DISSERTATION FROM THE
NORWEGIAN SCHOOL OF
SPORT SCIENCES
2023

Annett Victoria Stornæs

Too *perfect* to be healthy?

A quantitative and qualitative study of perfectionism, expectations, and mental health among students aged 13-16 in specialized sports, performing arts and regular lower secondary school

NIH NORWEGIAN SCHOOL OF SPORT SCIENCES

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ISBN 978-82-502-0613-7

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Rådet for psykisk helse

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Acknowledgments

Can actually a Ph.D. thesis on perfectionism ever be completed? – I was recently asked this exact question at a friend's birthday party. Although asked with a twinkle in the eye – it is indeed a superb to-the-point question and inherently characteristic of perfectionism. This thesis would certainly not, or it would have taken even more time if I had not been able to let go of some of the high expectations and standards that I had anticipated to fulfill before starting the Ph.D. – particularly when I met the more tough personal obstacles during these years. Indeed, it would not have been possible without the tremendous support from all the many significant colleagues, friends, and family.

It is a privilege to be given the opportunity to do a Ph.D. The long journey and learning process have given me many new and valuable experiences, starting from developing the project through several applications for funding and being hands-on at every step throughout the project, data gathering, analysis, and writing. The Ph.D. thesis results from many contributors and invaluable collaborations, from the first application for funding submitted many years ago to the initiation of the first data collection during spring 2016, getting the final paper published in June 2023, and now a completed Ph.D. thesis.

Stiftelsen Dam and the Norwegian Council for Mental Health (Rådet for psykisk helse) supported the project financially. The project would not have been possible without the funding, and I am grateful for your financial support. A special thank you to Charlotte Elvedal for your support during these years.

Thank you to the Norwegian School of Sport Sciences (NIH) at the Department of Sports Medicine for giving me the opportunity to do the Ph.D. and including me in the department. Prof. Sigmund A. Andersen, the Head of the Department, thank you for all your support, particularly during the more demanding times, for taking time for conversations and giving valuable and important advice. Thank you also to Solveig Sunde, Head of Office, for all the administrative and positive support throughout the years.

The Ph.D. would not be possible without the cooperation of the school leaders and teachers who facilitated our study during their hectic school schedules. A special thank you go to all participating students who contributed with essential insight by responding to comprehensive questionnaires and the students who participated in the qualitative interviews sharing their experiences.

Prof. Jorunn Sundgot-Borgen, my main and incredible supervisor, thank you for all your genuine academic and personal support throughout the Ph.D. Your extensive academic experience, genuinely supportive approach to supervising, and positivity are and have been during the Ph.D. pivotal for the completion of this thesis. You know me well, which has been uniquely valuable during these years. You know exactly when to *push* and when to *pull*. It has been a long journey since our first personal meeting in 2006 in connection with a project I participated in as an athlete at the Norwegian Olympic Sports Centre, and the year after you were my supervisor for my master's thesis. I am so grateful that when I emailed you about doing a Ph.D. on youth athletes ten years ago, you said yes (although having a lot on your plate) to supervising me on the first project protocol

and Ph.D. application. That was the early beginning of what, some years later, became this Ph.D. project. Sincerely, thank you so much for your considerable contributions, unique guidance, all our meetings and talks, and your encouragement during these years, Jorunn!

Prof. Gunn Pettersen, my co-supervisor, and Prof. Jan Rosenvinge, thank you for all your invaluable contributions during the entire project, including on the papers and our discussions that have enhanced my reflections about the themes covered in the Ph.D. I also thank you so much for the opportunity you gave me and the hospitality while I was in Tromsø for five weeks in 2018. Also, I thank you, Gunn, for all the conversations during my stay and, not least, for introducing me and including me in your Sunday's Padel tennis. Thank you, Prof. Oddgeir Friborg, also for taking the time to supervise me in advanced statistics for the first paper while I was in Tromsø and for your important contributions.

Sanna Nordin-Bates, I am genuinely grateful that you had the opportunity to come on board the Ph.D. project's two final papers. It has been great working with you. Your knowledge and insight into the field of perfectionism and your contributions to the papers have been invaluable. Also, thank you for inviting me and including me in your group that gathers for a writing retreat at beautiful Djurönäset. While finishing the thesis, I was fortunate to have another great colleague, Heidi Haraldsen, read and comment on the thesis. Thank you, Heidi, for your essential and meaningful feedback and comments. It was critically valuable.

In the spring of 2019, I went for two months abroad, taking the Ph.D. work with me to the outstanding surroundings of the city of Bath. I thank Tom Curran so much for the opportunity and hospitality, the great conversations about perfectionism, and for including me in working on an exciting paper while there. The stay in Bath was surely two of the most extraordinary months I have experienced during the Ph.D.

Thank you to the team of Jorunn's *Dream team,* Nina Sølvberg, Christine Sundgot-Borgen, Kethe Svantorp-Tveiten, and Therese Mathiesen for the valuable feedback during all our "practice" meetings before holding presentations and for the lovely social gatherings during the years. Thank you, Christine and Kethe, for your important assistance during the first data collection. I would not have managed it without you. Thank you, Nina, for all our good conversations and messenger chats, especially during the last year; you are remarkable. Sandra Bjordal Gluppe whom I was fortunate to share an office; although some time has passed since sharing the office, I loved our conversations and your optimism.

Thank you to all IIM Ph.D.-students and colleagues during my time at NIH; you are truly unique. Also, a special thank you goes to all of you in the engaging qualitative method group at the Department of Sport and Social Sciences. It was by coincidence that I joined the group as we were not in the same department, and I am so grateful for that coincidence. It has brought about invaluable discussions and reflections, important considerations for decision-making on the qualitative analytical method, and valuable reading and reflections on my qualitative paper. I hope I can continue being part of the group. Also, I was fortunate to get the opportunity to be a co-supervisor on a master's thesis on perfectionism. Thank you, Prof. Trine Stensrud and Camilla Sahlin Pettersen, for involving me. It was not only exciting to be involved, but being a supervisor

during that period on perfectionism enhanced further reflections on my Ph.D. thesis. I also thank you, former master's student Øystein Slokvik, for your invaluable help during the last data collection for the thesis.

Nina Rones, while we were working together at the defense department, formerly at NIH, thank you for encouraging me to apply for a Ph.D. candidate position. I am grateful that we have kept our friendship, and I look forward to more of our conversations. I have learned a lot from you and your thoughtful insights and perspectives. Also, indeed, I look forward to doing fun stuff with you again. Anders Sookermany, thank you also for encouraging me to apply and follow the track to doing a Ph.D.

Thank you to all my incredible friends. The three M's, and dear friends, Mette Øyen, Monica Grimstad, and Magnus Lian Ranum, you have been an incredible support, and luckily you have managed to distract me from my Ph.D. and remind me about the importance and how great it is to socialize with you (though not much the last year). I do not know what I would have done without you as my friends close by; thank you! Elisabeth Lund, thank you for our friendship for, well, it is about 40 years, and thank you for the lovely gatherings at your home. Jannicke Monsen, my friend, for even longer, and thank you, especially for the valuable translation contribution in the project's initial phase. Elisabeth Tømt and Tor Olav Hugdal, my dear friends from our first year at NIH (the year 2000), thank you especially much for having me at your beautiful home outside Bergen two years ago and helping out–you are sincerely extraordinary. Elisabeth Wiken, thank you for our friendship, starting from bachelor studies (twenty years ago) in physical activity and health. It is great being around you. I truly appreciate your positivity, encouragement, and thoughtful advice when we meet – and for distraction time from the Ph.D. with the super gathering at your cottage. Camilla Therese Karlsen, I cherish our friendship (also from bachelor studies twenty years ago), our talks, and your perspectives. Although you are situated in Berlin, the friendship is keeping strong. To my friends whom, during these years, I also have traveled with and gathered with, and that also have contributed valuable Ph.d.–leisure-time balance; thank you, Tove Skarpenes, Sturla Smári Hansen, Birgitte Brevik, Anders Grude, Eirik Ihlen, Renate Bjerk, Gina Matre, Ivar Sandmo. Thank you, all my friends, for being in my life.

My supportive family, thank you, mom, sister Cathrine, brother-in-law Jan, nephew Nicolai, and niece Catharina. My niece and nephew, you were only kids or young adolescents when we started the project, and both of you contributed with your valuable insight and gave me clear, direct advice for adjustments to language and words when planning for the interviews in the project. I feel so fortunate; you are the best. Cathrine, thank you for always being helpful and for your wise advice when needed. Cathrine and Jan, thank you for knowing that I, *little* sister, could always come by your home whenever. Last but not least, my mother, I have so much to thank you for during my time with this Ph.D., most importantly your emotional support and genuine interest in the themes in the project. I know you are as happy as I am that I finally managed to complete the thesis.

Oslo, May 21, 2023
Annett Victoria Stornæs

List of Papers

Paper I

Stornæs, A. V., Rosenvinge, J. H., Sundgot-Borgen, J., Pettersen, G., & Friborg, O. (2019). Profiles of perfectionism among adolescents attending specialized elite-and ordinary lower secondary schools: A Norwegian cross-sectional comparative study. *Frontiers in Psychology*, *10*, 2039. https://doi.org/10.3389/fpsyg.2019.02039

Paper II

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023). Mental health profiles among 13-16-year-old Norwegian talent and mainstream students - A prospective person-centered analytical approach. *Psychology of Sport and Exercise*, *68*, 102474. https://doi.org/10.1016/j.psychsport.2023.102474

Paper III

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023). Self-expectations, socially prescribed expectations, and wellness in 14-to 15-year-old athletes, ballet, and music students in Norwegian talent schools—An interview study. *The Sport Psychologist*, *37*(2), 92-105. https://doi.org/10.1123/tsp.2022-0133

Summary

Background: Concerns have been raised among practitioners and researchers about the increasing professionalization of young performers, which may generate negative experiences resulting from high expectations, perfectionism, and rigid schedules. Such experiences make young student-athletes and performing arts students susceptible to mental and physical strains. Still, original research on young teenage student-athletes and performing arts students are limited compared to mainstream students' mental health and aspects of perfectionism and expectations. By adopting quantitative and qualitative methods, this thesis aimed to lay the foundation for further comprehensive knowledge. Contributing to increased knowledge is pivotal to informing best practices that promote mental health development and well-being. This thesis is even more relevant now, as Norwegian TD sports schools have increased in numbers without a comprehensive evidence base to draw on.

Objectives: The overarching objective was to gain further knowledge about school-aged students' perfectionism, expectations, and mental health. The first paper aimed to identify how different perfectionism factors may co-exist in adolescents and how such profiles might be differently related to potentially adverse and positive mental health outcomes among talent development (TD) and regular students aged 13-14. The second paper aimed to identify how potential positive and adverse mental health indicators may co-occur in adolescents. Further, stability and transition between mental health profiles from age 13 to 16 and their association with self-oriented and socially prescribed perfectionism, gender, and school type were explored. The third paper aimed to provide in-depth insight into how self-oriented and socially prescribed expectations might be experienced by TD students in sports, ballet, and music aged 14-15.

Methods: Two quantitative studies, one cross-sectional and one prospective, were designed, targeting perfectionism and positive (resilience and self-worth) and negative mental health indicators (anxiety, depressive symptoms, and weight-shape concerns). The third study used a qualitative design with broad perspectives of expectations, i.e., because experiences of unrealistic expectations are involved in perfectionism. Students were recruited from Norwegian lower secondary schools: all three specialized TD sports schools existing at the initiation of study I, one TD ballet and one classical music class, and 11 schools referred to as *regular* in the thesis. In total, 832 (53.2% girls) and 946 (50.4% girls) students were included in paper I and II, respectively; this included 166 and 168 TD students in papers I and II, respectively. The qualitative paper (III) included 27 TD students. Cross-sectional perfectionism profiles (paper I) were explored by latent profile analysis (LPA). Mental health profiles (paper II) were explored by LPA and prospectively by latent transition analysis. The qualitative study was based on semi-structured interviews and analyzed by reflexive thematic analysis.

Results: Five identified perfectionism profiles (paper I) were related differently to adverse and positive mental health indicators. Students with co-occurring high levels of perfectionism (high mixed perfectionism) and a profile dominant by perfectionistic concerns (PC) fared worse, i.e., higher anxiety, depression, weight-shape concerns, and lower resilience and self-worth, than students with non-perfectionism and a profile dominant of personal standards and self-oriented perfectionism. Relatively high proportions experienced high mixed and PC-dominant perfectionism among student performers (22%) and regular students (38%). In paper II, four mental health profiles (*distressed-body concerned*, *dissatisfied*, *moderate mentally healthy*, *mentally healthy*) showed distinct patterns of co-occurring anxiety, depression, weight-shape concerns, and self-worth. Two mental profiles revealed relatively high proportions with co-occurring high-above or above average anxiety, depressive symptoms, weight-shape concerns, and low-below or below average self-worth: *distressed-body concerned*, 9-11% and *dissatisfied* profiles, 26-31%, at T1 and T2 respectively. High overall mental health profile stability (72-93%) was identified from age 13 to 16. Two notable transitions were that TD boys who transitioned were likely changing to healthier profiles and girls to unhealthier ones. The highest proportion of TD schoolboys was in the *mentally healthy* profile (T1: 52%, T2: 53%), the *moderate* profile in TD schoolgirls (T1: 44%, T2: 41%) and regular schoolboys (T1: 46%, T2: 43%) and the most common among regular school girls were the *dissatisfied* profile (T1: 41.5%, T2: 46%). Socially prescribed perfectionism predicted more unhealthy mental health profiles. In paper III, four main themes illustrated some of the complexities of young performers' experiences with self-oriented and socially prescribed expectations and their struggles with balancing them. The students' feeling of responsibility to fulfill expectations from several areas, high workloads, and tight schedules was a source of a physically and mentally demanding everyday life. Most TD students frequently felt tired (sometimes exhausted), and even some described more anxiousness, irritation, headaches, and concentration difficulties when experiencing they could not keep up with the expectations.

Conclusion: The thesis findings add to the extant literature further central knowledge and insight about perfectionism, expectations, and mental health in an understudied group of young student-athletes and performing arts students, as well as regular students. The occurrence of perfectionism and mental health symptoms in line with international trends provided further evidence suggesting a need for sincere attention to perfectionism and unbalanced expectations at the variance of realistic expectations in the effort to reduce the risk of mental health difficulties and enhance the well-being of student performers and regular students. Last, this thesis's findings highlight the critically valuable role of coaches, teachers, and parents of young student performers as they play decisive roles in facilitating positive and supportive environments.

Sammendrag

Bakgrunn: Forskere og praktikere har reist bekymringer knyttet til økende profesjonalisering av unge utøvere. Disse bekymringene er knyttet til den belastningen dette kan påføre unge satsende utøvere, og de negative opplevelsene dette kan frembringe knyttet til for høye forventninger, perfeksjonisme og utfordrende ukeplaner. Slike belatsninger og opplevelser i ung alder kan medføre at disse utøverne blir mer utsatt for psykiske og fysiske påkjenninger. Til tross for dette foreligger det lite forskning på de yngste utøverne som går på spesialiserte skoler for idrett, ballett og musikk, til forskjell fra kunnskapsgrunnlaget knyttet til ungdommer generelt og deres mentale helse og aspekter ved forventninger og perfeksjonisme. I denne doktorgradsavhandlingen er både kvantitativ og kvalitativ metode benyttet med formål om å frembringe et godt og omfattende kunnskapsgrunnlag. Det er behov for et økt kunnskapsgrunnlag som kan benyttes for best mulig å legge til rette for god praksis som fremmer god mental helse i ulike skolesettinger. Avhandlingen er spesielt aktuell nå da det har vært en stor økning i antall spesialiserte idrettsskoler på ungdomstrinnet de siste årene uten et godt nok evidensgrunnlag å forholde seg til.

Mål: Det overordnede målet med denne avhandlingen var å gi et økt kunnskapsgrunnlag om ungdomsskoleelevers perfeksjonisme, forventninger og mental helse. Målet med den første studien var å identifisere hvordan ulike faktorer ved perfeksjonisme sameksisterer hos ungdom. Herunder, hvordan ulike perfeksjonismeprofiler er relatert til potensielt negative og positive indikatorer for mentale helse blant 13-14 år gamle elever ved spesialiserte (idrett, ballett og klassisk musikk) og *ordinære* skoler. I den andre studien var målet å identifisere hvordan potensielle positive og negative mentale helseindikatorer sameksisterer, dvs., ved å studere ulike mentale helseprofiler. I tillegg til å avdekke stabilitet og forflyttinger mellom mentale helseprofiler fra ungdommene var 13 til 16 år, samt om tilhørighet til ulike mentale helseprofiler viste ulik sammenheng med selvorientert og sosialt foreskrevet perfeksjonisme, kjønn og skoletype. Målet med den tredje studien var å gi dypere innsikt i hvordan selvorientert og sosialt foreskrevne forventninger erfares av elever som går på spesialiserte skoler i idrett, og klasser for ballett og musikk i alderen 14-15 år.

Metode: To kvantitative studier, en tverrsnitt- og en prospektiv studie, ble designet, og var rettet mot perfeksjonisme og positive (resiliens og selvfølelse) og negative mentale helseindikatorer (angst, depressive symptomer og kroppsbekymringer). Den tredje studien brukte et kvalitativt design, og hadde et bredt perspektiv på forventninger fordi det å oppleve svært høye og urealistiske forventninger er en sentral del av perfeksjonisme. Elevene som deltok ble rekruttert fra ulike ungdomsskoler: alle tre spesialiserte idrettsskoler som eksisterte ved oppstart av studie I, samt en ballett og en klassisk musikkklasse, i tillegg til 11 *ordinære* skoler. Artikkel I inkluderte 832 (53,2 % jenter) og artikkel II 946 (50,4 % jenter) elever; herunder var 166 og 168 av elevene fra de spesialiserte skolene. Den kvalitative artikkelen (III) inkluderte 27 elever fra de spesialiserte skolene i idrett, ballet og klassisk musikk. Latent profilanalyse (LPA) ble benyttet for å identisere perfeksjonismeprofiler (artikkel I). Mentale helseprofiler ble studert gjennom LPA og prospektivt med latent overgangsanalyse (latent transition analysis, LTA; artikkel II). Den kvalitative studien var

basert på semistrukturerte intervjuer som ble analysert gjennom refleksiv tematisk analyse.

Resultater: Fem perfeksjonismeprofiler (artikkel I) ble identifisert. Profilene var ulikt assosiert med negative og positive mentale helseindikatorer. Elever med kombinert høye perfeksjonismeskårer (*high mix perfectionism*) og elever med en profil dominert av perfeksjonistiske bekymringer (PC) hadde høyere angst, depresjon, kroppsbekymringer og lavere resiliens og selvfølelse, enn elever uten perfeksjonisme og elever med en profil dominert av moderat selvorientert perfeksjonisme og personlige standarder. Relativt høye andeler hadde kombinert høy grad av perfeksjonisme og en PC-dominerende perfeksjonismeprofil blant elevene i spesialiserte (22%) og *ordinære* skoler (38%). I artikkel II fant vi fire mentale helseprofiler med distinkte mønstre for hvordan angst, depresjon, kroppsbekymringer og selvfølelse sameksisterte. To mentale helseprofiler viste at det var relativt mange elever med samtidig høy grad av angst og depressive symptomer, og kroppsbekymringer kombinert med lav selvfølelse: 9-11 % med høyt over/lavt under gjennomsnittet og 26-31 % over/under gjennomsnittet ved henholdsvis T1 og T2. Det var høy grad av stabilitet i hver profil (72-93 % ble værende i samme profile) fra elevene var 13 til 16 år. To bemerkelsesverdige endringer ble identifisert; gutter ved de spesialiserte skolene som byttet profil, forflyttet seg til gunstigere profiler og jenter til mer usunne. Den største andelen av guttene i de spesialiserte skolene var i den gunstigste mentale helse profilen (T1: 52 %, T2: 53 %). Den største andelen av jentene i spesiliserte skoler var i en moderat god mental helseprofil (T1: 44 %, T2: 41 %) samt gutter i *ordinærskole* (T1: 46 %, T2: 43 %), mens de fleste av jentene i de *ordninære* skolene var i den nest minst gunstige profilen, betegnet som *«misfornøyd»* profil (T1: 41,5 %, T2: 46 %). Sosialt foreskrevet perfeksjonisme var relatert til de minst gunstige mentale helseprofilene. I artikkel III var fire hovedtema sentrale. De fire hovedtemaene illustrerte kompleksiteten knyttet til unge utøveres erfaringer med selvorienterte og sosialt foreskrevne forventninger og hvordan utøverne strevet med å balansere disse forvetningene. Elevenes ansvarsfølelse knyttet til å oppfylle forventninger fra flere hold, lange dager med trening og skole og stramme ukeplaner var kilde til en fysisk og psykisk krevende hverdag. De fleste følte seg ofte slitne (noen ganger utmattet), og noen beskrev at de fikk mer angst, ble oftere irritert, hadde mer hodepine og konsentrasjonsvansker når de opplevde at de ikke klarte å holde tritt med forventningene.

Konklusjon: Denne avhandlingen tilfører den eksisterende litteraturen viktig kunnskap og innsikt om perfeksjonisme, forventninger og mental helse hos en understudert gruppe unge utøvere ved spesialiserte skoler for idrett og klasser i ballett og musikk så vel som *vanlige* elever. Avhandlingen som viser en utbredelse av perfeksjonisme og mentale helsesymptomer i tråd med internasjonale trender gir et ytterligere kunnskapsgrunnlag og tyder på at det er behov for oppriktig oppmerksomhet på perfeksjonisme, kryssende sosialt påførte- og selvpålagte forventninger for å redusere risikoen for psykiske helseproblemer og øke trivselen til elev-utøvere og elever generelt. Til slutt, funnene i denne avhandlingen viser den kritisk verdifulle rollen trenere, lærere og foreldre har for unge satsende utøvere; de spiller en avgjørende rolle i å legge til rette for positive og støttende miljøer.

Abbreviations

CAPS	Child Adolescent Perfectionism Scale
CFA	Confirmatory factor analysis
FIML	Full information maximum likelihood
FMPS	Frost Multidimensional Perfectionism Scale
HF-MPS	Hewitt & Flett Multidimensional Perfectionism Scale
LPA	Latent profile analysis
LTA	Latent transition analysis
PC	Perfectionistic concerns
PS	Perfectionistic strivings
REC	Regional Committee for Medical and Health Science Research Ethics in Southern Norway
SOP	Self-oriented perfectionism
SPP	Socially prescribed perfectionism
TD	Talent development

Introduction

Adolescents generally report good mental health and are satisfied with their lives (Inchley et al., 2020; NIPH, 2016). Still, international (Inchley et al., 2020) and Norwegian reports (NIPH, 2016; Bakken, 2021) illustrate a high and increasing number of adolescents who experience mental health problems that affect their daily lives. Leisure time sports and cultural activities like dance and music may yield beneficial mental health outcomes related to enhanced well-being, social belonging, and enjoyment (Eime et al., 2013; Hansen et al., 2015; McCrary et al., 2021). However, there is likely a difference between participation in a leisure time activity and being a very young, ambitious, and invested performer. Indeed, underpinned by an abundance of studies and reports that raise concerns about an increasing professionalization of young performers from earlier ages, specifically related to the negative experiences that might result from high pressures, expectations, and rigid schedules (Bergeron et al., 2015; Haraldsen et al., 2020; Hayward et al., 2017; LaPrade et al., 2016). Such experiences may make young performers susceptible to mental and physical strains during adolescence (Brenner et al., 2019; Quinn et al., 2021; Walton et al., 2021). Hence, the overall purpose of the thesis was to provide further knowledge about perfectionism, expectations, and mental health in an understudied group of young Norwegian student performers and school-aged students.

This doctoral thesis involves adolescents (13-16 years old) attending specialized talent development (TD) schools in sports, ballet, and music and general students (referred to as regular students in the thesis). TD schools for this age group are relatively new in Norway. Only three sports schools and one each TD program for ballet and music students existed when this doctoral project was initiated in the spring of 2016. Seven years later, over 20 private sports schools are established. Indeed, in the last decade, there have been an increasing number of studies published on adolescent athletes' and other performers' mental health status, indicating lower anxiety and depressive symptoms among adolescents participating in sports than in non-athletes (Panza et al., 2020). At the same time, risk factors have been reported, highlighting the negative influences of several psychosocial stressors, including distress, body concerns, and perfectionism related to adolescents in competitive sports (Walton et al., 2021) and dance (Quinn, 2021). Notwithstanding, research on mental health and aspects of perfectionism and expectations among young teenage student-athletes and performing arts who attend TD schools from a young age (i.e., 13 yrs) is still limited and, thus, needed. Increased knowledge may contribute to optimized facilitation of practice to promote positive experiences, positive mental health development, and well-being in these student performers who are highly devoted and invested in their activity while striving to reach their dream of becoming a professional athlete, dancer, or musician.

The Theoretical Framework

In this section of the introduction chapter, I describe the main theoretical concepts involved in the thesis papers, i.e., perfectionism, expectations, anxiety, depression, body weight-shape concerns, self-worth, and resilience. A literature overview of relevant studies on profiles of perfectionism and mental health aligning with the research design in this thesis will follow after one each section on profiles of perfectionism and mental health profiles.

Perfectionism and Expectations

Expectations

Expectations involve attitudes or beliefs toward oneself or others about future events and anticipated outcomes developed through previous experiences and knowledge (Heaviside et al., 2021; Olson et al., 1996). How expectations influence an individual's behavior, emotions, or actions relates to what value the person places on meeting the expectation (Feather, 1982). For instance, experiences of a disproportion between one's expectations (from the self and, or others) and inadequate capacity or ability to meet those expectations may increase distress, exhaustion, and other health issues (Nordin-Bates & Abrahamsen, 2016; Patston & Osborne, 2016). In school-aged performers, such disproportions may originate from societal expectations of succeeding in both academics and their sports or performing arts (Ryba et al., 2017). Furthermore, experiencing unrealistic expectations is involved in perfectionism, a well-established correlate of mental ill-health (Flett & Hewitt, 2022; 2014).

Previous studies have revealed that being equally invested and having expectations about working and performing equally well in sports and school can be a source of stress and ill-being (Skrubbeltrang et al., 2016; Stambulova et al., 2015). How student performers experience the influence of expectations might be complex, as revealed in a study among high school student-athletes with high expectations to succeed from themselves and their parents (Sorkkila et al., 2017). The results indicated one-sided expectations for school or sports might protect against burnout in that domain (Sorkkila et al. 2017). However, experiences of striving to meet high and conflicting expectations could come at a cost, as the positive influence of such expectations did not persist across both domains. Instead, high expectations in one domain tended to increase the likelihood of burnout in the other domain (Sorkkila et al. 2017). Finally, consensus statements (Bergeron et al., 2015; LaPrade et al., 2016) and clinical reviews (Walton et al., 2021) on youth athletes report concerns about excessive expectations, overall high loads, and overscheduling experienced by young athletes and its effect on their well-being and health.

These previous findings among youth athletes, specifically student-athletes, are essential. Explicitly pinpointing the importance of exploring students' experiences across domains to

understand further how different aspects of expectations, perfectionism, or conflicting performance expectations may affect their well-being, health, and everyday life. Hence, in this thesis (qualitative paper), experiences of self- and socially imposed expectations and wellness among young student performers in sports, ballet, and music activities and everyday life were further explored and unfolded, inspired amongst others by a well-established perfectionism model. The model is further described in the following sections.

Perfectionism

Perfectionism is a multidimensional construct, characterizing individuals with exacting personal standards combined with harsh self-critical evaluations (Frost et al., 1990). It is a vulnerability factor with the nickname *"successful failures"* (Missildine, 1963, pp. 76); on the one side, nurturing dedication and high achievements – on the other, it can predispose adolescents to debilitative behavior and mental health problems (Flett & Hewitt, 2022; Hewitt et al., 2017). Researchers underline the inherently distinct difference between perfectionism and personality characteristics like conscientiousness and holding high-performance standards (Burns, 1980; Flett & Hewitt, 2022; Gaudreau, 2019). As Greenspon (2000) noted, "Striving to excel, by contrast, is healthy for anyone unless it becomes obsessive; perfectionism is not the simple wish to excel" (p. 199). Perfectionism instead nurtures enduring mental patterns and specific thoughts, behavior, perceptions, and interpersonal dynamics (Flett & Hewitt, 2022). Indeed, researchers have demonstrated that perfectionistic individuals driven by inflexible orientations, embodied harsh self-requirements, and self-criticism may experience relational discord and occupational challenges (Hewitt et al., 2017; Sherry et al., 2007). Further, lower self-worth and self-worth contingency are associated with perfectionism. That is, perfectionistic individuals seem to be dependent on "being perfect" and, thus, need to continually pursue achievements and avoid failures to experience a sense of self-worth (Hill et al., 2011; Raedeke et al., 2021; Ståhlberg et al., 2019). Especially in the presence of failure or achievement stress, such strivings may lead to considerable psychological difficulties, like shame, guilt, and anxiety (Hewitt et al., 2017). Moreover, perfectionism may both predispose and maintain mental ill health, like anxiety, depression, and significant body concerns (Affrunti & Woodruff-Borden, 2018; Limburg et al., 2017; Vacca et al., 2021).

In the last two decades, an increasing number of perfectionism studies have been published. However, few existed on perfectionism related to the common mental health risk factors, anxiety, depressive symptoms, and body concerns in very young student-athletes (Hill et al., 2018) before initiating this doctoral project. Given the vulnerability factors related to perfectionism and the fact that high-expectation contexts like TD might generate perfectionistic tendencies (Flett & Hewitt, 2022; 2014), this thesis set out to provide further knowledge about such associations as well as the prevalence of different perfectionism profiles.

Multidimensional Perfectionism

Until the 1990s, perfectionism was assessed unidimensionally (e.g., Burns Perfectionism Scale by Burns, 1980; or the Eating Disorder Inventory six perfectionism items by Garner et al., 1983). Today, two of the most widely used multidimensional frameworks are those developed over 30 years ago by Frost and colleagues (1990) and Hewitt and Flett (1991). A specific version for children and adolescents was developed later from the latter (Flett et al., 2016; 1997).

The adult perfectionism scale by Hewitt and Flett (1991) differentiates between three perfectionism dimensions. Building on the adult version, a measure to assess two trait dimensions in children and adolescents was developed that assesses self-oriented (SOP) and socially prescribed perfectionism (SOP; Flett et al., 1997; Flett et al., 2016: Child Adolescent Perfectionism Scale, CAPS). All the thesis papers involve SOP and SPP.

SOP involves immense self-directed requirements for perfection with exaggerated attention to failure avoidance (Hewitt & Flett, 1991; Hewitt et al., 2017). When falling short of one's rigid standards, self-oriented perfectionists tend to engage in self-punishment by critiquing themselves and being inclined to dwell on their failures and flaws, which they believe reflect all of the self (Flett & Hewitt, 2022). The distinctive differences between hoping to perform to the best of one's ability and adolescents with SOP are that the latter is excessively concerned about imperfection. Thus, they need to be perfect and obtain success to perceive a sense of worth (Hewitt et al., 2017). Hence, failures followed by receiving feedback from, for instance, coaches, teachers, or parents would likely lead to higher self-expectations to compensate for imperfect performances (Hewitt et al., 2017).

SPP involves the perception that other people or society expect perfection of the self and the need to comply with those others' exacting expectations. Flett and Hewitt (2022) have described SPP as a "self-relevant personality dimension because it involves an emphasis on how the social world relates to the self" (p. 59). Thus, like SOP, SPP involves self-demands of perfection, but its source is external rather than internal, linked to norms and values in the family- and performance culture (Flett & Hewitt, 2022; Hewitt et al., 1991). In SPP, the motivational strive for perfection is based on conditional regard as it involves securing approval and avoiding rejection or disapproval from others; others the individual tends to believe never will be satisfied. Thus, the perception of social pressure and external expectations will only increase if success is accomplished, i.e., "the better I do, the better I am expected to do" (Hewitt et al., 2017, p. 44). Perfectionism may thus be reinforced, instead of decreased, as successful accomplishments nurture the self- and socially imposed expectations of perfection (Hewitt et al., 2017). Although SOP has been related to anxiety, depression, and body concerns (Bento et al., 2010; Hewitt et al., 2002; Rosewall et al., 2018), SPP is the most harmful, consistently associated with mental ill-health (Flett et al., 2022).

The second perfectionism framework used in this thesis (paper I) is the Frost

multidimensional perfectionism scale (FMPS; Frost et al., 1990). Frost et al. (1990) developed a scale along the six dimensions high personal standards, concerns over mistakes, doubts about actions, parental criticism, parental expectations, and organization. Concerns over mistakes (CM) is considered an essential dimension within FMPS as it might differentiate perfectionistic individuals from those who set high standards (Frost et al., 2010, p. 120; Flett & Hewitt, 2022). Further, individuals with merely high personal standards are not necessarily perfectionistic. Hence, the FMPS personal standards dimension warrants evaluation of whether the individuals place excessive importance on their standards for self-evaluation (Frost et al., 1990; Flett & Hewitt, 2022). In contrast, individuals with high CM are excessively concerned and sensitive about making mistakes and experiencing failures. Doubts about actions are another self-directed dimension involving a tendency to doubt the quality of one's performance (Frost et al., 1990).

Two FMPS dimensions involve interpersonal factors related to individuals' perceptions of parental expectations and criticism, which reflect conditional regard. Individuals who experience high parental expectations might perceive that failure to meet these expectations can be a risk for parental criticism and potentially lead to disapproval and loss of parental love (Frost et al., 1990). These interpersonal factors might be involved in the development of perfectionism (Flett & Hewitt, 2022; Sironic & Reeve, 2015). Also, some argue that the parental factors might be better considered as antecedents and correlates of perfectionism than core parts of the concept (Rice et al., 2005; Stoeber, 2018a).

The original FMPS also included a dimension characterizing individuals who overemphasize organization related to order and neatness (Frost et al., 1990). However, most current researchers do not consider the organization dimension as a central factor of the perfectionism construct (Frost et al., 1993; Flett & Hewitt, 2022; Hill, 2016). Furthermore, several issues have been raised about the psychometric properties and the assessment of perfectionism by FMPS original conceptualization (Cox et al., 2002; Hawkins et al., 2006; Sironic & Reeve, 2015; Stöber, 1998; Stumpf & Parker, 2000). Paper I involves all six FMPS factors, and due to the mixed support, paper I and the thesis discussion chapter provide a further evaluation of the FMPS.

Combining the Perfectionism Models in Higher Order Factors

The first published paper in this thesis used a perfectionism model combining the FMPS and the CAPS (paper I). Frost et al. (1993) were the first to study the association between HF-MPS and FMPS. Substantial overlaps were found, and a two-factor solution was retained by which one factor related to negative affect and one to positive affect. The authors introduced the first factor as an indication of maladaptive evaluative concerns and the second as positive achievement striving (Frost et al., 1993). Others (Cox et al., 2002) came to an overlapping conclusion, indicating a hierarchical two-factor model of perfectionism (though discarding 48 original items). These and

other researchers (Bieling et al., 2004; Stoeber & Otto, 2006) made the foundation for a two higher-order conceptualization of perfectionism. In this thesis (paper I), the two higher-order conceptualization is not per se explored but is relevant as a well-established theoretical model (Hill, 2016; Stoeber, 2018a; 2018b). Also, in this thesis, it is used for addressing findings across studies that use different measures of perfectionism.

The two-factor conceptualization has been given a range of labels in the past, considered unadvisable in contemporary research, e.g., adaptive and maladaptive perfectionism; healthy and unhealthy perfectionism; functional and dysfunctional perfectionism (Stoeber, 20018a). Preferred terms are either personal standards and evaluative concerns perfectionism (Dunkley et al., 2000) or perfectionistic strivings (PS) and concerns (PC) as they do not assume a specific effect by the given term (Hill 2016; Stoeber, 20018a, 2018b). The latter, PS and PC, are used for brevity in this thesis. When appropriate and related to specific papers or findings, I refer to the terms used by the authors.

PC may be described as capturing "aspects associated with concerns over making mistakes, fear of negative social evaluation, feelings of discrepancy between one's expectations and performance, and negative reactions to imperfection" (Gotwals et al., 2012, p. 264). PS captures the "aspects of perfectionism associated with self-oriented striving for perfection and the setting of very high personal performance standards" (Gotwals et al., 2012, p. 264). Self-oriented perfectionism and personal standards (and organization) typically tap into PS. Factors typically tapping into PC are socially prescribed perfectionism, concerns over mistakes, doubts about actions, parental criticism, and parental expectation (Hill, 2016).

Although there is statistical evidence for the hierarchical perfectionism model, there are also arguments against and concerns about combining unique perfectionism factors as it may obscure the underlying conceptualizations and processes that are inherently present in the specific factors of the different models (Flett & Hewitt, 2019; Hill, 2016). Hence, whether it might be applicable or suitable to combine different models, or reduce the number of factors into broader conceptualizations, need to be evaluated in relation to the psychometric properties by statistical procedures (e.g., factor analysis), previous literature, as well as the purpose of the study.

From Unique Perfectionism Indicators to Profiles of Perfectionism

The association between unique perfectionism and mental health indicators has been widely studied in the past three decades (Flett & Hewitt, 2022, Hill, 2016; Stoeber, 2018a). Burnout symptoms is one of the most common criterion variable studied in association with perfectionism among performers in sports and dance in the last decade (2013-2023), including adults and adolescents (i.e., see reviews: Gustafsson et al., 2017; Hill et al., 2018; Jowett et al., 2016b; and primary studies on adolescent performers: e.g., Gustafsson et al., 2016; Hill 2013; Jowett et al., 2021; 2016a; 2013, Madigan et al., 2016; 2015; Nordin-Bates et al., 2017; Smith et al., 2018a). Relatively

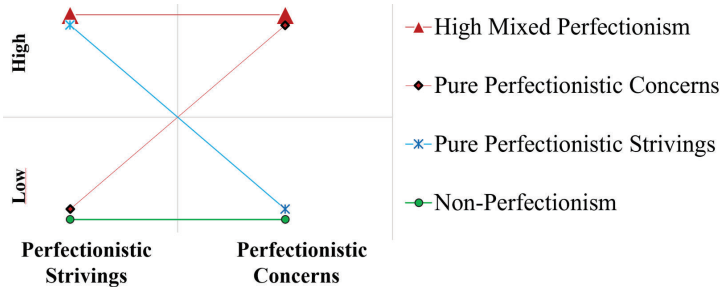
few studies have explored young student-athletes and performing arts students' perfectionism related to mental health, particularly profiles of perfectionism and their association with essential criterion variables, like symptoms of anxiety, depression, and body concerns (Table 1). Hence, this thesis sought to explore this further and contribute to the research field.

Among adolescents in general, consistent associations are reported between perfectionistic concerns and mental ill health, including anxiety, depressive symptoms, and body concerns (Affrunti & Woodruff-Bordon, 2016; Flett & Hewitt, 2022; Vacca et al., 2021). Perfectionistic strivings are more complex and contradictory than PC, showing positive, negative, or non-relations with positive, debilitating, and maladaptive factors (Gotwals et al., 2012). For instance, positive associations tend to emerge with indicators considered more protective or adaptive for mental health and well-being, such as global self-worth, achievement, and engagement (Damian et al., 2017; Luo et al., 2016; McArdle & Duda, 2008; Stoeber & Rambow, 2007). Some of the complexities in perfectionistic strivings are shown by studies also reporting its association with anxiety, depressive symptoms, and body concerns (Affrunti & Woodruff-Bordon, 2014; 2018; Vacca et al., 2021). Notably, researchers suggest that positive outcomes of perfectionistic strivings may reflect that the individuals strive for excellence or conscientiously pursue high standards instead of absolute perfection (Flett & Hewitt, 2022; Gaudreau, 2019; Hill, 2016). Further, though a debated theme in the field, several scholars maintain that individuals who do not display both perfectionistic strivings and concerns may not be characterized as perfectionists because, separately, the dimensions do not adequately capture perfectionism (Hill, 2016).

The broad perfectionism dimensions of PS and PC and their correlates and effects are important to understand how and why perfectionism impacts the well-being and mental health of young athletes, other performers, and school-aged students. Further analytical developments have emerged that explore how within-person combinations of the dimensions may relate differently to outcome variables. One such conceptualization is a 2x2-dimensional model developed under the assumption that in all individuals' the unique features that define perfectionism can coexist to a certain extent (Gaudreau, 2016; 2012; Gaudreau & Thompson, 2010). Based on standardized low (-1 SD) and high (+1 SD) means of PS and PC, an a-priori four-profile solution was proposed by Gaudreau and Thompson (2010). An illustration of the within-person combinations of PS and PC in the 2x2 model is provided in Figure 1. Another grouping approach to perfectionism is the tripartite model, which was predominant before the 2x2 model (Parker, 1997; Rice & Ashby, 2007; Stoeber & Otto, 2006). The latter tripartite model will not be further addressed in this thesis.
(Note that the different within-person combinations are referred to as profiles in this thesis for consistency, alternative terms are groups or clusters).

Figure 1

2x2 Model of Perfectionism Illustratting Within-Person Combinations of PS and PC



Gaudreau and Thompson (2010) suggested that four hypotheses are specifically relevant to test to identify whether individuals with different coexisting PS and PC levels differ in psychological adjustments based on the general assumptions of PS being more adaptive than PC. First, pure PS compared to non-perfectionism would reveal that the pure PS profile has either better psychological adjustments, poorer, or does not differ ($H1_{a, b, c}$). Second, the pure PC profile would fare worse than the non-perfectionism (H2). Third, mix-perfectionism would fare better than the pure PC; thus, a PC-dominant profile would be the most unhealthy (H3). Fourth, the mixed perfectionism profile would fare worse than the pure PS (H4). Consistent with their hypothesis, undergraduate students with a PC-dominant profile were clearly externally regulated by motives, values, and goals controlled by socially imposed standards (Gaudreau & Thompson, 2010). Also, the students with a PC-dominant profile fared worse than those with high co-occurring PC and PS (mixed perfectionism). The latter has been explained by an assumption that individuals' high PS in mixed perfectionism may buffer against the adverse influence of external pressures from PC (Gaudreau, 2016). However, later studies using different analytical approaches to study perfectionism profiles have not fully supported the latter hypothesis (e.g., Haraldsen et al., 2021; Sironic & Reeve, 2015; see Table 1).

When developing the 2x2 model, Gaudreau and Thompson (2010) used a variable-centered approach to create the four profiles. However, the 2x2 model hypotheses are also relevant when using more advanced empirical approaches, like the person-centered approach latent profile analysis (LPA). LPA is explorative and data-driven by which the number of profiles to retain and the within-profile levels of PC and PS is unknown in advance. The decision on the final profile solution relies on several criteria related to model fit indices, substantive rationale, and previous literature (Spurk et al., 2020; the methods section provides further descriptions of the criteria). Hence, it might be anticipated that LPA solutions may not align with the a-priori 2x2 model. Still, via LPA, examining the profile resemblance and differences that emerge from the data-driven approach compared to the 2x2 theory and hypotheses related to positive and adverse outcomes is relevant.

Although the 2x2 model has contributed to further understanding of within-person

combinations of PS and PC and their effect on different outcome variables (Gaudreau, 2016; Hill & Madigan, 2017), it is not well-documented how perfectionism profiles are related to mental health across school types and gender during adolescence. Hence, in this thesis, we aimed to provide further knowledge on perfectionism profiles among student performers and regular school-aged students. Further, in the next section, I provide an overview of previous studies that explored perfectionism profiles or the 2x2 model (i.e., LPA, cluster analysis, regression analysis; Table 1).

Literature Overview - Profiles of Perfectionism and Association with Mental Health

The literature overview is provided to contextualize the current thesis' and its research design in the research field. By providing this short synthesis, the purpose is to identify studies and explore knowledge gaps in primary studies on perfectionism profiles related to indicators used in this thesis, i.e., anxiety, depressive symptoms, body concerns, resilience, and self-worth, among young performers in sports, dance, and classical music and adolescent students aged 13-18 years.

Several literature reviews and meta-analytical studies have been published in the last decade on unique dimensions of perfectionism (Jowett et al., 2016b) and its relationship with mental health or well-/ill-being in the general population (Curran & Hill, 2019; Hill & Curran, 2016; Flett et al., 2022), and on samples of non-clinical and clinical samples (e.g., Smith et al., 2018b on anxiety; Vacca et al., 2021 on body/eating related concerns) and athletes and dancers (Hill et al., 2018; Jowett et al., 2016b). Literature reviews on studies exploring the hypothesis of the 2x2 model have also been provided (Gaudreau, 2016; Hill & Madigan, 2017). In 2017 the 2x2 model of perfectionism was used in nine sports/dance studies (Hill & Madigan, 2017). Three studies were on dancers (Cumming & Duda, 2012; Nordin-Bates et al., 2017; Quested et al., 2014) and two on athletes (Hill, 2013; Mallinson et al., 2014) aged 13-20 years. Three of these studies examined burnout and or motivation related to distinct profiles of perfectionism (Hill, 2013; Nordin-Bates et al., 2017; Quested et al., 2014). Accordingly, when initiating this doctoral project in 2016, few primary studies explored profiles of perfectionism associated with other mental health indicators in very young performers. Hence, for this literature overview, I searched for studies on pure perfectionism profiles based on multidimensional perfectionism related to similar mental health indicators used in the thesis. Accordingly, this literature overview does not refer to all study indicators used previously – though I acknowledge the essentiality of other indicators and their association with perfectionism (e.g., burnout, motivation, and goal orientations related to perfectionism profiles).

Several searches were conducted to retrieve relevant studies in APA PsycINFO and PubMed (February 27 to March 10, 2023), along with supplemental Google Scholar searches and screening of reference lists. Including filters: published last 15 years (2008-2023), age 13-18 years (in PsycINFO: adolescence <13 to 17 years>), English language, female and male. The final search included all selected terms in combination, the performer groups, and filter options:

(perfectionism[title]) AND (perfectionism cluster OR perfectionism profile OR 2 x 2 perfectionism[all fields]) AND (mental health OR anxiety OR anxiety symptoms OR depression OR depressive symptoms OR distress OR body weight concerns OR body shape concerns OR body dissatisfaction OR resilience OR self-worth OR self-esteem[all fields]) AND (sport OR athlete OR athlete-student OR dance student OR ballet student OR music student[all fields]).

Seventy-eight records were identified in APA PsycINFO, PubMed, and 304 from Google Scholar. After removing duplicates, 28 papers were identified as eligible for inclusion from reading the abstracts. Ten papers complied with the aims of identifying studies among adolescents and perfectionism profiles related to one or more of this thesis's relevant mental health indicators. Nine studies were cross-sectional, and one used a longitudinal design. The age range was 11-20 years (hence the inclusion criteria, age range 13-18, were not strictly followed). Five studies were on young performers (n = 1048 participants, 69.5% females) in sports (N = 2) and dance (N = 2), and one explored all three performer groups (aged 16-19 years; Haraldsen et al., 2021). Five studies were on regular adolescent students or community samples (n = 4898 participants, 51.6% females).

The two-dimensional framework of perfectionism was used in most studies to examine perfectionism profiles and their contrasting effects on the criterion variables. The studies on young performers used perfectionism dimensions from the FMPS or the domain-specific Sports FMPS, and one used the HF-MPS. In adolescent students, two used FMPS, two the CAPS, one the short APS-R, and one combined the three scales. Table 1 provides an overview of the ten studies.

Profiles of Perfectionism in Young Performers in Sports and Performing Arts

Five studies tested the 2x2 model hypothesis; one through latent profile analysis (Haraldsen et al., 2021), two by cluster analysis (Duda & Cumming, 2012; Quested et al., 2014), and two by regression analysis (Mallinson et al., 2014; Mallinson-Howard et al., 2019). Indicators to test the association with perfectionism profiles relevant to this overview were performance anxiety related to sports, music, or dance (N = 2), body-related concerns (N = 2; body dissatisfaction; others negative body evaluation), and general or specific self-esteem (N = 2).

Overall, the high mixed and perfectionistic concerns (PC) dominant profiles fared worse than the dominant perfectionistic strivings (PS) and non-perfectionism profiles. The studies using person-centered approaches, i.e., latent profile (Haraldsen et al., 2021) or cluster analysis (Quested et al., 2014; Cumming & Duda, 2012), reported relatively high proportions of performers with high mixed perfectionism (19-21%) or a PC dominant profile (14-31%).

A 2x2 model hypothesis is that the mixed-perfectionism profile will fare better than the PC dominant (H3). As earlier noted, the hypothesis relates to suggestions that the high PS may buffer against some of the unfavorable effects of PC when individuals have high co-occurring levels of both. Hence, PS, as an internally driven factor, is anticipated to be more favorable than PC since PC is associated with social evaluations and external pressures of perfectionism (Gaudreau, 2016).

Only one of the six studies in this overview fully supported the 2x2 hypothesis, including the mixed perfectionism profile revealing better outcomes on physical self-worth and self-esteem enhancement than the PC dominant profile (Mallinson et al., 2014). In contrast, four studies revealed that young performers in the mixed perfectionism and PC dominant profiles did not significantly differ in performance anxiety (Haraldsen et al., 2021), somatic anxiety, worry (Mallinson-Howard et al. (2019), self-esteem, body dissatisfaction (Quested et al., 2014), or body-related concerns (Cumming & Duda, 2012). Hence, within these four latter studies, the proposed buffering effect of high personal standards in the mixed profile was not supported (H3). Further, the PS dominant and non-perfectionism profiles did not differ on those specific indicators ($H1_b$ supported). In contrast, school- and community youth athletes with a PS dominant profile reported significantly higher self-worth than non-perfectionism individuals ($H1_a$; Mallinson et al., 2014).

The contrasting findings across these studies may relate to the different analytical approaches. In cluster and latent profile analysis, the level of each perfectionism dimension within each profile (e.g., a profile reported as "high PS/high PC") is rarely equal to studies testing the original framework of the 2x2 model using variable-centered analysis. Gaudreau's (2016) review of the 2x2 model in sports and dance argues that the mixed perfectionism profiles in some cluster analytical studies (e.g., Cumming & Duda, 2012; Quested et al., 2014) might need to be interpreted cautiously, particularly if revealing a PC dimension being above PS. Indicating that PC could be more dominant in such mixed perfectionism profiles and, thus, being the indicator influencing the outcomes the most. Indeed, different findings across studies may also be sample dependent, e.g., attributed to different age ranges, gender, contexts, or covariates.

To sum up, this overview indicates that the hypothesis of the 2x2 model or explorative approaches of perfectionism profiles and associations with specific adverse or positive mental health indicators have not been extensively studied among student-athletes, ballet, or music students aged 13-18, and several important questions remain unanswered.

Profiles of Perfectionism in Adolescent Students

The main findings are provided in Table 1. One study used latent profile analysis, adopting an explorative approach (Sironic & Reeve, 2015). Four studies used cluster analysis, discussing their findings within the 2x2 framework. Indicators used to test the associations with perfectionism profiles were anxiety, depression, and stress symptoms (N = 2), body-related concerns (N = 1), school anxiety (N = 1), and self-worth contingency (N = 1). One study identified six perfectionism profiles (Sironic & Reeve, 2015). Four profiles were reported in four studies, which differed from the 2x2 model by the levels of PS and PC in each profile. The occurrence of students with high mixed perfectionism (6.6-28.6%) or a PC dominant profile (23.6-27.5%) was relatively high.

Overall, students with high mixed and PC dominant perfectionism profiles fared worse than

those with a PS dominant or non-perfectionism profile. None of the studies indicated that students with a PC dominant profile fared worse than those with high mixed perfectionism (H3 not supported). Instead, non-significant differences were found in anxiety and depressive symptoms (Sironic & Reeve, 2015; Vicent et al., 2020) and school anxiety (Vicent et al., 2019). Alternatively, the students with high mixed perfectionism showed worse outcomes than those with PC dominant related to body concerns and academic self-worth contingency (Boone et al., 2010; Ståhlberg et al., 2019). Also, students not reporting perfectionistic tendencies (non-perfectionism) fared overall better than students with a PS-dominant profile regarding body concerns, anxiety, and stress symptoms ($H1_b$ supported).

In sum, the studies on youth performers and adolescent school-aged students illustrate that relatively high proportions may struggle with perfectionism during their teens. Also, the studies show that exploring different within-person combinations of perfectionism are relevant to gain knowledge on how such combinations may affect individuals' well-being differently. Further, the 2x2 model can be a useful theoretical framework when exploring non-predetermined profiles of perfectionism via LPA. This overview indicates that a few studies have explored perfectionism profiles related to mental health among young student performers and adolescent school-aged students (13-14 years). Hence, this thesis's exploration of perfection profiles may provide further knowledge about associations with adverse and possible positive mental health factors in young adolescents.

Table 1

Overview of Studies on Profiles of Perfectionism and Associations with Specific Mental Health Indicators^ Among Adolescent Athletes, Dancers, and Music Students, and Regular Students from the Last 15 years (2008-2023).

