Service support and quality of life for youth in foster care

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NORCE

STIFTELSEN
DAM

NORSK FOSTERHJEMSFORENING

List of abbrevations

Bufetat: The Office for Children, Youth and Family Affairs

CAMHS: Child and Adolescent Mental Health Services

CFA: Confirmatory factor analysis

CFI: Comparative fit index

CWS: Child Welfare Services

d: Cohen's *d* effect size

FIML: Full information maximum likelihood

HRQoL: Health related quality of life

LFB: The Norwegian organization for children in care

NF: The Norwegian foster care association

PCA: Principal component analysis

QoL: Quality of life

RMSEA: Root mean square error of approximation

SDQ: The Strengths and Difficulties Questionnaire

SD: Standard deviation

T1: Data from "Foster children's mental health"

T2: Data from the follow-up study "Young in foster care"

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Abstract

Studies have consistently shown that children and youth in out-of-home care have substantially more health problems and greater health care needs than children and youth in general populations. Therefore, researchers and national decision makers agree that youth in foster care need extra service support. Hence, the question is whether youth in foster care receive services according to need and how the families experience the quality of the help received. Furthermore, we need more knowledge about positive outcomes for youth in foster care.

The overall aim of the current thesis was to examine service use among foster families, foster parents' experiences of quality of care, quality of life (QoL) among youth in foster care, and whether different characteristics were related to these outcomes. To reach this aim we utilized data from the prospective follow up study "Young in foster care" concerning foster families in Norway. Carers of children in foster care aged 6-12 years (n = 236) and child welfare caseworkers (n = 220) answered survey questionnaires in 2011/2012 (T1). Carers reported on the child's mental health, and caseworkers reported on pre-placement maltreatment and service contact. The follow-up study (T2) was conducted in 2016/2017 when the youths were aged 11-18 years. Youths (n = 303) and carers (n = 330) completed questionnaires regarding mental health and service use. In addition, youths reported their QoL, and foster parents reported their service experiences and perceived outcomes following contact with their main service provider.

The foster families had a high service use, with 31.2% of carers reporting contact with child and adolescent mental health services and 61.2% with primary health care services during the last two years (Paper I). Furthermore, a substantial number of families reported contact with several service providers, and there was a positive association between youth mental health problems and service use. However, less than half of the youth with indications of mental health problems had received services from child and adolescent mental health services. Moreover, youth in kinship

care had a lower use of the primary health care services compared to youth in non-kinship care, even when controlling for mental health problems.

Foster parents reported overall positive service experiences, especially regarding the clinician’s communication and professional skills (Paper II). However, they were less satisfied with the information provided about the youth in their care and with the cooperation between services. Half of the foster parents reported improvements in the youth’s condition and functioning following the service contact. Foster parents that had younger youths, reported more frequent service contact and no waiting time had more positive experiences of the service contact.

The youths in our sample had lower QoL across all dimensions compared to Swedish youth in the general population (Paper III). Their highest QoL scores were on the dimension of parent relations and autonomy, while their lowest scores were on the physical wellbeing dimension. Male gender and younger age were associated with higher QoL across all dimensions. Moreover, youth in kinship care and youth with more prosocial behavior five years earlier had higher QoL on some dimensions.

In sum, foster families had a high service use and the service contact was dependent on mental health problems. However, less than half of the youths with indications of mental health problems had contact with the child and adolescent mental health services during the last two years, which highlight the need for standardized assessments of youth in foster care to identify those with a need for specialized services. Overall, foster parents had positive experiences of their main service provider. Still, our findings indicate areas for service improvements, such as enhancing routines for sharing information and collaboration between services, securing frequent enough service contact and short waiting time, and evaluating measures provided to ensure that they are experienced as beneficial by the youth and their families. Lastly, the youths in foster care had lower QoL than youth in the general population, indicating that the help received has not fully counteracted the effect of the youth's previous experiences. At the same time, most youth seemed to have established supportive relationships with their foster parents, which is an important premise for having a positive development in foster care.

List of Publications

Paper I	Larsen, M., Baste, V., Bjørknes, R., Myrvold, T., & Lehmann, S. (2018). Services according to mental health needs for youth in foster care?–A multi-informant study. *BMC Health Services Research, 18*(1), 634. doi: 10.1186/s12913-018-3365-6
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Appendix I: Overview of questionnaires used to measure service use and service experiences

Appendix II: Supplementary material to paper III

1. Introduction

1.1 Background for the thesis

Youth in foster care have a high prevalence of mental disorders [1,2] and high health care needs.[3] The aim of foster care placements is to provide youth that have experienced detrimental care conditions with possibilities for positive development.[4] Despite this, a meta-analysis found no overall change in foster children's adaptive functioning or mental health during their stay in foster care.[5] This may indicate that children and youth in foster care and their foster parents need better support from services to enable positive development.

To determine whether Norwegian foster families receive the necessary support from services, we need knowledge about their service contact and how they experience the quality of services received. Moreover, while many studies have investigated problem areas for youth in foster care, there is a lack of research investigating predictors for positive outcomes for youth in care.[5,6] This knowledge is needed to inform services about which areas to focus on in order to support the wellbeing and positive development of youth in care. Moreover, it may inform the child welfare services (CWS) work on how to organize placements and promote wellbeing.

This thesis investigates whether foster families receive services according to their needs, how foster parents experience the services received, and what characterizes youth in foster care with a good quality of life. In this thesis these themes were examined by using data from a large sample of foster families with standardized measures of mental health, service use, user experiences and quality of life.

1.2 Child welfare services in Norway

In Norway the welfare state provides universal services for children and families in general and targets in-home child welfare services for at-risk families.[7] The main task for the CWS is to secure that children and youth that live under conditions that can harm their health and development receive the necessary help and care at the right time.[8] The CWS follows the principle of "the least intrusive form of intervention",[7] which entails that in-home services should always be tried first, and out of home placements should only be considered when in-home services have turned out to be insufficient to protect the child. The CWS can take the care of a child a) if there is a serious lack in the daily care the child receives, b) if the parents do not ensure that a child who is sick or has special needs receives the needed treatment or education, c) if the child is maltreated or experiences serious abuse in the home, or d) if its predominantly probable that the child's health or development may be seriously damaged because the parents are unable to take proper care of the child.[9] There are substantial differences in the way CWS are organized in different countries.[7,10] Children in Norway are on average placed in out-of-home care later in adolescence compared to countries such as the US, and adoption is rarely used as a child welfare measure as even long lasting placements often remain foster care arrangements.[7]

Placement in foster care is the most frequently used intervention by the CWS when a child cannot live with their parents,[11] and approximately 11000 children lived in foster care in Norway in December 2019.[12] The CWS shall always consider whether someone in the child's family or close network can serve as a foster carer,[13] and 27.7% of the foster care placements in 2019 were with family or close networks while 61.6% of youths lived in municipal foster care outside family and close networks.[12]

When the CWS takes the care responsibility of a child and moves the child into foster care, the foster parents provide the day-to-day care of the child on behalf of the CWS.[14] CWS has the responsibility of monitoring the development of the child and considering whether changes or additional measures are needed,[15] including health care or other services. To be able to monitor the child's development in the foster family, the CWS is obliged to have contact with the foster family at least four times each year,[16] which can be reduced to twice per year under given circumstances. The CWS is responsible for foster parents receiving necessary advice and counselling.[17] In addition, the CWS have a duty to collaborate with other services when this can contribute to solving their tasks.[13] For children who need long lasting and coordinated measures, the CWS has a duty to prepare an individual plan to contribute to holistic services for the child.[18]

1.3 Short and long time outcomes for youth in out-of-home care

Despite the provision of universal and targeted services, Norway has a relatively high proportion of children placed in out-of-home care, and the outcomes for many of these children as adolescents and adults are poor.[7] Studies have consistently reported that children in out-of-home care have more health problems and more health care needs than other children in general populations.[3] For youth in foster care this includes a high prevalence of mental disorders,[1] physical and dental treatment needs,[19] and school difficulties.[20,21] Among children in foster care in Norway one in two is found to suffer from mental disorders, and comorbidity is high.[2] Furthermore, youth in foster care in Norway have experienced on average 3 to 4 potential traumatic events, and half of them report symptoms of post-traumatic stress disorder.[22]

Ample research has shown that many children in out-of-home placements will suffer from substantial health problems over the course of their life.[23-25] In Norway, researchers have estimated that young adults with previous CWS contact have lower education, lower income, more often receive social benefits, and have higher rates of unemployment and mortality compared to young adults without previous contact with the CWS.[26] For adults with previous CWS contact, only 20% were classified as having a successful adult career, compared to 58% among adults without previous CWS contact. These differences were stable over time as a follow-up study found that 42.2% of the adults with previous CWS contact, compared to 83.4% of the adults without CWS contact, were classified as having a successful adult career four years later.[27] Adults who had lived in foster care had better outcomes than adults who lived in institutions, but they still had substantial problems compared to the general population.[26] These findings indicate that the outcomes of child welfare interventions have considerable room for improvement.

Several factors are proposed as contributing to the long-lasting load of health difficulties among youth in out-of-home care.[3] These include a history of parental neglect or abuse before entering care, genetic vulnerability for developing mental health disorders, chronic childhood stress leading to later psychiatric morbidity, neglectful healthcare prior to placement due to inadequate parental supervision, older children ignoring scheduled visits to health providers and living destructive lifestyles, and aggregation of adverse childhood experiences. Lastly, there is evidence that a lack of systematic routines for early identification of health issues and timely provision of health services for children in out-of-home care also has negative consequences for their health.[3] These children do not seem to be well served by general child health care systems in European welfare states.[3]

1.4 Services for children in foster care and their foster parents

Due to the high prevalence of mental health problems and high health care needs among children in out-of-home care, the research community has repeatedly and consistently recommended that CWS create systematic routines for the health screening and -monitoring of children in care.[3] While some European countries such as England have established screening routines for physical and mental health when children are placed in care, such routines are not established in Norway. Norway has been defined as a "'one size fits all' – the universal welfare state model" p. 14 [3] country, where health care for children in out-of-home care is fully integrated into the universal health care system, without any special arrangements or legislations for children placed outside the home. This means that despite the recommendation mentioned above, Norway has no standardized or mandatory somatic, dental, or mental health assessments of children who are entering or already in out-of-home care. The ministries responsible for child welfare and health care in Norway have recently made recommendations for a substantial reinforcement of health care provision for children in contact with the CWS, including a stronger focus on early discovery and mapping of help needs, closer collaboration between CWS and health services, and municipal teams that follow up children with complex needs.[28]

Moreover, a clearer division of responsibilities and more committed collaboration between the CWS and child and adolescent mental health services (CAMHS) are suggested as part of the new child welfare law currently under progress.[29] Lastly, the ministries responsible for child welfare and health care in Norway have this year investigated whether a routinely interdisciplinary health assessment for children considered to be moved out of the home should be regulated by law.[30] Thus even though Norway has no mandatory or standardized health assessments for when children are moved into out-of-home care, there are ongoing processes to increase access to health services for this group.

Despite the CWS's responsibility for the day-to-day care of children in foster care, a report by the Norwegian board of health supervision found that many CWS offices did not conduct the minimum number of home visits foster families have a right to.[17] They also found examples where the CWS did not provide additional visits after foster parents expressed that they were close to giving up. Consequently, the CWS may fail to sufficiently monitor the child's situation and needs in the foster home. There was also lacks in providing necessary advice and guidance to foster parents from the CWS. Taken together, this indicates that in some cases the CWS does not provide a proper follow up of the health and wellbeing of children in foster care.

The main goal of foster care is to "*provide possibilities for development through positive personal experiences, and experiences with other people that can counteract the influence of prior negative interactions and hence correct some of the problems that may have developed*" p. 192, our translation.[4] For services to be able to support foster families in reaching this goal, appropriate service access from a broader range of service providers is necessary. Even though international research indicates that children and youth in foster care utilize CAMHS and other services to a substantial degree,[31-35] the service utilization seems low relative to their high rate of mental disorders. Relatedly, studies have indicated that a considerable portion of this population does not receive services according to need.[36-39]

We lack systematic information about which service providers foster families in Norway are in contact with and whether the service use is determined by need characteristics. This knowledge is essential to evaluate whether the Norwegian model of universal health care is successful in identifying children in foster care in need of service support and providing them with adequate health care.

1.4.1 The importance of youth and carer reports

To ensure that services are knowledge-based, we need data from both youth and their carers in areas such as service use and service needs. Furthermore, to gain precise information about children and youth it might be necessary to collect data from multiple responders.[40] The prevalence of mental health problems among children vary depending on the type of informant.[41] In the general population, parents reported that the youth had more externalizing disorders than indicated by the youth self-report, whereas adolescents reported more internalizing disorders than their parents.[42] Similarly, the inclusion of youth self-reports to carer or teacher reports increased the identification of emotional disorders, whereas relying only on youth reports increased the risk of overlooking conduct and hyperactivity problems among youth in foster care.[43] These findings point to the importance of using both carer and youth reports when measuring youth mental health. However, most studies have only used carer reports of mental health when investigating the association between mental health and service use.[39,44]

1.5 User reported experiences with services, an indicator of service quality

For services to provide a meaningful contribution to foster families they need to be both available and of high quality. Quality of health care is often measured through three constructs: patient experiences, clinical improvement and patient safety.[45] Patient experiences are included as an important pillar of quality of care for several reasons. Firstly, as services should be humane and emphatic, measures of user experience have intrinsic value.[46] Secondly, patient experience measures evaluate if care is patient-centered and thus describe a dimension of quality of care that would otherwise be uncaptured.[47] Lastly, a systematic review has indicated positive associations between patient experiences and other quality measures across disease areas, settings, outcome measures, and study designs.[46]

Measuring user experiences also has legal and political sides. Health ministers from various Organisation for Economic Co-operation and Development (OECD) countries have recently highlighted the need for measuring patient-reported experiences,[48] and Norwegian legislation states that service users have a right to influence health and welfare services.[49] Coulter [50] has described that patient-reported experience- and outcome measures could be utilized to improve quality of care at the individual- and service level. Furthermore, researchers have argued that patient experience questionnaires are robust measures of the user dimension of quality of care when they measure specific care experiences using psychometrically sound instruments with a focus on provider-patient interactions in a timely manner.[47,51]

Reports from the Norwegian board of health supervision have shed light on the quality of services provided for families in contact with the CWS. The reports have indicated inadequate coordination of services, a lack of documentation of the CWS's work, and a lack of evaluations of measures provided.[17,52] However, these reports say little about the users' experiences of the services received. It is important to gain knowledge about foster parent's service experiences, as they are crucial agents for enabling positive change in foster children.[53,54] Moreover, foster parents ability to provide supportive care is influenced by their interactions with service providers,[55,56] and studies have shown that a lack of support from CWS and health services was one important reason for placement breakdowns.[57-59]

International studies have shown that most foster parents are satisfied with the health-[60] and welfare services[55,61] they receive. However, many foster parents felt insufficiently involved in decisions regarding the child[55,60,61] and reported a lack of continuity of care within services.[62] Furthermore, they reported problems with the availability and timeliness of mental health services,[60,61] while they had difficulties with receiving sufficient information about the child from CWS caseworkers[55,61,62] and expressed a need for better support and sensitivity.[61]

A systematic review has also indicated that foster parents are highly satisfied with the training they receive.[63] However, foster parents expressed unmet needs for training regarding parenting children with special needs and how to manage their role as foster parents. This corresponds to findings that foster parents' highest priority need was to receive training and support to manage and respond to children's mental health difficulties.[64]

The research regarding foster parent experiences with services are scarce, and we lack studies from the Scandinavian context. Consequently, little is known about foster parents' experiences of service quality in Norway. Moreover, few studies have used standardized and validated measures of user experiences, which is needed in future evaluations of health and welfare services.

1.6 Quality of life

While mental and physical health problems among youth in foster care are well documented,[1,19] we know less about what characterizes youth in foster care that have good lives. As a consequence, researchers argue that there is a need for studies that follow youth in foster care over time to identify predictors of positive outcomes.[5,6] Quality of life (QoL) is a multidimensional construct that covers physical, emotional, mental, social and behavioral components of wellbeing and functioning as perceived by the individual,[65] and it can thus serve as a measure of positive outcomes. QoL is regarded as a highly subjective experience, and self-report is regarded as the gold standard of assessment.[66] QoL encompasses the more specific construct of health related quality of life (HRQoL) which reflects the impact of perceived health on the individual's ability to live a fulfilling life.[67] Furthermore, QoL is closely related to the construct subjective wellbeing, which is considered an essential non-material component of QoL in children.[68]

There has been a shift in mental health service policy, from an emphasis on treatment that focuses on reducing symptoms, to a more holistic approach that takes into consideration well-being, social functioning, and QoL.[69] QoL is being increasingly employed as a patient-centered outcome variable in health services research and in evaluations of mental health care,[70,71] and epidemiological studies describing QoL are increasing in number.[70] In such studies QoL typically serves as a descriptor of perceived health in a population as a basis for planning, monitoring, and evaluating health-related interventions.[72] Hence, QoL measures provide information about how youth are doing in a multitude of areas in life and can serve as an outcome measure of how youth in foster care perceive their lives. Furthermore, assessing how many youths experience good QoL in foster care can be one method for evaluating the services provided for foster families.

Research on QoL among youth in out-of-home care is scarce, but findings across countries suggest that youth in foster care[73] and youth in residential care[74-77] have poorer QoL or HRQoL compared to youth in the general population. However, some European studies have found that youth in foster care had similar HRQoL[76] and subjective wellbeing scores[78] compared to youth in the general population. Youth in out-of-home care are not a homogenous group and studies have indicated that compared to youth in residential care, youth in foster care report higher HRQoL,[79] higher subjective wellbeing,[68,78] and more positive perceptions of their care situation.[80] This is in line with previous research that youth in foster care in Norway had better outcomes as adults compared to youth in residential care.[26] Based on the existing studies it is unclear whether youth in foster care have lower QoL than youth in the general population. This is surprising given youth in foster care's higher rates of mental health problems[2] and less favorable outcomes as adults[26] compared to the general population. To increase knowledge regarding how foster care-related experiences specifically affect QoL, we need studies that compare the QoL of youth in foster care to the QoL among youth reared in their family of origin.

1.7 Characteristics associated with service use, service experiences and QoL

There is a goal in Norway that: "*The health sector shall secure equal treatment based on health need, independent of personal economics, gender, ethnicity, residency, and the individuals living situation*" p. 29, our translation.[81] For services within the mental health sector to provide equal treatment, service use should be dependent on mental health problems and functional impairment, not contextual factors such as demographic and placement characteristics. Likewise, user-experiences of service quality should ideally be high for all users independent of their characteristics. Despite this, different demographic and placement characteristics seem to be related to service use among foster children, and there is a lack of studies investigating characteristics related to foster parents' experiences of service quality following contact for the youth in their care.

Variations in QoL among youth seem to be related to different individual and contextual characteristics.[72] Knowledge of characteristics that predict high QoL is needed to inform services, carers, and informal networks about areas to focus on to support wellbeing and positive development for youth in care. Furthermore, knowledge about predictors of QoL may inform the CWS of how to organize placements to optimize the chances for youths to have good lives in care. In addition, this information can benefit the whole population of foster youth, not only those with mental health problems and disorders. While there is a lack of studies examining predictors of QoL among youth in out-of-home care, cross-sectional studies about characteristics associated with QoL indicate factors that are interesting to examine as possible predictors of QoL.

In the following section I will describe different youth-, placement-, service-, maltreatment-, and mental health characteristics that are found to be associated with service use, service experiences, and QoL.

1.7.1 Youth characteristics

It is unclear whether gender is related to service use for foster families as some international studies have found that boys use more services,[33,44] while others found no relation between service use and gender.[31,32,39] Regarding user experiences, parents of girls were more satisfied with services received from CAMHS, compared with parents of boys.[82] Gender also seem to be related to QoL, with boys reporting higher QoL or HRQoL compared to girls in the general population[83,84] and among youth in out-of-home care.[76,85]

Age has been shown to be associated with a range of outcomes for children and youth. Older age seems to be related to higher service utilization among children in foster care[31,32,44,86] but with less positive parent-reported experiences of CAMHS in the general population.[87-89] Moreover, younger children report higher QoL and subjective wellbeing than adolescents, both in the general population[84] and in out-of-home care.[68] Summarized, youth gender and age seem relevant to study in relation to service use, service experiences and QoL, despite some contradictory findings.[73,90]

Having an ethnic minority background seems to be related to having a lower service use among children in foster care in the US.[31,35,36,38] However, this was not found in Germany,[39] indicating that this association might be country dependent.

1.7.2 Placement characteristics

The type and stability of foster care placements has been shown to be related to service use and QoL levels. Youth in kinship foster care seem to have a lower service utilization compared to youth in non-kinship foster care,[91] even when controlling for mental health.[35,92] Furthermore, youth in kinship care have shown higher wellbeing compared to youth in non-kinship foster care.[93] Longer time in foster care and more placement changes reduced the likelihood of help seeking in one study,[36] while others found that more placement changes were associated with higher service use.[94] Lastly, while a positive association between placement stability and subjective wellbeing is indicated among youth in out-of-home care,[68] others found no association between

HRQoL and the number of earlier placements.[73] Thus, cross- sectional findings on the relationship between placement stability and service use and QoL is inconclusive.

1.7.3 Service characteristics

Studies of the general population have indicated that service characteristics such as shorter waiting time,[87,89] more treatment sessions, longer treatment duration [87,89,95], satisfaction with the frequency of appointments,[82] and ease of contacting the therapist[89] were associated with positive parent reported experiences of CAMHS. One study found that youth characteristics explained little variance in parent reported service experiences, while service characteristics accounted for more variance,[89] indicating that service characteristics are most important for parent reported experiences concerning services for their child.

Youth in contact with health care professionals have poorer QoL compared to youth without health care contact.[72] Despite findings indicating that youth in foster care have a high service use,[96] there is a lack of studies investigating the relationship between service contact and QoL for this group.

1.7.4 Maltreatment

In general, maltreated children report lower HRQoL compared to children in general, [97] and exposure to maltreatment was associated with lower QoL and HRQoL in general population samples[83,98] and among youth in residential care.[66,75] Among youth in protective custody, experiences of family violence was related to lower HRQoL, while family instability (i.e., parental drug use, mental health problems and/or absent parents) was not,[99] indicating that family violence experiences may be especially relevant to study as a predictor of QoL among youth in foster care.

1.7.5 Mental health

Mental health should be related to service use, and studies indicate that more mental health problems are related to higher service utilization among children in foster care.[31,36,39,44,96,100] Furthermore, higher service utilization was especially related to externalizing problems[32,36,39] and complex and severe mental health problems.[44] Mental health problems are also associated with low QoL and HRQoL among children in the general population[72] and among youth in out-of-home care.[74,79,85] These findings are expected as emotional and mental wellbeing is part of the QoL construct. Conversely, good interpersonal relationships contributed to subjective wellbeing among youth in out-of-home care.[68] Combined, these findings indicate that youth mental health plays an important role in service use and QoL among youth in foster care.

Summarized, studies indicate that several factors are related to service use, service experiences and QoL levels among youth in foster care. However, the research on such characteristics is scarce, and some findings are contradictory. The cited literature provides insight to factors that are interesting to examine further, but also shows that much is still unknown about which youth in foster care that have service contact, experience high service quality and have good QoL.

1.8 Summary of the reviewed literature

Despite the provision of both universal and targeted services for families at risk by the Norwegian welfare state, youth in out-of-home placements have substantially poorer outcomes as adults compared to the general population.[26,27] This could indicate a lack in the service provision or service quality for youth in out-of-home care. Even though there exists some international research on service use and quality of services for foster families, the research is scarce within the European and Scandinavian context. As there are substantial differences in the organization of the CWS and health services between countries,[7] we need more research to evaluate service use and quality of care for foster families in a Nordic context. Moreover, much of the knowledge on quality of care provided for youth in foster care is based on reports or studies that have not utilized standardized and validated measures. To gain systematic knowledge and enable comparison across different samples and times, we need studies that utilize standardized and validated measures of user rated quality of care. There is also a lack of studies investigating positive outcomes for youth in foster care,[5,6] and studies following this group over time to find factors predictive of a good life are needed.

1.9 Aims of the thesis

The overall aim for this thesis was to examine service use, user experienced quality of care and QoL among youth in foster care and their carers. The following research questions were examined:

1. To what extent do youth in foster care and their carers report contact with the following services: CAMHS, primary health care services, CWS, special education and other services? (Paper I)
2. Is service use associated with demographic-, placement- and mental health characteristics? (Paper I)
3. How do foster parent's rate their service experiences and perceived outcomes of services received? (Paper II)
4. Is user reported quality of care associated with youth-, placement-, and service characteristics? (Paper II)
5. How do youth in foster care rate their QoL? (Paper III)
6. Do contextual- and prior mental health characteristics predict quality of life in adolescents, when adjusting for gender and age? (Paper III)

2. Methods

2.1 Sample and recruitment

This thesis uses data from the study “Foster children's mental health” and the follow-up study “Young in foster care”.[101] Overall, this is a prospective follow-up study of mental health among children and youth in foster care. In this thesis we used both cross sectional data and follow-up data from the project. Data was collected at two time-points five years apart, which will be referred to as T1 and T2. I worked as a project coordinator under the data collection at T2, and hence know the procedures of the data collection through my own experience.

2.1.1 Data from “Foster children’s mental health” (T1)

The T1 data collection was conducted between September 1st 2011 and the end of February 2012.[102] Eligible participants were children born between 1999 and 2005 who had lived in a foster home for at least six months following legally mandated placement. Thus, eligible children were aged 6-12 years old. Foster children with placements from municipalities in the Norwegian counties encompassed by The Office for Children, Youth and Family Affairs (Bufetat) – South were included, which consisted of 63 municipal CWS offices at T1.

Foster children were first assessed for eligibility from regional records from Bufetat South (n = 391). In addition, office heads in the municipal CWS were telephoned to enquire about the completeness of the register from the regional records. This led to 28 new children being assessed for eligibility. Based on the information provided by the CWS office heads, 23 children were deemed ineligible. Twenty of them had returned to their biological families or been adopted, and three were deemed ineligible due to serious neurological disabilities. This process resulted in 396 eligible children at T1. See Figure 1 for a detailed flowchart of the data collection.

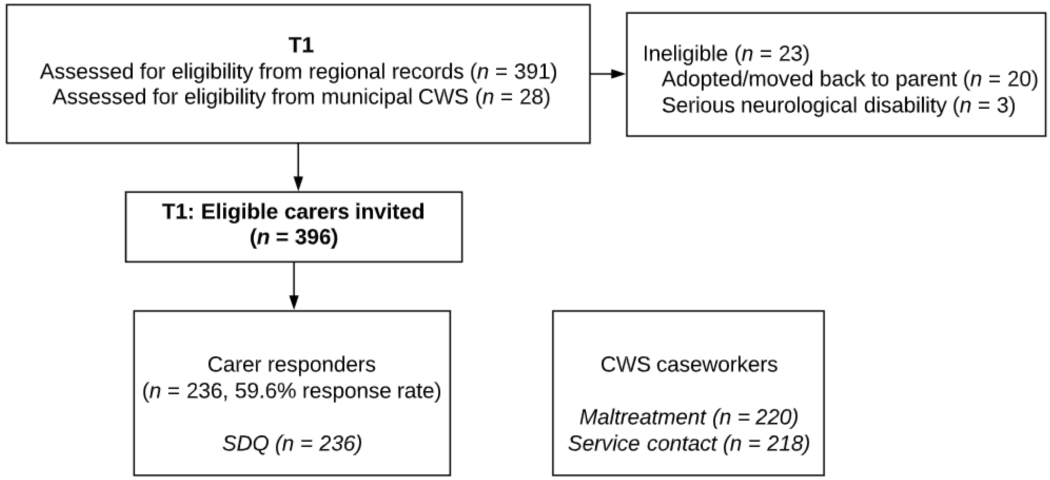

Figure 1: Flowchart of the data collection at T1

Note: Variables in italics

Foster parents, teachers and the child's caseworker in the CWS were invited to participate at T1. As teacher reports were not used in this thesis, the recruitment of this group will not be further described. Foster parents were invited per postal mail with an information letter describing the study and how to complete the online questionnaires on a secure webpage. There were 31 foster parents who were interviewed on the telephone as they either lacked internet access or were uncomfortable using the internet. We asked foster mothers and fathers to complete the questionnaires separately. Reminders were given by subsequent telephone contact. Foster parents were not compensated for participation.

The municipal CWS office heads were asked to distribute envelopes to caseworkers for each eligible child, containing informational letters, and questionnaires assessing whether the child had been exposed to adverse childhood experiences in the biological family and previous service contact. The caseworkers were asked to complete the questionnaire and return it by mail to the principal investigator. Non-responding caseworkers were contacted by telephone after 14 days.

2.1.2 Data from “Young in foster care” (T2)

The T2 data collection took place between October 1st 2016 and March 31st 2017. Identical to T1, eligible participants were youth born between 1999 and 2005 within the same geographical area, who had lived in a foster home for at least six months following legally mandated placement. Thus, at T2, eligible youth were aged 11-17 years old, with 15 youths turning 18 between January and March 2017. We included youth in foster care with placements from municipalities in the Norwegian counties encompassed by Bufetat South, which consisted of 43 municipal CWS offices at T2. This means that youth at T2 were eligible for invitation if they met these criteria, independent of whether they had been invited or participated at T1.

Youths were first assessed for eligibility from regional records from Bufetat South (n = 573). Secondly, office heads in the municipal CWS were telephoned to enquire about the completeness of the register from the regional records, which led to 279 new youth being assessed for eligibility. In addition, 112 youth were deemed ineligible, based on the information provided by the CWS. This was due to the following: Youth had returned to their biological families or had been adopted (n = 60), contact information was lacking (n = 34), they had serious neurological disabilities (n = 12), or foster parents with a serious disease or language problem (n = 6). This process resulted in 740 eligible youths at T2 (see Figure 2).

At T2, youth and their foster parents were invited to participate. They were invited per postal mail with an information letter describing the study and how to complete the questionnaires, either online on a secure webpage or by telephone interview. We placed invitations to youth aged 11-15 years in the letter addressed to the foster parents, while youth aged 16 and older received their information letter directly, in accordance with Norwegian legislation. Reminders were given by post and subsequent telephone contact. One youth and 25 foster parents chose to complete the survey by telephone interview. We asked foster mothers and fathers to complete the questionnaires separately. Participating youth were compensated with a gift card of 300 NOK (approximately 33 USD), while foster parents were not compensated for participation.

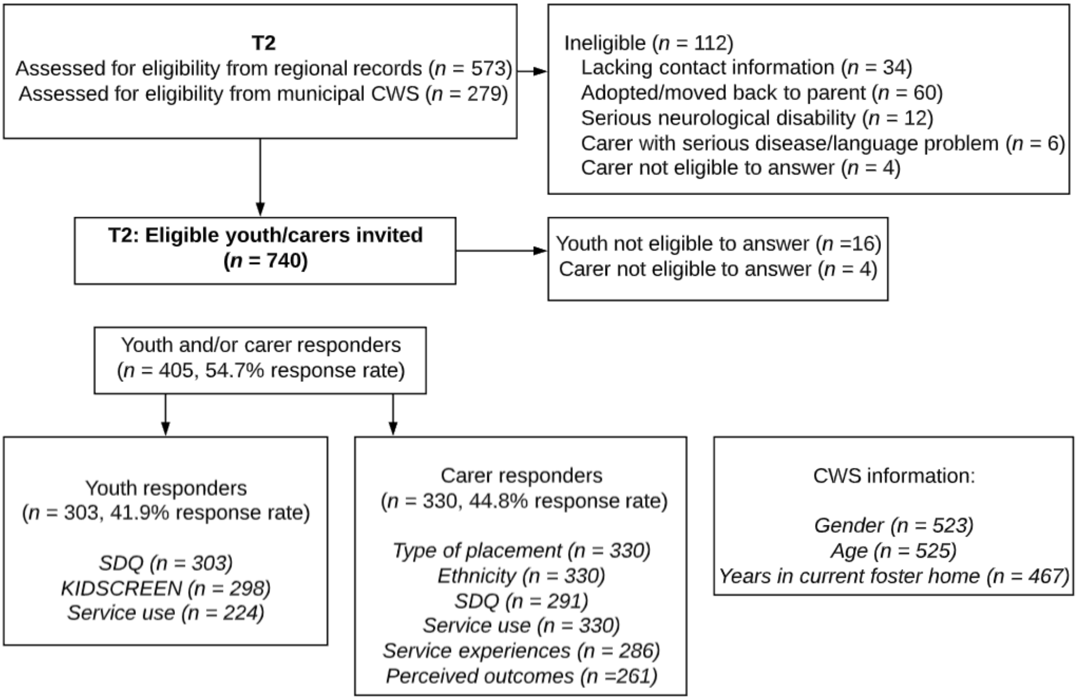

Figure 2: Flowchart of the data collection at T2

Note: Variables in italics

2.1.3 Data used in each paper

This thesis has used data from youth and foster parents at T2 (Paper I - III) and foster parents and CWS caseworkers at T1 (Paper III).

