Self-Reported Quality of Life of Maltreated Children Who Have Been Reported to Advice and Reporting Centers On Child Abuse and Neglect

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Abstract

Objectives To examine the self-reported quality of life of maltreated children, shortly after submission of a report to an advice and reporting center on child abuse and neglect, and the extent to which child and maltreatment characteristics were associated with quality of life.

Methods Participants were 228 maltreated children aged 5–16 years ($M = 9.99$; $SD = 3.20$) and their primary caregiver. Children completed the Pediatric Quality of Life Inventory. One-sample t -tests were used to compare the self-reported quality of life of the maltreated children with scores from normative populations. Stepwise multiple regression analyses were used to explore whether maltreated children's age, gender and type of maltreatment were associated with their quality of life, controlling for socio-demographic characteristics.

Results Significant differences were found between the study sample and three different normative populations regarding overall quality of life and the psychosocial health dimension of quality of life, indicating a poorer quality of life and psychosocial health for the maltreated children in this study. In addition, the socio-demographic characteristic of financial problems in the family as reported by the parent(s) was associated with children's poorer self-reported quality of life.

Conclusions The results of this study suggest that child maltreatment is negatively related to self-reported quality of life. Future research should further address the effects of child maltreatment on quality of life after child protection system interventions.

Keywords Quality of Life · Self-report · Maltreatment · Children · Adolescents

Quality of life (QoL) has been defined by the World Health Organization as 'the individuals' perception of their position in life in the context of the culture and value systems in which they live, in relation to their goals, expectations, standards and concerns' (World Health Organization Quality of Life Group [WHOQOL Group] 1995, p. 1405).

This definition highlights the view that QoL is multi-dimensional, including perceptions of physical health, psychological health, interpersonal relationships and social roles (WHOQOL Group 1995). In the last decade, the importance of the concept of QoL has increased, as it adds a client perspective to objective measures and can therefore be usefully applied in health-related research (Gielen et al. 2001; Klassen et al. 2011; Peeters and Stiggelbout 2010), as well as in clinical practice (e.g. Bastiaansen et al. 2005).

Recently, QoL has also become an important part of research into childhood maltreatment. Adults who have been maltreated as children report lower QoL than people without an abusive past (Afifi et al. 2007; Al-Fayez et al. 2012; Corso et al. 2008).

Inspection of the current QoL literature indicates, that studies into self-reported QoL outcomes of maltreated children have been limited, as the majority of studies have used proxy reports. Furthermore, research has focused on

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long-term outcomes, so information on the association between child maltreatment and QoL outcomes immediately after the submission of a report is very limited. As a consequence, our understanding of the QoL of recently maltreated children may be impeded. First, the question may be raised whether reports about children by other informants are able to reflect children's feelings and cognitions on personal subjects. Researchers have usually asked proxies such as parents to report on their children's QoL. However, research findings have shown discrepancies between children's self-reports and proxy reports (Eiser and Morse 2001; Rajmil et al. 1999; Theunissen et al. 1998; Whiteman and Green 1997). QoL research has found greater agreement between children's self-reports and proxy reports regarding the physical, i.e. more observable, dimensions, and less agreement regarding the social and emotional, i.e. less observable, QoL dimensions (Eiser and Morse 2001). Also, parents reported for child maltreatment may not make reliable proxies (Corso and Lutzker 2006). Since several studies have shown that children can be used as reliable informants as long as they are offered a valid age-appropriate instrument, the importance of including children in research by using child self-reports has been increasingly recognized (Bell 2007; Eiser and Morse 2001; Fuchs 2005).

As was mentioned before, many studies into child maltreatment have examined long-term QoL outcomes, years or decades after the occurrence of the maltreatment. This may lead to bias, in particular to underreporting of childhood adversities due to memory problems, such as dissociation (Corso et al. 2008; Felitti et al. 1998). Also, QoL outcomes assessed shortly after or during the maltreatment may vary over time, in particular as a result of interventions following a report to a child protection agency. Therefore, QoL outcomes at that stage may differ from outcomes reported years later.