Authors	Sample	Design Analysis	Perfectionism & Criterion variables	Perfectionism Profiles Main Findings	H1 *PS dominant vs. Non-P*	H2 *Non-P vs PC dominant*	H3 *Mixed P vs PC dominant*	H4 *PS dominant vs Mixed P*
ADOLESCENT PERFORMERS								
Haraldsen et al., 2021	TDS: sports, dance, music T_1 *n* = 219, Boys: 53.4% T_2 *n* = 156 M_{age} = 17.3, *SD* = 0.7 Range $_{age}$ = 16-19 Norway	Longitudinal LPA Profiles comparison: Auxilary 3-step	FMPS and FMPS brief: PS = Personal standards PC = Concern over mistakes + Doubts about actions Anxiety in performance, SAS-2 Contextualized measures	PS & PC levels within profiles ≠ 2x2: *Non-P*: Low PS/Low PC 21% *PS dom*: *mod PS/mod Low PC 46% *Mixed P*: mod High PS/High PC 19% *PC dom*: mod High PC/average-to-mod Low PS 14% Anxiety in sports: 2x2 hypothesis not supported - PC dom not worse than all others	ns. performance anxiety: *d* = 0.30	Non-P sig. Lower Performance anxiety: *d* = 0.77	ns. performance anxiety: *d* = 0.27	PS sig. Lower performance anxiety *d* = 0.53 Other comparisons: ns PS vs. PC dom, *d* = 0.10
Quested et al., 2014 (extended study of Cumming & Duda, 2012)	Vocational Dance n = 194 Boys: 12.9% M_{age} = 16.7, *SD* = 1.5 Range $_{age}$ = 14-20 UK	Cross-sectional Cluster analysis Profiles comparison: ANOVA MANOVA	FMPS: PS = Personal standards PC = Concerns over mistakes, Doubts about actions. Self-esteem, SDQ III, general self-subscale Body dissatisfaction (BD), EDI	PS & PC levels within profiles ≠ 2x2: *Non-P*: Low PS/Low PC 17% *PS dom*: mod High PS/mod Low PC 31% *Mixed P*: High PS/High PC 21% *PC dom.*: High PC/Low PS 31% Self-esteem, Body dissatisfaction: 2x2 hypothesis not supported: PC dom not worse than others.	ns. BD: *d* = -0.25 Self-esteem: *d* = 0.26	Non-P sig. Lower BD Higher self-esteem. BD: *d* = -0.28 Self-esteem: *d* = 1.30	ns. BD: *d* = 0.15 Self-esteem: *d* = 0.06	PS dom. sig. Lower BD Higher self-esteem. BD: *d* = -0.68 Self-esteem *d* = 1.37
Cumming & Duda, 2012	Vocational Dance students (see Quested et al., 2014)	Similar as Quested et al., 2014	Perfectionism, see above: Quested et al., 2014. Body-related concerns, SPA: social anxiety from others body evaluation	Similar profiles to Quested et al., 2014. Body-related concerns: 2x2 hypothesis not supported: PC dom not worse than other profiles	ns. body-related concerns: *d* = -0.12	Non-P sig. Lower body-related concerns: *d* = -0.51	ns. body-related concerns: *d* =0.15	PS dom. sig. Lower body-related concerns: *d* = -0.75
Mallinson-Howard et al., 2019	School- and community sports n = 222, Boys: 29.3% M_{age} = 13.5, *SD* = 1.5 Range $_{age}$ = 11-18 England	Cross-sectional Variable-centered analysis: Regression	Sport-MPS-2: PS = Personal standards PC = Concern over mistakes Sports performance anxiety (anx), SAS-2: somatic anxiety, worry, concentration disruption	*Non-P*: Low PS/Low P *PS dom*: High PS/Low PC *Mixed P*: High PS/High PC *PC dom*: High PC/Low PS Anxiety in sports: 2x2 model partly supported	ns. Worry: *d* = 0.10 concentr. disruption: *d* = -0.32 somatic anx: *d* = 0.21	Non-P sig. Lower worry *d* = -0.45 Lower concentr. disruption: *d* = -1.25 Lower somatic anx: *d* = -0.83	ns. worry: *d* = 0.10 Mixed P sig. Lower concentr. disruption: *d* = -1.06 ns. somatic anx: *d* = -0.39	PS dom sig. Lower worry: *d* = -0.45 Lower concentr. disruption: *d* = -0.52 ns. somatic anx: *d* = -0.23
Mallinson et al., 2014	School & community sports n = 219, Boys: 40.2% M_{age} = 15.1, *SD* = 2.0 Range $_{age}$ = 11-19 England	Cross-sectional Variable-centered analysis: Regression analysis	Sport MPS-2: PS = Personal standards PC = Concern over mistakes, Doubts about actions Self-esteem, SEES. Physical self-worth, CY-PSPP.	*Non-P*: Low PS/Low P *PS dom*: High PS/Low PC *Mixed P*: High PS/High PC *PC dom*: High PC/Low PS Self-worth: 2x2 hypotheses supported	PS dom sig. Higher physical self-worth: #*d* = 0.38 Higher self-esteem enhancement #*d* = 0.83	PC dom sig. Lower physical self-worth: #*d* = 0.69 Lower self-esteem enhancement #*d* = 0.84	PC dom sig. Lower physical self-worth: #*d* = 0.38 Lower self-esteem enhancement #*d* = 0.83	PS dom sig. Higher Physical self-worth: #*d* = 0.69 Lower self-esteem enhancement #*d* = 0.84
ADOLESCENT STUDENTS								
Vicent et al., 2020	School students n = 1562, Boys: 45.5% M $_{age}$ = 14.8, *SD* = 1.9 Range $_{age}$ = 12-17 Ecuador	Cross-sectional Cluster analysis Profiles comparison: ANOVA	CAPS: PS = SOP PC = SPP Anxiety, Depression, Stress, DASS	PS & PC levels within profiles ≠ 2x2: *Non-P*: Low PS/Low PC 21.1% *PS dom*: mod High PS/mod Low PC 26.2% *Mixed P*: High PS/High PC 25.2% *PC dom*: mod High PC/ mod Low PS 27.5% Anxiety, depression, stress, overall: Mixed P = PC dom. >PS dom. >Non-P 2x2 hypothesis not supported: PC dom not worse than all others	ns. Depression PS dom. sig. Higher anxiety, stress. Specific effect size not reported, but between: *d* = 0.20-0.46	Non-P sig. Lower anxiety, stress, depression. Specific effect size not reported, but between: *d* = 0.20-0.46	ns. Specific effect size not reported, but between: *d* = 0.20-0.46	PS dom. sig. Lower anxiety, stress, depression Specific effect size not reported, but between: *d* = 0.20-0.46

Vicent et al., 2019	School students n = 1588, Boys: 60.9% M $_{age}$ = 14.8, *SD* = 1.9 Range $_{age}$ = 12-18 Ecuador	Cross-sectional Cluster analysis Profiles comparison: ANOVA	CAPS: PS = SOP PC = SPP Anxiety in School, IAES, cognitive, behavioral, and physiological anxiety.	PS & PC levels within profiles ≠ 2x2: *Non-P*: Low PS/Low PC 21.2% *PS dom*: mod High PS/ mod Low PC 27.4% *Mixed P*: High PS/High PC 25.2% *PC dom*: mod PC/mod Low PS 26.2% School anxiety overall pattern: Mixed P = PC dom. >PS dom. >Non-P 2x2 hypothesis not supported: PC dom not worse than all others	PS dom. sig. Higher school anx: cognitive *d* = 0.34 behavioral: *d* = 0.25 physiological: *d* = 0.30	Non-P sig. Lower school anx: cognitive *d* = 0.38 behavioral: *d* = 0.32 physiological: *d* = 0.38	ns. cognitive *d* = nr behavioral: *d* = nr physiological: *d* = nr	PS dom. sig. Lower total anxiety cognitive *d* = 0.56 behavioral: *d* = 0.40 physiological: *d* = 0.53
Ståhlberg et al., 2019 (Study 2)	High school students n = 154, Boys: 43% Range $_{age}$ = 16-17 Finland	Cross-sectional Cluster analysis Profiles comparison: ANOVA ANCOVA	Short Almost Perfect Scale: PS = Standards PC = Discrepancy Specific self-worth, CSW, Academic self-worth contingency.	PS & PC levels within profiles ≠ 2x2: *Non-P*: mod low PS / Low PC 21.3% *PS dom:* High PS/Low PC 18.8% *Mixed P*: High PS/High PC 28.6% *PC elevated:* PC elevated / mod PS 30.5% (i.e., PS lower than mix and PS dom)	PS dom. sig. Higher academic self-worth *Overall effect size, between all profiles:* η2 = 0.21	ns. academic self-worth *Overall effect size, between all profiles:* η2 = 0.21	PC *elevated*: sig Higher academic self-worth *Overall effect size, between all profiles:* η2 = 0.21	ns. academic self-worth *Overall effect size, between all profiles:* η2 = 0.21
Boone et al., 2010	Junior high school students n = 656, Boys: 41.5% *M* $_{age}$ = 13.6, *SD* = 0.9 Range $_{age}$ = 12-15 Belgium	Cross-sectional Cluster analysis Profiles comparison: ANOVA MANCOVA	FMPS: PS = Personal standards PC = Concern over mistakes + Doubts about actions Body weight and shape concerns (WCSC), Child EDE-Q	PS & PC levels within profiles ≠ 2x2 *Non-P*: Low PS/Low PC 39.8% *PS dom*: High PS/mod Low PC 20.9% *Mixed P*: High PS/High PC 15.7% (♀: 46%, ♂: 32%) *PC dom*: mod High PC/ mod Low PS 23.6% Body weight and shape concerns: *Mixed P> PC dom >PS dom = Non-P* 2x2 hypothesis not supported: PC dom. not worse than all others	PS dom sig. Higher WCSC *Overall effect size, between all profiles:* weight con.: *d* = 0.10 shape con. *d* = 0.11	Non-P sig. Lower WCSC *Overall effect size, between all profiles:* weight con. *d* = 0.10 shape con. *d* = 0.11	PC dom sig. Lower WCSC *Overall effect size, between all profiles:* weight con. *d* = 0.10 shape con. *d* = 0.11	PS dom sig. Lower WCSC *Overall effect size, between all profiles:* weight con. *d* = 0.10 shape con. *d* = 0.11
Sironic & Reeve, 2015	High school students 9 -12th grade n = 938, Boys: 37.8% *M* $_{age}$ 9-12th: 14.8 – 17.8 *SD* = 0.3 – 0.4 Australia	Cross-sectional LPA Profiles comparison: 3-step approach	FMPS, CAPS, APS-R, combined 4-factor model: 1) Personal standards (PS) 2) Concerns, doubts, discrepancy = PC# 3) Externally motivated P (EMP) = PC 4) Order, organization (O) Anxiety, Depression, Stress: DASS	Six profiles ≠ 2x2: *NonP-a*: Low all P. factors 38.1% *NonP-b*: sig. lower P. vs. NonP-a 16.8% *ONonP*: Low all P. / mod O 2.9% *PS dom*: mod-High PS, High O/ Low PC 22.5% *Mixed P*: High PS, O/High PC 6.6% *EM Maladaptive P (≈PC dom)*: High PC/Low PS, O 23.6% Anxiety and depression overall: Mixed P > EM Maladaptive P > PS dom. > Non-P-a > Non-P-b > O-Non-P	***PS dom. vs. NonP-a:*** ns. *d = nr*	***NonP-a+PS vs. NonP-b+ONonP:*** Non-P-a+PS sig. Higher anxiety, depression, stress *d = nr*	***Mixed P vs. PC dom:*** PS sig. Higher anxiety, depression, stress *d = nr*	***PS dom. vs. Mixed P:*** ns. anxiety, depression. Mixed P sig. Higher stress *d = nr*

Note. PS = perfectionistic strivings and PC = perfectionistic concerns used in the table, though some used alternative terms as described in the theory section. ^ Only indicators related to anxiety, depressive symptoms, self-worth and body-related concerns are included here. LPA = Latent Profile Analysis; P = Perfectionism. ≠ not equal to. *Mod = Moderate = z score around -0.5 and 0.5. #cohens *d*-effect size retrieved from Gaudreau, 2016. *d* = Cohens *d* effect size (0.2 small, 05. Medium, 0.8 large). η2 = eta squared effect size (0.01 small, 0.06 medium, 0.14 large). ns. = non-significant difference. nr = not reported. dom = dominant, i.e., PS dominant and PC dominant. NonP = non-perfectionism. APS-R = Almost Perfect Scale-revised; CAPS = Child Adolescent Perfectionism Scale. SOP = Self-oriented Perfectionism; SPP = Socially Prescribed Perfectionism; FMPS = Frost Multidimensional Perfectionism Scale; Sport-MPS-2 = Sport Multidimensional Perfectionism Scale-2. BIQ = Body-Image Ideals Questionnaire; Body Dissatisfaction subscale of the EDI = Eating Disorders; Inventor; Child EDE-Q = Eating Disorder Examination Questionnaire for children; CSW = Contingencies of Self-Worth Scale; CY-PSPP = Children and Youth Physical Self-Perception Profile; DASS = Depression, Anxiety, Stress Scale; IAES = Inventario de Ansiedo Escolar = School Anxiety Inventory; MBSRQ-AS = Multidimensional Body Self Relations Questionnaire-Appearance Scale; SDQ III = Self-Description Questionnaire III; SPA = Social Physique Anxiety Scale, SAS-2 = Sport Anxiety Scale-2; Sports Friendship Quality Scale; TDS = Talent Development School.

Mental health

Mental health involves individuals' experiences of emotional, psychological, and social well-being, which influences thoughts, emotions, and behavior (Patel et al., 2018). How individuals' mental health may be affected depends on several determinants involving psychological, biological, social, cultural, economic, and environmental factors (Blakemore, 2019; Patel et al., 2018). World health organization (2022) describes mental health as:

> (…) a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. Mental health is a basic human right (WHO, 2022).

Based on these understandings of mental health, it incorporates individuals' experiences of well-being that are not limited to the absence of mental illness.

Worrying, feeling down, stressed, or sad is normal. However, when such emotions are excessive, prolonging over time, generating recurrent distress, and consequently influencing an individual's normal functioning, they may be symptoms of adverse mental health or a mental health condition (Thapar et al., 2022). Adolescence is a sensitive phase. The transformative period involves unique psychological, biological, and social developments and changes, and the changes during these formative years make some adolescents susceptible to mental ill health (Blakemore, 2019). Also, in adolescents diagnosed with a mental disorder, the condition may endure into adulthood (Castelpietra et al., 2022; Solmi et al., 2022). Hence, early detection of mental health symptoms is critical.

Adolescent athletes and other performers may experience similar mental health symptoms as adolescents in general. However, there might be pivotal experiences distinctly related to their context (Reardon, 2021), for instance, competitive factors like performance expectations and selections or organizational factors like balancing school-training-leisure time. Also, personal factors like injuries and overtraining and social factors like coach/teacher-performer relationships can be critical to young performers' mental health and well-being (Dwarika & Haraldsen, 2023; Kegelaers et al., 2022; Rice et al., 2016). Hence, gaining a solid knowledge base is crucial in the effort to support and safeguard the positive development of young student performers.

This doctoral thesis involves critical adverse mental health factors (symptoms of anxiety, depression, and body weight-shape concerns) alongside factors that may promote mental health (self-worth and resilience) among young student-athletes and performing arts students in talent development schools and regular students. Next, I describe the different mental health factors.

Anxiety and Depression

"Anxiety is an anticipation of future threat" (American Psychiatric Association, 2013, p. 189). Excessive or pathological anxiety entails an immense disproportion between the intensity, duration, or frequency of the individual's anxiety and worry and the real chance for the anticipated to occur (American Psychiatric Association, 2013). Exaggerated fear may resemble anxiety disorders, but in contrast to anxiety, fear is an emotional response to real and specific threats or perceived likely occurring threats (American Psychiatric Association, 2013). Different objects and situations may generate fear, anxiety, or avoidance behavior, and thorough examinations may reveal which situations the individual fears or avoids and which thoughts and beliefs are related to the various situations (American Psychiatric Association, 2013). Despite these distinctions, this thesis does not elaborate on different forms of anxiety. Instead, to reduce overall complexity, the thesis includes an anxiety model assessing total anxiety (see the method section; RCADS-25; Ebesutani et al., 2012; Krause et al., 2021; Lisøy et al., 2022). Hence, I refer to overall anxiety symptoms when not otherwise specified.

Global estimates among children and adolescents show that 3.6 and 4.6% of 10-14 and 15-19 year-olds, respectively, experience an anxiety disorder (IHME, 2019). Estimates among Norwegian children and adolescents are 8.7 and 9.8% among 10-14 and 15-19-year-olds (IHME, 2019). There is an absence of data on anxiety disorders and self-reported anxiety symptoms among very young athletes or other performers in Norway. However, a study on adolescent German athletes (aged 12-18 years) reported that 6.7% had subclinical and 3.4% had clinically relevant anxiety scores (no gender differences; Weber et al., 2018). Further, a recent review reported prevalence rates of anxiety symptoms between 25-48% among high school and college student-athletes (Kaishian & Kaishian, 2021).

Depression involves symptoms of prolonged "presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function" (American Psychiatric Association, 2013, p. 155). Symptoms of depression include depressed mood of feeling hopeless or discouraged; loss of interest or joy in all or nearly all activities; feeling worthless, excessive or inappropriate guilt; impaired concentration or decision making; sleep disturbances; fatigue or loss of energy; weight change (5% in a month) or change in appetite; recurrent thoughts of death, recurrent suicidal ideation with or without an explicit plan or actual attempt of suicide (American Psychiatric Association, 2013). While many symptoms are similar in adults and adolescents, children and adolescent moods may be shown as irritable instead of sad (American Psychiatric Association, 2013). This thesis concerns self-reported depressive symptoms (see methods section; RCADS-25; Ebesutani et al., 2012; Krause et al., 2021).

Global estimates among children and adolescents show that 0.8 and 2.1% of 10-14 and 15-

19 year-olds, respectively, experience depression (IHME, 2019). Corresponding estimates in Norwegian children and adolescents are 1.2 and 2.8% (IHME, 2019). Further, a relatively recent Norwegian study revealed that high self-reported depressive symptoms were experienced by 32% of girls and 12% of boys aged 13-19 (Kleppang et al., 2021). Similar data is not provided for young Norwegian adolescent athletes or other performers. However, others have reported subclinical depression of 9.5% and clinically relevant depressive symptoms of 3.7% among athletes aged 12-18 years (no gender differences; Weber et al., 2018). Another study reported that depressive symptoms in high school and college student-athletes varied between 16-31%, by which student-athletes tended to report similar or lower symptoms of both anxiety and depression than non-athletes (Kaishian & Kaishian, 2021). Further, girls tend to report higher levels of anxiety and depressive symptoms in the general adolescent population (McLaughlin & King, 2015), and similar gender differences are reported in athletes (Kegelaers et al., 2022).

Importantly, subthreshold symptoms of anxiety and depression in adolescents not meeting the diagnostic criteria seem to be more frequent, which also involves considerable impairment and distress and is a risk factor for the development of a disorder (Flett & Hewitt, 2013). Hence, studying the variation in adolescent symptom levels seems critical to detect who might be at risk. Moreover, anxiety and depressive symptoms frequently co-occur in children and adolescents, which may yield more severe symptoms and impaired functioning than for those with either anxiety or depressive symptoms in isolation (Melton et al., 2016).

Body Weight and Shape Concerns

Body weight and shape concerns refer to individuals' preoccupation or overconcern about their body weight and shape and their effect on the individual (O'Connor et al., 2020). Typically, individuals with significant weight-shape concerns condition their self-worth on how they perceive their weight and shape (Li & Mustillo, 2020). Adolescence is a sensitive period for developing concerns about body weight and shape because of the developmental factors that occur. For instance, factors related to body weight and shape change during puberty, increasing awareness and emphasis on external factors (e.g., peer pressure/acceptance, societal ideals, social media), and growing perceptions of needing to comply with peers and social body and appearance ideals to sense acceptance (Choukas-Bradley et al., 2022; McLean et al., 2021).

Overly concerns about weight and shape are critical factors that are implicated in all eating disorder diagnoses (O'Connor et al., 2020). Moreover, considerable body weight and shape concerns may represent clinically significant body dissatisfaction related to eating disorders (Carter et al., 2001; Friborg et al., 2013; McClelland et al., 2020). Hence, adolescents displaying such concerns may be at risk for developing disordered eating or eating disorders (McClelland et al., 2020; McLean et al., 2021; O'Connor et al., 2020). Furthermore, a recent systematic review reported

that several ED symptoms, including weight and shape concerns (and, e.g., body dissatisfaction, early eating difficulties, and fasting), and other related mental disorder symptoms like anxiety and depression often were present preceding the onset of an eating disorder (McClelland et al., 2020).

In young adolescent athletes and dancers, who are highly physically active, body concerns may be a risk for developing relative energy deficiency in sports (RED-s; Mountjoy et al., 2018; Quinn et al., 2021). RED-s have been reported to have severe health and performance consequences for young performers developing bodies (Ackerman et al., 2019). Further, adolescent athletes and dancers who specialize early with sport-specific training in one sport or dance before the body matures may be at particular risk (Quinn et al., 2021; Sundgot-Borgen et al., 2013). Some girls may perceive or experience real stagnation as their body develops, which is natural when their body weight and shape develop. Experiences of stagnation related to bodily changes may consequently lead some female adolescent performers to try to prevent the natural changes in their pursuit of performance progress (Sundgot-Borgen, 1994; Sundgot-Borgen et al., 2013). Still, among student-athletes and dancers during their adolescent developmental ages, there is a dearth of recent data on the frequency of weight and shape concerns.

High prevalence rates of body concerns have been reported in mainstream adolescents. A relatively recent study among Australian adolescents (11-15 years) reported that 21% of girls and 38% of boys experienced moderate and 20% and 7%, respectively, experienced clinically significant body dissatisfaction as measured by weight and shape concerns (McLean et al., 2021). In two previous studies among Norwegian high school students (aged 15-17 years), body dissatisfaction was reported by 31-32% of girls and 11-15% of boys (Martinsen et al., 2010; Torstveit et al., 2015). We lack similar data on younger Norwegian student-athletes or other performers (i.e., 13-16-year-olds). However, in first-year senior high school student-athletes, 17% of girls and 4% of boys experienced body dissatisfaction (Martinsen et al., 2010). Hence, data on younger performers' clinically significant weight and shape concerns is needed as body concerns commonly emerge in the early teens, especially among girls.

Self-Worth

Self-worth is an essential factor related to experiences of positive or adverse mental health. Global self-worth refers to an overall subjective assessment of one's worth or value as a person (akin to overall self-esteem; Donnellan et al., 2015; Harter, 2012). Low global self-worth among adolescents is commonly associated with higher adverse mental health symptoms like psychological distress, anxiety, depression, and body concern (Bos et al., 2010; Duchesne et al., 2017; Moksnes & Reidunsdatter, 2019). In contrast, experiencing positive global self-worth, generally, shows an opposite relationship with adverse mental health and positive life outcomes like life satisfaction, school and subjective well-being, and social relationships (Holopainen et al., 2020; Moksnes &

Espnes, 2013; Sarkova et al., 2014). Furthermore, individuals' self-worth may develop throughout life, for which a relatively recent extensive meta-analysis reported increasing average self-worth from childhood to early adolescence (4-11 years), stability during ages 11-15, then substantial increases until age 30 with a peak at around ages 60-70 (Orth et al., 2018). According to Orth et al. (2018), overall self-worth seems to be changing in a systematically normative pattern through different life stages, and they suggested a revision to previous notions of it declining during middle childhood and reaching a low point in early adolescence. Still, it might be valuable with more research in diverse settings among adolescents.

Global self-worth during adolescence among girls compared to boys has, in some meta-analytic studies, shown a slight difference, favoring boys (Zuckerman et al., 2016). However, such gender differences have been contested by others (Orth et al., 2018), who have revealed no different pattern between girls and boys. Zuckerman et al. (2016) revealed in their metanalyses that gender differences increased from age 10 to about 16 years, then declined above age 16. Also, among Norwegian adolescents, higher global self-worth has been reported among boys compared to girls at age 13, and the gender gap declined with age, with no visible difference at age 31 (von Soest et al., 2016). Researchers further refer to the importance of domain-specific self-esteem, for which the self-evaluations relate to how an individual evaluates one's abilities or features in a certain domain., e.g., self-esteem in academics, social relationships, sports, or physical appearance (Harter et al., 2012; Orth et al., 2021). Gender differences in domain-specific self-esteem typically correspond to gender-stereotypical sociocultural factors: e.g., females with higher close friendship- and behavioral conduct self-esteem and boys with higher athletic self-esteem (Gentile et al., 2009; von Soest et al., 2016). Further, participating in sports or performing arts may facilitate adolescents' positive experiences of self-worth (Bungay & Vella-Burrows, 2013; Chappell et al., 2021; Eime et al., 2013; Costa-Giomi, 2004). That is, for instance, through perceiving increased abilities, favorable changes or increased feelings of positive physical appearance, and social relationships. Accordingly, in this thesis, the term self-worth refers to global self-worth or overall self-esteem if not otherwise specified.

Resilience

Broadly resilience involves a dynamic developmental process of positive outcomes of well-functioning or adaptability to the circumstances despite facing adversity, risk, or disadvantages, e.g., when experiencing life misfortunes (American Psychological Association, 2023; Cicchetti, 2013; Luthar et al., 2015). In human resilience, several researchers underline that resilience should not be understood as a personality trait (Luthar et al., 2015; Masten et al., 2021; Masten & Cicchetti, 2016; Kalisch et al., 2019). Resilience is about processes and distributed capacity for adaption, which should not be confused with individual characteristics of inherent "hardiness" to "bounce back" from struggles in life (Masten & Cicchetti, 2016, p. 275). This understanding of resilience involves

several systems that are interacting and involved in the development and change of resilience. Accordingly, it encompasses changes and developments over the life span within the individual and externally through their relations and connections to others and their social contexts (Masten et al., 2021; Masten & Barnes, 2018). For instance, social resources, supportive relationships, and family cohesion are essential. Whether resilience may promote mental health or protect against mental health symptoms in the face of adversity is, thus, a process dependent on multiple interacting systems (Ungar & Theron, 2020). Note that this thesis has not extensively studied resilience (included in one paper); hence, this brief description of some involved processes in the complex construct.

This thesis aimed to provide further knowledge on the coexistence of anxiety, depressive symptoms, body concerns, and self-worth among student performers and regular school-aged students. Hence, next, I provide an overview of studies on the coexistence of positive and negative mental health indicators studied through different mental health profiles.

A Comprehensive View on Mental Health – the Dual-Factor Model

A range of studies has contributed valuable knowledge on associations between anxiety, depression, body concerns, and self-worth (e.g., Bos et al., 2010; Duchesne et al., 2017; Sowislo et al., 2013). Approaches that study young performers' and students' co-occurring levels of adverse and positive mental health may give a comprehensive view of their mental health status (Kuettel et al., 2021; Moore et al., 2019a; Suldo & Shaffer, 2008). Essential concepts for studying within-person combinations are the dual-factor model (Greenspoon & Saklofske, 2001) and the two-continua model of mental health (Keyes, 2002; Westerhof & Keyes, 2010). These concepts view mental health assessments of the absence of mental illness alone as insufficient because it considers only parts of the development of psychological outcomes (Westerhof & Keyes, 2010). Instead, psychological distress (or mental illness) and positive functioning (wellness) are viewed as representing two separate continua and still related dimensions (Moore et al., 2019a; Keyes, 2002). That is, a comprehensive mental health view regards both the absence and the presence of mental well-being and mental ill-health as essential. Hence, assessments going beyond the unidimensional view of the absence or presence of mental ill-health might be critically valuable to gain a complete understanding of individuals' mental health (Greenspoon & Saklofske, 2001; Keyes, 2002; Suldo & Shaffer, 2008).

Assessments then imply the critical value of simultaneously exploring levels of distress and wellness. Distinct profiles may be calculated by traditional cut-point strategies or explored by advanced data-driven approaches, like latent profile analysis. Within a dual-factor model, four profiles have been proposed as particularly relevant to explore to gain a comprehensive insight into individuals' mental health (Suldo & Shaffer, 2008). Note that the naming of mental health profiles

may vary across studies, yet, the following are the most common: a *flourishing* or *complete* mental health profile characterized by low distress/high well-being, a *vulnerable* or *languishing* profile characterized by low distress/low well-being, a *symptomatic but content* profile characterized by high distress/high well-being, and a *troubled* profile characterized by high distress/low well-being (Suldo & Shaffer, 2008). Also, a *moderately mentally healthy* profile has emerged in previous explorative LPA studies, characterizing individuals with relatively average well-being and low distress (Kuettel et al., 2021; Moore et al., 2019a). Such a profile may represent those who are "neither flourishing nor languishing in life" (Keyes, 2002, p. 210).

Exploring how positive and adverse mental health indicators co-occur in young performers and adolescent students may give valuable and comprehensive knowledge. However, there is a possibility that an explorative approach adding indicators not generally used across previous studies does not align with those models usually used in the dual-factor framework. Still, providing an overview of previous studies exploring how positive indicators of well-being and symptoms of distress may co-occur in adolescents might be valuable to uncover knowledge gaps.

Litterature Overview on Mental Health Profiles

The purpose of this short synthesis is to identify studies and explore knowledge gaps concerning studies on mental health profiles. Also, I wanted to uncover whether studies existed that used similar indicators as in the present thesis, i.e., anxiety and depressive symptoms, body concerns, and self-worth. Standard search procedures like those described for retrieving studies on perfectionism profiles (as earlier addressed) were used to retrieve relevant studies. Studies were included if mental health profiles were based on a combination of adverse and positive indicators, i.e., anxiety and depressive symptoms or distress and (or) body-related concerns – and subjective well-being or self-worth. Indicators of distress and well-being are common in studies exploring a dual-factor model of mental health; hence, the searches included the term "dual-factor model." Several initial searches were conducted until the final search included the following terms in combination, using filter options (age 13-18 years, studies the last 15 years, English language):

> APA PsycINFO: (Mental Health and (model* or profile*).ab. and (mental health profile* or dual-continua or dual-continuum or dual-factor or two-continuum or two-factor or complete state).af.
>
> Pub Med: mental health[title/abstract] AND model[title/abstract] AND (mental health profiles OR dual-continua OR dual-continuum OR dual-factor OR two-continuum OR two-factor OR complete state [title/abstract])

Reference lists were also screened by which one relatively recent scoping review was specifically relevant (i.e., Iasiello & Van Agteren, 2020). Various searches in google scholar using alternative search terms included, e.g., combinations of "mental health profiles," "latent profile analysis," "adolescence," and "athlete."

One hundred thirty-nine records were identified through the databases and screening

reference lists. After removing duplicates, 50 papers were identified as eligible after reading the abstracts. Only two studies included athletes, one on elite athletes above the mean age of 18 (Kuettel et al., 2021), and the second was not on mental health profiles (McFadden et al., 2016). The final full-text screening identified fifteen papers that complied with the aims of this overview.

One identified study involved elite athletes (n = 612, 42.2% females) with an age range above the intended criteria for this overview (mean age = 19 years, SD = 4.3; Kuettel et al., 2021). Still, it is included as the only study exploring athletes' mental health profiles based on both potential risk and protective factors and, thus, relevant to the present thesis. Fourteen studies were on regular students or community samples with an almost equal distribution of boys and girls: 53% (n = 40,419 participants; one cohort study included nearly 30,000: Weatherson et al., 2020). Participants' ages ranged from 11 to 18 years. Some studies only reported students' grade level, for which seven studies included U.S. middle school students (generally from ages 11-13 years). These studies were on a younger age group than intended, yet included to provide the most comprehensive overview possible of young adolescents' mental health profiles. Table 2 provides an overview of the studies. Six studies used a longitudinal design.

The elite-athlete study explored mental health profiles of co-occurring symptoms of anxiety and depression and subjective well-being. The studies on adolescent students included several measures of which profiles of co-occurring internalizing and externalizing symptoms and several indicators for well-being were explored. No studies included perfectionism as a covariate to distinguish between the mental health profiles.

Five studies explored mental health profiles by latent profile analysis (LPA), of which two were longitudinal, using latent transition analysis to estimate changes in profiles over time (Moore et al., 2019b; Zhou et al., 2020). Hence, most studies used cut-point criteria to classify adolescents by their co-occurring high or low distress and well-being scores. Some researchers argue that mental health profiles based on cut-point criteria insufficiently capture young adolescents' mental health because they may treat mental health groups as homogenous when consequential heterogeneity exists (Moore et al., 2019a). Also, the cut point criteria across studies differed from using normed references for the measures to a-priori-determined mean cut point scores. Hence, the sensitivity for correctly classifying individuals into different profiles and comparisons and replications across studies may be challenged (Moore et a., 2019a).

Different criteria used across studies may be a reason for the varied proportions identified within each profile but may also be attributed to variations in measures or specific sample characteristics (age, context, gender). Across studies using cut-point strategies, the proportion of participants within the healthiest profile ranged from 40% (Venning et al., 2013) to 70% (Antaramian et a., 2010; i.e., the *complete, flourishing, positive mental* health profiles). The proportions in

the most unhealthy profile ranged from 8% (Kelly et al., 2012) to 20% (Antaramian et al., 2010; i.e., *troubled* mental health profile). Using the data-driven LPA approach, Moore et al. (20019 a; 2019b) retained four profiles for which 19-36% were identified with a *complete* mental health profile and 3-7% with a *troubled* profile (least healthy). Lastly, among elite athletes, three mental health profiles were identified by LPA, for which 60% had a *flourishing* profile, and 8% were within the least healthy (Kuettel et al., 2021).

Three studies explored longitudinal stability and transitions between profiles by which students in the healthiest (*complete/flourishing*) profile were most likely remaining healthy over time, i.e., 77-85% remained (Kelly et al., 2012; Moore et al., 2019b; Xiong et al., 2017). Students within other profiles were more likely to fluctuate; 29-56% remained, yet, major transitions were not frequent. For instance, the likelihood of transition from the healthiest to unhealthiest profiles and vice versa was low (Moore et al., 2019b). Similar longitudinal studies in mental health among young student-athletes or dancers have not previously been explored. Hence, the need for more studies is warranted.

Overall, adolescents and athletes who experienced high well-being combined with low distress reported better outcomes than individuals in other profiles, like experiencing greater social support and academic achievement. Also, a buffering role of well-being among students who experience symptoms of distress might be essential (i.e., *symptomatic but content profile*). Students with such a profile frequently showed better outcomes than those with high distress and low well-being (*troubled* profile). In contrast, one study reported no distinguishable differences in social-emotional outcomes between students with co-occurring low distress and low well-being (*vulnerable* profile) and those with high distress and low well-being (Antaramian et al., 2010). Generally, the research findings supported the view that an absence of negative mental health symptoms like anxiety and depression might be insufficient for optimal functioning. Furthermore, the previous studies reflect the importance of assessing the combined effect of positive and negative factors to capture the mental health complexities in student performers and adolescents.

In sum, different within-person combinations of positive and negative mental health indicators may provide nuanced insights into adolescents' mental health above merely studying positive or adverse factors alone. Few studies used alternatives to cut-point strategies, e.g., the data-driven approaches, latent profile, and latent transition analysis. Further, this overview indicates that few studies have explored mental health profiles over time or whether perfectionism may predict different mental health profiles among very young student-athletes, dancers, and adolescent school-aged students (13-16 years). Hence, this thesis may provide further knowledge by using advanced and robust analytical approaches.

Table 2

Mental Health Profiles. Overview of Studies on Mainstream Adolescent Students – and Athletes from the Last 15 years (2008-2023)

Authors	Sample	Design Analysis	Measures in Mental Health Profiles and Covariates	Mental Health Profiles, Characterization and % within each profile	Between Profile Differences & Profile Stability and Transitions
Kuettel et al., 2021	Elite athletes n = 612, Males: 57.8% M_{age} = 19, *SD* = 4.3 Denmark	Cross-sectional LPA	Mental health (MH) profiles based on: Anxiety, GAD-7. Depressive symptoms, CES-D Mental well-being, SWEMWBS. Covariates: Social support, BSSS. Recovery and career satisfaction. Sport environment. Stressors: sports, education/work, private life. Injury, overtraining.	1. Flourishing: Above average well-being / Low distress 64.2% ♀: 69.5%; ♂: 57% 2. *Moderately MH*: Below average well-being/Low distress 29.3% ♀: 34.9%; ♂: 25.1% 3.#*Troubled*: Low well-being/mod High distress 6.5% ♀: 5.4%; ♂: 8.1%	*Flourishing* athletes: Protective factors: highest social support Risk factors: lowest stress levels Number of injuries: No differences. None experienced combined high distress and high well-being (no *symptomatic but content* profile)
Zhou et al., 2020	Middle School 7-9th grade T_1 n = 1009 T_2 n = 894 T_3 n = 654 Boys: 49.3% M_{age} = 13.0, *SD* = 0.67 China	Longitudinal LPA LTA	MH profiles based on: Anxiety, Screen for child anxiety-related emotional disorders. Depressive symp.; Depression Self-Rating Scale for Children. Self-esteem, RSES. Life satisfaction, BMSLSS. Covariates: Age, gender. Parents education, SES. Basic Psychological Needs. Perceived school stress, Stress Scale for Middle School Students.	Three profiles, % students T_1-T_3: 1. *Flourishing*: High self-esteem, life satisfaction / Low anxiety depression T_1: 51.2%, T_2: 40%, T_3: 36.8% 2. *Vulnerable*: Low self-esteem, life satisfaction / Low anxiety depression T_1: 40.3%, T_2: 46.6%, T_3: 49.3% 3. *Troubled*: Low self-esteem, life satisfaction / High anxiety depression T_1: 8.5%, T_2: 13.4%, T_3: 13.9% No gender differences within profiles.	Stability, % remaining in the same profile: *Flourishing & Vulnerable:* 71-78%.*Troubled*: 52-66%. Transitions: Low likelihood: *Flourishing* ↔ *Troubled* Likely transitions: *Vulnerable* → *Troubled* or *Flourishing; Troubled* →*Vulnerable*. Increase in positive indicators = lower odds of *Troubled* or *Vulnerable* vs. *Flourishing*. Increased academic stress = greater odds for *Troubled* or *Vulnerable* vs. *Flourishing*.
Moore et al., 2019b	High School 9-12th grade *n* = 963, Boys: 49.6% M_{age} = nr USA	Longitudinal LPA LTA	MH profiles based on: Social-emotional strengths and distress, Internalizing, externalizing risk, SDQ. Social-emotional functioning, belief-in-self, belief-in-others, emotional competence, engaged living, SEHS-S. Covariates: Mental health profile at earlier school year predictor of later status.	Four profiles, % students 9-12th grade: 1. *Complete (=flourishing)*: High well-being / Low distress 9th 19.1%, 10th 25.7%, 11th 20.5%, 12th: 35.8% 2. *Moderately MH*: High-average well-being / Low distress 9th 50%, 10th 48.5%, 11th 43.8 %, 12th 33.4% 3. *Symptomatic but content*: Average-high-average well-being / Average-above-average distress 9th 28.1%, 10th 18.7%, 11th 29%, 12th 23.9% 4. *Troubled*: Average-low-average well-being / Above-average distress: 9th 2.8%, 10th 7%, 11th 6.7%, 12th 6.9%	Stability across three years, % remaining in the same profile: *Complete*: 77%. *Moderately mentally healthy*: 56% *Symptomatic but Content*: 47%. *Troubled*: <42% remained. < 24% remained in the same profile across time
Xiong et al., 2017	Junior and High School 7-12th grade n = 1293 Two waves: n = 531 Boys: 56.1% M_{age} = 14.7, *SD* = 1.9 China	Longitudinal Cut points to create profiles Profile comparison: ANCOVA	MH profiles based on: Anxiety and depressive symptoms, YSR anxious-depressed scale. Externalizing, conduct Problems, CPS. Life satisfaction, SWLS. Positive and negative affect, PANAS. Covariates: Affective self-regulatory efficacy, RESE Academic self-efficacy, MSLQ. Academic emotions, AEQ.	Four profiles: 1. *Complete*: High well-being / Low distress T_1: 60.8%, T_2: 61.6% 2. *Vulnerable*: Low well-being / Low distress T_1: 19%, T_2: 21.3% 3. *Symptomatic but Content*: High well-being / High distress T_1: 9.2%, T_2: 8.5% 4. *Troubled*: Low well-being / High distress T_1: 10.9%, T_2: 8.7%	Boys: Larger representations of *Troubled* and *Symptomatic but Content* than girls. *Complete*: highest self-efficacy, enjoyment lowest hopelessness and frustration *Troubled:* lowest self-efficacy, enjoyment highest hopelessness and frustration Stability, % remaining in the same profile: *Complete* profile: 84%. *Vulnerable*, 43.6%. *Symptomatic but Content* 38.8%. *Troubled:* 34%. Transitions: *Complete* → *Troubled*: 1.9%. *Troubled* → *Complete*: 24.1%.
Lyons et al., 2013 (follow-up of Antaramin et al., 2010, see below)	Middle school, 7-8th grade T_1 n = 809, T_2 n = 727 (5 months apart) Boys: 48% M_{age} = 12.7, *SD* = 0.7 USA	Longitudinal Cut points to create profiles ANOVAs, repeated measures	MH profiles based on: Internalizing, externalizing risk, SRSC. Life satisfaction, SLSS. Positive and negative affect, PANAS-C. Covariates: GPA. Emotional engagement, MSLSS. Behavioral school engagement. Future goals, aspirations, SEI.	Four profiles – dual-factor model 1. *Positive MH (complete)*: High well-being/Low distress 2. *Vulnerable*: Low well-being/Low distress 3. *Symptomatic but Content*: High well-being/High distress 4. *Troubled*: Low well-being/High distress	% within profiles or transitions over time not reported. *Positive MH* most positive outcomes – followed by *Symptomatic but Content* and *Vulnerable*. *Troubled* least positive.
Kelly et al., 2012	Middle school, 7-8th grade n = 730, Boys: 49% M_{age} = nr. Range $_{age}$ = 11-15 USA	Longitudinal Cut points to create profiles Multiple logistic regression	MH profiles based on: Internalizing, externalizing risk, SRSC. Life satisfaction, SLSS. Positive and negative affect, PANAS-C. Covariates: Social support; teachers, family, friends, SRCS. Family involvement, teacher-student relation, peer support, SEI	Four profiles (groups): 1. *Flourishing*: Average-high well-being / Low distress 64% 2. *Vulnerable*: Low well-being / Low distress 8% 3. *Symptomatic but Content*: Average-high well-being / High distress 20% 4. *Troubled*: Low well-being / High distress 8%	Stability, % remaining in the same profile over time: *Flourishing*: 85%. Vulnerable: 29%. *Symptomatic but content:* 42%. *Troubled*: 47%. Transitions: Vulnerable → Flourishing: 46%. Social support predicted: positive change in mental health.

Suldo et al., 2011 and Suldo & Shaffer, 2008	Middle school 6-8th grade T_1 n = 341, Boys: 40.8% T_2 n = 300, Boys: 37.3% (T_1-T_2, one year apart) M_{age} = nr. USA	Longitudinal (and Cross-sectional) Cut points to create profiles ANCOVA	MH profiles based on: Internalizing symptoms (INT), YSR. Externalizing symptoms (EXT), TRF. Life satisfaction, SLSS. Positive and negative affect, PANAS-C. Covariates: Academic achievement; standardized test, GPA, attendance, discipline referral	Four profiles: 1. Complete: Average-high well-being/Low distress T_1: 57% 2. *Vulnerable*: Low well-being/Low distress T_1: 13% 3. *Symptomatic but Content*: Average-high well-being/High distress, T_1: 13% 4. *Troubled:* Low well-being/High distress T_1: 17%	*Troubled*: more decrease in GPAs vs. profiles with low distress, i.e., *Flourishing* & *Vulnerable*. *Symptomatic but Content*: No academic performance difference vs. *Flourishing* & *Vulnerable*. *Time 2*: *Flourishing* students' best attendance, grades, and math skills.
Clark & Malecki, 2022	Middle school 6-8th grade *n* = 404, Boys: 45% M_{age} = nr. USA Midwest	Cross-sectional LPA Multinomial log. reg, 3-step	MH profiles based on: Internalizing symptoms (INT), externalizing (EXT) behavior, YSR. Subjective well-being, SLSS. Positive and Negative Affect, PANAS-C. Covariates: Grit and growth mindset: Grit-S, AGS. GPA. Gender, ethnicity, social-economic status (SES).	Three profiles: 1. Complete: High life satisfaction, affect / Low INT EXT 55.2% ♀: 43.8%, ♂: 61.9% 2. *Symptomatic but Content:* Moderate-High life satisfaction affect / Moderate-High INT EXT 33.7% ♀: 34.7%, ♂: 27.5% 3. *Troubled*: Low life satisfaction, affect / High INT EXT 11.1% ♀: 13.2%, ♂: 6.9%	Girls sig. more likely in *Symptomatic but Content* or *Troubled vs. Complete MH*. Boys sig. likely in the *Complete* MH. *Complete* MH profile: most likely among boys, higher SES students, or eligible for special education, and those identifying as Black or Hispanic. *Vulnerable* profile not identified
Weatherson et al., 2020	High school 9-12th grade *n* = 29,133, Boys: 50.2% M_{age} = 15.3, *SD* = 1.45 Canada	Cross-sectional cohort study Cut points to create profiles ANOVA	MH profiles based on: Depressive sympt. (Dep), CESD-R-10 Flourishing scale, DFS, self-esteem, life purpose, engagement, daily activities. Covariates: Physical activity, self-report MVPA; 60 min. Sleep (8–10 h). Recreational screen time (ST; ≤2 h)	Four profiles 1. *Flourishing/Low Dep* 40% 2. *Languishing/Low Dep* 14% 3. *Flourishing/High Dep* 10% 4. *Languishing/High Dep* 36%	Profile 1 and 3 vs. 2 and 4: *Flourishing* and "*flourishing" with high depressive symptoms* (Profile 3) = more likely to achieve MVPA guidelines irrespective of depressive symptoms vs. *Languishing*
Moore et al., 2019a	High School 9-12th grade n = 332, Boys: 51.5% M_{age} = nr. USA (California)	Cross-sectional LPA *Note*. Data over four school years	MH profiles based on: Social-emotional strengths and distress, Internalizing, externalizing risk, SDQ Social-emotional functioning, belief-in-self, and others, emotional competence, engaged living, SEHS-S. Covariates: Generalized anxiety, GAD-7. Depressive symptoms, PHQ-9. Life satisfaction, BMSLSS. Positive Youth Development, PYDI. Grades.	Four profiles, grades 9 to 11th: 1. *Complete (flourishing)*, High well-being/Low distress 9th: 30.5%, 10th: 40.8%, 11th: 20.5% 2. *Moderately MH,* High-average well-being/Low distress 9th: 43.4%, 10th: 32%, 11th: 44.3% 3. *Symptomatic but content:* High-average well-being/above-average distress: 9th: 20.3%, 10th: 21.2%, 11th: 31.3% 4. *Troubled*: Low well-being/above-average distress 9th: 5.7%, 10th: 6%, 11th: 3.8%	*Complete profile*: Lowest symptoms of anxiety and depression Highest life satisfaction Highest grades and prosocial contribution to the community
Suldo et al., 2016	High school n = 500, Boys: 41% M_{age} = 15.3, *SD* = 1.0 Range $_{age}$ = 14-18 USA	Cross-sectional Cut points to create profiles	MH profiles based on: Internalizing problems, adaptive personal adjustment, SRP-A; BASC-2. Externalizing problems, TRS-A. Life Satisfaction, SLSS. Positive and negative affect, PANAS-C. Covariates: Peer experiences, SEQ. Social adjustment, CASSS. Romantic relations, DHQ-SF. Physical health, CHIP-AE. School Attitude, SAAS-R. Identity, SCSS.	Four profiles: 1. *Complete (flourishing):* High well-being/Low distress 62.2% 2. *Vulnerable*: Low well-being/Low distress 11.4% 3.*Symptomatic but Content:* High well-being/High distress 11.4% 4. *Troubled*: Low well-being/High distress 15%	*Complete*: better outcomes vs. Vulnerable: social support, satisfaction with romantic relationships, identity development, academic attitudes, and perceived physical health. *Symptomatic but content*: Better outcomes vs. *Troubled*. Underline the importance of high well-being for optimal functioning.
Venning et al., 2013	Adolescents *n* = 3913, Boys: 48% M_{age} = nr. Range $_{age}$ = 13-17 Australia	Cross-sectional, Youth mental health survey Cut points to create profiles	MH profiles based on: Anxiety, Depression, and Stress, DASS. Satisfaction With Life Scale, SWLS. Positive functioning, psychological well-being, PWBS. Social well-being, SWBS Covariates: Health behavior, Physical activity, sleep, alcohol consumption, smoking	Four profiles: 1. *Flourishing* High well-being, positive functioning/ Average-Low distress 42% 2. *Languishing (=vulnerable):* Low well-being, functioning / Non-Low distress 5% 3. *Struggling (=sympt but content):* Average-High well-being/ High distress 36% 4. *Floundering (=troubled)*: Low well-being, functioning/ High distress 17%	Almost similar proportions of girls and boys in each profile. Profiles 2-4, unhealthiest profiles, associated with increased health-risk behavior. Gender differences varied within profiles related to health risk behavior, e.g.: Girls exercised less than males, regardless of mental health profile.
Lyons et al., 2012	Middle and high school, 6-12th grade n = 990, Boys: 36% M_{age} = 14.6, *SD* = 2.1 USA	Cross-sectional Cut points to create profiles Multinomial log. reg.	MH profiles based on: Internalizing, externalizing risk, YSR. Life Satisfaction, SLSS. Covariates: Social support from parents, peers, close friends, CASSS. Stressful life events. Extraversion, Neuroticism, JEPQR-A.	Four profiles: 1. *Positive MH (=complete)*: High well-being/Low distress 64% 2. *Vulnerable*: Low well-being/Low distress 7.3% 3. *Symptomatic but Content*: High well-being/High distress 8.8% 4. *Troubled*: Low well-being/High distress 19.9%	Parent support sig. differentiated the *Vulnerable* and *Troubled* from the *Positive MH* = in favor of *Positive MH*. Stressful life events predicted being in the *Troubled* profile. Extraversion and Neuroticism predicted *Symptomatic but content* and *Troubled* profile.
Antaramian et al., 2010	Middle school, 7-8th grade n = 764, Boys: 45.8% M_{age} = nr USA	Cross-sectional Cut points to create profiles	MH profiles based on: Internalizing, Externalizing symptoms, SRSC Life satisfaction, SLSS. Positive, negative affect, PANAS-C. Covariates: Behavioral, emotional, cognitive, engagement. Environmental, SEI. GPA.	Four profiles: 1. *Complete, Positive MH*: Average-High well-being/ Low distress 66.9% 2. *Vulnerable*: Low well-being/Low distress 8.1% 3. *Symptomatic but Content*: Average-High well-being/ High distress 17.3% 4. *Troubled*: Low well-being/High distress 7.7%	*Complete, Positive MH* = higher positive outcome scores vs. all other profiles. *Vulnerable* profile = at risk for academic and school behavior problems. School performance not better than the *Troubled*. *Symptomatic but content* better outcomes vs. *Troubled* and *Vulnerable*.

Note. #Kuettel et al. (2021) label the third profile as *languishing*, but within-profile levels are similar to a *troubled* in the dual-factor model. LPA = Latent Profile Analysis;

LTA = Latent Transition Analysis. AEQ = Academic Emotions Questionnaire; AGS = Academic Grit Scale; Adolescent MHC-SF = mental health continuum-short form; BMSLSS = Brief Multidimensional Students' Life Satisfaction Scale; CASSS = Child and Adolescent Social Support Scale; CES-D = Center for Epistemological Study Depression Scale; CESD-R-10 = Depression Scale Revised; CHIP-AE = Children's Health and Illness Profile-Adolescent Edition; CPS = Conduct Problems Scale; Depression Self-Rating Scale for Children; DASS = Depression, Anxiety, Stress Scale; DFS = Diener's Flourishing Scale; GAD-7 = Generalized-Anxiety-Disorders questionnaire; Grit-S = Short Grit Scale; DHQ-SF = Dating History Questionnaire-Short Form; HBSC = Health Behavior in School-aged Children; JEPQR-A = Abbreviated Junior Eysenck Personality Questionnaire; MSLQ = Motivated Strategies for Learning Questionnaire; PANAS-C = Positive and Negative Affect Scale-Children; PANAS = Positive Affect and Negative Affect Scale; RESE = Regulatory Emotional Self-Efficacy Scale; SAAS-R = School Attitude Assessment Survey-Revised; SCSS = Self-Concept Clarity Scale; SEQ = Social Experiences Questionnaire; SEHS-S = Social Emotional Health Survey-Secondary; SRP-A = Self-Report of Personality form of BASC-2 = Behavior Assessment System for Children-2; SEI = Student Engagement Instrument; SDQ = Strengths and Difficulties Questionnaire (subscales UK teacher-report vers); Stress Scale for Middle School Students; SLSS = Students' Life Satisfaction Scale; SRCS = Self-Report Coping Scale; Screen for Child Anxiety Related Emotional Disorders; SWLS = Satisfaction with Life Scale; Stressful Life Events Scale; SWEMWBS = Short-Warwick-Edinburg-Mental-Wellbeing-Scale; TRS-A = Teacher Rating Scale form; TRF = Teacher report form of the child behavior checklist; YSR: Youth Self Report form.

The present doctoral thesis

The main aims of the doctoral thesis were to gain knowledge and provide further insight into school-aged students' perfectionism, expectations, and mental health. Specifically, we aimed to target students in specialized talent development schools in sports and the performing arts because there was a gap in knowledge about their experiences during the pivotal developmental age of 13-16 years. Secondarily, we wanted to compare the students at specialized TD schools with adolescents at schools without such specialized school programs. The rationale for conducting the project was multifaceted. First, concerns have been raised about an increased professionalization from a younger age that may affect young athletes' and other performers' mental health and well-being. Secondly, at the time we started planning and initiating the doctoral project (2015/2016), there was an increased focus, including debates and concerns, about how young adolescents were negatively affected by experiences of high and pressurized expectations. Indeed, frequent and increasingly common newspaper headlines were, for instance, the "generation perfection" and "performance generation." Lastly, empirical data documenting experiences of perfectionism among the young Norwegian generation was limited. Hence, aiming to fill the knowledge gap, this thesis' overarching aim was to provide knowledge on perfectionism, expectations, and mental health among TD and regular students aged 13-16, which could contribute to the field and school management, teachers, and coaches at the schools, and coaches and pedagogues who work with the students outside school hours—a contribution of knowledge that could help safeguard young students' health and performance development.

Three studies were designed, one quantitative cross-sectional and prospective study and one qualitative study, aiming to contribute comprehensive knowledge and fill the knowledge gap. The students were followed for three consecutive school years during lower secondary school. Each study's findings were presented in three papers, while in this thesis, I aim to elaborate further on the nuances and connections in and between the study findings. The following specific aims and research questions for each paper were:

Paper I (published 2019)

Paper I is a cross-sectional study exploring profiles of perfectionism among student performers and regular students and the profiles associations with mental health. The study aims were to:

(1) Examine the factor structure across the items of two commonly used measures of perfectionism.
(2) Identify meaningful profiles of perfectionism generated from the perfectionism factor scores.
(3) Examine possible differences in the proportion of girls and boys from specialized- and regular schools within each of the profiles of perfectionism.
(4) Examine the differences between the identified perfectionism profiles in terms of mental health and psychological functioning.

Paper II (published online first 2023)

Paper II is a prospective study on mental health profiles among TD students in sports and ballet and students in regular schools. The research questions were:

(1) Are symptoms of anxiety, depression, body concerns, and self-worth different between female and male talent development and regular students?

(2) (a) Which mental health profiles emerge based on indicators of anxiety and depressive symptoms, body concerns, and self-worth?

(b) How stable are adolescents' mental health profiles over two years?

(c) How are perfectionism, gender, and school type associated with mental health profiles two years apart?

(d) What are the estimated profile proportions within each profile for girls and boys from each school type?

(e) Which transition patterns are displayed among girls' and boys' talent development and regular students?

Paper III (published 2023)

Paper III is a qualitative interview study, including athletes, ballet, and music students.

The research questions were:

(1) How do student performers experience self-oriented and socially prescribed expectations?

(2) How do student performers perceive that expectations influence their well-being in sports, ballet, music, and everyday life?

Methods

The doctoral thesis consists of three papers exploring aspects of perfectionism, expectations, and mental health among young talent development (TD) school students in sports, ballet, and music and students from diverse schools without a unique sports, ballet, or music curriculum, i.e., the latter are referred to as regular students. This methods chapter provides a brief overview of the methods in Table 3, followed by specific descriptions of the samples, procedures, data generation, and analysis for each paper.

Overview of the methods

Table 3

Methods Overview of the Three Papers of the Doctoral Thesis

	Paper I	**Paper II**	**Paper III**
Design	Cross-sectional	Prospective	Qualitative
Data generation	Self-reported measures	Self-reported measures	Semi-structured interviews
Time of data collection	Spring 2016	Spring 2016 and 2018	Spring 2017
Participants	8th-grade: 13-14 yrs. Total n = 832 students: TD sports and performing arts students: n=166 Regular students: n=666	T1: 8th-grade, 13-14 yrs. T2: 10th-grade, 15-16 yrs. Total n = 946 students: TD sports and ballet students n=168 Regular students n=778	9th-grade, 14-15 yrs. TD sports students: n=14 Performing arts students: n=13
Main Analysis	Latent profile analysis	Latent transition analysis All available data from each measurement occasion were included using the maximum likelihood estimation (FIML)	Reflexive thematic analysis
Main theme	Perfectionism profiles associated with mental health	Mental health profiles stability and change and influence of perfectionism	Experiences of self-oriented and socially prescribed expectations

Quantitative and Qualitative Research Design

Two quantitative studies, one cross-sectional and one prospective, targeted specific variables of perfectionism and mental health to explore different perfectionism and mental health profiles. The third study used a qualitative design, interviewing student performers face-to-face, aiming to provide in-depth and broader insight into the students' experiences with a broad perspective of expectations as it is a more general term, yet, experiences of elevated and unrealistic expectations are inherently involved in perfectionism (Flett & Hewitt, 2022).

Positioned within critical realism (CR: Bhaskar, 2008), reflecting perspectives of ontological realism (objective reality) and epistemological constructionism (subjective; Fletcher, 2017; Vincent & O'Mahoney, 2018; Wiltshire, 2018), it is acknowledged that real events (e.g., expectations) occur and are experienced by young students independently of the studies, while the thesis studies may increase access to the nuances of student's experiences. Specifically concerning the qualitative paper,

the positioning in critical realism allowed the use of established methods and theories and to explore students' subjective experiences, though CR is not connected to specific theoretical frameworks or methods (Fletcher, 2017; Ryba et al., 2022). Acknowledging both an objective reality in the world that can be known through scientific efforts – and that knowledge production is subjective and socially constructed are central within CR (Vincent & O'Mahoney, 2018; Fletcher, 2017). Hence, consistent with CR, established methods and theoretical concepts were used for knowledge production, interpretations, and explaining findings while accepting that knowledge production is fallible (Ryba et al., 2022; Wiltshire, 2018).

By designing a doctoral project adopting both quantitative and qualitative methods, we aimed to lay the foundation to provide further comprehensive knowledge about this thesis's central themes – and explore the nuances, complexities, and connections in and between the study findings related to perfectionism, expectations, and mental health as a whole.

Schools, Participants, and Procedure

Description of Schools

All the Norwegian lower secondary schools recruited comprise three years of schooling, starting from 8th grade at age 12/13 (autumn semester) to 10th grade at age 15/16 years (spring semester). Norwegian specialized schools offering integrated and customized academic education combined with talent development in sports, music, or classical ballet, are relatively new for the age group in this thesis. The first two lower secondary sports schools were established in the mid-2000s, followed by a third ten years later. During the years following the initiation of this doctoral project (2016), the number of private sports schools increased, and by 2022, more than 20 schools were established. The TD program for ballet students was established in 2008, and in 2015 a fully established program was offered for classical music students. The ballet and music programs are collaborative projects facilitated by the Directorate for Education in Oslo at two public schools in cooperation with the ballet school at the Norwegian Opera and Ballet and the Academy Barratt Due (a classical higher music education institution).

Adolescent athletes and dancers may attend the lower secondary sports and ballet school for three years from ages 12/13 to 15/16 years: 8th to 10th grade. Classical music students may apply at age 9/10 and attend the school for six years: 5th to 10th grade. The student performers undergo a selection process involving written applications, tests, and auditions for which their motivation and, respectively, sports, music, and dance abilities are evaluated for qualification.

The students not attending the specialized TD schools represented students from the diversity of lower secondary schools within two of the largest regions in Eastern Norway (i.e., Oslo and Akershus; note, Akershus no longer a county – presently merged within a larger county, Viken)

Recruitment

The schools for athletes and performing arts were intentionally selected to represent Norway's specialized TD schools. We invited all three sports schools and one each school with TD classes for classical ballet and classical music existing at the time of recruitment to study I. The quantitative study I (paper I) included all TD schools, and study 2 (paper II) included the three sports schools and ballet students. The qualitative study (paper III) included students from two sports schools and the ballet and classical music programs (Table 3).

In the quantitative studies I and II, all lower secondary schools from the different regions within two Eastern Norway counties were considered for inclusion as reference schools. The schools were randomly drawn from each region based on the number of schools and students to ensure representation from the different regions. In the 2016 spring semester, 32 schools were considered eligible and were invited, of which 11 consented. Study I (paper I) included all 11 consenting schools, and study 2 (spring 2018; paper II) included ten schools (Figure 2). The qualitative study, paper III, included none regular students.

Participants

This doctoral project started in the spring semester of the school year 2015/2016; at the time, three specialized TD sports schools and one TD class each for ballet and music students existed at the lower secondary school level in Norway. Each sports school included two classes with a capacity of 30 students in each grade. One age cohort was followed from the spring semester of their first to the final year of lower secondary school. Study I included students in 8th grade, study II in 8th to 10th grade, and study III in 9th grade (Table 3). The inclusion criteria were: student at the grade level and school included, present on the day of data collection, and parental consent when below 16 years of age. Students were excluded if the inclusion criteria were not met and when the questionnaire was improperly filled out.

Study I – Cross-sectional

We invited all eligible students from the consenting schools, n = 199 TD students and n = 1055 regular students (Figure 2). The response rate for the two samples was 63% and 83%, respectively. The final sample included 832 students. The TD students were studied as one group, including 166 students, i.e., n = 135 athlete-students, n = 23 music, n = 8 ballet students (n = 82 girls and n = 84 boys). The regular school sample included 666 students (n = 361 girls and n = 305 boys). All students were 13-14 years old.

The student-performers reported starting deliberate practice (i.e., started focusing specifically on their main activity) in their sports at an average age of 9.7 years (SD = 2.8), in ballet at 10.5 years (SD = 1.9), and in classical music at 10.2 years (SD = 2.2). The average reported

training hours among athletes was 11.2 per week (*SD* = 5.8). Ballet students reported 14.4 (*SD* = 0.5) hours, and music students 11.9 (*SD* = 1.4) hours of practice per week. The athletes represented both team sports (football, handball, ice hockey, basketball, volleyball) and individual sports (alpine skiing, biathlon, athletics, cross-country skiing, climbing, cycling, diving, equestrian sports, freestyle skiing, gymnastics, martial arts/combat sports, motocross, rowing, swimming, sailing, skateboarding, tennis, triathlon, windsurfing). All dancers were classical ballet students, and the classical music students' main instruments included violin, cello, double bass, flute, and piano.