In paper I we used T2 data from youths and carers. At T2, 303 youths and 330 foster parents responded to the survey, resulting in a response rate of 41.9% for youths and 44.8% for foster parents (see Figure 1). In paper II we used data from foster parents at T2 and only included those who reported having contact with services during the last two years (n = 290). In paper III, data from foster parents and CWS workers at T1 and youth and carers at T2 were used. This gave us a total sample of 525 foster youths (46.2 % response rate) with a response from a foster parent at T1 (n = 236, 59.6% response rate) and/or a response from a youth and/or carer at T2 (n = 405, 54.7% response rate). Due to instabilities in the foster care population and lack of contact information from the CWS for some families, only 288 of the total 525 participating families were invited at both T1 and T2, and 116 (40.4% response rate) participants responded at both times. See Figure 1 and 2 for an overview of measures used in this thesis and number of participants for each measure.

In this thesis we have used responses from foster mothers ($N_{T1} = 212$, $N_{T2} = 285$). If the foster mother was a non-responder to the questionnaire, we used responses from foster fathers ($N_{T1} = 24$, $N_{T2} = 45$). We prioritized information from the foster mother, as most responders were foster mothers.

2.2 Ethics

The Regional Committee for Medical and Health Research Ethics, Western Norway approved the study (2010/1297/REK vest). At T1 the advisory for confidentiality evaluated the project and gave their recommendation to the Ministry of Children, Equality and Integration (BLD), which provided exemptions from confidentiality for caseworkers and foster parents. When T2 was conducted, The Norwegian Directorate for Children, Youth and Family Affairs (Bufdir) was delegated authority to provide exemptions for confidentiality of research, p. 94 [103] and they provided this for caseworkers and carers. In accordance with the Norwegian ethics requirement, oral consent is required from children aged 12 years or older. This was described in the invitation letter to children and foster parents, and the youth were instructed that they could inform their carers if they did not want them to participate in the study.

2.3 Measures

2.3.1 Youth, demographic and placements characteristics

For this thesis, we derived information about youth, demographics, and placements characteristics from the second data collection (T2). We collected the data on youth gender, age, and years lived in the current foster home from CWS regional records and checked the information with the municipal CWS through telephone interviews. We assessed youth ethnicity and type of foster care (non-kinship/kinship) through purpose-made questionnaires for the foster parents. Youths were categorized as being in kinship care if foster parents reported that they were biologically related to the youth in their care, and youths were categorized as an ethnic minority if foster parents reported that one or both biological parents were born in a non-western country. The variable youth ethnicity was only used in paper I, while the other variables were used in all three papers.

2.3.2 Service contact

Service contact were assessed at both T1 and T2. To assess service contact at T1, the CWS caseworkers were asked three yes/no questions concerning whether CAMHS, educational psychological services, or habilitation services had assessed or treated the child. We summed these items into a new variable called *service contact at T1* with a range from 0-3. This sum score was made for all youths where the CWS had provided information about at least one of the three services, and missing information on one or two providers were treated as 0/no service contact. This variable was used in Paper III.

To examine to what degree youth and foster parents had contact with different services at T2, we gave youths aged 13-17 and foster parents a questionnaire asking how frequent they had contact with CAMHS, the school health service, the educational psychology service, a general practitioner, the adolescent health clinic, the municipal CWS, and special education during the last two years. Respondents were also asked if they had contact with any other services, and if any, to name the service in an open text field. While youths were asked how often they had contact with the services, foster parents were asked how often the youth, or themselves for the youth, had service contact. Youth aged 11-12 were not given this questionnaire as we assumed that it would be difficult for them to differentiate between providers and report on service use up to two years back in time. For each service, the following contact frequencies were listed: “every week” (= 4); “every month” (= 3); “every 3rd Month” (= 2); “every 6th Month” (= 1); or “more seldom/none at all” (= 0).

To gain yes/no information about which services the families had contact with, we calculated a variable called *service contact* for each provider. These variables were coded yes (1) if the reported contact frequency was "every 6th Month" or more often, while "more seldom/none at all" was coded no (0). These variables were made separately for foster parents and youths, and were used in paper I. To gain information about how many services the foster families had contact with we summed the service contact variables for all service providers except the CWS, resulting in a score ranged from 0 to 7. This variable, called *number of services used*, was made separately for carers and youths, and was used in paper I. Also, in paper I we wanted to measure the foster families contact with primary health care services including the school health service, educational psychology service, general practitioner and adolescent health clinic. Therefore, we defined *contact with primary health care services* as yes (= 1) if the respondent was coded yes on service contact on one or more of these four services. This was also done separately for foster parents and youths. For paper II we wanted a sum score of services used that also included contact with the CWS. Therefore, we computed a variable called *number of services* by adding all services foster parents reported contact with every 6 month or more often.

2.3.3 Type of service provider

To gain information about which service provider the foster parents evaluated when answering questions about service experience and perceived outcomes at T2 (Paper II), we asked responders to describe the provider they had in mind in an open text box. We coded their answers in four categories: 1) CWS (including municipal, private, and regional CWS services); 2) Specialized mental health services (including CAMHS and child and youth habilitation service); 3) Primary health care services (including all municipal health providers; i.e., the educational psychological service, municipal psychologist and general practitioner); 4) Other services (when none of the categories were applicable, e.g: special education and dental care). For participants describing more than one provider in the open text field, their response was coded as the service with the highest reported contact frequency in the service contact questionnaire at T2. We computed a *frequency of service contact* variable for all responders by matching each responder's service category with the reported contact frequency for the relevant service. Most foster parents described their contact with CWS or specialized mental health services. Therefore, we made a *service provider* variable where CWS contact was coded one, specialized mental health services was coded zero, and the other service types were set to missing.

2.3.4 Service Experiences

To measure foster parents service experiences at T2 (Paper II), we used a generic short patient experiences questionnaire for parents of youth in contact with CAMHS.[104] The questionnaire is developed by the national knowledge center for health services (kunnskapsenteret, nå del av folkehelseinstituttet) and is based on more comprehensive and validated questionnaires.[104] The selection of questions for the short form was done by using information from relevant patient groups about the relevance and importance of items and by prioritizing a width in experiences.[104] The generic short questionnaire consists of 11 items that are rated on a five-point Likert scale, ranging from "not at all" (= 1) to "to a very large extent" (= 5), in addition to a sixth category "not applicable". We did some minor language changes to the questionnaire to customize it for contact with a broader range of service providers, e.g., by defining "clinicians" more widely than what was done in the original description to include, for example, caseworkers in the social services. The questionnaire had the following introduction text in our study: "*The following questions refer to your experiences with help services. When you answer, you can think of the service you've had most contact with. By using the term "clinicians" we mean those who have had the main responsibility for assessments and counseling. This may be doctors, psychologists, social workers, or other health and social personnel*". The questionnaire comprises items concerning foster parents' experiences with communication, professional skills, information, individualization, user involvement, organization and cooperation, overall satisfaction, and incorrect treatment. In this study, we included one additional, 12th item asking if the clinician talked to the youth in a way that s/he could understand. The generic short questionnaire included one last item asking if the foster parents had to wait for the service. This question was rated on a four-point scale with the response alternatives:

"no", "yes, but not long", "yes, quite long", and "yes, too long". We refer to this item as *waiting time*, and it is treated as a categorical variable where "no" is used as the reference group.

To investigate whether the items in the generic short questionnaire were measuring one overarching construct of user experiences, we conducted a principal component analysis (PCA). We included all items in the questionnaire except waiting time. Through parallel analysis and investigation of the scree plot we found support for one dominant component accounting for 54% of the variance in overall service experiences. Therefore, we have treated these 12 items as indicators of overall service experience. We computed a *service experiences index* by reversing one negative item and calculating the mean score of responders that had answered nine items or more and multiplied this score by 12 (index range 12-60). We treated "not applicable" responses as missing, and this procedure resulted in an *n* of 238 on the service experience index.

2.3.5 Perceived outcomes of service contact

To examine foster parents' perceived outcomes of measures received at T2 (Paper II), we used a section from a longer questionnaire measuring parent experiences with CAMHS.[105] This more comprehensive questionnaire was one of the precursors for the generic short questionnaire we used to assess service experiences. The section we utilized consists of three items measuring whether the youth's condition, function in the family and function at school and among friends has changed, compared to before the service contact. The items are rated on a five-point Likert scale, ranging from "much worse" (= 1) to "much better" (= 5). To investigate whether these three items measured one overarching construct, we conducted a PCA in the same way as for the service experiences items. The results supported one dominant component explaining 85% of the variance in perceived outcome. Thus, we treated these items as indicators for overall perceived outcome. We made a *perceived outcomes index* by computing the mean score of the three items and multiplying this by 3 providing an index range of 3 to15 for responders that had completed all three items. This gave an *n* of 259 on the perceived outcomes index.

2.3.6 Maltreatment

Pre-placement maltreatment (Paper III) was measured at T1 where the child's CWS caseworker answered four yes/no questions of whether the child had been exposed to or witnessed physical or emotional violence (threats, verbal punishment, harsh criticism or hostility) in the biological family before placement. We made a variable called *maltreatment*, were yes answers on these four items were summed (range = 0-4).

2.3.7 Child and youth mental health

To assess child and youth mental health we used the Strengths and Difficulties Questionnaire (SDQ).[106] The SDQ has versions for parents, teachers, and self-report from the age of 11 years.[43] In our study, foster parents completed the SDQ at T1 (Paper III), and both youths and foster parents completed the SDQ at T2 (Paper I and II). The SDQ consists of 25-items that measure symptoms and impairments in youth's daily life and is appropriate for children and youth aged 4 to 17 years old. The SDQ encompasses five subscales: emotional symptoms, conduct problems, hyperactivity-inattention, peer relationship problems and prosocial behavior. Each subscale consists of five items that responders rate on a three-point scale (0-1-2), giving a score range of 0-10. A total difficulties score was calculated by summing the four symptom-subscales, providing a score range of 0-40. Furthermore, the SDQ has an impact scale that consists of five items measuring distress and the interference of symptoms in the youth's daily life,[106] and it has a range from 0-10. We refer to this scale as functional impairment. The SDQ has shown satisfactory reliability and validity in general child populations.[107,108] The predictive value of foster parents reports on the SDQ is supported for foster children,[109] and the structural validity of the five-factor model of the SDQ are demonstrated when completed by Norwegian foster parents.[110]

In paper I we collapsed the emotional- and peer problems subscales into an internalizing subscale and the conduct- and hyperactivity-inattention subscales into an externalization subscale, each with a score range of 0-20. Previous findings indicate that these scales have good convergent and discriminative validity,[111] and they have been used in previous studies of mental health in Norwegian general samples e.g.[112] In addition, we used the total difficulties and functional impairment scores from T2 in paper I. In paper II we only used the foster parent reported total difficulties scores at T2. The prosocial behavior scale, total difficulties, and functional impairment from T1 were used in paper III.

Lastly, in papers I and III children and youths in foster care were considered to be in the clinical range of mental health problems if they scored 13 or higher on the foster parent reports on total difficulties, as recommended by Lehmann et al..[109] Thus, we created a dichotomized version of foster parents reported total difficulties where scores below 13 = 0 and scores above/equal to 13 = 1.

2.3.8 QoL

To measure the youths QoL at T2 (Paper III), we used the KIDSCREEN-27 Quality of Life Questionnaire, which assesses the physical, psychological, social, family, and school aspects of wellbeing and the functional ability of youths.[65] The KIDSCREEN questionnaires were developed in an EU project involving 13 nations and was based on literature reviews, expert consultations, and focus groups with children in all participating countries.[72] The KIDSCREEN-27 consists of 27 items measuring the following five dimensions of QoL in the last week: physical well-being (e.g., *Have you felt fit and well?*), psychological well-being (e.g., *Have you felt sad?*), parent relations & autonomy (e.g., *Have your parent(s) treated you fairly?*), peers & social support (e.g., *Have you had fun with your friends?*), and school environment (e.g., *Have you been able to pay attention*?). The questionnaire is self-report for youth aged 8 – 18, and all items are rated on a five-point Likert scale (1 = ”never” or “not at all”, 2 = “seldom” or “slightly”, 3 = “quite often” or “moderately”, 4 = “very often” or “very” and 5 = “always” or “extremely”). In three questions concerning the youth’s parent relations we substituted “parent(s)” with “foster parents” as our sample consist of youth in foster care. Ten of the questions embedded within the KIDSCREEN-27 questionnaire provides a single index of general QoL and constitutes the KIDSCREEN-10 questionnaire.[72] We have used the KIDSCREEN-27 to provide data on the five dimensions of QoL and the KIDSCREEN-10 to provide a general QoL index. The reliability, internal consistency, discriminatory power, and validity has been shown to be good for both instruments.[72,84,113] Moreover, the Norwegian version of the KIDSCREEN has demonstrated good validity and reliability in the general population and in clinical samples.[114]

We computed the raw scores of KIDSCREEN-10 and KIDSCREEN-27 into t-scores with a mean of 50 and a standard deviation of 10 (i.e., the mean and SD of the norm population) by using the scoring algorithms described by the KIDSCREEN group.[72] To test the factor structure of the KIDSCREEN-27, we applied confirmatory factor analysis (CFA). The five dimensions had a CFI of 0.88 and RMSEA of 0.09 in our data, and the fit became acceptable[115] (CFI = 0.90, RMSEA = 0.08) by allowing for correlation between item six and seven in the parent relations and autonomy dimension.

2.4 Statistical analyses

2.4.1 Paper I: Service use

We calculated percentages, means, standard deviations (SD), minimum and maximum values for the demographic, placement, mental health and service contact characteristics. To compare youth and carer reports of mental health at T2, we conducted paired t-tests on the SDQ scales' internalization and externalization problems, total difficulties and functional impairment. For the SDQ scales, Cronbach's alpha was also calculated for carers and youths. Furthermore, we compared contact (yes/no) with each service at T2 as reported by youth and carers using McNemar tests.

To examine whether different characteristics were associated with service use, we conducted log-binomial regressions using carer-reported contact with CAMHS and primary health care services (no =0, yes =1) as dependent variables. Demographic- (gender, age, ethnicity), placement- (kinship foster care, years in current foster home) and mental health variables (carer- and youth-reported internalization and externalization problems, functional impairment, and carer-completed dichotomized total difficulties) were tested separately as independent variables. Demographic or placement variables that were significantly associated with service use were reanalyzed adjusting for dichotomized carer reported total difficulties. We conducted post hoc log-binominal regressions to examine the relationship between each primary health care services and the independent variables, and the associations between youth reported mental health and youth reported service use.

All descriptive analyses were conducted with IBM SPSS 24,[116] while the log binominal regressions were conducted in STATA 15.[117] The significance level was set to 0.05.

2.4.2 Paper II: Service experiences

We calculated the percentages, means, SD, minimum, and maximum values for the youth-, placement-, and service characteristics, as well as the service experiences index and perceived outcomes index. Mean and SD of responses for each service experience- and perceived outcome item were also calculated. To examine possible differences in quality of care between service providers we compared carers evaluating CWS with carers evaluating specialized mental health services on the service experience- and perceived outcome items and waiting time, using independent samples t-tests and a chi square test.

We conducted linear regression analyses to examine whether different characteristics were associated with service experiences and perceived outcomes. The service experiences index and perceived outcomes index were regressed on the independent variables: gender, age, total difficulties, years in current foster home, number of services, service provider, frequency of service contact, and waiting time. All independent variables were first tested individually, then simultaneously within a multiple regression model.

Descriptive statistics, independent samples, t-tests and chi square tests were calculated in IBM SPSS Statistics 24.[116] The PCA's of the service experience items and the perceived outcomes items were conducted in R[118] using the Psych package.[119] The linear regression analyses were also conducted in R with the Lavaan package[120] using full information maximum likelihood (FIML) estimation to address missing data. The significance level was set to 0.05.

2.4.3 Paper III: QoL

We calculated descriptive statistics for gender, age, contextual and mental health characteristics, and QoL, including percentages, means, SD, minimum and maximum values. We calculated the Cronbach's alpha values for the SDQ dimensions for carers at T1 and for the QoL dimensions.

To compare the QoL levels in our sample to other relevant youth samples we conducted two sample t-tests. We compared the QoL t-scores in our sample to the t-scores in Swedish general population samples [113,121], a Norwegian sample of youth with ill or substance abusing parents (Norwegian youth at risk)[122] and European norm data of youth aged 12-18.[72] To estimate how large the differences between the samples were, we calculated the Cohen's *d* effect sizes by dividing the mean difference by the pooled standard deviation, where $d = 0.2$ can be considered a 'small' effect size, $d = 0.5$ a 'medium' effect size and $d = 0.8$ a 'large' effect size.[123]

To examine possible predictors of QoL, we conducted separate linear regression analyses for general QoL and the five QoL dimensions. In each regression analysis, predictors were added stepwise, by adding gender and age first. Secondly, maltreatment, service contact at T1, type of placement, and time in current foster home were added. Lastly, total difficulties-, prosocial behavior-, and functional impairment at T1 were added to the model.

Missing data in the regression analyses were handled by multiple imputation. One multiple imputation model was fitted for general QoL and one was fitted for the five dimensions of QoL. This was done separately to avoid overlapping data in the same model, as general QoL are based on items also included in the five QoL dimensions. Both imputation models included all predictors from the full regression model. To make the imputation models we entered the sum scores of the variables and created 30 imputed datasets. The results from the regression analyses were pooled into overall estimates. Due to the substantial amount of missing data between T1 and T2, we wanted to investigate whether different methods for handling the missing data would influence our results. Therefore, we ran our regression analyses again using FIML to address missing data. These additional analyses gave similar results (See Supplementary Table 1 and 2, in Appendix II), which supports the robustness of our findings.

Descriptive statistics were calculated in IBM SPSS Statistics 24.[116] The CFA of the KIDSCREEN-27 were done using the Lavaan package [120] in R.[118] The multiple linear regressions were also conducted in R, and the MICE package[124] was used to fit the multiple imputation models. Lastly, the Lavaan package in R was used to enable FIML estimation to handle missing data in the additional analyses. The significance level was set to 0.05.

3. Results

3.1 Paper I: Services according to mental health needs

In paper I we used the total study sample at T2 (n =405). There were 56.1% boys (n = 226), the mean age was 14.7 years (SD = 2.0) and mean years in the current foster home was 6.7 (SD = 4.3). Of the youths where carers had provided information about ethnicity and type of foster care, 23.9% (n = 79) were classified as ethnic minority and 15.2% (n = 50) lived in kinship foster care. The internal consistency of the SDQ scales in this sample was acceptable to good, and we found that 48.8% of the youths had a carer reported total difficulties score at or above the suggested cut off score of 13.[109]

We found that 74.5% of carers and 68.7% of youth reported contact with any service during the last two years, not including the CWS. More specifically, 31.2% of carers and 27.2% of youth reported contact with CAMHS, and 61.2% of carers and 58.5% of youth reported contact with primary health care services. CWS was the most used service, where 92.1% of carers and 85.3% of youth reported contact. Most carers and youth reported that they had contact with the CWS every third month, and 22.7% of carers and 8.9% of youth reported that the contact with the CWS was each month or more often. The second most used service reported by carers was special education (42.7%), while only 21.9% of youth reported contact with this service. Many families reported contact with several services during the last two years, and 32.8% of carers and 25.0% of youth reported contact with three services or more, not including the CWS.

The only difference between carer and youth reported service contact was on the providers' special education and "other services", where more carers than youths reported contact. For the mental health scales, we found that carers reported significantly higher functional impairment scores compared to the youths, while there were no differences between the responder groups in internalization or externalization problems or total difficulties.

While no demographic or placement variables were associated with having contact with CAMHS, we found that youth in kinship care had a lower use of the primary health care services even when controlling for total difficulties. Furthermore, post hoc analyses showed that girls used the school health service and the adolescent health clinic more than boys, while boys used the educational psychology service more than girls.

Increased carer-reported internalizing and externalizing problems and functional impairment were associated with increased carer-reported use of CAMHS and primary health care services. Among carers who scored their youth above the cut off on total difficulties, 43.0% reported contact with CAMHS, 78.2% with primary health care, and 83.8% with primary health care and/or CAMHS during the last two years. Total difficulties above the cut off doubled the probability of being in contact with CAMHS and primary health care compared to responders scoring below cut off. Increased youth-reported internalizing and externalizing problems and functional impairment were also associated with increased use of primary health care services, while there were no relations between youth-reported mental health or functional impairment and carer-reported CAMHS use. However, post hoc analyses showed associations between increased youth-reported internalizing problems, externalizing problems, functional impairment, and youth reported CAMHS use.

3.2 Paper II: Foster parents' experiences of using child mental health and welfare services

In paper II our sample consisted of the 290 foster parents at T2 who reported having service contact during the last two years. In this sample, 57.6% of the youths were boys (n = 166) and 14.8% lived in kinship care (n = 43). The youths had a mean age of 14.5 years (SD = 2.0) and had on average lived 6.4 years (SD = 4.2) in their current foster home. Of the 237 carers providing information about which service they evaluated, 42.2% (n = 100) responded CWS, and 37.1% (n = 88) responded specialized mental health services. Carers were in contact with three services on average (SD = 1.6), including the CWS. Most carers reported that they either did not wait for the service (41.0%) or did not have to wait long (41.0%), while fewer reported that they had to wait quite long (11.2%) or too long (6.8%).

Overall, we found that most carers evaluated their service contact positively. The two highest rated items were item 1 *Did the clinicians talk to you in a way that was easy to understand* and item 3 *Do you have confidence in the clinician's professional skills,* where 92.4% and 76.6%, respectively, agreed to a large or very large extent. Conversely, the lowest rated items were item 6 *Did you get sufficient information about the child's mental health problems/afflictions* and item 10 *Did you find that the institution has cooperated well with other public services,* where 50.9% and 54.0% of foster parents, respectively, agreed to a large or a very large extent. Furthermore, around half of the carers reported improvement in the youth's condition (59.4%), that the youth functioned better in the family (55.2%), and among friends, and at school (51.7%) compared to before the measure started.

We found no differences between responders evaluating CWS and specialized mental health services on most quality-of-care items. The exceptions were that carers evaluating CWS reported lower satisfaction with information given about the youth's condition, more often reported no waiting time, and more positive change in youth functioning compared to carers evaluating specialized mental health services.

Younger youth age, more frequent service contact, and reporting no waiting time compared to quite long and too long waiting times were associated with more positive service experiences. In addition, more years in the current foster home and higher total difficulties were associated with less positive perceptions of outcomes. Combined, the full model explained 12.9% of the total variance in service experiences and 8.6% of the total variance in perceived outcomes.

3.3 Paper III: Predictors of QoL

In paper III our sample consisted of 525 youths with a carer response at T1 and/or a youth and/or carer response at T2. This sample consisted of 54.5% boys (n = 285), and 15.2% (n = 50) of the youths lived in kinship care. Their mean age at T2 was

14.6 years old (SD = 2.0), and they had on average lived 7.1 years (SD = 4.4) in their current foster home. The foster youths had on average experienced less than one (mean = 0.9, SD = 1.2) type of maltreatment prior to placement, and most youths had been in contact with one service at T1 (mean = 1.1, SD = 1.0). The mean carer-reported total difficulties at T1 was 15.2 (SD = 7.9), and 58.9% (n = 139) of the responders scored at or above the suggested cut off score for being in the clinical range of mental health problems.[109] The Cronbach's alpha for the SDQ subscales total difficulties, functional impairment and prosocial behavior at T1 ranged from good to very good.

We found that the youths had their highest QoL scores on the parent relations and autonomy dimension (mean = 52.8), while their lowest scores were on physical wellbeing (mean = 46.3). Cronbach's alpha for general QoL and the five QoL dimensions ranged from good to very good.

Youth in our sample had lower general QoL and lower QoL scores across all dimensions compared to Swedish general youth populations.[113,121] Youth in foster care had similar scores to the Norwegian youth with ill or substance abusing parents[122] at most dimensions but lower scores on the school environment dimension and higher scores on the parent relations and autonomy dimension. Lastly, compared to European norm data of youth aged 12-18,[72] the only differences were that youth in our sample had higher scores on the parent relations and autonomy dimension but lower physical wellbeing.

We found that male gender and younger age was associated with higher general QoL and higher QoL across all dimensions. Youth in kinship care reported higher general QoL compared to youth in non-kinship care, but this relationship was not significant when adjusting for total difficulties, functional impairment and prosocial behavior at T1. Nevertheless, living in kinship care predicted higher physical wellbeing and higher scores on the parent relations and autonomy dimension compared to youth in non-kin care, even after adjusting for the mental health variables from T1.

Total difficulties and functional impairment at T1 did not predict adolescent QoL. However, more prosocial behavior at T1 predicted higher general QoL, as well as higher physical and psychological wellbeing. Lastly, more maltreatment experiences also predicted higher physical wellbeing.

The full model explained 33% of the variance in general QoL, and on the five dimensions of QoL the full model varied from explaining 40% of the variance in physical wellbeing to 12% of the variance in the social support and peers dimension.

4. Discussion

4.1 Summary of findings

The results in the present thesis indicate that the foster families had a high prevalence of service use, with 31.2% reporting contact with CAMHS and 61.2% with primary health care services during the last 2 years. However, one of two youths had indications of mental health problems, and less than half of these received services from CAMHS. Overall, foster parents reported positive service experiences, and half of the group reported improvements in the youth condition and functioning following the service contact. Youth in foster care had lower QoL compared to Swedish youth in the general population, but similar levels to other Norwegian youth at risk and European youth in general. The foster families' service use, experienced quality of care and QoL were associated with factors such as gender, age, type of placement, mental health and service characteristics.

4.2 Interpretation of findings

4.2.1 Service use

We found that 48.8% of youths at T2 showed indications of mental health problems, which is in accordance with results from a meta-analysis that found that 49% of children in the child welfare system qualify for a mental disorder.[1] This number is substantially higher than for children generally in Norway, where approximately 7% were estimated to have symptoms concurrent with one or more mental disorders.[125] This difference in mental health problems is substantial and supports the ongoing focus that youth in foster care have a high need for service support.

Contact with any service other than the CWS during the last two years was reported by 68.7% of youth and 74.5% of carers. Similarly, a Norwegian study on youth in residential care (n = 400, aged 12 – 20)[126] found that 60.6% reported contact with services for mental health problems during the last three months. In comparison, among the general youth population, 6.9% had sought help from different services for mental health problems during the last year.[127] Although these findings are difficult to compare due to the different measurements and timeframes used, the results indicate that youth in foster care have substantially more contact with help services compared to youth in the general population, but more similar levels to youth in residential care. Differences between youth in the general population and youth in out-of-home care are expected due to youth in out-of-home care 's prior adverse experiences and their elevated service needs. [3] However, youth in the general population may serve as a frame of reference for our findings, providing more detailed information about how the needs of youth in foster care differ from the needs of other youth.

We found that 27.2% of youth and 31.2% of carers reported contact with CAMHS during the last two years. This contrasts with the general child population in Norway, where approximately 5% of the population is treated in CAMHS each year.[128] Compared to other samples of youth in foster care, contact with CAMHS in our group were higher than some[37,96] and lower than others.[38,44] However, it is difficult to compare the prevalence of contact across samples as they vary according to the service systems of the country they are conducted in, the age range of the youth, and how widely CAMHS is defined. In this study we have used a narrow definition of CAMHS, whereas other studies have placed several different service providers under this definition (e.g. private professional, municipal mental health services, family doctors). Conversely, Norway has an extensive welfare system, and this might be one reason for CAMHS being more readily available here.

The largest service provider was the CWS, where 92.1% of carers and 85.3% of youth reported contact during the last two years. Most carers and youth reported that the frequency of contact was "every third month", which is in line with the Norwegian legislation that the CWS is obliged to have contact with the foster family at least four times each year.[16] This can be reduced to twice per year if the placement has lasted two years or more and after an individual assessment of needs.[17] However, 7.9% of carers and 14.7% of youths reported no contact with the CWS, or more seldom than every six months, which indicates a divergence between legally stated rights and actual follow up for some families. This is in line with findings from the Norwegian board of health supervision that many CWS offices did not conduct the minimum number of home visits that the foster families have a right to.[17] When this is the case the CWS cannot know whether the child is doing well in the foster home and cannot secure a proper follow up of the health and wellbeing of the child. On the other hand, a considerable portion of the foster parents (22.7%) reported contact with CWS each month or more often. Hence our findings indicate substantial variations in the CWS contact, where some families receive frequent follow up while others do not have the contact they have a legal right to.

Special education was the second most used service reported by carers (42.7%). This is in stark contrast to children in Norway in general where 7.7% of students in compulsory education received special education in 2019/2020.[129] However, our result is in accordance with findings from the foster care population, where a US study found that 52% of foster children received special education.[36]

Many families in our sample reported contact with several services during the last two years, and 32.8% of carers and 25.0% of youth reported contact with three services or more, not including the CWS. It is difficult to compare service use from multiple providers between different countries as the organization of help services varies, but these results are in line with findings from Scotland, where foster youth received services from a wide range of agencies.[96] Summarized, we see that youth in foster care have contact with a wide range of different service providers, which is in line with their elevated levels of mental health problems.

Youth and carer reports

We found no differences in reported service use between carers and youth for CAMHS, the primary health care services, or the CWS. However, more carers than youth reported that they had contact with special education and “other services”. Only 21.9% of the youths themselves reported receiving special education in contrast to 42.7% of carers. This difference in youth and carer reports could indicate that many youths are not aware of the special education they receive in school. This may be problematic as youth should be heard in decisions regarding measures provided for them, which is not possible if they are not aware of which services they receive.

Further, there were no differences in the parent and youth reports on the SDQ scales' total difficulties and externalizing or internalizing problems, but carers reported a higher level of functional impairment compared to the youths themselves. This contrasts with previous studies where youth reported more internalizing problems, whereas carers and parents report more externalizing problems.[42,43] Historically, informant discrepancies have created uncertainty about how to draw conclusions from research, and studies have focused on whether discrepancies reflect measurement error or informants' reporting biases.[130] Conversely, current thinking on best practices in mental health assessment assume that the value in multi-informant assessments lies in capturing the unique perspectives held by each informant.[130] This means that discrepancies among multiple informant's reports may reflect meaningful contextual variations in responders' experiences. Our findings indicate that foster parents and youths have quite similar perspectives of which services they have used, which supports the validity of our findings. Furthermore, the foster parents seem to have insights into the youth's mental health problems, which is in concurrence with our finding that the youths reported good relations with their foster parents. The difference found in functional impairment may be context dependent, so that the youth's function is lower in contexts were the foster parents see them compared to other context such as when a youth is alone with friends.

4.2.2 Service experiences and perceived outcomes

Most parents in the general population are satisfied with services received for their children,[88,95,131,132] and similarly the foster parents in our sample reported overall positive service experiences. The clinicians' professional skills and ability to communicate in a way that was easy to understand were highly evaluated. However, foster parents more negatively evaluated the information about the child's condition, cooperation with other services, and organizing of the work. This corresponds to previous studies indicating that foster parents experienced problems with receiving relevant information from CWS workers, a lack of continuity of services, and difficulties in navigating between the different services.[55,62,133]

The collaboration between CWS and CAMHS has in recent years been a priority in Norway, and official guidelines for improving the cooperation between these providers was released in 2015.[8] Despite this, a recent report found that the cooperation between CWS and other services was often random and informal, and there were examples where both CAMHS and CWS pushed the responsibility for the child and family over to each other.[52] Relatedly, a study found that the cooperation between CAMHS and CWS were difficult,[134] and the employees in the services explained this by disagreements regarding problem understanding, measures needed, disclaiming responsibility, and a lack of resources. As youth in foster care have high health care needs,[3] and our results and other studies[96] show that a large proportion of foster families are in contact with several service providers, it is especially important for this group that services work well together. For services to be helpful for these families, they need to be both available and of high quality, and cooperation and coordination between services are one important part of service quality from the user's perspective.