To the best of our knowledge, there have been three studies examining self-reported QoL. In a national cross-sectional study, 15-year-old Swedish pupils reported their QoL, including the extent to which they had been maltreated as a child (Jernbro et al. 2015). This study showed a linear relationship between the number of types of maltreatment and their self-reported QoL. Another cross-sectional study examined the relationship between fecal incontinence and self-reported QoL in abused and non-abused adolescents aged 13–18 years (Rajindrajith et al. 2016). However, although the prevalence of abuse was higher among adolescents with fecal incontinence, and adolescents with fecal incontinence had lower QoL scores, the study did not report on the association between these two independent variables, i.e. child abuse and QoL (Rajindrajith et al. 2016). A third study followed up a sample of former pediatric hospital patients who had been

maltreated approximately three years earlier (Jud et al. 2013). Twenty-five children aged 6 years and older reported about their QoL. These children were compared with a matched non-abused patient control sample. This follow-up assessment took place approximately 3 years after the case had been submitted to the child protection team. Their findings showed that the self-reported QoL of the maltreated children was significantly lower than that of the matched controls. However, the maltreated children's QoL as rated by their caregivers was not affected, emphasizing the need to include self-report QoL assessment in this population. Impaired self-reported QoL of maltreated children was related to socio-economic status and the number of life events. However, when these factors were controlled for, the maltreatment status lost its predictive contribution to self-reported QoL (Jud et al. 2013). Summarizing, two of the three studies used self-reported measures of QoL in adolescents. Only one study included a younger age group, aged 6 years and older, reporting their QoL, but with a small sample and with maltreatment having taken place years before. Thus, there is a lack of evidence on the association between self-reported QoL in a young age group and recent maltreatment.

As indicated before, QoL can reliably be self-reported from the age of 5 years (Varni et al. 2001). Furthermore, several studies have emphasized the importance of identifying factors associated with QoL, as this may help to distinguish children who are at risk for adverse outcomes and to identify factors that can be modified to improve QoL (Barnett and Hunter 2012; Jirojanukul et al. 2003; Ravens-Sieberer et al. 2008). There is extensive literature on the association between children's QoL and their characteristics, such as age and gender, as well as socio-economic characteristics such as parental education level, employment status and/or financial situation (Gaspar et al. 2012; Ravens-Sieberer et al. 2008). Lower QoL was found among older children and girls (Michel et al. 2009; Ravens-Sieberer et al. 2008). In addition, adverse socio-economic characteristics seem to have a negative impact on children's QoL (Gaspar et al. 2012; Jirojanukul et al. 2003; Ravens-Sieberer et al. 2008; Varni et al. 2007). However, whether these characteristics can be generalized to poorer QoL in a sample consisting of maltreated children is not clear. The research findings summarized above may indicate that the QoL of maltreated children is lower than that of non-maltreated children, but that socio-economic status may overrule the variance of the maltreatment status regarding self-reported QoL (Jud et al. 2013). Moreover, little information is available on the association between different types of maltreatment, including accumulation of several types of maltreatment ('multiple maltreatment'), and QoL outcomes (Jonzon and Lindblad 2005; Simon et al. 2009). Findings may indicate that multiple maltreatment is associated with a

lower QoL relative to single maltreatment (Jernbro et al. 2015).

The aims of the present study were twofold. First, it was examined whether the self-reported QoL of maltreated children aged 5 to 16 years, shortly after submission of a report to a Dutch advice and reporting center on child abuse and neglect (*Advies- en Meldpunt Kindermishandeling; AMK*), was significantly lower than the QoL of their non-maltreated counterparts. Second, this study sought to examine the extent to which child and maltreatment characteristics were related to QoL outcomes of maltreated children, while controlling for socio-economic characteristics of the family. The following types of maltreatment were included: physical abuse, emotional abuse, emotional neglect, physical neglect and sexual abuse. Furthermore, a distinction was made between single and multiple maltreatment.

Method

Participants

Participants were 228 maltreated children and their parents. Children were between 5 and 16 years old ($M = 9.99$; $SD = 3.20$), 118 boys and 110 girls. The average age of the parents was 38.12 years ($SD = 8.41$). Participating parents were mostly mothers or stepmothers (81.6%). Of the study sample, 36.5% reported financial problems (8.4% did not want to tell), with an average duration of 3.16 years ($SD = 2.77$). Almost half of the parents (48.2%) were employed. Percentages of children from low, middle, and high socio-economic backgrounds (based on educational levels of parents) were 30.1, 51.8, and 18.1%, respectively. The majority of the children (66.2%) were of Dutch origin, 33.8% were of non-Dutch descent. See Table 1 for further details.