Study II – Prospective

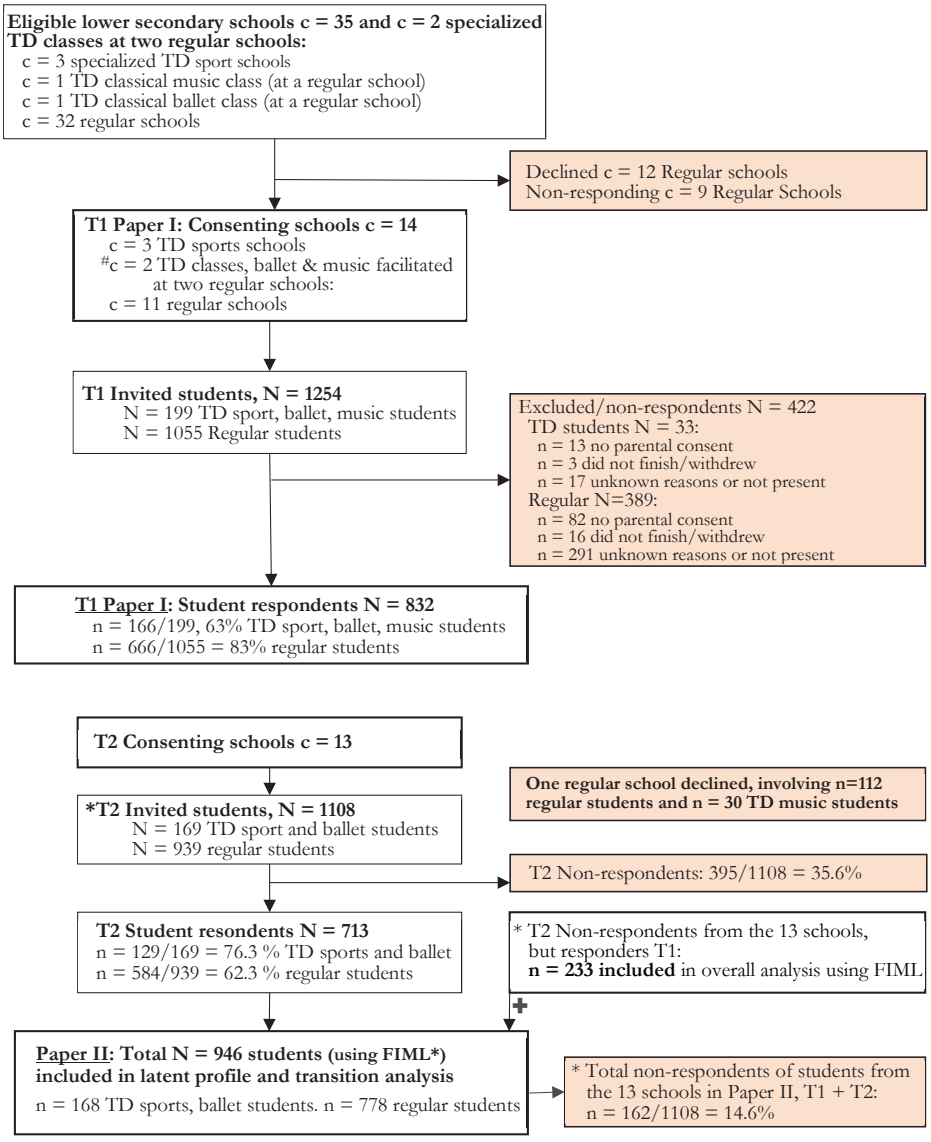
We invited all schools included in paper I. One school declined participation, resulting in 13 schools consenting and n = 1108 students invited (Figure 2). All available data from students at the 13 schools participating in either one or both measurement occasions were included because the maximum likelihood estimation (FIML) procedure for handling missing data was used (Enders, 2001; 2022, see statical analysis section). The final sample in paper II included 946 students (see Figure 2 below). In total, 168 TD students (*n* = 76 girls and *n* = 92 boys) in sports and ballet, and 778 students representing the regular schools (*n* = 401 girls and *n* = 377 boys; 49.6 % boys). Students were 13-14 years old at time point 1 (T1) and 15-16 years at time point 2 (T2).

Study III - Qualitative

We recruited 27 students from four schools: Two TD sports schools (n =14; six boys and eight girls; 8 and 6 students from each school) and two schools with TD performing art classes (*n* = 13, ten girls and three boys; six classical music and seven classical ballet students). All were 9th-grade students aged 14-15 years. Because all interviews were conducted during school hours at the schools or training facilities, we considered that the recruitment of participants needed to account for and reduce the chance of anyone feeling singled out. Accordingly, we randomly drew athletes from their class lists. Sixteen athlete-students (8 per school) were initially invited, for which four boys declined, and two other athlete-boys were recruited, resulting in 14 student-athletes participating. Classical music students were initially randomly drawn, for which eight students were invited. Four did not respond within the final deadline, and two declined; hence, we chose to inform all music students about the study, leading to six music students volunteering and consenting to participate. All ballet students were invited (*n* = 9), of which seven participated.

Figure 2

Overview of The Quantitative Papers I and II Schools (c), Students (N), Respondents, and Final Inclusion in Each Paper



Note. # The two TD classes for music and ballet referred to separately in the figure were situated at two of the 11 regular schools = 14 schools included in Paper I. *Paper II: see methods section for handling missing data using FIML, meaning that all students with available data from either one or both measurement occasions were included.

Procedure

In advance of all three studies, invitations and study information was sent to all schools through the head of the school management. Consenting schools appointed a staff member as a contact person. The Ph.D. student arranged meetings at all schools, informing students and teachers about the study at least one week before and on the data collection day. Students and their guardians received separate written study information letters. The written and oral information included informed consent from participants and their parents/guardians for each study (I-III) (i.e., from parents if age <16 years), as well as information about voluntary participation and their right to withdraw at any time without stating any reason.

Students completed questionnaires during one school hour in the presence of the Ph.D. student at all schools and depending on the school size research assistant(s) (studies I and II). The Ph.D. student conducted all the qualitative interviews (study III) at the schools or training facilities. The qualitative interviews took place 10-12 months after the first quantitative study (paper I) and one year before the second quantitative study (paper II).

Data Generation Quantitative methods, Papers I and II

Measures

All measures in papers I and II are self-reported questionnaires used in a range of previous studies on adolescents. Factor analyses were conducted to test the psychometric properties of the measures. The procedures are described in the data analyses section, reported in the results section of each paper, and discussed in the thesis and papers I and II. Cronbach's α was reported in paper I, and the McDonald's omega (ω) of each subscale for each multi-item measurement scale in paper II. Cronbach's α is a scale reliability test estimating how well the items within a scale are measuring the same concept (Coolican, 2014). Although Cronbach's alpha is a widely used internal consistency test, it is contested as a robust internal reliability test. Thus, the alternative test, McDonald's omega (ω), has been suggested (Hayes & Coutts, 2020). Because paper I did not provide the McDonald's ω coefficient estimates, they are provided below in Table 4.

Perfectionism

Child Adolescent Perfectionism Scale (CAPS) (Paper I and II)

The Child Adolescent Perfectionism Scale (CAPS; Flett et al., 1997; Flett et al., 2016) is a measure assessing self-oriented perfectionism (SOP: 12 items) and socially prescribed perfectionism (SPP: 10 items). SOP involves excessive self-directed expectations and standards and a need to fulfill them. SPP implies the conviction that others require perfection from the self. Three negatively worded items were recoded to calculate a mean subscale score. Items are rated on a five-point Likert scale from *false* (1) to *very true* (5).

A Norwegian version of CAPS did not exist. Standard required procedures for the translation of questionnaires with bi-directional translation were followed. Note that the CAPS item numbering in papers I and II differ from a later publication by Flett et al. (2016). The CAPS factor structure has received adequate support (see Leone and Wade, 2018, review), but discrepant findings exist (McCreary et al., 2004; O'Connor et al., 2009). The internal consistency coefficients of McDonald's ω and Cronbach's α were good in both papers.

Frost Multidimensional Perfectionism Scale (FMPS) (Paper I)

The original FMPS (Frost et al., 1990) assesses perfectionism by 35 items along six primary factors: Personal standards (exceedingly high personal standards for performances); concerns over mistakes (CM; overly fear of mistakes – mistakes perceived as a failure); doubt about actions (DA; doubting the quality of one's performances); parental expectations (PE; strong perceptions of parents having excessive expectations for one's performances); parental criticism (PCr; the worry of failure leading to criticism, disapproval, and loss of parental love); and organization (O; neatness, order, and organization). Items are rated on a five-point Likert scale from strongly disagree (1) to strongly agree (5). Items in the past tense (PCr 3, 5, 35, and PE 11 and 35), e.g., *As a child, I was punished for doing things less than perfect*, were modified to present tense for the adolescent sample: *I get punished if I do things less than perfect*. The wording "at work" (CM 9 and 13) was removed; "at school" was retained.

As earlier addressed, mixed support has been reported for the FMPS original factor structure (e.g., Cox et al., 2002; Stöber, 1998; Sironic & Reeve, 2015). The internal consistency coefficients of McDonald's ω and Cronbach's α were good for personal standards, CM, and PE and below satisfactory for DA. PCr showed unsatisfactory Cronbach's α.

Anxiety and Depression (Papers I and II)

Symptoms of anxiety and depression were assessed by the Revised Children's Anxiety and Depression Scale, short version (RCADS-25; Ebesutani et al., 2012), including one broad anxiety factor of 15 items and one depression factor of ten items. Items are rated on a four-point Likert scale from *never* (0) to *always* (3). Higher scores represent greater symptom severity of anxiety and depression. Cut-off-scores: anxiety; girls = 26, boys = 22, and depression; girls = 17, boys = 16.

Note that the RCADS-25 was developed according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV; American Psychiatric Association, 1994), including three items from six separate sub-scales of the RCADS-47: Generalized anxiety, separation anxiety, social anxiety, panic disorder, and obsessive-compulsive disorder. Accordingly, the broad anxiety factor in RCADS-25 included three OCD items, which are highly comorbid with anxiety symptoms but are recategorized in DSM-5 and omitted from the anxiety disorder categories

(American Psychiatric Association, 2013).

The internal consistency coefficients of McDonald's ω and Cronbach's α were good in both papers. Further, good internal consistency, structural validity (from confirmatory factor analysis), and convergent validity with other anxiety (Multidimensional Anxiety Scale for Children) and depression measures (Short Mood and Feelings Questionnaire) were recently supported in a study on Norwegian children and adolescents (Lisøy et al., 2022).

Body Weight and Shape Concerns (Papers I and II)

Body weight-shape concerns were assessed by 11 items (Friborg et al., 2013) from the Eating Disorder Examination-Questionnaire (EDE-Q 6.0, Fairburn, 2009). Items are rated on a seven-point scale from *not at all or no days* (0) to *very much or all days* (6). Higher mean scores indicate more problematic weight-shape concerns. The clinical mean cut-off score is ≥ 4.0 (Fairburn, 2009). The internal consistency coefficients of McDonald's ω and Cronbach's α were good in both papers.

Self-Worth (Papers I and II)

Global self-worth was assessed by the Norwegian short version of Harter's Self-Perception Profiles for Adolescents – Revised (SPPA-R; Wichstrøm, 1995). Five items are rated on a four-point Likert scale from *describes me very poorly* (1) *to describes me very well* (4). Higher scores represent better global self-worth (Harter, 2012). The internal consistency coefficients of McDonald's ω and Cronbach's α were good in both papers.

Resilience (Paper I)

Resilience was assessed by the Resilience Scale for Adolescents (READ). READ consists of five factors; personal competence, social competence, structured style, family cohesion, and social resources (Hjemdal et al., 2006). The 28 items are rated on a five-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). The five READ factors correlate strongly, and a mean general score was calculated (Hjemdal et al., 2006) by which higher scores represent better protection. The McDonald's ω and Cronbach's α were good.

Table 4

Cronbach's a and McDonald's ω Estimates of Reliability

		Paper I		Paper II			
Scales	Items	α	Ω	T1 α	T1 ω	T2 α	T2 ω
Self-Oriented Perfectionism	12	.86	.86	.85	.86	.87	.87
Socially Prescribed Perfectionism	10	.87	.88	.87	.88	.88	.88
Anxiety	15	.86	.86	.86	.86	.85	.85
Depression	10	.85	.85	.85	.85	.85	.86
Weight-shape concerns	11	.95	.95	.95	.95	.95	.95
Self-worth	5	.88	.88	.88	.88	.89	.89
Resilience	28	.92	.92				
FMPS – Personal Standards	7	.84	.85				
FMPS – Concerns over Mistakes	9	.82	.82				
FMPS – Doubt about actions	4	.67	.67				
FMPS – Parental Expectations	5	.82	.83				
FMPS – Parental Criticism	4	.68	.72				
FMPS – Organization	6	.84	.84				

Data Analyses (Paper I and II)

Person-Centered and Variable-Centered Analytical Approaches

The majority of perfectionism and mental health research has used traditional analytical variable-centered approaches. Variable-centered approaches examine relationships between variables, on their mean, within a population without acknowledging that unobserved subgroups displaying different configurations of the variables may exist (Howard & Hoffman, 2018). For instance, factor analysis is a variable centered-approach seeking to identify relationships between several observed indicators (e.g., items) that forms underlying unobserved constructs of fewer latent variables (i.e., factors) by their common concepts (Brown, 2015; Byrne, 2005). In this thesis (papers I and II), variable-centered approaches, i.e., factor analysis, ANOVA, MANOVA, and cross-tabulations, were used for preliminary analysis and descriptive statistics.

Person-centered approaches explore whether different configurations of the variables exist within the individuals in a population (Howard & Hoffman, 2018). Accordingly, the aim is to identify distinct unobserved subgroups of individuals within a population that shares similar patterns and levels on a set of observed indicators (Nylund-Gibson & Choi, 2018; Spurk et al., 2020). The unobserved subgroups that emerge are typically referred to as profiles, which is the term used in this doctoral thesis. Each profile is compared with the others on how the indicators are combined into different profile patterns and how predictors and outcomes may be differently related to each profile (Collins & Lanza, 2010; Nylund-Gibson & Choi, 2018; Spurk et al., 2020).

This thesis explores different profiles cross-sectionally with perfectionism indicators (paper I) and prospectively with positive and adverse mental health indicators (paper II). Latent profile analysis (LPA) was used in papers I and II, and the longitudinal extension latent transition analysis (LTA) explored stability and transitions between mental health profiles in paper II.

The LPA approach for exploring profiles was preferred for several reasons in line with recommendations from scholars. For instance, LPA is a model-based probabilistic analytical technique, meaning each individual is estimated with a varying probability (0 – 1) of profile membership to each profile accounting for classification errors (Hofmans et al., 2020). The LPA approach is, thus, recognized as having an advantage over other more traditional ('hard') cluster analytical techniques because of its more robust estimations of profile membership and its data-driven approach compared to a-priori definite clusters (Hofmans et al., 2020; Spurk et al., 2020). Further, when deciding on a final LPA profile solution, several fit indices are evaluated by contrasting different profile solutions according to how well they fit the data (see each paper description below; Nylund-Gibson & Choi, 2018). Hence, compared to variable-centered approaches, such as cut-score analytical strategies, typically used for estimating anxiety, depressive

symptoms, and clinically significant weight-shape concerns, person-centered approaches like LPA and LTA have the potential to offer more detailed and comprehensive information about mental health variations in a population. Such nuances in mental health can have implications for preventive measures for different groups of adolescents (Moore et al., 2019a).

Paper I – Data Analyses

The Perfectionism Factor Model - Factor analysis

As addressed in the theory section, a higher-order two-factor model is well-established, yet, hierarchical factor analysis was not performed in this thesis. The factor analysis in paper I included principal component analyses (PCA) and *first-order* confirmatory factor analysis (CFA). First, the initial PCAs' aimed to explore if and how items and factors from the CAPS and FMPS would merge and whether the solutions were related to previous research and theory—for instance, the performance of item factor loadings, loadings on expected factors, and cross-loadings. Secondly, we tested how a model with a reduction in the number of factors would perform by cross-validate the PCA solution through confirmatory factor analysis. A parsimonious model with fewer factors, reducing the overall complexity, was preferable because the retained factor model would be used in the LPA analysis to explore perfectionism profiles.

Several criteria were evaluated to determine the number of perfectionism components to retain from the PCA (i.e., Kaiser's criterion with eigenvalues > 1, Horn's parallel analysis, and item loadings; see paper I for further details). The CFA models were evaluated by several recommended model fit indices to test whether the perfectionism model fitted the data adequately. Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) evaluate incremental fit by comparing a hypothesized model with a baseline model. Optimal CFI and TLI values are > 0.95, and about 0.90 may be tenable (Hu & Bentler, 1999). Root mean square error of approximation (RMSEA) indicates how far the hypothesized model is from an excellent model with preferable values <0.06 (Hu & Bentler, 1999) and between 0.06-0.08 indicating mediocre fit (MacCallum et al., 1996). The standardized root mean square residual (SRMR) further evaluated the absolute fit, and, like RMSEA, it is a misfit measure (Little, 2013). SRMR values close to or below 0.08 are generally acceptable (Hu & Bentler, 1999). The standardized factor scores from the retained CFA model were used as indicators in the LPA to explore latent profiles of perfectionism.

Profiles of Perfectionism by Latent Profile Analysis

LPA was used to explore whether distinct profiles of perfectionism could be identified. One to ten profile solutions were explored and compared by a set of recommended fit indices, and their interpretability was evaluated according to previous research and contemporary theory (Nylund-Gibson & Choi, 2018). The Log-Likelihood ratio (LL) estimated the absolute fit of the models, i.e.,

how well the *K*-profile model fitted the data. The different solutions were compared by evaluating the approximate fit indices Akaike's Information Criterion (AIC), Bayesian Information Criterion (BIC), and adjusted BIC (aBIC; Morgan, 2015; Peugh & Fan, 2013). A better-fitting profile solution was indicated when the AIC, BIC, and aBIC values were lower than the contrasted models. The entropy index was evaluated for the accuracy of categorizing subjects into latent profiles (0 = terrible, 1 = perfect classification). We stopped increasing the number of profiles to the LPA modeling when no substantial fit improvements were observed (Spurk et al., 2020).

Note that the term latent class analysis (LCA) was used in the published paper I. Since we used continuous variables in the paper, this should have been corrected to LPA. LCA is the equivalent of LPA when categorical variables are explored.

Multivariate analysis of variance (MANOVA) and separate ANOVAs for each criterion variable was conducted to examine differences between the perfectionism profiles on adverse indicators, i.e., anxiety, depressive symptoms, weight-shape concerns, and positive mental health indicators, i.e., resilience and self-worth. The ANOVAs for each criterion variable used Scheffe's test, adjusting for post hoc multiple comparisons. Lastly, a contingency table was obtained to examine gender and school-type proportions within each perfectionism profile. Pearson chi-square (χ^2) of independence with an alpha level of *.05* tested whether there were differences in profile membership between the genders and school types, and the z-test compared the proportions, i.e., TD girls vs. regular student girls, TD boy vs. regular student boys.

Paper II – Data Analyses

Preliminary Factor Analysis and Descriptive Statistics

CFA's and longitudinal factorial invariance tests were performed to verify the measures' psychometric properties and the constructs' equivalence across time. The measures' longitudinal factorial invariance was assessed using the fixed factor method of scaling (Little, 2013). Three models were contrasted: configural invariance, weak factorial invariance, and strong factorial invariance (paper II Supplementary material for further details). Model fit was evaluated according to the fit indices described above for paper I; CFI, TLI, RMSEA, and SRMR. Measurement invariance across time was evaluated by the change in the goodness of fit indices, which should not exceed a change in ΔCFI/TLI of 0.010 or less (Cheung & Rensvold, 2002) and ΔRMSEA of 0.015 or less. Standardized factor scores were saved and used as indicators to explore whether distinct mental health profiles would emerge from LPA analyses.

Descriptive statistics for each mental health indicator; anxiety, depression, weight-shape concerns, and self-worth, at each measurement occasion, included: ANOVA tests using Scheffe's test to adjust for the post hoc multiple comparisons; and cross-tabulations with Chi-square tests for categorical data (i.e., cut scores: anxiety, depression, and weight-shape concerns) to detect

differences between girls and boys, TD and regular students.

Mental Health Profiles - Latent Profile and Latent Transition Analysis

The prime interest in paper II was to study adolescents' mental health profile characteristics and pathways of change. The indicators were anxiety, depression, weight-shape concerns, and self-worth. Using latent transition analyses (LTA), the stability and transition probabilities between mental health profiles across time were estimated. In LTA, the latent transition probabilities are the key interest, estimating latent profile status at Time t +1 conditioned by profile status at Time t (Collins & Lanza, 2010). The LTA model building included three main steps: 1) Cross-sectional LPA, 2) measurement invariance of the mental health profiles across time, and 3) LTA.

The cross-sectional LPAs were tested to decide the number of mental health profiles to retain and to assess if similar profiles emerged at both time points (T1 and T2). One to six profile solutions were estimated. Measurement invariance across time was tested by contrasting two models recommended by Collins and Lanza (2010). One non-invariant (all parameters free across time) and an invariant model (all parameters constrained equal across time) without the autoregressive pathway between time points. The LTA model was estimated, including the autoregressive relationship where individuals' probability (0 – 1) of profile membership in a latent profile at Time 2 was conditioned on their membership at T1 (see Figure S1, paper II supplementary material). SOP, SPP, gender, and school type were covariates in the final LTA model to test their influence on profile statuses at T1 and T2.

The cross-sectional LPA models were evaluated according to the similar fit indexes described for paper I: LL, AIC, BIC, and aBIC. The Bootstrap Likelihood Ratio Test (BLRT) and Lo-Mendell-Rubin adjusted likelihood ratio test (aLMR-LRT) were evaluated. Non-significant p-values (>.05) for the k-profile model indicated that the k-1 profile model was supported (Nylund et al., 2007). LTA models were evaluated to similar fit indices as the cross-sectional LPAs.

Mplus versions 8.0 (paper I) and 8.7 (paper II; Muthén & Muthén, 2021) was used for CFA, LPA, and LTA analysis. IBM SPSS Statistics versions 24 (paper I) and 28 (paper II) were used for all other analyses.

Sample Size and Statistical Power

Recommended sample sizes for LPA vary from about 200 to at least 500 (Nylund et al., 2007; Spurk et al., 2020). In papers I and II, the sample size was sufficient (>800) for accurately identifying the correct number of latent profiles.

Missing Data Handling

The model-based missing data procedure full information maximum likelihood (FIML) procedure was used to handle missing data in the CFA, LPA, and LTA (Lang & Little, 2018). FIML

uses both individuals with all data and partial data, which are analyzed simultaneously, adjusting the model estimates according to all available information (Collins and Lanza, 2010). Hence, in paper II, using FIML in the longitudinal analysis means that all available data were included from students participating either on one or both measurement occasions. Also, FIML offers less biased estimates than complete case analysis or listwise deletion (Enders, 2001; 2022). Available data for paper II (n = 946) consisted of all students answering at both measurement occasions (n = 520) and responders at either T1 (n = 233) or T2 (n = 193; Figure 2).

Data Generation Qualitative Methods, Paper III

Paper III is a qualitative study, generating data through semi-structured interviews and reflexive thematic analysis.

Semi-Structured Interviews

Data was generated through individual, face-to-face interviews using a semi-structured interview guide (appendix, paper III). Using the semi-structured approach means that the interview guide was prepared, piloted, and adjusted in advance. In contrast to closed-ended questionnaires, a semi-structured interview guide is a flexible tool in which the prepared questions help focus the conversation between the researcher and the participants on the relevant topic (Braun & Clarke, 2013; Smith & Sparkes, 2019). The approach allows the participants to raise issues not anticipated or prepared by the researcher that might further illuminate the research topic with more detailed insights into the participant's experiences. Hence, the interviewer needs to be flexible and allow the interviewee to discuss important and relevant subjects for them (Braun & Clarke, 2013).

The interview guide (paper III) was developed based on the academic and practical experiences of the research group related to youth athletes and performing artists and inspired by theory and related literature, e.g., perfectionism as expectations are central features of perfectionism. It was a deliberate choice to adopt a broad perspective on *expectations*, using expectations as a more general term than *perfectionism* because of the specific connotations young performers might relate to words like *perfectionism*, *perfection*, or *perfectionist*. Also, the intention was to avoid "putting any terms in the students' mouths" and enhance the possibility for the students to use terms they found naturally.

The interview guide (paper III appendix) included three main parts: 1) Introductory and background questions worked as both an "ice-breaker" and to generate specific descriptive data (e.g., how old are you?... which sport are you doing?.. do you remember why you started?). 2) Main topic questions related to the research questions, focused on the performers' expectations from themselves, coaches/teachers, and parents and how expectations influenced the students in their activity and everyday lives (e.g., can you tell me about; the expectations you set for yourself in

dance/music/sports? …how you perceive your expectations? …your expectations for yourself when you compete/perform/hold concerts? …your experiences with others' expectations of you? e.g., coaches or parents). 3) Closing questions to allow the participants the opportunity to raise issues that were not already covered (e.g., are there other areas that we have not talked about where you experience that there are expectations for you?). I probed for more elaborate descriptions, nuances, and clarifications through follow-up questions ("curiosity-driven questions"; Smith and Sparkes, 2019, p.112), e.g., "can you tell me more about how you experienced that situation?" The interviews lasted 30-70 minutes. All were recorded and transcribed verbatim by the Ph.D. candidate, resulting in 300 single-spaced pages of transcriptions.

Reflexive Thematic Analysis

The qualitative data were analyzed by using reflexive thematic analysis (Braun & Clarke 2006; 2013; 2019) guided by Braun & Clarke's (2019) current recommendations beyond the 2006 paper (Braun & Clarke, 2019; Braun et al., 2019). Reflexive thematic analysis is a systematic six-phase analytical approach relevant to exploring, identifying, describing, and interpreting patterns or themes in a dataset. It is not affiliated with specific theoretical concepts, methods, or philosophical positioning (Braun et al., 2019). The study was positioned within critical realism (Bhaskar, 2008), and we aimed to explore expectations broadly but also used theory. Hence, reflexive thematic analysis was suitable for exploring and identifying meaningful themes that could illuminate nuances and complexities in TD school students' experiences with expectations.

The possibility of the analytical process contributing to developing meaningful themes and perspectives related to the research questions was enhanced through active, reflexive, and recursive engagement with the data (Braun & Clarke, 2019; Braun et al., 2019). Accordingly, the six analytical phases do not refer to a rigidly linear process. Instead, it was a recurrent and ongoing reflexive process involving familiarization with data, systematic coding, theme development, theme refinement, theme naming, and writing the paper (Braun et al., 2019). Each main theme was described in detail and was related to a central organizing concept reflecting the participants' experiences with expectations. Sub-themes were developed, which reflected essential aspects of the main themes and illuminated patterns within the themes (Braun et al., 2019). Further details of the analytical phases, procedures, and thoughtful descriptions of the rationale for each step are provided in the methods section of paper III.

Quality Indicators of Rigor

Several recommended approaches were used to assess and enhance the quality and trustworthiness of this thesis qualitative study. Our ongoing reflexive discussions were essential. It involved how our subjectivity, including authors' preconceptions and experiences, might have

impacted the study and findings – both positively by capitalizing on it and undesirably by, for instance, not being attentive to new or different perspectives and interpretations (Berger, 2015; Dodgson, 2019; Olmos-Vega et al., 2022). In qualitative research, the reflexive process is multidimensional and involves personal, interpersonal, methodological, and contextual reflexivity (Olmos-Vega et al., 2020).

Continual reflexive discussions within the research group, which included evaluating how our positionality and experiences (personal reflexivity) and power relations between the interviewer and interviewee (interpersonal reflexivity) could influence the research process and findings, contributed to strengthening the study's trustworthiness (Berger, 2015). This process involved sharing and challenging our different views: During the development of the interview guide (e.g., wording, using the term "perfectionism" or not), on the notes shared immediately after interviews, including discussing my (the interviewer's) experiences and first impressions, during the analytical process involving sharing and discussing early exemplars of codes, candidate themes, and thematic maps with the second and third authors, and writing of the manuscript. Methodological reflexivity entailed our transparency on the methodological decisions and thorough descriptions of the methodological procedures, which enhanced the study's credibility (Olmos-Vega et al., 2022). Contextual reflexivity in this study involved careful reflection of the different school contexts, involving reflections on how the context may have influenced (me) the interviewer, and whether participation could be perceived as an evaluation rather than an open conversation about the interviewees' experiences (Olmos-Vega et al., 2022). The latter further involved reflections of power dynamics between the interviewer and the interviewee and, thus, overlapped with interpersonal reflexivity (Olmos-Vega et al., 2022).

"Critical friends" outside the research team offered critical feedback, which both challenged our perspectives and interpretations and enhanced awareness of alternative interpretations of the study (Smith & McGannon, 2018). The authors' academic and practical experience within sports and performing arts were particularly capitalized to bridging theory and the performers' accounts. I reflect on my prior experiences and positionality that may have impacted the research process in the paragraph below as the first author of the qualitative paper.

Personal and Interpersonal Reflexivity

The published qualitative paper (III) thoroughly addresses the researchers involved and their positionality. This section addresses my positionality, including how academic and performer experiences were evaluated during the research process. The careful evaluations involved self and others' conscious critique and appraisal both within the research group, from "critical friends" and through a Ph.D. course in qualitative methods (Olmos-Vega et al., 2022).

I have a background as a youth athlete in artistic gymnastics and a senior elite athlete in

Taekwon-Do (ITF), and thus, I had proximity to the field through former experiences. These experiences were shared with the research team, and the discussions and evaluations enhanced my self-reflections about how the experiences could influence my interaction with the participants and the research process. For instance, how I could react and respond to certain performers' experiences that were closely familiar to my own experiences as a youth athlete. These dialogs were critically valuable as I had no experience doing qualitative interviews, and pilot interviews were important for adjusting the interview guide, preparation, and practice (Braun & Clarke, 2013).

I was an outsider to the young student performers, for which my academic position at the Norwegian School of Sport Sciences was up to considerable reflections concerning the inherent power differentials existing between the interviewer and the young interviewees (Dodgson, 2019; Olmos-Vega et al., 2022). To decrease the possibility that power dynamics would restrain participants from sharing information, I carefully informed them that the interviews did not evaluate their knowledge and that the information they shared would not be shared with their teachers, parents, or coaches. This was important to develop a safe setting, particularly considering the young age of the students and that participation in an interview setting was unfamiliar to the students. The shared experiences as a performer became a resource that helped enhance trust between the participant and me, the interviewer (Sparkes & Smith, 2013). The student performers were also invited to reflect on how they experienced taking part in the interviews and the setting. In sum, the approaches taken gained mutual understanding and enhanced information sharing. The ongoing and continual reflections and acknowledgments of my prior experiences, knowledge, and positionality through the analysis and writing of the paper contributed to enhancing the transparency, quality, and trustworthiness of the research process and findings (Berger, 2015).

Ethical Approval and Funding

The Regional Committee for Medical and Health Science Research Ethics in Southern Norway (identifier, project no. 2015/1358) approved all studies in the doctoral thesis before recruitment and data collection took place. All studies were conducted according to the ethical guidelines and legislations of the Norwegian Health Research Act and the Declaration of Helsinki. The latter included written and oral information and informed consent from participants and their parents/guardians if students were below 16 years for each study (I-III), as well as information about voluntary participation and their right to withdraw at any time without stating any reason. The doctoral project was funded by Dam Foundation (Norwegian: Stiftelsen Dam) through the Norwegian Council for Mental Health (NCMH) (identifier, project no. 2017FO143239) and was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Results

This results section includes the overall findings for each papers I-III.

Paper I

Profiles of perfectionism among adolescents attending specialized elite-and ordinary lower secondary schools: A Norwegian cross-sectional comparative study

Stornæs, A. V., Rosenvinge, J. H., Sundgot-Borgen, J., Pettersen, G., & Friborg, O. (2019)

Aims: The aims of the cross-sectional paper 1 were: 1) To explore perfectionism profiles based on factors from two measures of perfectionism, CAPS and FMPS. 2) To compare the proportion of girls and boys from Talent Development (TD) schools- vs. regular schools within each profile. 3) To examine the perfectionism profiles association and differences in indicators of mental health, i.e., anxiety and depressive symptoms, weight-shape concerns, self-worth, and resilience.

Results: Overall, moderate to strong correlations were revealed between each unique perfectionism indicator (paper I: Table 1). One exception was organization, which revealed a small correlation with all perfectionistic concerns (PC) indicators and a moderate association with self-oriented perfectionism (SOP) and personal standards. The PC and perfectionistic strivings (PS) indicators showed small to moderate positive associations with adverse mental health indicators and negative associations with self-worth and resilience (except for organization: a positive association with self-worth and resilience). The associations with adverse and positive indicators were overall stronger for the PC than PS indicators.

The profiles of perfectionism were based on four perfectionism factors. The final LPA model retained a five-profile model characterizing adolescents with different within-person combinations of the four perfectionism factors.

Paper I (Table 2) provides the final and retained four-factor solution. The four factors used in the LPA modeling were retained by first exploring several principal component analyses (PCA). The final model from the explorative parallel analysis retained four components (R^2 = .47), and three misplaced items were discarded (i.e., loading on an unexpected component; SOP19, PS16, and SOP6; Note the numbering of the CAPS: SOP19 is equivalent to SOP20 in Flett et al. (2016)). The final four-factor solution combined 1) SPP with parental expectations and criticism (SPPEC), 2) SOP and PS (SOPS), 3) Concerns over Mistakes & Doubts about Actions (CMDA), and 4), Organization (O). Testing three competing CFA models resulted in the retention of the four-factor model, as the eight-factor model did not improve model fit substantially. However, the four-factor solution substantially reduced model complexity (vs. an eight-factor model) and was retained for parsimonious reasons for performing LPA. The CFI and TLI of both models were below recommended cut-offs. The RMSEA, a critical model misspecification index, indicated an

acceptable fit (0.058).

Factor scores from the retained four-factor perfectionism model were used to explore profiles of perfectionism. Through LPA, five profiles were retained characterized by the following four factors co-occurring patterns: Profile 1) High Mixed-Perfectionism: high-above-average on all factors except the organization was moderate-high above average. Profile 2) Perfectionistic concerns (PC) dominant profile moderate-above on the PC factors combined with below-average organization and slightly above-average on the PS factors. Profile 3) Perfectionistic strivings (PS) dominant profile: moderate-high above average PS and Organization combined with below-to-average on the PC factors. Profile 4) Low mixed profile, all factors were low-to-moderate below average. Profile 5) Non-Perfectionism was relatively similar to profile 4 but with low-below-average scores on all four dimensions factors (Table 5).

Table 5

Profiles of Perfectionism and Factor Scores

Profiles	1	2	3	4	5
4 Factors:	High Mixed Factor scores	PC dominant Factor scores	PS dominant Factor scores	Low mixed Factor scores	Non-P Factor scores
SOP + Personal Standards	z = 1.03	z = 0.12	z = 0.50	z = -0.34	z = -1.02
Organization	z = 0.44	z = -0.29	z = 0.65	z = -0.13	z = -0.50
SPP + Parental Exp & Criticism	z = 0.85	z = 0.49	z = -0.11	z = -0.33	z = -0.76
CM + DA	z = 1.30	z = 0.36	z = 0.04	z = 0.00	z = -0.92

Note. PC = Perfectionistic Concerns; PS = Perfectionistic Strivings; SOP = Self-oriented perfectionism; CM = Concerns over mistakes; DA = Doubts about actions.

The fourth and fifth profiles may seem redundant, and a merged profile of the two might seem more logical. Examining the four-profile solution did not reveal a merging of the non- and low-perfectionism profiles; instead, the two profiles remained separate. Contrasting the four-profile vs. the five-profile solution showed noticeable improvements in model fit for the five-profile solution. The five vs. six-profile solutions did not substantially improve fit, nor did the five- and six-profile solutions add theoretically valuable meaning. The five-profile solution was considered the most informative and was retained (see paper I, Figure 1, and Table 4).

Distinct differences between the five profiles were identified, and confirmed by ANOVA, revealing medium to large effects sizes by partial eta-squared: Anxiety $\eta 2 = .20$, depression $\eta 2 = .22$, weight-shape concern $\eta 2 = .10$, resilience $\eta 2 = .14$, self-worth $\eta 2 = .15$ ($Ps < .0001$). The multiple comparisons for each outcome variable revealed a pattern where the high-mixed perfectionism profile fared worse than all other profiles, followed by the PC dominant. The overall pattern can be summarized from worse to better like; high mixed > PC dominant > PS dominant > low mixed > non-perfectionism (paper I, Table 7). The adjustments for gender and school type revealed some changes in the high mixed perfectionism profile scores on the dependent variables, i.e., anxiety, depression, and weight-shape concerns decreased, and resilience and self-worth

increased. The adjustments resulted in lower weight-shape concerns (decreased from 2.51 to 1.77) among students with a high mixed perfectionism profile than those with a dominant PC profile (1.77 vs. 1.86, respectively). Depressive symptoms, weight-shape concerns, and self-worth between the low and non-perfectionism and the PS dominant profiles did not significantly differ. Students with a PS dominant profile reported higher anxiety symptoms than those with a non-perfectionism profile. Concurrently adolescents with a dominant PS profile reported higher resilience scores than all others.

The high mixed and PC-dominant profiles characterized about four out of ten regular students and two of ten TD schools students. The two school types differed in the total proportion of girls within the mixed and PC dominant profiles, with almost 39% of girls in regular and 26% in TD schools. Similar differences were found among boys: 36% of regular student boys and 19% TD school boys. More TD school students (32% girls and 35% boys) than regular students (18% girls and 16% boys) matched the PS dominant profile, characterizing students with moderately high PS and organization combined with about average concerns, doubts about their performances, and socially prescribed perfectionism (Table 5).

Paper II

Mental health profiles among 13-16-year-old Norwegian talent and mainstream students - A prospective person-centered analytical approach

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023).

Aims: To provide further knowledge about young TD and regular students' mental health by 1) examining descriptive statistics on anxiety, depression, weight-shape concerns, self-worth, and perfectionism, and 2) prospectively exploring a) mental health profiles based on symptoms of anxiety, depression, and body concerns, and self-worth, b) estimate the transition probabilities between distinct mental health profiles among adolescents aged 13/14 years and two years later and c) explore whether perfectionism, gender, and school type (TD school vs. regular school) were associated with initial mental health profiles (T1) and mental health status at T2.

Results: Overall, moderate to strong correlations were revealed between each unique mental health indicator (Table S1 supplementary material). Self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) showed small to moderate positive associations with adverse indicators and negative associations with self-worth. The association was stronger for SPP than SOP. Significant differences were found between the student groups on all variables except for SOP (paper II: Table 1). Significantly higher symptoms of anxiety and depression and lower self-worth were reported among regular schoolgirls than all other groups (i.e., TD girls, TD boys, and regular schoolboys). TD girls' and boys' anxiety and depression scores did not differ. Significantly higher

levels of weight-shape concerns were reported among both TD girls and regular student girls than boys (p<.01). Regular student girls reported higher weight-shape concern levels than TD girls (p<.001), albeit a high proportion of all scored above the strict clinical cut-off at T2: 25% regular and 10% TD girls. TD boys differed from the other students by reporting significantly higher self-worth at T2. Socially prescribed perfectionism (SPP) was higher in regular students than TD boys (p < .05). TD girls' SPP did not differ from other groups.

The four mental health profiles were characterized by the following co-occurring patterns of each indicator and named: 1) *Distressed-body concerned*: high-above-average anxiety, depressive symptoms (z = 2.0), and weight-shape concerns (z = 1.4), and low, below-average self-worth (z = -1.4); 2) *dissatisfied:* above-average anxiety, depressive symptoms (z = 0.4), and weight-shape concerns (z = 0.5) combined with below-average self-worth (z = -0.5), 3) *moderate mentally healthy:* below-average anxiety, depressive symptoms (z = -0.3) and weight-shape concerns (z = -0.2), and above-average self-worth (z = 0.2); and 4) *mentally healthy:* low to below-average anxiety and depressive symptoms (z = -0.8), and weight-shape concerns (z = -0.7) and above-average self-worth (z = 0.8).

The prospective LTA analysis revealed overall high-profile stability: 72-93% remained in their T1 profile two years later. The least stable were the *mentally healthy* (72%), and the most stable was the *dissatisfied* (93%). Exploring each student group revealed that the highest proportion of TD boys were in the *mentally healthy* profile (T1: 52%, T2: 53%), the *moderate* profile was most common among TD girls (T1: 44%, T2: 41%) and regular boys (T1: 46%, T2: 43%) and the most common among regular school girls was the *dissatisfied* profile (T1: 41.5%, T2: 46%). Girls were more likely than boys to be identified in the unhealthiest (*distressed-body concerned)* profile: 6-7% TD girls, 15-18% regular girls, 2% regular boys, and almost non TD boys.

Over 90% of all students who were *dissatisfied* at age 13/14 were still in the *dissatisfied* profile two years later (paper II, Table 6). Among students who transitioned to another profile over time, the most noteworthy transitions were that TD boys were likely to change to healthier profiles and girls to unhealthier profiles. Also, socially prescribed perfectionism was associated with unhealthier profiles. In sum, TD students fared relatively better than regular students, but considerable proportions of girls were identified in the unhealthiest profiles.

Paper III

Self-expectations, socially prescribed expectations and wellness in 14-15-year-old athletes, ballet and music students in Norwegian talent schools – An interview study

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023)

Aims: In paper III, we sought to explore in-depth the accounts of young TD school students in sports, ballet, and classical music experiences with self-oriented and socially prescribed expectations broadly. Quantitative data from the first study (paper I) were not used for interpretations of the qualitative interview data. The two main research questions of paper III were: 1) How do student performers experience self-oriented and socially prescribed expectations? 2) How do student performers perceive that expectations influence their well-being in sports, ballet, music, and everyday life?

Results: Four main themes illustrated the complexities of TD students' experiences with self-imposed and socially attributed expectations and the adolescents' struggles with balancing these expectations. The following themes reflected the main aspects and content of the TD students' experiences: 1) The student performers' self-oriented expectations served as an impetus to work persistently and evoked self-doubt and never-give-up attitudes. 2) Socially prescribed expectations from coaches/teachers stimulated the student performers' hard work and the pursuit of approval and opportunities. 3) Parental expectations were perceived as helpful support but could raise concerns about letting parents down and a need for negotiating independence. 4) Balancing the expectations and sustaining the demanding workloads were perceived as having negative influences on the TD students, such as experiencing difficulties with prioritizing recovery and ill-being.

Overall, the three performer groups, athletes, ballet, and music students, experiences revealed many general and similar expectations. Also, some prominent differences in their experiences were found. Compared to athletes, the notable difference was how ballet and music students tended to perceive their domains as tough and competitive. In sum, the young performers recognized the benefits of purposeful self-oriented expectations and expectations from coaches/teachers as well as parents, which stimulated the TD students to work hard for performance enhancements and future opportunities. Nevertheless, there was a fine line between perceiving purposeful and manageable expectations – and a relentless strive for enhanced achievements and future opportunities, which could evoke worry and doubts about abilities. Constantly striving for performance enhancement while trying to meet expectations in more than one arena was a source of highly demanding workloads and strains that influenced their well-being and everyday lives.

Discussion

The overall aim of this thesis was to gain knowledge and provide further insight into perfectionism, expectations, and mental health in an understudied group of adolescent student performers. Regular students were included in the quantitative studies for comparison. This chapter summarizes the main findings, followed by a general discussion of the three papers' findings and further how they may be connected and consolidated. Moreover, the discussion provides reflections on methodological and ethical considerations and summarizes the thesis in an overall conclusion.

Summary of Main Findings

Before initiating this doctoral project, few primary studies existed on perfectionism and mental health in very young student performers. However, consensus statements suggested that young athletes in such contexts were likely to experience high expectations and demands that could negatively affect their health and well-being (Bergeron et al., 2015; LaPrade et al., 2016). This thesis has contributed with warranted knowledge on the understudied group of young student performers aged 13-16 years using comprehensive novel approaches. First, paper I was the first to provide data on both young student performers and regular students, revealing five profiles of perfectionism. Students with high levels of all perfectionism factors fared worse overall, related to lower self-worth and resilience and higher symptoms of anxiety, depression, and weight-shape concerns than students in other profiles, including the dominant perfectionistic concerns profile (PC). Vice versa, students with non- or low perfectionism fared better overall than all others, including those with a dominant perfectionistic strivings profile (PS). These results did not support the hypothesis of high PS in the mixed profile acting as a buffer against the adverse effects of PC (Gaudreau, 2016).

Second, paper II provided nuanced insight into prospective mental health profiles using latent transition analysis. Four meaningful profiles of co-occurring anxiety, depressive symptoms, body concerns, and self-worth were revealed, for which socially prescribed (SPP), but not self-oriented perfectionism (SOP), was a significant predictor of more unhealthy profiles. Importantly, two worrisome mental health profiles revealed relatively high proportions (9-31%) of students with co-occurring high-above or above average anxiety, depressive symptoms, and weight-shape concerns, combined with low-below or below-average self-worth. High mental health profile stability (72-93%) was identified over two years. A further notable finding was that TD boys who transitioned to another profile from T1 to T2 were likely changing to healthier profiles and girls to unhealthier ones. The findings aligned with international trends on adolescents' mental health (Inchley et al., 2020) yet, contributed further knowledge about young student performers.

Third, in broader terms, the personal accounts of expectations and well/ill-being in paper III have provided more in-depth insight into the young performers' experiences. The trend from

the quantitative studies was supported, for which the qualitative findings further revealed that balancing and managing own and others' expectations were challenging. The students' feeling of responsibility to fulfill expectations from several areas was a source of physical and mentally demanding everyday life. For instance, students' experiences of tiredness and sometimes feelings of exhaustion, and for some, anxiety, headaches, irritation, and concentration difficulties, originated from too high expectations. Hence, using quantitative and qualitative methods has contributed to comprehensive knowledge from this thesis about perfectionism, expectations, and mental health in young student performers.

Perfectionism and Mental Health

From Unique Perfectionism Indicators to Profiles of Perfectionism

The thesis revealed that both indicators of perfectionistic strivings and concerns were positively associated with adverse mental health and negatively associated with positive indicators. These thesis findings support contemporary research and the theory of perfectionism that view perfectionism as a vulnerability to adolescents' mental health (Flett & Hewitt, 2022; Hewitt et al., 2017). Overall, examination of the unique perfectionism scales used in this thesis revealed stronger associations between SPP and each PC indicator from the FMPS (except parental expectations; paper I) than the PS indicators. These results were related to symptoms of anxiety, depression, weight-shape concerns, self-worth, and resilience. The findings on unique perfectionism indicators are consistent with previous research, reporting SPP and FMPS PC indicators as more steady and stronger correlates than SOP and FMPS PS indicator, with similar mental health indicators (Flett et al., 2022; Hill et al., 2018; Vacca et al., 2021). However, the unique PS indicators, i.e., SOP and the FMPS personal standards, also showed a clear positive association with the three adverse mental health indicators and a negative association with self-worth but a weak positive to neutral association with resilience. These findings are in support of researchers' views on not only PC but also PS's debilitating association and possible influence on adolescents' mental health and well-being (Flett & Hewitt, 2022). Specifically critical because individuals' continual strivings for self-perfection and self-evaluations in PS can generate an excessive burden on young performers and school-aged adolescents. Eventually, these strivings come at a cost and, thus, adversely influence the young students' well-being and may lead to injuries or illnesses (Flett & Hewitt, 2022; Flett & Hewitt, 2005; 2014; Hall et al., 2012; Hill, 2016).

Although SOP correlated in the same direction as SPP in paper II, SOP did not significantly predict whether students would be identified with a more unhealthy compared to a more favorable mental health profile. However, one exception at time point 2 by which SOP was associated with less likelihood of being in the unhealthiest *distressed-body concerned* vs. the *moderate* mentally healthy

profile. These findings offer further nuances to the extant literature about mental health related to self-oriented and socially prescribed perfectionism and contribute support to scholars highlighting the significant importance of socially prescribed perfectionism (Curran & Hill, 2019; Flett et al., 2022). Especially paper II was the first study to reveal SPP's significant association with and possible negative impact on school-aged students' mental health profiles. These thesis' findings further illuminate the relationship between different perfectionism indicators and mental health and may further strengthen the calls for increased attention to perfectionism and, specifically, socially prescribed perfectionism as a public health concern (Curran & Hill, 2019; Flett et al., 2022).

Researchers have reported worrisome increases in perfectionism and critically so of socially prescribed perfectionism from the late 80s to 2016 among young adults and late adolescents (Curran & Hill, 2019). Thus, specifically regarding SPP and its consistent solid relation to mental ill-health, Curran and Hill (2019) suggest that socially prescribed perfectionism may be one of the most critical factors that can help explain increases in mental health problems among today's adolescents and young adults. Also, Flett et al. (2022) underscore that *"*socially prescribed perfectionism is a significant public health concern that urgently requires sustained prevention and intervention efforts*"* (p.1). Notwithstanding, these scholars also regard self-oriented perfectionism as an essential vulnerability factor. For instance, in the case of the relationship between self-oriented perfectionism and anxiety in adolescents, Flett and Hewitt (2022) argue:

> Given how debilitating anxiety and chronic worry can be for children and adolescents, as well as for adults, the notion that self-oriented perfectionism is or can be adaptive seems as if it simply does not fit with the broader affective experience of most young people with extreme levels of perfectionism (p. 94).

In sum, the thesis findings on unique perfectionism indicators' associations with adverse and positive mental health indicators align with the view of Flett and Hewitt (2022). Even more comprehensively revealed from the findings (paper I) of adolescents with coexisting high levels of both PS and PC who reported higher anxiety and depressive symptoms than students with a PC-dominant profile. Hence, contrasting the notion of PS as buffering against the influence of PC (Gaudreau, 2016) and, thus, adverse outcomes. Next, these latter findings on different perfectionism profiles are further discussed.

Profiles of Perfectionism and Association with Mental Health

Research during the last three decades has revealed how detrimental perfectionism can be to adolescents' mental health (Flett & Hewitt, 2022). Most studies prior to paper I relied on quantitative and variable-centered approaches. Hence, in paper I, we aimed to illuminate further how different perfectionism indicators coexisted within young adolescents. Using the person-centered approach, latent profile analysis (LPA) allowed us to explore within-person combinations

of unique perfectionism factors across the CAPS and FMPS – and to examine whether students with different configurations differed concerning adverse and positive mental health outcomes.

The five perfectionism profiles retained in paper I revealed that different within-person combinations of perfectionism occur in adolescents aged 13-14. In the theory section, I addressed that comparing the profiles that emerge from the data-driven approach with the 2x2 theory and hypotheses related to positive and adverse outcomes is relevant. Hence, retaining five profiles is one deviation along with other critical matters hypothesized in the a-priori 2x2 perfectionism concept (Gaudreau & Thompson, 2010). Specifically substantial is the deviation from the hypothesis that individuals who experience high mixed-perfectionism will be related to more adaptive outcomes than those experiencing primarily perfectionism from PC (H3), underpinned by a notion of PS as a more "adaptive" indicator (Gaudreau, 2016). Thus, the hypothesis indicates that adolescents with high PS in a high mixed profile could be somewhat protected against adverse outcomes from PC (Gaudreau, 2016). Our findings did not support the hypothesis (H3). Instead, we found that student performers and regular students who experienced high mixed perfectionism were overall the most unhealthy. Our findings align with most studies referred to in the literature overview in this thesis among young athletes, dancers, and adolescent students that used explorative approaches (latent profile analysis or cluster analysis), which failed to confirm the hypothesis (H3; Table 1). Instead, adolescents with high mixed perfectionism either did not significantly differ or fared worse than those with a PC dominant profile (e.g., Cumming & Duda, 2012; Haraldsen et al., 2020; Quested et al., 2014; Sironic & Reeve, 2015). Although few studies have explored a similar young adolescent sample as in the current thesis, there are now apparent findings illustrating the detrimental influence both self- and externally imposed pressures of perfectionism can have, particularly when they co-occur.

Based on the findings from paper I and others (e.g., Sironic & Reeve, 2015), it can be suggested that student performers and regular students who really are afflicted and at risk are those who experience overall high mixed perfectionism alongside those primarily experiencing perfectionism imposed by others and fear failing these others' high expectations. Hence, not only students with a high mixed profile but also those with a PC-dominant perfectionism profile fared worse (i.e., significantly higher anxiety, depression, weight-shape concerns, and lower resilience and self-worth) than those with a profile dominant of personal standards and self-oriented perfectionism and adolescents with non-perfectionism. Furthermore, students with a primarily internally driven perfectionism profile (i.e., the PS dominant profile) reported higher anxiety symptoms than students with overall low to non-perfectionism. Reasonable explanations for the latter finding are experiences of more fearfulness, worry, and rumination about not meeting one's expectations and standards in the primarily PS-driven adolescents than in students not experiencing

such standards (Affrunti & Woodruff-Bordon, 2018; Flett et al., 2011).

One might suggest from the findings of the potential protective factors associated with the different perfectionism profiles that student performers and regular students with more resilience resources and higher self-worth may better withstand excessive performance standards and expectations and seemingly hold off convictions connected to a need to comply with imposed expectations. For instance, resilience is associated with more flexibility (Koole et al., 2015). Thus, it might be that students with more resilience resources experience an enhanced capacity to balance internal and external demands or pressures compared to students with fewer resources. In contrast, perfectionistic individuals, who do not experience such resources, are more vulnerable since their perceptions about their worth are contingent on accomplishing success and the approval of others; thus, continually striving for perfection and avoiding failure is perceived as a must (Curran, 2018; Hill, 2011). Importantly, high proportions experienced high mixed and PC-dominant perfectionism (TD 22%; regular students 38%; comparative perspectives are discussed later). Furthermore, although the PS-dominant profile was related to slightly more resilience resources than the non-perfectionism (2x2 $H1_a$), the PS students had higher anxiety levels than students with non or low perfectionism ($H1_b$), which should be noticed (proportion among TD 33% and 17% regular students). These findings from paper I are especially essential considering the young age of the students (13-14 years). Hence, it is critically essential that school personnel, coaches, and others significant to young students in performance settings are knowledgeable about these issues.

Overall, the thesis findings support other researchers' views and hypothesis of perfectionism being a vulnerability factor in both young performers (Haraldsen, 2019; Flett & Hewitt, 2005; 2014; Hill, 2016) and school-aged students (Flett & Hewitt, 2022) and do not support a buffering role of PS (2x2 hypothesis H3 not supported).

Some aspects considering the explorative approach in contrast to a variable-centered grouping approach to study perfectionism profiles should be noted. Essentially, different profiles across studies might be expected to diverge concerning their combined levels of perfectionism indicators. For instance, when using the data-driven probabilistic LPA approach, a high mixed perfectionism profile may not emerge with equally high scores on all indicators. The LPA approach does not predetermine the profiles in contrast to studies using variable-centered approaches testing the 2x2 hypotheses (Gaudreau, 2016). Accordingly, some researchers argue that profiles from explorative approaches may challenge the interpretation of the impact of each perfectionism indicator on the outcomes, particularly across studies using explorative vs. variable-centered approaches (Gaudreau, 2016; Stoeber, 2018b). However, the explorative approaches do not "force" individuals into predetermined categories, and thus, the explorative approaches may be more aligned with how perfectionism *naturally* coexists in different individuals. Importantly, LPA can also

offer more robust profile membership estimations when individuals are "categorized" into profiles than other cluster analytical techniques or variable-centered a-priori definite grouping approaches (Hofmans et al., 2020; Spurk et al., 2020). Thus, the approach used in the thesis might have given robust estimates on the "natural" emerging coexistence of perfectionism in young adolescents.

Our findings and evidence from other researchers (Flett & Hewitt, 2022; Hill, 2016) suggest that attention towards both dimensions of perfectionistic concerns and strivings in young student performers and adolescents is needed, given their likely costs on their mental health, such as anxiety, depressive symptoms, and weight-shape concerns. Next, I discuss the findings on how different mental health indicators coexisted in adolescents, which were based on similar indicators used to distinguish between the profiles of perfectionism (except for resilience).

Mental Health Profiles

In paper II, four profiles of the coexistence of anxiety, depressive symptoms, weight-shape concerns, and self-worth in adolescents were identified. Two of the four mental health profiles revealed worrying proportions of adolescents with co-occurring high-above or above average anxiety, depressive symptoms, weight-shape concerns, and low-below or below average self-worth, i.e., named *distressed-body concerned*, 9-11% and *dissatisfied* profiles, 26-31%. Both profiles were predicted by socially prescribed perfectionism. Essentially, the proportions in the most unhealthy profile (i.e., *distressed-body concerned* profile) are within the range reported in the previous studies addressed in the theory section (Table 2). Using the data-driven LPA approach, the proportions ranged from 3 (Moore et al., 2019b) to 14% (Zhou et al., 2020) within a *troubled* profile (least healthy) and 8 (Kelly et al., 2012) to 20% (Antaramian et al., 2010) when creating profiles using cut-point strategies. Among elite athletes, the proportion was 8% (Kuettel et al., 2021). The findings in paper II are worrying, considering the students' young age – and because fairly similar unhealthy profiles of coexisting high distress/low well-being are consistently associated with several adverse outcomes, like lower life satisfaction, higher stress levels, and lower school grades than students with healthier profiles (Table 2; e.g., Lyones et al., 2012; Moore et al., 2019a; Suldo et al., 2011). The essential findings of higher self-worth reported among this thesis students in more favorable healthy profiles than students in unhealthier profiles should be noted, and propose that future interventions to strengthen students' well-being should focus on strengthening adolescents' self-worth.

To my knowledge, paper II is the first to explore mental health profiles based on anxiety, depression, weight-shape concerns, and self-worth among TD students and regular students over time. The study's (paper II) four profiles and patterns could perhaps be expected as they seem to align with previous variable-centered studies consistently demonstrating that low self-worth is related to these three adverse indicators (Bos et al., 2010; Duchesne et al., 2017; Moksnes & Reidunsdatter, 2019). Accordingly, I recognize that a variable-centered approach to studying each

mental health indicator along a continuum or by cut-point strategies could be as relevant as the profiling approach. Still, paper II's findings contributed to critical knowledge about how symptoms of anxiety, depression, weight-shape concerns, and self-worth may coexist in adolescents aged 13-16, how prevalent different profiles may be, the influence of perfectionism on such mental health profiles, and the stability and change over two years. The latter has been valuable as the approach used in the present thesis provided further nuanced insights into different adolescents' mental health above purely studying the associations between favorable or adverse factors alone.

As noted, no previous studies have explored similar co-occurring adverse and positive mental health in young TD students as in the present thesis. Most previous studies, as addressed in the theory section, used indicators of distress and well-being and explored the hypothesis of the dual-factor model in school-aged adolescents (e.g., Suldo & Shaffer, 2008). However, only one study existed on elite athletes (Kuettel et al., 2021) and none on young TD students. Most previous studies were explored within the framework of the dual-factor model. Considering this thesis's findings in the context of the dual-factor model, we unsurprisingly failed to reveal a profile of simultaneously high symptoms of distress, body concerns, and self-worth (a *symptomatic but content* profile), which were expected considering that low self-worth is commonly related to adverse indicators. Such a profile in the dual-factor model hypothesizes that high levels of well-being might have a buffering influence on an individual's overall mental health (e.g., Antaramian et al., 2010). Also, another group of individuals not identified in paper II is expected to show low symptoms of distress while also experiencing low well-being (named *languishing or vulnerable*; Keyes, 2002; Suldo & Shaffer, 2008).

Reasonable explanations for not identifying similar mental health profiles as some previous studies (e.g., Antaramian et al., 2010; Suldo et al., 2016) are related to the indicators and analytical approach differing, specifically, those testing the framework of the dual-factor model creating profiles by cut-point strategies (see Table 2; e.g., Antaramian et al., 2010; Suldo et al., 2016). Few studies have explored similar mental health profiles by the data-driven LPA approach. Notably, when using akin explorative approaches as in paper II, others have revealed no pattern of co-occurring high levels of positive and adverse mental health or low levels of all indicators among elite athletes (Kuettel et al., 2021). Also, among adolescent students using the LPA approach, a profile of co-occurring low symptoms of distress and low well-being did not emerge (*vulnerable*; Moore et al., 2019 a; 2019b). Moore et al. (2019a) suggested that too few young students might fit such a profile; thus, it could be statistically unreliable and hard to identify within the LPA framework. Importantly, comparing the findings in paper II to previous studies must consider the different age groups, school contexts, and mental health indicators used (Moore et al., 2019a; 2019b; Kuettel et al., 2021). Moreover, in future studies, it might be valuable to include specific indicators of well-being to more directly explore the hypothesis within a dual-factor model in similar samples

as in the present thesis. The latter is essential as studying the absence of mental ill-health is viewed as insufficiently capturing the complexities in adolescents' mental health (Suldo & Shaffer, 2008).