Between 50 and 60% of foster parents reported that the youth's condition and function within the family, and with friends and at school, was better than before the service contact. This is similar to how parents in the general Norwegian population rate the outcomes of contact with CAMHS (overlapping confidence intervals; n = 7906, child age 0-16 years).[131] Thus, foster parents seem to experience similar outcomes of measures received compared to parents in the general population. Around 40% of the foster parents reported no change in youth condition or function, and around 5% reported that it had declined. This might be a consequence of a lack, or unsystematic use, of evaluations of measures provided by the services, resulting in ineffective measures remaining unchanged. This corresponds to findings of a lack of documentation in the CWS over actions, plans, and their evaluations and considerations.[17] A recent rapport on municipal coordination of services for children and youth also found that a risk area in the service provision was that measures are not evaluated.[135] Another possible explanation is that many foster parents have received support and guidance, rather than therapeutic measures directed at the youths' functioning per se, as much of the services provided by CWS in Norway is supervision and counseling of foster parents.[136,137] While many common parent training programs have been shown to make parents more secure in the parenting role, fewer have been evaluated for whether they lead to positive outcomes for the child.[138] Therefore, it is possible that even though foster parents have experienced the counselling as beneficial for them, it has not led to an improvement in the youth's condition and functioning.

We found no overall difference in reported quality of care between foster parents evaluating CWS and specialized mental health services. However, foster parents evaluating the CWS were less satisfied with information given about the youth's mental health compared to responders evaluating the specialized mental health services, which is in line with previous studies indicating problems with information from the CWS.[55,61,62] On the other hand, carers evaluating the CWS more often reported no waiting time and more improvement in youth functioning compared to responders evaluating specialized mental health services. This corresponds with international studies showing that foster parents reported difficulties with the availability and timeliness of mental health services.[60,61] Referrals are needed to receive specialized mental health services, hence longer waiting times for this provider compared to the CWS seems reasonable. Moreover, most foster parents reported no or short waiting time, indicating that the overall waiting time was brief and hence that the services seem to be available to the foster families.

4.2.3 QoL

Youth in foster care had a lower QoL than Swedish youth in the general population, [113,121] which is in line with findings from Australia where youth in foster care had lower QoL on most dimensions compared to the general population.[73] The youths in our sample had comparable QoL scores to the European norm data on most dimensions.[72] There are sizeable differences in general QoL between countries [113] and as Scandinavia has better health status and higher subjective wellbeing than most

European countries,[139] it seems plausible that Scandinavian youth will have higher QoL levels, as indicated by the high scores in the Swedish norm data. It seems that Norwegian youth in foster care have lower QoL scores than Scandinavian youth in general, but comparable QoL scores to other Norwegian youth at risk (youth with ill or substance abusing parents).[122]

Regarding the subdimension physical wellbeing, youth in foster care had lower scores compared to the Swedish general population sample [121] and the European norm data,[72] while they had similar scores to the Norwegian youth at risk.[122] This means that even though the youths in our sample had lived on average seven years in their current foster home, their physical wellbeing was still worse off compared to their peers, and it was their lowest QoL score across dimensions. This suggests that at risk populations report poorer physical wellbeing than general populations and are thus an important dimension to assess in future studies and clinical settings.

Youth in foster care had their highest QoL scores on the parent relations and autonomy dimension, and they had higher scores on this dimension than the European norms and Norwegian youth at risk. Even though they had somewhat lower scores on this dimension than the Swedish general population sample, the difference was small (d = -.20). These findings suggest that despite their early, often detrimental relational experiences, youth moved into adequate care conditions often form good relationships with their new caregivers. Youth in foster care had lower scores on school environment compared to the Norwegian youth at risk, which might be a consequence of youth in foster care changing schools more often than other youth.[140] These results highlight the importance of securing stable placements for youth in care, as stable placements are crucial for ensuring lasting connections to schools, social networks and foster parents.

Overall, our results indicate that youth in foster care have lower QoL than the general Scandinavian youth population. This is in line with research showing that many children in out-of-home placements suffer from substantial health problems over their life.[23,24] Lower QoL in our sample, despite their stable placements, may indicate that foster families in Norway do not receive enough help from services to counteract the effect of their earlier adverse experiences. This supports the argument that the Norwegian government should create systematic routines for health assessments and health monitoring of children in their care.[3] Moreover, our findings that youth in foster care have lower QoL across dimensions compared to the general youth population imply that these assessments should be broad and include areas such as mental and physical health, and educational and developmental needs.

4.2.4 Factors associated with service use, service experiences and QoL

Youth gender and age

We found no overall difference in service contact between boys and girls. However, post hoc analyses showed that girls had more contact with the school health service and the adolescent health clinic, whereas boys had more contact with the educational psychology service. Thus, boys and girls in foster care seem to use different services, although at overall similar rates. This gender difference corresponds with user rates from the general Norwegian population, where 72% of youth that used the school health services and the adolescent health clinics were girls, whereas 69% of the children and youth in contact with the educational psychology service were boys.[141] Studies have indicated that girls have more internalizing problems while boys have more externalizing problems.[142,143] Therefore, differences in the types of services used can stem from boys and girls having different types of mental health problems, leading to different types of services being suited to their needs. However, as our findings indicate that mostly girls use the services that are directly approachable for youth themselves, this calls into question whether low threshold services are perceived as accessible by boys.

Boys reported higher QoL than girls, which corresponds to results in the general population[83,84] and among youth in care.[68,76] However, while girls had higher scores than boys in the domains social support and peers and school environment in the general European population,[84] the girls in our sample had lower QoL across all dimensions. This could indicate that girls are especially vulnerable to the stressors of detrimental care-experiences prior to placement and moving into foster care and may need extra support to have good lives in care. This is in line with findings of stronger associations between maltreatment experiences and internalizing symptoms for girls compared to boys in foster care.[144] Our results contrast somewhat to findings on young adults with previous CWS contact.[26] Here male gender was predictive of unemployment, lower education, receiving more social benefits, and an overall less chance of having a successful adult carer. However, also in the comparison group from the general population fewer boys had higher education, and boys had more often been unemployed and received social benefits. Hence, it seems that both among youth in foster care and in the general population girls have a more challenging time in adolescence with lower QoL levels, while boys struggle more into adulthood with attaining an education and a job. This might indicate that boys and girls need help with different areas of functioning at different time points in their development.

Regarding youth age, older age was associated with less positive service experiences as reported by foster parents, which is in line with findings from the general population.[87,88] These findings might indicate that across youth-characteristics, services are better adapted to children compared to adolescents. Alternatively, carers may be more involved in services provided to younger youth and thus have more positive service experiences. Furthermore, we found that younger youth age was associated with higher QoL across all dimensions, which corresponds to results in the general population[84] and among youth in care.[68,76] Generally, teenagers are found to have more mental health problems than children,[145] and hence higher levels of mental health problems might be one reason for the lower levels of QoL among older youth.

Placement characteristics

Youth in kinship foster care had less contact with primary health care services than youth in non-kinship foster care, even after adjusting for mental health problems. This is in line with existing research[35,92] and indicates that a lower service use for youth in kinship care cannot be solely explained by youth in kinship care having better mental health. Others suggestions are purposed for the lower rate of service use among youth in kinship care, including that non-kinship foster parents are more "system involved" or that the training and supervision of non-kinship foster parents may contribute to a higher identification of mental health problems, and hence higher levels of service utilization.[91] Furthermore, youth in kinship care had higher general QoL compared to youth in non-kinship care, but not when adjusting for mental health characteristics at T1. This could indicate that youth in kinship care report higher general QoL because of better mental health. This seems plausible as psychological wellbeing is one dimension of QoL, and youth with mental health problems are shown to have significant and sizable lower QoL values in all dimensions of the KIDSCREEN questionnaires.[72] Youth in kinship care reported higher physical wellbeing and better parent relations and autonomy compared to youth in non-kinship care, even when we adjusted for previous mental health. Our results correspond to a systematic review indicating that children in kinship care have higher wellbeing and lower rates of mental health disorders than children in non-kinship care.[93] Hence, the existing evidence base seems supportive for a positive relationship between kinship care and mental health and wellbeing, but the service support for youth in kinship care seem to be inadequate.

Longer time in the current foster home was associated with less positive outcomes of measures received as evaluated by foster parents. One may speculate that there are many changes happening during the early stages of living in a foster home, which could be the reason why foster parents with more newly placed youth report more positive outcomes independent of this change being related to the services provided. Alternatively, it is possible that measures are more frequently evaluated and adjusted in the early stages of a placement. Hence, measures for youth in long lasting placements might be more seldomly evaluated with the consequence that ineffective measures continue unchanged. This possible explanation may be supported by the framing of the Norwegian foster care regulations that supervisions by the CWS can be reduced from four to two visits per year when the placement has lasted over two years.[17] This is only supposed to happen after an individual assessment of needs, but previous reports show that an individual assessment is not necessarily done.[17] In sum, a lack of contact with the CWS in long lasting placements might be a reason for these foster parents experiencing, to a lesser degree, positive outcomes of the measures received. However, as research in this field is scarce, little is known about the relationship between the duration of placements and outcomes of services received.

Time in the current foster home was not predictive of QoL, which contrasts with previous reports that youth with longer stays in the same placement had higher subjective wellbeing.[68] As the youths in our sample had lived on average 7.1 years in their current foster home (median = 6.4, 25th percentile = 3.4), this may have limited our opportunity to discover possible negative effects of short stays and frequent moves on QoL.

Service characteristics

While youth in contact with health care professionals are found to have poorer QoL compared to youth without health care contact,[72] we found that childhood service contact was not predictive of adolescent QoL. However, as five years had passed between the report of service use and QoL in our study, changes may have occurred in the youths' lives in the meantime, explaining the lack of association. Furthermore, it is unclear whether one would expect youth with previous service contact to have lower QoL, as the service contact indicates that they had mental health problems at T1, or that they would have better QoL as they had received help for their problems. Regarding the influence of service characteristics on service experiences, foster parents that reported a higher frequency of service contact and no waiting time had more positive experiences. This is in concurrence with findings from the general population that more treatment sessions, longer treatment episodes, and shorter waiting time were associated with service satisfaction.[87,89,95] These findings indicate that services that are accessible and have enough resources to enable frequent contact are important to provide high quality care from the user perspective. These results also highlight how service accessibility and quality of care are intertwined, where the quality of care provided is dependent on the availability of the services.

Mental health and maltreatment

To our surprise, we found that more maltreatment experiences also predicted higher physical wellbeing. This contrasts with previous findings that having experienced family violence was associated with lower QoL.[99] However, the effect was small and only present when controlling for mental health characteristics at T1. Hence, this finding might be a false positive. Alternatively, one may speculate that children whom the CWS knows have experienced physical or emotional violence are moved more quickly into alternate care than children where the CWS does not have such information. Consequently, this may protect these children from experiencing more maltreatment, leading to better physical wellbeing later in life.

Youth internalizing and externalizing problems, total difficulties, and functional impairment were associated with use of CAMHS and primary health care services. Previous studies have indicated that externalizing problems are more closely related to service use than internalizing problems among youth in foster care[32,36,39] and the general population.[125] In contrast, our results did not indicate that externalizing problems had a higher predictive value for receiving services compared to internalizing problems. This is consistent with other results that foster children with more severe and complex difficulties had higher service use independent of types of mental health problems.[44]

Even though youths with indications of mental health problems had a doubled probability of being in contact with CAMHS and primary health care services, 57% of these youths did not have contact with CAMHS. This may indicate an underuse of specialized mental health services for youth in foster care. However, 78.2% of youths with mental health problems were in contact with different primary health care services and might have their needs met there. Our results are in line with findings among institutionalized youth with mental disorders, where less than 50% received help from CAMHS, and two-thirds received help from primary health care and special education during the last three months.[126] Combined, these results suggest that despite their high load of mental health problems, primary health care services, rather than CAMHS, is the main service provider for youth in out-of-home care. In a treatment process (pakkeforløp) that is currently being implemented for children in contact with the CWS,[146] it is described that the CWS should contact the municipal health and welfare service if they think that a child’s mental health needs to be assessed. The municipal health and welfare service should assess the child and only refer the child to CAMHS if they find indications that the child has a severe mental disorder. Hence, many youths with mental health problems should receive their help from the municipal services, which is in line with our finding that primary care services was the main health care provider for youths in foster care. However, this system is dependent on municipal services conducting thorough assessments, both to be able to implement effective measures and to ensure that youth are referred to specialized services when they have a right to specialized care.

Youth-reported mental health problems were associated with carer reported contact with the primary health care services but not to carer reported contact with CAMHS. However, youth-reported mental health problems were associated with self-reported CAMHS contact. This means that even though there were no significant differences between youth and carers in reported CAMHS contact or internalizing- or externalizing problems or total difficulties, the variances in the youth and carer reports were large enough to yield different associations in the regression analyses. Some differences between youth and carers in reported service use are expected. For example, carers may receive supervision from CAMHS or CWS without the youth having direct contact. Furthermore, from the age of 16, youths may receive services from CAMHS without the carer's assent or knowledge,[49] and youths may also have contact with the school health service or adolescent health clinic without their carers being involved. This exemplifies how gathering information from several responders provides insight to their unique perspectives, which in turn might influence the predictive value of the measured characteristics.

Foster parents of youth with more mental health problems reported less improvement in youth condition and functioning following the service contact. This means that while more mental health problems were associated with more service contact, these families also experienced less improvements following the service contact. It is possible that families that have experienced little or no improvement of measures received, consequently have youths with poorer mental health. Alternatively, the services resulted in less improvements in condition and functioning for youths who initially had more mental health problems.

Mental health and functional impairment five years earlier (T1) did not predict QoL (T2) among youth in foster care. This indicates that childhood mental health problems do not necessarily lead to poor QoL in adolescents. This is surprising given the association between mental health and QoL [72] and previous results indicating that youth in foster care show stable trajectories of mental health.[147] Our result might be a consequence of youths receiving effective mental health services. This is supported by our findings that families had a high service use and that 50-60% reported improvements in youth condition and functioning. The null finding between mental health problems in childhood and QoL in adolescence might also be a consequence of positive development processes occurring in the foster home, as the youths in our sample had on average long lasting placements and good relationships with their carers. Lastly, as carers reported on mental health at T1, while youths reported on QoL at T2, differences in youth and carer perspective might also have limited the associations between the constructs.

Prosocial behavior five years earlier predicted general QoL, physical wellbeing, and psychological wellbeing among the youths in our sample. This is in line with previous findings that there is a relationship between social support and subjective wellbeing, and that this relation is mediated by prosocial behavior.[148] Furthermore, researchers argue that supporting youth in foster care using mentoring and social skills training could reduce the negative outcomes for these youths.[149] Combined with our findings this indicates that building prosocial behavior and social skills among youth in foster care might be one way to enhance future QoL.

The combined contribution of different characteristics

The full regression model explained 12.9% of the variance in service experiences and 8.6% of the variance in perceived outcomes (Paper II). This corresponds to previous findings that youth and service characteristics explained relatively little variance in parent’s experiences with CAMHS.[89,95] Thus, even though some of the investigated characteristics were related to user-rated quality of care, they only explained a minor part of why some foster parents experience higher quality of care than others. In contrast, the full model of predictors explained 33% of the variance in general QoL (Paper III). Here gender and age combined contributed with roughly half of the explained variance, which indicates that these characteristics are important determinants of QoL. The explained variance varied greatly between the QoL dimensions, where the included independent variables had the greatest effect on physical wellbeing (40%) and the least influence on social support and peers (12%). These results indicate that the independent variables we have studied are important determinants for the youths' QoL, while they explain substantially less of foster parent's experiences of quality of care. Some findings suggest that service characteristics explain more of the variance in parent reported experiences than youth characteristics.[89] This indicates that future studies should examine more service-related characteristics such as treatment specific factors and alliance with the helper as possible predictors of parent's service experiences.

4.3 Methodological considerations

4.3.1 Instrument reliability and validity

Key indicators of the quality of an instrument are the validity and reliability of the measure.[150] Validity is whether an instrument measures what it purports to measure, while reliability is whether an instrument is stable across times and context and whether the items in the measure has internal consistency.[150] This thesis has measured mental health, QoL, service experiences and perceived outcomes with standardized measures. Both the SDQ[107,108] measure for mental health and the KIDSCREEN[72,84,113] for QoL has shown good reliability and validity and has also been used in Norwegian samples.[114,151] Furthermore, the Cronbach’s alpha values of the SDQ and KIDSCREEN27 dimensions ranged from acceptable to very good in our sample, indicating a good internal consistency of these instruments. Furthermore, the five dimensions in the KIDCREEN27 had an acceptable fit [115] to our data (CFI = 0.90, RMSEA = 0.08) when two items in the parent relations and autonomy dimension were allowed to correlate. The PCA analyses of the service experience and perceived outcome items gave support for one dominant component accounting for 54% of the variance in service experience and one component explaining 85% of the variance in perceived outcomes. These findings support our use of these items as indicators for overall service experiences and perceived outcomes. Combined, these measures seem to function well in our sample, which supports the validity of the measures used. This strengthens our trust in our findings, and that they provide systematic knowledge about foster youth's mental health and QoL and the foster parent's experiences of quality of care. Moreover, as we have used a QoL instrument with good cross-cultural validity and available norm-values,[72] we have been able to compare QoL among youth in foster care to QoL in other youth populations, increasing the knowledge on how foster care-related experiences affect QoL.

We were unable to find a standardized and validated questionnaire regarding the family's service use. Therefore, we based our questions on previously used service questions from the youth@hordaland study.[152] This means that the questions had been previously tested in a youth sample, but we lack information about the reliability and validity of the measure. To examine service use and service quality as a part of service development, we are dependent on measures with good psychometric properties. Hence the development and evaluation of measures should be in focus in future research and professional investment.

4.3.2 Multi-informant assessment

Much of the value in a multi-informant assessment lies in capturing the unique perspectives held by each informant.[130] We have used data from youth, carers and caseworkers in the CWS in this thesis. Thus, we have the advantage of using information from multiple informants, and both carers and youth have reported on mental health and service use at T2. However, we do not have reports from multiple responders on all measures. Youth and carers received a different mix of questionnaires adapted to their situation, where only foster parents reported their experiences with services, while only youths reported on QoL. Previous studies have shown weak to moderate correlations between service satisfaction of parents and youth,[88,95,153] hence we cannot infer the youth's service experiences from the foster parents' responses. However, foster parents' own experiences are important as they are also users of the youth- and family services, and foster parents are dependent on sufficient service support to provide nurturing and stable homes for youth in their care.[56,59] We chose to only measure QoL by self-report as it is a subjective experience, and self-report is the gold standard of assessment.[66] Lastly, pre-placement maltreatment was only reported by caseworkers, which could influence the accuracy of this measure. Case workers do not have full information about the children's experiences, hence an underreport of maltreatment experiences seems probable.

4.3.3 Bias and representativeness

Bias causes results or observed measurements to differ from their true values due to systematic errors.[154] Bias can stem from the way we enroll study subjects (selection bias) or the way we collect data from them (information bias). In this thesis we have used a sample of a high-risk group that is difficult to recruit and challenging to follow over time due to instability in the living arrangements. The overall response rate from foster parents at T1 and/or youth and foster parents at T2 were 46.2%. Furthermore, the response rates for youth, carers, and youth and/or carers at T2 were 41.9%, 44.8%, and 54.7%, respectively. A recent meta-analysis found that the average response rate in online psychological surveys on adults with depression or anxiety was 43% and that response rates were lower in more recently conducted studies.[155] This finding indicates that our response rates are within the expected range for psychological survey studies.

We only have a modest overlap in responders at T1 and T2 mainly due to changes in the living arrangements between T1 and T2 making youths ineligible for recruitment at T2 (e.g. adoption, recent moves). In addition, it was challenging to obtain the correct contact information for all relevant foster families, as there were large discrepancies between the information provided by the regional records from Bufetat South and the municipal CWS offices at T2. Of the 525 youths included in paper III, only 288 were invited at both T1 and T2, and 116 participated at both times. We handled the missing data in paper III with multiple imputation, which is preferable over listwise and pairwise deletion as it results in more statistical power, gives unbiased results under missing at random, and less biased results than other methods when missing is not random.[156] Furthermore, we compared T1-only responders to responders that had participated at both T1 and T2 on the variables gender, age, maltreatment, service use, total difficulties, functional impairment and prosocial behavior, and found no differences for families lost at follow-up. In addition, we found no differences between carer responders and non-responders at T2 on youth gender, age or years in current foster home, and youth responders only differed from non-responders by having a higher mean age than non-responders (14.8 years vs 14.3 years). Furthermore, our T2 sample seems representative of the general foster care population in Norway on the parameters of gender, 56.1% boys vs 53% in the whole population, and 23.9% being defined as an ethnic minority in our sample versus 25% with a minority background in the whole population.[157] However, a lower percentage of responders lived in kinship foster care compared to the whole population (15.2% versus 25%). Summarized, even though our response rate was somewhat low our sample seems representative for both responders and non-responders, and for the general foster care population, apart from a lower amount of youth living in kinship care. This could mean that the youth in kinship care and their carers that have chosen to respond to our survey are not representative of kinship foster families in Norway in general. However, our results that youth in kinship care had a lower service use and higher QoL on some dimensions are in line with findings from other studies.[35,92,93] This indicates that the kinship families in our sample share characteristics with other samples of youth in kinship care.

Information bias is also called data inaccuracy and can for example occur if we measure or determine a variable with error.[154] The cut-off value that we used for carer-reported total difficulties at T1 and T2 was derived from analyses on the T1 data where the children were aged 6-12 years old.[109] As the youths at T2 were five years older but used the same cut off score, this might lead to information bias and inaccurate results on the amount of youths at T2 with mental health problems above the cut-off. However, a Swedish study with a general population sample found that for 13-year-olds the cut-off score for being in the 90th percentile on parent reported total difficulties on the SDQ were 13.0 for girls and 13.9 for boys, [158] which corresponds to the cut-off value we have used. Furthermore, our results corresponds to the prevalence of mental health problems in other studies of youth in foster care.[1]

The items in the service experiences questionnaire were overall rated very positively. High levels of service satisfaction have also been found in other studies, and authors discuss whether there are ceiling effects in the measures used.[88,131] A ceiling effect would indicate that the questionnaire has not been able to capture variations in foster parent's service experiences. This could lead to data inaccuracy, as foster parents' negative service experiences would not have been accurately represented in the data. Therefore, we investigated whether there seemed to be a ceiling effect in our measure. We found that only 5.5% of responders had the highest possible score in the service experience index, while ceiling effects are considered to be present if more than 15% of respondents achieve the highest score.[159] Thus, a ceiling effect in the overall service experience scores was not indicated, which supports the validity of this measure.

4.3.4 Limitations

We measured service use over the last two years, which means that the timeframe for reported service contact and user rated quality of care is wide. This is positive for capturing service access and quality of care over time but decreases specificity in the reported contact frequency and evaluations. It is a limitation that we lack information about the content of the service contact (e.g., foster parent counselling or youth mental health assessment) and about the reasons for contact with the services. Therefore, we cannot distinguish between user evaluations for specific treatments or content of the service contact. Simultaneously, it is a strength in this thesis that the data on service use and service experiences covers a broad range of service providers and experiences. We obtained information about contact with eight different service providers, and the service experiences and perceived outcome questions provide detailed information about different aspects of quality of care with the family's main service provider. Knowledge about service use across providers and over time is especially important for foster families that often have contact with several providers and problems that are complex and persistent.[3]

Even though we used mental health problems as a measure of service need, we do not know whether the measures the families received targeted mental health problems or other issues, such as somatic health problems or learning difficulties. This is only a minor limitation when investigating contact with CAMHS as this service specifically targets mental health problems. Moreover, many youth in contact with the school health service, adolescent health clinic, educational psychology service and the general practitioner in Norway show evidence of mental health problems,[141,160] indicating that mental health problems can serve as a good proxy for health care needs regarding these services as well.

Foster parents' responses to which service they evaluated were complex to categorize, as some responders described multiple providers (n = 54) or described providers that were not mentioned often enough to be included as separate groups in the analyses (n = 49). Therefore, the results comparing the evaluations of CWS and specialized mental health services should be interpreted with caution. Furthermore, it is a limitation in the thesis that we do not have separate reports of foster parent's experiences with different services, for example a new service experience questionnaire for each service they reported contact with. As the data used in this thesis was collected as a part of a larger survey on mental health among youth in foster care, we chose to limit responder strain by only asking for service experiences with the family’s main service provider.

4.4 Ethical considerations

The Ministry of Children, Equality and Integration (BLD) state that it is important to support research on the child welfare area, as new knowledge is needed, and the existing knowledge needs to be regularly updated.[161] At the same time, they press that people in contact with the CWS are a vulnerable group that could be unnecessarily heavy burdened if caution is not shown when providing information about them.

Hence, research on families in contact with the CWS is sought after but has clear demands to researchers regarding confidentiality and not burdening participants in an unjustifiable way. Furthermore, children and youth that participate in research has special requirements for protection, and their needs and interests must be taken care of in other ways than what is done for adults.[162] The methods, content and information about the project must be adapted to the age and developmental stage of the child. To address these concerns in the T2 data collection were the youths were invited, we made different age-adapted versions of the information letters. Also, the length and content of the survey was adjusted to the youths age, where the younger youths were given shorter questionnaires.

When studying a distinct and vulnerable group such as youth in foster care, it is also important to be aware of possible stigmatization, especially when reporting problem areas of the group. Some youth in foster care have reported dual stigma for being both a mental health recipient and for living in foster care.[163] We received feedback from a youth participating at T2, that it was uncomfortable to be pointed out as "foster youth" in the invitation letter, and that for them their foster parents were just their family, not their "foster parents". However, other youths expressed that they were happy to get the chance to share their experiences. In addition, is it important for policy makers and services to have knowledge about the needs of youth in foster care and their foster parents, and how this is currently met by services. This is important for service development to enable better help for them in the future. Hence, it is a balancing act of doing research to provide adequate care for this group without contributing to stigmatization.

Another ethical consideration when conducting survey research is that being asked questions about mental health problems might be distressing for some participants. We had this in mind when constructing the survey and tried to place questions about problem areas among more strength-based or neutral questions. Furthermore, contact information to the principal investigator and research coordinator, both clinical psychologists, were provided with the invitation letters so that families could establish contact if they had questions or distressing experiences.

The research in this thesis was conducted in collaboration with the Norwegian foster care association (Norsk Fosterhjemsforening, NF) and the Norwegian organization for children in care (Landsforeningen for barnevernsbarn, LFB). The aim of this user participation was to secure data and results that are relevant for the users, surveys that were acceptable to answer for both youth and foster parents, and a dissemination of results that is not stigmatizing for the foster families. In April 2016, the PIs of the three work-packages in the CARE models project held one introductory meeting with the project's reference group, comprising the user organizations, to discuss alternative instruments and data collection procedures, ideas on how to inform foster children and their family about the project, and important considerations in disseminating results from the project. During spring 2016, NF and LFB participated in the planning of the study (T2 data collection) and in the drafting of the application for funding of this thesis. Throughout the project period we have had contact with the user organizations and collaborated on recruitment of participants and dissemination of results. For example, I wrote a popular scientific article for the NF journal (Fosterhjemskontakt) disseminating results from papers I and II.

4.5 Implications

4.5.1 For research

Little previous research exists on characteristics related to service use, service experiences and QoL among youth in foster care and their carers. The studies on characteristics related to service use is mainly from the US, and we identified no studies investigating characteristics related to service experiences for foster families. Moreover, while some studies have investigated characteristics related to QoL among youth in out-of-home care, there is a lack of studies following youth over time to find predictors of QoL. Hence, our results provide new knowledge of characteristics that seem to be related to service use, service experiences and QoL among foster families, which can contribute to generating ideas for what to investigate further in future studies. For example, future longitudinal research is needed to evaluate the causal direction of the relationships between service use and service experiences and different independent variables. Furthermore, we found that kinship foster care was the only demographic or placement variable related to service use, which is in contrast to other studies' findings that factors such as age, gender, ethnic minority background and placement stability were related to service use.[31,36,39,44,164] Such discrepancies between studies indicate that more research is needed to untangle which factors that are important for foster families' service use in different contexts.

This thesis has provided information about how services are experienced by foster parents and whether foster families have a service use that is suited to their needs. However, we need more specific knowledge about what measures the families receive from the services and how they evaluate the quality of those specific measures.

While there is a clear need for longitudinal research on youth in foster care, the data collection in our study exemplifies the challenges with research following this group over time. Foster care is arranged as a temporary placement form, where the CWS shall facilitate that the biological parents can get the care back if considerations for the child do not speak against it.[15] Furthermore, the placement is based on a written agreement between foster carers and the CWS, and this contract can be ended by the carers or CWS.[165] Hence, longitudinal research on the foster care population is naturally challenging due to the instability in the living arrangements. Moreover, we had challenges attaining the correct contact information for the families, and it was time consuming to recruit youth and foster parents to participate. Consequently, future longitudinal studies on this group should ensure that enough funding is set aside for personnel in the data collection. Moreover, due to the attrition over time, researchers should invite large groups of foster families and have a plan for how to handle missing data in the statistical analyses.

4.5.2 For practice

This study has demonstrated a high service use among foster families and that service contact is related to needs. However, less than 50% of the youths with indications of mental health problems had contact with CAMHS during the last two years, which highlights the need for systematic health assessments of youth in foster care to ensure that youths with a need for specialized help are identified. This recommendation is supported by studies showing that statutory health assessment identified a multitude of health care needs that may otherwise go unrecognized [166] and that far more children in foster care are identified with indications of mental health problems that require treatment when standardized instruments are used.[167] Different providers are responsible for the assessment of youth in foster care, depending on the severity of the problem. The CWS should identify possible mental health problems and contact the municipal health and welfare services.[146] The municipal health and welfare services should then assess the youth, consider potential measures, and refer youth with indications of severe mental disorders to CAMHS.[146] Thus, both the CWS and municipal health and welfare services could benefit from implementing screening procedures using standardized measures when assessing the needs of children and youth in foster care.

One structural measure in place to ensure that children in foster care receive the service support they need is the arrangement of regular meetings between the foster families and the CWS, four times a year or two at a minimum.[16] However, some of the foster families in our sample did not report contact with the CWS twice a year or more. If the CWS does not have contact with the families, they cannot identify whether the youth have a need for other follow up. Consequently, this responsibility is laid on the foster parents. Thus, providing meeting points at the needed frequency is one area that the CWS could focus on to improve and better enable service support for these families.

Patient experiences are one important pillar of quality of health care,[45] and according to Norwegian legislation, service users have a right to influence health and welfare services.[49] Foster parents had overall positive service experiences, especially concerning the clinician’s communications and professional skills, and they experienced a short waiting time. These findings highlight areas where the service provision is functioning well, according to the users. Hence, it is important that the services continue delivering on these areas, with the practical implication that services need enough resources and personnel to keep the waiting time low and maintain systems that ensure that clinicians are professionals trained in communication skills. This corresponds to a hearing note published from the Norwegian ministry for children and families this year, suggesting to increase the competency in the CWS through efforts such as demanding a master's degree for employees in the municipal CWS, giving more weight to clinical competencies in the master's education, and providing more supervision for CWS workers.[168]

Fewer foster parents were satisfied with the information provided about the youth in their care, especially among foster parents who evaluated their contact with the CWS. Youth in foster care should have opportunities to make sense of their identity, and having accurate and up-to-date personal health information is an important part of this.[169] For this to be possible, carers need to be informed about the personal history of the child and receive support from the CWS in answering questions. If a thorough assessment of youth in foster care is done, this can enable CWS workers to better convey the child's needs to foster parents and base their counselling of the foster parents on individual needs. This is in line with findings in a recent Norwegian report that a thorough assessment of children and youth placed in foster care contributed with new knowledge about the child's needs and history, which the carers experienced as important for their own and the CWS's further follow up of the child.[170]

The collaboration and coordination of services were two of the dimensions of service experiences that the foster parents were least satisfied with, so even though our T2 data collection was conducted after the new official guidelines for cooperation between CWS and CAMHS was released in 2015,[8] there still seem to be issues with the collaboration between services. There are other measures in progress to improve the collaboration between services. Firstly, a clearer divide in responsibilities and more committed collaboration between the services are suggested to be described as a part of the new child welfare law.[29] Moreover, a hearing note from several Norwegian departments this year suggests that services' duty to collaborate should be changed for all services regarding children, so that it is the child's need that decides whether the service has a duty to collaborate.[171] This would mean a change for the CWS, who today has a duty to collaborate with other services only if this contributes in solving the CWS tasks. As children and youth in foster care often have complex problems,[2] and our findings show that they often receive help from several providers, it is especially important for this group that new structures and frameworks are implemented to improve the collaboration between services.