Procedure

Data were collected from families who had been reported to an advice and reporting center on child abuse and neglect (AMK). In total, there are 17 AMKs in the Netherlands. As part of the present study a sample was drawn from 7 AMKs, covering all regions in the Netherlands. Professionals and non-professionals who suspect child maltreatment are expected to contact an AMK. AMKs either provide professional advice on how to deal with the suspected maltreatment, for which no report is made, or they receive reports of suspected child maltreatment, in which case an investigation follows. This study focused only on reports to the AMKs. The investigation starts by developing an investigation plan. During the investigation, which has a

Table 1 Sample characteristics

Variables	<i>N</i>	%	<i>M</i>	<i>SD</i>
Age of the child (years)	228		9.99	3.20
Gender of the child				
Male	118	51.8		
Female	110	48.2		
Age of the parent (years)	228		38.12	8.41
Gender of the parent				
Male	42	18.4		
Female	186	81.6		
Education level of the parent				
No education/primary school only	25	11.1		
High school degree	58	25.7		
Lower professional education	43	19.0		
Secondary professional education	59	26.1		
Tertiary education (bachelor/master)	41	18.1		
Ethnicity				
Dutch	151	66.2		
Non Dutch	77	33.8		
Moroccan	43	18.9		
Surinamese	6	2.9		
Other	28	12.3		
Employment status of parent				
Employed	110	48.2		
Unemployed	118	51.8		
Financial problems				
Yes	83	36.5		
No	125	55.1		
Did not want to tell	19	8.4		
Average duration of financial problems (years)	83		3.16	2.77

maximum duration of 13 weeks, the AMK collects information from adults (e.g. parents, teachers, family doctors) and children to uncover any family problems, the need for child and family care and the willingness to accept professional help. When the suspicion is substantiated, the multidisciplinary team develops an intervention plan, which includes a plan to end maltreatment and a referral to voluntary care. If voluntary care is rejected, the AMK can refer the case to a Child Protection Agency, which (through the Family Court) can force the family to accept help (Baeten 2009).

Baseline data were derived from a Dutch prospective study into the course of the QoL of maltreated children after they have been reported to an AMK (Snoeren et al. 2013). Inclusion criteria were: age of the child between 5 and 16 years, a report about physical and/or emotional abuse, physical and/or emotional neglect and/or sexual abuse, and sufficient verbal and cognitive capacities of both child and

parent to complete a questionnaire. Only one child and one parent (the primary caregiver) per family were asked to participate. When the report related to more than one child of the same family, the oldest child within the eligible age range was included. When the child was placed in care, the adult who was the primary caregiver at the time of the study was asked to participate. Families that met the inclusion criteria were approached by phone, if possible, by an AMK employee within three months after the report had been filed with the AMK. No record was kept of whether this recruitment by phone was successful or not. Participation in this study was voluntary. If during the phone conversation the parent and child agreed to participate, an appointment was made to complete the questionnaires. A research assistant then visited the participant at a time and place of their choice. Written informed consent was obtained prior to questionnaire completion.

Some obstacles were encountered during the phone recruitment, for instance phone numbers being missing from the AMK records, people not being available when the phone calls were made or people being unable to speak Dutch. Based on oral communication between AMK employees and the research team, we estimate that over half of the potential families were not approached at all—due to lack of family telephone numbers and lack of time of AMK employees. Another possible explanation for the low response might be the delicate nature of the subject of study. Many parents refused to participate due to a perception of accusation and/or stigmatization and/or stress because of the recent AMK report. In most of the cases, the reports were still under AMK investigation when the eligible participants were approached by phone, so the families' maltreatment status was not known at the time of study inclusion. Fifty-eight parent-child dyads were excluded because maltreatment was not substantiated, resulting in data from 228 parent-child dyads for this study.

To prevent the parents from influencing the children's answers, they were requested to complete their questionnaires in separate rooms. If parents or children did not agree to this setup, exceptions were made and parents were allowed to be present, but not involved, when their children were interviewed and/or completed the questionnaire. The percentage of cases in which the child was not interviewed in a separate room was explored in a subsample ($n = 128$). Data revealed that the parent was present in 51.6% of cases. After having completed the questionnaire, the parents received a 10 euro gift certificate, while the children received either a 5 euro gift certificate (children > 10) or an age-appropriate present (5–10 years) to thank them for their participation. No referral procedures were needed because these are implemented within the AMKs. However, in case a research assistant felt concerned about the child or the living situation, the family doctor could be contacted for

consultation. The study was designed in accordance with the ethical guidelines of interviewing and surveying (recently) maltreated children and was approved by the Dutch Medical Ethics Committee for Mental Health Care (METiGG) in September 2010 (reference number: NL31267.097.10).