Specifically central from paper II is the findings of high stability in the worrisome mental health profiles from ages 13 to 16 years (78% and 93% remained in *distressed-body concerned* and *dissatisfied* profiles). Previous LTA findings have indicated more instability among students with unhealthier profiles (Moore et al., 2019b) than we found among our younger students. Also, the overall direction of change revealed a tendency among those who changed their profile to transition to an unhealthier profile, especially girls. This finding may reflect that mental health problems related to anxiety, depression, and body concerns emerge during the early teens (Solmi et al., 2022). The thesis findings of girls' high likelihood of an unhealthy profile and remaining in such a profile is a matter of concern that needs attention and prevention efforts. Hence, because few studies have explored mental health profiles over time in adolescents, more studies are needed in this field.

The thesis has contributed new knowledge about how essential and common mental health indicators for mental health and well-being among adolescents may co-occur. However, similar studies are required to examine if the findings can be replicated in larger samples, especially among young Norwegian student-athletes considering the increase of schools in the last 7-8 years. It would be valuable if such studies included different age groups, school contexts, and longer study periods. Lastly, the findings of adolescents aged 13-16 high probability of being in and remaining in a profile with co-occurring elevated levels of anxiety, depressive symptoms, and body concerns combined with low self-worth are disquieting and require attention from practitioners and researchers.

Comparative Perspectives

Gender Differences

Gender differences were found in both papers I and II. Specifically, the high mixed perfectionism profile revealed a significantly higher proportion of girls (16 %) than boys (6%). Few previous studies have explored such gender differences in school-aged students' perfectionism profiles. However, one relevant study is that of Sironic and Reeve (2015), who found that girls were more likely than boys to be in a non-perfectionism profile than a PS-dominant or externally motivated perfectionism profile. Our findings did not indicate such a pattern in different perfectionism profiles among girls vs. boys. Instead, this thesis's findings indicated that more girls experience higher self- and socially imposed pressures than boys aged 13-14. These findings are consistent with and might give further support related to previous studies on the general Norwegian adolescent population, which have reported that girls are more exposed to pressure, experience more problems coping with the pressure, and experience higher pressure for school achievements than boys (Bakken et al., 2018). However, in our study, the most noticeable differences related to

proportions in different perfectionism profiles were among TD compared to regular students (which are further discussed later). Still, more girls than boys were likely to have the most debilitating co-occurring levels of anxiety, depressive symptoms, body concerns, and self-worth at ages 13 to 16 (paper II) and to change to unhealthier ones over time.

The gender differences reported in paper II may be seen in relation to previous research reporting that anxiety, depressive symptoms, and body concerns are relatively similar in girls and boys before puberty, and differences emerge during the early teens (NIPH, 2016). That is, from puberty, a higher frequency of such internalizing symptoms is reported among girls than boys, while more boys typically experience externalizing symptoms (Campbell et al., 2021; NIPH, 2016). Previous research has revealed that two out of three Norwegian adolescents with significant symptoms of anxiety and depression are girls (NIPH, 2016). Hence, findings from this study (paper II) support national and international trends (e.g., Duchesne et al., 2017; McLean et al., 2021) regarding boys in general faring better than girls in their early teens on the mental health indicators of anxiety, depression, and body concerns. Also, our findings align with previous studies on self-worth during this age, which tend to favor boys until the age of 16 years (Zuckerman et al., 2016).

Although the "gender gap" in mental health is referred to in numerous studies, scholars still report that the underlying understanding and explanations for the differences between girls and boys are not well understood or widely studied and are still warranted in future research (Campbell et al., 2021; Patalay & Demkowicz, 2023). However, some explanations have been suggested by which differences in symptoms of distress might relate to girls' perceiving higher expectations and pressures about school performances than boys (Wiklund et al., 2012). Also relevant is societal appearance expectations for girls compared to boys. During puberty, girls may perceive their bodily changes as developing further from society's appearance ideals. In contrast, boys might experience the changes as developing closer to the body ideals (lean/muscular), which may explain some of the higher occurrences of body-related concerns we and others have found in adolescent girls than boys (Bearman & Stice, 2008; McLean et al., 2021).

The gender differences in bodily changes by which girls are especially prone to body-related concerns during puberty are pronounced explicitly in weight-sensitive sports and dance (Sundgot-Borgen et al., 2013). Critically, when studying the occurrence of weight-shape concerns at age 15-16 in paper II, 10% of TD student girls experienced weight-shape concerns above clinical cut-offs. The high level of weight-shape concerns in these student performers girls might signify clinically significant body dissatisfaction associated with eating disorders (Carter et al., 2001; Friborg et al., 2013). These results indicate that specific preventive measures that take into account the gender gap might be especially suitable for this age group. The finding from paper II is also important because body dissatisfaction is an essential risk factor for developing relative energy deficiency in sports

(RED-s; Mountjoy et al., 2018). Also, since RED-s can lead to severe health and performance consequences (e.g., menstrual dysfunction, poor bone health, psychological problems) in young performers (Ackerman et al., 2019) and young TD students in sports and dance are understudied, further endeavors to explore and identify risk and protective factors within TD school contexts for students below 16 years of age are warranted.

Student Performers vs. Regular Students

Few studies have previously included TD students and not at least the comparison with regular students (Kegalears et al., 2022). There were pronounced school-type differences in paper I; in paper II, the differences between students were more pronounced for gender than for school affiliation. The two most debilitating profiles of perfectionism (i.e., high mixed perfectionism and PC dominant profiles) characterized high but lower proportions of TD students (22%) than regular students (38%). Even higher proportions of TD students (33%) than regular students (17%) had a PS-dominant profile. Also, the proportion in the most unhealthy mental health profile was lower in TD student girls (6-7%) than in regular schoolgirls (15-18%). Similar comparative findings have not previously been reported. However, as addressed in the theory section, perfectionism profiles in athletes and dancers have been reported with high proportions in mixed perfectionism (19-21%) or a PC dominant profile (14-31%; Haraldsen et al., 2021; Quested et al., 2014; Cumming & Duda, 2012). In school-aged students, similar findings are 7-29% with high mixed and 24-28% with a PC dominant profile (see Table 2). Thus, it is evidently frequent to experience perfectionism in adolescents, and many young students might be at increased risk of experiencing mental health problems related to high pressures from perfectionism.

As discussed in paper I, the differences found in perfectionism profiles between the students from the TD schools versus regular schools might appear counterintuitive, given that talent development schools and classes have been identified as high-expectation environments (Haraldsen et al., 2020; Skrubbeltrang et al., 2016). However, the findings align with one of the few studies on student-athletes versus non-athlete students within the same age range as in this thesis, which reported that student-athlete girls tended to report overall better mental health than non-athlete student girls (Brand et al., 2013). Furthermore, the domain differences in the present thesis, concerning the fact that school type was not predictive of mental health profile classification at T2 could point to TD students' later development of mental health symptoms. This hypothesis might require further exploration over an even longer time than in this thesis.

Considering the differences between the student groups, it might be that more TD students have developed better abilities to adjust their goals and standards than regular students, which is beneficial to avoid increased strains if needed (Nicholls et al., 2016). In contrast, it might be that more regular students perceive more discrepancy between their abilities and capacity to meet and

adjust perceived high standards and expectations. This hypothesis of differences needs to be further examined, as from the qualitative paper (III), many TD students also had challenges adjusting their expectations and standards. However, the TD students' enjoyment and dedication (paper III) to their activity might be some further explanations. Also, the TD students had actively applied to the schools and passed the criteria, and were a selected group of students. Indeed, the differences may be explained by the beneficial factors, like increased well-being, enjoyment, and self-worth associated with sports and performing arts participation reported by others (Chappell et al., 2021; Eime et al., 2013; McCrary et al., 2021). For instance, it might be that TD students perceive enhanced self-worth in general or specific self-esteem through experiencing being physically competent and having high abilities in sports or performing arts (Schmidt et al., 2015). Notwithstanding, the findings from papers I and II should not undermine the fact that relatively high proportions in TD schools were identified with worrisome mental health- and perfectionism profiles, especially among girls, which might negatively impact their well-being and development.

Perfectionism and Mental Health in Young Student Performers and Regular Students – Summary

To date, the themes explored in this thesis, perfectionism–and mental health profiles, have generally been studied separately within athletes/performing arts and conventional school contexts at the lower secondary school level (e.g., see Tables 1 and 2 in the theory section). This thesis has illuminated different perfectionism profiles (paper I) and the dimensions of socially prescribed and self-oriented perfectionism associations with mental health profiles in different school settings (paper II). Expectedly, as previous research on adolescents' mental health in general (Inchley et al., 2020; NIPH, 2016) and on mental health profiles, specifically, have reported (Table 2), most students seemed to be doing well mentally, and TD students (especially boys) tended to fare better than the regular students. Still, there were disquieting high proportions of worrisome perfectionism and mental health profiles during their early teens in the lower secondary school settings, which aligns with international trends (Flett & Hewitt, 2022; Sironic & Reeve, 2015; Inchley et al., 2020).

The thesis confirmed the possible detrimental mental health associations in adolescents with coexisting high levels of perfectionism, demonstrating no buffer from internalized perfectionism indicators. Further nuances were revealed by the unfavorable correlates of SPP in distinct mental health profiles, adding further support for increased awareness of SPP in student performers and school-aged students (Curran & Hill, 2019; Flett et al., 2022). Furthermore, students' higher self-worth was related to experiencing lower levels of perfectionism (paper I) and anxiety, depressive symptoms, and body concerns (paper I and II). Hence, as addressed explicitly in paper II, considering that students with more favorable mental health profiles reported higher self-worth than students with unhealthier ones, it seems reasonable to support others' calls for interventions

that focus on strengthening self-worth as crucially valuable means for strengthening well-being and decreasing adverse outcomes (Sowislo & Orth, 2013; Sundgot-Borgen et al., 2020). Furthermore, socially prescribed perfectionism might be one of the essential factors contributing to mental health problems in young people (Curran & Hill, 2019; Flett et al., 2022). Hence, it seems urgent that school personnel, coaches, and others significant to adolescents are attentive and knowledgeable on these issues, as it can be pivotal for the students' healthy development and well-being.

The contribution of the thesis's papers I and II findings is critically valuable to note, as they have provided knowledge about mental health and perfectionism in a highly understudied group of young student performers. The following section will provide specific considerations connected to the young TD students, discussing the qualitative study on expectations and well/ill-being more broadly and how these findings may be connected to papers I and II findings.

Specific Considerations of Young TD Students: Expectations, Perfectionism, and Mental Health

This doctoral project was initiated in the school year 2015/2016 when knowledge of the mental health status among young Norwegian students in specialized TD schools for athletes and performing arts students in lower secondary school (ages 13-16 years) was limited. Also, internationally, primary studies on this young age group of student performers in sports and the performing arts were lacking (Kegelaers et al., 2022). Hence, there was a clear knowledge gap and a need for this thesis studies on perfectionism, expectations, and mental health to bring the field forward and to inform best practices. By increasing the knowledge about these essential aspects, which are considered to underpin the mental health and wellness of the youngest students, more sound practices could be developed and offered to performers who attend Norwegian specialized schools in sports and performing arts. Hence, this is even more relevant today, as these types of TD schools have increased in numbers without a sound evidence base to draw upon.

High proportions of student performers experienced high mixed and PC-dominant perfectionism at ages 13-14. However, an even higher proportion seemed to be driven by internalized perfectionism (PS dominant profile). Students in the PS-dominant profile reported moderately above-average PS, and these findings might be viewed in connection with the performers' accounts of self-oriented expectations in the qualitative study a year later. Meaning there was a coherency between the quantitative paper I and the qualitative findings related to the young student performers' explicit expressions of their expectations, e.g., "I think it actually is me who sets the highest standards and expectations. I do not feel anyone is pushing me" (student-athlete, 15 years old). This finding is consistent with characteristics of performers with a PS-dominant profile who are less likely to participate in activities like sports or dance to meet others' expectations (Molnar et a., 2021). However, the in-depth accounts in paper III illustrated how

student performers' self-oriented expectations at this young age are complex and somewhat paradoxical given their notion of having appropriate expectations and standards on one side and the other that their expectations could generate negative experiences.

In paper I, we stated that «at high-performance levels, an internalization of high standards and goals are necessary and may serve as driving factors to reach further development and achievements» (p. 8). Indeed, the findings in the qualitative study (paper III) exemplified how the young performers experienced expectations as stimulating to hard work. However, although most students perceived they had manageable expectations, they still found it hard to lower them even when aware of the risks they could experience if continuing on such a path (i.e., risks like injuries and illnesses). A reasonable explanation for the students' need to keep up their expectations – instead of lowering them to avoid strains – is their relentless focus on improvement and future opportunities (Nordin-Bates & Kuylser, 2021; Flett & Hewitt, 2014). It seemed to be a discrepancy between what the student performers thought were appropriate expectations and how they could manage them. The discrepancy was also found in how the students experienced expectations from coaches/teachers and parents (paper III).

The student performers experienced supportive coaches, teachers, and parents; these significant others "only expected them to perform to the best of their ability" (paper III, p. 97). Still, in paper III, some critical issues were raised about the students' pursuit of securing acknowledgment and the importance many invested in avoiding letting the coaches and teachers down to avoid hampering future opportunities. The dependent relationship with coaches/teachers may be generated from socially prescribed perfectionism, which, underpinned by the results from papers I and II and other relevant studies, demonstrate associations with mental ill-health (Flett & Hewitt, 2022; Hill, 2016). Indeed, those constantly evaluating their achievements and self-worth in the mirror of coaches' feedback and corrections might be particularly vulnerable (Hill et al., 2011). Individuals with socially prescribed perfectionism highly regard the need to secure approval and avoid rejection from others as critical; yet, perceiving these others never are satisfied with one's accomplishments as they monitor primarily for critique (Flett & Hewitt, 2022). In turn, these perceptions are likely to be reinforced, increasing them over and over again, affecting the student performers' expectations and perfectionism. It is also imperative to consider that socially prescribed perfectionism may be internalized during adolescence, leading to an increase in self-oriented perfectionism through high exposure to others' demands of perfection by which the individual eventually internalizes the pressures into their own demands and self-system (Flett et al., 2022). A good case example is from the former top-ranked tennis player Andre Agassi (2010), who writes in his autobiography about his struggles with perfectionism during his career and, here, from when he was a junior player on how he experienced the internalization of his father's demands:

> After years of hearing my father rant at my flaws, one loss has caused me to take up his rant. I've internalized my father—his impatience, his perfectionism, his rage—until his voice doesn't just feel like my own, it is my own. I no longer need my father to torture me. From this day on, I can do it all by myself (p. 38).

The findings in paper III signified the student performers' sense of obligation to repay coaches/teachers for investing in them. This finding needs attention as such a coach-athlete-dependent relationship gives coaches undue power (Rylander, 2015). When such a coach-performer climate is allowed to develop, the fear of negative evaluation and being deselected for opportunities might hinder some young performers from being honest about their needs (Kerr & Stirling, 2017; Rylander, 2015). Further, the feelings of responsibility of repaying through achievements were also found in relation to parents. Yet, overall, the performers expressed that they experienced positive parental social-emotional and financial support. However, due to experiencing parents' sacrifices and financial investments, some expressed that they felt a particular responsibility to pay back their parents with progression: "I think a lot about how much my family has sacrificed. I want to show my parents I can make it and show them I am doing my best because of the opportunity I have been given" (dance student, paper III, p. 98). These findings emphasize how critical it is that parents are mindful of how children might experience and be influenced by instrumental support (Ryan Dunn et al., 2016). However, in sum, the results supported previous research that suggests that the unique role of parents is to balance their involvement in order to facilitate healthy development and well-being in high-expectation environments (Elliott et al., 2018; Harwood & Knight, 2015).

An important finding to note from the qualitative study is the experiences of conflicting and unbalanced expectations. This finding was connected to student performers' sense of responsibility towards meeting parallel expectations from several areas, i.e., keeping up with school performance expectations and performing at their best as athletes, dancers, and music students. Although these findings might not be unexpected, they are critical, especially considering the students' young age, by which the continual multidimensional strive may generate unnecessary strains, which, in turn, may lead to injuries, burnout, or illnesses (Flett & Hewitt, 2022). Indeed, the student performers clearly expressed their challenges with balancing the expectations, high workloads, tight schedules, and frequently feeling tired (sometimes exhausted). Some even described that they became more anxious, irritated, or had more headaches or concentration difficulties when the total workload was unbalanced. These findings in paper III, alongside findings addressed earlier in paper I and II, are consistent with previous research reporting several negative aspects of unreasonably high expectations, perfectionism, and overscheduling on young performers' mental and physical health and well-being (Bergeron et al., 2015; LaPrade et al., 2016; Walton et al., 2021).

In sum, this thesis's three papers add important knowledge and insight to the extant

literature about perfectionism, expectations, and mental health in young adolescents attending specialized sports-, performing arts-, and regular schools. Because of the young age of the students in this thesis, it seems obvious to emphasize the critical role coaches, teachers, and parents of young high-ability performers play in facilitating positive experiences and the importance of being knowledgeable and ethically aware of the vulnerability issues concerning adolescents' expectations and perfectionism. Future studies that explore students within and across contexts, e.g., sports and school, would be valuable for further understanding student-performers well-being. In this thesis, the quantitative papers were not focusing on a specific domain. However, the qualitative paper contributed with further insight into the young performers' experiences of conflicting expectations and challenging workloads related to a need to (always) perform at their best in their sports, dance, music, and school, which could negatively influence their well-being. These results and others (e.g., Lundqvist et al., 2023; Haraldsen et al., 2020) highlight how critical positive social-, emotional-supportive, and well-functioning psychosocial environments are to the well-being and development of young performers. Lastly, it might be valuable to evaluate further how young performers' time is organized by involving the performers, the parents, coaches, school leaders, and sports clubs. That is because it might be a structural and organizing challenge related to negative experiences, which were not addressed in this thesis.

Methodological Reflections of Strengths and Limitations

Several strengths and limitations have been addressed in each paper I-III. In this chapter, I address some of the overall methodological strengths, followed by overall limitations related explicitly to the sample and the perfectionism factor model (paper I), and finally, some considerations about using variable-centered versus person-centered analytical approaches.

Strengths

First, it is a strength of this doctoral thesis that we followed the sample for three consecutive school years during lower secondary school, i.e., in 8th, 9th, and 10th grade. The first cross-sectional study included student performers and regular students aged 13-14 (paper I). The second paper was a prospective study, including the student performers and regular students' data from age 13-14, and a second data collection at age 15-16 in 10th grade. The third paper was a qualitative interview study including student performers aged 14-15 in 9th grade. Together, these approaches made it possible to provide comprehensive data about perfectionism, expectations, and mental health. Because one age cohort was followed during their developmental years from ages 13 to 16, the thesis has given essential insight into an understudied group of young student performers. Further, the connection between the study findings in this thesis and their overall meaning is strengthened by the comprehensiveness of the three studies as a whole.

Secondly, it is a strength of the thesis that all available specialized sports schools and talent development classes for ballet and music students at the particular time participated, contributing unique insight into this population. The young TD students' participation was pivotal as previous research on the themes addressed in this thesis on Norwegian student performers aged 13-16 years was absent when initiating the data collection in 2016.

Third, the analytical approaches, LPA and LTA, used in the quantitative papers to explore perfectionism profiles (paper I: LPA) and mental health profiles (paper II: LPA and LTA) are regarded as robust data-driven approaches. These data-driven analytical methods are recommended over a-priori definite clusters approaches in the literature because of their solid and unbiased estimations of profile membership (Hofmans et al., 2020; Spurk et al., 2020). Hence, using LPA (paper I and II) and LTA (paper II) made it possible to provide further solid and nuanced data about the variations in adolescents' perfectionism and mental health. A further strength is that we used an advanced statistical modeling program (Mplus) to validate all models thoroughly. This approach provided essential model fit indices and information when validating the perfectionism models and mental health measures before conducting the profile analyses and in the last step for evaluating the LPA and LTA profile solutions. Lastly, using the advanced latent modeling program made it possible to handle missing data by the model-based data procedure FIML, which was a further strength (Enders, 2001; 2022). (Note that the perfectionism model is discussed in the limitation section).

Fourth, the qualitative study's credibility and quality were enhanced by several considerations taken throughout the study, which was an ongoing process from the development of the interview guide through the interviews, analysis, and interpretations of the findings and writing-up. The specific strategies are thoroughly addressed in paper III.

My background as a former athlete in youth artistic gymnastics and senior elite Taekwon-Do was an added strength, yet, it could have challenged the credibility of the qualitative paper. Acknowledging that proximity to the field could restrain my openness to alternative questions or interpretations (Berger, 2015; Malterud, 2001), my preconceptions and relative proximity to the field were an ongoing process of reflection, not only during the qualitative study but throughout the whole Ph.D. project. Hence, instead of challenging the research process, my background and experiences became an invaluable resource. Particularly in the interview setting, it enhanced the chance for a mutual understanding and, thus, in the performers' sharing of their experiences, e.g., by contributing to comprehensible and more precise questions and follow-up questions about the themes in a manner the young performers understood the meaning of. Furthermore, the comprehensiveness of the analysis and interpretations of the findings was enhanced, as well as in the writing process of connecting theory and the performers' experiences.

Limitations

Sample Issues

In this Ph.D. thesis, an overarching aim was to increase the knowledge about the mental health and well-being of young adolescents who are invested in sports, ballet, and classical music. Hence, conducting the studies as school-based rather than in community sports clubs was a deliberate choice because students attending the specialized schools could represent a unique and highly dedicated population of understudied young performers. When initiating the first data collection in the spring semester 2016, only three specialized sports schools existed in Norway for lower secondary school students. Also, as each sports school included two classes with a maximum of 30 students in each class at each grade, few student-athletes were eligible for inclusion in this Ph.D. project. Furthermore, the classes for classical ballet and music students did not include adequate numbers of students to parse out each group in the quantitative papers I and II. Hence, comparative analyses of each performer group were not possible, and the statistical analyses had to include the total TD student sample to provide adequate power.

A previous doctoral thesis on older adolescent performing arts and athlete students (Haraldsen, 2019) also conducted quantitative analyses on the whole sample due to insufficient numbers to parse each group. Similar remarks as raised by Haraldsen (2019) about homogeneity and heterogeneity when studying the sports, dance, and music students as one group can be raised for the present thesis, albeit the present thesis included younger performers. That is, differences between the three performer groups might indeed exist at this age, yet, as a selected group to specialized schools and talent development programs, they might be considered a relatively homogenous group representing young high-ability performers. Although comparative findings related to the three TD groups could not be offered from papers I and II, the qualitative study (paper III) provided further insight. Indeed, we found many similarities across the three TD students' groups related to their experiences with self-imposed and socially prescribed expectations and well-/ill-being. Future comparative studies on a similar age group as in this thesis would certainly be interesting and valuable. However, a school-based approach might, at this point, not be adequate for including a sufficient number of young performing arts students as there is only one school each to draw on.

The thesis' quantitative papers were the first to provide data on perfectionism- and mental health profiles among students representing specialized sports, performing arts, and regular school contexts in the age group between 13-16 years. It is a strength of this thesis that students representing all Norwegian specialized TD sports schools, ballet, and music classes for the age group at the time (Spring 2016) were included. However, the fact that we chose the school-based approach may also be considered a limitation due to unbalanced samples of student performers

versus regular students. Still, they presumably represented the total TD student population because all existing schools were included. Thus, the included students were representative of the TD student population at the time. Still, in terms of generalization purposes and considerations of robust proportion estimates now (2023), with the increased number of specialized sports schools in mind, the findings from the quantitative papers I and II on perfectionism and mental health profiles for each school type might be regarded as suboptimal today. Indeed, there has been an increase in the number of sports schools from three to above 20 since data collection for paper I, so a corresponding study on a contemporary representative sample would be valuable.

The Perfectionism Factor Model (Paper I)

The present thesis paper I and others have lent mixed support to the psychometric properties of the original six-factor structure of the FMPS (e.g., Cox et al., 2002; Sironic & Reeve, 2015; Stumpf & Parker, 2000; Stöber, 1998). Hence, first, I attend to some specific issues about the FMPS, followed by some concerns related to the merged four-factor model of the FMPS and CAPS used to explore perfectionism profiles in this thesis.

Paper I included items from all six FMPS factors, despite research suggesting that the organization factor is not a core dimension of perfectionism (e.g., Frost et al., 1993; Hill, 2016). Also, because experiences of parental expectations and criticism might contribute to the development of perfectionism, some scholars suggest that the FMPS parental factors might be relevant when studying adolescents (Sironic & Reeve, 2015). However, others argue that parental factors should be regarded as antecedents and correlates of perfectionism (Rice et al., 2005; Stoeber, 2018a; Stoeber & Otto, 2006). The inclusion of the items from these three factors in paper I, which is debated, might be viewed in light of my novice experience with the measure of perfectionism at the time. However, our evaluation of the FMPS has contributed to further evidence about issues related to the number of factors and problematic items (i.e., low loadings and cross-loadings, essentially the items CM10, CM18, PS4). An adjusted four-factor model was retained, which aligns with other reports on the original FMPS among adolescents (Hawkins et al., 2006; Sironic & Reeve, 2015) and samples of children, college students (Stumpf & Parker, 2000) and adults (Stöber, 1998).

In paper I, the main aim was to explore how different factors of perfectionism may co-occur in adolescents by exploring their perfectionism profiles. In this process, factor analysis was performed to validate the factor structure across the items of CAPS and FMPS. As addressed in this thesis' method section, the factor analytical process involved exploring if and how CAPS and FMPS items and factors merged (e.g., the performance of item factor loadings). Final competing CFA models resulted in the retention of four factors because the original eight-factor model did not improve model fit substantially compared to the retained model. Also, the four-factor solution substantially reduced model complexity (i.e., four factors instead of eight) and was retained for

parsimonious reasons. The latter was predominantly preferred because the LPA modeling of perfectionism profiles used the factor model.

Although our four-factor model was within the acceptable region for the model misspecification index, RMSEA, and standardized root mean square residual (SRMR), neither an eight-factor model with all original factors nor the retained reached satisfactory CFI. The unsatisfactory CFI might relate to the FMPS organization factor, which tends to show a weak correlation with the other factors (Frost et al., 1990; 1993). Also, the correlation matrix of paper I showed a weak correlation between organization and other factors. Further adjustments to the factor model and leaving out the organization factor might have been a more optimal solution than the one used for exploring perfectionism profiles. Hence, I recognize that the retained four-factor solution in paper I was not excellent. Evidence is abundant concerning the organization factor, and future studies should undoubtedly include the organization factor as a correlate instead of a core factor in a perfectionism model (Frost et al., 1993; Hill, 2016). Still, our reduced factor model (i.e., evaluated by several fit indices) contributed to gaining further insight into the nuances of how different perfectionism factors coexisted in adolescents.

Evaluating whether different models and measures of perfectionism clearly capture the construct is critical (Flett & Hewitt, 2022). Indeed, scholars have argued that even though a perfectionism model might be reduced and collapsed to fewer factors with adequate model fit, the conceptualization and clinical applications of the factors might be blurred if they are merged (Flett & Hewitt, 2015). These researchers emphasize the critical value of retaining the distinction between original factors. Accordingly, although the paper on perfectionism profiles provided further insight into how different perfectionism factors coexisted in young students, I recognize the limitations as addressed above regarding the factor model used in the first thesis' published paper.

Person-centered vs. Variable-Centered Analytical Approaches (Paper I and II)

This thesis aimed to contribute with further and comprehensive nuanced knowledge on student performers and school-aged adolescents' perfectionism and mental health. As noted in the methods section, most research has relied on variable-centered approaches. The variable-centered approaches typically examine associations between variables within a population without accounting for the existence of different unobserved subgroups with diverse configurations of the study variables (Howard & Hoffman, 2018). The advantage of the person-centered approaches, LPA and LTA, used in the present thesis is that they allowed for exploring such unobserved configurations of perfectionism (paper I) and mental health (paper II). Thus, detailed and comprehensive information about these variables' heterogeneity in the thesis' young sample was offered. Still, some considerations are relevant to note. Specifically, some researchers have argued that perfectionism profile solutions that fail to show a discontinuity, i.e., no qualitatively different

within-person PC and PS combinations, might not contribute to further knowledge about perfectionism (Gaudreau, 2016). In these circumstances, when the perfectionism profiles only differ quantitatively (similar shapes), some suggest it might be as relevant to study each unique indicator's association with different outcomes (Gaudreau, 2016). In this thesis, the profiles revealed qualitatively different patterns, albeit two profiles seem redundant, the *low-* and the *non-*perfectionism profile (which remained when examining a four-profile solution). Still, our analytical approach gave relevant, informative, and important new knowledge on perfectionism profiles and their different association with positive and adverse mental health, which alternative variable-centered approaches cannot reveal (Nylund-Gibson et al., 2023).

Considering the approach and findings of the thesis' mental health profiles, as earlier addressed in the discussion of the findings, our profiles might be anticipated, as studies using variable centered-approaches typically show that high levels of the three adverse indicators are related to lower self-worth (Bos et al., 2010; Duchesne et al., 2017). However, adopting the person-centered approaches, LPA and LTA, seemed fruitful as it contributed further insight into the variation of the coexistence of anxiety, depressive symptoms, weight-shape concerns, and self-worth among students aged 13-16 and how prevalent and stable such profiles can be. In addition, new insight was provided about adolescent student performers. However, further research on mental health profiles across school contexts is needed to examine if similar or divergent findings emerge using similar indicators and larger samples. Furthermore, future studies on perfectionism and mental health profiles might benefit from using a similar person-centered approach like LPA (Moore et al., 2019b; Nylund-Gibson et al., 2023). That is because LPA gives more robust trustworthy estimates for classifying individuals to different profiles than a-priori, or often arbitrary set, cut-point strategies that create profiles (Nylund-Gibson et al., 2023). The latter cut-point-strategies are, thus, more likely to misclassify individuals as an individual will be categorized as either over or below a cut-point without considering the in-between "categories" (Nylund-Gibson et al., 2023). Hence, the LPA approach might be crucially valuable in future research examining within-person combinations of different perfectionism and mental health indicators.

Ethical Considerations when Studying Young Teenagers' Mental Health

Reflections on the Procedures of the Doctoral Project

As addressed in the methods section, all studies were pre-approved by the Regional Committee for Medical and Health Science Research Ethics (see appendices 1-4) and conducted according to ethical guidelines and legislation. In this section, I reflect on practical and ethical considerations that have been important in this doctoral project.

This doctoral thesis involved young adolescents, starting the first data collection at ages 13-14, for which the students were asked to answer questions about aspects of their mental health.

Hence, this Ph.D. project required several general and specific considerations related to the participants' young age; during the planning, data collection, and writing. First, it was an unfamiliar setting for most students to participate in a research project. Hence, to accommodate and enhance the possibility of creating a safe setting by which students would feel secure while taking part in the project, it was critically valuable to be present at each school and class to orally inform the students about the purpose of the project in advance of the day of data collection and at the day of data collection. Second, it was critically valuable that I (and sometimes with a research assistant(s)) was present to answer any questions the students could have when answering the questionnaires. Acknowledging that the presence of a researcher might, contrary, be a limitation creating social desirability bias where, for instance, some students might answer questions as they presume would be socially acceptable to not presenting themselves in adverse terms (Galione & Oltmanns, 2014). It is impossible to protect entirely against such response biases in self-report studies. Furthermore, the considerations and evaluations carried out during the entire research project described throughout this Ph.D. thesis have enhanced the trustworthiness of the data gathered and the findings reported (e.g., by carefully validating and evaluating the measurements, using multiple measures, and adopting quantitative and qualitative methods).

Most TD students participating in the qualitative interviews had met with me a year before at the quantitative data collection and information meetings. Taking part in a face-to-face interview was a new and unfamiliar situation for the student performers. The meeting and conversation with the student performers when inviting them to participate were valuable. For instance, some students raised concerns about whether they knew enough about the theme or how much they could contribute as participants. These concerns raised by some students were confirmed by a teacher who had conversations with some students before the informant meetings. It was also a new situation for me to interview such young students. Hence, the first meeting was critically meaningful to obtain an impression of whether students had concerns about participation and to be able to provide the necessary information to the students about what participation in an interview entailed. Although the first meeting and conversation with the students seemed critically valuable for the students being assured about the purpose of the study and what it meant to take part in qualitative interviews, it is conceivable that some students declined participation for the same reasons (e.g., concerns about how much they could contribute). Indeed, most students invited to participate in the qualitative study consented to participation. Still, from those who declined, it might be that their experiences could have brought some other, further, or even more nuanced findings not covered in this thesis. In sum, I would argue that the considerations and steps taken throughout the entire study period enhanced the possibility of providing quality and trustworthiness to the qualitative study findings, as also earlier addressed in the methods section and discussion.

Implications and Future Research

Overall, it seems reasonable to suggest from the thesis' and previous findings by other researchers that future prevention programs focusing on reducing the pressures, specifically from socially prescribed perfectionism, and on enhancing self-worth can be crucially valuable. Furthermore, it might be beneficial to include parents, coaches, and teachers to offer additional and essential perspectives that can be pivotal for the positive development of youths' mental health and well-being (Flett et al., 2022). Below I list some suggestions for future studies and practical perspectives. Further studies and the listed perspectives and approaches may offer further essential knowledge and contribute to positive experiences, prevent attrition, and reduce potential adverse health effects due to perfectionism and expectations from several areas:

Future research

- Replication studies on specialized lower secondary TD sports schools
- Future studies on motivational climates and perfectionistic climates in different performance contexts' in the age group between 13-16 years
- Studies exploring the more in-depth reasons for the gender gap in adolescents' mental health
- Whether mental health symptoms emerge later in TD students than in regular students and thus, a longer study period is required (longitudinal design)
- Future studies should examine how different TD schools facilitate the school-practice-leisure time balance
- In future studies, it would be interesting to explore whether contextual matters may explain differences in mental health between the school contexts of TD vs. regular schools

Perspectives for practice

- Regular health screening, including mental health, might be beneficial and possible in TD schools to detect students at risk for mental health problems early. However, such practices would need to be evaluated by studies assessing their effects.
- It seems necessary to evaluate adolescents' experiences with access to support persons (e.g., appropriate access to school nurses or school psychologists).
- It seems of crucial value that schools and school personnel are provided with the means to intervene early

Conclusions

This doctoral thesis's purpose was to provide further insight and add to the extant literature knowledge about expectations, perfectionism, and mental health in an understudied group of young Norwegian student-athletes, ballet, and music students. The overall findings from the thesis suggest that most student performers and the comparison group of regular students have good mental health, yet, a high proportion had profiles of perfectionism and mental health that likely affect their everyday lives. The prevalence of perfectionistic tendencies and mental health symptoms aligning with international trends provided further evidence signifying a need for sincere attention and prevention efforts related to perfectionism and unbalanced socially imposed- and self-directed expectations at the variance of realistic expectations and standards in order to help reduce the risk of mental health difficulties and enhance the well-being of student performers and adolescents.

By comparing the student performers with regular students, the quantitative studies added further knowledge revealing that at age 13-16, student performers fare better overall than regular students. However, these findings should not undermine the fact that the thesis illustrated worrisome perfectionism and mental health profiles and experiences with expectations that adversely influenced student performers' well-being.

The qualitative study specifically revealed that young student performers experienced challenges with balancing their expectations, coming from several areas like school, family, and practice/training. It appears of pivotal value that school personnel, coaches/teachers, and others significant to the students are attentive and knowledgeable of these matters and are provided with the means needed to intervene when required. Finally, this thesis's findings highlight the critically valuable role of coaches, teachers, and parents of young student performers as they play decisive roles in facilitating positive and supportive environments.

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Appendices: Papers I - III

Paper I

Stornæs, A. V., Rosenvinge, J. H., Sundgot-Borgen, J., Pettersen, G., & Friborg, O. (2019). Profiles of perfectionism among adolescents attending specialized elite-and ordinary lower secondary schools: A Norwegian cross-sectional comparative study. *Frontiers in Psychology*, *10*, 2039. https://doi.org/10.3389/fpsyg.2019.02039

frontiers in Psychology

ORIGINAL RESEARCH
published: 06 September 2019
doi: 10.3389/fpsyg.2019.02039

Profiles of Perfectionism Among Adolescents Attending Specialized Elite- and Ordinary Lower Secondary Schools: A Norwegian Cross-Sectional Comparative Study

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OPEN ACCESS

Edited by:
Éric Laurent, Université Bourgogne Franche-Comté, France

Reviewed by:
Gil Goldzweig, Academic College Tel Aviv-Yaffo, Israel
Caterina Lombardo, Sapienza University of Rome, Italy

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Specialty section:
This article was submitted to Psychopathology, a section of the journal Frontiers in Psychology

Received: *04 March 2019*
Accepted: *21 August 2019*
Published: *06 September 2019*

Citation:
Stornæs AV, Rosenvinge JH, Sundgot-Borgen J, Pettersen G and Friborg O (2019) Profiles of Perfectionism Among Adolescents Attending Specialized Elite- and Ordinary Lower Secondary Schools: A Norwegian Cross-Sectional Comparative Study. Front. Psychol. 10:2039. doi: 10.3389/fpsyg.2019.02039

The versatile construct of perfectionism has been heavily debated, e.g., its nature or measurement constituents, how it influences performances or, most importantly, our health. Conventional linear analyses seem inadequate to address such challenges. Hence, we used a latent variable and a person-centered approach to identify different patterns of perfectionism, and their relationships with psychological health as outcome among early adolescents (13–14 years) attending conventional or elite sports-/performance-oriented lower secondary schools (14 schools, 832 students, 53% girls). All students completed two perfectionism scales, i.e., the child-adolescent perfectionism scale (CAPS) and the frost multidimensional perfectionism scale (FMPS). The criterion-related variables of psychological health included anxiety, depression, eating disorder problems, self-worth and resilience, respectively. Exploratory and confirmatory factor analyses yielded a four-factor representation of perfectionism. Using latent class analysis extracted five profiles of perfectionism, which were related to the criterion variables. Three profiles were clear indicators of either low or high perfectionism score patterns. Two profiles showed a mixed picture of high and low scores, whereas one represented a psychological healthy subgroup. About four of ten adolescents in the ordinary schools matched the two most debilitating perfectionism profiles compared to two of ten in the elite schools. How these results align with international findings is discussed along with the relevance for early interventions aimed at preventing the potential downsides of perfectionism. Longitudinal studies are neeed to explore profile trajectories as well as possible health consequences.

Keywords: perfectionism, adolescents, latent class analysis, subgroups, mental health

INTRODUCTION

According to a recent meta-analysis (Curran and Hill, 2017) youth's perfectionism levels have steadily increased the last 25–30 years. Perfectionism is a multidimensional, intra- and interpersonal construct consisting of exceedingly high or unrealistic personal standards, accompanied by overly self-critical evaluations (Frost et al., 1990; Hewitt and Flett, 1991). Two interrelated superordinate dimensions have been identified, i.e., "perfectionistic concerns" (or "evaluative concerns perfectionism") and "perfectionistic strivings" (or "personal standard perfectionism") (Frost et al., 1993; Dunkley et al., 2000; Stoeber and Otto, 2006). People with perfectionistic concerns tend to be preoccupied with a fear of making mistakes, a fear of negative evaluations from others and that significant others are holding rigorous standards for them (Dunkley et al., 2000; Gotwals et al., 2012). Hardly surprising then, such concerns run along with poor mental health among adults (Hill and Curran, 2016; Limburg et al., 2017), and among adolescents in terms of outcomes like anxiety, depression and eating disorder symptoms (Hewitt et al., 2002; Bento et al., 2010; Flett et al., 2011). A similar consistency is, however, not evident between mental health and "perfectionistic strivings". Thus both adaptive and maladaptive outcomes have been linked to the personal standards and self-oriented strivings toward perfection (Stoeber and Otto, 2006; Gotwals et al., 2012; Jowett et al., 2016; Hill et al., 2018). Different health outcomes raise the issue of how dimensions or facets of perfectionism are related. This issue is further relevant considering the fact that distinct profiles emerge when subdimensions of perfectionism are analyzed together, and such profiles are differently related to health indicators (Boone et al., 2010; Hill, 2013; Sironic and Reeve, 2015; Gustafsson et al., 2016). In addition, health outcomes may be moderated by contextual aspects like for instance students' type of school settings. Hence, certain facets of perfectionism may be more prominent and endanger health to a greater extent within elite or high performance and sport contexts than in low performance contexts.

At least three analytical approaches have been used to identify perfectionism profiles. The first one is the *a priori* 2 × 2 model of perfectionism isolating four within-person subgroups based on the higher order factors "perfectionistic strivings" and "perfectionistic concerns" (Gaudreau and Thompson, 2010; Gaudreau, 2012, 2016; Hill, 2013). Secondly, profiles of perfectionism have been derived from cluster analyses, whereas the profiles may differ in terms of maladaptive outcomes depending on gender and performance contexts (Dixon et al., 2004; Vallance et al., 2006; Boone et al., 2010). A third approach is latent class analysis (LCA). Similar patterns of differences between perfectionism subgroups and mental health have emerged irrespective of these three analytical approaches (Dixon et al., 2004; Boone et al., 2010; Gotwals, 2011; Cumming and Duda, 2012; Hill, 2013; Damian et al., 2014; Sironic and Reeve, 2015). These approaches are, however, not equally adequate. In contrast to a cluster analysis, the LCA approach is a more complex, robust and stable approach which is model based, and with more stringent criteria to determine the final profile model (Pastor et al., 2007; Marsh et al., 2009). Moreover, a LCA approach may give more nuanced knowledge of how various perfectionism profiles in adolescents are linked to adaptive and maladaptive indicators of mental health, beyond traditional variable-centered approaches where mental health outcomes are linked to each separate perfectionism dimension (Pastor et al., 2007).

Among adolescents one LCA study identified six distinct classes of perfectionism (Sironic and Reeve, 2015). A "mixed maladaptive perfectionism" profile included high ratings on all dimensions. Male and female high-school students with this profile reported higher levels of anxiety, depression and stress compared to the other perfectionism subgroups. The remaining profiles comprised an "externally motivated maladaptive" subgroup with low personal standards and high scores for perfectionism prescribed by significant others, and concerns and doubts about their own performances. An "adaptive" profile with high personal standards and low externally factor scores has also been identified, along with two non-perfectionism groups and one subgroup of students that exclusively valued order and organization (Sironic and Reeve, 2015). Furthermore, based on perfectionism scores and parental climate scores four latent profiles have been identified in adolescent athletes (Gustafsson et al., 2016).

A large number of perfectionism studies in sports have comprised mainly athlete boys (Vallance et al., 2006; Hill et al., 2008; Stoeber et al., 2009; Appleton and Hill, 2012; Hill, 2013; Madigan et al., 2016, 2017; Hill et al., 2018). Moreover, perfectionism profiles have been studied among adolescent athletes (Hill, 2013) and ordinary school students (Boone et al., 2010; Sironic and Reeve, 2015) separately. Thus, there is a lack of comparative studies, and a gap of knowledge about perfectionism profiles across gender and within a broder range of high-performance contexts, i.e., boys and girls attending ordinary versus specialized school contexts for talented athletes or performing artists. The relevance of filling this gap of knowledge rests on the importance of identifying profiles of perfectionism that may constitute a risk of poor health among young adolescents in a vulnerable developmental stage. Such risks may be particularly important to contrast with students in ordinary schools, because adolescents attending specialized elite schools may have to face environments and contexts where high goals of achievements and performances are highly valued, yet hard to cope with (Hall and Hill, 2012; Bergeron et al., 2015; Hewitt et al., 2017). To expand on the previous research the present study aims to:

(1) Examine the factor structure across the items of two commonly used measures of perfectionism.
(2) Identify meaningful profiles of perfectionism generated from the perfectionism factor scores.
(3) Examine possible differences in the proportion of girls and boys from specialized- and ordinary schools within each of the profiles of perfectionism.
(4) Examine the differences of the identified perfectionism profiles in terms of mental health and psychological functioning.

MATERIALS AND METHODS

Participants

The participants in this cross-sectional survey consisted of Norwegian students aged 13–14 years who were enrolled into 8th grade at 14 lower secondary schools during the school year 2015/2016. Students (n = 1055) from 11 ordinary schools were eligible. To ensure sociodemographic representativity the ordinary schools were randomly drawn from regions within two of the largest counties in the Eastern part of Norway. Also eligible were students (n = 199) at all the three national private elite lower secondary sport schools, and the two elite classes for performing arts (ballet and music) located at the ordinary public schools in the catchment area. From the total sample (n = 1254) students were excluded due to missing or inadequate parental consent (n = 95) or survey completion (n = 19). In addition 308 students did not participate for unknown reasons, thus yielding a final sample of 832 students. Of these, 166 students (82 girls and 84 boys) came from the elite schools and classes, and 666 students from ordinary schools (361 girls and 305 boys). The response rate for the two samples was 83 and 63%, respectively.

Procedure

The consenting schools appointed a teacher or staff member as the contact person to the research group. Study information were distributed to the students and their guardians separately, and both guardians and students had to provide their written informed consent. Additionally, the first author informed all students at school about the study purpose ahead of and at the day of data collection. Students completed questionnaires during one school hour with the presence of a research group member.

Self-Report Measures

In the present study the internal consistency (Cronbach's α) ranged from 0.67–0.95 (**Table 1**).

Frost Multidimensional Perfectionism Scale (FMPS)

The frost multidimensional perfectionism scale (FMPS) consists of 35 items covering six primary factors (Frost et al., 1990) that are typically combined in two over-arching dimensions: (a) "personal standards"; having exceedingly high standards for performances, and "organization"; emphasis on neatness, order and organization, and (b) "concern over mistakes"; worry about own performances, "doubt about actions"; a sense to doubt the quality of one's performances, "parental expectations"; a strong integration of parents' high expectations for performance, and "parental criticism"; worry of parental criticism, disapproval and loss of parental support. Items are rated on a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree". The subscale scores were calculated as the mean of all subscale items. In the present study we initiated both an explorative and a confirmatory factor analysis because previous psychometric studies (Stöber, 1998; Stumpf and Parker, 2000; Cox et al., 2002; Hawkins et al., 2006; Sironic and Reeve, 2015) have lend mixed support to the original factor model, and a loosely defined "organization" factor (Frost et al., 1990).

Child Adolescent Perfectionism Scale (CAPS)

The child adolescent perfectionism scale (CAPS) (Flett et al., 2000) is derived from the Hewitt and Flett Multidimensional Perfectionism Scale for adults (Hewitt and Flett, 1991), and measures the two dimensions "self-oriented perfectionism" (SOP, 12 items) and "socially prescribed perfectionism" (SPP, 10 items). SOP indicates excessively high personal standards and a need to fulfill them, whereas SPP imply the conviction that other people require perfection from oneself. The items are rated on a five-point Likert scale from false (1), neutral (3) to very true (5). Three items (SOP10, SPP20, and SOP22) were reversed to enable a mean subscale score from all items. In contrast to the FMPS, a Norwegian version of the CAPS did not exist. Thus, the CAPS was

TABLE 1 | Descriptive Statistics and Correlations Between the Measured Study Variables.

Variable	*M*	(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13
1 FMPS PS	2.97	(0.89)	α = 0.84												
2 FMPS CM	2.31	(0.77)	0.58	α = 0.82											
3 FMPS DA	2.78	(0.88)	0.39	0.54	α = 0.67										
4 FMPS PE	2.22	(0.93)	0.34	0.47	0.31	α = 0.82									
5 FMPS PC	1.76	(0.79)	0.10	0.43	0.32	0.60	α = 0.68								
6 FMPS O	3.88	(0.76)	0.46	0.20	0.17	0.05	−0.13	α = 0.84							
7 CAPS SOP	3.15	(0.74)	0.72	0.64	0.42	0.34	0.15	0.35	α = 0.86						
8 CAPS SPP	2.37	(0.82)	0.42	0.57	0.40	0.69	0.51	0.08	0.52	α = 0.87					
9 ANX	10.21	(6.78)	0.25	0.50	0.49	0.20	0.31	0.09	0.29	0.33	α = 0.86				
10 DEP	6.92	(5.03)	0.20	0.48	0.48	0.24	0.37	−0.06	0.24	0.38	0.74	α = 0.85			
11 WCSC	1.51	(1.57)	0.12	0.35	0.32	0.16	0.24	−0.01	0.19	0.27	0.55	0.56	α = 0.95		
12 READ	3.94	(0.55)	0.08	−0.25	−0.23	−0.19	−0.37	0.36	−0.03	−0.29	−0.35	−0.53	−0.37	α =0.92	
13 Glob. SW	3.19	(0.68)	−0.14	−0.43	−0.38	−0.17	−0.34	0.13	−0.20	−0.35	−0.58	−0.70	−0.67	0.62	α = 0.88

Correlations above 0.08 were significant at $p < 0.05$, and below −0.125 and above 0.125 at $p < 0.01$. α, Cronbach's alpha; CM, Concern over mistakes; DA, Doubts about actions; Glob. SW, Global Self-Worth from SPPA-R; O, Organization; PE, Parental Expectations; PC, Parental Criticism; PS, Personal Standards; SOP, Self-Oriented Perfectionism; SPP, Socially Prescribed Perfectionism; ANX, Anxiety; DEP, Depression; WCSC, EDE-Q Weight Concern and Shape Concern; READ, Resilience Scale for Adolescents.

bi-directionally translated. The original (Flett et al., 2000) item numbers used in the present study diverge from later versions (Flett et al., 2016). Despite adequate support of the CAPS factor model (Sironic and Reeve, 2015; Flett et al., 2016; Leone and Wade, 2018), incongruent findings exist (McCreary et al., 2004; O'Connor et al., 2009).

Revised Children's Anxiety and Depression Scale (Short Version) (RCADS-25)

The RCADS measures DSM-IV relevant anxiety and depressive symptoms in children (Chorpita et al., 2000). The short version, RCADS-25 (Ebesutani et al., 2012) encompasses two subscales; a general anxiety score (15 items) and a depression score (10 items). The items are rated on a four-point Likert scale from 0 "never" to 3 "always". The subscale scores were calculated as the sum of all subscale items, and higher scores represent greater severity of anxiety and depression symptoms.

Eating Disorder Examination-Questionnaire (EDE-Q-11)

The EDE-Q-11 (Friborg et al., 2013) is derived from the 28-item EDE-Q (6.0) (Fairburn, 2009), and consists of 11 items measuring the importance of weight and shape concern (WCSC) for one's self-worth. The items are rated on a seven-point scale from 0 "not at all" or "no days" to 6 "very much" or "all days". The subscale scores were calculated as the mean of the subscale.

Resilience Scale for Adolescents (READ)

The READ (Hjemdal et al., 2006) consists of 28 items to assess the five protective factors "personal competence," "social competence," "structured style," "family cohesion," and "social resources." All items were rated on a five-point Likert scale from 1 "strongly disagree" to 5 "strongly agree" (higher scores; more protection). As the READ subscales correlate strongly (Hjemdal et al., 2006), a mean score from all subscales was calculated.

Harter's Self-Perception Profiles for Adolescents – Revised (SPPA-R)

One of the six subscales from the Norwegian short version of SPPA-R (Wichstrøm, 1995) was used. The subscale measures global self-worth as the evaluation of how much general value one places on oneself. The five items are rated on a four-point Likert scale; describes me: 1 "very poorly", 2 "quite poorly", 3 "quite well", and 4 "very well". Two negatively worded items were recoded to calculate a mean subscale score. Higher scores represent better global self-worth.

Ethics Statement

The study was approved by the Regional Committee for Medical and Health Science Research Ethics (REC) in Southern Norway (project nr.2015/1358), and has been conducted in accordance to ethical guidelines, and the health research legislations and regulations.

Statistical Analyses

The analyses were conducted in four steps: (1) principal component analysis (PCA) and confirmatory factor analyss (CFA) were used to explore an adequate perfectionism measurement model, (2) identification of subgroups of perfectionism using latent class analyses (LCA), (3) identification of the proportion of gender and school group within each of the perfectionism classes (profiles) using cross tabulation and (4) multivariate analyses of variance examining the differences of the identified perfectionism classes (or profiles) in terms of mental health and psychological functioning.

The PCA was performed on both perfectionism scales (FMPS and the CAPS), first separately and then combined, as they are distinct scales with mixed support for the number of factors (Stöber, 1998; Cox et al., 2002; Sironic and Reeve, 2015). The number of components were decided using the Kaiser's criterion (eigenvalues > 1) and Horn's parallel analysis, preferring the latter if deviant. The parallel analysis retains components with eigenvalues higher than the corresponding component eigenvalue from a randomly generated dataset. Components with $\leq$3 items were not retained. Items with small ($<$0.4) loadings, or with substantial ($>$0.5) cross-loadings, or with small differences between two or more component loadings (e.g., a primary loading of 0.55, and a cross loading of 0.4), were discarded. Loadings were Promax rotated (kappa = 4).

The sample was randomly split in two equal halves for the factor analysis, where the second half was used (CFA) to cross-validate the PCA findings. The CFA model fit were evaluated by the comparative fit index (CFI), the tucker-lewis index (TLI), chi-square difference test, the root mean square error of approximation, (RMSEA), and the standardized root mean square residual (SRMR). For the CFI and TLI, values > 0.95 should be preferred, but values about 0.90 are acceptable. RMSEA values $< 0.05/0.06$ are preferable (Hu and Bentler, 1999), while values between 0.05–0.08 indicate mediocre fit (MacCallum et al., 1996). SRMR < 0.08 are commonly considered a good fit (Hu and Bentler, 1999). Factor scores following the CFA modeling was saved and used in the following LCA.

The LCA was applied to identify subgroups of perfectionism based on the saved factor scores. A key challenge with fitting LCA models is to decide the number of classes (or subgroups) that is necessary to fit in order to adequately account for the correlations between the factor scores. We relied on the log likelihood ratio (LL), Akaike's information criterion (AIC), Bayesian information criterion (BIC), and adjusted BIC (aBIC). Smaller values indicate a better fitting model preferring the BIC/aBIC as they require a more substantial improvement in fit than LL/AIC for retaining more complex models. We terminated adding subgroups when noticeably improvement in fit declined. The entropy index is additionally reported to measure the accuracy (0 = terrible, 1 = perfect classification) of the categorization of subjects into latent classes. The number of cases within each class was also of importance.

The final analyses used multivariate analysis of variance (MANOVA) to examine how well the retained classes, as representatives of the different perfectionism profiles, differed on a combined set of outcome variables (i.e., anxiety, depression, EDE-Q shape and weight concern, resilience and self-worth). Follow-up tests of a significant overall MANOVA effect were conducted with a univariate analysis for each outcome

variable using the Scheffe's test to adjust for the *post hoc* multiple comparisons.

All latent variable analyses were conducted using Mplus version 8.0 (Muthén and Muthén, 1998–2017), whereas the remaining principal component and multivariate analyses were conducted in SPSS Statistics version 24 (IBM SPSS Inc., Chicago, IL, United States).

RESULTS

Descriptive Findings

The descriptive statistics, measurement reliabilities and correlations between the questionnaire variables are reported in **Table 1**. The CAPS and the FMPS subscales were strongly related, except with the FMPS organization subscale.

Exploration and Confirmation of an Adequate Perfectionism Measurement Model

PCA of the FMPS

The PCA extracted six components with eigenvalues > 1 (8.57, 4.97, 1.94, 1.78, 1.22, 1.03; R^2 = 0.56); however, we preferred the parallel analysis solution of four components as the fifth eigenvalue were lower than the random based eigenvalue of 1.41. This solution combined the two parental subscales "parental expectations" and "parental criticism" (named PEC), as well as the two subscales "concerns over mistakes" and the "doubts about actions" (named CMDA). Three items dropped out due to component misplacement or cross-loadings. This solution had acceptable loadings (0.42–0.95) and accounted for 51.1% of the variance (**Supplementary Table X1**).

PCA of the CAPS

The PCA extracted three components with eigenvalues > 1 (7.42, 2.49, and 1.39; R^2 = 0.51); however, we retained two components as the third had three items, in which all originally had reverse wording (i.e., SOP10, SOP22 and SPP20). In the subsequent PCA two components were extracted, and two items dropped out due to a weak loading (i.e., SPP20) or cross-loading (i.e., SPP18). The final two-component solution showed acceptable item loadings (0.42–0.88) and accounted for 47.1% of the variance (**Supplementary Table X2**).

PCA Analysis of the FMPS and CAPS Combined

Kaiser's criterion extracted 10 components (R^2 = 0.61), but three components had too few items. The parallel analysis retained four components (R^2 = 0.47). This solution had three items with component misplacement (i.e., SOP19, PS16, and SOP6); hence, these were removed from the final CFA analyses. **Table 2** presents the final solution that combined the CAPS "socially prescribed perfectionism" and the FMPS "parental expectations/criticism" subscales, as well as the CAPS "self-oriented perfectionism" and the FMPS "personal standards" subscale. The components were labeled as (1) socially prescribed perfectionism/parental expectations and criticism (SPPEC), (2) self-oriented perfectionism/personal standards (SOPS), (3) concerns over mistakes and doubts about actions (CMDA), and (4), organization (O) (**Table 2**).

CONFIRMATORY FACTOR ANALYSES

The joint perfectionism factor model generated by the PCA from the first sample split was cross-validated on the second sample split, and additionally compared to the following competing models: (1) a simple one-factor model (Model 0), (2) the original FMPS and CAPS specified as eight (six + two) primary correlated factors (Model 1), and (3) the current joint four-factor (Model 2). As expected models 1 and 2 performed better than Model 0, and model 1 fitted better than model 2, given the more nuanced item covariance modeling (**Table 3**). The performance of Model 2 (four factors) was close to Model 1 (eight factors) in terms of absolute and relative fit given the substantial reduction in model complexity, which speaks for retaining Model 2 for parsimonious reasons. The relative fit indices (CFI and TLI) of Model 2 were unsatisfactorily low, whereas the more important model misspecification index (RMSEA) was within an acceptable region. Although keeping in mind that the RMSEA tends to over-perform more complex models (Fan and Sivo, 2007), as Model 2 is an example of, it does not invalidate the main objective of finding the most parsimonious and theoretically meaningful model for the final profiling of perfectionism. The factor scores of Model 2 was saved and used in the LCA analyses.

Latent Class Analysis – Profiles of Perfectionism

Three of the variances were estimated as free (i.e., SPPEC, CMDA and O) in the LCA analyses as the BIC/aBIC was markedly worse if constrained as equal. The fourth variance (SOPS) was kept equal as it varied little between the classes and the change in BIC/aBIC was minor if free. The modeling started with one class and increased continually until model fit did not improve (**Table 4**). The improvement in fit stopped after nine classes according to BIC. Since the interpretation of an LCA analysis swiftly becomes complex if fitting too many classes, we evaluated the rate of improvement in model fit (reduction in BIC/aBIC). We preferred a solution that showed a clear deceleration in the improvement of fit (akin to the scree-plot criterion), which led us to retain five classes (**Figure 1**). This is also a reasonable number of classes to interpret and analyze further, as presented in **Table 5**.