The fact that around 40% of the foster parents reported no change in the youth's condition or functioning following the service contact highlights the need for regular evaluations of measures provided. If the services have assessed the youth's needs and functioning, this can inform the decision of which measures that should be provided and can serve as a baseline for evaluating the outcomes of the service. In addition, the foster families own experiences of outcomes of the services received should be included in evaluations of the services to ensure that the help is experienced as beneficial by the families. We found that youth who had lived longer in the same placement and had more mental health problems, experienced less improvement of the measures received. For these youths it might be especially important that the services evaluate the assistance provided.

The youths in our sample had lower QoL compared to Swedish youth in the general population, but they reported quite good relations to their foster parents. This indicates that the youths have received good care from their foster parents and that they have been able to connect to new carers despite their experiences in their past. This finding highlights the importance of stable placements so that youths have the time to form bonds to their new carers and to benefit from this relation. To enable stable placements, available supervision and service support for foster parents is important, as a lack of service support is one important reason for placement breakdowns.[57-59]

Our findings also provide information about which youths in foster care may need extra help. As girls and older youth had poorer QoL across all dimensions, this indicates that services need to be extra aware of providing enough support for these groups. On the other hand, while boys and girls had similar service contact, we found that girls primarily had contact with the services that youth can access themselves (e.g. the school health service). It is important that we have relevant and available services for boys as well, so that they are not dependent on their foster parents enabling the service contact.

We found that foster parents of older youth were less satisfied with services received. Hence services should have an extra focus on services provided for older youth to assess if they receive the help they need and whether foster parents are sufficiently involved in the services provided.

Youth in kinship care had better relations with their carers and better physical health, which supports the CWS regulations to always consider whether persons in the youth's extended family or close network can serve as foster carers.[13] In the new Norwegian regulations for foster homes, it is suggested that the CWS should also document their considerations around whether a child could be placed within the extended family or network.[11] However, as our and other studies have indicated that kinship families have a underuse of services,[35,92] it is possible that kinship placement could be more effective if these families received more service support.[91] Moreover, the available evidence on kinship care lacks studies that have controlled for baseline differences in the youths before placement, hence possible differences between children who enter kinship care and those who enter non-kinship care leaves it unclear whether the groups are comparable or not.[91] This means that the differences between youth in kinship care and youth in non-kinship care could be due to characteristics with the youth and their families before placement, rather than a consequence of the placement form itself.

Prosocial behavior in childhood predicted QoL, which indicates that social skills and functioning may contribute to a good life in foster care. As prosocial skills predicted QoL while mental health did not, this could be an indication that supporting or improving social skills among youth in foster care could be a beneficial focus in treatment. This is supported by findings that mentoring and social skills training seem to reduce negative outcomes for youth in foster care.[149]

4.6 Conclusion

In this thesis, survey data from youth, carers and child welfare workers were used to expand the knowledge on service use, user reported experiences of services and QoL for youth in foster care. The foster families had a high service use, and the service contact seemed to be dependent on service needs rather than other characteristics. While youths with indications of mental health problems had a doubled chance of having contact with services, less than half of these youths had contact with CAMHS during the last two years. This finding highlights the need for standardized assessments of youth in foster care to identify youth with a need for specialized mental health services.

Most foster parents had positive experiences of their main service provider, but they were less satisfied with information received about the youth in their care and the collaboration between services. Moreover, almost half of the group reported no positive changes in the youth's condition or functioning following the service contact. These findings indicate areas for the services to improve on, such as clarifying routines for sharing information, improving systems for collaboration between services, and evaluating the measures provided to secure that they are experienced as beneficial for the youth and their families.

Youth in our sample had lower QoL compared to youth in the general Scandinavian population. This indicates that the foster families do not receive enough follow up from service providers to counteract the effect of the youth’s detrimental care-experiences prior to placement. However, the youths had their highest QoL scores on the dimension parent relations and autonomy, indicating that most of these youth have established supportive relationships with their carers. This is an important premise for having a positive development in foster care and highlights the need for stability in placements.

Lastly, our findings indicate that youth, placement and service characteristics are related to service use, foster parents' experiences of services and QoL for youth in foster care. Future longitudinal studies are needed to investigate the predictive impact of these factors, as well the explanatory power of additional characteristics.

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Erratum

Small changes in the gender variable in paper I

At T2 we based the gender variable on the name registry. For youth where we could not identify the gender based on the name, we set the gender to unknown, and treated it as missing in the analyses. In the writing process of paper 2 we did a quality check of the gender variable by cross examining the coding against the foster parents reports on gender in the DAWBA section at T2 and the gender information we had from T1. This procedure led to a change in reported gender for ten youths (4 boys to girls, 5 girls to boys, and one unknown to girl), resulting in the percentage of boys in the sample being 56.0% instead of 56.1%. This corrected gender variable was used in papers II and III, while the old version was used in paper I. However, this is a small change in a large dataset, and it did not to affect the findings in paper I. When replicating the regression analyses in paper I with the updated gender variable, the results were unchanged.

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RESEARCH ARTICLE Open Access

Services according to mental health needs for youth in foster care? – A multi-informant study

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Abstract

Background: Foster children have a high risk of mental disorders. This has contributed to increased international attention to service utilization for youth in foster care. The aim of this study is to examine whether youth in foster care receive services according to need, by using a multi-informant design.

Method: Detailed information on the type and frequency of service use during the last 2 years and on youth mental health were collected from foster youths and their carers in Norway ($n = 405$, aged 11–17 years) through online questionnaires. Mental health was assessed with the Strengths and Difficulties Questionnaire. Statistical analyses were conducted using descriptive statistics and log-binominal regressions.

Results: In total, 48.8% of foster youths showed evidence of mental health problems, and 74.5% of foster families had contact with services. Increased mental health problems and living in non-kin foster care were associated with more service use. Youths with mental health problems had twice the probability of receiving services from the child and adolescent mental health service (CAMHS) and primary health care services compared to youths without problems. However, 57.0% of youths with carer-reported mental health problems did not have contact with CAMHS.

Conclusions: Service use among foster youths was associated with service need rather than demographic and placement characteristics. The majority of youths with mental health problems did not receive services from CAMHS. However, many of them were in contact with primary health care services.

Keywords: Foster youth, Service utilization, Mental health, Predictors, Multi-informant design

Background

Youths in foster care are a highly vulnerable group. One in two foster children suffers from mental disorders [1], and comorbidity is high [1, 2]. These findings have contributed to increased attention to service utilization for youth in foster care [3, 4]. Knowledge about service utilization in this group relative to their need for services is essential to better understand the mechanisms of service access and ensure availability and the correct dimensioning of services. By using a multi-informant design, the present study examines mental health problems as an indicator of service need, and service utilization among foster youths in Norway. Further, we investigate whether contact with services is associated with youth mental health problems or demographic and placement characteristics.

Generally, children and youths in foster care have a high use of mental health services [5–9], also compared to the general youth-population [6, 7]. However, relative to their high rate of mental disorders, the service utilization by foster youth seems low, and findings indicate that a considerable part of this population does not receive services according to need [2, 10–12]. Much of the research on service utilization in foster care has used broad definitions of mental health services, in which different service providers are grouped together under this definition [5, 6, 13, 14]. Therefore, little knowledge exists about which specific services youths in foster care use. An exception is a Scottish study in which 60% of the foster youths ($N = 192$, aged 5–

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16 years) had mental health problems as measured by the Strengths and Difficulties Questionnaire (SDQ) [15]. These youths received a high level of service support from a wide range of agencies within the previous 6 months, with the exception of the child and adolescent mental health service (CAMHS). Social workers (93%) and general practitioners (55%) were the providers most often used. The study showed limited access to CAMHS, which has high competence in diagnostics and treatment. Two studies from the US have investigated special educational services [2, 11] and have yielded different rates of use of this service among foster children of 14.6% [11] and 52% [2].

There is a strong policy in Norway that individuals should receive services according to their need. According to an official Norwegian report, "*The health sector shall secure equal treatment based on health need, independent of personal economics, gender, ethnicity, residency, and the individuals living situation*" ([16], p. 29, our translation). Although demographic and placement characteristics are not representative of service need, such factors are related to service use among foster children. For example, having an ethnic minority background is related to lower service use in the US [2, 5, 9, 11], but not in Germany [12]. There are mixed findings regarding the relationship between gender and service utilization for foster children, with some studies finding that males use more services [7, 13], whereas others have found no relation between service use and gender [5, 6, 12]. Further, older age seems related to higher service utilization among foster children [5, 6, 13].

Regarding placement characteristics, living in kinship foster care is related to lower service utilization compared to living in non-kin foster care when controlling for mental health [9, 17]. Findings regarding placement stability and service use are inconclusive. A higher number of placement changes has been associated with higher service use [14], although another study found that a longer duration in foster care and more placement changes were related to a reduced likelihood of help seeking among foster children with ADHD [2].

Health needs should be related to service use, and in this article we use mental health problems as a proxy for service needs. The presence of more mental health problems has been found to be related to higher service use among foster children [2, 5, 12, 13, 15, 18]. In this group, higher service utilization has also been found to be especially related to externalizing problems [2, 6, 12] and to more complex symptom patterns and more severe mental health problems [13].

The prevalence and characteristics of mental health problems among children and youth vary depending on the type of informant [19]. In the general population, parents report more externalizing disorders, whereas adolescents themselves report more internalizing disorders [20]. Similarly, including youth self-reported SDQ scores to carer or teacher reports increased the identification of emotional disorders in foster youths, whereas relying only on youth reports increased the risk of overlooking conduct and hyperactivity problems [21]. This finding highlights the importance of using both carer- and youth reports when measuring youth mental health. However, most studies have used carer reports only when investigating the association between service use and youth's mental health [12, 13].

Empirical studies of predictors of service use are ambiguous and scarce outside of the American context. There are substantial differences in the way Child Protective Services (CPS) are organized in different countries [22, 23]. In Norway, children are generally older when they are placed in foster care compared to the US, and adoption is rare [23]. Systematic knowledge of the type and frequency of service use among Norwegian foster youth and their families is lacking [24].

In this study, we first investigate youth mental health reported by carers and youths. Further, self- and carer reported frequency of contact with the following services is examined: CAMHS, primary health care (school health service, educational psychology service, general practitioner, and adolescent health clinic), CPS, special education, and "other services". Second, we investigate whether the utilization of services from CAMHS and primary health care are associated with demographic characteristics (gender, age, and ethnicity), and placement characteristics (kinship foster care, and time in current foster home). Third, we investigate whether the utilization of services from CAMHS and primary health care are associated with self and carer-reported youth mental health (measured both dimensionally and dichotomous) and functional impairment.

Methods

Measures

Youth gender, age, and years living in the current foster home were derived from regional records in CPS and checked with the municipal CPS. Ethnicity of the child and kin/non-kin foster care were assessed through a purpose-made questionnaire to the carers. Youths were categorized as an ethnic minority if one or both biological parents were born in a non-western country. The foster home was defined as kinship care if the carer answered yes to the question "are you in biological family with the foster youth?"

In this study, mental health was measured with the Strengths and Difficulties Questionnaire (SDQ) [25]. This is a 25-item questionnaire for 4- to 17-year-olds measuring symptoms and impairments in the youth's daily life. It may be completed by parents, teachers and as a self-report from the age of 11 years [21]. The SDQ has five subscales: Emotional Symptoms, Conduct Problems, Hyperactivity-Inattention, Peer Relationship Problems and Prosocial Behaviour. Each subscale consists of five items that are rated on a three-point scale (0–1-2), providing a total score range from 0 to 10. A Total difficulties score with a range from 0 to 40 is calculated by summing all four symptom subscales. The SDQ also contains an Impact scale comprising five items measuring distress and the interference of symptoms in the youth's daily life [25]. This scale is referred to as a measure of functional impairment. The Impact score ranges from 0 to 10 for parent- and self-report. In this study, the SDQ was completed by youths and carers. The SDQ has been found to have satisfactory reliability and validity in general child populations [25, 26]. Structural validity for the five-factor model for the parent version of the SDQ was demonstrated when it was completed by Norwegian foster parents [27], and the predictive value of the carer-completed SDQ is supported for foster children [28]. The Emotional and Peer problems subscales were collapsed into an Internalizing subscale, and the Conduct and Hyperactivity-Inattention subscales were collapsed into an Externalization subscale, each with a score range of 0–20. These scales have been shown to have good convergent and discriminative validity [29] and have been used in previous studies of mental health in Norwegian general samples [30].

As recommended by Lehmann et al. [28], foster youths were considered to be in the clinical range for mental health problems with a score of 13 or higher on the foster parent-completed Total difficulties scale. Therefore, the Total difficulties scale was dichotomized as scores below the cut off = 0 and scores above/equal to the cut off =1.

Service use was measured through a custom made questionnaire asking how frequent the contact was with different services during the last 2 years. It was completed by all participating foster parents and by youth aged 13- to 17 years old. The youths were asked how often they had contact with different services, and carers were asked how often the youth (or themselves, for the youth) had contact with the services. The following seven services were included in the questionnaire: CAMHS, school health service, educational psychology service, general practitioner, adolescent health clinic, municipal CPS, and special education. The adolescent health clinic is a free service for youth aged 13 to 20. It provides counselling on sexual, mental and physical health questions. In addition, respondents were asked if they had contact with any other services, and were asked to name the service, if any, in an open textbox. For each type of service, the following categories of frequencies were listed: every week (= 4); every month (= 3); every 3 months (= 2); every 6 months (= 1); or more seldom/none at all (= 0). For each service, a Service Contact variable was made and coded yes (1) if the frequency category was 1 to 4 and no otherwise (0). It was coded separately for carers and youths. The variable Number of Services Used was calculated by summing Service Contact (0/1) for all services except CPS, yielding a score range from 0 to 7. Further, the variable Contact with Primary Health Care Services was defined as yes (= 1) if the respondent was coded yes on Service Contact on one or more of the four services: school health service, educational psychology service, general practitioner and adolescent health clinic.

Procedure and study sample

The study was a part of the larger study, "Young in Foster Care", within the research project "Children At Risk Evaluation (CARE) models".

Data were collected between 1 October 2016 and 31 March 2017. Eligible foster youth were born between 1999 and 2005, had lived in their current foster home for at least 6 months following legally mandated placement and were placed by municipalities in the five counties encompassed by The Office for Children, Youth and family Affairs (Bufetat) – South (43 municipal CPS offices). Participants were assessed for eligibility from regional records from Bufetat South ($n = 573$) and from the municipal CPS ($n = 279$) in the same region. Heads of municipal CPS were asked to provide background information for all eligible youths. In total, 740 foster youth were identified as eligible.

Carers and youths were invited per postal mail with an information letter describing the study and how to complete the questionnaires, either through online completion on a secure webpage or by telephone interview. Foster mothers, foster fathers and youths were asked to complete the questionnaires separately. In accordance with Norwegian legislation, invitations to youths aged 11–15 years were placed in the letter addressed to the carers, whereas youths aged 16 and older received their information letter directly. Reminders were given by post and subsequent telephone contact. Through this telephone contact, additional 16 youths and four carers were identified as ineligible to participate. The youths were compensated with a gift card of 300 NOK (approximately 38 USD) for their participation. Carers were not compensated.

The final sample consisted of 405 foster youths (54.7% response rate) with a response from a carer (330), youth (303), or both. Figure 1 provides a flowchart of the data collection and sample size for the different questionnaires. We combined foster fathers ($n = 120$) and foster mothers ($n = 285$) into one group of informants as there were no significant differences between foster mothers and foster fathers on reported service utilization and the SDQ Total difficulties scores. We prioritized information from the foster mother when available as most carer responders were foster mothers. This group is hereafter referred to as the "carers". As only youths aged 13–17 were asked to answer the service use questionnaire 224 youths completed this.

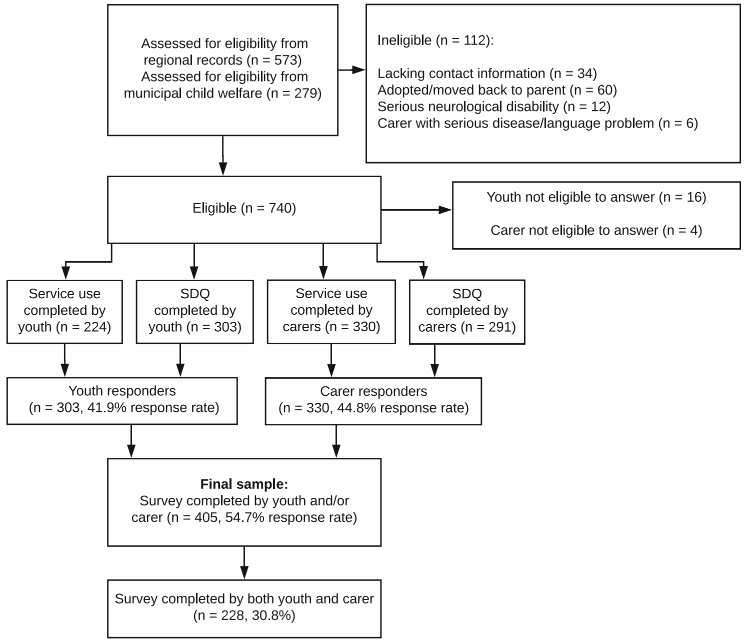

Fig. 1 Flow-chart of data collection

Ethics

The Regional Committee for Medical and Health Research Ethics, Western Norway approved the study. The Norwegian Directorate for Children, Youth and Family Affairs provided exemptions from confidentiality for caseworkers and carers. In accordance with the Norwegian ethics requirement, oral assent is required from children aged 12 years or older. The youths were instructed in their invitation letters that they could inform their carers if they did not want them to participate in the study.

Data analysis

All descriptive analyses were conducted using IBM SPSS 24, while all log binominal regressions were conducted using STATA 15. The significance level was set to 0.05. Demographic and placement variables and Service Contact were presented as percentages, means, standard deviations (SD), and minimum and maximum values. Chi-square and t-tests were conducted to compare responders with non-responders on gender, age, and years in current foster home. For the SDQ scales, the means, SD, minimum and maximum scores, and Cronbach's alpha were calculated for carers and youths. The percentage above the cut off (> = 13) on SDQ Total difficulties was calculated for carers. For cases where both carers and youths had completed the SDQ, paired t-tests were used to compare carer and youth reports on all four SDQ scales. Similarly, McNemar tests were conducted to compare the Service Contact variables for youth and carer pairs for each service. As there were no differences between carers and youth Service Contact for CAMHS or any of the primary health care services, we used carer responses as indicators of service use in the further analyses.

Possible associations between demographic and placement variables and service use, were examined by log-binomial regressions with carer-reported CAMHS Contact and Contact with Primary Health Care Services (no =0, yes =1) as dependent variables. The independent variables were tested separately and included gender, age, ethnicity, kinship foster care, and years in current foster home. The results are presented with relative risk (RR) and a 95% confidence interval (CI). Any variable significantly associated with a service provider was also analysed with adjustments for dichotomized Total difficulties scores. To check for possible different predictive values between specific primary health care services and thereby to evaluate the validity of grouping them together, we conducted post hoc log-binominal regressions for each of the primary health care services (yes/no).

Possible associations between youth mental health and service use were examined by conducting log-binomial regressions with CAMHS Contact and Contact with

Primary Health Care Services as dependent variables. The independent variables were tested separately and included both carer- and youth-completed SDQ Internalization and Externalization subscales, Impact scale, and dichotomized Total difficulties scores. To prevent unstable estimates due to a small number of youths for some scale scores, Internalization and Externalization subscale scores and the Impact scale score were recoded into broader score categories. All three scales started with zero, and then two and two scores were combined (e.g., scores 1 and 2 were collapsed into one category "1–2", 3 and 4 into "3–4" and so on). Due to empty cells in the highest categories in the Internalization and Externalization subscales, scores from 15 and up were collapsed into one single category. Thus, the original 20 steps in the Internalization and Externalization subscales were reduced to 9 categories, and the original 10 steps in the impact scale were reduced to 6 categories. The scales were treated as continuous variables, and the results are presented with RR and 95% CI. Post hoc analyses of the association between the use of each of the primary health care services (yes/no) and mental health were conducted using log-binominal regressions. Further, post hoc log-binominal regressions were conducted to investigate possible associations between youth-completed SDQ scales and youth-reported CAMHS use.

Results

Of the total study sample ($n = 405$), 56.1% were boys ($n = 226$). The mean age was 14.7 (SD = 2.02, range 11–17) and mean years in the current foster home was 6.7 (SD = 4.34, range 0.7–17.6). Of the 330 youths were carers have provided information about ethnicity and type of foster care, 23.9% ($n = 79$) were classified as an ethnic minority and 15.2% ($n = 50$) lived in kinship foster care. Drop-out analyses showed no differences between carer responders ($n = 330$) and non-responders ($n = 410$) on youth gender, age, and years in current foster home. Further, no differences were found between youth responders ($n = 303$) and non-responders ($n = 437$), with the exception of a higher mean age for responders compared to non-responders (14.8 years vs 14.3 years, $p \leq .001$).

Youth mental health

Table 1 shows the mean sum scores on the carer- and youth-completed SDQ Internalizing, Externalizing, Total and Impact scales with the maximum scale scores and Cronbach's alpha for each scale. The internal consistency of the SDQ scales was acceptable to good. Carer-reported impact scores were higher compared to the youths' score ($n = 209$, $p < .001$), in the paired analyses. No differences were found between carer- and youth-reported internalization or externalization problems or total difficulties ($p = .188$; $p = .250$; $p = .157$). A Total difficulties score above the cut off was reported by 48.8% of the carers.

Service utilization

Table 2 presents the frequency of service utilization. Table 3 shows service contact and frequency of use for each service, reported by carers and youth separately. Overall, 74.5% of carers and 68.7% of youths reported contact with any service. Contact with CAMHS was reported by 31.2% of carers and 27.2% of youth. Further, 61.2% of carers and 58.5% of youth reported Contact with Primary Health Care Services. CPS stands out as the single service most used by carers and youths; 92.1 and 85.3%, respectively, reported having any contact. The second most used service was special education (41.7%), reported by carers, and the school health service (30.8%), reported by youth. The only differences in reported Service Contact (yes/no) when comparing youth and carer responders on the same case, were in special education ($p = .008$) and other services ($p = .016$), with carers reporting more service use.

Associations between demographic and placement characteristics and service use

No demographic or placement variables were associated with having contact with CAMHS. Kinship foster care was associated with decreased use of the primary health care services (RR = 0.68, 95% CI [0.50, 0.95]) (Table 4). When controlling for dichotomized Total difficulties score, this association was still significant (RR = 0.65, 95% CI [0.45, 0.95]). Post hoc analyses of each primary health care service revealed that girls used the school health service (RR = 2.03, 95% CI [1.41, 2.92]) and the adolescent health clinic (RR = 3.14, 95% CI [1.34, 7.37]) more than boys did. In contrast, boys used the educational psychology service (RR = 1.40, 95% Cl [1.02, 1.91]) more than girls did. For this service, more time in the current foster home was also associated with more use (RR = 1.04, 95% Cl [1.01, 1.07]).

Associations between youth mental health and service use

Increased carer-reported internalizing and externalizing problems and functional impairment were associated with increased use of CAMHS and primary health care (Table 5). Further, Total difficulties scores above the cut off doubled the probability of being in contact with CAMHS (RR = 2.00, 95% CI [1.39, 2.87]) and primary health care (RR = 1.82, 95% CI [1.48, 2.23]) compared to scores below the cut off. Among youths who had scores above the cut off, 43.0% of the carers reported contact with CAMHS, and 78.2% with primary health care, during the last 2 years.

Table 1 Scores on carer- and youth completed Strengths and Difficulties Questionnaire (SDQ)

	N	Sum score				Cronbach's alpha
		Mean	SD	Min	Max	
Carer reported SDQ						
Internalizing problems	291	5.7	4.1	0	18	.78
Externalizing problems	291	7.0	4.2	0	18	.82
Total difficulties	291	12.7	7.2	0	33	.86
Impact score	291	2.7	2.9	0	10	.78
Youth reported SDQ						
Internalizing problems	303	5.4	4.0	0	16	.81
Externalizing problems	303	6.6	3.6	0	16	.78
Total difficulties	303	12.0	6.6	0	32	.85
Impact score	303	1.3	1.9	0	8	.87

Note: Subscales mean, and minimum and maximum of sum scores

Increased youth-reported internalizing and externalizing problems and functional impairment were associated with increased use of primary health care services. There were no relations between youth-reported mental health or functional impairment and carer-reported CAMHS use. However, post hoc analyses of youth-reported contact with CAMHS showed that there were positive associations between youth reported CAMHS utilization and youth-reported internalizing problems (RR = 1.20, 95% CI [1.10, 1.31]), externalizing problems (RR = 1.12, 95% CI [1.01, 1.24]), and functional impairment (RR = 1.38, 95% CI [1.21, 1.58]).

The post hoc analyses of each primary health care service separately showed that youth-reported internalizing and externalizing problems, and functional impairment were not associated with general practitioner contact, and youth-reported functional impairment was not associated with the use of the adolescent health clinic. Carer-reported youth internalizing and externalizing problems, functional impairment and dichotomized total difficulties were associated with increased use of all primary care services except for the adolescent health clinic.

Table 2 Carer and youth reported number of different services used

Number of Services Used[a]	N	n	Percent	Mean	SD	Min	Max
Carer reported	330			1.90	1.61	0	7
0 services		84	25.5				
1–2 services		138	41.8				
3–4 services		86	26.1				
5–7 services		22	6.7				
Youth reported	224			1.54	1.53	0	7
0 services		70	31.3				
1–2 services		98	43.8				
3–4 services		45	20.1				
5–7 services		11	4.9				

Note: [a]Summed Service Contact scores for all services, except CPS

Discussion

Of the foster youths in our sample, 48.8% had a total difficulties score indicative of mental health problems. There was a high prevalence of service use, with 31.2% reporting contact with CAMHS and 61.2% with primary health care services during the last 2 years. Living in kinship foster care was associated with lower use of primary health care services. No other demographic or placement characteristics were related to contact with CAMHS or primary health care services. Youth mental health problems were related to more contact with both service providers. Youths with Total difficulties scores above cut off had a doubled probability of contact with both CAMHS and primary health care services compared to those scoring below the cut off. However, more than half of the youths with indications of mental health problems had not received services from CAMHS during the last 2 years.

The finding that 48.8% of youths showed indications of mental health problems is in accordance with results from a recent meta-analysis including studies from 5 different Western countries, which found that 49% of children in the child welfare system qualify for a mental disorder [31]. The only difference when comparing carer and youth scores on the SDQ scales was on reported functional impairment, with carers reporting that youths' mental health problems had a larger impact on the youths' daily lives. This finding contrasts with earlier studies that have found that youths report more internalizing problems, whereas carers and parents report more externalizing problems [20, 21].

Our finding that 68.7% of youths reported contact with any help services, excluding CPS, is in line with

Table 3 Service contact reported by carers ($n = 330$) and youths ($n = 224$)

	Service contact	Distribution of use for the ones that have had contact.			
		Every week (4)	Every month (3)	Every 3. month (2)	Every 6. month (1)
	% (n)	% (n)	% (n)	% (n)	% (n)
CAMHS					
Carers	31.2 (103)	23.3 (24)	43.7 (45)	13.6 (14)	19.4 (20)
Youth	27.2 (61)	18.0 (11)	44.3 (27)	16.4 (10)	21.3 (13)
Contact with primary health care services:					
Carers	61.2 (202)				
Youth	58.5 (131)				
School health service					
Carers	27.6 (91)	5.5 (5)	20.9 (19)	28.6 (26)	45.1 (41)
Youth	30.8 (69)	14.5 (10)	15.9 (11)	33.3 (23)	36.2 (25)
Educational psychology service					
Carers	34.8 (115)	5.2 (6)	10.4 (12)	34.8 (40)	49.6 (57)
Youth	19.6 (44)	11.4 (5)	27.3 (12)	15.9 (7)	45.5 (20)
General Practitioner					
Carers	29.7 (98)	1.0 (1)	6.1 (6)	27.6 (27)	65.3 (64)
Youth	35.7 (80)	2.5 (2)	10.0 (8)	30.0 (24)	57.5 (46)
Adolescent health clinic					
Carers	7.3 (24)	0 (0)	20.8 (5)	8.3 (2)	70.8 (17)
Youth	11.6 (26)	3.9 (1)	11.5 (3)	19.2 (5)	65.4 (17)
Other service providers:					
Municipal CPS					
Carers	92.1 (304)	2.3 (7)	20.4 (62)	54.9 (167)	22.4 (68)
Youth	85.3 (191)	1.0 (2)	7.9 (15)	52.4 (100)	38.7 (74)
Special Education					
Carers	42.7 (141)	77.3 (109)	9.2 (13)	3.6 (5)	9.9 (14)
Youth	21.9 (49)	65.3 (32)	12.2 (6)	12.2 (6)	10.2 (5)
Other services					
Carers	16.4 (54)	22.2 (12)	38.9 (21)	22.2 (12)	16.7 (9)
Youth	7.1 (16)	18.8 (3)	31.3 (5)	25.0 (4)	25.0 (4)

Note: *CAMHS* child and adolescent mental health service. Primary health care services include: the school health service, educational psychology service, general practitioner, and the adolescent health clinic, *Municipal CPS* Municipal Child Protective Service

results from a Norwegian study on youth in residential care ($n = 400$, aged 12–20) [32] in which 60.6% of youths reported contact with any services for mental health problems during the last 3 months. In the general youth population, 6.9% have sought help from different services for mental health problems during the last year [33], which is substantially lower than our findings. These results show that foster youth have a higher incidence of overall service use compared to the general Norwegian population, which are in line with higher estimates of mental disorders in foster youths compared to the general population [1].

Between 27.2 and 31.2% of the foster youth had contact with CAMHS during the last 2 years. This percentage is high compared to findings from other studies on this group [10, 15]. In the study by Minnis et al. [15], 18% of the foster children had contact with CAMHS. One possible explanation may be that Norway has an extensive welfare system, and therefore CAMHS might be more readily available. As higher age is related to more service use [5, 6, 13], it is also possible that our higher rate of CAMHS contact is due to a higher age range in our sample. However, our results for CAMHS use were low compared to other studies [11, 13], which may be a consequence of our narrower definition of CAMHS, whereas other studies have placed several different service providers under this definition.

Table 4 Associations between CAMHS and Primary Health Care Service Contact, and demographic- and placement characteristics

			CAMHS utilization			Primary Health Care Service utilization		
		n	%	RR	95% CI	%	RR	95% CI
Gender	Female	143	35.0	1.00		62.9	1.00	
	Male	185	28.1	0.80	[0.58, 1.11]	60.0	0.95	[0.80, 1.13]
Age (years)		330		0.98	[0.91, 1.07]		1.01	[0.96, 1.05]
Ethnicity	Majority	251	28.7	1.00		61.4	1.00	
	Minority	79	39.2	1.37	[0.98, 1.92]	60.8	0.99	[0.81, 1.21]
Type of foster care	Non kin	280	30.0	1.00		64.3	1.00	
	Kin	50	38.0	1.27	[0.85, 1.88]	44.0	**0.68**	**[0.50, 0.95]**
Years in current foster home		330		0.98	[0.95, 1.02]		1.00	[0.98, 1.02]

Note: RR = relative risk; CI = confidence interval. Log-binominal regression with CAMHS and Primary Health Care Service utilization (No =0, Yes =1) as dependent variables, separate models for each independent variable. Primary Health Care include the following services: school health service, educational psychology service, general practitioner, and adolescent health clinic. Significant associations are marked in **boldface**

We found that the largest service provider was CPS, with which 92.1% of carers reported having contact. The most frequent answer regarding the frequency of contact was "every third month" for both carers and youth, which is in line with the Norwegian legislation that municipal CPS is obliged to have contact with the foster family at least four times each year [34]. However, our findings that some families have no contact with CPS, indicates a divergence between legally stated rights and actual follow up for some families. However, a considerable part of the group (22.7%) reported contact with CPS each month or more often. Taken together, our findings indicates substantial variations in follow-up from CPS, with some families receiving extra follow up while others do not receive the contact to which they legally have a right.

Special education was the second most used service reported by carers, with 42.7% of the youth receiving this service. This finding is in accordance with the finding that 52% of foster children in the US use special education [2]. However, only 21.9% of the youths in our sample reported receiving special education. We may only speculate, but this finding could indicate that many of the youths are not aware of the special education they receive in school. This may be problematic as youths should be heard in decisions regarding their own treatment, which is difficult if they are not aware of which services they receive.