Measures

Pediatric quality of life inventory

The children's QoL was assessed by asking them to complete the Pediatric Quality of Life Inventory (PedsQL), while parents completed a questionnaire on socio-demographic characteristics.

QoL was measured with one of the three age-appropriate versions (5–7, 8–12, 13–18 years) of the Dutch translation of the (PedsQL) (Engelen et al. 2009; Varni et al. 1999). This scale measures children's perceptions and reflects their concerns on the dimensions of physical health (8 items) and psychosocial health, the latter comprising the subdimensions of emotional functioning (5 items), social functioning (5 items) and school functioning (5 items). The overall QoL score is obtained by adding up the scores for all dimensions. Children were asked to indicate on a 3-point (5–7 year version) or 5-point (8 years and older versions) Likert scale to what extent they had experienced difficulties regarding these dimensions over the last month (0 = never, 1 = almost never, 2 = sometimes, 3 = often, 4 = almost always). The answers were reverse-scored and rescaled to a 0–100 scale (0 = 100, 1 = 75, 2 = 50, 3 = 25, 4 = 0). A score of 100 represents the best possible QoL, a score of 0 the worst. The PedsQL has adequate psychometric properties (Engelen et al. 2009; Varni et al. 2001) and is widely used to measure children's QoL. Cronbach's α values for the age groups 5–7, 8–11, and 12–16 were 0.85, 0.82, and 0.85 for the total scale, 0.69, 0.61, and 0.69 for the physical health scale, and 0.82, 0.79, and 0.80 for the psychosocial health scale, respectively (Engelen et al. 2009). Some examples of the questionnaire items include: 'It is hard for me to run' (physical health dimension), 'I feel afraid or scared' (emotional functioning dimension), 'I have trouble getting along with other kids' (social functioning dimension), 'It is hard for me to pay attention in class' (school functioning dimension). Varni et al. (2007) have demonstrated that children as young as 5 years can reliably and validly self-report on their QoL using the PedsQL.

Socio-demographic features

Parents completed a questionnaire on socio-demographic characteristics. Child and maltreatment characteristics were derived from AMK records, using a query. Information on

the socio-economic status of the family included the education level of the parent, the employment status of the parent (currently employed/currently unemployed) and the experience of having financial problems.

Data Analyses

A non-response analysis was carried out in which the original study sample was compared with the AMK population regarding several demographic and maltreatment characteristics. The AMK population consisted of all children aged 5–16 years and their families who had been reported to the participating AMKs during the recruitment period of our study, irrespective of the substantiation status in both samples.

The following characteristics were assessed: age of the child, gender of the child, ethnicity (Dutch vs. non-Dutch), living situation (traditional family, single-parent family, shared parenthood, newly-formed family, other), type of maltreatment as substantiated by the AMK, outcome of AMK procedure (no maltreatment, maltreatment not substantiated, maltreatment ended during AMK involvement, referral to voluntary care, report to child protection services, left with unknown destination, or died due to maltreatment). An independent samples *t*-test was used to compare the two groups in terms of the child's age. The other characteristics were studied using Chi-square tests. Due to the high percentage of multiple maltreatment reports, the characteristic type of maltreatment as substantiated by AMK was analyzed using dummy variables.

Internal consistency of the PedsQL within the study sample was examined prior to the analyses. Only dimensions or subdimensions with a Cronbach's alpha of at least 0.70 were used in this study, to ensure reliability of the results (Cronbach 1951). Next, one-sample *t*-tests were performed to examine differences in overall QoL and the psychosocial health dimension between maltreated children and three different available healthy populations (Varni et al. 2007). Cohen's *d* effect sizes were calculated for significant outcomes (Cohen 1988).

Stepwise multiple regression analyses were used to examine if the child's age and gender and type of maltreatment were associated with the QoL outcomes of the maltreated children, controlling for socio-demographic characteristics of the parent. Analyses were performed for the reliable QoL scales. Prior to the analyses, we examined the possible influence of (1) the different AMKs (as families were derived from seven AMKs), (2) the presence of parents in the room where the child completed the questionnaire and (3) the time that had elapsed between the report to the AMK and the moment of questionnaire completion. Collinearity was also examined.

Normative populations

Data from three normative populations were available: (1) Scores from an American healthy population derived from a study by Varni et al. (2001). This study provided norm data on the total sample of children aged 5–16 years (Varni et al. 2001). (2) Scores from a Dutch healthy population derived from the validation study of the Dutch version of the PedsQL in 2009. This study provided normative data on two subgroups: children aged 8–11 and those aged 12–16 years. Unfortunately, the 5–7 year age group was not part of this Dutch study sample (Engelen et al. 2009). (3) Scores from an American healthy population derived from another study by Varni et al. (2007). This study provided normative data on individual age groups (Varni et al. 2007).