The Proportion of Girls and Boys From Specialized- and Ordinary Schools Within Each of the Profiles of Perfectionism

More girls (15.8%) compared to boys (6.2%) were observed within profile 1 (high mixed perfectionism). Furthermore, a higher relative proportion of ordinary school girls (39.3%) compared to elite school girls (25.6%), and ordinary school boys (36.4%) compared to elite school boys (19%), were observed within profile 1 and profile 2 (low self-oriented perfectionism with high perfectionistic concerns), which were the two profiles

TABLE 2 | Principal Component Analysis of the FMPS and the CAPS.

	Item		1 SPPEC	2 SOPS	3 CMDA	4 O
CAPS	My family expects me to be perfect.	SPP8	**0.89**	0.05	−0.17	−0.02
FMPS	My parents set very high standards for me.	PE1	**0.83**	0.00	−0.12	0.15
FMPS	My parents wants me to be the best at everything.	PE11	**0.79**	0.17	−0.19	−0.04
CAPS	There are people in my life who expect me to be perfect.	SPP5	**0.76**	0.02	−0.02	0.05
FMPS	My parents have expected excellence from me.	PE20	**0.75**	−0.02	−0.10	0.16
FMPS	My parents have always had higher expectations for my future than I have.	PE26	**0.70**	−0.16	0.01	−0.13
CAPS	Other people always expect me to be perfect.	SPP13	**0.68**	0.11	0.01	−0.01
CAPS	People expect more from me than I am able to give.	SPP9	**0.58**	−0.09	0.24	0.00
CAPS	I feel that people ask too much of me.	SPP3	**0.58**	0.17	−0.05	0.12
FMPS	I never feel like I can meet my parents' standards.	PC35	**0.57**	−0.22	0.23	−0.16
FMPS	Only outstanding performance is good enough in my family.	PE15	**0.56**	0.04	0.13	−0.01
FMPS	I never feel like I can meet my parents' expectations.	PC22	**0.50**	−0.31	0.35	−0.08
CAPS	My teachers expect my work to be perfect.	SPP21	**0.48**	0.14	0.05	0.05
CAPS	People around me expect me to be great at everything.	SPP15	**0.48**	0.29	0.06	0.01
FMPS	I am punished for doing things less than perfect	PC3	**0.47**	−0.17	0.10	0.03
FMPS	My parents never try to understand my mistakes.	PC5	**0.40**	−0.13	0.08	−0.14
CAPS	Other people think that I have failed if I do not do my very best all the time.	SPP12	**0.38**	0.13	0.18	−0.08
CAPS	I want to be the best at everything I do.	SOP2	−0.02	**0.86**	−0.16	−0.12
CAPS	I try to be perfect in everything I do.	SOP1	−0.02	**0.76**	−0.13	0.04
CAPS	I don't always try to be the best	SOP10	−0.22	**0.74**	−0.04	−0.19
FMPS	I set higher goals than most people.	PS12	−0.10	**0.72**	−0.02	0.15
FMPS	I don't always try to be the best.	PS6	0.08	**0.69**	0.03	0.03
CAPS	I do not have to be the best at everything I do.	SOP22	−0.04	**0.62**	0.02	−0.38
CAPS	I always try to be as perfect as I can	SOP14	0.15	**0.62**	−0.06	0.09
CAPS	When I do something, it has to be perfect	SOP16	0.10	**0.62**	0.15	−0.03
CAPS	I get upset if there is even one mistake in my work	SOP11	0.03	**0.60**	0.19	−0.18
FMPS	I have extremely high goals.	PS19	0.12	**0.60**	−0.13	0.26
CAPS	I feel that I have to do my best all the time.	SOP4	0.18	**0.55**	−0.02	0.07
FMPS	I expect higher performance in my daily tasks than most people.	PS30	−0.05	**0.51**	0.24	0.18
CAPS	It really bothers me if I don't do my best all the time.	SOP7	0.04	**0.51**	0.16	0.15
FMPS	Other people seem to accept lower standards than I do.	PS24	−0.21	**0.44**	0.25	0.14
CAPS	I can't stand to be less than perfect.	SOP17	0.09	**0.43**	0.25	−0.14
FMPS	If someone does a task at school better than I am, then I feel like I failed the whole task.	CM13	−0.04	0.04	**0.76**	0.06
FMPS	I usually have doubts about the simple everyday things I do.	DA28	−0.16	−0.10	**0.73**	0.19
FMPS	It takes me a long time to do something "right."	DA33	−0.04	−0.15	**0.69**	−0.04
FMPS	If I do not do well all the time, people will not respect me.	CM25	0.10	−0.08	**0.64**	0.06
FMPS	If I fail partly, it is as bad as being a complete failure.	CM14	−0.05	0.14	**0.62**	0.00
FMPS	Even when I do something very carefully, I often feel that it is not quite right.	DA17	0.05	0.02	**0.57**	0.13
*CAPS	Even when I pass, I feel that I have failed if I didn't get one of the highest marks in the class.	*SOP19*	−0.07	0.33	***0.53***	0.01
FMPS	If I fail at school, I am a failure as a person.	CM9	0.09	0.15	**0.53**	−0.05
FMPS	The fewer mistakes I make, the more people will like me.	CM34	0.23	−0.01	**0.51**	−0.03
FMPS	I tend to get behind in my work because I repeat things over and over.	DA32	0.03	0.00	**0.50**	0.00
FMPS	If I do not as well as other people, it means I am an inferior human being.	CM23	0.18	0.03	**0.49**	−0.15
FMPS	People will probably think less of me if I make a mistake.	CM21	0.08	0.21	**0.48**	−0.12
FMPS	I am an organized person.	Org31	−0.04	−0.03	0.03	**0.83**
FMPS	I am a neat person.	Org7	0.06	−0.11	−0.10	**0.79**
FMPS	I try to be an organized person.	Org8	0.01	0.01	−0.05	**0.79**
FMPS	Organization is very important to me.	Org2	0.02	−0.35	0.18	**0.75**
FMPS	I try to be a neat person.	Org27	0.09	−0.01	−0.05	**0.68**
FMPS	Neatness is very important to me.	Org29	0.02	0.08	0.20	**0.65**
*FMPS	I am very good at focusing my efforts on attaining a goal.	*PS16*	−0.06	*0.31*	0.00	***0.52***
*CAPS	I always try for the top score on a test.	*SOP6*	−0.17	*0.23*	−0.01	***0.43***
		Eigenvalues	13.54	6.00	2.49	2.23
		% of explained variance	26.04	11.53	4.78	4.28

*CMDA = Concerns Over Mistakes and Doubts About Actions, O = Organization, SOPS = Self-Oriented Perfectionism-Personal Standards, SPPEC = Socially Prescribed Perfectionism-Parental Expectations and Criticism. *Items loading onto unexpected components (SOP19, PS16, SOP6). The bold font highlights that the item has its highest loading corresponding to component 1, 2, 3, or 4.*

TABLE 3 | Confirmatory Factor Analysis of the F-MPS and the CAPS.

	χ^2	*df*	MLR scaling correction	CFI	TLI	RMSEA	SRMR
Model 0 – 1 factor (57 items)	5880	1539	1.070	0.55	0.53	0.082	0.103
Model 1 – 8 factors (6 FMPS + 2 CAPS)	3245	1511	1.060	0.81	0.81	0.053	0.074
Model 3 – 4 factors (49 items)	2704	1121	1.075	0.80	0.79	0.058	0.071

χ^2, square difference test; df, degrees of freedom; MLR scaling correction, Scaling Correction Factor for MLR; CFI, comparative fit index; TLI, tucker-lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.

hypothesized to be associated with the most debilitating health outcomes. A higher proportion of the elite school students had a profile of higher personal standards and lower external fears, concerns and doubts related to their performance (Profile 3) compared to students in ordinary schools (**Table 6**).

Comparisons of the Five Perfectionism Profiles With Regard to Psychological Health

A MANOVA with five dependent criterion variables (anxiety, depression, EDE-Q weight and shape concern (WCSC), resilience and self-worth) indicated an overall significant difference between the five perfectionism profiles ($F_{20, 2654}$ = 16.32, $p < 0.0001$; Wilks' ϰ = 0.68; partial η^2 = 0.09), which was followed up with a separate ANOVA for each outcome variable (**Table 7**). A MANOVA of the four subdimensions of perfectionism as dependent variables (SOPS, SPPEC, CMDA and O) also indicated an overall significant difference between the five profiles ($F_{16, 2454}$ = 183.96, $p < 0.0001$; *Wilks'* ň = *0.09;* partial η2 = 0.45). The follow-up ANOVA confirmed differences between the profiles for all criterion variables: Anxiety, $F_{4, 817}$ = 49.78, partial η2 = 0.20, Depression, $F_{4, 819}$ = 55.99, partial η2 = 0.22, EDE-Q WCSC, $F_{4, 824}$ = 23.82, partial η2 = 0.10, Resilience, $F_{4, 818}$ = 32.80, partial η2 = 0.14, Self-Worth, $F_{4, 821}$ = 36.47, partial η2 = 0.15, *Ps < 0.0001*. Scheffe's multiple comparisons are presented in **Table 7**.

Profile 1 (high mixed perfectionism), and 2 (low SOPS-O/High SPPEC-CMDA) (**Table 5** and **Figure 1**) were associated with the highest levels on anxiety, depression and WCSC, and the lowest ratings for resilience and global self-worth (**Table 7**). No significant differences were found in depression, WCSC, and self-worth between the two non-perfectionism groups (profiles 4–5) and profile 3. The anxiety score was higher for profile 3 than the non-perfectionism groups, and the adolescents within profile 3 had higher resilience ratings than all other perfectionism profiles.

The interaction effect between gender, school group and perfectionism profile was not statistically significant for any of the criterion variables. Adjusting for gender and school group changed the scores for the dependent criterion variables for profile 1 only, whereas the anxiety, depression and WCSC decreased and resilience and self-worth increased. Additionally, adjusting for gender and school group resulted in lower WCSC scores within profile 1 compared to profile 2.

TABLE 4 | Fit Indices for Twelve Latent Class Models.

Latent Classes	LL	AIC	BIC	ΔBIC	aBIC	ΔaBIC	Entropy
1	−3469.54	6955.08	6992.87		6967.46		–
2	−2971.61	5975.21	6050.79	−942.08	5999.98	−967.48	0.793
3	−2799.24	5646.47	5759.85	−290.94	5683.63	−316.35	0.798
4	−2699.50	5464.00	5614.16	−145.69	5512.54	−171.09	0.803
5	−2615.04	5310.07	5499.02	−115.14	5372.00	−140.54	0.795
6	−2566.39	5228.78	5455.52	−43.50	5303.09	−68.91	0.805
7	−2531.77	5175.54	5440.08	−15.44	5262.24	−40.85	0.766
8	−2494.37	5116.74	5419.06	−21.02	5215.82	−46.42	0.789
9	−2465.72	5075.45	5415.56	−3.50	5186.91	−28.91	0.816
10	−2438.86	5037.71	5415.62	0.06	5161.57	−25.34	0.799

LL, log likelihood ratio; AIC, Akaike's information criterion; BIC, bayesian information criterion, ΔBIC, change in BIC; aBIC, adjusted Bayesian information criterion; ΔaBIC, change in aBIC.

DISCUSSION

Profiles of Perfectionism Derived From Factor Scores of the FMPS and CAPS

The separate factor structure of the FMPS and CAPS supported previous findings (e.g., Sironic and Reeve, 2015). When the items of the two questionnaires were combined, a four-dimensional model was the most parsimonious and theoretically meaningful to use for the final profiling of perfectionism. The subsequent LCA yielded five distinct profiles of perfectionism. Compared with a solution with four and six profiles, this five-profile solution fitted the data better (**Table 4**), and it was used in the further analyses as the most reasonable model to interpret. Moreover, this solution aligns with a consistent pattern of perfectionism among adolescents reported in previous studies (Dixon et al., 2004; Boone et al., 2010; Hill, 2013; Sironic and Reeve, 2015). Notably, the present study identified one 'high mixed' perfectionism profile (Profile 1) with combined high levels of all four factors except for "organization." Profile 2 may reflect a tendency of perceiving standards originated from other people (Sironic and Reeve, 2015), and that a failure to meet such standards and expectations may elicit disapproval, criticisms or even rejection (Frost et al., 1990). Some (Stoeber and Otto, 2006; Stoeber, 2018a) argue that the external facets of 'parental expectation' and 'parental criticism' from FMPS (Frost et al., 1990) should rather be considered as antecedents of perfectionism. However, young adolescents like in the present study are in a developmental stage where they are perceptive and thus, vulnerable to perceived external standards and pressure to conform with them (Hall and Hill, 2012; Bergeron et al., 2015; Flett et al., 2016; Curran, 2018).

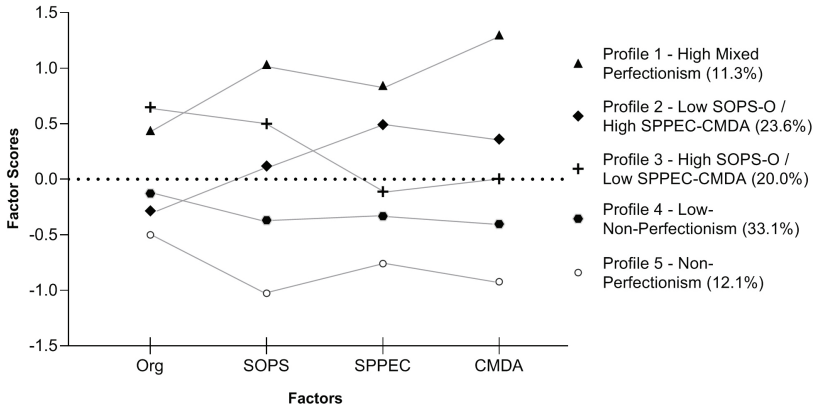

FIGURE 1 | The five profiles of perfectionism and the corresponding four factors, factor mean scores. CMDA, Concerns Over Mistakes and Doubts About Actions; O, Organization; SOPS, Self-Oriented Perfectionism-Personal Standards; SPPEC, Socially Prescribed Perfectionism-Parental Expectations and Criticism.

Hence, such external factors may affect how an adolescent think and behave at school or in competitive contexts.

The third profile mirrors a previously proposed "adaptive" profile of perfectionism (Sironic and Reeve, 2015) or the "pure personal standards perfectionism" in the 2 × 2 model of perfectionism (Gaudreau and Thompson, 2010; Hill, 2013). The present findings suggest that a subgroup of young adolescents do not display a perfectionistic trait *per se* (Hill, 2016), but rather set sound personal standards with barely any perfectionistic concerns. In a similar vein and consistent with previous studies (Sironic and Reeve, 2015) another group of adolescents was identified by profiles 4 and 5, in which aspects of perfectionism were of negligible or no relevance. In total, our findings support the notion of individual differences in how perfectionism may operate (Gaudreau and Thompson, 2010; Sironic and Reeve, 2015) as well as the interaction of individual and interpersonal components that may affect adolescents' health and well-being (Hall et al., 2012; Hewitt et al., 2017).

TABLE 5 | Five profiles of perfectionism from the latent class analyses.

Five profiles of perfectionism:	Description
(1) High Mixed Perfectionism	High ratings on all four dimensions of perfectionism, i.e., exceedingly high personal standards and a need to fulfill them, with a conviction that others requires perfection, and a personal concern and doubt about own performances. In addition, organization, order and neatness are emphasized.
(2) Low SOPS-O/ High SPPEC and CMDA	Being more concerned and doubtful about whether one meets the requirements of perfectionism from others, but does not set exceedingly high personal performance standards or emphasize organization, order and neatness.
(3) High SOPS-O/ Low SPPEC and CMDA	Setting personal performance standards and emphasizes organization, order and neatness, but no experience that significant others have high expectations of one's performances, and is not highly concerned and doubting own performances.
(4) Low/Non-Perfectionism	This profile indicates low personal standards, no experience of high expectations from others, and negligible concerns and doubts about personal performances.
(5) Non-Perfectionism	Similar to profile 4, but with even lower scores on all four dimensions of perfectionism.

CMDA, concerns over mistakes and doubts about actions; O, organization; SOPS, self-oriented perfectionism-personal standards; SPPEC, socially prescribed perfectionism-parental expectations and criticism.

The Proportion of Girls and Boys From Specialized Schools and Ordinary Schools Within Each of the Profiles of Perfectionism

The relative proportion of adolescent who are really plagued with perfectionism (profile 1 and 2) were lower in elite sports- and performing arts schools (22%) than ordinary schools (38%). This might seem contra-intuitive given the considerable amount of time sports- and performing arts school students spend in a highly competitive context. However, contextual and selection issues may account for the fact that more young girls and boys from elite schools do seem to set high personal standards, yet they do not experience highly doubts about their performances or external pressure or expectations. For instance, many students in ordinary schools may experience a distance between their capacities and external standards or demands. Furthermore, those who attend elite schools have actively sought such schools and passed the admittance criteria that they experience as reasonable and achievable. Moreover, at high performance levels, an internalization of high standards and goals are necessary and may serve as driving factors to reach further development and achievements (Hall and Hill, 2012; Hill et al., 2015). Yet, attention

TABLE 6 | Proportions of perfectionism profiles within school setting and gender.

	Profiles	(1) High mixed perfectionism		(2) Low SOPS-O/high SPPEC-CMDA		(3) High SOPS/low SPPEC-CMDA		(4) Low-non-perfectionism		(5) Non-perfectionism		Chi-square tests	
		%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	χ^2	*p*
GIRLS *n* = 443	Specialized[O] schools *n* = 82	*12.2*[a]	10	*13.4*[a]	11	*31.7*[a]	26	*30.5*[a]	25	*12.2*[a]	10	10.36	*0.035*
	Ordinary schools *n* = 361	*16.6*[a]	60	*22.7*[a]	82	*17.5*[b]	63	*30.5*[a]	110	*12.7*[a]	46		
BOYS *n* = 389	Specialized[O] schools *n* = 84	*6.0*[a]	5	*13.1*[a]	11	*34.5*[a]	29	*32.1*[a]	27	*14.3*[a]	12	20.12	*0.000*
	Ordinary schools *n* = 305	*6.2*[a]	19	*30.2*[b]	92	*15.7*[b]	48	*37.0*[a]	113	*10.8*[a]	33		
TOTAL *n* = 832	Girls *n* = 443	*15.8*[a]	70	*21.0*[a]	93	*20.1*[a]	89	*30.5*[a]	135	*12.6*[a]	56	21.76	*0.000*
	Boys *n* = 389	*6.2*[b]	24	*26.5*[a]	103	*19.8*[a]	77	*36.0*[a]	140	*11.6*[a]	45		

[a,b]different lettered subscripts indicate significant difference between the school groups at $p < 0.05$ for the proportion within the perfectionism profiles. CMDA, concerns over mistakes and doubts about actions; O, organization; SOPS, self-oriented perfectionism-personal standards; SPPEC, socially prescribed perfectionism-parental expectations and criticism; [O]Specialized schools, students attending specialized schools for talented athletes and performing artists.

TABLE 7 | The five perfectionism profiles and $mean_{95\%CI}$ on the criterion related variables of the revised anxiety depression scale (RCADS), the eating disorder examination questionnaire (EDE-Q) weight-concern and shape-concern, self-worth (SPPA-R), and resilience scale for adolescents (READ).

	(1) High mixed perfectionism (*n* = 94)		(2) Low SOPS-O/high SPPEC-CMDA (*n* = 196)		(3) High SOPS-O/Low SPPEC-CMDA (*n* = 166)		(4) Low-non-perfectionism (*n* = 275)		(5) Non-perfectionism (*n*=101)		Multiple comparison between each profile
	$M_{95\%CI}$	Rank	$M_{95\%CI}$	Rank	$M_{95\%CI}$	Rank	$M_{95\%CI}$	Rank	$M_{95\%CI}$	Rank	$p < 0.05$
Criterion variables											
Anxiety (crude)	17.09 *15.85, 18.33*	1	11.97 *11.10, 12.83*	2	9.81 *8.88, 10.74*	3	8.21 *7.48, 8.93*	4	6.60 *5.40, 7.80*	5	1 > 2–5, 2 > 3–5, 3 > 5
Anxiety (adj.)	14.77 *13.05, 16.50*		12.00 *10.71, 13.28*		9.22 *8.28, 10.16*		8.03 *7.15, 8.91*		6.21 *4.80, 7.62*		
Depression (crude)	12.05 *11.14, 12.96*	1	8.76 *8.13, 9.40*	2	5.88 *5.20, 6.57*	3	5.42 *4.89, 5.95*	4	4.50 *3.63, 5.38*	5	1 > 2–5, 2 > 3–5
Depression (adj.)	9.71 *8.43, 10.99*		8.89 *7.94, 9.84*		5.69 *4.99, 6.38*		5.22 *4.57, 5.87*		4.69 *3.67, 5.71*		
WCSC (crude)	2.51 *2.21, 2.82*	1	1.98 *1.77, 2.19*	2	1.31 *1.08, 1.54*	3	1.15 *0.98, 1.33*	4	0.94 *0.65, 1.24*	5	1 > 3–5, 2 > 3–5
WCSC (adj.)	1.77 *1.37, 2.17*		1.86 *1.56, 2.16*		1.12 *0.90, 1.34*		1.04 *0.83, 1.24*		0.92 *0.60, 1.24*		1 > 2–5, 2 > 3–5
Resilience (crude)	3.73 *3.63, 3.84*	2	3.66 *3.59, 3.73*	1	4.23 *4.15, 4.31*	5	4.00 *3.94, 4.06*	3	4.03 *3.93, 4.13*	4	1 < 3–5, 2 < 3–5, 3 > 4–5
Resilience (adj.)	3.90 *3.75, 4.05*		3.65 *3.54, 3.77*		4.25 *4.17, 4.33*		4.00 *3.92, 4.08*		4.04 *3.92, 4.16*		
Self-worth (crude)	2.66 *2.53, 2.79*	1	2.94 *2.85, 3.03*	2	3.33 *3.24, 3.43*	3	3.37 *3.29, 3.44*	4	3.46 *3.33, 3.58*	5	1 < 2–5, 2 < 3–5
Self-worth (adj.)	3.02 *2.84, 3.20*		2.95 *2.82, 3.08*		3.40 *3.30, 3.50*		3.40 *3.31, 3.49*		3.49 *3.35, 3.64*		
Overall rank		1		2		3		4		5	

Cut-off scores for; RCADS anxiety: girls = 26, boys = 22, RCADS depression: girls = 17, boys = 16 (Ebesutani et al., 2012). Cut-off scores for; EDE-Q severe clinical ≥4.0, Age group 16–19: ≥2.7 (Rø et al., 2015) (No agreed cut-point exist for the age group in our study). Adj, adjusted for gender and school setting; CMDA, concerns over mistakes and doubts about actions; O, organization; SOPS, self-oriented perfectionism-personal standards; SPPEC, socially prescribed perfectionism-parental expectations and criticism; WCSC, EDE-Q weight concern and shape concern.

toward external performance pressures, and on holding realistic personal standards and goals, should also be a focus in elite schools (Bergeron et al., 2015).

Identified Perfectionism Profiles and Mental Health and Psychological Functioning

The present study showed that profile 1 and 2 were related to significantly higher levels of anxiety, depression and excessive weight and shape concerns as well as lower levels of resilience and self-worth (**Table 7**). These findings add support to previous studies (Sironic and Reeve, 2015) showing that adolescents who may fit into profile 1 and 2 may be more vulnerable to mental health problems and that higher combined perfectionism levels (Profile 1) may endanger mental health (Boone et al., 2010; Gustafsson et al., 2016). Of note, a rather low psychological burden seems to be present in the large group of adolescents who display moderate self-oriented strivings in addition to experiencing low external pressure (Profile 3) (Dixon et al., 2004). This finding supports the understanding that mental health problems related to perfectionism relate to the self-critique and the overly evaluative processes and not to holding personal standards for performance or actions *per se* (Hill, 2013, 2016).

Our findings adds further support to study the interaction of facets of perfectionism, because the within-person levels of perfectionism, which differs between the five profiles, are differently related to the criterion variables. Moreover, even though the two "non-perfectionism" profiles may have limited practical relevance, the findings of the overall outcomes of all five perfectionism profiles (**Table 7**) suggest that there is a pattern of the profiles, from profile 1 to profile 5, which is

successively linked to worse or better scores on the mental health variables. Hence, these findings indicate that the lower the overall perfectionism scores are, the better the adolescents score on the mental health outcome measures (except from resilience which were highest within profile 3).

Moreover, the interaction effect between perfectionism profiles, gender and school group (i.e., "specialized school" and "ordinary school") was not statistically significant for any of the dependent criterion variables (**Table 7**). Thus, at this age, specialized school settings may not be the prime target for overall actions against sources and consequences of perfectionism. However, the potential downsides of perfectionism are detrimental, and adolescents in a developmental age in both specialized and ordinary school settings, as in the present study, are vulnerable (Bergeron et al., 2015; Flett et al., 2016; Curran, 2018).

Implications, Strengths, Limitations, and Future Research

Our results indicate a prevalence of perfectionistic tendencies that is on par with international trends (Sironic and Reeve, 2015; Curran and Hill, 2017), and highlight a need of attention toward lowering external performance pressure and personal quality standards at variance with realistic goals in order to reduce the risk of adjustment difficulties and mental health problems (Bergeron et al., 2015).

Several strengths of this study comprise the use of a sample which is large, almost equally gender distributed across very young adolescents within both ordinary and elite performance contexts. Moreover, the total number of "elite" specialized lower secondary schools in Norway were included in our study. This strength also represents a limitation as it was not possible to increase this subsample to match the ordinary school sample. As a result, the absolute number of subjects in some of the profiles may be considered as suboptimal for generalization purposes and for the purpose of robust comparisons of relative proportions between the school groups and genders. This is, however, the first study that compares perfectionism among younger adolescents who attend both specialized sports-/performing arts and regular schools.

Measures of resilience and self-worth included as criterion variables is a strength, and extend previous findings regarding associations between combined facets of perfectionism levels and poor health indicators. On the other hand, subgroups across studies will probably diverge (Stoeber, 2018b), preventing a direct comparison of latent classes (profiles). However, comparable perfectionism profiles like in the present study have previously been, and may in forthcoming studies be, identified by others when utilizing a person-centered approach (Sironic and Reeve, 2015). Recognizing the perils of cross-sectional data, more research is needed to explore stability or change in perfectionism profiles over time. Such issues will be examined in forthcoming longitudinal studies of the present material, and with the potential of person-oriented interventions to prevent the potential downsides of perfectionism among young adolescents in a vulnerable developmental stage of life.

DATA AVAILABILITY

All datasets generated for this study are included in the manuscript and/or the **Supplementary Files**.

ETHICS STATEMENT

The protocol of the study was approved by the Regional Committee for Medical and Health Science Research Ethics (REC) in Southern Norway (project nr.2015/1358). The study was carried out in accordance with the recommendations of the ethical guidelines, health research legislations and regulations (The Health Research Act, 2008; Regulations on the organization of medical and health research, 2009; the Personal Data Act, 2000; Act on ethics and integrity in research, 2017). All participants gave written informed consent in accordance with the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

AS and JS-B conceived the study. All authors contributed to the development of the design and manuscript revision, and have read and approved the submitted version. AS collected and organized the data and performed the statistical analysis with major contributions from OF. AS wrote the first draft of the manuscript.

FUNDING

The Norwegian Extra Foundation for Health and Rehabilitation (Norwegian: EkstraStiftelsen Helse og Rehabilitering) through the Norwegian Council for Mental Health (NCMH). Project number 2017FO143239.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02039/full#supplementary-material

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Supplementary Material

Two tables: Principal Component Analysis of 1) the FMPS and 2) the CAPS.

1. Principal Component Analysis of the Frost Multidimensional Perfectionism Scale (FMPS)

Table X1. Principal Component Analysis of the FMPS. Four components extracted based on the evaluation of the parallel analysis and removal of three problematic items found in step 2 of the PCA. Final solution of the FMPS PCA analysis.

Item		1 CMDA	2 PEPC	3 O	4 PS
DA28	I usually have doubts about the simple everyday things I do.	**0.75**	-0.23	0.21	-0.08
CM13	If someone does a task at school better than I am, then I feel like I failed the whole task.	**0.69**	0.00	0.06	0.09
DA33	It takes me a long time to do something "right."	**0.67**	-0.09	-0.01	-0.11
CM25	If I do not do well all the time, people will not respect me.	**0.62**	0.06	0.04	0.04
CM14	If I fail partly, it is as bad as being a complete failure.	**0.60**	-0.03	-0.01	0.16
CM21	People will probably think less of me if I make a mistake.	**0.59**	0.00	-0.15	0.23
DA17	Even when I do something very carefully, I often feel that it is not quite right.	**0.58**	-0.01	0.04	0.15
CM34	The fewer mistakes I make, the more people will like me.	**0.57**	0.14	-0.06	0.04
CM9	If I fail at school, I am a failure as a person.	**0.53**	0.14	-0.06	0.13
CM23	If I do not as well as other people, it means I am an inferior human being.	**0.53**	0.14	-0.14	0.07
DA32	I tend to get behind in my work because I repeat things over and over.	**0.51**	0.08	0.06	-0.06
PE20	My parents have expected excellence from me.	-0.15	**0.82**	0.10	0.13
PE11	My parents wants me to be the best at everything.	-0.15	**0.81**	-0.05	0.19
PE1	My parents set very high standards for me.	-0.10	**0.79**	0.09	0.16
PE26	My parents have always had higher expectations for my future than I have.	0.03	**0.72**	-0.09	-0.13
PE15	Only outstanding performance is good enough in my family.	0.06	**0.69**	0.03	0.07
PC35	I never feel like I can meet my parents' standards.	0.25	**0.59**	-0.02	-0.32
PC22	I never feel like I can meet my parents' expectations.	0.34	**0.50**	0.01	-0.32
PC3	I am punished for doing things less than perfect	0.04	**0.43**	-0.05	0.01
PC5	My parents never try to understand my mistakes.	0.09	**0.42**	0.00	-0.23
Org31	I am an organized person.	-0.01	-0.03	**0.83**	0.06
Org8	I try to be an organized person.	-0.05	0.00	**0.79**	0.03
Org2	Organization is very important to me.	0.12	-0.04	**0.78**	-0.27
Org7	I am a neat person.	-0.14	0.02	**0.74**	0.06
Org27	I try to be a neat person.	-0.01	0.05	**0.71**	0.02
Org29	Neatness is very important to me.	0.20	0.01	**0.65**	0.11
PS12	I set higher goals than most people.	0.00	-0.07	-0.11	**0.95**
PS19	I have extremely high goals.	-0.08	0.12	0.06	**0.81**
PS24	Other people seem to accept lower standards than I do.	0.18	-0.14	-0.10	**0.70**
PS30	I expect higher performance in my daily tasks than most people.	0.28	-0.01	0.01	**0.67**
PS6	I don't always try to be the best.	0.11	0.19	0.10	**0.52**
PS16	I am very good at focusing my efforts on attaining a goal.	-0.04	-0.01	0.32	**0.50**
	Eigenvalues	7.78	4.92	1.92	1.72
	% of variance	24.32	15.39	6.00	5.37

Note. CM = Concern over Mistakes. DA = Doubts About Actions. O = Organization. PE = Parental Expectations. PC = Parental Criticism. PS = Personal Standards.
Three items were removed before the final PCA was performed due to loadings onto unexpected components. PS 4 ("If I do not set the highest standards for myself, I am likely to end up a second-rate person") had a low loading on the expected component (i.e.,0.28) and loaded onto the CMDA component. The CM items 10 ("I should be upset if I make a mistake.") and 18 ("I hate being less than the best at things.") loaded onto the PS component and had a low loading on the expected components (i.e., 0.19 and -0.05, respectively).

2. Principal Component Analysis of the Child Adolescent Perfectionism Scale (CAPS).

Table X2. CAPS component pattern matrix. Two components extracted based on the evaluation of the parallel analysis and removal of two problematic items found in step 2 of the PCA. Final solution of the CAPS PCA analysis.

Item		1 SPP	2 SOP
SPP5	There are people in my life who expect me to be perfect.	**0.88**	-0.13
SPP13	Other people always expect me to be perfect.	**0.84**	-0.06
SPP9	People expect more from me than I am able to give.	**0.84**	-0.18
SPP8	My family expects me to be perfect.	**0.77**	-0.06
SPP3	I feel that people ask too much of me.	**0.66**	0.07
SPP15	People around me expect me to be great at everything.	**0.62**	0.18
SPP12	Other people think that I have failed if I do not do my very best all the time.	**0.61**	0.03
SPP21	My teachers expect my work to be perfect.	**0.60**	0.04
SOP2	I want to be the best at everything I do.	-0.11	**0.80**
SOP1	I try to be perfect in everything I do.	-0.07	**0.75**
SOP7	It really bothers me if I don't do my best all the time.	0.08	**0.69**
SOP10	I don't always try to be the best.	-0.27	**0.68**
SOP14	I always try to be as perfect as I can	0.11	**0.66**
SOP16	When I do something, it has to be perfect.	0.25	**0.60**
SOP6	I always try for the top score on a test.	-0.31	**0.56**
SOP4	I feel that I have to do my best all the time.	0.22	**0.55**
SOP11	I get upset if there is even one mistake in my work	0.17	**0.53**
SOP19	Even when I pass, I feel that I have failed if I didn't get one of the highest marks in the class.	0.20	**0.49**
SOP22	I do not have to be the best at everything I do.	0.01	**0.46**
SOP17	I can't stand to be less than perfect.	0.28	**0.42**
	Eigenvalues	6.96	2.47
	% of variance	34.77	12.32

Note. SOP = Self-Oriented Perfectionism. SPP = Socially Prescribed Perfectionism.
Two items were removed before the final PCA analysis of the CAPS. SPP 18 ("I am always expected to do better than others") due to substantial cross loading onto the second component (i.e., 0.43 versus 0.37 on its expected component), and SPP 20 ("My parents don't always expect me to be perfect in everything I do") had a low loading on its expected component (i.e., -0.14).

Paper II

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023). Mental health profiles among 13-16-year-old Norwegian talent and mainstream students - A prospective person-centered analytical approach. *Psychology of Sport and Exercise*, *68*, 102474. https://doi.org/10.1016/j.psychsport.2023.102474

Psychology of Sport & Exercise 68 (2023) 102474

Contents lists available at ScienceDirect

Psychology of Sport & Exercise

journal homepage: www.elsevier.com/locate/psychsport

Mental health profiles among 13-16-year-Old Norwegian talent and mainstream students - A prospective person-centered analytical approach

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ARTICLE INFO

Keywords:
dance
Youth athletes
Distress
Self-worth
Body concerns
Latent profile analysis

ABSTRACT

Objectives: To contribute further knowledge about symptoms of anxiety, depression, body concerns, and self-worth among young talent development (TD) and mainstream students by exploring the indicators within-person combinations prospectively, aiming to identify distinct profiles.
Methods: We included 946 students, n = 168 (45% girls) from three TD sports schools and one ballet class, n = 778 (52% girls) from ten mainstream schools. All were 13–14 years at T1 and 15–16 years at T2. Descriptive statistics were examined via variable-centered approaches: ANOVA and cross-tabulations. Mental health profiles were explored via person-centered approaches: latent profile and latent transition analysis, including profile stability over two years and school type, gender, and perfectionism association with profiles.
Results: TD girls' and boys' anxiety and depression scores did not differ, but girls reported more weight-shape concerns. Mainstream schoolgirls fared worse compared to all others. Four retained profiles (*distressed-body concerned*, *dissatisfied*, *moderate mentally healthy*, *mentally healthy*) showed distinct patterns of co-occurring anxiety, depression, weight-shape concerns, and self-worth. Profile stability was high overall (72–93%). The highest proportion of TD boys was in the *mentally healthy*, TD girls and mainstream boys in *moderate*, and mainstream girls within the *dissatisfied* profile. Noteworthy transitions: TD boys who transitioned were likely changing to healthier profiles and girls to unhealthier. Unhealthier profiles were associated with socially prescribed perfectionism.
Conclusion: TD students fared relatively better than mainstream students. Still, considerable proportions of girls were identified in the unhealthiest profiles. These findings involving young TD and mainstream students propose a need for specific follow-up measures to promote mental health.

1. Introduction

School-aged adolescents' mental health is a public health concern (Inchley et al., 2020). Although most adolescents are doing well, one in seven experience impaired daily life due to mental health problems (IHME, 2019). In the last decade, increased attention has been paid to the mental health of sports-involved adolescents (Walton et al., 2021) and student-athletes (Kegelaers et al., 2022). Essentially, previous studies indicate that adolescent athletes experience lower symptoms of anxiety and depression than non-athletes (Panza et al., 2020), and sports and dance participation may facilitate positive experiences of self-worth and well-being (Chappell et al., 2021; Eime et al., 2013). Still, experiences of distress, body concerns, and perfectionism related to decreased well-being among youth athletes and dancers require further attention (Quinn et al., 2021; Walton et al., 2021).

Anxiety and depressive symptoms, body concerns, and low self-worth are critical indicators of poor mental health and are reported more frequently in teenage girls than boys (Duchesne et al., 2017; McLean et al., 2021). Similar gender differences are found for student-athletes (Kegelaers et al., 2022). Although gender differences in mental health are consistently reported among adolescents, the explanations for the differences are not extensively studied or well understood

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https://doi.org/10.1016/j.psychsport.2023.102474
Received 28 January 2023; Received in revised form 5 May 2023; Accepted 6 June 2023
Available online 7 June 2023

(Campbell et al., 2021; Patalay & Demkowicz, 2023). Some relevant explanations of emerging gender differences in symptoms of distress during adolescence might relate to girls' experiences of higher pressures and expectations for success in school compared with boys (Wiklund et al., 2012). Further, it is suggested that the higher occurrence of body-related concerns among adolescent girls relates to different societal expectations of appearance for girls compared to boys, by which girls may experience their bodily changes during puberty as developing further away from society's appearance ideals while boys may perceive their bodies as developing closer to the ideals (lean/muscular) (Bearman & Stice, 2008; McLean et al., 2021). Such disparities are especially pronounced in weight-sensitive forms of sports and dance (Sundgot-Borgen et al., 2013).

Only a few studies have as yet explored such mental health indicators, gender differences, and whether there are differences between very young student-athletes and non-student athletes, specifically during their junior high school years (i.e., 12/13–15/16 years old: Brand et al., 2013; see Kegelaers et al., 2022, for a scoping review on student-athletes mental health from various ages). Notably, one of the few previous studies on 12-15-year-old student-athletes and non-student athletes reported that student-athlete girls tended to report *fewer* mental health symptoms (i.e., panic, posttraumatic stress, and specific phobia) than non-athlete girls.

Adolescents are in a life stage involving physical, emotional, and psychosocial changes that can make them vulnerable to mental health symptoms (Solmi et al., 2022). Early detection of who might be at risk is important. However, we have limited research on mental health development among young student performers at talent development schools (i.e., 12 to 16-year-old students in specialized schools combining academic studies with sports or performing arts for selected students) compared to non-student performers. Given this lack of knowledge and the anticipation that the very young student performers might struggle with mental health issues related to, amongst others, experiencing pressures from performance expectations, preventive work might be needed (Walton et al., 2021). Accordingly, we need more knowledge about adolescent students' mental health status and development to promote healthy development and to facilitate preventive work in different school settings.

1.1. Person-centered approach to mental health

Mental health can be defined as a state of well-being and healthy functioning where individuals realize their potential, manage the normal demands of life, and contribute to their community (WHO, 2022). Based on these views, mental health incorporates individuals' experiences of well-being and self-worth that are not limited to the absence of mental illness.

Previous studies have provided valuable knowledge on the prevalence and associations between anxiety, depression, body concerns, and self-worth among adolescents (Bos et al., 2010; Duchesne et al., 2017). Alternative approaches addressing how levels of positive and adverse mental health coexist within adolescents may contribute to further knowledge of their mental health status (Moore et al., 219a; Suldo & Shaffer, 2008). The dual-factor model (Greenspoon & Saklofske, 2001) or two-continua model of mental health (Keyes, 2002; Westerhof & Keyes, 2010) are theoretical concepts viewing well-being and psychological distress as representing two separate continua but as related dimensions (Keyes, 2002; Moore et al., 2019a; Suldo & Shaffer, 2008). Aligning with contemporary mental health views, these models consider exclusive assessments of the absence of mental illness as insufficient to cover the heterogeneity in different individuals' mental health (Westerhof & Keyes, 2010).

Studies exploring co-occurring levels of adverse and positive mental health based primarily on indicators of psychological distress and well-being have suggested four mental health profiles as particularly valuable (e.g., Antaramian et al., 2010; Suldo et al., 2016; Suldo & Shaffer, 2008). These four profiles hypothesized within the dual-factor model are commonly named and characterized as *flourishing* or *complete* mental health with low distress/high well-being, *vulnerable* or *languishing* with low distress/low well-being, *symptomatic but content* with high distress/high well-being, and *troubled* mental health with high distress/low well-being (e.g., Suldo & Shaffer, 2008). Most previous studies have used cut-point strategies that pre-specifies four profiles consistent with the dual-factor model (e.g., Antaramian et al., 2010; Suldo et al., 2016; Lyons, Huebner, & Hills, 2013). In contrast, using a data-driven explorative approach, latent profile analysis (LPA), the number of profiles to retain and the characterization of within-profile patterns can not be pre-determined but relies on a set of criteria related to model fit indices, substantive rationale, and previous literature (Spurk et al., 2020). Unsurprisingly then, the number of mental health profiles retained across studies varies depending on the analytical approach.

Notably, in the present study, we aim to explore mental health profiles based on self-worth instead of specific indicators of well-being – and in addition to indicators of anxiety and depression, we include body weight-shape concerns. To our knowledge, such mental health profiles have not yet been explored among young teenage students from different school contexts cross-sectionally or prospectively. However, some previous studies have provided valuable insight into mental health profiles exploring co-occurring symptoms of distress and well-being using the explorative LPA approach among relevant samples to the present study, i.e., elite athletes (Kuettel et al., 2021) and mainstream students (Moore et al., 2019a; Moore et al., 2019b).

Among elite athletes, three mental health profiles based on indicators of anxiety, depressive symptoms, and well-being have been identified by the LPA approach (Kuettel et al., 2021). Also, using LPA, four mental health profiles were retained based on internalizing and externalizing distress and well-being among mainstream high school students (15–19 years old: Moore et al., 2019a; Moore et al., 2019b). Indeed, these explorative studies found a profile with severe distress/low well-being and a profile with low distress/high well-being (i.e., *complete/flourishing* profile: Kuettel et al., 2021; Moore et al., 2019a; Moore et al., 2019b). Moore et al. (2019a;)Moore et al. (2019b further identified individuals with co-occurring high-average well-being and above-average distress corresponding to the *symptomatic but content* profile of the dual-factor model, which did not emerge in elite athletes (Kuettel et al., 2021). However, no athletes or mainstream students were identified with combined low distress and low well-being (i.e., *vulnerable* profile). Instead, a *moderately mentally healthy* profile emerged, characterized by average well-being and distress. Accordingly, using LPA, the hypothesis of the dual-factor model was only partly supported (Kuettel et al., 2021; Moore et al., 2019a; Moore et al., 2019b).

Critical differences have been reported between different profiles in terms of individuals with higher levels of well-being combined with lower levels of distress (*complete* and *moderately mentally* healthy) reporting higher levels of protective factors (e.g., social support) and lower levels of risk factors (e.g., stress) than those in other profiles (Kuettel et al., 2021; Moore et al., 2019a). Also, when experiencing high levels of distress, a buffering role of well-being might be possible, as demonstrated among high school students with a *symptomatic but content* profile who reported higher life satisfaction than those with lower levels of well-being but high distress (*troubled* profile: Moore et al., 2019a).

Providing mental health profile estimates related to gender seems valuable, considering the frequently reported gender differences reported in other mental health research (Duchesne et al., 2017; Kegelaers et al., 2022). More female (8.1%) than male (5.4%) elite athletes have been classified with the combination of high distress/low well-being, and conversely, more males (69.5%) than females (57%) with coexisting low distress/high well-being (Kuettel et al., 2021). Gender proportions in mental health profiles were not reported among high school students, but the coexistence of high distress/low well-being included the lowest proportion of students (*troubled* 4–10%). Hence, more students experienced high co-occurring distress and well-being

(*symptomatic but content* 20–31%), low distress with high well-being (*complete profile* 20–55%), or average distress and well-being across four school years (32–49%: *moderate mentally healthy* profile; Moore et al., 2109a; 2019b).

Gaining knowledge of mental health profiles and their stability over time can be valuable for the early detection of students at risk of developing mental health symptoms (Moore et al., 2019b). For instance, Moore et al. (2019b) used the robust but rarely used approach, LTA, to explore mental health profile stability and transition over time. Low stability was reported among students with co-occurring high distress and low well-being (*troubled*: 39% remained; Moore et al., 2019b). In contrast, rather high stability was estimated among students with co-occurring low distress and high well-being (*complete mental health*; 73% remained), for which those transitioning out tended to go to the neighboring *moderate mentally healthy* profile. This may suggest that extreme transitions (e.g., from healthiest to unhealthiest mental health profile) are unlikely (Moore et al., 2019b). Similar transition patterns in mental health profiles have not been explored in young student-athletes or other performers.

1.2. Mental health and perfectionism

Perfectionism is a critical factor associated with adolescent anxiety and depressive symptoms, body concerns, and lowered self-worth (Affrunti & Woodruff-Borden, 2014; Flett & Hewitt, 2022; Vacca et al., 2021). For young performers in achievement domains such as sports, dance, and school, being perfectionistic might mean achieving success is necessary to feel a sense of self-worth (Flett & Hewitt, 2022). Still, limited research has explored young student-athletes' and dancers' perfectionism related to common mental health risk factors (i.e., anxiety, depressive symptoms, and body concerns; Hill et al., 2018). Given that demanding performance environments may generate perfectionistic tendencies (Flett & Hewitt, 2014, 2022), exploring potential associations between mental health profiles and perfectionism is likely to be illuminating.

An established perfectionism model differentiates between self-oriented (SOP) and socially prescribed perfectionism (SPP; Flett et al., 2016). SOP involves self-directed demands of perfection with exaggerated attention to avoiding imperfection and failures, and the need to obtain perfection to perceive a sense of worth. SPP involves the perception that others (e.g., parents, coaches) require perfection of oneself (Hewitt & Flett, 1991). Although SOP has been related to distress and body concerns, SPP is a more consistent and stronger predictor of mental health symptoms (Flett et al., 2022). For instance, O'Connor et al. (2010) found SPP to be a stronger predictor than SOP for increased levels of depressive symptoms over time. Also, a concept akin to SPP known as evaluative concerns perfectionism predicted increases in adolescents' anxiety (Damian et al., 2017) and body weight-shape concerns over time (Boone et al., 2014). Extending previous research, we aim to provide further knowledge by exploring the effect of SOP and SPP on different mental health profiles based on specific positive and adverse mental health indicators.

1.3. The present study

In this study, we explored the following research questions:

I) Are symptoms of anxiety, depression, body concerns, and self-worth different between female and male talent development and mainstream students?

II) (a) Which mental health profiles emerge based on indicators of anxiety and depressive symptoms, body concerns, and self-worth? (b) How stable are adolescents' mental health profiles over two years? (c) How are perfectionism, gender, and school type (talent development vs. mainstream school) associated with mental health profiles two years apart? (d) What are the estimated profile proportions within each profile for girls and boys from each school type? (e) Which transition patterns are displayed among girls' and boys' talent development and mainstream students?

2. Methods

2.1. Participants

We recruited adolescents from 13 schools in large regions south of Norway: three talent development (TD) sports schools and ten mainstream schools. The first year in Norwegian lower secondary sports schools starts in the autumn semester of 8th grade when students are 12/13 years old. The last year is the 10th grade of lower secondary school, and students are 15/16 years when they graduate in the spring semester. This study included all the private sports schools in Norway for this age group at time 1 (T1). The athletes represented both team sports (football, handball, ice hockey, basketball, volleyball) and individual sports (alpine skiing, biathlon, athletics, cross-country skiing, climbing, cycling, diving, equestrian sports, freestyle skiing, gymnastics, martial arts/combat sports, motocross, rowing, swimming, sailing, skateboarding, tennis, triathlon, windsurfing). One of the mainstream schools included a TD class of young high-ability classical ballet students. Accordingly, in this study, TD students refer to both athletes and ballet students. Since the data collection was conducted during the spring semester, the students were 13–14 years old at T1 and 15–16 at time 2 (T2). The total T1-T2 sample comprised 946 adolescents (50.4% girls), including 168 TD school students (n = 158 athlete-students and n = 10 ballet students, 45% TD girls) and 778 (52% girls) mainstream students.

2.2. Ethics statement and Procedure and

The Regional Committee for Medical and Health Science Research Ethics in Southern Norway approved the study (project number: 2015/1358). All eligible students received written and oral information about the study. It included voluntary participation and their right to withdraw at any time without stating a reason. Written informed consent was obtained from all students and parents/legal guardians at T1 and T2 if the student was <16 years old. All participating students conducted the self-report measures during one school hour in the presence of the first author and research assistants.

2.3. Self-report measures

2.3.1. Anxiety and depressive symptoms

The short version of the Revised Children's Anxiety and Depression Scale was used to assess symptoms of general anxiety (15 items) and depression (10 items) (RCADS-25; Ebesutani et al., 2012). Items are rated on a four-point Likert scale from *never* (0) to *always* (3). Higher scores indicate greater severity, with cut-off scores for anxiety: girls ≥26, boys ≥22, and depressive symptoms: girls ≥17, boys ≥16. The omega coefficients for anxiety (T1 $\omega = 0.86$, T2 $\omega = 0.85$) and depression (T1 $\omega = 0.85$, T2 $\omega = 0.86$) were good.

2.3.2. Body weight and shape concerns

A brief 11-item version (Friborg et al., 2013) of the Eating Disorder Examination-Questionnaire (EDE-Q 6.0, Fairburn, 2009) was used to assess body weight-shape concerns (WCSC). Items are rated on a seven-point scale from *not at all* or *no days* (0) to *very much* or *all days* (6). Examples include: *Has your weight influenced how you think about (judge) yourself as a person?* and *Has your shape influenced how you think about (judge) yourself as a person?* Higher scores indicate elevated concerns; clinical mean cut-off score ≥4.0 (Fairburn, 2009). The omega coefficients were good (T1 and T2 $\omega = 0.95$).

2.3.3. Self-worth

Five items from the Norwegian version of Harter's Self-Perception Profiles for Adolescents – Revised (SPPA-R; Wichström, 1995) were used to assess global self-worth. Items are rated on a four-point Likert scale from *describes me very poorly* (1) to *describes me very well* (4). Higher scores indicate better self-worth. The omega coefficients were good (T1 $\omega = 0.88$, T2 $\omega = 0.89$).

2.3.4. Perfectionism

The Child Adolescent Perfectionism Scale (CAPS; Flett et al., 2000; Flett et al., 2016) was used to assess perfectionism, i.e., self-oriented perfectionism (SOP: 12 items) and socially prescribed perfectionism (SPP: 10 items). Items are rated on a five-point Likert scale from *false* (1) to *very true* (5). Examples include: *I try to be perfect in everything I do* (SOP), *My family expects me to be perfect* (SPP), *and My teachers expect my work to be perfect* (SPP). The omega coefficients for SOP (T1 $\omega = 0.86$, T2 $\omega = 0.87$) and SPP were good (T1 and T2 $\omega = 0.88$).

2.3.5. Statistical analyses

We used SPSS (IBM SPSS Statistics version 28) for missing data analysis and descriptive statistics. Mplus 8.7 (Muthén & Muthén, 1998-2021) was used for factor analysis, latent profile, and latent transition analyses in which full-information maximum likelihood (FIML) was used to handle missing data (Lang & Little, 2018). FIML includes individuals with both complete and partial data, analyzing them simultaneously and adjusting model estimates according to all available information (Collins & Lanza, 2010). Our longitudinal analysis thus included all available data from students participating on one or both measurement occasions. FIML also offers less biased estimates when data are missing at random than complete case analysis/listwise deletion (Enders, 2022). Accordingly, the available data ($n = 946$) consisted of students answering at two time points ($n = 520$) and responders at only T1 ($n = 233$) or T2 ($n = 193$).

Analyses were conducted in the following steps: (1) Confirmatory factor analysis (CFA); (2) longitudinal factorial invariance across time; (3) descriptive statistics for each measurement occasion using ANOVA tests for continuous data and cross-tabulations (anxiety, depression, weight-shape concerns cut-scores) with Chi-square tests for categorical data to detect differences between female and male TD and mainstream students; (4) latent profile analysis (LPA) to explore mental health profiles based on anxiety and depressive symptoms, weight-shape concerns, and self-worth; (5) latent transition analysis (LTA) to explore stability and transition probabilities between profiles over two years; and (6) adding SOP, SPP, gender, and school type as covariates to examine their influence on profile membership at T1 and T2.

2.3.6. Factor analyses

Preliminary CFA and longitudinal factorial invariance tests were conducted to verify the psychometric properties of all measures. Standardized factor scores estimated in standardized units ($M = 0$, $SD = 1$) were saved and used as indicators in the LPA and LTA (Morin et al., 2016). The model estimations are provided in the supplementary material.

2.3.7. Latent profile and latent transition analyses – person-centered analytical approach

The model building of the LTA started with examining the cross-sectional latent profile models to verify that the same number of profiles would reemerge at both time points. To decide the number to retain, we estimated 1–6 profile solutions with freely estimated variances (Nylund-Gibson & Choi, 2018). In the second step, we examined measurement invariance, contrasting two models; one non-invariance model with all parameters freed and varying across time, and one full invariant model with all parameters constrained to equality across time (Collins & Lanza, 2010). Both models were estimated without the autoregressive pathway between time points, as is included in the LTA.

The primary interest in LTA is latent transition probabilities. Hence, the third step included the autoregressive relation between T1 and T2, estimating the individuals' probability of latent profile status at T2 ($t+1$) conditioned on profile status at T1 (Time t) (Collins & Lanza, 2010). Finally, covariates (SOP, SPP, gender, school type) were added. Two models were estimated: (1) a baseline model to test the influence of the covariates on the start point of the transitions and (2) a main effect model to test the influence of the covariates on the T1 and T2 profile variables (see Figure S3 supplementary material; Muthén, 2021).

Model fit was compared to a combined set of fit indices; Log-Likelihood ratio (LL), Akaike's Information Criterion (AIC), Bayesian Information Criterion (BIC), and adjusted BIC (aBIC: Nylund-Gibson & Choi, 2018; Nylund et al., 2007). Models with the lowest AIC, BIC, and aBIC values indicate a better fit (Spurk et al., 2020). To decide the number of profiles to retain, we further evaluated the elbow plot of the fit indices. Adding profiles to the LPA stopped when no substantial improvements were observed (see supplementary material figures S1 and S2). The standardized index value entropy (0 = *terrible*, 1 = *perfect classification*) indicated whether the categorization and separation of individuals to correct profiles were adequate, with values of ≥0.8 optimal and 0.6–0.8 suggested as tenable certainty (Spurk et al., 2020). Bootstrap Likelihood Ratio Test (BLRT) and Lo-Mendell-Rubin adjusted likelihood ratio test (aLMR-LRT) with non-significant p-values (>.05) suggested the k-1 profile model was supported (Nylund et al., 2007). Notably, BLRT tends to overestimate the number of profiles to retain (Morin & Marsh, 2015). Finally, we evaluated LPA models by the profiles' interpretability, previous studies, and theory (Nylund-Gibson & Choi, 2018). LTA models were evaluated by similar fit indices as the cross-sectional LPA's, i.e., LL, AIC, BIC, and aBIC.

3. Results

3.1. Preliminary assessments

Missing value analysis showed less than 5% missing data at T1 and T2 among those who responded to the questionnaires. Little's MCAR test assumed data were missing completely at random ($\chi^2(111) = 134.47$, $p = .064$). The sample size (n = 946) for accurately identifying the correct number of latent profiles met the recommendations of a sample size of approximately 500 (Nylund et al., 2007; Spurk et al., 2020).

3.2. Factor analyses

Confirmatory factor analyses and longitudinal factorial invariance tests are provided in the supplementary material, Table S2. Longitudinal factorial invariance was tested by using the fixed-factor method of scaling, contrasting 1) configural invariance, 2) weak factorial invariance, and 3) strong factorial invariance (Little, 2013). The final models showed an overall acceptable fit, and changes in the goodness-of-fit indices for measurement invariance across time were within the acceptable cutoffs: ΔCFI/TLI; ≤0.010 and ΔRMSEA ≤0.015 (see supplementary material, Table S2 for further details).

3.3. Cross-sectional mental health findings

Descriptive data with effect sizes for all variables by gender and school type are reported in Table 1. We found significant differences between groups on all variables except SOP. Post-hoc tests revealed that mainstream student girls reported significantly ($p < .01$) higher anxiety and depressive symptoms and lower self-worth than all other groups. TD boys reported significantly higher self-worth than all others at T2. All girls reported significantly higher levels of weight-shape concerns than boys ($p < .01$), and mainstream girls reported higher levels than TD girls ($p < .001$). One in four mainstream girls and one in 10 TD girls scored above the strict clinical cut-off for weight-shape concerns at T2. SPP was higher in mainstream students than TD boys ($p < .05$). TD girls' SPP did

Table 1
Descriptive statistics of the mental health indicators and the perfectionism covariates.