Overall, 61.2% of carers and 58.5% of youth reported contact with primary health care services. As the organization of services varies, it is difficult to compare service use from multiple providers between different countries. However, our results are in line with findings that foster youth receive a high level of services from a wide range of agencies [15]. The fact that one third of our sample was in contact with three or more different services highlights the importance of coordination and

Table 5 Associations between CAMHS and Primary Health Care Service Contact and youth mental health

			CAMHS utilization			Primary Health Care Service utilization		
		n	%	RR	95% CI	%	RR	95% CI
Carer reported mental health								
Internalizing problems		291		**1.22**	**[1.15, 1.30]**		**1.11**	**[1.08, 1.13]**
Externalizing problems		291		**1.10**	**[1.02, 1.19]**		**1.11**	**[1.07, 1.15]**
Impact		291		**1.19**	**[1.08, 1.31]**		**1.18**	**[1.13, 1.25]**
Total difficulties[a]	Below	149	21.5	1.00		43.0	1.00	
	Above	142	43.0	**2.00**	**[1.39, 2.87]**	78.2	**1.82**	**[1.48, 2.23]**
Youth reported mental health								
Internalizing problems		228		1.09	[1.00, 1.19]		**1.09**	**[1.05, 1.13]**
Externalizing problems		228		1.02	[0.92, 1.13]		**1.08**	**[1.03, 1.13]**
Impact		228		1.11	[0.94, 1.32]		**1.13**	**[1.05, 1.21]**

Note: *RR* relative risk, *CI* confidence interval. Log-binominal regression with CAMHS and Primary Health Care Service utilization (No =0, Yes =1) as dependent variables, separate models for each independent variable. Primary Health Care includes the following services: school health service, educational psychology service, general practitioner, and adolescent health clinic. Mental health is measured with the Strength and Difficulties Questionnaire

[a] Total difficulties: below and above cut off

Significant associations are marked in **boldface** collaboration between services to provide adequate and coherent services for youth in foster care.

Youths in kinship foster care had less contact with primary health care services compared to youths in non-kin foster care, even when adjusting for mental health. This finding is in line with earlier research [9, 17] and indicates that the association is not explained by youths in kinship foster care having fewer mental health problems. It is surprising that no other demographic or placement characteristics were related to service use as other studies indicate that these factors have an impact (e.g., [2, 5, 12, 13, 35]).However, post hoc analyses of each of the primary care services separately nuanced these results. Girls had more contact with the school health service and the adolescent health clinic, whereas boys had more contact with the educational psychology service. These results corresponds with findings from the general Norwegian population [36]. Our findings suggest that boys and girls in foster care use different services, although at overall similar rates. Differences in the types of service used can stem from boys and girls having different types of problems; thus, different types of services are suited to their needs. However, our findings indicate that mostly girls use the services that are directly available for the youths themselves. This calls into question whether low threshold services are available for boys or designed in a way that they will use them. However, our results from the post hoc analyses must be interpreted with caution given the increased likelihood of type 1 errors with multiple testing.

Carer-reported internalizing and externalizing problems, total difficulties, and functional impairment were all related to CAMHS and primary health care use. Our results do not indicate that externalizing problems have a higher predictive value for receiving services compared to internalizing problems. This contrasts with earlier findings suggesting that externalizing difficulties are more closely related to service use than internalizing problems are among foster youths [2, 6, 12] and in the general population [37]. Our results are more consistent with findings that foster children with more severe difficulties have higher service use, with no differences in service access between types of mental health problems [13].

Even though youths with indications of mental health problems had twice the probability of being in contact with CAMHS and primary health care services, more than half of this group did not have contact with CAMHS. This could indicate an underuse of specialized mental health services among foster youths. However, 78.2% of youths with mental health problems were in contact with different primary health care services. Among institutionalized Norwegian youth, 37.8% had contact with CAMHS during the last 3 months [32]. In this group, less than 50% of those with mental disorders received help from CAMHS, whereas two-thirds received help from primary health care and special education. Combined, these results suggest that primary health care services, rather than CAMHS, is the main service provider for both institutionalized and foster youth with mental health problems.

Further, whereas youth-reported mental health problems were associated with the use of primary health care services, this was only associated with self-reported, not carer-reported, contact with CAMHS. Small differences between youth and carers in reported CAMHS use are expected as carers may receive supervision from CAMHS without the youth having direct contact. From the age of 16, youths may receive services from CAMHS without the carer's assent or knowledge [38]. The finding that the strength of association between mental health and service use depend on informant used, highlight the value of using multiple informants on both variables when investigating the association between measures of mental health and service utilization.

Strengths and limitations

This study has the advantage of using a multi-informant design with information from both carers and youths regarding mental health and service use. Further, we provide detailed information about contact with eight different services and frequency of service contact. Another strength of our study is that our sample seems representative of the general foster care population [39], even though our percentage of responders living in kinship foster care was somewhat low (15.2% versus 25%) [39].

One limitation of this study is that we have a two-year recall period of service use, which can be challenging to remember correctly, especially for younger youths. Further, we ask the participants to differentiate between several service providers, which might be challenging for the respondents. However, as there were few significant differences between youth and carer reported service contact for each service, this can indicate that the youths have a similar understanding to their carers with regards to which services they've had contact with during the last 2 years. Further, we lack information about reasons for contact with the different services. Thus, we do not know how much of the contact targeted mental health problems as opposed to contact for other reasons, such as somatic health problems or learning difficulties. However, findings from the general Norwegian population show that high proportions (76-77%) of youth in contact with the school health service, adolescent health clinic and educational psychology service show evidence of mental health problems [36]. Further, the main reason for contact with the general practitioner is mental health problems for youth aged 15–24 [40]. These findings indicates that mental health problems are a prevalent focus in contact with these services. However, this is less of a limitation when investigating contact with CAMHS as this is a specialized service targeting mental health problems.

Because the cut-off value for SDQ Total difficulties was derived from a study on foster children aged 6–12 years old [28], there is uncertainty about the validity of using this cut off in our group of older foster youth. However, a Swedish study of 13-year-olds in the general population found that norms for being in the 90th percentile on Total difficulties on the parent-completed SDQ were 13.0 for girls and 13.9 for boys [41], which are in line with our cut-off value.

Conclusions

The present paper describes mental health, the type and frequency of service use, and factors associated with service utilization for 11- to 17-year-old foster youth in Norway. In our sample, 48.8% of youths had indications of mental health problems, and they had a high rate of service utilization from a wide range of services. Our findings indicate that service need, measured as mental health problems, rather than demographic and placement characteristics seems to have importance for service use. Even though youths with mental health problems had a doubled probability of receiving services, less than half of them had contact with CAMHS. As 78.2% of youths with mental health problems receive service support from primary health care services, it is possible that many have their service needs met there. To secure stepped care, screening procedures should be used in primary health care services to identify the youths in need for more specialized services. Further, as youths in foster care often are in contact with several service providers it is important to have a good collaboration between services.

We need more knowledge on foster youths' and their carers' experiences with services and whether they consider this contact helpful and suited to their needs. Lastly, as there is a lack of knowledge regarding whether services as presently offered are effective in reducing symptoms and increasing wellbeing in foster youth, future research on the effect of specified treatment approaches for foster youth is needed.

Abbreviations

CAMHS: Child and adolescent mental health service; CI: Confidence interval; CPS: Child protective service; RR: Relative risk; SD: Standard deviations; SDQ: Strength and Difficulties Questionnaire

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Availability of data and materials

Access to data is restriced by Norwegian law on medical and health related research. Information about the data and analysis is available from corresponding author M.L. on request.

Authors' contributions

M.L. was the main contributor in conception of research questions, performing statistical analyses, and writing the manuscript. She also participated in the data collection. V.B. assisted in the choice of analyses and interpretation of results, and contributed in revising and critically commenting on drafts. R.B. and T.M. contributed in conception of the research questions and in revising and critically commenting on drafts. S.L. led the conception and design of the study and the data collection, contributed in conception of the research questions and in drafting and revising the manuscript. All authors read and approved the final manuscript.

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Ethics approval and consent to participate

The Regional Committee for Medical and Health Research Ethics, Western Norway approved the study. The Norwegian Directorate for Children, Youth and Family Affairs provided exemptions from confidentiality for caseworkers and carers. In accordance with Norwegian Ethics requirement, oral assent is required from children aged 12 years or older. The youths were informed in their invitation letters that they could inform their carers if they did not want them to participate in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Publisher's Note

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ORIGINAL ARTICLE

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Foster parents' experiences of using child mental health and welfare services in Norway: Associations with youth, placement, and service characteristics

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Abstract

The measurement of user experience has gained international attention as a tool for improving quality of care. Because foster families have a high need for service support, we examined quality of care from the foster parent's perspective and associated characteristics. We collected information about type and frequency of service use in the last 2 years and standardized measures of user-reported experiences and outcomes from foster parents of youths aged 11–18 years in Norway (N = 290). We analysed the data using descriptive statistics, independent samples t-tests and multiple regressions. Overall, foster parents had positive service experiences, and around half reported improvement in youth condition and function compared with before the service contact. The foster parents gave similar evaluations of child welfare services and specialized mental health services but indicated different strengths and weaknesses of the providers. Younger age, more frequent service contact and less waiting time were associated with positive service experiences, while less mental health problems and fewer years in current foster home were related to positive perceptions of outcomes. Our results indicate focus areas for increasing quality of care from the user perspective, for example, sharing information, cooperation between services, having frequent enough service contact and reducing waiting time.

KEYWORDS

child and adolescent mental health services, child welfare services, foster care, perceived outcomes, quality of care, user experiences

1 | INTRODUCTION

Measures of user experience have increased in public reporting, and there is growing evidence that health officials and clinicians have become more responsive to user reports (Anhang Price et al., 2014). In 2017, health ministers from various Organisation for Economic Co-operation and Development (OECD) countries highlighted the need for measuring patient-reported experiences and outcomes of care (OECD Health Ministers, 2017). Despite this international trend, we know little about how foster families in Norway and other European countries experience care and perceive the outcomes of the services they receive. The present study examines foster parents' service experiences and perceived outcomes following contact with services in Norway and associations with youth, placement, and service characteristics.

Killaspy (2017) described three commonly accepted constructs for measuring the quality of health care: how patients experience treatment, clinical improvement, and patient safety. Patient-reported experience measures evaluate whether the care is patient-centred and thus reveal a dimension of quality of care that would otherwise not be captured (Anhang Price et al., 2014). A systematic review indicated positive associations between patient experiences and other quality measures across disease areas, settings, outcome measures and study designs (Doyle, Lennox, & Bell, 2013), which indicate utilitarian grounds for measuring patient experiences as well. Furthermore, Norwegian legislation states that users have a right to influence health and welfare services (Patient and User Rights Act, 2017) and that user inputs shall influence treatment at the individual, service and system level (The Norwegian Health library, 2009).

Receiving support through services of high quality is important for foster families as many children in foster care have complex needs (Luke, Sinclair, Woolgar, & Sebba, 2014), including a high prevalence of mental disorders (Lehmann, Havik, Havik, & Heiervang, 2013), medical and dental treatment needs (Kling, Vinnerljung, & Hjern, 2016) and school difficulties (Scherr, 2007). Furthermore, foster families often have extensive contact with health and welfare services (Larsen, Baste, Bjørknes, Myrvold, & Lehmann, 2018; Minnis, Everett, Pelosi, Dunn, & Knapp, 2006). Moreover, a recent meta-analysis indicated no overall changes in foster children's adaptive functioning or mental health problems during their time in foster care (Goemans, van Geel, & Vedder, 2015). Given the high prevalence of mental health problems in this group, the lack of overall improvement over time is troublesome and may indicate that many foster families need better service support to enable positive youth development. As foster parents are crucial agents for enabling positive change in foster children (Fernandez, 2007; Minnis & Del Priori, 2001), it is important to gain knowledge about their service experiences. Moreover, their ability to provide supportive care is affected by their interactions with service providers (Benesh & Cui, 2017; Geiger, Piel, & Julien-Chinn, 2017), and a lack of support from child welfare services (CWS) and health services seems to increase the risk of placement breakdowns (Khoo & Skoog, 2014; Rhodes, Orme, & Buehler, 2001; Tonheim & Iversen, 2018).

Studies have found that most foster parents were satisfied with health (Hayes, Geiger, & Lietz, 2015) and welfare services received (Geiger et al., 2017; López López & Del Valle, 2016). However, many foster parents felt insufficiently involved in decisions regarding the child (Geiger et al., 2017; Hayes et al., 2015; López López & Del Valle, 2016) and reported a lack of continuity of care within services (Pasztor, Hollinger, Inkelas, & Halfon, 2006), problems with availability and timeliness of mental health services (Hayes et al., 2015; López López & Del Valle, 2016) and issues with receiving sufficient information about the child from CWS workers (Geiger et al., 2017; López López & Del Valle, 2016; Pasztor et al., 2006). Moreover, foster parents expressed a need for more support and sensitivity from caseworkers (López López & Del Valle, 2016). Nevertheless, only one of the mentioned studies (Spain; López López & Del Valle, 2016) is from outside the United States. Thus, we need more knowledge about foster parents' user experiences across cultural contexts and different service systems. Moreover, none of the studies has used standardized and validated measures of patient-reported experiences.

Currently, there is a lack of research on characteristics related to foster parents' experiences of service quality following contact for the youths in their care. Studies of the general population have indicated that younger age (Bjørngaard, Wessel Andersson, Osborg Ose, & Hanssen-Bauer, 2008; Holmboe, Iversen, & Hanssen-Bauer, 2011; Turchik, Karpenko, Ogles, Demireva, & Probst, 2010), shorter waiting time (Bjørngaard et al., 2008; Holmboe et al., 2011), more treatment sessions and longer treatment episodes (Bjørngaard et al., 2008; Garland, Haine, & Lewczyk Boxmeyer, 2007; Holmboe et al., 2011) were associated with positive parent experiences with child and adolescent mental health services (CAMHS). However, these results were equivocal, and many of the effects identified were weak. Holmboe et al. (2011) found that youth characteristics explained a small part of the variance in service experiences, while service characteristics accounted for more variance.

In Norway, children are generally older when they are placed in foster care than in the United States, and adoption is rare (Pösö, Skivenes, & Hestbæk, 2014). Because of such differences, it is not given that existing knowledge of foster parents' experiences, predominantly from the United States, is applicable in a European and Norwegian context. Furthermore, there is a dearth of studies investigating foster parents' service experiences using standardized and psychometrically sound instruments. Such knowledge can improve quality of care by informing service development at the system level, on how to support foster parents in enabling positive youth development. The aim of this study was to examine quality of care from foster parents' perspective. Quality indicators were foster parent reports of service experiences and perceived outcomes of services received. In addition, we compared CWS and specialized mental health services on foster parent-reported quality of care and examined whether quality of care was associated with youth (gender, age and mental health problems), placement (years in current foster home) and service characteristics (frequency of contact, type of service, number of services and waiting time).

2 | METHODS

2.1 | Procedure and study sample

This study was a part of the larger study, ‘Young in Foster Care’ (Lehmann, 2016). The data collection took place between October 1. 2016 and March 31. 2017. Eligible participants were foster parents of youths born between 1999 and 2005 (youths aged 11–18 years) with whom the youths had lived for at least 6 months following legally mandated placement. We included foster parents with placements from municipalities in five Norwegian counties encompassed by The Office for Children, Youth and Family Affairs (Bufetat)—South (43 municipal CWS offices). Foster parents were assessed for eligibility from regional records from Bufetat South (*n* = 573) and from the municipal CWS offices (*n* = 279) in the region. We identified the foster parents of 736 youths as eligible (see Figure 1 for a detailed flow chart of the data collection).

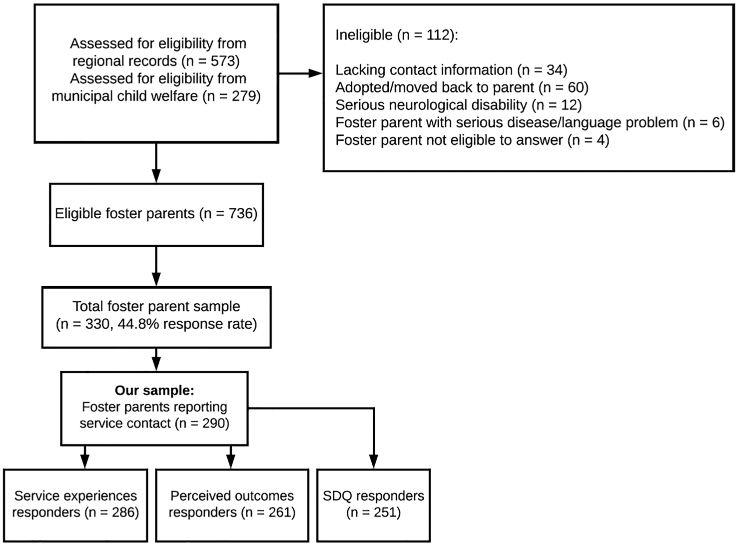

FIGURE 1 Flow chart of data collection

We sent informational letters to foster parents through the mail describing the study and how to participate. Foster parents completed the questionnaires either online on a secure webpage or by telephone interview. We asked foster mothers and foster fathers to respond separately. We provided reminders by mail and subsequent telephone contact.

In total, one or both foster parents of 330 youths completed the survey (a 44.8% response rate). Of these, 290 reported service contact during the last 2 years and were included in this study. We collapsed foster mothers (*n* = 244) and fathers (*n* = 102) into one group of informants. We used responses from foster fathers when the foster mother was a nonresponder, otherwise we used information from foster mothers. There were no statistically significant differences between foster mothers and foster fathers responding for the same youth on any of the quality indicator items, with the exception that foster fathers reported more improvement in the youths' conditions compared with foster mothers (mean difference = 0.26, *p* = 0.031).

2.2 | Measures

2.2.1 | Youth and placement characteristics

Youth gender, age and years lived in the current foster home were derived from CWS regional records and checked with the municipal CWS through telephone interviews.

2.2.2 | Service use

We assessed foster parents' contact with a broad range of services through a custom-made questionnaire asking foster parents how often the youth (or themselves, on behalf of the youth) had had contact with the following services during the last 2 years: CAMHS, school health services, educational psychology services, general practitioners, adolescent health clinic, CWS and special education. We also asked respondents if they had had contact with any other services and, if any, to name the service in an open text field. For each type of service, the following contact frequency alternatives were listed: every week (=4), every month (=3), every 3 months (=2), every 6 months (=1), or less often/none at all (=0). We computed the variable 'number of services' by adding up the services with which foster parents reported contact every 6 months or more often.

2.2.3 | Service experiences

We used a generic short questionnaire about parent experiences with CAMHS, derived from a more comprehensive and validated service questionnaire (Sjetne, Bjertnæs, Iversen, & Olsen, 2009). The generic short questionnaire consisted of 11 items that were rated on a five-point Likert scale, ranging from *not at all* (=1) to *to a very large extent* (=5), in addition to a sixth category of *not applicable*. We made some minor language changes to the questionnaire to make it fit contact with a broader range of service providers, for example, by defining 'clinicians' more widely than in the original description. The questionnaire had the following introduction: 'The following questions refer to your experiences with help services. When you answer, think of the service you've had the most contact with. By the term "clinicians" we mean those who have had the main responsibility for assessments and counseling. This may be doctors, psychologists, social workers, or other health and social personnel'. For this study, we included an item asking if the clinician talked to the youth in a way that she/he could understand (see Table 2 for an overview of

TABLE 1 Sample characteristics, service use, waiting time and quality of care indicators

	Total *N*	*n*	Percentage	Mean	SD	Min	Max
Boys	288	166	57.6				
Ethnic minority	290	72	24.8				
Kinship foster care	290	43	14.8				
Age in years	290			14.5	2.0	11.0	18.0
SDQ[a] total difficulties score	251			13.6	7.1	0	33
Years in current foster home	290			6.4	4.2	0.7	17.0
Type of service provider	237						
Contact CWS[b]		100	42.2				
Contact Specialized mental health services		88	37.1				
Contact Primary health care services		39	16.5				
Contact other service		10	4.2				
Frequency of service contact[c]	226			2.2	1.2	0	4
Number of services used	290			3.0	1.6	0	8
Waiting time (*Did you have to wait to receive the service?*)	266						
No		109	41.0				
Yes, but not long		109	41.0				
Yes, quite long		30	11.2				
Yes, too long		18	6.8				
Service experiences index[d]	238			45.3	8.5	20	60
Perceived outcomes index[e]	259			11.3	2.6	3	15

[a] The Strength and Difficulties Questionnaire.
[b] Child welfare services.
[c] The frequency alternatives were every week (=4), every month (=3), every 3 months (=2), every 6 months (=1) or less often/none at all (=0).
[d] Mean sum score of the 12 service experience items.
[e] Mean sum score of the three perceived outcome items.

the 12 items in the service experiences questionnaire). Principal component analysis was conducted in R (R Core Team, 2019) using the Psych package (Revelle, 2018) and through parallel analysis and investigation of the scree plot showed support for one dominant component accounting for 54% of the variance in overall service experience. We therefore treated these 12 items as indicators of overall service experience. We made a 'service experiences index' by reversing the one negative item and calculating the mean score of responders who had answered nine or more of the items and multiplied this score by 12 (index range 12–60). We treated 'Not applicable' responses as missing. This procedure gave an *n* of 238 on the service experiences index.

The generic short questionnaire also included an item asking if the foster parents had to wait for the service. This item was rated on a four-point scale with the response alternatives: 'no', 'yes, but not long', 'yes, quite long' and 'yes, too long'. We refer to this variable as 'waiting time' and treated it as a categorical variable where 'no' was used as the reference group.

2.2.4 | Perceived outcomes

We assessed foster parents' perceived outcomes of services received with a section from a longer questionnaire regarding parent experiences with CAMHS (Holmboe & Garratt, 2007), which was one of the precursors of the generic short questionnaire on service experiences. The section consisted of three items measuring changes in the youths' condition and functioning compared with before the service contact; for details, see Table 3. The items were rated on a five-point Likert scale, ranging from *much worse* (=1) to *much better* (=5). A principal component analysis conducted in the same way as for service experience supported one dominant component explaining 85% of the variance in perceived outcome. Therefore, we treated these items as indicators for overall perceived outcome. We created a 'perceived outcomes index' variable by calculating the mean score for the three items for responders who had completed all three items and multiplying this by three (index range 3–15), resulting in an *n* of 259 on this variable.

2.2.5 | Type of service provider

The foster parents filled in an open text box describing which service provider they had in mind when answering the service experience and perceived outcome questions. We coded their answers into four categories: (a) CWS (including municipal, private and regional CWS services). (b) Specialized mental health services (including CAMHS and child and youth habilitation services). (c) Primary health care services

TABLE 2 Distribution of foster parents' responses on the service experience items, with means and standard deviation

	N	Not at all–to a small extent (1 and 2)	To a moderate extent (3)	To a large–very large extent (4 and 5)	Mean	SD	Not applicable (6)
		% (*n*)	% (*n*)	% (*n*)			(*n*)
1. Did the clinicians talk to you in a way that was easy to understand?	286	1.2 (3)	6.5 (17)	92.4 (243)	4.41	0.68	(23)
2. Did the clinicians talk to your foster child in a way that was easy to understand?	284	6.0 (15)	22.0 (55)	72.0 (180)	3.89	0.87	(34)
3. Do you have confidence in the clinician's professional skills?	286	4.9 (13)	18.5 (49)	76.6 (203)	4.04	0.84	(21)
4. Do you have confidence in the other staff's professional skills?	286	2.7 (7)	22.7 (58)	74.5 (190)	3.96	0.77	(31)
5. Were you told as much as you considered necessary about how tests or other examinations would be carried out?	285	11.1 (27)	25.5 (62)	63.4 (154)	3.71	1.00	(42)
6. Did you get sufficient information about the child's mental health problems/condition?	286	20.6 (47)	28.5 (65)	50.9 (116)	3.39	1.08	(58)
7. Did you perceive the services as suited to your child's situation?	285	12.9 (31)	27.4 (66)	59.8 (144)	3.64	0.99	(44)
8. Were you involved in decisions regarding the child's services?	285	11.7 (28)	20.5 (49)	67.8 (162)	3.80	1.09	(46)
9. Did you perceive the institution's work as well organized?	285	11.3 (28)	32.4 (80)	56.3 (139)	3.55	0.93	(38)
10. Did you find that the institution has cooperated well with other public services (e.g., school, CAMHS, psychological education services, general practitioner, adolescent health clinic)?	284	16.7 (40)	29.3 (70)	54.0 (129)	3.51	1.04	(45)
11. Overall, were the help and services you received satisfactory?	284	14.1 (35)	29.0 (72)	56.9 (141)	3.56	1.07	(36)
12. Do you believe that the child was in any way given the wrong services (according to your own judgement)?	282	68.9 (164)	18.1 (43)	13.0 (31)	2.11	1.14	(44)

Abbreviation: child and adolescent mental health services.

(including all municipal health providers, that is, educational psychological services, municipal psychologist and general practitioner). (d) Other services (when none of the categories were applicable). Where several providers were mentioned in the text box (*n* = 54), we applied the service with the highest reported contact frequency in further analyses. We computed a ‘frequency of service contact’ variable by matching the service category with the contact frequency reported for the relevant service, which was possible in 226 of the cases. There were 237 foster parents who described a service provider, and 188 of these noted their contact as being with either CWS or specialized mental health services. We created a ‘service provider’ variable where CWS contact was coded 1, specialized mental health was coded 0 and the other service types were set to missing.

2.2.6 | Mental health

We assessed youth mental health using the parent version of The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1999). This is a 25-item questionnaire for parents of 4–17-year olds. It measures symptoms and impairments in a youth's daily life. The SDQ has five subscales: emotional symptoms, conduct problems, hyperactivity

TABLE 3 Distribution of foster parents' responses on the perceived outcome items, with means and standard deviation

	n	Much worse– worse (1 and 2)	Not better or worse (3)	A little–much better (4 and 5)	Mean	SD
		% (*n*)	% (*n*)	% (*n*)		
1. Is the child's condition worse or better now compared to before the service contact?	261	4.6 (12)	36.0 (94)	59.4 (155)	3.82	0.95
2. How does the child function in the family now compared to before the service contact?	259	5.0 (13)	39.8 (103)	55.2 (143)	3.75	0.93
3. How does the child function outside the family now compared to before the service contact (at school, among friends)?	259	6.2 (16)	42.1 (109)	51.7 (134)	3.68	0.96

inattention, peer relationship problems and prosocial behaviour. Each subscale consists of five items that are rated on a three-point scale (0–2), providing a score range from 0 to 10. A total difficulties score is computed by summing the four symptom subscales, giving a range from 0 to 40. The parent version of the SDQ has been found to have satisfactory reliability and validity in general child populations

TABLE 4 Associations between foster parents' reports of quality of care and youth, placement and service characteristics

	Service experiences index				Perceived outcomes index			
	n	*β*	*B*	95% CI	*n*	*β*	*B*	95% CI
Unadjusted								
Gender[a]	290	0.07	1.15	[−1.02, 3.32]	289	−0.00	−0.01	[−0.66, 0.63]
Age (years)	290	−0.11	−0.47	[−1.02, 0.08]	290	−0.09	−0.12	[−0.27, 0.04]
Total difficulties	282	−0.08	−0.10	[−0.27, 0.07]	280	−0.13	−0.05	[−0.09, 0.00]
Years in current foster home	290	0.02	0.03	[−0.22, 0.28]	290	**−0.22**	**−0.13**	**[−0.21, −0.06]**
Service provider[b]	261	−0.04	−0.70	[−3.21, 1.82]	263	**0.14**	**0.72**	**[0.00, 1.44]**
Frequency of service contact	264	**0.14**	**0.96**	**[0.00, 1.92]**	265	0.05	0.11	[−0.17, 0.40]
Number of services	290	0.04	0.23	[−0.44, 0.89]	290	−0.05	−0.07	[−0.27, 0.12]
Waiting time[c]	272				270			
Yes, but not long		−0.08	−1.35	[−3.71, 1.00]		−0.10	−0.52	[−1.23, 0.18]
Yes, quite long		**−0.19**	**−5.03**	**[−8.49, −1.58]**		−0.08	−0.64	[−1.71, 0.42]
Yes, too long		**−0.22**	**−7.25**	**[−11.61, −2.89]**		−0.06	−0.67	[−1.99, 0.66]
Adjusted	290				290			
Gender[a]		0.04	0.62	[−1.46, 2.69]		−0.01	−0.08	[−0.70, 0.55]
Age (years)		**−0.13**	**−0.55**	**[−1.07, −0.02]**		−0.06	−0.08	[−0.23, 0.08]
Total difficulties		−0.15	−0.18	[−0.36, 0.00]		**−0.15**	**−0.06**	**[−0.11, −0.00]**
Years in current foster home		0.05	0.10	[−0.15, 0.34]		**−0.18**	**−0.11**	**[−0.19, −0.04]**
Service provider[b]		−0.12	−1.97	[−4.50, 0.56]		0.07	0.39	[−0.38, 1.16]
Frequency of service contact		**0.18**	**1.27**	**[0.28, 2.26]**		0.06	0.12	[−0.18, 0.42]
Number of services		0.06	0.32	[−0.43, 1.07]		0.05	0.08	[−0.15, 0.31]
Waiting time[c]								
Yes, but not long		−0.09	−1.51	[−3.96, 0.93]		−0.07	−0.36	[−1.08, 0.37]
Yes, quite long		**−0.20**	**−5.24**	**[−8.67, −1.81]**		−0.06	−0.46	[−1.53, 0.61]
Yes, too long		**−0.21**	**−7.03**	**[−11.32, −2.73]**		−0.04	−0.39	[−1.70, 0.91]

Note: β, standardized beta values. Linear regressions with foster parent reported service experiences and perceived outcome as dependent variables. All the independent variables were tested individually in the unadjusted analyses and simultaneously in the adjusted analyses. Significant associations are marked in boldface.

Abbreviation: CI, confidence interval.

[a] Boys is the reference group.

[b] Specialized mental health services is the reference group.

[c] No waiting time is the reference group.

(Goodman, 1999, 2001), and the predictive value of a caregiver's completed total difficulties score was supported for foster children (Lehmann, Heiervang, Havik, & Havik, 2014).

2.3 | Data analysis

Youth, placement and service characteristics; the service experiences index; and the perceived outcomes index are presented as percent, means (*M*), standard deviations (SD), minimum and maximum values. For each service experience and perceived outcome item, we calculated the distribution of responses, means, and SDs. We used independent samples *t*-tests to compare responders with nonresponders on youth gender, age and years in current foster home. We compared foster parents evaluating CWS with foster parents evaluating specialized mental health services on the service experience and perceived outcome items and waiting time, using independent samples *t*-tests and a chi-square test. We conducted linear regression analyses where the service experience index and perceived outcome index were regressed on the independent variables (IVs): gender, age, total difficulties score, years in current foster home, service provider, frequency of service contact, number of services and waiting time. We first tested all the IVs individually (unadjusted), then simultaneously (adjusted for all the other IVs) within a multiple regression model. The IVs were not highly correlated (≤0.49) and did not indicate problems with multicollinearity.

We conducted descriptive statistics, independent samples *t*-tests and the chi-square test using IBM SPSS Statistics for Windows, version 24 (IBM Corp., 2016). We conducted linear regression analyses in R (R Core Team, 2019) using the Lavaan package (Rosseel, 2012), with full information maximum likelihood estimation to handle missing data. This method assumes a missing-at-random mechanism. The significance level was set to 0.05.

3 | RESULTS

3.1 | Sample characteristics

Sample characteristics are presented in Table 1. Of the 237 responders that provided information about which service they evaluated, 100 (42.2%) responded CWS and 88 (37.1%) responded specialized mental health services. Foster parents were in contact with three services on average (SD = 1.6). Most reported that they either did not wait for the service (41.0%) or did not have to wait long (41.0%), while fewer reported that they had to wait quite long (11.2%) or too long (6.8%). We found no significant differences between responders and nonresponders on youth gender, age or years in current foster home.

3.2 | Service experiences

For the 11 positively loaded service experience items, the amount of foster parent who agreed 'To a large extent' or 'To a very large extent' varied from 50.9% up to 92.4% (Table 2). The two highest-rated items were Item 1 *Did the clinicians talk to you in a way that was easy to understand* and Item 3 *Do you have confidence in the clinician's professional skills*, where 92.4% and 76.6% agreed to a large or very large extent. The lowest-rated items were Item 6 *Did you get sufficient information about the child's mental health problems/condition* and Item 10 *Did you find that the institution has cooperated well with other public services*, where 50.9% and 54.0% of foster parents agreed to a large or a very large extent. The percentage of 'not applicable' responses ranged from 7.3% on Item 3 to 20.3% on Item 6. There were no differences in service experience between responders evaluating CWS and responders evaluating specialized mental health services, except on item number 6 concerning information about the youths' condition. On this item, CWS obtained lower scores compared to specialized mental health services ($M = 3.12$ and $M = 3.51$, respectively, $p = 0.020$). Furthermore, foster parents evaluating CWS reported shorter wait times (more often responding no) compared with foster parents evaluating specialized mental health services ($p = 0.001$).

3.3 | Perceived outcomes

Around half of the foster parents reported improvement of the youths' condition (59.4%) and that the youths functioned better in the family (55.2%) and among friends and at school (51.7%) than before the service contact (Table 3). Responders that evaluated CWS reported more positive change in youth function both inside ($M = 3.96$) and outside ($M = 3.84$) the family, compared with responders who evaluated specialized mental health services ($M = 3.66$, $p = 0.030$; $M = 3.54$, $p = 0.041$, respectively). There was no difference between the service types regarding reported change in the youths' condition.

3.4 | Characteristics associated with service experiences and perceived outcomes

The unadjusted and adjusted associations among youth, placement and service characteristics and foster parents' reports of quality of care are displayed in Table 4. In the adjusted analysis, younger age (standardized $\beta = -0.13$, $p = 0.041$), more frequent service contact (standardized $\beta = 0.18$, $p = 0.012$) and reporting no waiting time, compared with quite long (standardized $\beta = -0.20$, $p = 0.003$) and too long waiting time (standardized $\beta = -0.21$, $p = 0.001$), were associated with higher scores on the service experience index. When combined, the full IV model explained 12.9% of the total variance in service experiences. Higher total difficulties scores (standardized $\beta = -0.15$, $p = 0.039$) and years lived in current foster home (standardized $\beta = -0.18$, $p = 0.003$) were associated with less positive perceptions of outcomes in the adjusted analysis. When combined, all the IVs explained 8.6% of the total variance in perceived outcome.

4 | DISCUSSION

To the best of our knowledge, this is the first study to assess quality of care from foster parents' perspective and associations with youth, placement and service characteristics. Overall, the foster parents reported positive service experiences, which is in line with findings in the general population that most parents were satisfied with health services provided for their children (Aarons et al., 2010; Bjertnaes et al., 2008; Garland et al., 2007; Turchik et al., 2010). A large majority of foster parents reported that clinicians communicated in a way that was easy to understand and that they had confidence in the clinicians' professional skills. However, a substantial portion of foster parents evaluated some parts of the service contact as low to medium, including receiving information about the child's condition, cooperation with other services and organization of the work. This is consistent with studies from the United States, which indicated that foster parents experienced problems receiving relevant information from CWS workers, a lack of continuity of services and difficulties navigating different services (Bass, Shields, & Behrman, 2004; Geiger et al., 2017; Pasztor et al., 2006). As research has shown that a large proportion of foster families were in contact with several service providers (Larsen et al., 2018; Minnis et al., 2006), it is especially important for this group that different services work well together.

Around half of the foster parents reported improved youth condition and better functioning within the family and with friends and at school compared with before the service contact. The foster parents' reports of perceived outcomes were similar to how parents in the general Norwegian population rated outcomes of contact with CAMHS (i.e., overlapping confidence intervals; *n* = 7,906, child ages 0–16 years; Bjertnaes et al., 2008). This indicates that foster parents' experiences of outcomes of services received are comparable with those of parents of youths in a clinical sample. Despite an overall positive perception of outcomes of services for the foster youth, approximately 40% of the foster parents reported no change in youth condition or function, and approximately 5% reported a decline. One possible explanation is that many foster parents received support and guidance instead of therapeutic interventions directed at the youths' functioning per se, as much of the services provided by CWS in Norway are supervision and counselling of foster parents (Christiansen et al., 2015; The Office for Children, Youth and Family Affairs, 2019). Alternatively, many foster parents did not experience positive changes compared with before the service contact, which might be a consequence of issues with information flow or lack of coherent treatment across services.

There were no overall differences in reported quality of care between responders evaluating CWS and specialized mental health services in the adjusted analyses. However, there were differences on single items in the quality indicators. Foster parents evaluating CWS were less satisfied with information given about the youths' mental health, more often reported no waiting time, and reported more improvement in youth functioning compared with responders evaluating specialized mental health services. The difference in youth functioning in favour of the CWS contact was surprising, given that specialized mental health services formally have the highest therapeutic competence. We need future studies including more information on the form and content of the services provided to examine whether this difference is found in other samples and can be explained by features of the service content. Our findings regarding information and waiting time align with findings from the United States and Spain where foster parents reported difficulties with the availability and timeliness of mental health services (Hayes et al., 2015; López López & Del Valle, 2016) and had problems receiving information about the child in their care from CWS (Geiger et al., 2017; López López & Del Valle, 2016; Pasztor et al., 2006). However, our results showed that responders evaluating the CWS more often reported no waiting time, while responders evaluating specialized mental health services more often reported that they had to wait, but not long. This difference seems reasonable, as referrals are needed to receive specialized mental health services.

Foster parents of older youths had less positive experiences with services, which is in line with findings from the general population (Bjørngaard et al., 2008; Turchik et al., 2010). This might indicate that services are better adapted to children than to adolescents. Alternatively, foster parents may be more involved in services for younger youths and therefore had more positive service experiences. Furthermore, foster parents of youths with more mental health problems reported less improvement in youth condition and functioning. One interpretation of this finding is that families that experienced less positive outcomes of services received consequently had youths with poorer mental health. Another possibility is that foster parents of youths with more initial mental health problems experienced less youth improvement. It would be troubling if the last explanation were true, and therefore, future research should examine this relationship further.

Foster parents of youths who had lived with them for longer periods experienced less positive outcomes of services received compared with foster parents of youths with shorter stays. This finding highlights the need to evaluate services provided to youths in foster care regularly to ensure that foster families receive appropriate service support over time. Finally, higher frequency of service contact and reporting no waiting time were related to more positive service experiences. This is consistent with findings from the general population, which showed that more treatment sessions, longer treatment episodes and shorter waiting times were associated with service satisfaction (Bjørngaard et al., 2008; Garland et al., 2007; Holmboe et al., 2011). This indicates that available services with sufficient resources to enable frequent contact are important to provide high-quality care from the user perspective, also for foster families.

The full models of associated characteristics explained 12.9% of the variance in service experiences and 8.6% of the variance in perceived outcomes. This is in line with findings that youth and service characteristics explained a small fraction of the variance in parents' experiences with CAMHS (Bjørngaard et al., 2008; Garland et al., 2007). Consequently, future studies should include characteristics such as alliance with the helper and other organizational and treatment-specific factors as possible predictors of quality of care.

5 | LIMITATIONS

One limitation in this study is that we only had foster parent reports of quality of care. Studies have shown that there are weak-to-moderate correlations between service satisfaction of parents and youth (Biering, 2010; Garland et al., 2007; Turchik et al., 2010). Therefore, we cannot infer youths' perceptions from their foster parents' responses. However, foster parents' experiences are important in their own right as foster parents are also users of youth and family services and depend on sufficient service support to provide nurturing and stable homes for youths in their care (Benesh & Cui, 2017; Tonheim & Iversen, 2018). Furthermore, as this is a cross-sectional study, we cannot determine cause and effect, only associations. Future longitudinal research to evaluate directions of these associations is needed.

Another limitation is that we collected the information about which service provider the foster parents evaluated in an open text field, and the responses were complex to categorize. For example, some responders described multiple providers (*n* = 54), and some described providers that were not mentioned often enough to be included as separate groups in the analyses (*n* = 49). Therefore, the results regarding type of service provider should be interpreted with some caution. It would have been useful to have separate reports of foster parent's experiences with different services, but as our study was part of a larger survey on mental health among youths in foster care, we chose to limit responder strain by only asking for service experiences with their main provider. Furthermore, we do not have information about what service structure (e.g., foster parent counselling and youth mental health assessment) the families have received from the service providers and thus cannot distinguish between user evaluations for specific treatments or types of service contact.

Moreover, as foster parents rated the items in the service experiences questionnaire very positively, there was a possibility of a ceiling effect in the measure, which could have inhibited our ability to detect associated characteristics and identify differences between service providers. Previous studies has also found high levels of service satisfaction, and authors discussed possible ceiling effects (Bjertnaes et al., 2008; Turchik et al., 2010). Although foster parents rated the single items positively, only 5.5% of responders had the highest possible score in the service experiences index. As ceiling effects are considered to be present if more than 15% of respondents achieve the highest score (Terwee et al., 2007), a ceiling effect in the overall service experience scores was not indicated. Furthermore, as we measured service use over the last 2 years, the timeframe for user-rated quality of care was wide. This is positive for capturing experiences with service support given over time but reduces the specificity in the evaluations.

6 | CONCLUSIONS

This paper presents foster parents' experiences with services for youths in their care and indicates that foster parents experienced the services as useful and about half reported positive changes in youth condition and functioning following the service contact. Foster parents evaluated clinicians' communication and professional skills highly, while they gave poorer evaluations of information about the child's condition, cooperation between services and coordination of the work. Interagency collaboration is especially important for high-risk groups like foster youths that often depend on simultaneous services from different providers, and may be improved by using screening procedures and having routines for sharing information and cooperation. Furthermore, we found that CWS provided less information about youths' mental health but had shorter waiting times and more improvement in youth function compared with specialized mental health services. These results indicate focus areas for the specific providers to increase quality of care and highlight the importance of screening procedures in the CWS specifically, as it may improve the information provided to both foster parents and other services, while specialized mental health services can benefit from assessing whether services lead to improvements in youth condition and functioning. Our findings also indicate areas for services in general to focus on to improve quality of care for foster families. These include involving foster parents of older youths in treatment, having appointments at the needed frequency, reducing waiting times, and regularly evaluating services provided for youths in foster care. The characteristics studied in this article explained only parts of why some foster parents experience higher quality of care than others, and future studies could expand this knowledge by using longitudinal designs and including additional organizational and treatment-specific variables as possible predictors of service quality.

ETHICS

The study was approved by the Regional Committee for Medical and Health Research Ethics, Western Norway. Because current Norwegian law states that foster parents cannot consent to participate on behalf of their foster youths, The Norwegian Directorate for Children, Youth and Family Affairs provided exemptions from confidentiality for CWS caseworkers and foster parents for the study. Furthermore, in accordance with the Norwegian ethics requirement, oral assent was obtained from the youths so that foster parents could participate.

DATA AVAILABILITY STATEMENT

Access to data is restricted by Norwegian law on medical and health related research. Information about the data and analysis is available from corresponding author Marit Larsen on request.

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Predictors of quality of life among youths in foster care—a 5-year prospective follow-up study

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Abstract

Purpose Few studies have investigated possible predictors of positive outcomes for youths in foster care. The aim of this prospective follow-up study was to examine quality of life (QoL) among youths in foster care and to assess whether contextual and child factors predicted QoL.

Methods Online questionnaires were completed by carers in Norway in 2012 (T1, $n = 236$, child age 6–12 years) and by youths and carers in 2017 (T2, $n = 405$, youth age 11–18 years). We received responses on 116 of the youths at both T1 and T2, and our final sample consisted of 525 youths with responses from T1 and/or T2. Child welfare caseworkers reported preplacement maltreatment and service use at T1. We assessed mental health and prosocial behavior at T1 by having carers complete the Strength and Difficulties Questionnaire and QoL at T2 with youth-reported KIDSCREEN-27. We analyzed the data using descriptive statistics, *t*-tests and multiple linear regressions, and we used multiple imputation to handle missing data.

Results Youths in foster care had lower QoL across all dimensions compared to a Swedish general youth sample. QoL scores among our sample were similar to Norwegian youths with ill or substance abusing parents and to European norm data. Youths reported the highest QoL scores on the parent relations and autonomy dimension. Male gender, younger age, kinship care and prosocial behavior five years earlier predicted higher QoL.

Conclusion Similar to other at-risk youths, youths in foster care seem to have lower QoL than the general Scandinavian population. Despite early adversities, they had good relations with their current carers. Adolescent girls seem especially vulnerable to low QoL and might need extra support to have good lives in foster care.

Keywords Quality of life · QoL · Foster care · Youth · Predictors · Prospective study

Introduction

While a high prevalence of mental and physical health problems among youths in foster care is well documented [1, 2], less is known about youths in foster care that have good lives. Studies following youths in foster care over time are

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needed to identify predictors of positive outcomes [3, 4]. Our study examined quality of life (QoL) among youths in foster care and compared them to other youth populations. Furthermore, we investigated whether contextual and child factors were predictive of QoL in adolescence.

QoL is a multidimensional construct that encompasses physical, emotional, mental, social and behavioral components of wellbeing and functioning as perceived by the individual [5]. As QoL is a subjective experience, the gold standard of assessment is self-report [6]. While research on QoL among youths in care is scarce, findings across countries suggest that youths in foster care [7] and youths in residential care [8–11] have a poorer QoL or health related quality of life (HRQoL) than youths in the general population (see Supplementary material 1 for an overview of studies on QoL and related terms cited in this introduction). However, some European studies found similar HRQoL [10] and subjective wellbeing [12] scores for youths in foster care and youths in the general population. Furthermore, youths in foster care report higher HRQoL [13], higher subjective wellbeing [12, 14], and more positive perceptions of their care situation [15] than youths in residential care. Thus, the current knowledge suggests that youths in foster care have a higher QoL than youths in residential care, but it is unclear whether they have lower QoL than youths in the general population. To gain knowledge about how foster care-related experiences specifically affect QoL, we need more studies comparing QoL between youths in foster care and youths reared in their family of origin.

Even though information about predictors of high QoL is crucial for helping more youths having a good life in foster care, there is a lack of studies following youths in foster care over time examining QoL. However, some cross-sectional studies exist that provide information about factors associated with QoL, HRQoL or subjective wellbeing, which makes them relevant to study as possible predictors. Across European countries, boys report higher QoL and HRQoL than girls in the general population [16, 17], and among youths in care [10, 18]. Furthermore, younger children report higher QoL and subjective wellbeing than adolescents in the general European population [17], and in care [14]. However, some studies of youths in care found no relation between HRQoL and gender [7] or age [7, 19], indicating that it is unclear how gender and age are related to QoL in this population.

Although findings are mixed [20], in general, maltreated children report lower HRQoL than children in the general population [21], and exposure to maltreatment is associated with lower QoL and HRQoL among youths in the general population [16, 22] and in residential care [6, 9]. Among young people in protective custody, experiences of family violence were related to lower HRQoL, while family instability (i.e., parental drug use, mental health problems and/or absent parents) was not [23]. These findings suggest that violent experiences may be especially relevant to study as a predictor of QoL among youths in care.

A positive association between placement stability and subjective wellbeing has been found among youths in care [14]. Furthermore, a Cochrane review indicated that youths in kinship care had higher wellbeing compared to youths in nonkinship foster care [24]. However, other studies found no association between HRQoL and the number of earlier placements [7] or the age of entry into care [23]. Thus, the relationship between placement characteristics and QoL is unclear.

Youths in contact with health care professionals had poorer QoL than youths without health care contact [25]. Youths in foster care have extensive service contact [26, 27], but there is a lack of studies investigating the relationship between service use and QoL for this group. Studies indicate that mental health problems were associated with low QoL and HRQoL among youth in care [8, 13, 18]. Good interpersonal relationships, however, contributed to subjective wellbeing among youths in care [14]. Overall, the findings indicate that service contact, mental health and social relationships might predict QoL among youths in foster care.

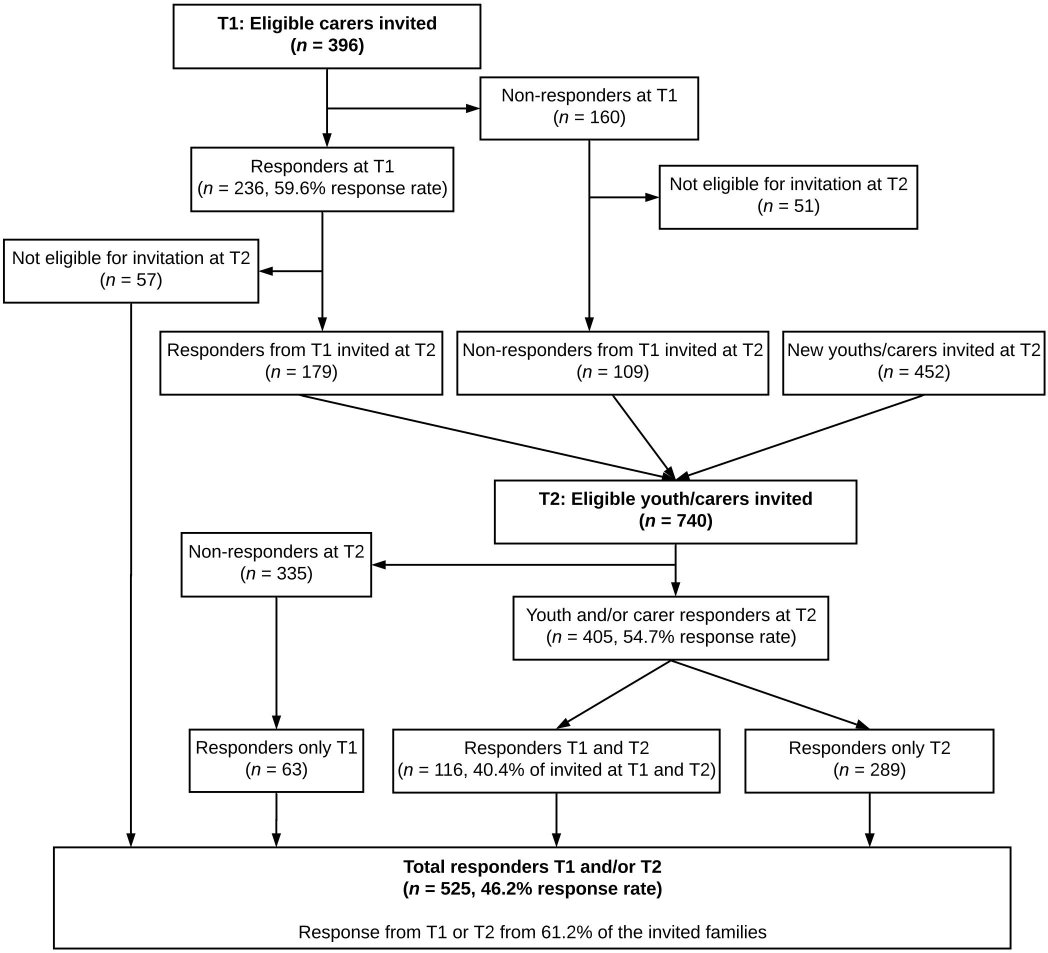
As most studies are cross-sectional, there is a need for studies following youths in foster care over time to identify predictors of QoL. This knowledge is necessary to inform services and informal networks about areas to focus on to enhance the wellbeing and positive development of youths in foster care. Furthermore, such knowledge may inform child welfare services (CWS) about how to organize placements to enable good lives. In addition, this information can benefit the whole population of youths in foster care, not only those with mental health problems. Lastly, there are substantial differences in how the child protective services are organized in different countries [28]. Therefore, it is uncertain how transferable the knowledge about QoL among youths in foster care is between countries. Moreover, we lack studies describing the QoL of youths in foster care from the Scandinavian setting.

The first aim of the current study was to examine QoL and its subdimensions among youths in foster care in Norway and to compare their QoL scores with the scores of youths with ill or substance abusing parents, Swedish youth, and European youth. Our second aim was to examine whether QoL of youths in foster care can be predicted by contextual factors (i.e., preplacement maltreatment, kin or nonkin foster care, years in current foster home and former service contact) and child factors (i.e., mental health problems, functional impairment, and prosocial behavior) when adjusted for gender and age.

Methods

Procedure and study sample

The study sample is part of the research project "Young in Foster Care", where data were collected in two waves: wave one was between September 2011 and February 2012 (T1), and wave two was between October 2016 and March 2017 (T2). Eligible participants were youths in foster care born between 1999 and 2005 who were in a legally mandated placement in the Southeast of Norway and had lived in their current foster home for at least six months. The number of eligible participants was 396 at T1 and 740 at T2. Figure 1 provides a flowchart illustrating the data collection.



Note. Overview of responders and measures used at the different time points (T1 and T2)

T1: Foster parents reports on Child factors measured with the SDQ (n = 236)
Caseworkers in the child welfare services reports on Maltreatment (n = 220) and Service contact (n = 218)

T2: Youths reports on QoL measured with the KIDSCREEN27 (n = 298)
Foster parents reports on Type of placement (n = 330)
Caseworkers in the child welfare services reports on Gender (n = 523), Age (n = 525) and Years in current foster home (n = 467)

Fig. 1 Flowchart of the data collection

At T1, carers were invited to participate, while carers and youths were invited to participate at T2. We recruited participants via postal mail with an information letter describing the study and how to complete the survey, either online on a secure webpage or by telephone interview. We asked foster mothers, foster fathers and youths to complete the survey separately. We provided reminders by post and subsequent telephone contact. We compensated youths with a gift card of 300 NOK (approximately 38 USD) for participating. Carers were not compensated.

In this study, we included all youths who had a response from a carer at T1 ($n = 236$) and/or a response from the youth ($n = 303$) and/or carer ($n = 330$) at T2 (total n T2 = 405). As we have T1 and T2 responses on 116 of the youths (i.e., 40.4% of the families invited at both T1 and T2), our finale sample consisted of 525 youths in foster care (46.2% response rate; Fig. 1). We combined foster mothers ($N_{\mathrm{T1}} = 212$, $N_{\mathrm{T2}} = 285$) and fathers ($N_{\mathrm{T1}} = 106$, $N_{\mathrm{T2}} = 120$) into one group of informants for each wave. We used responses from foster fathers when the foster mother was a nonresponder; otherwise, we used responses from foster mothers.

Ethics

The Regional Committee for Medical and Health Research Ethics, Western Norway approved the study. The Norwegian Directorate for Children, Youth and Family Affairs provided exemptions from confidentiality for caseworkers and carers. In accordance with the Norwegian ethics requirement, oral consent is required from children aged 12 years or older. We described this in the invitation letter to youths and carers, and the youths were instructed that they could inform their carers if they did not want them to participate in the study.

Measures

Demographic and contextual factors

We collected information about gender, age and years in the current foster home from municipal CWS offices. We defined placement type as kinship care when carers at T2 were biologically related to their foster child. Preplacement maltreatment was measured at T1 with four custom-made yes/no questions asking the child's caseworker in CWS if the child had been exposed to or witnessed physical or emotional (i.e., threats, verbal punishment, harsh criticism or hostility) violence in the biological family before placement. We summed these variables into a new variable called "maltreatment", with scores ranging from 0 to 4.

Service contact was measured at T1 with three custom-made yes/no questions asking caseworkers if the child had ever been assessed by child and adolescent mental health services, educational psychological services, or habilitation services. We summed these questions into a new variable called "service contact", with scores ranging from 0 to 3. We computed a sum score for youths when CWS had provided information about at least one of the services, and missing information on one or two providers was treated as 0 (i.e., no service contact).

Child factors

We measured child factors at T1 by having carers complete the Strengths and Difficulties Questionnaire (SDQ) [29]. This is a 25-item questionnaire consisting of five subscales, with five items on each subscale, assessing symptoms and impairments in the daily life of youths aged 4–17 years old. Each item is rated on a three-point scale ranging from 0–2. Four of the subscales measure symptoms and one subscale measures prosocial behavior (score range 0–10). A total difficulties score (range 0–40) is calculated by summing the symptom subscales. In addition, the SDQ contains an impact scale (range 0–10), referred to as "functional impairment", that measures distress and interference of symptoms in the youth's daily life [29]. The SDQ has shown satisfactory reliability and validity in general child populations [29, 30] and the predictive value of the SDQ completed by carers is supported for foster children [31]. In the current study, Cronbach's alpha for the total and subscales ranged from good to very good, as reported in Table 1.

QoL

We measured QoL at T2 with the KIDSCREEN-27 Quality of Life Questionnaire [25] a 27-item self-reported measure to assess five dimensions of QoL within the last week for youth aged 8–18 years old. The dimensions are physical wellbeing (e.g., *Have you felt fit and well?)*, psychological wellbeing (e.g., *Have you felt sad?)*, parent relations & autonomy (e.g., *Have your parent(s) treated you fairly?)*, peers & social support (e.g., *Have you had fun with your friends?)*, and school environment (e.g., *Have you been able to pay attention*?). Each item is scored on a five-point Likert scale (1 = "never" or "not at all" to 5 = "always" or "extremely"). The KIDSCREEN-10 questionnaire is embedded within the KIDSCREEN-27 questionnaire and consists of ten items that provide a single index of general QoL. In this study we utilized both the five dimensions of QoL from the KIDSCREEN-27 and the general QoL index calculated from the ten items in the KIDSCREEN-10 questionnaire. The reliability, discriminatory power, and validity of both instruments have been shown to be good [17, 25, 32]. The Norwegian version of the KIDSCREEN has shown good validity and reliability in the general population and in clinical samples [33]. Cronbach's alpha for both instruments in

Table 1 Distribution of youth characteristics, contextual and child factors, and quality of life (QoL) among youths in foster care (*N* = 525)

	N	% Missing^a	*n*	%	Mean	*SD*	Min	Max	Cronbach's alpha
Gender—boys	523	0.4	285	54.5					
Age (in years)	525	0			14.61	2.01	11.00	17.99	
Type of placement—Kinship care	330	37.1	50	15.2					
Years in current foster home	467	11.0			7.08	4.40	0.72	17.75	
Maltreatment at T1	220	58.1			0.88	1.23	0	4	
Physical violence	220		29	13.2					
Witnessed physical violence	220		59	26.8					
Emotional abuse	220		38	17.3					
Witnessed emotional abuse	220		67	30.5					
Service contact at T1	218	58.5			1.06	0.95	0	3	
CAMHS	209		96	45.9					
Education psychology service	205		108	52.7					
Habilitation service	192		26	13.5					
Foster parent reported child factors at T1									
Total difficulties	236	55.0			15.24	7.94	0	35	.88
Prosocial behavior	236	55.0			6.84	2.30	0	10	.77
Functional impairment	236	55.0			2.69	2.74	0	10	.80
T-scores of the QoL dimensions									
General QoL	298	43.2			47.99	11.82	15.88	83.81	.87
Physical wellbeing	298	43.2			46.30	13.21	20.70	73.20	.87
Psychological wellbeing	297	43.4			49.33	13.70	17.56	73.53	.92
Parent relations and autonomy	297	43.4			52.80	13.01	1.75	74.39	.89
Social support and peers	296	43.6			50.22	11.63	23.62	66.34	.86
School environment	298	43.2			48.35	11.98	16.28	71.00	.88

[a] % missing's are provided for the variables used in further analyses

the current study ranged from good to very good (Table 1). For both measures, the raw scores were computed into t-scores using a mean of 50 and a standard deviation of 10 (i.e., the mean and SD of the norm population), adopting the scoring algorithms provided by the KIDSCREEN group [25]. We applied confirmatory factor analysis (CFA) to test whether the established five-factor structure of KIDSCREEN-27 fitted our data. The five-factor structure showed an acceptable fit to our data (CFI = 0.88, RMSEA = 0.09) and was improved (CFI = 0.90, RMSEA = 0.08) by allowing items six and seven of the parent relations and autonomy dimension to correlate.

Analyses

Descriptive statistics for gender, age (at T2), contextual and child factors, and QoL are presented as percentages, means (M), standard deviations (SD), minimum and maximum values. We compared the T1 values of gender, age, maltreatment, service use, and child factors between T1-only responders and responders at both T1 and T2 using two-sample t-tests, and found no differences between the groups. We examined the correlations between general QoL, the five QoL dimensions, and all predictors. No problems with multicollinearity were indicated between variables included in the same analysis, with functional impairment and total difficulties having the highest correlation (0.73).

We conducted two-sample *t*-tests to compare the *t*-scores on the five dimensions of QoL against the *t*-scores in a Swedish general population sample [34], a Norwegian sample of youths with ill or substance abusing parents (at-risk Norwegian youths [35]) and European norm data from youths aged 12–18 [25]. We used the same test to compare the general QoL scores in our sample to Swedish [32] and European norm data [25]. We calculated the Cohen's *d* effect sizes of the differences between the groups by dividing the mean difference by the pooled standard deviation, where $d = 0.2$ can be considered a 'small' effect size, $d = 0.5$ a 'medium' effect size and $d = 0.8$ a 'large' effect size [36].

To examine possible predictors of QoL, we conducted separate linear regression analyses for general QoL and the five QoL dimensions. In each regression analysis, we added the predictors stepwise. The covariates gender and age were added first. Second, contextual factors were added (i.e., maltreatment, service contact, type of placement and years in current foster home). Last, the child factors (i.e., total difficulties, prosocial behavior, and functional impairment) were added to the model. We used multiple imputation to handle missing data. Multiple imputation models were fitted separately for general QoL and the five QoL dimensions and included all predictors from the full regression model. We imputed missing values on both predictor and outcome variables. In both imputation models, we used the sum scores of the variables, created 30 imputed datasets and pooled the results from the regression analyses into overall estimates. To investigate the effect of the missing data on the obtained results, the regression models were also fit with full information maximum likelihood (FIML) to address missing data. These additional analyses yielded similar results (see Supplementary Tables 1 and 2) which supports the validity of our findings.

Descriptive statistics were calculated using IBM SPSS Statistics 24 [37]. We conducted multiple linear regressions in R [38], and multiple imputation models were fitted with the MICE package [39].We also performed the CFA and regression analyses with FIML in R using the Lavaan package [40]. The significance level was set to 0.05.

Results

As can be seen in Table 1, our sample consisted of 54.5% ($n = 285$, total $n = 523$) boys and had a mean age of 14.61 (SD = 2.01). On average, they had lived 7.08 years (SD = 4.40) in their current foster home, and 15.2% ($n = 50$, total $n = 330$) lived in kinship care. The foster youths had experienced, on average, less than one ($M = 0.88$, SD = 1.23) type of maltreatment with witnessing emotional abuse as the most common type (30.5%, $n = 67$, total $n = 220$). Most youths had been in contact with one service at T1 ($M = 1.06$, SD = 0.95). The mean reported total difficulties at T1 was 15.24 (SD = 7.94), and 58.9% ($n = 139$, total $n = 236$) of the responders scored at or above the suggested cut off score of 13 [31] for being in the clinical range of mental health problems for this group.

QoL and comparison of scores to other youth samples

General QoL had high correlations to the five QoL dimensions, and the highest was with psychological wellbeing (0.85; Supplementary Table 3).The highest QoL scores were reported on the parent relations and autonomy dimension ($M = 52.8$), while the lowest scores were on physical wellbeing ($M = 46.3$; Table 2). Compared to the Swedish general youth population, the youths in our sample had lower general QoL ($d = -0.36$, $p < 0.001$) and lower scores on all QoL dimensions with small or medium effect sizes. Compared to the at-risk Norwegian youths, the youths in foster care reported lower scores on the school environment dimension ($d = -0.23$, $p = 0.009$) but higher scores on the parent relations and autonomy dimension ($d = 0.18$, $p = 0.041$). Compared to European norm data, the youths in our sample had higher scores on the parent relations and autonomy dimension ($d = 0.29$, $p < 0.001$) but lower physical wellbeing ($d = -0.20$, $p < 0.001$). The effect sizes of the differences between our sample and the Norwegian at-risk youths and European norm data were small.

Predictors of general QoL

Male gender and younger age predicted higher general QoL in all steps of the regression analyses (Table 3). Living in kinship care was predictive of higher general QoL compared to living in nonkin care in step two ($B = 5.15$, 95% CI [0.79, 9.51], $p = 0.022$), but this relationship was not significant when adjusting for child factors in step 3 ($B = 3.32$, 95% CI [− 1.17, 7.80], $p = 0.143$). Prosocial behavior was predictive of higher general QoL ($B = 1.34$, 95% CI [0.36, 2.32], $p = 0.009$). The full model explained 33% of the variance in general QoL.

Predictors of the five dimensions of QoL

For all five QoL dimensions, male gender and younger age predicted higher QoL in all steps of the analyses (Table 4). More maltreatment experiences ($B = 2.23$, 95% CI [0.09, 4.37], $p = 0.042$), kinship care ($B = 4.82$, 95% CI [0.11, 9.52], $p = 0.045$), and more prosocial behavior ($B = 1.53$, 95% CI [0.40, 2.66], $p = 0.010$) predicted higher physical wellbeing. More prosocial behavior was also predictive of higher psychological wellbeing ($B = 1.39$, 95% CI [0.04, 2.73], $p = 0.044$). Living in kinship care was predictive of higher scores on the parent relations and autonomy dimension compared to living in nonkin care ($B = 6.14$, 95% CI [1.11, 11.17], $p = 0.018$). The full model ranged from explaining 40% of the variance in physical wellbeing to 12% of the variance in the social support and peers dimension.