	Boys TD school T1 n = 74; T2 n = 71	Boys mainstream T1 n = 281; T2 n = 277	Girls TD school T1 n = 69; T2 n = 58	Girls mainstream T1 n = 329; T2 n = 307	All T1 n = 753; T2 n = 713			
	mean [95% CI]	mean[95% CI]	mean [95% CI]	mean[95% CI]	mean [95% CI]	*p*	ω^2	
Time 1								
Anxiety	7.03 $_{a}$ [6.06, 8.00]	8.06 $_{a}$ [7.43, 8.68]	9.13 $_{a}$ [7.86, 10.39]	12.79 $_{b}$ [11.95, 13.63]	10.12 [9.63, 10.61]	*<.001*	.121	
Depression	5.11 $_{a}$ [4.38, 5.83]	5.47 $_{a}$ [4.98, 5.96]	6.07 $_{a}$ [5.27, 6.87]	8.45 $_{b}$ [7.82, 9.08]	6.79 [6.43, 7.15]	*<.001*	.084	
WCSC	0.56 $_{a}$ [0.39, 0.74]	0.90 $_{a, b}$ [0.77, 1.03]	1.24 $_{b}$ [0.95, 1.53]	2.30 $_{c}$ [2.11, 2.49]	1.51 [1.40, 1.63]	*<.001*	.199	
Self-Worth	3.55 $_{a}$ [3.46, 3.65]	3.40 $_{a}$ [3.33, 3.46]	3.40 $_{a}$ [3.27, 3.54]	2.94 $_{b}$ [2.86, 3.02]	3.21 [3.16, 3.26]	*<.001*	.128	
SOP	3.17 [3.00, 3.33]	3.00 [2.88, 3.03]	3.09 [2.89, 3.29]	3.02 [2.92, 3.11]	3.02 [2.96, 3.12]	*.187*	.002	
SPP	2.04 $_{a}$ [1.88, 2.20]	2.45 $_{b, d}$ [2.35, 2.55]	2.16 $_{a, d}$ [1.94, 2.38]	2.40 $_{b, d}$ [2.38, 2.58]	2.40 [2.34, 2.46]	*<.001*	.025	
Time 2								
Anxiety	6.84 $_{a}$ [5.79, 7.89]	7.17 $_{a}$ [6.57, 7.78]	9.18 $_{a}$ [7.57, 10.78]	12.69 $_{b}$ [11.91, 13.48]	9.68 [9.20, 10.17]	*<.001*	.163	
Depression	5.59 $_{a}$ [4.68, 6.51]	6.09 $_{a}$ [5.58, 6.61]	7.67 $_{a}$ [6.34, 9.01]	9.90 $_{b}$ [9.25, 10.55]	7.82 [7.42, 8.21]	*<.001*	.119	
WCSC	0.52 $_{a}$ [0.35, 0.69]	0.88 $_{a}$ [0.75, 1.01]	1.56 $_{b}$ [1.18, 1.94]	2.39 $_{c}$ [2.19, 2.59]	1.55 [1.43, 1.67]	*<.001*	.168	
Self-Worth	3.51 $_{a}$ [3.39, 3.62]	3.26 $_{b}$ [3.18, 3.34]	3.16 $_{b}$ [3.00, 3.32]	2.79 $_{c}$ [2.71, 2.87]	3.07 [3.02, 3.13]	*<.001*	.134	
% above cut-score:	%	%	%	%	%	*p*	χ^2	φ_c
T1 Anxiety	0 $_{a}$	1.8 $_{a}$	1.5 $_{a, b}$	8.0 $_{b}$	4.3	*<.001*	19.64	.16
T1 Depression	1.4 $_{a}$	3.6 $_{a}$	1.4 $_{a}$	9.8 $_{b}$	5.9	*<.001*	16.83	.15
T1 WCSC	1.4 $_{a}$	2.9 $_{a}$	4.3 $_{a}$	21.6 $_{b}$	11.1	*<.001*	66.35	.30
T2 Anxiety	0 $_{a}$	1.4 $_{a}$	1.7 $_{a, b}$	6.5 $_{b}$	3.5	*.002*	14.77	.14
T2 Depression	2.8 $_{a}$	3.3 $_{a}$	6.9 $_{a, b}$	15.0 $_{b}$	8.6	*<.001*	29.26	.20
T2 WCSC	0 $_{a}$	3.7 $_{a}$	10.3 $_{b}$	25.2 $_{c}$	13.2	*<.001*	71.72	.32

Note. T1 = time 1; T2 = time 2. SOP = Self-Oriented Perfectionism; SPP = Socially Prescribed Perfectionism; WCSC = weight-shape concerns. *p* = *p-value* = between groups. Subscripts: different column labels $_{(e.g., b c)}$ = statistically mean different scores, $p < .05$. ω^2 = omega-squared effect size: small = 0.01 - 0.06, medium = 0.06 - 0.14, large ≥0.14. φ_c = Cramer's V effect size: small <0.2, medium = 0.2 - 0.6, large >0.6.

not differ from other groups.

3.4. Mental health profiles - latent profile and transition analysis models

Step 1: Cross-Sectional LPA Models

Fit indices for each time point are presented in Table 2. Guided by a combination of fit indices, the fit continued to improve with the number of profiles added (2–6). The six-profile solution revealed the lowest AIC, BIC, and aBIC. Contrasting the three-vs. four-profile solution showed noticeable improvements in model fit for the four-profile solution. The four-vs. five- and six-profile solutions did not substantially improve fit, nor did the five- and six-profile solutions add theoretically valuable meaning. The four-profile solution was deemed the most informative and was retained (Figure 1).

Step 2: Measurement Invariance of the Latent Mental Health Profiles across Time

Table 3 provides the model fit for two contrasted LPTA models. The full invariant model showed a better fit than the non-invariant model, indicating measurement invariance.

Step 3: Latent Transition Modelling of Mental Health Profiles

Figure 1 displays mean factor scores for anxiety, depressive symptoms, weight-shape concerns, and self-worth within each profile for the total sample. The figure legends present the estimated proportions within each profile at each time point. We intended to be descriptive when naming the profiles in a manner related to how the combinations of positive and negative indicators occurred in each profile. The four retained mental health profiles were characterized and named: 1) *distressed-body concerned:* high, above-average anxiety, depressive symptoms (2.0 *SD*) and weight-shape concerns (1.4 *SD*), and low, below-average self-worth (−1.4 *SD*); 2) *dissatisfied:* above-average anxiety, depressive symptoms (0.4 *SD*), and weight-shape concerns (0.5 *SD*) combined with below-average self-worth (−0.5 *SD*), 3) *moderate mentally healthy:* below-average anxiety, depressive symptoms (−0.3 *SD*)

Table 2
Fit statistics for the preliminary cross-sectional latent profile models.

K	# fp	LL	Scaling	AIC	BIC	aBIC	ΔAIC	ΔBIC	BLRT *p*	aLMR-LRT *p*	Entropy
T1											
1	8	−4123.54	1.401	8263.07	8300.06	8274.66	–	–	–	–	–
2	17	−3054.37	1.312	6142.73	6221.34	6167.36	−2120.34	−2079.72	<.001	<.001	.880
3	26	−2626.21	1.263	5304.41	5424.64	5342.08	−838.32	−796.70	<.001	<.001	.912
4	35	−2422.96	1.372	4915.92	5077.76	4966.63	−388.49	−346.88	<.001	.047	.884
5	44	−2287.96	1.319	4663.93	4867.38	4727.67	−251.99	−210.38	<.001	.139	.885
6	53	−2202.07	1.262	4510.01	4755.09	4586.79	−153.92	−112.29	<.001	.109	.880
T2											
1	8	−3904.78	1.174	7825.56	7862.11	7836.71	–	–	–	–	–
2	17	−3004.20	1.205	6042.39	6120.07	6066.09	−1783.17	−526.97	<.001	<.001	.882
3	26	−2711.15	1.186	5474.29	5593.10	5510.54	−568.10	−555.55	<.001	<.001	.894
4	35	−2548.26	1.339	5166.53	5326.46	5215.33	−307.76	−266.64	<.001	.089	.880
5	44	−2468.84	1.223	5025.68	5226.74	5087.03	−99.72	−128.30	<.001	.092	.849
6	53	−2400.56	1.235	4907.13	5149.31	4981.02	−118.55	−106.01	<.001	.135	.865

Note. K = number of profiles estimated; # fp = number of free parameters; LL = log-likelihood; Scaling = scaling correction factor for robust maximum likelihood estimates; BIC = Bayesian Information Criterion; aBIC = Sample-size adjusted BIC; BLRT = bootstrapped likelihood ratio test; aLMR-LRT = Lo-Mendell-Rubin adjusted likelihood ratio test; *p* = p-value.

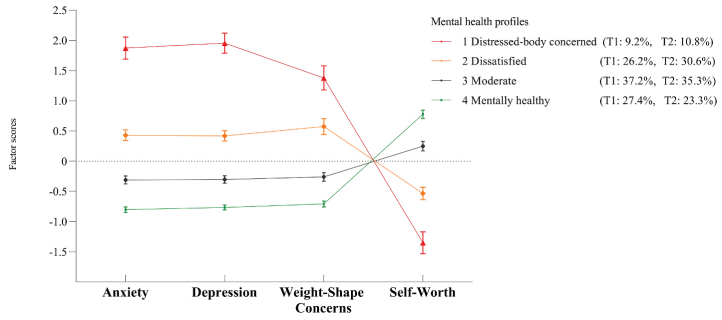

Figure 1. Latent Transition Analysis Four Profile Solution with Four Mental Health Indicators, Mean Factor Scores, and 95% CI within Each Latent Profile
Note. The final LTA model; constrained with equal means and variances across time.

Table 3
Fit statistics for the measurement invariance of the profiles across time and latent transition analysis models.

	# fp	LL	Scaling	AIC	BIC	aBIC	Entropy
Measurement invariance [a]							
Non-invariance, all parameters freely estimated	70	6377.88	1.394	12895.76	13235.41	13013.10	.870
Full invariance, all parameters constrained equal across time	38	−6400.67	1.592	12877.34	13061.72	12941.04	.868
Regular Latent Transition Analysis Model (LTA)							
C2 profile variable on C1 profile variable [b]	47	−5946.03	1.426	11986.06	12214.11	12064.84	.891
LTA Transition Probabilities Influenced by Covariates							
Baseline; covariates influencing the start point of transitions:							
C1 profile conditioned by gender school.grp t1SOP t1SPP	59	−5781.18	1.335	11680.37	11966.59	11779.21	.894
Main Effect Model:							
C1–C2 on gender school grp t1SOP t1SPP	71	−5755.58	1.318	11653.17	11997.60	11772.11	.897

Note. [a] Measurement invariance estimated without including the autoregressive relations between each latent profile (C) variables. [b] C1 = Latent profile variable at T1, C2 = Latent profile variable at T2. Regular LTA model = latent profile variable C2 regressed onto the latent profile variable at T1 (C1). # fp = number of free parameters; LL = Log Likelihood; Scaling = scaling correction factor for robust maximum likelihood estimates; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; aBIC = Sample-Size Adjusted BIC.

and weight-shape concerns (−0.2 *SD*), and above-average self-worth (0.2 *SD*); and 4) *mentally healthy:* low to below-average anxiety and depressive symptoms (−0.8 *SD*), and weight-shape concerns (−0.7 *SD*) and above-average self-worth (0.8 *SD*). The *moderate* profile was the most common in the total sample (T1 n = 352, T2 n = 333), followed by the *dissatisfied* (T1 n = 248, T2 n = 289), *mentally healthy* (T1 n = 259, T2 n = 221), and *distressed-body concerned* profile (T1 n = 86, T2 n = 102; Figure 1). The proportions within each profile changed somewhat over time. The tendency was that overall proportions increased in the *distressed-body concerned* and *dissatisfied* profiles. Accordingly, the proportions decreased in the *moderate* and *mentally healthy* profiles.

The *dissatisfied* profile revealed the highest stability for the total sample, estimating that 93% maintained their status from T1 to T2. The *mentally healthy* profile was the least stable, for which 72% remained across time. No adolescents in the *distressed-body concerned* or *dissatisfied* profiles at T1 were estimated to transit to the *mentally healthy* profile at T2 (Table 4).

Covariates' influence on profile status is presented in Table 5. Adolescents with higher SPP were more likely to be in the *distressed-body concerned*, *dissatisfied,* and *moderate* profiles compared to the *mentally healthy* at T1. At T2, SPP was a significant predictor for being identified within the *distressed-body concerned* vs. *dissatisfied* and in the *distressed-body concerned* vs. *moderate* profile. SOP was not a significant predictor of profile status at T1. At T2, lower SOP was associated with less likelihood of being identified within the *distressed-body concerned* vs. the *moderate* profile.

School type was a significant predictor at T1 but not T2. Mainstream students were more likely than TD students to be in the *distressed-body concerned*, *dissatisfied,* or *moderate* profiles compared to the *mentally healthy* at T1. Gender influenced profile statuses at both time points.

Table 4
Final LTA model. Latent Transition Probability Estimates for Each Latent Profile Variable.

Profiles	Transition probabilities to Time 2 profiles			
	1 Distressed-body concerned	2 Dissatisfied	3 Moderate	4 Mentally healthy
Time 1				
1	**.781**	.111	.109	.000
2	.054	**.926**	.019	.000
3	.014	.133	**.797**	.055
4	.015	.072	.195	**.718**

Note. Time 1 profile probability in rows, time 2 in columns. Diagonal (bold) = probability estimates for maintaining a profile classification; off-diagonal = transition probability estimates.

Girls were more likely than boys to be in the *distressed-body concerned*, *dissatisfied,* or *moderate* profiles compared to the *mentally healthy* at T1 and T2.

We provide detailed transition probability estimates and estimated profile proportions within each profile for girls and boys from each school type in Table 6. Most TD boys were identified in the *mentally healthy* profile (>50%), followed by the *moderate*, *dissatisfied,* and *distressed-body concerned.* Most TD girls (>40%) were in the *moderate* profile, followed by the *dissatisfied*, *mentally healthy*, and *distressed-body concerned.* Most mainstream boys were in the *moderate* (>40%), followed by *mentally healthy*, *dissatisfied*, and *distressed-body concerned.* Most mainstream girls were in the *dissatisfied* profile (>40%), followed by *moderate, distressed-body concerned,* and *mentally healthy.*

The transition probability estimates showed a pattern where girls

Table 5
Multinomial logistic regressions for the effects of each covariate on profile membership.

		Distressed-body concerned (1) vs. Mentally Healthy (4)	Dissatisfied (2) vs. Mentally Healthy (4)	Moderate (3) vs. Mentally Healthy (4)	Dissatisfied (2) vs. Moderate (3)	Distressed-body concerned (1) vs. Moderate (3)	Distressed-body concerned (1) vs. Dissatisfied (2)
		OR [95% CI]	OR[95% CI]	OR[95% CI]	OR[95% CI]	OR[95% CI]	OR[95% CI]
Time 1	SPPt1	$3.9_{[2.2, 6.9]}$*	$2.9_{[1.9, 4.4]}$*	$1.7_{[1.2, 2.5]}$*	$1.7_{[1.2, 2.3]}$*	$2.2_{[1.4, 3.6]}$*	$1.3_{[.8, 2.3]}$
	SOPt1	$1.5_{[.8, 2.6]}$	$1.1_{[.8, 1.7]}$	$1.0_{[.7, 1.5]}$	$1.1_{[.8, 1.6]}$	$1.5_{[.9, 2.3]}$	$1.3_{[.8, 2.3]}$
	School	$11.3_{[3.3, 39.1]}$*	$3.1_{[1.7, 5.6]}$*	$2.0_{[1.2, 3.3]}$*	$1.6_{[.9, 2.9]}$	$5.7_{[1.7, 19.5]}$*	$3.6_{[1.0, 13.0]}$*
	Gender	$22.3_{[10.2, 48.8]}$*	$9.0_{[5.6, 14.5]}$*	$2.5_{[1.6, 3.8]}$*	$3.6_{[2.4, 5.6]}$*	$9.0_{[4.4, 18.6]}$*	$2.5_{[1.2, 5.2]}$*
Time 2	SPPt1	$1.9_{[.7, 5.5]}$	$0.7_{[.3, 1.7]}$	$.6_{[.3, 1.2]}$	$1.2_{[.6, 2.7]}$	$3.2_{[1.3, 8.1]}$*	$2.6_{[1.1, 6.0]}$*
	SOPt1	$.4_{[.2, 1.3]}$	$1.0_{[.4, 2.2]}$	$1.3_{[.6, 2.6]}$	$.8_{[.3, 1.8]}$	$.3_{[.1, .9]}$*	$.5_{[.2, 1.2]}$
	School	$1.9_{[.4, 9.2]}$	$1.5_{[.5, 5.0]}$	$1.1_{[.4, 2.9]}$	$1.4_{[.4, 4.5]}$	$1.8_{[.4, 7.9]}$	$1.2_{[.3, 5.3]}$
	Gender	$33.9_{[10.0, 114.6]}$*	$8.0_{[3.1, 21.1]}$*	$4.1_{[1.5, 11.1]}$*	$1.9_{[.9, 4.0]}$	$8.2_{[3.0, 22.3]}$*	$4.2_{[1.6, 10.8]}$*

Note. *$p < .05$. t1 = time 1; MH = mental health; SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism; School mainstream = 1; Gender girl = 1.

Table 6
Detailed latent transition probability estimates and proportion of students for each latent profile variable.

Time 1	Time 1 profile size	Detailed Transition Probabilities to Time 2 profiles				
		1 Distressed-body concerned	2 Dissatisfied	3 Moderate	4 Mentally healthy	Time 2 profile size
Boys TD school						
1	0.5%	**.504**	.222	.274	.000	0.4%
2	7.6%	.011	**.954**	.035	.000	10.7%
3	40.3%	.001	.067	**.762**	.140	36.1%
4	51.6%	.000	.012	.074	**.914**	52.8%
Boys mainstr.						
1	2.0%	**.701**	.159	.140	.000	1.9%
2	16.1%	.022	**.953**	.025	.000	21.2%
3	45.7%	.003	.097	**.822**	.078	42.9%
4	36.2%	.002	.029	.127	**.843**	34.0%
Girls TD school						
1	6.0%	**.841**	.098	.062	.000	6.7%
2	28.9%	.042	**.940**	.018	.000	35.0%
3	43.8%	.008	.135	**.816**	.042	40.9%
4	21.4%	.008	.065	.203	**.725**	17.3%
Girls mainstr.						
1	14.6%	**.920**	.055	.025	.000	17.7%
2	41.5%	.079	**.909**	.012	.000	45.9%
3	33.7%	.021	.180	**.778**	.021	30.1%
4	10.2%	.030	.129	.289	**.553**	6.3%

Note. mainstr. = mainstream students. Time 1 profile probability in rows, time 2 in columns. The diagonal (bold) = probability estimates for maintaining a profile classification; the off-diagonal = transition probability estimates

who transitioned likely changed to more unhealthy profiles over time. The *mentally healthy* profile was the least stable for girls, with 45% of mainstream girls and 28% of TD girls changing to another at T2. In contrast, most boys in the *mentally healthy profile* at T1 remained at T2 (91% TD, 84% mainstream). Few boys were in the *distressed-body concerned* profile, and it was the least stable among boys. The highest stability was found for the *distressed-body concerned* profile in mainstream girls (92% remained), while the *dissatisfied* profile was most stable in TD girls and all boys (>94% remained). Over 90% of girls and boys within both school types with co-occurring above-average anxiety, depressive symptoms, weight-shape concerns, and below-average self-worth (*dissatisfied* profile) at age 13/14 were still in the *dissatisfied* group two years later (Table 6).

4. Discussion

In this study, we explored young TD and mainstream students' symptoms of anxiety, depression, weight-shape concerns and self-worth, and mental health profiles based on the four indicators prospectively. Key findings include the retention of four informative profiles and the identification of the highest proportions within the *mentally healthy* profile among TD boys, the *moderate* among TD girls and mainstream boys, and the *dissatisfied* profile among mainstream girls. Profile stability was overall high across time, but noteworthy transitions were found: more TD boys transitioned into healthier profiles, and more girls transitioned out of healthier profiles. The unhealthier profiles were associated with socially prescribed perfectionism. Overall, the findings indicated that young TD students fared relatively better than mainstream students, especially compared to mainstream girls. Next, we discuss our findings in more depth.

4.1. TD school and mainstream students' mental health

Our findings of mainstream girls reporting higher anxiety and depressive symptoms, weight-shape concerns, and lower self-worth than boys are consistent with gender differences reported previously (Duchesne et al., 2017; McLean et al., 2021). In contrast, average anxiety and depressive symptoms in TD girls and boys did not differ, which aligns with a previous study on youth athletes (Weber et al., 2018). Interestingly, these gender similarities are inconsistent with most mental health studies on older student-athletes (Kegelaers et al., 2022), indicating that gender differences in distress symptoms emerge later in adolescent TD students than in mainstream students. Further explorations of this hypothesis, as well as when gender differences in distress symptoms may emerge in TD students, might be particularly valuable for developing targeted preventive measures in TD school settings.

Similar to a previous study on age-matched students' mental health (Brand et al., 2013), we found no profound differences between TD

student boys and mainstream boys, in contrast to the two girl groups. The lower anxiety and depressive symptoms and higher self-worth in TD girls compared to mainstream girls may be related to the beneficial factors associated with sports and dance participation (Chappell et al., 2021; Eime et al., 2013; Panza et al., 2020).

In line with results from McLean et al. (2021), more girls reported weight-shape concerns above the clinical level compared to boys, albeit fewer TD than mainstream girls. However, we consider the fact that 10% of TD girls were above clinical cut-off as worrisome, considering that these weight-shape indicators may represent clinically significant body dissatisfaction related to eating disorders (Carter et al., 2001; Friborg et al., 2013). Furthermore, body dissatisfaction is considered an important risk factor for developing relative energy deficiency in sports (RED-s; Mountjoy et al., 2018), by which severe health and performance consequences related to a developing body have been reported (Ackerman et al., 2019). Since young TD students are understudied, further exploration is warranted to help identify risk and protective factors during the important developmental years.

4.2. Mental health profiles

The latent profile modeling yielded four distinct profiles (*distressed-body concerned*, *dissatisfied*, *moderate*, and *mentally healthy*), by which individuals within each profile shared similar levels and patterns on the positive and adverse mental health indicators.

Adopting an explorative approach to studying mental health through profiles or using variable-centered approaches to study unique indicators depends on which may provide the most novel and useful information for a field. We acknowledge that the emerging profiles identified through LPA can be viewed on a continuum with co-occurring high/average/low symptoms of anxiety, depression, weight-shape concerns, and low/average/high self-worth. That is, no profiles revealed a pattern of within-person combinations in terms of discontinuity, like the '*symptomatic but content*' profile in the dual factor framework (Moore et al., 2019a). Our findings might be anticipated due to previous studies on the association between similar mental health indicators, as in the present study, persistently show that low self-worth is associated with higher symptoms of anxiety, depression, and body concerns and vice versa (Bos et al., 2010; Duchesne et al., 2017). However, this study provides further knowledge of such associations by their coexistence to varying degrees and proportions of students in four different profiles.

Due to different indicators used to explore mental health profiles in this study compared to other studies exploring co-occurring levels of adverse and positive mental health by LPA (e.g., Kuettel et al., 2021; Moore et al., 2019a; Moore et al., 2019b), direct comparison and interpretation of our findings should be cautioned. Still, some comparisons are relevant to address. For instance, although we identified the fewest students in the *distressed-body concerned* profile (9–11% of the total sample at T1 and T2, respectively), these adolescents displayed worrisome combinations on all four profile indicators; high above-average symptoms of anxiety and depression, weight-shape concerns, and low below-average self-worth. Notably, adolescents with a similarly unhealthy profile of coexisting high distress/low well-being did expectedly report lower life satisfaction than those with healthier profiles (Moore et al., 2019a). The higher self-worth reported among our students in healthier profiles than their peers in unhealthier profiles suggests that interventions aiming to strengthen students' well-being should focus on strengthening self-worth.

4.2.1. Overall stability and transition between mental health profiles

The majority of students remained in the same profile over two years. The *mentally healthy* profile was the least stable (72% remained), and specific stability estimates corroborate a *mentally healthy* profile reported among older US high school students (i.e., *complete mental health,* 73% remained: Moore et al., 2019b). However, the overall stability of nearly 80% within the *distressed-body concerned* profile contrasted with Moore et al.'s (2019b) finding of low stability in their unhealthiest profile (i.e., *troubled mental health*: 39% remained). Divergent findings from our study may reflect differences in age, school contexts, a longer study period, and mental health indicators used. Still, the high likelihood of being in, and staying in, an unhealthy profile is a great cause for concern that warrants attention from researchers and practitioners alike.

Congruent with a previous LTA study (Moore et al., 2019b), radical changes in mental health profiles were less likely than transiting into a neighboring profile. For instance, we did not find any transitions from the *distressed-body concerned* to the *mentally healthy* profile or vice versa. However, the overall transition directions revealed a tendency among those who changed their profile to transition to an unhealthier profile, which may reflect other reports of the emergence of mental health problems during the early teens (Solmi et al., 2022). Thus, it seems of crucial value that school personnel are being educated on these matters and have the means to intervene early.

4.2.2. Gender and schooltype stability and transition patterns

The mental health profiles were based on mental health factors that more girls than boys tend to struggle with during the first teenage years (Duchesne et al., 2017; McLean et al., 2021). Accordingly, the most likely patterns of girls transitioning into unhealthier profiles over time might be expected. In contrast, TD boys were more likely to transition to a healthier profile, while mainstream boys' transitions revealed a varied pattern. The present study is the first to explore mental health profiles among both TD and mainstream students over time. Hence, further studies are required to explore whether the findings, including the transition tendencies, may be replicated using similar indicators and larger samples.

4.2.3. Perfectionism, gender, school type, and profile proportions

Congruent with the perfectionism literature (Flett & Hewitt, 2022), SPP predicted the likelihood of belonging to more unhealthy mental health profiles. Notably, as the first study to confirm the undesirable correlates of SPP in distinct mental health profiles among school-aged students, these findings contribute further to answering calls for increased attention to SPP (Curran & Hill, 2019; Flett et al., 2022).

More girls were identified in the *distressed-body concerned* and *dissatisfied* profiles at both time points than boys, which corresponds with general studies on anxiety, depressive symptoms, body concerns, and self-worth among adolescents (Duchesne et al., 2017, 2021; McLean et al., 2021). Furthermore, our study provided insight into students' mental health profiles from different school contexts, for which displaying unhealthy profiles was more likely among mainstream students than TD students at T1. The fact that school type was not predictive of profile classification at T2 might, as we suggested earlier, point to a later emergence of mental health symptoms in TD students.

Among TD students, we estimated that almost no boys were in the *distressed-body concerned* profile, but nearly one in ten boys was in the second most unhealthy and stable, *dissatisfied* profile. While this comprises no severe psychological distress or weight-shape concerns, the relatively low self-worth might have negative implications for these TD boys' well-being. For TD girls, we found corresponding proportions (6–7%) in the most unhealthy profile, as did Kuettel et al. (2021) with older female elite athletes (8%). Due to the young age of the TD students in our study, intervention studies might be needed along with longer follow-up periods for students with different mental health profiles to facilitate healthy development.

4.3. Strengths, limitations, and future directions

A novel feature of this study is the inclusion of adolescent girls and boys representing both TD and mainstream schools. Specifically, prospective insights into mental health profiles, including positive and adverse mental health indicators, that were simultaneously explored via latent profile and latent transition analysis are a strength. The model-

based analytical approach for exploring such profiles is advised in the literature over an a-priori-determined clusters approach (Spurk et al., 2020), for which this study provided detailed accounts of distinct mental health profiles with robust estimates. However, comparing the present study's four-profile solution across studies testing the dual-factor model hypothesis should be considered carefully due to some different mental health indicators.

A limitation is that the profile modeling was based only on internalizing mental health indicators. Given that girls and boys in the age group studied frequently report different mental health problems, indicators of externalizing problems might be used in future studies. Further, regular health screening for early detection of students at risk for mental health problems might be beneficial and possible in TD schools. It might also be valuable in future studies to address different school contexts (TD vs. mainstream) regarding the adolescents' experiences with having appropriate access to support persons (e.g., school nurses and psychologists). Also, it is important to study potential causes behind high rates of mental ill-being, one of which might be motivational climates/environments.

Although the approach of our study examining individuals' mental health give valuable documentation on adolescents' mental health status from different school contexts, we will underscore the importance of not getting stuck in an individualistic approach to problem-solving. However, to be clear, with so many young people struggling, systems-level approaches are likely to be the only truly effective way forward.

5. Conclusion

The present findings indicated that TD school students fared relatively better than mainstream students. Selection and contextual matters might be important, and it is possible that mental health symptoms emerge later in TD students. Notwithstanding, a considerable proportion of students, especially girls, from both school types were identified in the unhealthiest profiles (i.e., *distressed-body concerned and dissatisfied*). Moreover, socially prescribed perfectionism is a likely risk factor for unhealthier profiles. This study has gained valuable insight into TD and mainstream students' mental health. However, more research is needed to identify risk and protective factors that make it more likely for young TD and mainstream students to develop and remain within unhealthy vs. healthy profiles. Such studies might contribute to developing pertinent and effective educational programs for both TD and mainstream schools.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors have no known conflicts of interest that would have the potential to influence the present study.

Data availability

Data will be made available on request.

Acknowledgments

We extend special gratitude to all the participating students, and the teachers and staff who put in extra effort and time to facilitate the study at the schools. This project has been made possible by Dam Foundation (Norwegian: Stiftelsen Dam) through the Norwegian Council for Mental Health (NCMH). Project number 2017FO143239.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.psychsport.2023.102474.

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Supplementary Material

Mental Health Profiles Among 13-16-Year-Old Norwegian Talent and Mainstream Students - A Prospective Person-Centered Analytical Approach

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Article accepted for publication in Psychology of Sport & Exercise: June 6, 2023

This supplementary material provides a correlation matrix of all study variables (Table S1). The confirmatory factor analyses (CFA) and longitudinal factorial invariance tests are provided in Table S2. We have also included two figures of contrasting latent profile analysis (LPA) models with corresponding fit indices (Figure S1; S2), and the final latent transition analysis (LTA) model is illustrated in Figure S3.

Factor Analysis

To estimate the longitudinal factorial invariance, we used the fixed-factor method of scaling, contrasting 1) configural invariance, 2) weak factorial invariance, and 3) strong factorial invariance (Little, 2013). The first allowed correlated residuals across time of the same indicators. Latent means were fixed to zero and variances to one at both time points. In the weak factorial invariance, loadings were constrained to equality of the matching indicator across time. Latent means were fixed to zero for both time points. T1 variances were constrained to one, while T2 variances were free. The strong factorial invariance was

specified with equivalent intercepts across time to equal, and T2 latent means were free. Otherwise, the strong factorial invariance was similarly specified as the weak invariance model (Little, 2013).

We evaluated model fit by several fit indices. Root mean square error of approximation (RMSEA) with values < 0.06, indicating optimal fit (Hu & Bentler, 1999) and between 0.06-0.08 mediocre fit (MacCallum et al., 1996). Standardized root mean square residual (SRMR) with generally acceptable values close to or below 0.08. Incremental fit by Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) with optimal values of > 0.95 and about 0.9 tenable (Hu & Bentler, 1999). Changes in the goodness-of-fit indices for measurement invariance across time should not exceed the recommended cutoffs for ΔCFI/TLI; ≤0.010 and for ΔRMSEA ≤0.015.

Latent Profile Analysis

We relied on a combined set of fit indices to decide the number of profiles to retain. This supplementary material includes two figures, including the Akaike's Information Criterion (AIC), Bayesian Information Criterion (BIC), and adjusted BIC (aBIC) of six contrasted LPA models: 1-6 profile solutions with the variances freely estimated (Nylund-Gibson & Choi, 2018; Peugh & Fan, 2013). The better-fitting model is indicated when the values are smaller than the contrasted models and starts to flatten out and increase again. When clear improvements in the fit indexes were observed (see figures S1 and S2) and adding more profiles did not substantially improve fit nor add any theoretically valuable meaning to the model, we stopped adding more profiles to the LPA modeling. Further descriptions of the model building and fit indices for deciding on the number of profiles to retain are provided in the main body of the paper.

Table S1

Correlation Matrix for All Study Variables

	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1	T1 Anxiety	-											
2	T2 Anxiety	.65**	-										
3	T1 Depression	.75**	.49**	-									
4	T2 Depression	.49**	.69**	.57**	-								
5	T1 WCSC	.56**	.40**	.58**	.39**	-							
6	T2 WCSC	.45**	.53**	.42**	.51**	.67**	-						
7	T1 Self-Worth	-.59**	-.44**	-.70**	-.48**	-.69**	-.54**	-					
8	T2 Self-Worth	-.41**	-.56**	-.42**	-.66**	-.45**	-.67**	.58**	-				
9	T1 SOP	.30**	.15**	.27**	.09*	.20**	.09*	-.23**	-.04	-			
10	T2 SOP	.23**	.30**	.11*	.11**	.09*	.18**	-.12**	-.15**	.48**	-		
11	T1 SPP	.32**	.20**	.38**	.27**	.28**	.17**	-.35**	-.21**	.55**	.28**	-	
12	T2 SPP	.29**	.30**	.22**	.31**	.25**	.22**	-.23**	-.26**	.31**	.48**	.53**	-

Note. *** $p<.001$, ** $p<.01$, * $p<.05$. SOP = Self-Oriented Perfectionism; SPP = Socially Prescribed Perfectionism. Reliability coefficients are reported in the methods section in the main body of the paper.

Table S2

Final CFA Model Fit Indices for All Measures at Each Time Points (T1 and T2) and Factorial Measurement Invariance Across Timepoints

	χ^2 (df)	*p*	CFI	TLI	RMSEA 90% CI	Pr.RMSEA <= .05	SRMR	*S-B* $\Delta\chi^2$ (df)	ΔCFI	ΔTLI	ΔRMSEA	ΔSRMR
RCADS												
Time 1	658.68 (269)	*.000*	0.92	0.91	.044 .040, .048	*.990*	.045	-	-	-	-	-
Time 2	879.89 (269)	*.000*	0.87	0.85	.056 .052, .061	*.005*	.056	-	-	-	-	-
Longitudinal:												
Configural invariance	2467.98 (1136)	*.000*	0.88	0.87	.035 .033, .037	*1.00*	.055	-	-	-	-	-
Weak invariance	2482.01 (1159)	*.000*	0.88	0.87	.035 .033, .037	*1.00*	.056	24.02 (23)	0	.004	0	.001
Strong invariance	2631.33 (1182)	*.000*	0.87	0.86	.036 .034, .038	*1.00*	.057	81.71 (23)	-.011	-.011	.010	.001
WCSC												
Time 1	155.27 (36)	*.000*	0.97	0.96	.066 .056, .077	*.000*	.028	-	-	-	-	-
Time 2	200.60 (36)	*.000*	0.96	0.94	.080 .069, .091	*.000*	.030	-	-	-	-	-
Longitudinal:												
Configural invariance	753.10 (185)	*.000*	0.95	0.93	.057 .053, .061	*.000*	.037	-	-	-	-	-
Weak invariance	776.95 (195)	*.000*	0.94	0.93	.056 .052, .060	*.007*	.038	31.15 (10)	.002	.002	-.001	.001
Strong invariance	901.78 (205)	*.000*	0.93	0.92	.060 .056, .064	*.000*	.042	81.76 (10)	-.011	-.010	.004	.004
Self-Worth												
Time 1	13.11 (4)	*.011*	0.99	0.98	.055 .024, .090	*.345*	.014	-	-	-	-	-
Time 2	5.67 (4)	*.225*	1.00	1.00	.024 .000, .066	*.815*	.008	-	-	-	-	-
Longitudinal:												
Configural invariance	45.52 (27)	*.014*	0.99	0.99	.027 .012, .040	*.999*	.018	-	-	-	-	-
Weak invariance	54.08 (31)	*.006*	0.99	0.99	.028 .015, .040	*.999*	.032	8.31 (4)	-.001	-.001	.001	.014
Strong invariance	65.60 (35)	*.001*	0.99	0.99	.030 .019, .042	*.999*	.036	10.62 (4)	-.003	-.001	.002	.004
Perfectionism SOP SPP												
Time 1	623.92 (165)	*.000*	0.91	0.90	.061 .056, .066	*.000*	.056	-	-	-	-	-
Time 2	635.39 (165)	*.000*	0.91	0.90	.063 .058, .068	*.000*	.059	-	-	-	-	-
Longitudinal:												
Configural invariance	1795.16 (706)	*.000*	0.91	0.90	.040 .038, .043	*1.00*	.057	-	-	-	-	-
Weak invariance	1825.37 (724)	*.000*	0.91	0.90	.040 .038, .042	*1.00*	.059	35.16 (18)	-.001	.001	0	.002
Strong invariance	1853.70 (742)	*.000*	0.91	0.90	.040 .038, .042	*1.00*	.059	34.35 (18)	-.001	.001	0	0

Note. Estimator = robust maximum likelihood (MLR). χ^2 = chi square test, *p* value for χ2 test, df = degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation, Pr. RMSEA = Probability RMSEA, SRMR = standardized root mean square residual. $_{S\text{-}B}\text{-}\Delta\chi^2$: chi-square difference tests calculated (Satorra-Bentler scaled chi-square).
RCADS = Revised Children's Anxiety and Depression Scale; WCSC = weight-shape concerns. Perfectionism, SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism.

Supplementary Material

Figure S1

Criterion Values for Cross-Sectional LPA, Timepoint 1

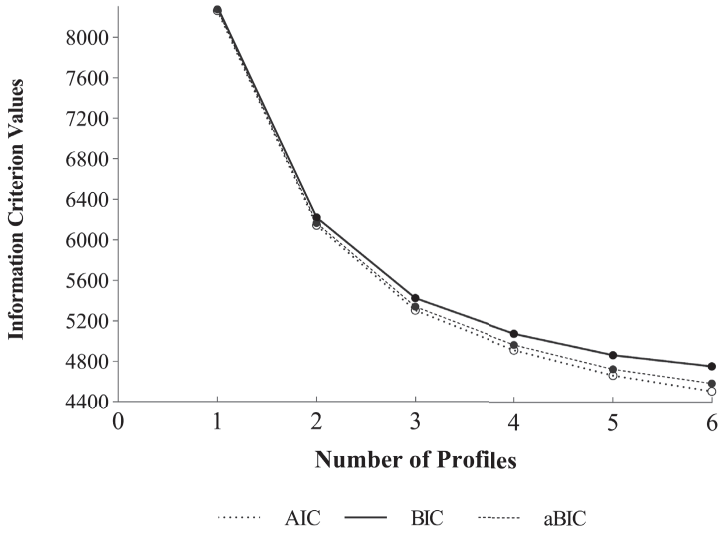
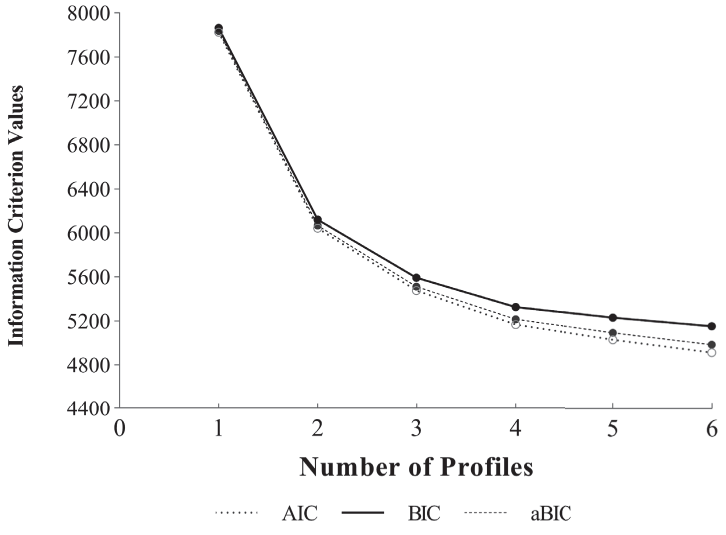


Figure S2

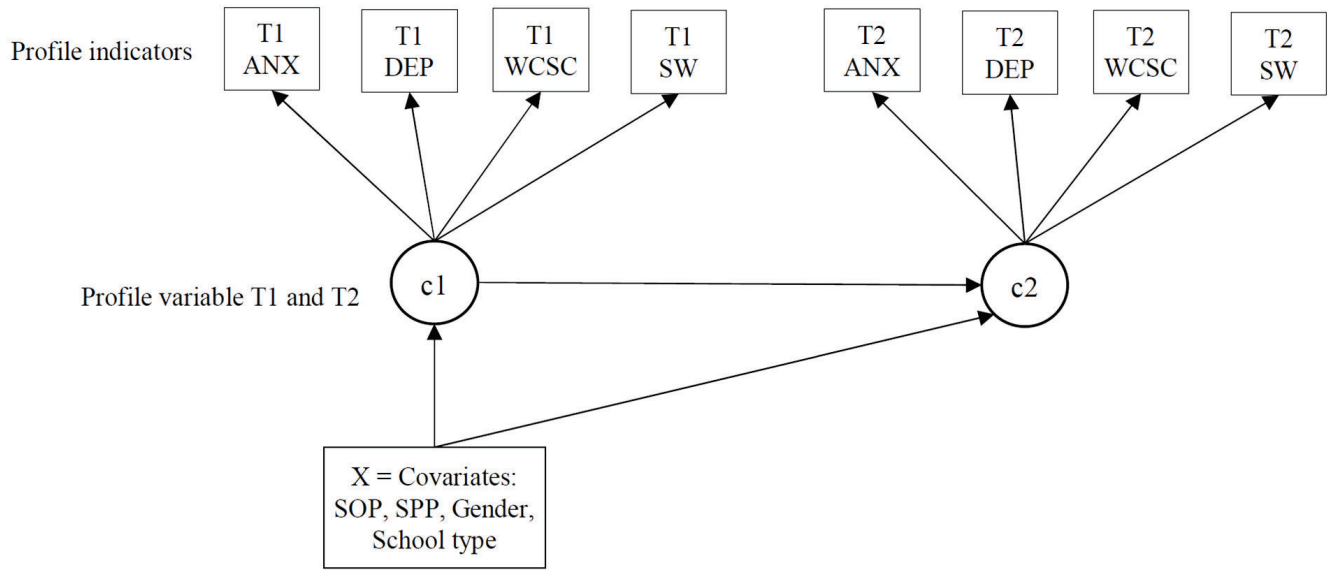
Criterion Values for Cross-Sectional LPA, Timepoint 2



Note. AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; aBIC = Sample-Size Adjusted BIC.

Figure S3

Latent Transition Analysis, Main Effect Model Testing the Influence of the Covariates on T1 (Start Point) and T2 Profile Variable.



Note. The figure illustrates the final LTA model, exploring the covariates' influence on profile status at T1 and T2. ANX = anxiety, DEP = depression, WCSC = weight-shape concerns, SW = self-worth, SOP = self-oriented perfectionism, SPP = socially prescribed perfectionism.

Supplementary Material

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Paper III

Stornæs, A. V., Sundgot-Borgen, J., Pettersen, G., Rosenvinge, J. H., & Nordin-Bates, S. M. (2023). Self-expectations, socially prescribed expectations, and wellness in 14-to 15-year-old athletes, ballet, and music students in Norwegian talent schools—An interview study. *The Sport Psychologist*, *37*(2), 92-105. https://doi.org/10.1123/tsp.2022-0133

The Sport Psychologist, 2023, 37, 92-105
https://doi.org/10.1123/tsp.2022-0133

Human Kinetics
APPLIED RESEARCH

Self-Expectations, Socially Prescribed Expectations, and Wellness in 14- to 15-Year-Old Athletes, Ballet, and Music Students in Norwegian Talent Schools—An Interview Study

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Talent-school settings may generate stress via demanding expectations. To investigate students representing Norway's growing phenomenon of early adolescent talent schools, we interviewed twenty-seven 14- to15-year-old boys and girls about their experiences with self- and socially imposed expectations. Students were recruited from two sports schools ($n = 14$) and one school each with talent classes for ballet ($n = 7$) and music ($n = 6$). Using reflexive thematic analysis, we found four main themes representing the performers' accounts of (a) self-oriented expectations of persistent hard work, evoking self-doubts, and never-give-up attitudes; (b) coaches'/teachers' socially prescribed expectations, stimulating hard work, and pursuit of approval and opportunities; (c) parental expectations, reflected as helpful support, concerns of letting parents down, and negotiating independence; and (d) struggles with balancing expectations, reflected by demanding workloads, difficulties with prioritizing recovery, and ill-being. Early interventions targeting unhealthy self- and socially imposed expectations in high-expectation settings may be required to safeguard youth performers' healthy development.

Keywords: coaching, mental health, parenting, perfectionism, youth sports, well-being

The ideals of striving for ever-higher achievements are deeply rooted in sports and the performing arts, and it is suggested that such ideals are pursued at ever-younger ages (Bergeron et al., 2015). For example, early specialization, youth talent schools, and professionalization of youth sports have proliferated in recent years, including in countries traditionally organizing competitive leisure-time activities outside the academic school system (Ferry et al., 2013; Kristiansen & Houlihan, 2017; Nielsen et al., 2022). Although participation in youth sports, music, and dance is associated with beneficial outcomes such as well-being and enjoyment (Eime et al., 2013; McCrary et al., 2021), it can also generate mental and physical strains as a result of competitive environments, high training volumes, and demanding performance expectations (Brenner et al., 2019; Quinn et al., 2021; Walton et al., 2021). In the present study, we explored personal accounts of expectations and well/ill-being among young Norwegian athletes, ballet, and music students.

Expectations and Perfectionism Among Young High-Ability Performers

An individual's expectations involve attitudes toward oneself or others developed through previous experiences and knowledge that may be used to anticipate an outcome (Heaviside et al., 2021). An imbalance between one's expectations and lack of ability to meet those expectations may increase performers' distress, exhaustion, and other health issues (Nordin-Bates & Abrahamsen, 2016; Patston & Osborne, 2016). Importantly, demanding competitive environments may foster young performers' need to continually strive to meet high expectations and to achieve flawless performances to perceive success and satisfaction and to secure approval and opportunities. However, such continual striving with elevated and rigid expectations are key characteristics of perfectionism, which is a well-established predictor of ill-being, including mental health problems (Flett & Hewitt, 2022, 2014).

A healthy and successful developmental pathway for young athletes and performing artists depends on their motives for participation, including how expectations are perceived, imposed, and adapted (Haraldsen et al., 2020; Nordin-Bates & Kuylser, 2021). To date, studies into very young student performers' subjective experiences with expectations are scarce. However, expectations are an important component of perfectionism, which has been extensively studied in performance domains; as a result, we employed a perfectionism framework to study expectations. Two forms of perfectionism are self-oriented perfectionism (SOP) and socially

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prescribed perfectionism (SPP; Hewitt & Flett, 1991). An individual with SOP typically has immense self-directed expectations, worries about living up to the expectations, and consistently engages in negative self-talk and criticism. Obtaining success and avoiding failure is critical to perceiving a sense of worth; hence, for self-oriented perfectionists, it is imperative to fulfill their excessive expectations (Hewitt & Flett, 1991). SPP characterizes individuals who believe that perfection is expected of them by others (Hewitt & Flett, 1991). It involves the pursuit of perfection to secure approval or avoid disapproval from others, such as coaches and parents, but also the perception that these others will never be satisfied, as their expectations will increase if success is accomplished (Flett & Hewitt, 2022). SPP is the most detrimental of these dimensions, showing a consistent relationship with ill-being, such as psychological distress, hopelessness, and burnout (Flett et al., 2022). SOP tends to show weaker associations with adverse outcomes like distress than SPP (Hill et al., 2018), but it has been linked to adolescent anxiety symptoms and worry (Flett & Hewitt, 2022). However, SOP has also been associated with positive outcomes for well-being and performance, like higher levels of passion (Curran et al., 2014) and satisfaction with goal progress (Hill et al., 2008). Such discrepant findings have made it a popular topic among researchers trying to understand the factors that facilitate versus debilitate performance and well-being among performers.

Most perfectionism research in performance domains has relied on closed-ended questionnaires (Hill et al., 2018). More recently, an increase in qualitative studies has provided in-depth descriptions of performers' lived experiences with perfectionistic expectations in sports, dance, and music. However, a majority of these studies included adult performers at the upper extreme of the perfectionism distribution (e.g., Gotwals & Tamminen, 2022; Hill et al., 2015; Sellars et al., 2016). Only two studies included adolescents: these were lower level community-based athletes (Mallinson-Howard et al., 2018) and high-level dancers (Nordin-Bates & Kuylser, 2021) strategically recruited from both the top of the perfectionism distribution (i.e., highly perfectionistic) and the bottom (i.e., nonperfectionistic). Across these studies, the performers generally perceived their expectations to help them progress while also contributing to strains and exhaustion (Nordin-Bates & Kuylser, 2021), concerns over not meeting expectations, and worries about letting others down (Mallinson-Howard et al., 2018).

The increased number of qualitative studies has contributed to our understanding of performers' experiences with perfectionism. However, limiting recruitment to performers from the extremes of the distribution may exclude important views of adolescent performers' experiences with expectations in broader terms. That is, younger performers who may not strive for perfection per se may experience varying degrees of self- and socially imposed expectations, which can nevertheless have important implications for their well-being and development as performers.

Expectations of Youth Student-Performers in Talent School Settings

How self- and socially imposed expectations are experienced and managed are inherently connected to contexts, and talent development (TD) schools are identified as high-expectation environments (Haraldsen et al., 2020). Hence, a specific focus on expectations in such performance settings is relevant, considering that the performers are often expected to put in large amounts of time both in their activities at and after school as well as academically. Rigorous schedules and requirements of working equally hard in sports and academic studies can be demanding and a source of stress and ill-being (Skrubbeltrang et al., 2016; Stambulova et al., 2015). For example, in Swedish 16-year-old first-year elite sports school students, a constant equal focus on sports and academic performances was experienced as an untenable path to follow when realizing the adverse impact it had on their well-being, health, and private life (Stambulova et al., 2015).

A year prior to this qualitative study, we conducted a larger quantitative study on perfectionism and mental health among 832 young student performers and mainstream students (Stornæs et al., 2019). Correlation analysis of SOP and SPP showed positive associations with symptoms of anxiety and depression, weight-shape concerns, and negative associations with self-worth, while resilience was only negatively associated with SPP. In the current qualitative study, we sought to explore in-depth the accounts of the young students' experiences of expectations, and quantitative data were not used for explaining or interpreting the qualitative interviews. The present study explores the experiences of young students in Norwegian TD schools, a relatively new and increasing phenomenon at the junior high school level (12–16 years old). Thus, to provide knowledge that may help inform those who run talent schools, we need studies that explore these young student performers' experiences. A qualitative study has the potential to contribute to a further understanding of the views and experiences of young student performers' expectations which, together with past studies, may help tailor recommendations for practices and facilitate positive experiences for future young student performers. In this study, a well-established perfectionism framework was employed to study expectations. We deliberately used a broad perspective with *expectations* as a more general term because words like *perfectionism*, *perfection*, or *perfectionist* might have specific connotations for young performers. Hence, we designed a study using qualitative methods with two main research questions: (a) How do student performers experience self-oriented and socially prescribed expectations? and (b) How do student performers perceive that expectations influence their well-being in sports, ballet, music, and everyday life?

Method

Paradigmatic Positioning

We position this study in critical realism (CR; Bhaskar, 2008/1975). Accordingly, it is situated within perspectives of ontological realism (objective reality) and epistemological constructionism (subjective; Fletcher, 2017; Vincent & O'Mahoney, 2018; Wiltshire, 2018). Consistent with CR, we acknowledge that real events (i.e., expectations) exist and are experienced by young performers independent of our study, while our qualitative study may increase access to the nuances of the experienced expectations. However, the knowledge accessed through the participants' described experiences and the authors' interpretations is socially constructed (Ryba et al., 2022). CR is not linked to any particular theoretical framework or method, but they have a central function in knowledge production (Fletcher, 2017; Ryba et al., 2022). Positioning this research within CR allowed us to explore the participants' subjective experiences and use established methods and theories. Hence, we used established methods (i.e., Braun & Clarke, 2019: reflexive thematic analysis) and theoretical concepts (i.e., Flett et al., 2016: perfectionism) to produce knowledge and for interpretation and explaining findings while accepting our knowledge production was influenced by and cocreated in the interaction with the participants and is fallible (Ryba et al., 2022; Wiltshire, 2018).

Study Context

Student performers from four Norwegian schools were included: Two sports TD schools and one school each with specialized talent classes for classical ballet and classical music. They were chosen explicitly to represent Norway's relatively new and growing phenomenon of specialized talent schools. Sports schools are for students pursuing specialized training in a specific sport (e.g., football, alpine skiing). The ballet dancers and music students attend specific classes facilitated at two mainstream public schools (one each for music and ballet). These TD classes for ballet students were established in 2008, while for classical music students, they were established in 2015. The two first private sports schools at the junior high school level were established in the mid-2000s. Ten years later, a third school was established, and in 2022, there were more than 20 private sports schools in Norway. The schools' vision is to offer customized and integrated academic education and TD in sports, music, or classical ballet, aiming to develop and prepare students to qualify for further opportunities within their respective activities. The Norwegian sports schools are private and charge tuition fees, while the ballet and music schools do not because they are within the public school system. None of the schools provide boarding, meaning all students live at home and practice and train daily during and after school hours.

Students can apply for ballet and sports schools from age 12 to 13 (i.e., eighth grade) and classical music from age 9 to 10 years (fifth grade). The sport and ballet students may attend their schools for 3 years (eighth- to 10th-grade junior high school in Norway) and music students for 6 years (fifth to 10th grade). Only a few students are accepted into the program. Therefore, the applicants undergo a selection process, making the selected students among the top performers within their age cohorts. A written application is followed by a selection process, where students are evaluated on their skills and motivation. For athletes, the tests involve physical, coordinative, and motor exercises and sport-specific abilities. Dancers are evaluated on dance abilities, technique, and musicality. For music students, tests are on musicality, competence in their instrument, potential, and motivation.

Recruitment and Participants

Twenty-seven students aged 14–15 years were recruited, including athletes ($n = 14$, eight of whom were girls; eight and six athlete-students from each school) and performing arts students ($n = 13$, 10 of whom were girls; six classical music students; and seven classical ballet students).

Especially because interviews were to be conducted at schools and training facilities, we wanted to reduce the chance of anyone feeling singled out. Hence, athletes were randomly drawn from their class list, leading to the initial invitation of 16 students (eight per school). Four boys declined participation; hence, two other athlete boys were invited and consented to participate. Classical music students were initially randomly drawn from their class list, leading to the invitation of eight music students. Because four did not respond within the final deadline and two declined, all music students ($n = 23$) were informed about the study during school. Six music students volunteered and consented to participate. All nine ballet students from the ballet class were invited, of which seven consented to participate.

Ethical Considerations and Data Handling

All eligible students received written and oral information about the study, which included voluntary participation and their right to withdraw at any time without stating any reason. We obtained written informed consent from parents/legal guardians, as well as from students. Data were de-identified and stored in accordance with data protection regulations. The Regional Committee for Medical and Health Science Research Ethics in Southern Norway approved the study (project number: 2015/1358).

Data Generation

Interviews were performed by the first author face-to-face at the schools and training facilities during the spring semester of the performers' second year in junior high school, that is, ninth grade. Two pilot interviews with one former gymnast and a young football player helped evaluate the relevance and comprehensiveness of the interview guide for young performers, leading to adjustments in the language (see the Appendix).

The development of the interview guide was partly based on the research group's academic and practical experiences with youth athletes and performing artists. It was also inspired by theory and related literature, including perfectionism research, because expectations are central features of perfectionism. Questions targeted the performers' expectations from themselves, coaches/teachers, and parents and how those expectations influenced the students in their activity and everyday lives.

The interviews had a conversational form using opening statements related to the aims of the study, such as: Can you tell me about; the expectations you set for yourself in dance/music/sports? ... How you perceive your expectations? ... Your expectations for yourself when you compete/perform/hold concerts? ... Your experiences with others' expectations of you (e.g., from the coaches or parents)? ... Yours/others' expectations for your future? The interviewer probed for more elaborate descriptions or nuances through follow-up questions, for example, Can you tell me more about how you perceived that situation or those instances?

Participants were also asked about weekly training/practice hours and age when they first started practicing ballet, music, and sports (see Table 1). Interviews lasted 30–70 min and were recorded and transcribed verbatim, resulting in 300 pages of transcriptions.

Analysis

The transcribed interviews were analyzed using a six-phase reflexive thematic analysis to explore patterns and develop meaningful themes across the data set (Braun & Clarke, 2019; Braun et al., 2019). The software program MAXQDA 2020 (VERBI Software, 2019) was used during the analytical process.

We engaged with the data reflexively and recursively, that is, moving "forwards–backward–forwards" between the six phases to enhance the possibility that the developed themes reflected relevant perspectives and meaning with respect to our research questions. The analytical approach involved familiarization with data, systematic coding, theme development, theme refinement, theme naming, and writing up (Braun et al., 2019). Familiarization included listening to the interview recordings before and during the transcription process and was further achieved by thoroughly reading all transcripts to obtain an overview of the data. Notes were taken to form first impressions and ideas, for which transcriptions and notes were shared and discussed with the second and third authors to enhance reflexivity. To keep theme development relevant to the research questions, the systematic coding process

Table 1 Description of the Participants, All 14–15 Years Old

	Sports	Music	Ballet
Performing in	Football Handball Basketball Alpine skiing Cross-country skiing Rowing Tennis	Violin Piano Double bass	Classical ballet
Weekly practice/training hours[a] (range)	16–20	9–27	14–20
Age started to practice (range)	5–12 years mode: 7	3–10 years mode: 7	3–10 years mode: 4
Perfectionism scores[b]			
CAPS-SOP, *M* (*SD*)	39.4 (8.3)	38.8 (16.1)	41.3 (8.2)
CAPS-SPP, *M* (*SD*)	22.5 (8.0)	25.0 (13.1)	18.8 (4.7)

Note. CAPS scoring: a 5-point scale from 1 to 5 with higher scores reflecting greater perfectionism: SOP minimum score = 12, maximum score = 60; SPP minimum score = 10, maximum score = 50. CAPS = Child–Adolescent Perfectionism Scale (Flett et al., 2016); SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism.
[a]Weekly practice/training hours during school and after school hours, not including, for example, matches, competitions, ballet performances, or concerts. [b]A year before conducting the qualitative interviews, at ages 13–14 years, 25 of the interviewees in the qualitative study were part of a quantitative study on perfectionism.

involved closely reading and marking each text extract with first-impression code labels. Analytical Phases 3–5 were a recursive process of refinements, involving theme development of organizing the coded data into broader candidate themes and clustering the candidate themes with similar underlying meanings around a shared concept into main themes and subthemes. Ongoingly, we reread data, initial codings, and candidate themes to evaluate if the themes captured the initial codes' features and nuances and adequately covered the interview data to represent the performers across the sample (Braun et al., 2019). The fifth phase involved further evaluations of the content of the candidate themes and defining the final themes and subthemes. The sixth phase involved further restructuring the final themes and organizing the results to present the final findings. Also, consistent with the CR paradigm, plausible explanations of the findings were discussed related to theory and previous findings (Vincent & O'Mahoney, 2018).

In the "Results" section, themes are illustrated by quotes, which are provided with pseudonyms and students' affiliations to sports, ballet, or music, respectively. How common it was for adolescents to describe certain themes/aspects was approached using "fuzzy quantifiers" illustrated by words instead of numbers (Hanrahan & Vergeer, 2001). Hence, in the text, "some/few" refers to 1–9, "many" refers to 10–17, "most/typical" refers to 18–26, and "all" refers to 27. The purpose of this study was to explore instead of quantify the adolescent performers' experiences. Hence, the "fuzzy quantifiers" approach was used as an intermediary to strike a balance between the purely qualitative and the quantitative (e.g., counting the exact numbers of people who said a particular thing). Also, to avoid any emphasis on frequencies that could blur the importance of accounts from some performers and inadequately give assumptions of the importance of other themes.