Discussion

The youths in foster care had lower general QoL and lower QoL across all dimensions than Swedish youths in the general population. However, compared to at-risk Norwegian youths and European norm data, the scores were similar on most dimensions. To our knowledge, this is the first prospective study to investigate the predictors of QoL among youths in foster care. Male gender, younger age, living in kinship

Table 2 Quality of life (QoL) *t*-scores of foster youth compared to other youth groups using the KIDSCREEN-10 and KIDSCREEN-27

	Our sample			Swedish general population					At-risk Norwegian youths[c]					European norm data[d]				
	n	*M*	SD	*n*	*M*	SD	*P*	Cohen's *d*	*n*	*M*	SD	*p*	Cohen's *d*	*n*	*M*	SD	*p*	Cohen's *d*
General QoL	298	47.99	11.82	3283[a]	52.0	10.12	**< 0.001**	**− 0.36**						14932	48.51	9.28	.341	− 0.05
Physical wellbeing	298	46.30	13.21	202[b]	48.8	9.21	**0.020**	**− 0.22**	246	47.05	10.55	.471	− 0.06	15239	48.57	9.64	< **.001**	**− 0.20**
Psychological wellbeing	297	49.33	13.70	202[b]	53.4	10.93	**0.001**	**− 0.33**	246	49.02	11.22	.776	0.02	15323	48.83	9.78	.387	0.04
Parent relations and autonomy	297	52.80	13.01	202[b]	55.1	9.88	**0.034**	**− 0.20**	246	50.62	11.51	**.041**	**0.18**	15135	49.41	9.81	< **.001**	**0.29**
Peers and social support	296	50.22	11.63	202[b]	54.1	8.17	**< 0.001**	**− 0.39**	246	50.32	11.68	.921	− 0.01	15372	49.62	9.96	.306	0.06
School environment	298	48.35	11.98	202[b]	55.8	9.60	**< 0.001**	**− 0.69**	246	51.05	11.76	**.009**	**− 0.23**	15255	48.44	9.41	0.871	− 0.01

[a] Swedish youths from the general population aged 12–18 [35]

[b] A random population sample of Swedish youths aged 11–16 [37]

[c] Norwegian children with ill or substance abusing parents, aged 8–17, the article did not include general QoL scores [38]

[d] European norm data from the construction and validation of the KIDSCREEN instruments. Youth aged 12–18 from 13 European countries [28]

The other youth samples are used as the reference group in all comparisons, meaning that our sample has a lower score than the comparison group when cohen's *d* is negative

Significant differences are marked in boldface care and more prosocial behavior five years earlier predicted higher QoL.

Our finding that youths in foster care had lower QoL than Swedish youths from the general population [32, 34] is in line with findings from Australia, where youths in foster care had lower HRQoL on most dimensions compared to the general population [7]. However, this contrast to a Serbian study, which observed no differences in HRQoL between youths in foster care and the general population [10]. The youths in our sample had similar QoL scores on most dimensions compared to European norm data. Sizeable differences in general QoL are observed between countries [32] and because Scandinavia has better health status and higher subjective wellbeing than most European countries [41], it seems plausible that Scandinavian youths will have higher QoL levels, as indicated by the high scores in the Swedish norm data.

We found that youths in foster care had lower physical wellbeing than the Swedish general population sample [34] and the European norm data [25], but similar levels to the at-risk Norwegian youths [35]. These findings imply that physical wellbeing and health are important to assess and target in interventions for at-risk youths. Our sample reported lower scores on the school environment dimension compared to the at-risk Norwegian youths, which might be a consequence of youths in foster care changing schools more often than other youths [42]. Youths in foster care reported the highest scores on the parent relations and autonomy dimension. These scores were lower than the scores from the Swedish general population sample but higher than the scores from European norm data and at-risk Norwegian youths. These findings suggest that despite their often detrimental care experiences, youths moved into adequate care conditions often form good relationships with their new caregivers. The effect sizes for the differences found between the compared youth groups ranged from 0.18 to 0.69, which are considered as small to medium according to Cohen [36]. However, even small differences may have substantial impact when they affect many people, as is the case for youths in foster care.

Table 3 Associations between general quality of life (QoL) and contextual and child factors, adjusted for gender and age ($N=525$)

	General QoL		
	${}_{\text{adj}}R^2$	*B*	95% CI
Step 1: covariates	0.17		
Gender[a]		**7.40**	**[4.99, 9.82]**
Age (years)		**− 1.55**	**[− 2.14, − 0.96]**
Step 2: added contextual factors	0.21		
Gender[a]		**7.96**	**[5.48, 10.44]**
Age (years)		**− 1.48**	**[− 2.08, − 0.87]**
Maltreatment[b,d]		− 0.12	[− 2.18, 1.94]
Service contact[d]		− 0.93	[− 3.37, 1.50]
Type of placement[c]		**5.15**	**[0.79, 9.51]**
Years in current foster home		0.06	[− 0.27, 0.38]
Step 3: added child factors	0.33		
Gender[a]		**7.71**	**[5.06, 10.36]**
Age (years)		**− 1.33**	**[− 1.94, − 0.73]**
Maltreatment[b,d]		0.20	[− 1.78, 2.18]
Service contact[d]		0.28	[− 2.64, 3.20]
Type of placement[c]		3.32	[− 1.17, 7.80]
Years in current foster home		− 0.17	[− 0.55, 0.20]
Total difficulties[d]		− 0.30	[-0.80, 0.20]
Prosocial behavior[d]		**1.34**	**[0.36, 2.32]**
Functional impairment[d]		0.34	[− 0.64, 1.32]

${}_{adj}R^2$ Adjusted *R* squared, *B* beta values (unstandardized coefficient), *CI* confidence interval

[a] Girls are the reference group

[b] A sum score of four maltreatment items (range 0–4)

[c] Nonkinship care is the reference group

[d] Variable was measured at T1

Significant associations are marked in boldface

Male gender and younger age predicted higher QoL, which is in line with findings from the general population [16, 17] and from youths in care [10, 14]. While girls in the general European population reported higher scores on the peers and social support and school environment dimensions compared to boys [17], our results showed that girls had lower QoL across all dimensions. This might indicate that girls are especially vulnerable to the stressors of preplacement maltreatment and moving into foster care, and may need extra support to facilitate a positive development.

Living in kinship care predicted higher general QoL compared to living in nonkinship care, but only prior to controlling for the child factors. This might indicate that youths in kinship care report higher general QoL because of better mental health. This is in line with findings from Winokur et al. [24] that children in kinship care had higher wellbeing and fewer mental health disorders compared to children in nonkinship care. However, living in kinship care was predictive of higher physical wellbeing and higher scores on the parent relations and autonomy dimension compared to living in nonkinship care, even after adjusting for child factors, indicating that youths in kinship care have better physical health and better relations with caregivers. One might speculate that the CWS more often places youths with good health and good relations with their extended family in kinship care; alternatively, when the contact between youths and kinship caregivers is of high quality, this placement form supports contact with the biological family and their local community, which could lead to positive outcomes.

In contrast to previous findings that exposure to family violence was associated with lower HRQoL [23], we found that previous maltreatment predicted higher physical wellbeing. However, the effect was small and only present when

Table 4 Associations between the five dimensions of quality of life (QoL) and contextual and child factors, adjusted for gender and age ($N = 525$)

	Physical wellbeing			Psychological wellbeing			Parent relations and autonomy			Social support and peers			School environment		
	$_{adj}R^2$	B	95% CI	$_{adj}R^2$	B	95% CI	$_{adj}R^2$	B	95% CI	$_{adj}R^2$	B	95% CI	$_{adj}R^2$	B	95% CI
Step 1: covariates	0.22			0.14			0.08			0.07			0.09		
Gender[a]		**7.81**	**[5.00, 10.61]**		**7.74**	**[4.87, 10.61]**		**6.39**	**[3.33, 9.44]**		**4.27**	**[1.62, 6.92]**		**4.00**	**[1.24, 6.76]**
Age (years)		**− 2.36**	**[− 3.03, − 1.69]**		**− 1.61**	**[− 2.29, − 0.94]**		**− 0.83**	**[− 1.52, − 0.14]**		**− 1.04**	**[− 1.66, − 0.41]**		**− 1.50**	**[− 2.15, − 0.84]**
Step 2: added contextual factors	0.29			0.18			0.17			0.09			0.13		
Gender[a]		**7.68**	**[4.55, 10.82]**		**8.41**	**[5.19, 11.64]**		**7.12**	**[3.88, 10.37]**		**4.35**	**[1.60, 7.09]**		**4.51**	**[1.45, 7.58]**
Age (years)		**− 2.48**	**[− 3.18, − 1.78]**		**− 1.61**	**[− 2.32, − 0.89]**		**− 0.84**	**[− 1.53, − 0.14]**		**− 0.98**	**[− 1.66, − 0.30]**		**− 1.44**	**[− 2.12, − 0.78]**
Maltreatment[b, d]		2.03	[− 0.02, 4.08]		0.08	[− 2.28, 2.43]		1.05	[− 1.28, 3.38]		− 0.29	[− 2.34, 1.76]		− 1.08	[− 2.54, 0.39]
Service contact[d]		0.13	[− 2.25, 2.51]		− 2.04	[− 4.95, 0.88]		− 2.17	[− 5.50, 1.16]		0.66	[− 1.87, 3.19]		− 0.38	[− 2.75, 1.98]
Type of placement[c]		**5.83**	**[1.86, 9.80]**		3.41	[− 0.47, 7.30]		**7.21**	**[2.35, 12.08]**		2.16	[− 1.82, 6.15]		3.02	[− 0.99, 7.03,]
Years in current foster home		0.12	[− 0.22, 0.47]		0.21	[− 0.19, 0.60]		0.19	[− 0.22, 0.59]		− 0.07	[− 0.47, 0.35]		0.15	[− 0.23, 0.53]
Step 3: added child factors	0.40			0.27			0.21			0.12			0.20		
Gender[a]		**7.15**	**[3.71, 10.58]**		**7.90**	**[4.58, 11.22]**		**7.07**	**[3.86, 10.28]**		**4.19**	**[1.37, 7.01]**		**4.24**	**[0.97, 7.50]**
Age (years)		**− 2.42**	**[− 3.15, − 1.68]**		**− 1.51**	**[− 2.24, − 0.78]**		**− 0.72**	**[− 1.43, − 0.00]**		**− 0.93**	**[− 1.63, − 0.23]**		**− 1.31**	**[− 1.97, − 0.64]**
Maltreatment[b, d]		**2.23**	**[0.09, 4.37]**		0.33	[− 2.05, 2.70]		1.17	[− 1.23, 3.56]		− 0.23	[− 2.29, 1.83]		− 0.89	[− 2.43, 0.65]
Service contact[d]		0.25	[− 2.52, 3.02]		− 1.30	[− 4.38, 1.78]		− 1.20	[− 4.81, 2.41]		0.92	[− 1.87, 3.71]		0.62	[− 1.88, 3.12]
Type of placement[c]		**4.82**	**[0.11, 9.52]**		2.03	[− 2.42, 6.47]		**6.14**	**[1.11, 11.17]**		1.58	[− 2.65, 5.80]		1.70	[− 2.53, 5.94]
Years in current foster home		− 0.15	[− 0.54, 0.24]		− 0.03	[− 0.43, 0.37]		0.12	[− 0.33, 0.56]		− 0.14	[− 0.53, 0.24]		− 0.01	[− 0.37, 0.34]
Total difficulties[d]		− 0.24	[− 0.78, 0.31]		− 0.31	[− 0.79, 0.17]		− 0.03	[− 0.57, 0.51]		− 0.07	[− 0.64, 0.49]		− 0.15	[− 0.57, 0.26]
Prosocial behavior[d]		**1.53**	**[0.40, 2.66]**		**1.39**	**[0.04, 2.73]**		0.58	[− 0.68, 1.85]		0.46	[− 0.64, 1.56]		1.14	[− 0.02, 2.29]
Functional impairment[d]		1.35	[− 0.11, 2.82]		0.92	[− 0.42, 2.27]		− 0.50	[− 1.77, 0.78]		0.22	[− 0.99, 1.44]		0.13	[− 0.96, 1.21]

$_{adj}R^2$ Adjusted R squared, B Beta values (unstandardized coefficient), *CI* Confidence interval

[a] Girls are the reference group

[b] A sum score of four maltreatment items (range 0–4)

[c] Nonkinship care is the reference group

[d] Variable was measured at T1

Significant associations are marked in boldface controlling for the child factors; thus, further research on the relation between maltreatment and QoL among youths in foster care is warranted.

Neither years in the current foster home nor previous service contact was predictive of QoL, which contrasts to findings that youths with longer stays in the same placement reported higher subjective wellbeing [14]. However, the youths in our sample had lived seven years in their current foster home on average, which may limit our opportunity to discover possible negative effects of short stays and frequent moves on QoL. Moreover, mental health and functional impairment five years earlier did not predict QoL, indicating that childhood mental health problems do not necessarily lead to poor QoL among adolescents in foster care. This result was surprising, as studies have found associations between mental health and QoL [18] and that youths in foster care showed stable trajectories of mental health [43]. Our findings might be a consequence of youths receiving effective mental health services and/or positive development processes in the foster home. Prosocial behavior five years earlier predicted general QoL, physical wellbeing, and psychological wellbeing, indicating that building social skills among youths in foster care might be one way to enhance future QoL.

The full model of predictors explained 33% of the variance in general QoL; gender and age contributed to roughly half of the explained variance, indicating that these characteristics are important determinants of QoL. The explained variance varied between the QoL dimensions, with the included predictors having the greatest effect on physical wellbeing (40%) and the weakest effect on the social support and peers dimension (12%).

Strengths and limitations

As this study used a QoL instrument with good cross-cultural validity [25], we have been able to compare QoL among youths in foster care to QoL in other youth populations. We have a fairly large sample of high-risk youths that are difficult to recruit and challenging to follow over time due to instability in their living arrangements. Consequently, a limitation of our study is that we have missing data between T1 and T2 that is mainly due to changes in the youths living arrangements making them ineligible for recruitment at T2 (e.g., adoption, moved within the last six months, moved to an institution or reunited with biological parents). The response rate of invited youths at T2 was somewhat low (41.9%), which could influence the generalizability of our results. However, there were no differences in baseline measures for families lost to follow-up, and we have no reason to assume that missing data were related to QoL. Furthermore, we used multiple imputation to handle the missing data, which is preferable over listwise and pairwise deletion, as it results in more statistical power, gives unbiased results when data are missing at random and less biased results than other methods when data are not missing at random [44].

In our study maltreatment was reported by caseworkers, which could influence the accuracy of the measure, as caseworkers do not have full information about children's experiences. We considered to include the SDQ sub dimensions externalization and internalization problems as predictors in our analyses, but as these dimensions where highly correlated to total difficulties and to each other (data not shown) we only included total difficulties in the final analyses. We had no information on factors such as intelligence and socio economic status and future studies of QoL among youths in foster care ought to include such variables.

Conclusions

Youths in foster care had lower QoL than Scandinavian youths in general, indicating that these youths need more support to enhance their QoL. The relatively high scores on the parent relations and autonomy dimension implies that these youths have supportive relationships with their carers. Our finding of higher QoL among boys and among younger youth suggests that adolescent girls might need extra support to have good lives. Furthermore, higher physical wellbeing and better carer-relations among youths in kinship care lend support to the ongoing preference for kinship placements when the extended family can provide adequate care. Last, our results indicate that it is important to build and strengthen relational resources among children who have experienced detrimental care conditions.

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Author contributions ML contributed in the conception of the research questions and the data collection at T2, and was the main contributor in performing statistical analyses, and writing of the manuscript. AG, VB and TFW assisted in the choice of analyses and in the interpretation of the results, and contributed in revising and critically commenting on drafts. SL led the conception of the research questions and the design of the study and the data collection, and contributed in drafting and revising the manuscript. All authors read and approved the final manuscript.

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Data availability Access to data is restricted by Norwegian law on medical and health related research. Information about the data and analysis is available from corresponding author Marit Larsen on request.

Code availability Code is available from Marit Larsen upon request.

Compliance with ethical standards

Conflicts of interest The authors declare that they have no competing interests.

Ethical approval The Regional Committee for Medical and Health Research Ethics, Western Norway approved the study. The Norwegian Directorate for Children, Youth and Family Affairs provided exemptions from confidentiality for caseworkers and carers. In accordance with the Norwegian ethics requirement, oral consent is required from children aged 12 years or older. This was described in the invitation letter to youths and carers, and the youths were instructed that they could inform their carers if they did not want them to participate in the study.

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Appendix I: Overview of questionnaires used to measure service use and service experiences

Questions about service contact for foster parents:

Har fosterbarnet og/eller du hatt kontakt med følgende hjelpetilbud for fosterbarnet i løpet av DE TO SISTE ÅRENE? Hvis ja, kryss av for hvor ofte.

	Hver uke	Hver måned	Hver tredje måned	Hvert halvår	Sjeldnere
Skolehelsetjeneste (1)	○	○	○	○	○
Spesialpedagogiske tiltak/spesialundervisning (2)	○	○	○	○	○
Pedagogisk psykologisk tjeneste (OT/PPT) (3)	○	○	○	○	○
Psykisk helsevern for barn og unge (BUP) (4)	○	○	○	○	○
Barnevernet (5)	○	○	○	○	○
Fastlege (6)	○	○	○	○	○
Helsestasjon for ungdom (7)	○	○	○	○	○
Andre deler av hjelpeapparatet (spesifiser) (8)	○	○	○	○	○

○ Hverken fosterbarnet eller jeg har hatt kontakt med hjelpeapparatet de to siste årene

Questions in the service experience index:

De neste spørsmålene handler om hvilke erfaringer du har hatt med hjelpetjenesten. Når du svarer kan du tenke på den tjenesten du har hatt mest kontakt med. Med "behandlerne" mener vi: De som har hatt hovedansvar for undersøkelser og behandling/rådgiving. Dette kan være leger, psykologer, barnevernspedagog eller annet helse- og sosialpersonale.

	Ikke i det hele tatt	I liten grad	I noen grad	I stor grad	I svært stor grad	Ikke aktuelt
Snakket behandlerne til deg slik at du forsto dem? (1)	○	○	○	○	○	○
Snakket behandlerne til fosterbarnet slik at hun/han forsto dem? (2)	○	○	○	○	○	○
Har du tillit til behandlernes faglige dyktighet? (3)	○	○	○	○	○	○
Har du tillit til det øvrige personalets faglige dyktighet? (4)	○	○	○	○	○	○
Fikk du vite det du syntes var nødvendig om hvordan kartlegging og tiltak skulle foregå? (5)	○	○	○	○	○	○
Fikk du tilstrekkelig informasjon om barnets psykiske plager / tilstand? (6)	○	○	○	○	○	○
Opplevde du at tiltaket var tilpasset barnets situasjon? (7)	○	○	○	○	○	○
Var du involvert i avgjørelser	○	○	○	○	○	○

som angikk barnets tiltak? (8)						
Opplevde du at arbeid var godt organisert? (9)	○	○	○	○	○	○
Synes du tjenesten har samarbeidet godt med andre offentlige tjenester (for eksempel skole, BUP, PP-tjeneste, fastlege, barnevern, helsestasjon)? (10)	○	○	○	○	○	○
Var hjelpen og tiltaket dere fikk, alt i alt, tilfredsstillende? (11)	○	○	○	○	○	○
Mener du at barnet på noen måte fikk feil tiltak (etter det du selv kan bedømme)? (12)	○	○	○	○	○	○

Waiting time:

	Nei	Ja, men ikke lenge	Ja, ganske lenge	Ja, altfor lenge
Måtte du vente for å få tilbud ved tjenesten? (1)	○	○	○	○

Questions in the perceived outcomes index:

	Mye dårligere	Litt dårligere	Verken bedre eller dårligere	Litt bedre	Mye bedre
Er barnets tilstand dårligere eller bedre nå, sammenlignet med før tiltaket startet? (1)	○	○	○	○	○
Hvordan fungerer barnet i familien nå sammenlignet med før tiltaket startet? (2)	○	○	○	○	○
Hvordan fungerer barnet utenfor familien nå sammenlignet med før tiltaket startet (på skole, blant venner og lignende)? (3)	○	○	○	○	○

Service provider item:

Fyll inn hvilken tjeneste du har tenkt på da du besvarte spørsmålene over:

Appendix II: Supplementary material to paper III

Supplementary material 1.
Overview of studies cited in the introduction, describing QoL or related measures

Citation number	Article	Instrument used	Country
5	Ravens-Sieberer et al., 2014	KIDSCREEN	13 European countries
6	Greger, Myhre, Lydersen, & Jozefiak, 2016	The Kinder Lebensqualitat Fragebogen (KINDL-R)	Norway
7	Carbone, Sawyer, Searle, & Robinson, 2007	Child Health questionnaire (CHQ)	Australia
8	Bronsard et al., 2013	Vécu et Santé Perçue de l'Adolescent (VSP-A questionnaire)	France
9	Seiler, Kohler, Ruf-Leuschner, & Landolt, 2016	KIDSCREEN-27	Chile
10	Damnjanović et al., 2012	Pediatric Quality of life inventory (PedsQL)	Serbia
11	Jozefiak & Kayed, 2015	The Kinder Lebensqualitat Fragebogen (KINDL-R)	Norway
12	Llosada-Gistau, Casas, & Montserrat, 2017	The personal well-being index-school children (PWI-SC6)	Spain
13	Damnjanovic, Lakic, Stevanovic, & Jovanovic, 2011	Pediatric Quality of life inventory (PedsQL)	Serbia
14	Llosada-Gistau, Casas, & Montserrat, 2019	The personal well-being index-school children (PWI-SC6) and Student Life satisfaction scale (SLSS)	Spain
15	Li, Chng, & Chu, 2019	Meta-analysis	
16	Jernbro, Tindberg, Lucas, & Janson, 2015	KIDSCREEN-10	Sweden
17	Ravens-Sieberer et al., 2007	KIDSCREEN-27	13 European countries
18	Gander et al., 2019	Inventory of Life Quality in Children and Adolescents (ILC)	Switzerland
19	Jozefiak et al., 2017	The Kinder Lebensqualitat Fragebogen (KINDL-R)	Norway
20	Weber, Jud, Landolt, & Goldbeck, 2017	KIDSCREEN-10	Germany
21	Lanier, Kohl, Raghavan, & Auslander, 2015	Pediatric Quality of life inventory (PedsQL)	U.S.
22	Weber, Jud, & Landolt, 2016	A systematic review	
23	Beal et al., 2019	Center for Disease Control Health-Related Quality of Life measure	U.S.
24	Winokur, Holtan, & Batchelder, 2014	A Cochrane review	
26	Ravens-Sieberer & Europe, 2006	The KIDSCREEN questionnaires	13 European countries

Supplementary Table 1

Predictors of general quality of life (QoL). Comparisons of results using three different methods of handling the missing data.

	QoL (FIML^e - cases with missing on IVs excluded)				QoL (FIML^e- all cases included)				QoL (Multiple imputations)			
	n	R^2	B	95% CI	n	R^2	B	95% CI	n	R^2	B	95% CI
Step 1: covariates	523	0.17			525	0.17			525	0.17		
Gender^a			**7.27**	**[4.81, 9.73]**			**7.25**	**[4.80, 9.70]**			**7.40**	**[4.99, 9.82]**
Age (years)			**-1.50**	**[-2.10, -0.90]**			**-1.50**	**[-2.10, -0.90]**			**-1.55**	**[-2.14, -0.96]**
Step 2: added contextual predictors	111	0.24			525	0.20			525	0.22		
Gender^a			**8.29**	**[3.76, 12.83]**			**7.85**	**[5.24, 10.46]**			**7.96**	**[5.48, 10.44,]**
Age (years)			**-1.29**	**[-2.41, -0.17]**			**-1.40**	**[-2.06, -0.75]**			**-1.48**	**[-2.08, -0.87]**
Maltreatment$^{b, d}$			-0.69	[-2.82, 1.44]			-0.27	[-2.66, 2.13]			-0.12	[-2.18, 1.94]
Service contact^d			-1.39	[-4.02, 1.25]			-0.78	[-3.58, 2.02]			-0.93	[-3.37, 1.50]
Type of placement^c			6.34	[-0.54, 13.23]			**5.47**	**[1.62, 9.31]**			**5.15**	**[0.79, 9.51]**
Years in current foster home			-0.01	[-0.59, 0.58]			-0.00	[-0.36, 0.36]			0.06	[-0.27, 0.38]
Step 3: added child factors	82	0.28			525	0.31			525	0.34		
Gender^a			**5.76**	**[0.38, 11.14]**			**7.29**	**[4.63, 9.96]**			**7.71**	**[5.06, 10.36]**
Age (years)			**-1.24**	**[-2.47, -0.02]**			**-1.29**	**[-1.96, -0.62]**			**-1.33**	**[-1.94, -0.73]**
Maltreatment$^{b, d}$			0.48	[-2.24, 3.19]			0.26	[-2.04, 2.55]			0.20	[-1.78, 2.18]
Service contact^d			0.50	[-2.91, 3.90]			1.00	[-1.93, 3.93]			0.28	[-2.64, 3.20]
Type of placement^c			4.18	[-3.55, 11.90]			3.28	[-0.91, 7.48]			3.32	[-1.17, 7.80]
Years in current foster home			-0.42	[-1.14, 0.30]			-0.25	[-0.64, 0.13]			-0.17	[-0.55, 0.20]
Total difficulties^d			-0.09	[-0.60, 0.42]			-0.17	[-0.62, 0.28]			-0.30	[-0.80, 0.20]
Prosocial behavior^d			1.33	[-0.10, 2.76]			**1.66**	**[0.47, 2.85]**			**1.34**	**[0.36, 2.32]**
Functional impairment^d			0.03	[-1.22, 1.28]			0.27	[-0.95, 1.50]			0.34	[-0.64, 1.32]

Note: R^2 - R squared. B - beta values (unstandardized coefficient). CI - Confidence interval. ^{a} Girls are the reference group. ^{b} A sum score of four maltreatment items (range 0 – 4). ^{c} Nonkinship care is the reference group. ^{d} Variable was measured at T1. ^{e} Full information maximum likelihood
Significant associations are marked in **boldface**.

Supplementary Table 2

Predictors of the five dimensions of quality of life (QoL; N = 525). Comparisons of results using full information maximum likelihood (FIML; all cases included) versus multiple imputations (MI) to deal with missing data.

	Physical wellbeing		Psychological wellbeing		Parent relations & autonomy		Social Support & peers		School environment	
	B (FIML)	B (MI)	B (FIML)	B (MI)	B (FIML)	B (MI)	B (FIML)	B (MI)	B (FIML)	B (MI)
Step 1: covariates										
Gender[a]	**8.00**	**7.81**	**7.99**	**7.74**	**6.48**	**6.39**	**4.42**	**4.27**	**3.98**	**4.00**
Age (years)	**-2.29**	**-2.36**	**-1.65**	**-1.61**	**-0.86**	**-0.83**	**-1.07**	**-1.04**	**-1.55**	**-1.50**
Step 2: added contextual predictors										
Gender[a]	**7.68**	**7.68**	**8.82**	**8.41**	**7.06**	**7.12**	**4.55**	**4.35**	**4.49**	**4.51**
Age (years)	**-2.42**	**-2.48**	**-1.54**	**-1.61**	**-0.87**	**-0.84**	**-1.02**	**-0.98**	**-1.45**	**-1.44**
Maltreatment[b, d]	2.08	2.03	-1.10	0.08	1.12	1.05	-0.25	-0.29	-1.99	-1.08
Service contact[d]	0.73	0.13	-1.76	-2.04	-1.72	-2.17	0.60	0.66	0.18	-0.38
Type of placement[c]	**5.75**	**5.83**	3.17	3.41	**7.12**	**7.21**	2.88	2.16	2.95	3.02
Years in current foster home	0.10	0.12	0.10	0.21	0.20	0.19	-0.30	-0.07	0.07	0.15
Step 3: added child factors										
Gender[a]	**6.96**	**7.15**	**8.19**	**7.90**	**7.04**	**7.07**	**4.37**	**4.19**	**4.17**	**4.24**
Age (years)	**-2.42**	**-2.42**	**-1.51**	**-1.51**	-0.72	**-0.72**	**-0.96**	**-0.93**	**-1.32**	**-1.31**
Maltreatment[b, d]	**2.29**	**2.23**	-0.82	0.33	1.48	1.17	-0.07	-0.23	-1.66	-0.89
Service contact[d]	1.43	0.25	-0.59	-1.30	-0.66	-1.20	1.34	0.92	1.37	0.62
Type of placement[c]	4.06	**4.82**	1.72	2.03	**5.64**	**6.14**	1.84	1.58	1.06	1.70
Years in current foster home	-0.24	-0.15	-0.16	-0.03	0.10	0.12	-0.18	-0.14	-0.14	-0.01
Total difficulties[d]	-0.08	-0.24	-0.23	-0.31	0.08	-0.03	0.02	-0.07	-0.05	-0.15
Prosocial behavior[d]	**1.95**	**1.53**	**1.59**	**1.39**	0.91	0.58	0.84	0.46	**1.48**	1.14
Functional impairment[d]	1.22	1.35	0.97	0.92	-0.74	-0.50	0.03	0.22	0.16	0.13

Note: B - beta values (unstandardized coefficient). [a] Girls are the reference group. [b] A sum score of four maltreatment items (range 0 – 4). [c] Nonkinship care is the reference group.

[d] Variable was measured at T1

Significant associations are marked in **boldface**.

Supplementary Table 3

Pearson correlations between general quality of life (QoL), the five QoL dimensions and all predictors.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. General QoL														
2. Physical Wellbeing	.68**													
3. Psychological Wellbeing	.85**	.54**												
4. Parent relations & Autonomy	.76**	.43**	.60**											
5. Peers & Social Support	.64**	.47**	.60**	.46**										
6. School Environment	.78**	.47**	.69**	.50**	.50**									
7. Male gender^{a}	.32**	.32**	.31**	.26**	.20**	.18**								
8. Age (years)	-.28**	-.37**	-.26**	-.15**	-.20**	-.28**	-.05							
9. Maltreatment$^{b, e}$	-.04	.12	-.11	.07	-.04	-.23*	.07	.08						
10. Service contact^{e}	-.05	.02	-.09	-.10	.06	.01	.15*	.09	.02					
11. Kinship care^{c}	.17**	.15*	.10	.19**	.09	.11	-.11*^{d}	-.06	-.07	-.09				
12. Years in current foster home	-.03	-.08	.02	.02	-.04	.03	.03	.21**	-.23**	.08	-.04			
13. Total difficulties^{e}	-.24*	-.03	-.20	-.16	-.03	-.19	.02	.08	.11	.37**	-.15	-.07		
14. Prosocial behavior^{e}	.30**	.18	.31**	.19	.10	.32**	-.04	-.06	-.18*	-.22**	.21*	.24**	-.46**	
15. Functional impairment^{e}	-.13	.08	-.04	-.18	-.01	-.11	.07	.13	.04	.41**	-.15	.07	.73**	-.35**

Note. * $p < .05$, ** $p < .01$. [a] Girls are the reference group. [b] A sum score of four maltreatment items (range 0 – 4). [c] Nonkinship care is the reference group. [d] The association between gender and type of foster care was tested with a chi-square test as both variables are binary. [e] Variable measured at T1.

Doctoral Theses at The Faculty of Psychology, University of Bergen

1980	Allen, Hugh M., Dr. philos.	Parent-offspring interactions in willow grouse (Lagopus L. Lagopus).
1981	Myhrer, Trond, Dr. philos.	Behavioral Studies after selective disruption of hippocampal inputs in albino rats.
1982	Svebak, Sven, Dr. philos.	The significance of motivation for task-induced tonic physiological changes.
1983	Myhre, Grete, Dr. philos.	The Biopsychology of behavior in captive Willow ptarmigan.
	Eide, Rolf, Dr. philos.	PSYCHOSOCIAL FACTORS AND INDICES OF HEALTH RISKS. The relationship of psychosocial conditions to subjective complaints, arterial blood pressure, serum cholesterol, serum triglycerides and urinary catecholamines in middle aged populations in Western Norway.
	Værnes, Ragnar J., Dr. philos.	Neuropsychological effects of diving.
1984	Kolstad, Arnulf, Dr. philos.	Til diskusjonen om sammenhengen mellom sosiale forhold og psykiske strukturer. En epidemiologisk undersøkelse blant barn og unge.
	Løberg, Tor, Dr. philos.	Neuropsychological assessment in alcohol dependence.
1985	Hellesnes, Tore, Dr. philos.	Læring og problemløsning. En studie av den perseptuelle analysens betydning for verbal læring.
	Håland, Wenche, Dr. philos.	Psykoterapi: relasjon, utviklingsprosess og effekt.
1986	Hagtvet, Knut A., Dr. philos.	The construct of test anxiety: Conceptual and methodological issues.
	Jellestad, Finn K., Dr. philos.	Effects of neuron specific amygdala lesions on fear-motivated behavior in rats.
1987	Aarø, Leif E., Dr. philos.	Health behaviour and sosioeconomic Status. A survey among the adult population in Norway.
	Underlid, Kjell, Dr. philos.	Arbeidsløyse i psykososialt perspektiv.
	Laberg, Jon C., Dr. philos.	Expectancy and classical conditioning in alcoholics' craving.
	Vollmer, Fred, Dr. philos.	Essays on explanation in psychology.
	Ellertsen, Bjørn, Dr. philos.	Migraine and tension headache: Psychophysiology, personality and therapy.
1988	Kaufmann, Astrid, Dr. philos.	Antisosial atferd hos ungdom. En studie av psykologiske determinanter.

	Mykletun, Reidar J., Dr. philos.	Teacher stress: personality, work-load and health.
	Havik, Odd E., Dr. philos.	After the myocardial infarction: A medical and psychological study with special emphasis on perceived illness.
1989	Bråten, Stein, Dr. philos.	Menneskedyaden. En teoretisk tese om sinnets dialogiske natur med informasjons- og utviklingspsykologiske implikasjoner sammenholdt med utvalgte spedbarnsstudier.
	Wold, Bente, Dr. psychol.	Lifestyles and physical activity. A theoretical and empirical analysis of socialization among children and adolescents.
1990	Flaten, Magne A., Dr. psychol.	The role of habituation and learning in reflex modification.
1991	Alsaker, Françoise D., Dr. philos.	Global negative self-evaluations in early adolescence.
	Kraft, Pål, Dr. philos.	AIDS prevention in Norway. Empirical studies on diffusion of knowledge, public opinion, and sexual behaviour.
	Endresen, Inger M., Dr. philos.	Psychoimmuniological stress markers in working life.
	Faleide, Asbjørn O., Dr. philos.	Asthma and allergy in childhood. Psychosocial and psychotherapeutic problems.
1992	Dalen, Knut, Dr. philos.	Hemispheric asymmetry and the Dual-Task Paradigm: An experimental approach.
	Bø, Inge B., Dr. philos.	Ungdoms sosiale økologi. En undersøkelse av 14-16 åringers sosiale nettverk.
	Nivison, Mary E., Dr. philos.	The relationship between noise as an experimental and environmental stressor, physiological changes and psychological factors.
	Torgersen, Anne M., Dr. philos.	Genetic and environmental influence on temperamental behaviour. A longitudinal study of twins from infancy to adolescence.
1993	Larsen, Svein, Dr. philos.	Cultural background and problem drinking.
	Nordhus, Inger Hilde, Dr. philos.	Family caregiving. A community psychological study with special emphasis on clinical interventions.
	Thuen, Frode, Dr. psychol.	Accident-related behaviour among children and young adolescents: Prediction and prevention.
	Solheim, Ragnar, Dr. philos.	Spesifikke lærevansker. Diskrepanskriteriet anvendt i seleksjonsmetodikk.
	Johnsen, Bjørn Helge, Dr. psychol.	Brain assymetry and facial emotional expressions: Conditioning experiments.
1994	Tønnessen, Finn E., Dr. philos.	The etiology of Dyslexia.
	Kvale, Gerd, Dr. psychol.	Psychological factors in anticipatory nausea and vomiting in cancer chemotherapy.

	Asbjørnsen, Arve E., Dr. psychol.	Structural and dynamic factors in dichotic listening: An interactional model.
	Bru, Edvin, Dr. philos.	The role of psychological factors in neck, shoulder and low back pain among female hospitale staff.
	Braathen, Eli T., Dr. psychol.	Prediction of exellence and discontinuation in different types of sport: The significance of motivation and EMG.
	Johannessen, Birte F., Dr. philos.	Det flytende kjønnet. Om lederskap, politikk og identitet.
1995	Sam, David L., Dr. psychol.	Acculturation of young immigrants in Norway: A psychological and socio-cultural adaptation.
	Bjaalid, Inger-Kristin, Dr. philos.	Component processes in word recognition.
	Martinsen, Øyvind, Dr. philos.	Cognitive style and insight.
	Nordby, Helge, Dr. philos.	Processing of auditory deviant events: Mismatch negativity of event-related brain potentials.
	Raaheim, Arild, Dr. philos.	Health perception and health behaviour, theoretical considerations, empirical studies, and practical implications.
	Seltzer, Wencke J., Dr. philos.	Studies of Psychocultural Approach to Families in Therapy.
	Brun, Wibecke, Dr. philos.	Subjective conceptions of uncertainty and risk.
	Aas, Henrik N., Dr. psychol.	Alcohol expectancies and socialization: Adolescents learning to drink.
	Bjørkly, Stål, Dr. psychol.	Diagnosis and prediction of intra-institutional aggressive behaviour in psychotic patients
1996	Anderssen, Norman, Dr. psychol.	Physical activity of young people in a health perspective: Stability, change and social influences.
	Sandal, Gro Mjeldheim, Dr. psychol.	Coping in extreme environments: The role of personality.
	Strumse, Einar, Dr. philos.	The psychology of aesthetics: explaining visual preferences for agrarian landscapes in Western Norway.
	Hestad, Knut, Dr. philos.	Neuropsychological deficits in HIV-1 infection.
	Lugoe, L.Wycliffe, Dr. philos.	Prediction of Tanzanian students' HIV risk and preventive behaviours
	Sandvik, B. Gunnhild, Dr. philos.	Fra distriktsjordmor til institusjonsjordmor. Fremveksten av en profesjon og en profesjonsutdanning
	Lie, Gro Therese, Dr. psychol.	The disease that dares not speak its name: Studies on factors of importance for coping with HIV/AIDS in Northern Tanzania
	Øygard, Lisbet, Dr. philos.	Health behaviors among young adults. A psychological and sociological approach
	Stormark, Kjell Morten, Dr. psychol.	Emotional modulation of selective attention: Experimental and clinical evidence.

	Einarsen, Ståle, Dr. psychol.	Bullying and harassment at work: epidemiological and psychosocial aspects.
1997	Knivsberg, Ann-Mari, Dr. philos.	Behavioural abnormalities and childhood psychopathology: Urinary peptide patterns as a potential tool in diagnosis and remediation.
	Eide, Arne H., Dr. philos.	Adolescent drug use in Zimbabwe. Cultural orientation in a global-local perspective and use of psychoactive substances among secondary school students.
	Sørensen, Marit, Dr. philos.	The psychology of initiating and maintaining exercise and diet behaviour.
	Skjæveland, Oddvar, Dr. psychol.	Relationships between spatial-physical neighborhood attributes and social relations among neighbors.
	Zewdie, Teka, Dr. philos.	Mother-child relational patterns in Ethiopia. Issues of developmental theories and intervention programs.
	Wilhelmsen, Britt Unni, Dr. philos.	Development and evaluation of two educational programmes designed to prevent alcohol use among adolescents.
	Manger, Terje, Dr. philos.	Gender differences in mathematical achievement among Norwegian elementary school students.
1998 **V**	Lindstrøm, Torill Christine, Dr. philos.	«Good Grief»: Adapting to Bereavement.
	Skogstad, Anders, Dr. philos.	Effects of leadership behaviour on job satisfaction, health and efficiency.
	Haldorsen, Ellen M. Håland, Dr. psychol.	Return to work in low back pain patients.
	Besemer, Susan P., Dr. philos.	Creative Product Analysis: The Search for a Valid Model for Understanding Creativity in Products.
H	Winje, Dagfinn, Dr. psychol.	Psychological adjustment after severe trauma. A longitudinal study of adults' and children's posttraumatic reactions and coping after the bus accident in Måbødalen, Norway 1988.
	Vosburg, Suzanne K., Dr. philos.	The effects of mood on creative problem solving.
	Eriksen, Hege R., Dr. philos.	Stress and coping: Does it really matter for subjective health complaints?
	Jakobsen, Reidar, Dr. psychol.	Empiriske studier av kunnskap og holdninger om hiv/aids og den normative seksuelle utvikling i ungdomsårene.
1999 **V**	Mikkelsen, Aslaug, Dr. philos.	Effects of learning opportunities and learning climate on occupational health.
	Samdal, Oddrun, Dr. philos.	The school environment as a risk or resource for students' health-related behaviours and subjective well-being.
	Friestad, Christine, Dr. philos.	Social psychological approaches to smoking.
	Ekeland, Tor-Johan, Dr. philos.	Meining som medisin. Ein analyse av placebofenomenet og implikasjoner for terapi og terapeutiske teoriar.

H	Saban, Sara, Dr. psychol.	Brain Asymmetry and Attention: Classical Conditioning Experiments.
	Carlsten, Carl Thomas, Dr. philos.	God lesing – God læring. En aksjonsrettet studie av undervisning i fagtekstlesing.
	Dundas, Ingrid, Dr. psychol.	Functional and dysfunctional closeness. Family interaction and children's adjustment.
	Engen, Liv, Dr. philos.	Kartlegging av leseferdighet på småskoletrinnet og vurdering av faktorer som kan være av betydning for optimal leseutvikling.
2000 V	Hovland, Ole Johan, Dr. philos.	Transforming a self-preserving "alarm" reaction into a self-defeating emotional response: Toward an integrative approach to anxiety as a human phenomenon.
	Lillejord, Sølvi, Dr. philos.	Handlingsrasjonalitet og spesialundervisning. En analyse av aktørperspektiver.
	Sandell, Ove, Dr. philos.	Den varme kunnskapen.
	Oftedal, Marit Petersen, Dr. philos.	Diagnostisering av ordavkodingsvansker: En prosessanalytisk tilnærmingsmåte.
H	Sandbak, Tone, Dr. psychol.	Alcohol consumption and preference in the rat: The significance of individual differences and relationships to stress pathology
	Eid, Jarle, Dr. psychol.	Early predictors of PTSD symptom reporting; The significance of contextual and individual factors.
2001 V	Skinstad, Anne Helene, Dr. philos.	Substance dependence and borderline personality disorders.
	Binder, Per-Einar, Dr. psychol.	Individet og den meningsbærende andre. En teoretisk undersøkelse av de mellommenneskelige forutsetningene for psykisk liv og utvikling med utgangspunkt i Donald Winnicotts teori.
	Roald, Ingvild K., Dr. philos.	Building of concepts. A study of Physics concepts of Norwegian deaf students.
H	Fekadu, Zelalem W., Dr. philos.	Predicting contraceptive use and intention among a sample of adolescent girls. An application of the theory of planned behaviour in Ethiopian context.
	Melesse, Fantu, Dr. philos.	The more intelligent and sensitive child (MISC) mediational intervention in an Ethiopian context: An evaluation study.
	Råheim, Målfrid, Dr. philos.	Kvinners kroppserfaring og livssammenheng. En fenomenologisk – hermeneutisk studie av friske kvinner og kvinner med kroniske muskelsmerter.
	Engelsen, Birthe Kari, Dr. psychol.	Measurement of the eating problem construct.
	Lau, Bjørn, Dr. philos.	Weight and eating concerns in adolescence.
2002 V	Ihlebæk, Camilla, Dr. philos.	Epidemiological studies of subjective health complaints.

	Rosén, Gunnar O. R., Dr. philos.	The phantom limb experience. Models for understanding and treatment of pain with hypnosis.
	Høines, Marit Johnsen, Dr. philos.	Fleksible språkrom. Matematikklæring som tekstutvikling.
	Anthun, Roald Andor, Dr. philos.	School psychology service quality. Consumer appraisal, quality dimensions, and collaborative improvement potential
	Pallesen, Ståle, Dr. psychol.	Insomnia in the elderly. Epidemiology, psychological characteristics and treatment.
	Midthassel, Unni Vere, Dr. philos.	Teacher involvement in school development activity. A study of teachers in Norwegian compulsory schools
	Kallestad, Jan Helge, Dr. philos.	Teachers, schools and implementation of the Olweus Bullying Prevention Program.
H	Ofte, Sonja Helgesen, Dr. psychol.	Right-left discrimination in adults and children.
	Netland, Marit, Dr. psychol.	Exposure to political violence. The need to estimate our estimations.
	Diseth, Åge, Dr. psychol.	Approaches to learning: Validity and prediction of academic performance.
	Bjuland, Raymond, Dr. philos.	Problem solving in geometry. Reasoning processes of student teachers working in small groups: A dialogical approach.
2003 **V**	Arefjord, Kjersti, Dr. psychol.	After the myocardial infarction – the wives' view. Short- and long-term adjustment in wives of myocardial infarction patients.
	Ingjaldsson, Jón Þorvaldur, Dr. psychol.	Unconscious Processes and Vagal Activity in Alcohol Dependency.
	Holden, Børge, Dr. philos.	Følger av atferdsanalytiske forklaringer for atferdsanalysens tilnærming til utforming av behandling.
	Holsen, Ingrid, Dr. philos.	Depressed mood from adolescence to 'emerging adulthood'. Course and longitudinal influences of body image and parent-adolescent relationship.
	Hammar, Åsa Karin, Dr. psychol.	Major depression and cognitive dysfunction- An experimental study of the cognitive effort hypothesis.
	Sprugevica, Ieva, Dr. philos.	The impact of enabling skills on early reading acquisition.
	Gabrielsen, Egil, Dr. philos.	LESE FOR LIVET. Lesekompetansen i den norske voksenbefolkningen sett i lys av visjonen om en enhetsskole.
H	Hansen, Anita Lill, Dr. psychol.	The influence of heart rate variability in the regulation of attentional and memory processes.
	Dyregrov, Kari, Dr. philos.	The loss of child by suicide, SIDS, and accidents: Consequences, needs and provisions of help.
2004 **V**	Torsheim, Torbjørn, Dr. psychol.	Student role strain and subjective health complaints: Individual, contextual, and longitudinal perspectives.

	Haugland, Bente Storm Mowatt Dr. psychol.	Parental alcohol abuse. Family functioning and child adjustment.
	Milde, Anne Marita, Dr. psychol.	Ulcerative colitis and the role of stress. Animal studies of psychobiological factors in relationship to experimentally induced colitis.
	Stornes, Tor, Dr. philos.	Socio-moral behaviour in sport. An investigation of perceptions of sportspersonship in handball related to important factors of socio-moral influence.
	Mæhle, Magne, Dr. philos.	Re-inventing the child in family therapy: An investigation of the relevance and applicability of theory and research in child development for family therapy involving children.
	Kobbeltvedt, Therese, Dr. psychol.	Risk and feelings: A field approach.
2004 H	Thomsen, Tormod, Dr. psychol.	Localization of attention in the brain.
	Løberg, Else-Marie, Dr. psychol.	Functional laterality and attention modulation in schizophrenia: Effects of clinical variables.
	Kyrkjebø, Jane Mikkelsen, Dr. philos.	Learning to improve: Integrating continuous quality improvement learning into nursing education.
	Laumann, Karin, Dr. psychol.	Restorative and stress-reducing effects of natural environments: Experiencal, behavioural and cardiovascular indices.
	Holgersen, Helge, PhD	Mellom oss - Essay i relasjonell psykoanalyse.
2005 V	Hetland, Hilde, Dr. psychol.	Leading to the extraordinary? Antecedents and outcomes of transformational leadership.
	Iversen, Anette Christine, Dr. philos.	Social differences in health behaviour: the motivational role of perceived control and coping.
2005 H	Mathisen, Gro Ellen, PhD	Climates for creativity and innovation: Definitions, measurement, predictors and consequences.
	Sævi, Tone, Dr. philos.	Seeing disability pedagogically – The lived experience of disability in the pedagogical encounter.
	Wiium, Nora, PhD	Intrapersonal factors, family and school norms: combined and interactive influence on adolescent smoking behaviour.
	Kanagaratnam, Pushpa, PhD	Subjective and objective correlates of Posttraumatic Stress in immigrants/refugees exposed to political violence.
	Larsen, Torill M. B. , PhD	Evaluating principals` and teachers` implementation of Second Step. A case study of four Norwegian primary schools.
	Bancila, Delia, PhD	Psychosocial stress and distress among Romanian adolescents and adults.
2006 V	Hillestad, Torgeir Martin, Dr. philos.	Normalitet og avvik. Forutsetninger for et objektivt psykopatologisk avviksbegrep. En psykologisk, sosial, erkjennelsesteoretisk og teorihistorisk framstilling.

	Nordanger, Dag Øystein, Dr. psychol.	Psychosocial discourses and responses to political violence in post-war Tigray, Ethiopia.
	Rimol, Lars Morten, PhD	Behavioral and fMRI studies of auditory laterality and speech sound processing.
	Krumsvik, Rune Johan, Dr. philos.	ICT in the school. ICT-initiated school development in lower secondary school.
	Norman, Elisabeth, Dr. psychol.	Gut feelings and unconscious thought: An exploration of fringe consiousness in implicit cognition.
	Israel, K Pravin, Dr. psychol.	Parent involvement in the mental health care of children and adolescents. Emperical studies from clinical care setting.
	Glasø, Lars, PhD	Affects and emotional regulation in leader-subordinate relationships.
	Knutsen, Ketil, Dr. philos.	HISTORIER UNGDOM LEVER – En studie av hvordan ungdommer bruker historie for å gjøre livet meningsfullt.
	Matthiesen, Stig Berge, PhD	Bullying at work. Antecedents and outcomes.
2006 H	Gramstad, Arne, PhD	Neuropsychological assessment of cognitive and emotional functioning in patients with epilepsy.
	Bendixen, Mons, PhD	Antisocial behaviour in early adolescence: Methodological and substantive issues.
	Mrumbi, Khalifa Maulid, PhD	Parental illness and loss to HIV/AIDS as experienced by AIDS orphans aged between 12-17 years from Temeke District, Dar es Salaam, Tanzania: A study of the children's psychosocial health and coping responses.
	Hetland, Jørn, Dr. psychol.	The nature of subjective health complaints in adolescence: Dimensionality, stability, and psychosocial predictors
	Kakoko, Deodatus Conatus Vitalis, PhD	Voluntary HIV counselling and testing service uptake among primary school teachers in Mwanza, Tanzania: assessment of socio-demographic, psychosocial and socio-cognitive aspects
	Mykletun, Arnstein, Dr. psychol.	Mortality and work-related disability as long-term consequences of anxiety and depression: Historical cohort designs based on the HUNT-2 study
	Sivertsen, Børge, PhD	Insomnia in older adults. Consequences, assessment and treatment.
2007 V	Singhammer, John, Dr. philos.	Social conditions from before birth to early adulthood – the influence on health and health behaviour
	Janvin, Carmen Ani Cristea, PhD	Cognitive impairment in patients with Parkinson's disease: profiles and implications for prognosis
	Braarud, Hanne Cecilie, Dr.psychol.	Infant regulation of distress: A longitudinal study of transactions between mothers and infants
	Tveito, Torill Helene, PhD	Sick Leave and Subjective Health Complaints

	Magnussen, Liv Heide, PhD	Returning disability pensioners with back pain to work
	Thuen, Elin Marie, Dr.philos.	Learning environment, students’ coping styles and emotional and behavioural problems. A study of Norwegian secondary school students.
	Solberg, Ole Asbjørn, PhD	Peacekeeping warriors – A longitudinal study of Norwegian peacekeepers in Kosovo
2007 H	Søreide, Gunn Elisabeth, Dr.philos.	Narrative construction of teacher identity
	Svensen, Erling, PhD	WORK & HEALTH. Cognitive Activation Theory of Stress applied in an organisational setting.
	Øverland, Simon Nygaard, PhD	Mental health and impairment in disability benefits. Studies applying linkages between health surveys and administrative registries.
	Eichele, Tom, PhD	Electrophysiological and Hemodynamic Correlates of Expectancy in Target Processing
	Børhaug, Kjetil, Dr.philos.	Oppseding til demokrati. Ein studie av politisk oppseding i norsk skule.
	Eikeland, Thorleif, Dr.philos.	Om å vokse opp på barnehjem og på sykehus. En undersøkelse av barnehjemsbarns opplevelser på barnehjem sammenholdt med sanatoriebarns beskrivelse av langvarige sykehusopphold – og et forsøk på forklaring.
	Wadel, Carl Cato, Dr.philos.	Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon
	Vinje, Hege Forbech, PhD	Thriving despite adversity: Job engagement and self-care among community nurses
	Noort, Maurits van den, PhD	Working memory capacity and foreign language acquisition
2008 V	Breivik, Kyrre, Dr.psychol.	The Adjustment of Children and Adolescents in Different Post-Divorce Family Structures. A Norwegian Study of Risks and Mechanisms.
	Johnsen, Grethe E., PhD	Memory impairment in patients with posttraumatic stress disorder
	Sætrevik, Bjørn, PhD	Cognitive Control in Auditory Processing
	Carvalhosa, Susana Fonseca, PhD	Prevention of bullying in schools: an ecological model
2008 H	Brønnick, Kolbjørn Selvåg	Attentional dysfunction in dementia associated with Parkinson’s disease.
	Posserud, Maj-Britt Rocio	Epidemiology of autism spectrum disorders
	Haug, Ellen	Multilevel correlates of physical activity in the school setting
	Skjerve, Arvid	Assessing mild dementia – a study of brief cognitive tests.

	Kjønniksen, Lise	The association between adolescent experiences in physical activity and leisure time physical activity in adulthood: a ten year longitudinal study
	Gundersen, Hilde	The effects of alcohol and expectancy on brain function
	Omvik, Siri	Insomnia – a night and day problem
2009 V	Molde, Helge	Pathological gambling: prevalence, mechanisms and treatment outcome.
	Foss, Else	Den omsorgsfulle væremåte. En studie av voksnes væremåte i forhold til barn i barnehagen.
	Westrheim, Kariane	Education in a Political Context: A study of Konwledge Processes and Learning Sites in the PKK.
	Wehling, Eike	Cognitive and olfactory changes in aging
	Wangberg, Silje C.	Internet based interventions to support health behaviours: The role of self-efficacy.
	Nielsen, Morten B.	Methodological issues in research on workplace bullying. Operationalisations, measurements and samples.
	Sandu, Anca Larisa	MRI measures of brain volume and cortical complexity in clinical groups and during development.
	Guribye, Eugene	Refugees and mental health interventions
	Sørensen, Lin	Emotional problems in inattentive children – effects on cognitive control functions.
	Tjomsland, Hege E.	Health promotion with teachers. Evaluation of the Norwegian Network of Health Promoting Schools: Quantitative and qualitative analyses of predisposing, reinforcing and enabling conditions related to teacher participation and program sustainability.
	Helleve, Ingrid	Productive interactions in ICT supported communities of learners
2009 H	Skorpen, Aina Øye, Christine	Dagliglivet i en psykiatrisk institusjon: En analyse av miljøterapeutiske praksiser
	Andreassen, Cecilie Schou	WORKAHOLISM – Antecedents and Outcomes
	Stang, Ingun	Being in the same boat: An empowerment intervention in breast cancer self-help groups
	Sequeira, Sarah Dorothee Dos Santos	The effects of background noise on asymmetrical speech perception
	Kleiven, Jo, dr.philos.	The Lillehammer scales: Measuring common motives for vacation and leisure behavior
	Jónsdóttir, Guðrún	Dubito ergo sum? Ni jenter møter naturfaglig kunnskap.
	Hove, Oddbjørn	Mental health disorders in adults with intellectual disabilities - Methods of assessment and prevalence of mental health disorders and problem behaviour
	Wageningen, Heidi Karin van	The role of glutamate on brain function

	Bjørkvik, Jofrid	God nok? Selvaktelse og interpersonlig fungering hos pasienter innen psykisk helsevern: Forholdet til diagnoser, symptomer og behandlingsutbytte
	Andersson, Martin	A study of attention control in children and elderly using a forced-attention dichotic listening paradigm
	Almås, Aslaug Grov	Teachers in the Digital Network Society: Visions and Realities. A study of teachers’ experiences with the use of ICT in teaching and learning.
	Ulvik, Marit	Lærerutdanning som danning? Tre stemmer i diskusjonen
2010 V	Skår, Randi	Læringsprosesser i sykepleieres profesjonsutøvelse. En studie av sykepleieres læringserfaringer.
	Roald, Knut	Kvalitetsvurdering som organisasjonslæring mellom skole og skoleeigar
	Lunde, Linn-Heidi	Chronic pain in older adults. Consequences, assessment and treatment.
	Danielsen, Anne Grete	Perceived psychosocial support, students’ self-reported academic initiative and perceived life satisfaction
	Hysing, Mari	Mental health in children with chronic illness
	Olsen, Olav Kjellevold	Are good leaders moral leaders? The relationship between effective military operational leadership and morals
	Riese, Hanne	Friendship and learning. Entrepreneurship education through mini-enterprises.
	Holthe, Asle	Evaluating the implementation of the Norwegian guidelines for healthy school meals: A case study involving three secondary schools
H	Hauge, Lars Johan	Environmental antecedents of workplace bullying: A multi-design approach
	Bjørkelo, Brita	Whistleblowing at work: Antecedents and consequences
	Reme, Silje Endresen	Common Complaints – Common Cure? Psychiatric comorbidity and predictors of treatment outcome in low back pain and irritable bowel syndrome
	Helland, Wenche Andersen	Communication difficulties in children identified with psychiatric problems
	Beneventi, Harald	Neuronal correlates of working memory in dyslexia
	Thygesen, Elin	Subjective health and coping in care-dependent old persons living at home
	Aanes, Mette Marthinussen	Poor social relationships as a threat to belongingness needs. Interpersonal stress and subjective health complaints: Mediating and moderating factors.
	Anker, Morten Gustav	Client directed outcome informed couple therapy

	Bull, Torill	Combining employment and child care: The subjective well-being of single women in Scandinavia and in Southern Europe
	Viig, Nina Grieg	Tilrettelegging for læreres deltakelse i helsefremmende arbeid. En kvalitativ og kvantitativ analyse av sammenhengen mellom organisatoriske forhold og læreres deltakelse i utvikling og implementering av Europeisk Nettverk av Helsefremmende Skoler i Norge
	Wolff, Katharina	To know or not to know? Attitudes towards receiving genetic information among patients and the general public.
	Ogden, Terje, dr.philos.	Familiebasert behandling av alvorlige atferdsproblemer blant barn og ungdom. Evaluering og implementering av evidensbaserte behandlingsprogrammer i Norge.
	Solberg, Mona Elin	Self-reported bullying and victimisation at school: Prevalence, overlap and psychosocial adjustment.
2011 V	Bye, Hege Høivik	Self-presentation in job interviews. Individual and cultural differences in applicant self-presentation during job interviews and hiring managers' evaluation
	Notelaers, Guy	Workplace bullying. A risk control perspective.
	Moltu, Christian	Being a therapist in difficult therapeutic impasses. A hermeneutic phenomenological analysis of skilled psychotherapists' experiences, needs, and strategies in difficult therapies ending well.
	Myrseth, Helga	Pathological Gambling - Treatment and Personality Factors
	Schanche, Elisabeth	From self-criticism to self-compassion. An empirical investigation of hypothesized change prosesses in the Affect Phobia Treatment Model of short-term dynamic psychotherapy for patients with Cluster C personality disorders.
	Våpenstad, Eystein Victor, dr.philos.	Det tempererte nærvær. En teoretisk undersøkelse av psykoterapautens subjektivitet i psykoanalyse og psykoanalytisk psykoterapi.
	Haukebø, Kristin	Cognitive, behavioral and neural correlates of dental and intra-oral injection phobia. Results from one treatment and one fMRI study of randomized, controlled design.
	Harris, Anette	Adaptation and health in extreme and isolated environments. From 78°N to 75°S.
	Bjørknes, Ragnhild	Parent Management Training-Oregon Model: intervention effects on maternal practice and child behavior in ethnic minority families
	Mamen, Asgeir	Aspects of using physical training in patients with substance dependence and additional mental distress
	Espevik, Roar	Expert teams: Do shared mental models of team members make a difference
	Haara, Frode Olav	Unveiling teachers' reasons for choosing practical activities in mathematics teaching

2011 H	Hauge, Hans Abraham	How can employee empowerment be made conducive to both employee health and organisation performance? An empirical investigation of a tailor-made approach to organisation learning in a municipal public service organisation.
	Melkevik, Ole Rogstad	Screen-based sedentary behaviours: pastimes for the poor, inactive and overweight? A cross-national survey of children and adolescents in 39 countries.
	Vøllestad, Jon	Mindfulness-based treatment for anxiety disorders. A quantitative review of the evidence, results from a randomized controlled trial, and a qualitative exploration of patient experiences.
	Tolo, Astrid	Hvordan blir lærerkompetanse konstruert? En kvalitativ studie av PPU-studenters kunnskapsutvikling.
	Saus, Evelyn-Rose	Training effectiveness: Situation awareness training in simulators
	Nordgreen, Tine	Internet-based self-help for social anxiety disorder and panic disorder. Factors associated with effect and use of self-help.
	Munkvold, Linda Helen	Oppositional Defiant Disorder: Informant discrepancies, gender differences, co-occuring mental health problems and neurocognitive function.
	Christiansen, Øivin	Når barn plasseres utenfor hjemmet: beslutninger, forløp og relasjoner. Under barnevernets (ved)tak.
	Brunborg, Geir Scott	Conditionability and Reinforcement Sensitivity in Gambling Behaviour
	Hystad, Sigurd William	Measuring Psychological Resiliency: Validation of an Adapted Norwegian Hardiness Scale
2012 V	Roness, Dag	Hvorfor bli lærer? Motivasjon for utdanning og utøving.
	Fjermestad, Krister Westlye	The therapeutic alliance in cognitive behavioural therapy for youth anxiety disorders
	Jenssen, Eirik Sørnes	Tilpasset opplæring i norsk skole: politikeres, skolelederes og læreres handlingsvalg
	Saksvik-Lehouillier, Ingvild	Shift work tolerance and adaptation to shift work among offshore workers and nurses
	Johansen, Venke Frederike	Når det intime blir offentlig. Om kvinners åpenhet om brystkreft og om markedsføring av brystkreftsaken.
	Herheim, Rune	Pupils collaborating in pairs at a computer in mathematics learning: investigating verbal communication patterns and qualities
	Vie, Tina Løkke	Cognitive appraisal, emotions and subjective health complaints among victims of workplace bullying: A stress-theoretical approach
	Jones, Lise Øen	Effects of reading skills, spelling skills and accompanying efficacy beliefs on participation in education. A study in Norwegian prisons.

2012 H	Danielsen, Yngvild Sørebø	Childhood obesity – characteristics and treatment. Psychological perspectives.
	Horverak, Jøri Gytre	Sense or sensibility in hiring processes. Interviewee and interviewer characteristics as antecedents of immigrant applicants’ employment probabilities. An experimental approach.
	Jøsendal, Ola	Development and evaluation of BE smokeFREE, a school-based smoking prevention program
	Osnes, Berge	Temporal and Posterior Frontal Involvement in Auditory Speech Perception
	Drageset, Sigrunn	Psychological distress, coping and social support in the diagnostic and preoperative phase of breast cancer
	Aasland, Merethe Schanke	Destructive leadership: Conceptualization, measurement, prevalence and outcomes
	Bakibinga, Pauline	The experience of job engagement and self-care among Ugandan nurses and midwives
	Skogen, Jens Christoffer	Foetal and early origins of old age health. Linkage between birth records and the old age cohort of the Hordaland Health Study (HUSK)
	Leversen, Ingrid	Adolescents’ leisure activity participation and their life satisfaction: The role of demographic characteristics and psychological processes
	Hanss, Daniel	Explaining sustainable consumption: Findings from cross-sectional and intervention approaches
	Rød, Per Arne	Barn i klem mellom foreldrekonflikter og samfunnsmessig beskyttelse
2013 V	Mentzoni, Rune Aune	Structural Characteristics in Gambling
	Knudsen, Ann Kristin	Long-term sickness absence and disability pension award as consequences of common mental disorders. Epidemiological studies using a population-based health survey and official ill health benefit registries.
	Strand, Mari	Emotional information processing in recurrent MDD
	Veseth, Marius	Recovery in bipolar disorder. A reflexive-collaborative exploration of the lived experiences of healing and growth when battling a severe mental illness
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