Rigor and Quality

Positioned within the CR paradigm, we adopted several strategies to assess and enhance the credibility and quality of our study (Berger, 2015; Dodgson, 2019; Smith & McGannon, 2018). The authors' academic and practical experience within sports (first author) and sports and performing arts (all other authors) were essential for bridging theory and the performers' accounts. Specifically, the senior researchers (Authors 2–5) have a long-lasting research engagement, including publications on adolescent athletes and dancers, and the second and last authors act as applied consultants for young performers. All have experience as participants in sports (Authors 1, 2, and 5), dance (5), and music (3 and 4). Importantly, our ongoing reflexive discussions on how the authors' preconceptions and proximity to the field could challenge openness to alternative questions and interpretations helped enhance the study's confirmability (Berger, 2015; Dodgson, 2019). "Critical friends" outside the research team offered critical feedback that enhanced reflexivity and challenged our perspectives and interpretations of the study (Smith & McGannon, 2018). The continual dialogs in the research group during all study phases (i.e., interviewing, analysis, writing) encouraged reflexive open-mindedness to alternative interpretations by discussing various views, nuances in the data, and concepts that could illuminate the study aims. Consistency was provided by having the first author conduct all interviews. Although the interviewer had proximity to the field, she was an outsider to the participants. Reflecting on power relations was an important part of preparing for and conducting the interviews because of the inherent influence the power relation may create between the participant and researcher in these settings (Dodgson, 2019). The interviewer (first author) has a background as a youth (gymnastics) and senior elite athlete (Taekwon-Do). Shared performer experiences became an asset in the interview setting, which helped develop rapport and enhanced trust between participant and researcher (Sparkes & Smith, 2013). The interviewer also invited the participants to reflect on their interviews, including how they experienced the interview setting. The approach and development of rapport in the interview setting worked well to gain mutual understanding and enhance the sharing of information. Finally, reflections and acknowledgments on the authors' positionality were important in all phases of the study to enhance the trustworthiness of both process and findings (Berger, 2015).

Results

As part of the reflexive thematic analysis, we organized the results into four main themes, with subthemes, which reflected the main

aspects and content of the student performers' experiences as follows: (1) self-oriented expectations: (a) persistent work and (b) self-doubts and never-give-up attitudes; (2) socially prescribed coach/teacher expectations: (a) stimulating hard work and (b) pursuit of approval and opportunities; (3) socially prescribed parental expectations: (a) parental support and (b) negotiating independence; and (4) balancing expectations: workloads and perceived consequences of expectations.

Self-Oriented Expectations

The first main theme describes how the adolescent performers perceived their self-oriented expectations. Perceiving purposeful and manageable self-oriented expectations was common. The theme also illustrates the experiences related to fulfilling and failing own expectations, which include self-doubts, disappointments, negative self-talk about one's abilities, as well as reorientations involving never-give-up attitudes. The theme was structured into two subthemes.

Persistent Work

Most young performers described their expectations as purposeful, manageable, and as an impetus that helped them work persistently to progress and improve performances in the pursuit of "(always) doing one's best," which was a typical expression. As athlete Ashley exemplified, "I expect to do the best I can, I expect to have fun at training, and I should continue improving every week." For most students, the expectations implied diligent practice and making sure every training session brought about performance improvements, as dancer Cameron expressed:

> After each ballet class, I should feel that NOW I live the dream! I should feel that if I continue to practice as well as I do now, I will be a good dancer. It is really the only expectation I have for myself; that I shall improve.

Some also expressed that too high expectations and practice that got too serious gave them a feeling of less enjoyment and decreased motivation. In the words of athlete Avery: "I get a feeling of mastery if I don't set too many long-term goals. If not, I can become demotivated and feel that I don't achieve much." On the other hand, many perceived that fulfilling expectations and reaching higher performance levels could nurture higher self-oriented expectations, inspire one to practice harder, increase pressure, and elevate expectations. In the words of dancer Sarah:

> I have always wanted to dance. Now that I have reached this level, I want to get even better because it's a little sad to stop now when I have already spent so much time and energy to be this good. So now I am aiming for those ballet schools next year.

The quote from Sarah illustrates a performer's high and self-oriented striving that was perceived as helpful in reaching higher performance levels and goals, though also illustrating disappointment if the performance striving would not continue.

Self-Doubts and Never-Give-Up Attitudes

Although most students experienced working with appropriate and manageable self-oriented expectations, many also described feelings of self-doubt and negative self-talk. In the words of dancer Sam: "I feel pretty bad about everything when I cannot achieve what I want, and then I get disappointed in myself." Further, for some students, the emphasis on performing well at competitions and performances/concerts could trigger both cognitive and somatic anxiety. Music student Jayden exemplified:

> I get nervous when I play concerts because I want to play the best I can. Before concerts, thoughts often appear about how I should have practiced more or about sections that did not go well the last time, and the section may neither go well this time I play. During concerts, I can get the feeling that my whole body is shaking.

While most student performers acknowledged that it was impossible to practice or perform at their best every day, negative moods and changes in behavior were experienced when self-oriented expectations were not met. Failing at training and rehearsals also raised concerns about "losing" practice time, as some performers felt they could not regain the session another time. In turn, this could trigger worries about insufficient progress or ability, as illustrated by dancer Sarah:

> I often do poorly in class, which is very demotivating. I also get a bit sad because I am afraid I am not good enough and cannot be good enough. I think I'm lousy if I have performed poorly for a week, or two or three, as I sometimes do, and then I lose the motivation.

Although adjusting to negative experiences could be challenging, it was common for most performers to try to reorient themselves, think ahead, and return to hard work with a never-give-up attitude, which nurtured determination. As exemplified by dancer Cameron:

> When I was younger, it was a problem for me when I did not perform as I expected and did not achieve what I wanted straight away. Now I know; if I fail, I fail, and I have to make mistakes to rise again and become stronger, you know. (. . .) If I get an injury, I will go through that too. I am never giving up—I won't.

Most performers had a never-give-up attitude, as illustrated by the athlete Jordan: "I expect to do my best no matter the situation," and some expressed overly persistent or rigid training. When describing such situations, some performers talked about how their eagerness to fulfill their expectations and standards could elicit rigid training sessions or fuel self-critique regarding the effort put into accomplishing their goals. As athlete Madison expressed: "Even when I know I have given everything, I can start to think I should have pushed a bit harder and should have continued until I began vomiting." For many performers, failed performances or feelings of not progressing as expected could raise doubts about performance abilities and concerns about further opportunities, such as whether one could keep the spot on a team or be selected for a well-known music or ballet school. Music student Cailyn exemplified such concerns with not meeting performance expectations and the tough competition within classical music:

> I expect a lot from myself. I expect to be the best. I expect to reach the highest level. If I do not reach the top level, I think I will be quite devastated. However, it is such a risky career path, and the fact is, it scares and worries me a lot.

Most students recognized both the benefits of setting expectations for themselves as a source of performance enhancement and

the downsides of putting too much pressure on themselves. In the words of young musician Jayden:

> It is very positive to have expectations, but you may push yourself a bit too hard if you set the standards and expectations too high. That's no good, and many other things may not work for you any longer, and you get exhausted, or you may get stress "attacks," or a lot may go wrong if you push yourself too hard.

Socially Prescribed Coach/Teacher Expectations

This theme describes the students' perceived expectations from their coaches and teachers. Most students regarded the expectations as important for performance development and perceived that meeting those expectations was needed for future opportunities. The theme was structured into two subthemes.

Stimulating Hard Work

Supportive and caring were typical descriptions of the coaches/teachers. Most adolescents emphasized that they only expected them to perform to the best of their ability and generally perceived their expectations as achievable. For example, athlete Avery said, "I like that the coaches want us to be as good as we can be and to do our best." Although some performers used the term "pressure" from coaches/teachers, it was mainly expressed as a positive source stimulating hard work and progress, as athlete Madison expressed:

> I appreciate their expectations because it makes me perform better. I like to feel such pressure put on me—without any pressure, I could just take it as it comes. Then I had not felt any pressure to achieve well and had not pushed myself.

When pressures from high expectations were experienced, some described it as leading to worries and doubts about one's abilities. For instance, dancer Sam said, "if someone expects too much, then I'll become very disappointed in myself because I cannot achieve what they [teachers] want." Further, meeting coaches'/teachers' expectations were expressed by some as a means of repaying them for their efforts and investments and making them proud.

Pursuit of Approval and Opportunities

Perceiving that the coaches/teachers set expectations, and fulfilling them, was seen as a pathway to approval and recognition by many and implied that the coaches/teachers had faith in the performers. As exemplified by athlete Amelia:

> I appreciate that someone sets standards for me because I feel it indicates that they [coaches] pay attention to me, see me, support me, and expect something from me. I don't think they expect more than I can manage, but then I know they know how good I am.

The coaches stimulated the performers to work hard and strive for enhanced performances, and gaining the coaches'/teachers' approval was described by many as critical for future opportunities. As athlete Harper put it:

> I want to perform the best I can because then the coaches can see me, and I may eventually be selected for the regional team. If I cannot show them my abilities or perform poorly, I'll get a bit angry with myself because I finally had the chance to show the coaches that I am good enough.

Although few expressed actual disappointment from coaches/teachers, many reported that failing to meet socially prescribed expectations evoked disappointment in the self and worries about letting coaches/teachers down. In turn, the latter raised concerns about future opportunities, as exemplified by dancer Alex:

> The fact that she [ballet teacher] has hopes for me to be accepted to a ballet school helps me get her attention and corrections, which helps me reach my goals. At the same time, if I can't make it when she has helped me that much and spent a lot of time making sure I can, then it is not fine for me to tell her if I don't.

There were many examples of high and pressurizing socially prescribed expectations that often were related to failing or underperforming in front of others who could have a say in future opportunities and careers. Underperforming could then be perceived as having implications for future goals, which for many were experienced as they could lose the opportunities to be selected for a TD program or team at a higher level. Like athlete Taylor experienced how failing with performances could lead to implications from the coach: "I have to avoid making mistakes because I will just be pulled down [by the coach] and left out of the team if I perform poorly. So, it is critical not to let down the coaches." Further examples of perceived implications included challenges to retaining equipment provided by their sports clubs. In the words of athlete Madison:

> I feel that I have to perform well because that's how it is—how the arrangements are in the club. You have to deserve the boat. You must be practicing and be on the regattas because if you do it halfway during training and don't show respect for your boat, you'd suddenly lose it the next season.

It was striking how most ballet and music students spoke about the tough competition in a performance career while most athletes did not. Ballet students appeared to be under particular pressure to prove themselves to others, with most feeling dependent on recognition and approval by their current teachers in order to secure future opportunities, as exemplified by dancer Alex:

> It can be negative for me to think about who's watching my performances. If I am nervous in the first place and start to think about the choreographers who may be present and who may have a say in my future, then, if I do poorly, I don't think I have a good chance at anything. On the other hand, it can be positive if important people are watching when I feel I am in control over what I do.

Socially Prescribed Parental Expectations

This theme describes the young performers' experiences with their parents' expectations and involvement in their activity. Generally, most performers experienced parental expectations as helpful and appropriate, but many also described that parents should give them more independence. The theme was structured into two subthemes.

Parental Support

Most performers experienced parental expectations as helpful and appropriate and described their parents as supportive. The

following quote of athlete Ryan was typical: "They support me as much as they can, but it is not my parents who push me." Notably, most performers emphasized that their self-oriented expectations and standards were higher than their parent's expectations. The sense of support from parents who showed interest and offered helpful advice was the most important for the adolescents. In the words of dancer Cameron:

> My parents support me a lot and have been the best support team. They have pushed me, but they haven't pushed too hard. They have been at competitions, watched my ballet performances, and given corrections. One of my parents was a professional ballet dancer, having a great deal of knowledge, knowing the right words to say, knowing what is correct to do and how I could improve as a dancer. It has been incredibly useful. I think I have been fortunate to have engaged parents who care about what I do.

Parents were rarely described as being disappointed or critically evaluating the adolescents for mistakes. Although experiencing supportive parents, some young performers expressed worries about letting their parents down and felt that their parents had sacrificed a lot. That is, they had spent time, money, and other resources to enable the adolescents to attend TD schools. It was particularly important for performers who described such concerns to give back to their parents by performing at their very best and showing progress, as exemplified by dancer Riley:

> I think a lot about how much my family has sacrificed. I want to show my parents I can make it and show them I am doing my best because of the opportunity I have been given. We have moved away from family and friends, so I feel it is nice if I can show them I can seize this opportunity—and my parents can see that I am grateful.

Negotiating Independence

Although most young performers expressed appreciation for their parents' supportive and engaged involvement, they appeared to prefer more independence than they were given. They spoke of disagreements as well as annoyance with parents, and how too much interference from "pushy" or overprotective parents could decrease their motivation for training. As athlete Hanna said:

> Sometimes, I feel Dad wants to push me. He probably doesn't mean to put unnecessary pressure on me, but when he nags about training and says—maybe you should go practice now! Then I answer, "yes, I probably can!" However, when he continues to ask several times, I get irritated. I feel I do my training for him. I think it is important not to get too much pressure because the motivation may disappear, and I get reluctant about training. Then I feel the motivation no longer comes from me and what I want to do.

Conversely, perceiving more autonomy over one's decisions was described as positively changing the motivation to practice by some, as illustrated by music student Chloe:

> I practice more music now than I did half a year ago because they [the parents] have stopped nagging and being concerned about it, which makes me feel more willing to practice on my initiative instead of my parents forcing me. But, I understand why they were concerned because attending this talent class means the music teachers expect me to practice more, so I progress.

Balancing Expectations: Workloads and Perceived Consequences of Expectations

The final theme describes how the adolescents' self-oriented and socially prescribed expectations influenced their health and well-being. Balancing all expectations and workloads and finding time to rest were important issues described as challenging by the student performers.

Although most performers described their expectations as helpful most of the time, many described it as challenging to properly balance the high workloads, tight schedules, and performance expectations related to practice, training, and school. For instance, athlete Amelia said:

> Sometimes, there are too many tests and presentations at school. At the same time, it can be a regatta coming up, and I have to go and practice for the regatta, so I don't lose the sparkle, but I have to go to school as well. Every day continues like "home-eat-school-training-school-sleep." I can be very mentally and physically tired when I have tough weeks like that.

The quote from Amelia illustrates how prioritizing could be challenging for a young performer who is eager to do well academically and as a performer. Despite high workloads, many performers expected themselves to maintain high training loads and performance levels. Also, many performers talked about having challenges in making time for social life with friends and family outside school and sports/performing arts; for instance, athlete Harper illustrated:

> When I had races every weekend and one game a week in addition to football and cross-country training and training at school, I noticed that I didn't have the energy to be with friends after school. Actually, I didn't really get the time either.

Many reported a physically and mentally demanding everyday life, which they related to having high expectations. Most expressed awareness of how high expectations and workloads could become a source of ill-being, including injury, anxiety, irritation, headaches, and concentration difficulties. Dancer Sam gave the following example:

> I have struggled with anxiety attacks when it is a lot at both school and ballet. Then I get very stressed, scared, and sad because so many things are going on at the same time—then anxiety attacks may happen to me. That is not very fun, really.

Most participants voiced the need for rest, but making room for rest was often challenging due to their desire to fulfill expectations and eagerness to reach their goals. Also, their schedules often limited their possibility for rest and recovery. Still, most knew the consequences for their health and development as performers if they did not prioritize rest; as dancer Cameron put it:

> Sometimes, I feel exhausted, and I can't take it anymore, but then I get rid of those feelings by thinking of how fun ballet is. I also feel that I am doing a lot, and ballet can take a toll on the body, but with the proper treatment, if I relax occasionally and take good care of my body, I know it is going well. But, of course, it's tough. (. . .) I try as best I can [to take time off], and

> I usually relax entirely on Sundays, which is the only day I have complete time off. After all, I do put in breaks and rest.

Experiences with physical pain also contributed to realizing the need for rest for some, as illustrated by music student Cailyn:

> Sometimes my shoulders hurt. Then I know I need a bit of time off, and I can't keep on going. I practice every single day, and I know I may go on the wrong path without noticing. It is important to make room for some rest, so I occasionally have vacations, but only when I go abroad.

Furthermore, some performers described challenges of talking to their coaches about the fact that they needed time for rest and described problems with inadequate communication between coaches. In the words of athlete Taylor:

> The school coaches and club coaches do not talk much together even though my coach knows I am a student at this sports school and have physical training every day. I have suggested that I probably need to skip a match when I feel very tired because I may get overtrained or injured. Then it is no longer like they (school coach and club coach) talk together, but I need to talk in-between.

In sum, the study findings illustrated a fine line between performers' experiences of working with appropriate and desirable expectations as a source that helped them progress as performers; on the other hand, high strivings and expectations could negatively influence their well-being and everyday life.

Discussion

In this study, we explored expectations and how they were perceived to influence the well-being of young Norwegian adolescents selected to talent schools in sports, classical ballet, and classical music. The four main themes from the interview data illustrated the complexities of experiences with self-oriented and socially prescribed expectations and struggles with balancing expectations. The self-oriented expectations served as an impetus to work persistently and evoked self-doubts and never-give-up attitudes. Coaches'/teachers' socially prescribed expectations stimulated hard work and the pursuit of approval and opportunities. Parental expectations were perceived as helpful support but could also lead to concerns about letting parents down and negotiating independence. Balancing expectations and sustaining the demanding workloads were perceived to have consequences, such as difficulties with prioritizing recovery and ill-being. The three groups of performers' experiences revealed many general and similar expectations. Although the qualitative design does not allow for direct comparisons, there were also striking differences, which warrants a follow-up in a larger scale quantitative study. The notable difference was how ballet and music students, compared to athletes, tended to perceive their domains as tough and competitive.

The young performers recognized the benefits of having purposeful self-oriented expectations and socially prescribed expectations from coaches/teachers as well as parents, which stimulated them to work hard for performance enhancements and future opportunities. However, there was a fine line between perceiving purposeful and manageable expectations—and a relentless strive for enhanced achievements and future opportunities, which could evoke worry and doubts about abilities. Constantly striving for performance enhancement while trying to meet expectations in more than one arena was a source of highly demanding workloads and strains that influenced their well-being and everyday lives. Consistent with the literature on perfectionism in children and adolescents (Flett & Hewitt, 2022), such pressure to perform may consequently lead to mental and physical exhaustion that further hinder instead of promoting the performers' potential. Such experiences may further generate self-doubts, criticism, and overtraining to compensate for not progressing as expected (Flett & Hewitt, 2022). Although the findings partly mirror previous literature, they are novel in that they represent the voices of very young TD students. As such, they highlight the need for heightened awareness within talent school contexts about how and why expectations can influence performers.

Self-Oriented Expectations

This theme concerned the young performers' self-oriented expectations, with most reporting a clear sense of how their expectations benefitted performance progress. Their perceptions of working with manageable expectations of "doing one's best" contrasted with their subsequent descriptions involving rigidity, self-doubts, and negative self-talk, which resembled self-oriented perfectionistic tendencies of endless strivings for enhanced performances despite experiencing strains (Flett & Hewitt, 2022). However, most student performers expressed awareness of the cost of putting too much pressure on themselves. Still, to avoid self-disappointments and worries of not progressing as performers, it was necessary to attain demanding standards and hard to lower their expectations when required.

Student performers will meet obstacles during the development and process of attaining their goals and expectations. Hence, the ability to regulate and adjust goals and expectations related to the context plays a critical role in performers' development and well-being (Nicholls et al., 2016; Wrosch et al., 2003). Individuals with elevated expectations may have developed such self-regulatory capacities to help them avoid increased burdens when required (Nicholls et al., 2016; Nordin-Bates & Kuylser, 2021). However, others may not have developed such capacities to adopt flexible expectations, and alternative goals and expectations may not be available to them (Wrosch et al., 2003). Accordingly, our findings are a concern, considering that young performers who adopt increasingly high self-oriented expectations may succumb to the mounting pressure it can create, especially when experiencing setbacks (Flett & Hewitt, 2014, 2022).

The findings may further illustrate that the self-oriented expectations within this age group are complex and partly paradoxical. Consistent with previous writings (Burton, 1989), most students felt they set manageable expectations, yet, many struggled to appropriately lower their standards even when understanding the problems that could occur if continuing on the same path. In real-life settings, it may not be easy to discern those who adopt desirable expectations from the extreme or perfectionistic. Notwithstanding, coaches, teachers, and others close to adolescent performers play an essential role in recognizing signs of excessive and unhealthy self-oriented expectations and in facilitating sustainable expectations for healthy development (Bergeron et al., 2015; LaPrade et al., 2016).

Socially Prescribed Coach/Teacher Expectations

The young student performers experienced that most coaches/teachers facilitated positive expectations and support, which

elicited an impetus to work hard. They were seen as highly influential in the performers' continued participation, progress, and future opportunities. Although our participants were as young as 14–15 years, their perceptions of coaches and teachers as gatekeepers are already similar to those of older performers (Haraldsen et al., 2020; Jarvin, 2017). Accordingly, securing acknowledgment and avoiding letting coaches and teachers down was perceived to be critical to getting opportunities. While this may work well in the short term, awareness is important because it can change to become problematic. Indeed, pursuing approval and the need to meet others' expectations to avoid disappointments are known to contribute to the development of perfectionism (Flett & Hewitt, 2022). Specifically, such dependency may result from SPP, which is a well-known contributor to ill-being (Flett & Hewitt, 2022; Hill, 2016). The dependent relationships reflected in adolescents' sense of obligation to repay their coaches/teachers for investing in them may develop into an unhealthy coach–athlete relationship where coaches gain excessive power over young performers (Rylander, 2015). The most prone may be adolescents who constantly evaluate achievements and self-worth according to coaches' feedback and corrections. Dependent relationships may generate a climate where young performers do not dare to speak up when they need help and support because they fear negative evaluation and being passed over for opportunities (Kerr & Stirling, 2017; Rylander, 2015). Instead, young athletes, dancers, and music students may benefit from relying more on their own judgments already from earlier ages, which requires autonomy support from the coaches/teachers and gatekeepers (Nordin-Bates & Kuylser, 2021). As these authors point out, it appears crucial to emphasize awareness regarding young performers who are concerned about meeting external expectations, who display high coach/teacher dependency, and who constantly need external feedback to feel a sense of approval that others have faith in them.

Socially Prescribed Parental Expectations

Most adolescents perceived their parents to facilitate desirable expectations and to be generally caring and supportive. Notably, the young performers stressed their self-oriented expectations as being higher than parental expectations and emphasized that this was how it should be. When considering the age of the performers, it was unsurprising to find inconsistency between how parents were thought of as helpful supporters while concurrently finding that the adolescents desired less parental involvement. Indeed, independence was a source of enhanced motivation for training and practice.

For the young performers, parental support was the most emphasized aspect of parental involvement, which involved social–emotional support, financial support, showing interest, and spending time on the adolescents' activity. These aspects mentioned by the young performers concur with and replicate previous studies on parental involvement on how their supportive role can be positively experienced, and the fine line between experiences of overly pushy parents and a balanced involvement (Csikszentmihalyi et al., 1997; Gould et al., 1996, 2006; Lauer et al., 2010). Similar to these previous studies, it is noteworthy how interviewees sometimes expressed that they perceived helpful parental support while also experiencing a sense of duty to repay parents through achievements (Elliott et al., 2018; Lauer et al., 2010). Such perceptions of having a responsibility to repay their parents might increase the pressure to strive for ever-higher levels and avoid mistakes. Notably, greater instrumental support through financial family investments has previously been linked to athletes' experiences of higher parental pressures and decreased enjoyment and commitment (Dunn et al., 2016). These findings underline the importance of parents being conscious of how children may be influenced by instrumental support (Dunn et al., 2016). It also seems germane to emphasize the need for good dialogs between parents and young aspiring performers to ensure they are "on the same page" (Elliott et al., 2018). Overall, our results concur with previous studies that parents play unique roles that may foster healthy development and well-being by adopting a balanced involvement in high-expectation environments (Elliott et al., 2018; Harwood & Knight, 2015; Knight & Holt, 2014).

Balancing Expectations: Workloads and Perceived Consequences of Expectations

It was challenging for many performers to manage and balance the internal and external expectations they faced in their everyday lives. Previous studies have also reported several negative impacts of excessive expectations, high overall loads, and overscheduling on young performers' well-being and mental and physical health (Bergeron et al., 2015; Walton et al., 2021). Hence, the present findings add to the literature in terms of how young student performers perceive that expectations influence their well-being in sports, ballet, music, and everyday life.

Unsurprisingly, the performers' constant focus on progress and future opportunities made it hard to prioritize and lower expectations when required. Combined with a sense of responsibility to fulfill expectations from several areas, this manifested for most performers in tiredness (sometimes exhaustion), and some described anxiety, irritation, headaches, and concentration difficulties. There was a tendency of needing to experience strains or physical pain before realizing the need for rest. Although most students were aware of the importance of rest and recovery for their health and performance, prioritizing it was challenging. High overall loads combined with insufficient life balance might be a result of performers striving to progress, achieve future opportunities, and compensate for failures or setbacks. In turn, such continual striving may generate undue burden and eventually result in injuries or illnesses (Flett & Hewitt, 2022). Notably, among TD athletes aged 15–16, prevalence rates of perceived ill-being have been reported as high as 43%, with 25% reporting severe health problems and 37% overuse injuries (Moseid et al., 2018). Furthermore, 22% of even younger athletes and performing artists have previously displayed unhealthy perfectionism patterns associated with maladaptive mental health indicators (Stornæs et al., 2019).

In sum, many young performers find their expectations encouraging as it helps them advance in sports, music, and ballet. However, there are evident experiences of elevated expectations and demanding workloads from young ages that can be sources of ill-being if not appropriately addressed with positive support and guidance. Overscheduling might be a structural challenge related to how school days, practice, and free time are organized. Accordingly, further evaluations on the organization of young people's time might be needed (e.g., by involving performers, schools, clubs, parents, and coaches).

Strengths, Limitations, and Future Research Directions

Recruiting a relatively large number of adolescents from top TD schools at the age of 14–15 years is a strength of this study, as there

has been a lack of investigation into the lives of these young performers. Developing and using an interview guide that focused the interviews on expectations (rather than the arguably more extreme construct of perfectionism) gave broad, nuanced data on young performers' experiences, which may help inform future guidelines for school leaders. Our findings reflect athletes, music, and ballet students attending Norwegian talent school settings, and caution in interpreting the findings and their applicability to other contexts (e.g., younger or older students, other cultures) is warranted. Also, a different participant recruitment procedure, for example, recruiting from the ends of a distribution or openly via social media, may well have resulted in slightly different findings. The qualitative design in this study did not allow for direct comparisons between the groups of TD school students, but there were striking trends that we discussed, which warrant follow-up in larger scale quantitative studies. More research that explores how different TD schools facilitate the possibility for student performers to optimize the school-practice-leisure time balance seems required. Such knowledge may help optimize positive experiences, prevent attrition, and reduce potential adverse health effects due to conflicting performance expectations. The high workloads and expectations many aspiring performers experience from a young age requires further exploration over time.

Conclusion

Coaches, teachers, and parents of young high-ability performers need awareness of adolescents' expectations since the nature of those expectations is decisive for healthy development and well-being. How talent schools for very young student performers facilitate guidance to help young performers manage the fine line between healthy and unhealthy expectations needs to be explored further.

Acknowledgments

We extend special gratitude to all the participating adolescents and the teachers and staff that put in extra effort and time to facilitate the study at the schools. This project has been made possible by Dam Foundation (Norwegian: Stiftelsen Dam) through the Norwegian Council for Mental Health (NCMH). Project number 2017FO143239. The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. Data availability statement: Data are unavailable because the participants gave no consent to sharing their complete interview in public.

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Appendix: Interview Guide

Introductory questions and background	Follow-up questions/clarifying questions (relevant during the interviews if they did not elaborate)
How old are you? For athletes: Which sport are you doing? For music students: Which instrument are you playing?	*Are you active in other activities as well?*
Do you remember how old you were when you first became interested in and started; playing music; your sports (e.g., playing football); dancing? Do you remember why you started? Can you tell me a bit about it?	*Has someone in your family practiced the same sports; been a musician; dancer? Did they/it mean something to you?*
Do you know approximately how many hours a week you practice? And how many hours do you spend on your sports; music; dance?	*Totally on practice and competitions?*
Do you participate in competitions? What level would you say you are at compared to others your age?	*Can you tell which placements you usually get when participating in competitions?*
Main topics	**Follow-up questions/clarifying questions (relevant during the interviews if they did not elaborate)**
Goals	
Do you have any goals?	May you describe this/these goals? *Why have you set yourself this goal?* *What possibilities do you have for reaching this/these goals? And can you tell me a little bit about what you think needs to be done to achieve this or these goals?* *What does it mean to you to achieve this goal?*
Performance expectations—Own and others' expectations	
Own expectations:	
Do you have any expectations for yourself? Can you describe that/those expectations?	*How do you feel about having those expectations?* *Can you describe a typical day at practice?* *e.g.: your plan for the practice, expectations and goals you may have, what it's like if you don't get to do what you had planned, etc.*
Can you tell me a bit about your experiences with concerts; performances; competitions? Can you also tell in as much detail as possible an example from a concert; performance; competition/match/race, and what it is like?	How do you prepare yourself? *For instance: Are there some things that are important for you to do before a concert/competition/performance? How are you prior to starting?* *How are you during and after a concert; performance; competition/match/race? Can you describe it? What are you thinking about (any particular, e.g., positive/negative thoughts)*
Can you say something about what makes the difference for you about whether you feel you have done well or not so well? For instance, when are you satisfied or not satisfied with your own performance/effort?	*Do you have examples that you can tell about from competitions; concerts; performances?*
Why do you think you got/have these ideas about what good and poor performances are?	
How would you say your expectations and goals are, compared to the others at your age that you practice with (e.g., at school; sports club)?	
Expectations from others:	
Can you tell a little about how those closest to you are in relation to you and your sports; dance; music? Do they have expectations of you?	*What do they say about practice?* *Do they have expectations regarding competitions; concerts?* *How do you perceive the expectations they have for you? Can you tell me a little about your experiences?*
Can you tell me a bit about what the expectations are from those in your training/practice group/class and the coaches; teachers?	*What is a typical day at rehearsal/training like?* *What expectations do they (others, e.g., coaches/teachers/parents/) have, and what is required of you? For instance, what do you think is positive and negative about this?*
Can you tell a little about what those closest to you are like when you participate in competitions; performances; concerts?	

(continued)

(continued)

Peers	
Can you tell me a bit about how you get along with the others you play with?	*What is good? What is not good?*
Finishing Questions	
Generally, what do you think about having expectations? Is there anything in particular that you see as positive or negative? Are there other areas that we have not talked about where you experience that there are expectations for you? If so, can you tell me a little about it?	
Final Question	
Is there anything else you would like to say?	*The last thing I would like to ask; is there something that you think might be good for me to take with me further in my studies? As I study adolescents and your experiences with expectations and of you who are involved in sports; dance; music. Is there anything you think I could take with me further?*

Note. Translated interview guide from Norwegian. Participants were ninth-grade (14 and 15 years old) Norwegian talent development school students in sports, ballet, and music.

Appendices: Approval letters, Informed consent letters, Questionnaires

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6. Questionnaires and questions used in Papers I and II

Appendix 1

Approval letter from Regional Committee for Medical Research Ethics, quantitative study 1 and qualitative interview study (paper III)

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Anette Solli Karlsen	22845522	17.12.2015	2015/1358/REK sør-øst A
			Deres dato:	**Deres referanse:**
			30.11.2015	

Vår referanse må oppgis ved alle henvendelser

Jorunn Sundgot-Borgen
Norges idrettshøgskole

2015/1358 Så flink at en blir syk?

Forskningsansvarlig: Norges idrettshøgskole
Prosjektleder: Jorunn Sundgot-Borgen

Vi viser til søknad om forhåndsgodkjenning av ovennevnte forskningsprosjekt. Søknaden ble behandlet av Regional komité for medisinsk og helsefaglig forskningsetikk (REK sør-øst) i møtet 27.08.2015. Vurderingen er gjort med hjemmel i helseforskningsloven (hfl.) § 10, jf. forskningsetikkloven § 4.

Prosjektbeskrivelse (revidert av REK)

Formålet med dette prosjektet er å kartlegge andelene av ungdom som sliter med prestasjonskrav, hvordan slike krav relateres til mentale helseplager og hvilke beskyttende forhold som kan foreligge.

Levekårsundersøkelsene viser en betydelig økning i egenrapporterte psykiske plager der angst, depresjoner og spiseproblemer dominerer. Dagens ungdomsgenerasjon fremstilles som "de sykt flinke" og "generasjon prestasjon". Dette er nye, sosiokulturelle og psykologiske forhold som kan bidra til å forklare variasjon i mentale helseplager, men som ennå er lite kartlagt. Det er således lite kjent i hvilken grad et stort prestasjonskrav fra flere arenaer kan skape helsemessige negative konsekvenser. Bekymringen knyttet til helsemessige konsekvenser av en prestasjonsorientert kultur er særlig aktuell i forhold til ungdom som deltar i organiserte prestasjonsrettede aktiviteter.

I prosjektet er det planlagt inkludert 200 elever i 8. trinn rekruttert fra prestasjonsorienterte skoler i Osloområdet [redacted]). Som kontrollgruppe skal 500 elever fra allmenne ungdomskoler inngå i prosjektet.

Samtykke vil bli innhentet fra alle deltakere (ungdommen). Det legges opp til at foresatte vil bli informert om undersøkelsens innhold og dersom de ikke ønsker at barna skal delta i studien kan de reservere barnet mot dette.

Relevante opplysninger planlegges innhentet fra ungdommen ved følgende spørreskjema:

- Prestasjonsmotivasjon: Child-Adolescent Perfectionism Scale, Frost Multidimensional
- Perfectionism Scale, Perceived Parental Pressure subscale from the Multidimensional Inventory of
- Perfectionism in Sport (MIPS)
- Kroppsopplevelse: The Eating Disorder Inventory-3 (EDI-3), Sociocultural Attitudes Towards
- Appearance Questionnaire-4 (SATAQ-4)

- Angst/depresjon: Hospital Anxiety and depression Scale (HADS)
- Mestringsressurser, herunder opplevd sosial støtte (resiliens/beskyttende faktorer): The Resilience Scale for Adolescents (READ)
- Livskvalitet: Overall wellness (WHOQOLBREF)
- Selvfølelse: Rosenberg self-esteem scale (RSES) og Harter's Self-perception Profile for Adults

Det skal videre gjennomføre kvalitative dybdeintervjuer med inntil 15 elever blant de ungdommer fra spesialiserte skoler som synes å ha problemer med prestasjonsmotivasjon og dermed ansees å være sårbare for å utvikle psykiske problemer.

Saksbehandling

Søknad om forhåndsgodkjenning ble behandlet i møte den 27.08.2015, og det ble fattet et utsettende vedtak.

Følgende inngikk i komiteens vurdering, jf. vedtak av 10.09.2015:

Etter komiteens syn er dette en viktig studie, der resultatene som utledes potensielt kan være av betydning for fremtidig forebyggende arbeid.

Imidlertid har komiteen en rekke merknader til prosjektet som må besvares før det kan tas stilling til endelig godkjenning.

Det legges i prosjektet opp til at foresatte ikke skal gi aktivt samtykke til barnets deltakelse i studien. Komiteen vil innledningsvis bemerke at de deltakerne det planlegges inklusjon av til omsøkte studie i lovens forstand ikke er samtykkekompetente, jf. helseforskningsloven § 17. Foreldre eller andre foresatt må samtykke på vegne av barnet til forskning som inkluderer deltakere under 16 år, jf. samtykkebestemmelsene i pasient- og brukerettighetsloven § 4-4, jf. helseforskningsloven § 17 fjerde ledd. Hovedregelen om samtykke sier at samtykket skal være informert, frivillig, uttrykkelig og dokumenterbart. Videre skal et slikt samtykke bygge på spesifikk informasjon om et konkret forskningsprosjekt, jf. helseforskningsloven § 13. I utgangspunktet kreves samtykke fra begge foreldrene, jf. lovteksten «foreldrene». Det er tilstrekkelig at en av foreldrene eller andre med foreldreansvar samtykker til helsehjelp som regnes som ledd i den daglige og ordinære omsorgen for barnet, eller helsehjelp som er nødvendig for at barnet ikke skal ta skade. Eksempler på førstnevnte kan være ordinære legebesøk og behandlingsoppfølging ved forbigående sykdommer, og eksempler på det andre er for eksempel akuttmedisinske tiltak ved skade. Deltakelse i medisinsk og helsefaglig forskning anses ikke for å være en av de tilfeller der det er tilstrekkelig at en av foreldrene samtykker. Dersom det foreligger samtykke fra bare en av foreldrene med felles (delt) foreldreansvar, foreligger det ikke gyldig samtykke etter pasient- og brukerettighetsloven § 4-4 første ledd jf. helseforskningsloven § 17 fjerde ledd.

Etter komiteens vurdering kan dermed ikke prosjektet gjennomføres uten at det legges opp til at det innhentes skriftlig samtykke fra foresatte. Det stilles vilkår om at begge foresatte må samtykke på vegne av barnet.

Videre må det utarbeides et separat informasjonsskriv for dybdeintervjuet som er planlagt gjennomført av 15 ungdommer, et for ungdommen og et til foresatte. Også her stilles det som vilkår at begge foresatte må samtykke på vegne av ungdommen. Sensitiviteten av de opplysninger som her skal innsamles må tydelig fremkomme.

I informasjonsskrivet til skolene er det nevnt at det skal sørges for beredskap fra helsesøster. Beredskapen er ikke beskrevet hverken i søknad eller protokoll, og komiteen kan på det grunnlag ikke ta stilling til prosjektets forsvarlighet.

Det er vedlagt søknaden en oversikt over hvilke skjema som skal benyttes i studien. Samtlige skjema må innsendes i sin helhet for vurdering. Det gjøres oppmerksom på at det er angitt at skjemaet Harter's Self-perception Profile for Adults skal benyttes. Skjemaet finnes kun for ungdom (adolesents).

I det utarbeidede informasjonsskrivet til ungdommene er det angitt at «spørsmålene handler om hvordan du

har det, det å prestere og hva du gjør utenom skolen». Etter komiteens syn er dette en altfor generell beskrivelse av de til dels sensitive opplysninger som skal innhentes ved bruk av spørreskjema. Ungdommene bør informeres på samme måte som de foresatte, om at det her spørres om symptomer, selvfølelse, symptomer på spiseforstyrrelse etc.

I informasjonsskrivene sies det: «Spørreskjemaene ber ikke om intim eller støtende informasjon.» Etter komiteens oppfatning er de opplysninger man samler inn i prosjektet av en såpass sensitiv karakter at ordet intim bør strykes.

I informasjonsskrivet henvises det til at «Spørreskjema vil bli delt ut i vårsemesteret 2016.» Imidlertid er det, ifølge vedlagt protokoll, lagt opp til elektronisk innsamling av opplysninger i prosjektet. Dette må tydeliggjøres i informasjonsskrivet.

Videre er «anonymt» brukt feil i informasjonsskrivene. Dersom det eksisterer en koblingsnøkkel, er opplysningene å betrakte som avidentifiserte og ikke anonyme.

Det må tydelig fremkomme av informasjonsskrivene når opplysninger er planlagt slettet.

Komiteen ba om tilbakemelding på følgende merknader før et endelig vedtak fattes:

1. Det bes om en redegjørelse for hvordan det skal innhentes skriftlig samtykke fra begge foreldre eller andre med foreldreansvar.
2. Det bes om at det utarbeides separate informasjonsskriv for dybdeintervjuene, til ungdommen og foresatte. Skrivene må innsendes til REK for vurdering.
3. Prosjektets plan for beredskap må fremlegges REK for vurdering.
4. De spørreskjemaene som skal benyttes i studien må innsendes i helhet, i norsk versjon.

Vedrørende informasjonsskrivene bes det om at følgende punkter revideres:

1. Informasjonsskrivene til ungdommen må tydeliggjøre hvilke opplysninger som skal innsamles i prosjektet.
2. Setningen «Spørreskjemaene ber ikke om intim eller støtende informasjon.» må omformuleres.
3. Informasjonsskrivet må være dekkende for hvilke metode som benyttes for å innsamles prosjektopplysninger, det vil si om dette gjøres elektronisk eller på papir.
4. Ordet anonymt må omskrives til avidentifisert.
5. Informasjonsskrivene må videre opplyse om når prosjektopplysninger skal slettes.

Prosjektleders tilbakemelding på dette vedtak ble mottatt 20.10.2015.

Det fremkommer av tilbakemeldingen at det legges opp til at det skal informeres om prosjektet på foreldremøte i regi av skolen. Det skal deretter sendes e-post til alle foreldre med informasjon og samtykkeskjema. Det planlegges å innhente samtykke fra foreldre ved at disse returnerer samtykkeskjemaet på e-post. Prosjektleder ber her REK vurdere hvorvidt det kan gis fritak fra å innhente samtykke fra begge foreldre for barnets deltakelse.

Det er utarbeidet informasjonsskriv for delstudie 2 i prosjektet, der det inngår dybdeintervju av 15 elever.

I forhold til etterspurt beredskap ved spørreskjemadelen av undersøkelsen fremkommer det av tilbakemeldingen «..at dersom elever har behov for oppfølging, meldes behovet til kontaktlærer/kontaktperson som har ansvaret for å melde aktuelle elever opp til en prioritert samtale hos skolens helsesøster.»

Det fremkommer videre av tilbakemeldingen at de skjema som per i dag ikke er ferdig oversatt, vil bli ettersendt REK.

Informasjonsskrivet er revidert i forhold til komiteens merknader.

Tilbakemeldingen ble vurdert av komiteen i møte 29.10.2015.

Følgende inngikk i komiteens vurdering, jf. vedtak av 11.11.2015:

Etter en samlet vurdering er komiteens merknader tilfredsstillende besvart på en rekke områder.

Imidlertid er det enkelte forhold som må avklares før det tas stilling til godkjenning av prosjektet.

Når det gjelder innhenting av samtykke fra barnets foreldre, vil komiteen vise til sin tidligere vurdering. Prosjektleder viser til at det kan være en logistisk utfordring å innhente samtykke fra begge foreldre. Komiteen deler dette synet, men anser dette for å være av underordnet betydning i forhold til hvilke vilkår loven stiller for forskning på mindreårige. Lovteksten er tydelig på at dersom det kun foreligger samtykke fra en av foreldrene med felles (delt) foreldreansvar, foreligger det ikke gyldig samtykke etter pasient- og brukerettighetsloven § 4-4 første ledd jf. helseforskningsloven § 17 fjerde ledd. Barnet kan av denne grunn ikke delta i undersøkelsen med mindre begge foreldre har samtykket til det.

Når det gjelder utsending av informasjon og samtykkeskjema til foreldre på e-post bør dette kun gjennomføres i regi av skolen. Etter komiteens vurdering er e-postadresser å anse som sensitiv informasjon, og bør ikke utleveres fra skolen til prosjektgruppen. REK anbefaler derfor at det sendes med barnet skriftlig informasjon hjem i etterkant av foreldremøte, fremfor at denne utsendes på e-post.

Etter komiteens vurdering er samtykket gyldig dersom det foreligger en signert kopi av informasjonsskrivets samtykkedel, og samtykkedelen av informasjonsskrivet kan signeres, skannes og innsendes til prosjektgruppen på e-post dersom foreldrene ønsker dette. Dersom det er praktisk vanskelig kan det godtas at barnet inkluderes i studien ved ett foreliggende foreldresamtykke. Foreldre nummer to må imidlertid samtykke innen fire uker etter inklusjon. Dersom foreldre nummer to ikke har samtykket innen fire uker, må de innsamlede opplysningene slettes. Prosjektgruppen gis anledning til å sende foreldre en påminnelse ved manglende eller forsinket respons.

Det foreligger en misforståelse av hvilke beredskap som REK mener bør foreligge i prosjektet. REK deler prosjektleders syn på at det å svare på standardiserte, velutprøvde spørreskjema om sykdom og helse i seg selv neppe vil medføre psykiske problemer eller belastninger i seg selv. Imidlertid er REKs vurdering her ment å være knyttet til den beredskap som man i prosjektet må ha dersom det, for eksempel ved at enkeltelever ved gjennomgang av utfylte skjema avdekkes urovekkende funn skårer høyt på angst eller depresjon, eller rapporterer andre forhold som krever hjelpetiltak. Etter komiteens syn krever slike funn oppfølging, og må medføre tiltak i samråd med barnets foreldre, det være seg gjennom skolens helsesøster eller ved henvisning til annen instans.

Det bes om at resterende skjema innsendes når oversettelsen er ferdigstilt. Skjemaene kan ettersendes REK på e-post.

Komiteen ba om tilbakemelding på følgende merknader før det tas stilling til godkjenning av prosjektet:

1. Det må legges opp til at det innhentes samtykke fra de av barnets foreldre som har foreldreansvar.
2. Det må redegjøres for hvordan informasjon skal distribueres til foreldre (etter avholdt foreldremøte), og videre hvordan det legges opp til at samtykke skal innhentes fra barnets foreldre.
3. Det må videre redegjøres for hvilke beredskap man har i prosjektet i forhold til de enkeltelever som i spørreskjemaene rapporterer forhold som medfører tiltak.

Prosjektleder har nå sendt tilbakemelding, mottatt 30.11.2015.

Det fremkommer av tilbakemelding at det i prosjektet skal innhentes samtykke fra begge barnets foreldre. Minst ett samtykke må foreligge før barnet inkluderes i studien, deretter kan foreldresamtykke nummer to innhentes i løpet av fire uker.

Videre redegjør prosjektleder for at informasjon om prosjektet skal utgå på e-post, og da i regi av skolen.

Foreldres e-post adresser blir dermed ikke utlevert til prosjektgruppen fra skolene som inngår i prosjektet.

Vedrørende beredskap i prosjektet oppgis det at det iverksettes tiltak i samråd med barnets foreldre basert på opplysninger om alarmerende funn som tilkommer prosjektgruppen under prosjektets gang eller fremkommer i dybdeintervjuer.

Spørreskjemaene CAPS og MIPS er ettersendt per e-post og mottatt 07.12.2015.

Ny vurdering

Tilbakemeldingen er vurdert av komiteens leder på delegert fullmakt, og er å anse som tilfredsstillende.

Vedtak

Prosjektet godkjennes med hjemmel i helseforskningsloven §§ 9 og 33.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknaden og protokollen, og de bestemmelser som følger av helseforskningsloven med forskrifter.

Godkjenningen gjelder til 31.12.2018.

Av dokumentasjonshensyn skal opplysningene oppbevares i 5 år etter prosjektslutt. Opplysningene skal oppbevares avidentifisert, dvs. atskilt i en nøkkel- og en datafil. Opplysningene skal deretter slettes eller anonymiseres, senest innen et halvt år fra denne dato.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse- og omsorgssektoren».

Prosjektet skal sende sluttmelding på eget skjema, jf. helseforskningsloven § 12, senest et halvt år etter prosjektslutt.

Dersom det skal gjøres endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden, må prosjektleder sende endringsmelding til REK, jf. helseforskningsloven § 11.

Komiteens vedtak kan påklages til Den nasjonale forskningsetiske komité for medisin og helsefag, jf. helseforskningsloven § 10 tredje ledd og forvaltningsloven § 28. En eventuell klage sendes til REK sør-øst A. Klagefristen er tre uker fra mottak av dette brevet, jf. forvaltningsloven § 29.

Med vennlig hilsen

Knut Engedal
Professor dr. med.
Leder

Anette Solli Karlsen
Komitesekretær

Kopi til:turid.sjostedt@nih.no; postmottak@nih.no

Appendix 2

Approval letter from Regional Committee for Medical Research Ethics, prospective study (data collection II, 2018)

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Leena Heinonen	22845598	30.06.2017	2015/1358 REK sør-øst A
			Deres dato:	**Deres referanse:**
			22.06.2017	

Vår referanse må oppgis ved alle henvendelser

Jorunn Sundgot-Borgen
Norges idrettshøgskole

2015/1358 Så flink at en blir syk?

Forskningsansvarlig: Norges idrettshøgskole
Prosjektleder: Jorunn Sundgot-Borgen

Vi viser til søknad om prosjektendring datert 22.06.2017 for ovennevnte forskningsprosjekt. Søknaden er behandlet av leder for REK sør-øst på fullmakt, med hjemmel i helseforskningsloven § 11.

Endringen innebærer:

- en ny delprosjekt: en ny måling med spørreskjema til samme utvalgsgruppe
- ny revidert protokoll, versjon sendt 22.6.17, vedlagt
- nye informasjonsskriv for deltakere og foreldere vedlagt

Vurdering
REK har vurdert den omsøkte endringen, og har ingen forskningsetiske innvendinger til endringen slik den er beskrevet i skjema for prosjektendring.

Vedtak

REK godkjenner prosjektet slik det nå foreligger, jfr. helseforskningsloven § 11, annet ledd.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknad, endringssøknad, oppdatert protokoll og de bestemmelser som følger av helseforskningsloven med forskrifter.

Klageadgang

REKs vedtak kan påklages, jf. forvaltningslovens § 28 flg. Eventuell klage sendes til REK sør-øst D. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst D, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no <http://helseforskning.etikkom.no/> . Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Knut Engedal
Professor dr. med.
Leder

Leena Heinonen
rådgiver

Kopi til: *turid.sjostedt@nih.no;*

Norges idrettshøgskole ved øverste administrative ledelse: postmottak@nih.no

Appendix 3

Approval letter from Regional Committee for Medical Research Ethics, extension of the end date for the research project, first extension

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Leena Heinonen	22845522	23.01.2018	2015/1358 REK sør-øst A
			Deres dato:	**Deres referanse:**
			10.01.2018	

Vår referanse må oppgis ved alle henvendelser

Jorunn Sundgot-Borgen
Seksjon for idrettsmedisinske fag

2015/1358 Så flink at en blir syk?

Forskningsansvarlig: Norges idrettshøgskole, Norges idrettshøgskole
Prosjektleder: Jorunn Sundgot-Borgen

Vi viser til søknad om prosjektendring datert 10.01.2018 for ovennevnte forskningsprosjekt. Søknaden er behandlet av leder for REK sør-øst A på fullmakt, med hjemmel i helseforskningsloven § 11.

Det er søkt følgende endringer i dette prosjektet:
1.- utsettelse av prosjektslutt til 31.03.2020
2.- ny endret forespørsel til deltakere som fyller 16 år i løpet av 2018
3. -fritak fra innhenting av foreledresamtykke til ungdom som er 15 år

Vurdering
REK har vurdert de omsøkte endringene, og har ingen forskningsetiske innvendinger til endringene 1 og 2 slik de er beskrevet i skjema for prosjektendring.
Komiteen har imidlertid innvendinger mot endring 3: Komiteen kan ikke tillate at ungdom på 15 år skal samtykke selv. Komiteen innvilger ikke fritak fra innhenting av foreldresamtykke til ungdom på 15 år.

For samtykke til forskning som inkluderer deltakere under 16 år kreves samtykke fra foreldrene eller andre med foreldreansvar, jf. helseforskningsloven § 17 fjerde ledd, jf. pasient- og brukerettighetsloven § 4-4. Avgjørelser om helsehjelp (inkludert deltakelse i medisinsk og helsefaglig forskning) faller inn under foreldreansvaret etter barneloven. Foreldre som har felles (delt) foreldreansvar, må ta avgjørelser om helsehjelp i fellesskap, og i utgangspunktet kreves samtykke fra begge foreldrene, jf. lovteksten «foreldrene». For foreldre som har felles (delt) foreldreansvar kreves samtykke fra begge foreldrene. Det stilles på dette grunnlag som vilkår at begge foresatte må samtykke på vegne av barnet.

På bakgrunn av dette setter komiteen som vilkår at foreldresamtykke innhentes for ungdom som er under 16 år.

Vedtak

Komiteen godkjenner med hjemmel i helseforskningsloven § 11 annet ledd at prosjektet videreføres i samsvar med det som fremgår av søknaden om prosjektendring under forutsetning av at ovennevnte vilkår oppfylles og i samsvar med de bestemmelser som følger av helseforskningsloven med forskrifter.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknad, endringssøknad, oppdatert protokoll og de bestemmelser som følger av helseforskningsloven med forskrifter.

Godkjenningen gjelder til 31.03.2020. Av dokumentasjonshensyn skal opplysningene oppbevares i 5 år etter prosjektslutt. Opplysningene skal oppbevares avidentifisert, dvs. atskilt i en nøkkel- og en datafil. Opplysningene skal deretter slettes eller anonymiseres.

Klageadgang

REKs vedtak kan påklages, jf. forvaltningslovens § 28 flg. Eventuell klage sendes til REK sør-øst A. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst A, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Knut Engedal
Professor dr.med
Leder

Leena Heinonen
rådgiver

Kopi til: *turid.sjostedt@nih.no; postmottak@nih.no*

Appendix 4

Approval letter from Regional Committee for Medical Research Ethics, extension of the end date for the research project, extension to December 31, 2023

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst A	Anne Schiøtz Kavli	22845512	14.11.2022	11708

Jorunn Sundgot-Borgen

Prosjektsøknad: Så flink at en blir syk?
Søknadsnummer: 2015/1358
Forskningsansvarlig institusjon: Norges idrettshøgskole

Prosjektsøknad: Endring godkjennes

Søkers beskrivelse

Sosiokulturelle utviklingstrekk i retning av høye prestasjonskrav kan true ungdoms mentale helse. Vi trenger mer kunnskap om hvor mange som sliter med slike krav, hvordan slike krav relateres til mentale helseplager og beskyttende forhold som kan foreligge.
Prosjektet kartlegger (i) antall unge som opplever sterke prestasjonskrav, (ii) om slike kan relateres til sårbarhet, sosiokulturell kontekst, livskvalitet, kroppsopplevelse og symptomer på angst og depresjon,(iii) beskyttende mestringsressurser og (iv) erfaringsperspektiv knyttet til prestasjonskrav og mestring av disse.
Tverrsnittsdesign; elever i 8. trinn rekrutteres fra prestasjonsorienterte skoler ([redacted])
(n=200) og allmenne ungdomskoler (n=500). Delstudie 1: Standardiserte spørreskjema. Delstudie 2: Kvalitative intervju av inntil 15 elever som synes å ha problemer med prestasjonsmotivasjon og kan være sårbare for å utvikle psykiske problemer.

Vi viser til søknad om prosjektendring datert 07.11.2022 for ovennevnte forskningsprosjekt. Søknaden er behandlet av sekretariatet i REK sør-øst på delegert fullmakt fra REK sør-øst A, med hjemmel i helseforskningsloven § 11.

REKs vurdering

REK har vurdert følgende endringer i prosjektet:

- Ny sluttdato. Det søkes om å forlenge prosjektperioden til 31.12.2023.

Sekretariatet i REK har vurdert prosjektendringen og har ingen forskningsetiske innvendinger mot endringen av prosjektet.

Vedtak

Komiteen godkjenner med hjemmel i helseforskningsloven § 11 annet ledd at prosjektet videreføres i samsvar med det som fremgår av søknaden om prosjektendring og i samsvar med de bestemmelser som følger av helseforskningsloven med forskrifter.

Prosjektet er godkjent frem til 31.12.2023. Etter prosjektslutt skal opplysningene oppbevares i fem år for dokumentasjonshensyn. Enhver tilgang til prosjektdataene skal da være knyttet til behovet for etterkontroll. Prosjektdata skal således ikke være tilgjengelig for prosjektet. Prosjektleder og forskningsansvarlig institusjon er ansvarlig for at opplysningene oppbevares indirekte personidentifiserbart i denne perioden, dvs. atskilt i en nøkkel- og en datafil. Etter disse fem årene skal data slettes eller anonymiseres. Vi gjør oppmerksom på at anonymisering kan være mer omfattende enn å kun slette koblingsnøkkelen, jf. Datatilsynets veileder om anonymiserings-teknikker.

Vi gjør samtidig oppmerksom på at etter ny personopplysningslov må det også foreligge et behandlingsgrunnlag etter personvernforordningen. Det må forankres i egen institusjon.

Sluttmelding
Prosjektleder skal sende sluttmelding til REK på eget skjema via REK-portalen senest 6 måneder etter sluttdato 31.12.2023, jf. helseforskningsloven § 12. Dersom prosjektet ikke starter opp eller gjennomføres meldes dette også via skjemaet for sluttmelding.

Søknad om endring
Dersom man ønsker å foreta vesentlige endringer i formål, metode, tidsløp eller organisering må prosjektleder sende søknad om endring via portalen på eget skjema til REK, jf. helseforskningsloven § 11.

Klageadgang
Du kan klage på REKs vedtak, jf. forvaltningsloven § 28 flg. Klagen sendes på eget skjema via REK portalen. Klagefristen er tre uker fra du mottar dette brevet. Dersom REK opprettholder vedtaket, sender REK klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag (NEM) for endelig vurdering, jf. forskningsetikkloven § 10 og helseforskningsloven § 10.

Med vennlig hilsen

Jacob C. Hølen
Sekretariatsleder
REK sør-øst

Anne S. Kavli
Seniorkonsulent
REK sør-øst

Kopi til:

Norges idrettshøgskole
Annett Victoria Stornæs

Appendix 5: Informed consent letters to students and parents

Invitation and information letter to the schools, study 1 (2016)

Information letter to students, quantitative study 1 (2016)

Information letter to parents, quantitative study 1 (2016)

Information letter to students, qualitative study (2017)

Information letter to parents, qualitative study (2017)

Invitation and information letter to the schools, study 2 (2018)

Information letter to students, study 2 (2018)

Information letter to parents, study 2 (2018)

NORGES IDRETTSHØGSKOLE

Jorunn Sundgot-Borgen
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: xx.xx.2016

Til:
XX, Rektor
XX skole

Invitasjon om deltakelse i en spørreskjemaundersøkelse om ungdom, prestasjonskrav, mestring og helse

Dette er en forespørsel til din skole vedrørende deltakelse i et forskningsprosjekt med planlagt oppstart våren 2016. I dette prosjektet inviteres elever fra et tilfeldig utvalg av ungdomsskoler i 8.trinn fra Oslo og Akershus, og spesialiserte skoler for idrett, musikk og ballett. Vi ønsker å invitere alle elever i 8.trinn ved deres skole til denne studien.

Bakgrunn for studien

Helsemyndighetene er bekymret fordi mange unge sliter med prestasjonskrav. Det er imidlertid svakt kunnskapsgrunnlag for å angi hvor mange, eventuelt i hvilken grad, og hvordan ungdom faktisk opplever og håndterer krav og forventninger, samt hvor mange av disse som også angir at de har problemer som f.eks. angst og depressive symptomer. Videre er det behov for mer kunnskap om hvordan ungdom selv opplever sin hverdag, i en sosiokulturell kontekst, som kan være preget av mange og kanskje kryssende krav generert både fra egne forventninger og forventninger fra nære relasjoner, venner skole, og samfunn for øvrig. Vårt mål med prosjektet er å bidra til et slikt kunnskapsgrunnlag for i neste omgang å utvikle tiltak.

Studien integrerer mål på sårbarhet, prestasjonskrav og mestringsressurser. Herunder benyttes standardiserte målemetoder der elevenes opplevelser av prestasjonskrav, prestasjonsmotivasjon, selvfølelse, livskvalitet, mestringsressurser, motivasjon og kroppsopplevelse samt symptomer på angst og depresjon kartlegges. Utvalget i prosjektet omfatter ungdom fra Oslo & Akershus i offentlige kommunale skoler og private ungdomsskoler, og skoler som er spesialiserte innen idrett, musikk og ballett.

De offentlig kommunale og private skolene i Oslo og Akershus som blir invitert til å delta i studien er tilfeldig trukket ut blant alle skoler som har flere enn 20 elever i 8.trinn. Trekningen er gjort regionsvis for å sikre at alle regioner innen hvert fylke er representert i studien. Deres skole er en av skolene som ble trukket ut og som inviteres til å delta i studien.

Hva innebærer deltakelse i studien for deres skole og elever?

Det er planlagt å gjennomføre en spørreskjemaundersøkelse. Spørreskjemaene besvares på papir, og det er ønskelig å gjøre dette i en skoletime der prosjektmedarbeidere fra NIH er tilstede under gjennomføringen. Spørreskjemaundersøkelsen gjennomføres en gang våren 2016 (tidspunkt avtales med skolen), og vil ta omlag 45-60 minutter å besvare.

De standardiserte instrumentene som er valgt ut er utformet slik at de ikke skal kunne oppleves som en belastning for deltakerne. Det er ikke kjent at det å svare på disse utløser psykiske reaksjoner/problemer. I dette prosjektet er det likevel ønskelig med et samarbeid med skolens helsesøster, en linje til en kontaktperson ved skolen, både når elevene fyller ut de standardiserte instrumentene og under tiden der intervjuene foretas. Konkret vil dette fungere slik at dersom elever har behov for en samtale/oppfølging, meldes behovet til denne kontaktpersonen som har ansvaret for å melde aktuelle elever opp til en prioritert samtale hos skolens helsesøster. Dette vil vi informere både elever og deres foresatte om i forkant av studien, herunder også navn/kontaktinformasjon til kontaktlærer og helsesøster.

Ut fra alder og erfaring elevene har med slike undersøkelser vil det bli informert grundig om at det ikke finnes noen "rette" eller "gale" svar på det vi spør om i spørreskjemaene og i intervju, og at det de svarer ikke får noen konsekvenser for dem på skolen eller i andre sammenhenger. Under de kvalitative intervjuene kan det komme frem informasjon fra elever som kan ha behov for hjelp, og herunder vil «beredskapsplanen» skissert over følges.

Hva skjer med informasjonen om elevene?

Spørreskjemaene besvares på papir og deles ut i en skoletime der prosjektmedarbeidere er tilstede under gjennomføringen. Spørreskjemabesvarelsen og intervjuene vil kobles til navnet til den enkelte elev gjennom det ID-nummeret (koblingsnøkkel) elevene får oppgitt før de besvarer undersøkelsen. Det er kun prosjektleder, Professor Jorunn Sundgot-Borgen, og forsker, Annett V. Stornæs, som har tilgang til koblingen. Denne oppbevares i låsbart skap ved Norges idrettshøgskole. Koden som er koblet til navnet slettes 5 år etter prosjektets slutt. Grunnen til dette er at vi skal kunne slette riktig spørreskjema/ intervju for de som av en eller annen grunn ønsker å trekke seg fra prosjektet nå eller senere.

De svarene elevene gir på spørreskjema/intervju skal bare brukes til dette forskningsprosjektet. Verken lærere, trenere, instruktører/pedagoger, foresatte eller andre har tilgang til svarene, og ansvaret for at så ikke skjer tilligger meg som prosjektleder.

All informasjon som blir gitt behandles strengt konfidensielt, og avidentifiseres før publisering. Resultatene fra studien vil bli publisert i vitenskapelige tidsskrifter nasjonalt og internasjonalt. Hva de enkelte deltakere svarer er ikke i seg selv interessant for forskningsprosjektet. Resultatene vil bli analysert for å se etter trender og større sammenhenger på tvers av hva hver enkelt svarer. Dette betyr at vi verken kan, eller ønsker å fremstille resultatene slik at det er mulig direkte eller indirekte å kjenne igjen hva enkeltdeltakere har svart.

Det er Norges idrettshøgskole som er behandlingsansvarlig institusjon, og informasjonen skal utelukkende brukes for forskningsformål. Prosjektet er godkjent av Regionale komiteer for medisinsk og helsefaglig forskning Sør-Øst (REK Sør-Øst).

Frivillig deltakelse og samtykkeskjema

Det vil bli gitt både muntlig og skriftlig informasjon til elevene om undersøkelsen og det opplyses om at det er frivillig deltakelse. Foresatte/foreldre mottar et informasjonsskriv om undersøkelsen på e-post fra skolen/ utdeles under foreldremøte/ evt. legges ut på skolens elektroniske læringsplattform (eks.itslearning). Foreldrene/foresatte må samtykke i barnas deltakelse. For at eleven skal kunne delta i studien, må vi innhente skriftlig samtykke fra begge, eller den, av de foresatte som har foreldreansvar. Elevene må selv også gi sitt muntlige samtykke i deltakelse. Ideelt sett hadde det vært optimalt om vi kunne orientere om studien på et storforeldremøte som avholdes i vårsemesteret (februar/mars, evt. om det ikke avholdes møte i disse månedene avtales et egnet tidspunkt med skolen der vi kan informere om studien).

Praktisk gjennomføring

For å sikre god praktisk gjennomføring av prosjektet er det sentralt for oss at koordineringen og gjennomføringen av datainnsamlingen skjer i dialog og samarbeid med deres skole. Vi er fleksible i forhold til timeplanen ved deres skole, og herunder vil vi ta kontakt igjen for å avtale et tidspunkt for når vi kan komme til skolen for å informere om studien samt avtale tidspunkt for gjennomføringen av datainnsamlingen. Vi vil også sende dere en nærmere beskrivelse av den praktiske gjennomføringen av studien dersom dere takker ja til å delta. I denne sammenheng vil det være behov for en kontaktperson ved skolen som vi kan henvende oss til i forbindelse med planleggingen og gjennomføringen av prosjektet.

Undersøkelsen skal ikke medføre ekstra arbeid for deres ansatte.

Vi håper med dette skrivet på velvillig respondens på forespørselen om deltakelse. Vi ønsker at dere tar kontakt med oss på e-post: annett.stornas@nih.no; jorunn.sundgot-borgen@nih.no, så snart dere har anledning eller **innen 15.februar**. Eventuelt ta kontakt på telefon til Annett V. Stornæs: 986 49 672.

Med vennlig hilsen

Jorunn Sundgot-Borgen

Professor,
Prosjektleder
Norges idrettshøgskole
E-post: jorunn.sundgot-borgen@nih.no
Tlf: 922 41 745/ 23 26 23 35

Annett Victoria Stornæs

Prosjektmedarbeider/forsker
Norges idrettshøgskole

NORGES IDRETTSHØGSKOLE

Fra:
Jorunn Sundgot-Borgen
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: XX

Til deg som går i 8.klasse på xx

Kan du tenke deg å være deltaker i en spørreundersøkelse om krav og forventninger til deg?

Du og 900 andre elever i 8. klasse fra Oslo og Akershus inviteres til å bli med i en spørreundersøkelse som handler om prestasjonskrav, motivasjon, mestring, kropp og helse. Spørreskjemaundersøkelsen gjennomføres i en skoletime i april/mai.
Noen elever trekkes ut til intervju senere, men dette gjennomføres ikke før i 9.klasse. (De som trekkes ut til intervju får vite om dette neste skoleår og får da et informasjonsskriv om dette).

Hva vil vi spørre deg om?

Det er mange unge som strever med krav og forventninger i hverdagen, men vi vet lite om hvordan du og dine jevnaldrende faktisk opplever og håndterer dette. Spørsmålene i spørreundersøkelsen handler om hvordan du har det i hverdagen, dine fritidsinteresser, hva du tenker i forhold til krav og forventninger som settes av deg og andre, og hvordan du håndterer dette. Vi vil stille deg spørsmål om det å prestere, mestre, motivasjon, kropp, helse, om du engster deg for noe og hvordan humøret ditt er. I tillegg vil vi stille noen spørsmål om hva som motiverer deg til å drive med din fritidsinteresse(r) som f.eks dans, idrett, og musikk.

Det finnes ingen "rette" eller "gale" svar på et slikt spørreskjema. Verken lærere, trenere, instruktører, pedagoger, foreldre/foresatte eller andre får lese svarene dine. Vi, professor Jorunn Sundgot-Borgen og forsker Annett V. Stornæs, har ansvaret for at det ikke skjer, og det er bare vi som har tilgang til svarene dine. Det du svarer får ingen konsekvenser for deg på skolen eller i andre sammenhenger.

Frivillig deltakelse

Det er helt frivillig å delta i spørreskjemaundersøkelsen, og du kan trekke deg fra å delta når som helst og uten å oppgi noen grunn for det.

Hva skjer med informasjonen om deg?

De svarene du gir skal bare brukes til dette forskningsprosjektet. Resultatene fra studien vil bli skrevet om i det vi kaller forskningstidsskrifter. Ingen vil få vite hva du har svart. Navnet ditt erstattes med en kode på spørreskjema. Koden er et ID-nr som du får oppgitt før du svarer på spørreskjema. Denne koden brukes i stedet for navnet ditt og det er kun vi, Jorunn Sundgot-Borgen og Annett V. Stornæs, som har tilgang til koblingen. Denne oppbevares på et sikret sted. Koden som ditt navn får, vil bli slettet 5 år etter prosjektets slutt. Grunnen til dette er at vi skal kunne slette riktig spørreskjema for de som av en eller annen grunn ønsker å trekke seg fra prosjektet nå eller senere.

Prosjektet er meldt inn og godkjent av det som heter Regionale komiteer for medisinsk og helsefaglig forskning (REK) Sør-Øst.

Praktisk gjennomføring

Skolen hvor du er elev har allerede takket ja til å delta på spørreskjemaundersøkelsen, og de vil legge til rette for gjennomføringen. Spørreskjemaene er i papirformat, og deles ut og besvares i en skoletime. Vi vil være til stede under gjennomføringen av denne undersøkelsen. Dersom du ønsker å prate med noen andre underveis eller etter at du har gjennomført spørreundersøkelsen vil du få anledning til det, og da vil kontaktlærer og helsesøster være tilgjengelig for deg.

Informasjonsskriv og samtykke om å delta

Alle elever får både muntlig og skriftlig informasjon om denne undersøkelsen.

Du er under 18 år og derfor har din/dine foreldre/foresatte fått et brev der de må svare på om de synes det er greit at du er med i undersøkelsen. For at du skal kunne være med må din/dine foresatte eller de med foreldreansvar for deg undertegne det brevet de har fått. Snakk gjerne med din nærmeste voksen om dette. Dette er beskrevet i informasjonsbrevet til din/dine foreldre/foresatte.

Vi trenger ikke skriftlig svar fra deg. Ønsker du å være med er det bare å delta når vi deler ut spørreskjemaene i klasserommet. Hvis du ikke ønsker å være med så trenger du ikke svare på spørreskjemaet.

På forhånd takk!

Med vennlig hilsen

Jorunn Sundgot-Borgen

Professor, prosjektleder
Norges idrettshøgskole

Annett Victoria Stornæs

Prosjektmedarbeider/Forsker
Norges idrettshøgskole

Jorunn Sundgot-Borgen
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: XX.XX.2016

Til deg som har barn i 8.klasse på XX skole

Spørreundersøkelse om ungdom, prestasjonskrav, mestring og helse

Alle elever i 8. trinn ved XX skole inviteres til å delta i en spørreundersøkelse om prestasjonskrav, motivasjon, mestring, kropp og helse denne våren. Totalt inviteres 900 tilfeldig utvalgte elever i 8. trinn fra skoler i Oslo og Akershus, og elever ved skoler som har særlig tilrettelagt opplæring for talenter innen ballett og musikk og idrettsungdomsskoler. Alle foreldre/ foresatte får tilsendt dette skrivet med forespørsel om samtykke til barnets deltakelse (samtykkeskjema finner dere på siste side).

Mange unge strever med krav og forventninger i hverdagen. Vi vet imidlertid lite om hvor mange, eventuelt i hvilken grad, og hvordan ungdom faktisk opplever og håndterer slike krav og forventninger, samt hvor mange av disse som også angir at de har problemer som f.eks. angst og depressive symptomer. Videre er det behov for mer kunnskap om hvordan ungdom selv opplever sin egen hverdag, som kan være preget av mange og kanskje kryssende krav generert både fra egne forventninger og forventninger fra nære relasjoner, venner, skole og samfunn for øvrig.

Vårt mål med prosjektet er å innhente et slikt kunnskapsgrunnlag, og i neste omgang å kunne utarbeide tiltak som skal kunne bidra til at ungdommene håndterer opplevde prestasjonskrav på en konstruktiv måte.

Standardiserte målemetoder vil bli benyttet, og elevenes opplevelser av prestasjonskrav, prestasjonsmotivasjon, selvfølelse, mestringsressurser, motivasjon, kropp og helse samt symptomer på angst og depresjon kartlegges.

Hva innebærer deltakelse i studien?

Spørreundersøkelsen gjennomføres i skoletiden i april/mai 2016. Det vil ta ca. 45 min å svare på den. Et mindre utvalg elever vil bli plukket ut til intervju, som gjennomføres neste skoleår. Forespørsel med informasjonsskriv om deltakelse i intervjudelen sendes senere dersom ditt barn blir plukket ut til dette.

Spørreskjemaene som barna får er utformet slik at det ikke skal kunne oppleves som en belastning å svare på disse. Det er ikke kjent at det å svare på slike spørsmål utløser reaksjoner/ problemer. I dette prosjektet er det likevel etablert en avtalt linje til en kontaktperson ved hver skole når elevene fyller ut spørreskjema. Konkret vil dette fungere slik at dersom elever har behov for å snakke med noen, eller for oppfølging, meldes behovet til kontaktlærer som også har ansvaret for å melde aktuelle elever opp til en samtale hos skolens helsesøster. Alle elever og foresatte blir informert om dette i forkant av gjennomføringen av studien.

Ut fra alder og erfaring vil det også bli informert grundig om at det ikke finnes noen "rette" eller "gale" svar på spørreskjema, og at elevenes svar ikke får noen konsekvenser for dem på skolen eller i andre sammenhenger.

Hva skjer med informasjonen om elevene?

Spørreskjemaene besvares på papir og deles ut i en skoletime der prosjektansvarlige er tilstede under gjennomføringen. Spørreskjemabesvarelsen vil kobles til navnet til den enkelte elev gjennom en kode (koblingsnøkkel) elevene får oppgitt før de besvarer undersøkelsen. Det er kun professor Jorunn Sundgot-Borgen og forsker Annett V. Stornæs som har tilgang til den koblingen. Denne oppbevares i låsbart skap ved Norges idrettshøgskole. Koden som er koblet til navnet slettes 5 år etter prosjektets slutt. Grunnen til dette er at vi skal kunne slette riktig spørreskjema for de som av en eller annen grunn ønsker å trekke seg fra prosjektet nå eller senere.

De svarene elevene gir på spørreskjema skal bare brukes til dette forskningsprosjektet. Verken lærere, trenere, instruktører, pedagoger, foresatte eller andre har tilgang til svarene, og ansvaret for at så ikke skjer tilligger undertegnede.

Resultatene fra studien vil bli publisert i vitenskapelige tidsskrifter nasjonalt og internasjonalt (forskningstidskrifter). Hva de enkelte deltakere svarer er ikke i seg selv interessant for forskningsprosjektet. Resultatene vil bli analysert for å se etter trender og større sammenhenger på tvers av hva hver enkelt svarer. Dette betyr at vi verken kan, eller ønsker å fremstille resultatene slik at det er mulig direkte eller indirekte å kjenne igjen hva ditt barn eller andre enkeltdeltagere har svart. All informasjon som blir gitt behandles strengt konfidensielt, og avidentifiseres før publisering.

Prosjektet er meldt inn til og godkjent av Regionale komiteer for medisinsk og helsefaglig forskning (REK) Sør-Øst (Prosjekt nr: 2015/1358)

Frivillig deltakelse og samtykkeskjema

Det er frivillig å delta i studien, og det vil bli gitt både muntlig og skriftlig informasjon til alle elevene om undersøkelsen. For at barnet ditt skal kunne delta i studien, må vi innhente skriftlig samtykke fra begge, eller den, av de foresatte som har foreldreansvar. Vedlagt (siste side) finner du/dere samtykkeskjema, og dersom du/dere samtykker i at barnet ditt/deres kan delta må du/dere besvare samtykkeskjema og sende dette tilbake til oss signert per e-post (skjema vedlagt), eller barnet ditt/deres kan ta dette med til kontaktlærer på skolen. Vi setter pris på om du via mail informerer oss dersom du velger å sende svarslippen med ditt/deres barn i stedet for i mail til oss

Praktisk gjennomføring

Skolen hvor ditt barn er elev har allerede takket ja til å delta på spørreskjemaundersøkelsen, og de vil legge til rette for gjennomføringen.

På forhånd takk!

Med vennlig hilsen

Jorunn Sundgot-Borgen

Professor, PhD
Prosjektleder
Norges idrettshøgskole
Seksjon for idrettsmedisinske fag
E-post: jorunn.sundgot-borgen@nih.no

Annett Victoria Stornæs

Forsker, MSc

Norges idrettshøgskole
Seksjon for idrettsmedisinske fag
E-post: annett.stornas@nih.no

NORGES IDRETTSHØGSKOLE

Jeg samtykker til at mitt barn kan delta i studien

Dersom du/dere samtykker i at ditt/deres barn kan delta i denne spørreundersøkelsen må du/dere krysse av for JA i denne svarslippen, skrive inn ditt/deres barns navn og signere nederst på svarslippen (signatur fra begge foreldre med foreldreansvar der dette gjelder).

Jeg/vi har mottatt informasjon om studien og jeg/ vi samtykker i at mitt/vårt barn deltar i spørreundersøkelsen om ungdom, prestasjonskrav, motivasjon, mestring, kropp og helse.

JA ☐

_____

Barnets navn (fornavn og etternavn)

(Signert av foresatt, dato)

(Signert av foresatt, dato)

Samtykkeskjema sendes oss enten på e-post (signert) til:

Annett V. Stornæs: annett.stornas@nih.no
Jorunn Sundgot-Borgen: jorunn.sundgot-borgen@nih.no

Eller leveres til kontaktlærer på trinnet til deres barn på skolen

Infoskriv til idrettselever, like infoskriv til musikk og ballettelever (tilpasset til elevens aktivitet)

Fra: Jorunn Sundgot-Borgen (Professor NIH), Gunn Pettersen (Førsteamanuensis UiT) og
Annett Victoria Stornæs (PhD stipendiat NIH)
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: XX.XX 2017

Til deg i 9.klasse

Vil du være med på et intervju om prestasjonskrav?

Du deltok i en spørreundersøkelse i 2016 som handlet om prestasjonskrav, forventninger og psykisk helse. Denne våren skal vi intervjue noen av alle dere som var med i spørreundersøkelsen, og alle som går i xx i 9.trinn inviteres.

Kan du tenke deg å være med på et intervju?

Intervjuet gjøres i skoletiden i mai eller juni, og det vil vare omtrent en halv til en time.

Hvis du har lyst til å være med så trenger vi et skriftlig samtykke fra dine foresatte innen XX (samtykkeskjema og informasjonsskriv må derfor leveres til foreldrene dine).

Hva vil vi spørre deg om i intervjuet?

Vi vet at det er mange på din alder som synes det er mange krav og forventninger i hverdagen, og noen opplever det som helt ok, mens andre kan oppleve det som vanskelig.

I intervjuet vil vi spørre deg om dine erfaringer med prestasjonskrav og forventninger. Det vi ønsker å vite mer om er hvordan du erfarer og opplever prestasjonskrav og forventninger i ulike situasjoner, og hvordan du forholder deg til dette både på skolen og i idretten din. Du vil også få noen spørsmål som handler om skolevalg, trening, mål du har, og hva som motiverer deg til å drive med idrett.

Målet vårt med dette prosjektet er å bidra med mer kunnskap om ungdom som kan benyttes i ulike skolesettinger og i prestasjonsgrupper for å fremme positiv mestring i hverdagen.

I et intervju som dette er det ingen "rette" eller "gale" svar. Det er dine egne og andre ungdommers erfaringer og opplevelser vi ønsker å få mer kunnskap om.

Frivillig deltakelse

Det er helt frivillig å delta i intervjuet, og du kan trekke deg når som helst også under intervjuet og etterpå om du ønsker det.

Hva skjer med den informasjonen du gir om deg selv?

Det du forteller under intervjuet skal bare brukes til dette forskningsprosjektet. Kun vi, doktorgradsstipendiat og hennes veiledere (Professor Jorunn Sundgot-Borgen og

Førsteamanuensis Pettersen) har tilgang til intervjuet / de innsamlede data. Svarene dine får ikke noen følger for deg på skolen eller i andre sammenhenger.

Resultatene fra intervjuene vil bli publisert/skrevet om i forskningsarbeider (det vi kaller forskningstidsskrifter), men ingen vil vite at det er du som har svart slik eller sånn fordi vi aldri vil bruke noen navn i noe av det vi skriver. Intervjuet tas opp på lydbånd (diktafon) og behandles strengt konfidensielt. Det betyr at resultatene fra intervjuene legges fram slik at andre ikke vil kunne identifisere hva du eller andre ungdommer har svart.

Prosjektet er godkjent av Regional komite for medisinsk og helsefaglig forskning (REK) Sør-Øst.

Praktisk gjennomføring

Skolen har takket ja til at du og de andre som er trukket ut, og som selv ønsker det, kan delta i dette intervjuet. De legger til rette for gjennomføringen. Det er jeg, Annett V. Stornæs, som vil intervjue deg. Dersom du ønsker å snakke med noen andre underveis i intervjuet eller etterpå vil du få mulighet til det, og da vil en lærer og helsesøster være tilgjengelig for deg.

Informasjonsskriv og samtykke om å delta

Alle elever har tidligere fått både muntlig og skriftlig informasjon om denne undersøkelsen, og dette skrivet går bare til deg som har blitt trukket ut til intervju.

Du er under 18 år og din/dine foreldre/foresatte får derfor også et informasjonsskriv med samtykkeskjema som må sendes oss **dato xxx**.

For å delta i studien, må din/dine foresatte eller de med foreldreansvar for deg undertegne i samtykkedelen av det skrivet. Dersom ikke dine foreldre/foresatte bor sammen, kan de likevel ha et felles foreldreansvar for deg. Snakk gjerne med din nærmeste voksen om dette. Dette er beskrevet i informasjonsskrivet til din/dine foreldre/ foresatte. Du trenger ikke å signere noe, ditt samtykke gir du muntlig.

På forhånd takk!

Med vennlig hilsen

Jorunn Sundgot-Borgen	Gunn Pettersen	Annett Victoria Stornæs
Professor	Førsteamanuensis	PhD stipendiat
Norges idrettshøgskole	Universitetet i Tromsø	Norges idrettshøgskole

Fra: Jorunn Sundgot-Borgen (Professor NIH), Gunn Pettersen (Førsteamanuensis UiT) og
Annett Victoria Stornæs (PhD stipendiat NIH)
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: XX. XX. 2017

Til deg som har barn i 9.klasse på XX våren 2017

Forespørsel om ditt barn kan delta i et intervju om ungdom og prestasjonskrav

I 2016 deltok ditt barn og 800 andre elever i delstudie 1 av et doktorgradsprosjekt som pågår ved Norges idrettshøgskole. I den første delstudien svarte elevene på en spørreskjemaundersøkelse om perfeksjonisme, prestasjonskrav, motivasjon, mestring og psykisk helse. Både elever i ordinære ungdomsskoleklasser i Oslo & Akershus, og elever i spesialiserte skoler og klasser for idrett, ballett og musikk deltok.

Vi er nå i gang med del II av dette PhD prosjektet der elever i 9. klasse fra spesialiserte skoler og allmenne ungdomsskoler forespørres om deltakelse i et intervju. Det er ikke anledning til å intervjue alle elever. Vi har derfor gjort et tilfeldig uttrekk, og ditt barn er blant elevene på XX som er trukket ut. For at barnet ditt skal kunne være med må han/hun ønske det selv, og vi trenger foresattes signerte samtykke **innen XX** (se siste side).

Hva handler intervjuet om og hvem forespørres?

Det er mange unge som strever med krav og forventninger i hverdagen, samtidig som andre ungdommer mestrer høye krav og forventninger uten å ha spesielle utfordringer knyttet til dette. Hovedtema i intervjuet er ungdommenes egne erfaringer knyttet til prestasjonsmotivasjon, og hvordan de forholder seg til og håndterer opplevde krav og forventninger på en positiv og/eller negativ måte. Formålet med intervjuene er å bidra med mer kunnskap som kan benyttes i ulike skolesettinger og i prestasjonsgrupper for å fremme positiv mestring i hverdagen.

Hva innebærer deltakelse i studien?

Intervjuet gjennomføres i juni 2017 på XX i skoletiden. Doktorgradsstipendiat, Annett V. Stornæs, gjennomfører intervjuene med ungdommene.

For mange av elevene vil det å sitte i en intervjusituasjon være en ny opplevelse. Dersom noen av elevene skulle ønske å snakke med noen andre voksne underveis i intervjuet eller etterpå vil det være mulighet for det, og lærer og/eller helsesøster vil være tilgjengelig. Det er frivillig å delta i studien, og elevene kan trekke seg når som helst uten å oppgi noen grunn for det, også underveis i intervjuet.

Det vil bli informert grundig om at det ikke finnes noen "rette" eller "gale" svar i denne intervjusituasjonen, og at det elevene snakker om i intervjuet ikke får noen konsekvenser for dem på skolen eller i andre sammenhenger.

Hva skjer med informasjonen om elevene?

Det elevene forteller under intervjuet skal kun anvendes til dette forskningsprosjektet. Kun vi, PhD stipendiat og hennes veiledere (Professor Jorunn Sundgot-Borgen og Førsteamanuensis Pettersen) har tilgang til intervjuene / innsamlede data.

All informasjon som elevene gir under intervjuet tas opp på lydbånd og behandles strengt konfidensielt, og avidentifiseres før publisering. Det betyr at resultatene legges fram slik at andre ikke vil kunne identifisere hva ditt/deres barn eller andre enkeltdeltakere har svart. Resultatene fra studien vil bli publisert i vitenskapelige tidsskrifter nasjonalt og internasjonalt (forskningstidssktifter).

Prosjektet er godkjent av Regionale komiteer for medisinsk og helsefaglig forskning (REK) Sør-Øst (Prosjekt nr: 2015/1358)

Frivillig deltakelse og samtykkeskjema fra foresatte

Det er frivillig å delta i studien, og elevene får både muntlig og skriftlig informasjon om intervjuene.

For at barnet ditt skal kunne delta i studien, må vi innhente skriftlig samtykke fra begge (jf helseforskningsloven § 17), eller den, av de foresatte som har foreldreansvar.

Vedlagt (siste side) finner du/dere samtykkeskjema, og dersom du/dere samtykker i at barnet ditt/deres kan delta må du/dere besvare samtykkeskjema. Vi setter også pris på en tilbakemelding dersom barnet deres eller dere ikke ønsker at barnet deres deltar, slik at vi eventuelt kan spørre andre om de ønsker å delta i dette intervjuet.

Dette skjema sendes tilbake til oss signert innen XX (før intervjuene gjennomføres). Dette sendes som vedlegg til e-post til oss (se neste side).

Praktisk gjennomføring

Skolen har takket ja til at vi kan forespørre tilfeldig valgte elever og det legges til rette for gjennomføringen. Intervjuene med elevene gjennomføres av doktorgradsstipendiat Annett V. Stornæs. Intervjuet vil ha en varighet av om lag 30 minutter til en time.

På forhånd takk!

Med vennlig hilsen

Jorunn Sundgot-Borgen	Gunn Pettersen	Annett Victoria Stornæs
Professor	Førsteamanuensis	PhD stipendiat
Norges idrettshøgskole	Universitetet i Tromsø	Norges idrettshøgskole

Jeg samtykker til at mitt barn kan delta i studien

Dersom du/dere samtykker i at ditt/deres barn kan delta i et intervju, må du/dere krysse av for JA i denne svarslippen, skrive inn ditt/deres barns navn og signer nederst på svarslippen. (Signatur fra begge foreldre med foreldreansvar der dette gjelder).

Samtykke/svarslippen leveres innen XX

Samtykke

Jeg/vi har mottatt informasjon om studien og jeg/ vi samtykker i at mitt/vårt barn deltar i et intervju.

JA ☐

_____

Barnets navn (fornavn og etternavn), skole

(Signert av foresatt, dato)

(Signert av foresatt, dato)

Dette sendes signert til e-post:

Annett V. Stornæs: annett.stornas@nih.no
Kopi til: Jorunn Sundgot-Borgen: jorunn.sundgot-borgen@nih.no
Med en kopi til kontaktlærer

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[Mail forespørsel til skoler som deltok i studie 1 i 2016]

Hei XX,

Jeg tar kontakt denne høsten vedrørende at vi ønsker å invitere elevene i 10. klasse ved XX til en oppfølging av spørreskjemaundersøkelsen om prestasjonskrav, mestring og helse som elevene deltok på da de gikk i 8.trinn (våren 2016).

Vi håper undersøkelsen kan gjennomføres i løpet av første kvartal i 2018, fortrinnsvis februar/mars.
Jeg vil, som sist, være til stede med elevene i klasserommet når de gjennomfører spørreskjemaundersøkelsen (som av erfaring tar + - 60 minutter).

Jeg tar kontakt igjen **i starten av januar** slik at vi sammen kan finne fram til aktuelle datoer for når jeg kan komme til XX for å gjennomføre selve spørreskjemaundersøkelsen med elevene i 10.trinn.
Jeg er med andre ord, slik som sist, til stede i klasserommet når elevene svarer på undersøkelsen.

Håper skolen ser verdien av å delta på denne oppfølgingen av undersøkelsen som elevene deres deltok på da de gikk i 8.trinn.

Denne mailen går også til XX i og med at jeg har hatt kontakt XX tidligere, og som bidro til at vi fikk gjennomført spørreskjemaundersøkelsen i 2016 på en super måte.

Ønsker dere en god dag!

Med vennlig hilsen
Annett V. Stornæs (PhD stipendiat, NIH)
Gunn Pettersen (Professor, UiT)
Jorunn Sundgot-Borgen (Professor, NIH)

Med vennlig hilsen
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PhD Stipendiat
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Fra:
Jorunn Sundgot-Borgen
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: XX.XX.2018

Til deg som går i 10.trinn på XX

Over 800 elever fra skoler i Oslo og Akershus, idrettsungdomsskoler, elever på musikk og ballettlinjer, var invitert til å delta i en spørreundersøkelse om prestasjonskrav, motivasjon, mestring, kropp og helse i 2016.

Vi ønsker nå å invitere deg og de andre på samme trinn som deg på din skole og på de andre skolene til å delta i **del 2** av denne spørreskjemaundersøkelsen.

Hva vil vi spørre deg om denne gangen?

Det er mange unge som strever med krav og forventninger i hverdagen, men vi vet lite om hvordan du og dine jevnaldrende faktisk opplever og håndterer dette. Spørsmålene i spørreskjema handler om dine fritidsinteresser, hva du tenker i forhold til krav og forventninger du stiller til deg selv og som settes til deg av andre, og hvordan du håndterer dette. I tillegg er det spørsmål om mestring, motivasjon, kropp og helse, om du engster deg for noe og hvordan humøret ditt er. I tillegg vil vi stille noen spørsmål om hva som motiverer deg til å drive med for eksempel en hobby, idrett, ballett eller andre fritidsinteresser.

Det finnes ingen "rette" eller "gale" svar på et slikt spørreskjema. Verken lærere, foreldre/foresatte, trenere, instruktører eller andre får lese svarene dine. Vi, professor Jorunn Sundgot-Borgen og doktorgradsstipendiat Annett V. Stornæs, har ansvaret for at det ikke skjer. Det du svarer får ingen konsekvenser for deg på skolen eller i andre sammenhenger.

Praktisk gjennomføring

Spørreskjema besvares i en skoletime. Vi vil være til stede under gjennomføringen av undersøkelsen. Dersom du ønsker å prate med noen andre underveis eller etter at du har gjennomført spørreundersøkelsen vil du få anledning til det, og da vil kontaktlærer og helsesøster være tilgjengelig for deg.

Frivillig deltakelse

Det er helt frivillig å delta i spørreskjemaundersøkelsen, og du kan trekke deg fra å delta når som helst og uten å oppgi noen grunn for det.

Hva skjer med informasjonen om deg?

De svarene du gir på spørreskjema skal bare brukes til dette forskningsprosjektet. Navnet ditt vil bli erstattet med en kode på spørreskjema. Koden er et ID-nummer som brukes i stedet for navnet ditt, og denne får du av oss når undersøkelsen gjennomføres. Bruk av ID nummer sikrer at svarene du gir kun kan kobles til deg av oss; professor Jorunn Sundgot-Borgen og doktorgradsstipendiat Annett V. Stornæs, og ingen andre. Denne koblingen oppbevares på et sikret sted og slettes 5 år etter prosjektets slutt. Grunnen til dette er at vi skal kunne slette riktig spørreskjema for de elevene som av en eller annen grunn ønsker å trekke seg fra prosjektet nå eller senere.

Dette betyr at det både er uaktuelt og umulig å trekke frem deg eller andre enkeltpersoner når vi senere skal publisere resultatene fra undersøkelsen i forskningstidsskrifter.

Vi har fått mulighet til å gjøre denne undersøkelsen etter tillatelse fra offentlige myndigheter (Regionale komiteer for medisinsk og helsefaglig forskning (REK, Sør-Øst)).

Informasjonsskriv og samtykke om å delta

Alle elever får både muntlig og skriftlig informasjon om denne undersøkelsen.

Ønsker du å være med i spørreskjemaundersøkelsen gir du ditt samtykke ved å krysse av JA, og skrive under med ditt navn på dette skrivet på neste side.

Hvis du er **under 16 år** må også foresatte gi sitt samtykke til at du kan delta. Vedlagt informasjonsskrivet ditt og til din/dine foresatte finner du svarslippen som må signeres for at du skal kunne delta i denne spørreskjemaundersøkelsen.

Beste hilsen

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Samtykke - elev

Dersom du samtykker i å delta i denne spørreundersøkelsen krysser du av for JA i denne svarslippen, skriver navnet ditt, signerer og leverer svarslippen den dagen spørreskjema besvares.

Jeg har mottatt informasjon om studien og jeg samtykker til å delta i spørreundersøkelsen om ungdom, prestasjonskrav, motivasjon, mestring, kropp og helse.

JA ☐

_____

Navn (fornavn og etternavn), **klasse, skole**

(Signatur, dato)

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Norges idrettshøgskole
Postboks 4014 Ullevål Stadion,
0806 Oslo

Dato: xx.xx.2018

Til deg som har barn i 10.klasse på XX

Spørreundersøkelse om ungdom, prestasjonskrav, mestring og helse

Over 800 elever fra ordinære skoler i Oslo og Akershus, elever ved idrettsungdomsskoler, og elever på musikk og ballettlinjer, var invitert til å delta i en spørreundersøkelse om prestasjonskrav, motivasjon, mestring, kropp og helse i 2016.

Vi ønsker nå å invitere alle elevene i 10.trinn på XX til å delta i del 2 av denne spørreskjemaundersøkelsen, som er en del av doktorgradsprosjektet til Annett V. Stornæs.

Elever som er under 16 år må ha signert samtykke fra foreldre/ foresatte for å kunne delta i spørreskjemaundersøkelsen. Elever som har fylt 16 år trenger ikke foreldresamtykke.

Samtykkeskjema er vedlagt informasjonsskrivet og deres svar imøtekommes snarest mulig og innen XX.

Hvorfor og hvordan?

Mange unge strever med krav og forventninger i hverdagen. Vi vet lite om hvor mange, eventuelt i hvilken grad, og hvordan ungdom faktisk opplever og håndterer slike krav og forventninger, samt hvor mange av disse som også angir at de har problemer som f.eks. angst og depressive symptomer.

Denne oppfølgingsundersøkelsen er viktig fordi en slik repetert måling vil kunne gi oss mer kunnskap om endringer over tid når det gjelder forhold knyttet til prestasjonskrav, perfeksjonisme, mestring og helse blant ungdomsskoleelever fra ulike skolemiljø.

Vårt mål med prosjektet er å innhente et slikt kunnskapsgrunnlag, og i neste omgang kunne utarbeide tiltak som skal kunne bidra til at ungdommene håndterer opplevde prestasjonskrav på en konstruktiv måte.

Standardiserte målemetoder benyttes, og elevenes opplevelser av prestasjonskrav, prestasjonsmotivasjon, selvfølelse, mestringsressurser, kropp og helse samt symptomer på angst og depresjon kartlegges.

Hva innebærer deltakelse i studien?

Spørreundersøkelsen gjennomføres i skoletiden. Det vil ta en skoletime å svare på den.

Spørreskjemaene som elevene får er utvalgt/utformet slik at det ikke skal kunne oppleves som en belastning å svare på disse. Det er ikke kjent at det å svare på slike spørsmål utløser reaksjoner/ problemer. I dette prosjektet er det likevel etablert en avtalt linje til en kontaktperson ved hver skole når elevene fyller ut spørreskjema. Konkret vil dette fungere slik at dersom elever har behov for å snakke med noen, eller for oppfølging, meldes behovet til kontaktlærer som også har ansvaret for å melde aktuelle elever opp til en samtale hos skolens helsesøster. Alle elever og foresatte blir informert om dette i forkant av gjennomføringen av studien.

Ut fra alder og erfaring vil det også bli informert grundig om at det ikke finnes noen “rette” eller “gale” svar på spørreskjema, og at elevenes svar ikke får noen konsekvenser for dem på skolen eller i andre sammenhenger.

Hva skjer med informasjonen om elevene?

Spørreskjemaene besvares i en skoletime der prosjektansvarlige er tilstede under gjennomføringen. Alle elevene vil få utdelt et nummer (koblingsnøkkel) som erstatter deres navn på spørreskjemaene, og elevene får oppgitt dette før de besvarer undersøkelsen. Det er kun professor Jorunn Sundgot-Borgen og doktorgradsstipendiat Annett Victoria Stornæs som har tilgang til den koblingen. Koden som er koblet til navnet slettes 5 år etter prosjektets slutt. Grunnen til dette er at vi skal kunne slette riktig spørreskjema for de som av en eller annen grunn ønsker å trekke seg fra prosjektet nå eller senere, og for å kunne se på endringer over tid fra delstudie 1 gjennomført i 2016 til delstudie 2 i 2018.

De svarene elevene gir på spørreskjema skal bare brukes til dette forskningsprosjektet. Verken lærere, foresatte, trenere, instruktører eller andre har tilgang til svarene, og ansvaret for at så ikke skjer tilligger undertegnede.

Resultatene fra studien vil bli publisert i vitenskapelige tidsskrifter nasjonalt og internasjonalt (forskningstidsskrifter). Hva de enkelte deltakere svarer er ikke i seg selv interessant for forskningsprosjektet. Resultatene vil bli analysert for å se etter trender og større sammenhenger på tvers av hva hver enkelt svarer. Dette betyr at vi verken kan, eller ønsker å fremstille resultatene slik at det er mulig direkte eller indirekte å kjenne igjen hva ditt barn eller andre enkeltdeltagere har svart. All informasjon som blir gitt behandles strengt konfidensielt, og avidentifiseres før publisering.

Prosjektet er meldt inn til og godkjent av Regionale komiteer for medisinsk og helsefaglig forskning (REK) Sør-Øst (Prosjekt nr: 2015/1358)

Frivillig deltakelse og samtykkeskjema

Det er frivillig å delta i studien, og det vil bli gitt både muntlig og skriftlig informasjon til alle elevene om undersøkelsen. Alle elever under 16 år må ha samtykke fra foresatte, og for at barnet ditt skal kunne delta i studien må vi innhente skriftlig signert samtykke fra begge (jf helseforskningsloven § 17) eller den av de foresatte som har foreldreansvar.

Vedlagt finner dere samtykkeskjema som må signeres. Dersom du/dere samtykker i at barnet ditt/deres kan delta, og herunder at besvarelsen kan benyttes i forskningsprosjektet, må du/dere skrive under på samtykkeskjema og sende dette tilbake til oss (signert). Dette sendes til annett.stornas@nih.no snarest mulig og senest innen XX. Det signerte samtykke kan også leveres direkte til kontaktlærer på skolen.

Praktisk gjennomføring

Skolen har takket ja til å delta på spørreskjemaundersøkelsen, og de vil legge til rette for gjennomføringen.

På forhånd takk!

Med vennlig hilsen

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Oppfølgingsstudie - spørreundersøkelse - ungdom, prestasjonskrav, mestring og helse

Foreldresamtykke – elever under 16 år

Alle elever under 16 år må ha samtykke fra foresatte for å delta i undersøkelsen, og det må være skriftlig signert samtykke fra begge med foreldreansvar der dette gjelder (jf helseforskningsloven § 17).

Dersom du/dere samtykker i at ditt/deres barn kan delta, og svarene benyttes i dette forskningsprosjektet, krysser dere av for JA i denne svarslippen. Skriv inn ditt/deres barns navn, signer og send inn svarslippen.

Vennligst lever skjema snarest mulig og senest innen xx

Samtykkeskjema sendes signert til:

- Annett Victoria Stornæs: **annett.stornas@nih.no**
- eller det kan sendes/leveres til kontaktlærer på skolen

Jeg/vi har mottatt informasjon om studien og jeg/vi samtykker i at mitt/vårt barn deltar i spørreundersøkelsen om ungdom, prestasjonskrav, motivasjon, mestring, kropp og helse.

JA ☐

Barnets navn (fornavn og etternavn), klasse_____

Signert av foresatt, dato:_____

Signert av foresatt, dato:_____

Appendix 6

Questionnaires and questions used in Papers I and II

The appendix includes the information in Norwegian that was given on the first page of the questionnaire at each year (2016 and 2018) followed by questionnaires used to assess perfectionism and mental health and demographic questions used in the thesis papers.

Information from the first page of the questionnaire from the first data collection in 2016.

NORGES IDRETTSHØGSKOLE

Kjære elev i 8. trinn!

Her er spørreskjemaet til vår undersøkelse om ungdom, prestasjonskrav, mestring, kropp og helse. Du har fått både muntlig og skriftlig informasjon om denne undersøkelsen tidligere, og foreldrene dine har sendt oss sin bekreftelse på at du kan delta.

Husk at når du svarer på dette spørreskjemaet er det ingen «rette» eller «gale» svar. Vi ønsker bare din mening. Velg det svaret som passer best for deg. Akkurat ditt skjema kan bare sees av prosjektleder professor Jorunn Sundgot-Borgen og forsker Annett Victoria Stornæs. Det vil være tusen elever som deltar i denne undersøkelsen og vi vil bare se på forskjeller mellom grupper av elever, og vi ser ikke på de enkelte utfylte skjemaene. Opplysninger fra deg og de andre som deltar skal for øvrig bare brukes i dette forskningsprosjektet, og de skal ikke gis til andre.

Vi ber om at du på første og siste side i skjemaet skriver inn det ID nummeret du har fått utlevert. Du må IKKE skrive navnet ditt eller andre personlige opplysninger i tillegg.

Har du spørsmål underveis mens du fyller ut er det bare å spørre.

Det kan ta inntil ca. 45 minutter å svare på undersøkelsen.

Takk for at du deltar og lykke til!

Hilsen

Jorunn Sundgot-Borgen	Annett Victoria Stornæs
Professor, prosjektleder	Forsker/prosjektmedarbeider
Norges idrettshøgskole	Norges idrettshøgskole

Information from the first page of the questionnaire from the second data collection (2018)

Kjære elev i 10. trinn!

Her er spørreskjemaet til vår undersøkelse om ungdom, prestasjonskrav, mestring, kropp og helse. Du har fått både muntlig og skriftlig informasjon om denne undersøkelsen tidligere, og hvis du er under 16 år så har foreldrene dine levert sin bekreftelse på at du kan delta.

Husk at når du svarer på dette spørreskjemaet er det ingen «rette» eller «gale» svar. Vi ønsker bare at du svarer det du mener passer for deg.

Det vil være 900 elever som deltar i undersøkelsen. Opplysninger fra deg og de andre som deltar skal bare brukes i dette forskningsprosjektet, og de skal ikke gis til andre. Resultater fra undersøkelsen som vi ser på gjelder forskjeller mellom grupper av elever, og ikke resultater for hver enkelt elev.

Vi ber om at du på første og siste side i skjemaet skriver inn det nummeret du får utlevert av oss når du fyller ut skjema.

Du må IKKE skrive navnet ditt eller andre personlige opplysninger i tillegg.

Har du spørsmål underveis mens du fyller ut er det bare å spørre.

Det tar ca. 45 minutter å svare på undersøkelsen.

Takk for at du deltar og lykke til!

Hilsen

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NIH NORGES IDRETTSHØGSKOLE

Frost Multidimensional Perfectionism Scale, FMPS 35 items (Paper I)

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My parents set very high standards for me	1	2	3	4	5
2	Organization is very important to me	1	2	3	4	5
3	As a child, I was punished for doing things less than perfectly	1	2	3	4	5
4	If I do not set the highest standards for myself, I am likely to end up a second-rate person	1	2	3	4	5
5	My parents never tried to understand my mistakes	1	2	3	4	5
6	It is important to me that I be thoroughly competent in what I do	1	2	3	4	5
7	I am a neat person	1	2	3	4	5
8	I try to be an organized person	1	2	3	4	5
9	If I fail at work/school, I am a failure as a person	1	2	3	4	5
10	I should be upset if I make a mistake	1	2	3	4	5
11	My parents wanted me to be the best at everything	1	2	3	4	5
12	I set higher goals than most people	1	2	3	4	5
13	If someone does a task at work/school better than I do, then I feel as if I failed the whole task	1	2	3	4	5
14	If I fail partly, it is as bad as being a complete failure	1	2	3	4	5
15	Only outstanding performance is good enough in my family	1	2	3	4	5
16	I am very good at focusing my efforts on attaining a goal	1	2	3	4	5
17	Even when I do something very carefully, I often feel that it is not quite right	1	2	3	4	5
18	I hate being less than the best at things	1	2	3	4	5
19	I have extremely high goals	1	2	3	4	5
20	My parents expect excellence from me	1	2	3	4	5
21	People will probably think less of me if I make a mistake	1	2	3	4	5
22	I never feel that I can meet my parents' expectations	1	2	3	4	5
23	If I do not do as well as other people, it means I am an inferior being	1	2	3	4	5
24	Other people seem to accept lower standards from themselves than I do	1	2	3	4	5
25	If I do not do well all the time, people will not respect me	1	2	3	4	5
26	My parents have always had higher expectations for my future than I have	1	2	3	4	5
27	I try to be a neat person	1	2	3	4	5
28	I usually have doubts about the simple everyday things that I do	1	2	3	4	5
29	Neatness is very important to me	1	2	3	4	5
30	I expect higher performance in my daily tasks than most people	1	2	3	4	5
31	I am an organized person	1	2	3	4	5
32	I tend to get behind in my work because I repeat things over and over	1	2	3	4	5
33	It takes me a long time to do something "right"	1	2	3	4	5
34	The fewer mistakes I make, the more people will like me	1	2	3	4	5
35	I never feel that I can meet my parents' standards	1	2	3	4	5

Reference

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, *14*(5), 449-468. https://doi.org/10.1007/BF01172967

Child Adolescent Perfectionism Scale, CAPS 22 items (Paper I and II)

Note that the item numbering shown below follows the Norwegian CAPS version used in the thesis. The numbering differs from an updated publication, i.e., Flett et al. (2016)

		False				True
		1	2	3	4	5
1	I try to be perfect in everything I do	1	2	3	4	5
2	I want to be the best at everything I do	1	2	3	4	5
3	I feel that people ask too much of me *[item 4 in Flett et al., 2016]*	1	2	3	4	5
4	I feel that I have to do my best all the time	1	2	3	4	5
5	There are people in my life who expect me to be perfect	1	2	3	4	5
6	I always try for the top score on a test	1	2	3	4	5
7	It really bothers me if I don't do my best all the time	1	2	3	4	5
8	My family expects me to be perfect	1	2	3	4	5
9	People expect more from me than I am able to give *[item 10 in Flett et al., 2016]*	1	2	3	4	5
10	I don't always try to be the best* *[item 9 in Flett et al., 2016]*	1	2	3	4	5
11	I get upset if there is even one mistake in my work *[item 14 in Flett et al., 2016]*	1	2	3	4	5
12	Other people think I have failed if I do not do my very best all the time	1	2	3	4	5
13	Other people always expect me to be perfect	1	2	3	4	5
14	I always try to be as perfect as I can	1	2	3	4	5
15	People around me expect me to be great at everything	1	2	3	4	5
16	When I do something, it has to be perfect	1	2	3	4	5
17	I can't stand to be less than perfect *[item 22 in Flett et al., 2016]*	1	2	3	4	5
18	I am always expected to do better than others [item 19 in Flett et al., 2016]	1	2	3	4	5
19	Even when I pass, I feel that I have failed if I didn't get one of the highest marks in the class [item 20 in Flett et al., 2016]	1	2	3	4	5
20	My parents don't always expect me to be perfect in everything I do* [item 3 in Flett et al., 2016]	1	2	3	4	5
21	My teachers expect my work to be perfect [item 17 in Flett et al., 2016]	1	2	3	4	5
22	I do not have to be the best at everything I do* [item 18 in Flett et al., 2016]	1	2	3	4	5

Reverse scoring:

10. I don't always try to be the best, (SOP item **9** in Flett et al., 2016)
20. My parents don't always expect me to be perfect, (SPP item **3** in Flett et al., 2016)
22. I do not have to be the best at everything I do (SOP item **18** in Flett et al., 2016)

References:

Flett, G. L., Hewitt, R L, Boucher, D. J., Davidson, L. A., & Munro, Y. (1997). *The Child-Adolescent Perfectionism Scale: Development, validation, and association with adjustment*. Unpublished manuscript.

Flett, G. L., Hewitt, P. L., Besser, A., Su, C., Vaillancourt, T., Boucher, D., Munro, Y., Davidson, L. A., & Gale, O. (2016). The Child–Adolescent Perfectionism Scale: Development, psychometric properties, and associations with stress, distress, and psychiatric symptoms. *Journal of Psychoeducational Assessment*, *34*(7), 634-652. https://doi.org/10.1177/0734282916651381

Revised Children's Anxiety and Depression Scale, RCADS-25 (Paper I and II)

		Never	Sometimes	Often	Always
1	I feel sad or empty	0	1	2	3
2	I worry when I think I have done poorly at something	0	1	2	3
3	I would feel afraid of being on my own at home	0	1	2	3
4	Nothing is much fun anymore	0	1	2	3
5	I worry that something awful will happen to someone in my family	0	1	2	3
6	I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds)	0	1	2	3
7	I worry what other people think of me	0	1	2	3
8	I have trouble sleeping	0	1	2	3
9	I feel scared if I have to sleep on my own	0	1	2	3
10	I have problems with my appetite	0	1	2	3
11	I suddenly become dizzy or faint when there is no reason for this	0	1	2	3
12	I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	0	1	2	3
13	I have no energy for things	0	1	2	3
14	I suddenly start to tremble or shake when there is no reason for this	0	1	2	3
15	I cannot think clearly	0	1	2	3
16	I feel worthless	0	1	2	3
17	I have to think of special thoughts (like numbers or words) to stop bad things from happening	0	1	2	3
18	I think about death	0	1	2	3
19	I feel like I don't want to move	0	1	2	3
20	I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	0	1	2	3
21	I am tired a lot	0	1	2	3
22	I feel afraid that I will make a fool of myself in front of people	0	1	2	3
23	I have to do some things in just the right way to stop bad things from happening	0	1	2	3
24	I feel restless	0	1	2	3
25	I worry that something bad will happen to me	0	1	2	3

Reference:

Ebesutani, C., Reise, S. P., Chorpita, B. F., Ale, C., Regan, J., Young, J., Higa-McMillan, C., & Weisz, J. R. (2012). The Revised Child Anxiety and Depression Scale-Short Version: Scale reduction via exploratory bifactor modeling of the broad anxiety factor. *Psychological Assessment*, *24*(4), 833-845. https://doi.org/10.1037/a0027283

Link: https://www.childfirst.ucla.edu/wp-content/uploads/sites/163/2018/03/RCADS25-Youth-English-2018.pdf

Body weight and shape concerns from the Eating Disorder Examination Questionnaire, EDE-Q (Paper I and II)

	On how many of the past 28 days…	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to loose weight?	0	1	2	3	4	5	6

		Not at all		Slightly		Moderately		Markedly
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next week?	0	1	2	3	4	5	6
25	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing, or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

References

Fairburn, C. G. (2009). Eating Disorder Examination (Edition 16.0D) and Eating Disorder Examination Questionnaire (EDE-Q 6.0). In C. G. Fairburn (ed.) *Cognitive Therapy and Eating Disorders* (pp. 265–313). Guildford Press.

Friborg, O, Reas, D. L., Rosenvinge, J.H, Rø, Ø. (2013). Core pathology of eating disorders as measured by the Eating Disorder Examination Questionnaire (EDE-Q): the predictive role of a nested general (g) and primary factors. *Int. J. Methods Psychiatr. Res.* 22(3)195–203.

Self-Worth (Paper I and II)

The five self-worth questions are from a Norwegian revised version (Wichstrøm, 1995) of the global self-worth items from Harter's Self Perception Profile for Adolescents (SPPA-R). The English statements are provided in the parenthesis.

		Stemmer svært godt (Describes me very poorly) **(4)**	**Stemmer nokså godt** (Describes me quite poorly) **(3)**	**Stemmer nokså dårlig** (Describes me quite poorly) **(2)**	**Stemmer svært dårlig** (Describes me very poorly) **(1)**
6	Jeg er ofte skuffet over meg selv (I am often unhappy with myself)	☐	☐	☐	☐
12	Jeg liker ikke den måten jeg lever livet mitt på (I don't like the way I am leading my life)	☐	☐	☐	☐
18	Jeg er stort sett fornøyd med meg selv (I am happy with myself as a person)	☐	☐	☐	☐
24	Jeg liker meg selv slik jeg er (I like the kind of person I am)	☐	☐	☐	☐
30	Jeg er svært fornøyd med hvordan jeg er (I am very happy being the way I am)	☐	☐	☐	☐

Reference:

Wichstrøm, L. (1995). Harter's Self-Perception Profile for Adolescents: Reliability, validity, and evaluation of the question format. *J Pers Assess*, *65*(1), 100-116. https://doi.org/10.1207/s15327752jpa6501_8

Resilience 28 items, Norwegian version (Paper I)

		Helt uenig	Litt uenig	Verken eller	Litt enig	Helt enig
1	Jeg kommer i mål dersom jeg står på	1	2	3	4	5
2	Jeg fungerer best når jeg lager meg klare mål	1	2	3	4	5
3	Jeg har noen venner/familiemedlemmer som pleier å oppmuntre meg	1	2	3	4	5
4	Jeg er fornøyd med livet mitt til nå	1	2	3	4	5
5	familien min er vi enige om hva som er viktig i livet	1	2	3	4	5
6	Jeg får lett andre til å trives sammen med meg	1	2	3	4	5
7	Jeg vet hvordan jeg skal nå målene mine	1	2	3	4	5
8	Jeg legger alltid en plan før jeg begynner med noe nytt	1	2	3	4	5
9	Vennene mine holder alltid sammen	1	2	3	4	5
10	Jeg trives godt i familien min	1	2	3	4	5
11	Jeg har lett for å finne nye venner	1	2	3	4	5
12	Når det er umulig for meg å forandre på ting slutter jeg å gruble på dem	1	2	3	4	5
13	Jeg er flink til å organisere tiden min	1	2	3	4	5
14	Jeg har noen nære venner/familiemedlemmer som virkelig bryr seg om meg	1	2	3	4	5
15	I familien min er vi enig om det meste	1	2	3	4	5
16	Jeg er flink til å snakke med nye folk	1	2	3	4	5
17	Jeg føler jeg er dyktig	1	2	3	4	5
18	I familien min har vi regler som forenkler hverdagen	1	2	3	4	5
19	Jeg har alltid noen som kan hjelpe meg når jeg trenger det	1	2	3	4	5
20	Når jeg skal velge noe vet jeg oftest hva som blir riktig for meg	1	2	3	4	5
21	Familien min ser positivt på tiden framover selv om det skjer noe veldig leit	1	2	3	4	5
22	Jeg finner alltid noe artig å snakke om	1	2	3	4	5
23	Min tro på meg selv får meg gjennom vanskelige perioder	1	2	3	4	5
24	I familien min støtter vi opp om hverandre	1	2	3	4	5
25	Jeg finner alltid på noe trøstende å si til andre som er lei seg	1	2	3	4	5
26	I motgang har jeg en tendens til å finne noe bra jeg kan vokse på	1	2	3	4	5
27	I familien min liker vi å finne på ting sammen	1	2	3	4	5
28	Jeg har noen nære venner/familiemedlemmer som setter pris på egenskapene mine	1	2	3	4	5

Reference

Hjemdal, O., Friborg, O., Stiles, T. C., Martinussen, M., & Rosenvinge, J. H. (2006). A new scale for adolescent resilience: Grasping the central protective resources behind healthy development. *Measurement and Evaluation in Counseling and Development*, *39*(2), 84-96. https://doi.org/https://doi.org/10.1080/07481756.2006.11909791

Demographic questions and specific questions related to the students sports, ballet and music participation

Note that each group (athletes, ballet, music, and regular students) were given questions that were adapted to their context.

Gender

Girl ☐
Boy ☐

Year born | 2 | 0 | | |

Athletes:

How old were you when you started doing organized sports (in a sports club)
Norwegian: Hvor gammel var du da du begynte med organisert idrett (i en klubb)?

☐☐ years

Can you state your current main sport?
Norwegian: Hva er din hovedidrett i dag?

Svar: _____

At what age were you when you chose your main sport/specialized in a single sport?
Norwegian: Hvor gammel var du da du valgte hovedidretten din/spesialiserte deg?

☐☐ years

How many hours do you practice/train during a typical week in your main sport (total training hours related to your main sport)
Norwegian: Hvor mange timer trener du i løpet av en vanlig uke i din hovedidrett (totalt antall timer trening relatert til idretten som er din hovedaktivitet):

Svar: ____ _____

Ballet students:

How old were you when you started dancing organized with a dance teacher at a ballet school or dance studio or similar?

Norwegian: Hvor gammel var du da du begynte å danse organisert med en instruktør på en ballettskole eller et dansestudio eller tilsvarende?

☐☐ years

At what age were you when you decided to focus on ballet/specialize in ballet?

Norwegian: Hvor gammel var du da du valgte å satse på balletten/spesialisere deg for ballett?

☐☐ years

How many hours do you practice during a typical week in ballet?
(total training hours related to ballet)

Norwegian: Hvor mange timer trener/øver du i løpet av en vanlig uke i ballett
(totalt antall timer trening relatert til ballett som er din hovedaktivitet):

Svar: _____

Music students:

When you think about your main instrument today, how old were you when you started playing it in a more organized form (at a music school or private lessons)?

Norwegian: Når du tenker på det som er ditt hovedinstrument (eller sang) i dag, hvor gammel var du da du begynte å spille dette i mer organisert form (på en musikkskole eller med privattimer)?

☐☐ years

How old were you when you chose to focus on/specialize in your main instrument?

Norwegian: Hvor gammel var du da du valgte å satse på/spesialisere deg på det som er hovedinstrumentet ditt?

☐☐ years

How many hours do you practice during a typical week? Total practice related to your music studies; on your instrument (main activity):

Norwegian: Hvor mange timer øver du i løpet av en vanlig uke?
Total øving relatert til musikken; instrumentet, sangen, som er din hovedaktivitet:

Svar: _____