Results

Non-Response Analysis

A total of 286 parents and children completed the questionnaire. The families were derived from a maximum eligible potential of 7932 families reported to the seven AMKs during the recruitment period. A non-response analysis was performed, in which the original study sample ($n = 286$) was compared with the AMK population ($n = 7932$). No significant differences were found for the demographic characteristics or the age and gender of the children, nor for the living situation. Significant differences were found for ethnicity (Chi-square (1) = 10.85; $p = 0.001$). The AMK population included 51.9% families of Dutch origin, vs. 61% in the study sample. The AMK population and study sample also differed significantly regarding two kinds of maltreatment, viz. emotional abuse (56.2% in the AMK population vs. 48.0% in the study sample, Chi-square (1) = 7.19; $p = 0.007$) and emotional neglect (17.2% in the AMK population vs. 26.3% in the study sample, Chi-square (1) = 15.63; $p = 0.000$). There were no significant differences regarding other types of maltreatment substantiated by the AMK. A comparison of the study sample with the AMK population regarding the outcome of the AMK procedure revealed significant differences (Chi-square (7) = 26.77; $p = 0.000$). Post-hoc analysis showed significant differences in the percentages of families who were reported to child protection services: (13% of the AMK population vs. 8.2% of the study sample; Chi-square (1) = 5.53; $p = 0.019$).

Internal Consistency of PedsQL

The overall QoL ($\alpha = 0.78$) and the psychosocial health dimension ($\alpha = 0.74$) had adequate internal consistencies and could therefore be reliably used for analyses.

Table 2 Results of one-sample *t*-tests comparing maltreated children with full-sample normative population data (Varni et al. 2001) and normative subgroup data aged 8–11 and 12–16 years (Engelen et al. 2009)

	Maltreated children		Normative population		<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)		
Full sample						
Quality of life	228	81.20 (9.60)	401	83.00 (14.79)	−2.84	0.005
Psychosocial health	228	78.22 (11.20)	399	82.38 (15.51)	−5.60	0.000
8–11 years						
Quality of life	85	79.20 (9.70)	219	82.11 (8.87)	−2.77	0.007
Psychosocial health	85	76.09 (11.40)	219	80.63 (10.31)	−3.67	0.000
12–16 years						
Quality of life	77	82.14 (10.70)	185	82.24 (9.15)	−0.085	0.932
Psychosocial health	77	79.41 (12.11)	185	80.23 (10.18)	−0.597	0.552

Cronbach's alpha values for the other four sub-dimensions were lower than 0.70 ($\alpha = 0.52$ for physical health; $\alpha = 0.60$ for emotional functioning; $\alpha = 0.63$ for social functioning and $\alpha = 0.45$ for school functioning) so these sub-dimensions were not analyzed separately.

Maltreatment Characteristics

Of the different maltreatment types, physical abuse was found in 13.6% of all the substantiated cases that were studied, emotional abuse in 57.5%, physical neglect in 12.3% and emotional neglect in 32.9%, while sexual abuse was found in 17.5%. In addition, 'multiple maltreatment' was found in 61.7% of all cases.

Comparison of the Study Sample with Norm Populations

A one-sample *t*-test was used to examine the QoL of the maltreated children in comparison with an American norm population, using norm score data from Varni et al. (2001). Significant differences were found with regard to overall QoL [$t(228) = -2.84$, $p = 0.005$] and the psychosocial health dimension [$t(228) = -5.60$, $p = 0.000$], indicating lower QoL and psychosocial health for maltreated children in this study (Table 2). Effect sizes were small, with Cohen's *d* values of 0.12 and 0.26, respectively.

Comparison of Subgroups

One-sample *t*-tests were performed for the 8–11 year and 12–16 year subgroups to examine differences in QoL outcomes between the maltreated children and a Dutch norm population (Engelen et al. 2009). For the 8–11 age group, significant differences were found regarding overall QoL [$t(84) = -2.77$, $p = 0.007$] and the psychosocial health dimension [$t(84) = -3.67$, $p = 0.000$], indicating less favorable outcomes for maltreated children aged 8–11 than for non-maltreated children of the same age group. Effect

sizes were small, with Cohen's *d* values of 0.33 and 0.44, respectively. No significant differences were found for the 12–16 age group (Table 2).

Comparison of Different Age Groups

One-sample *t*-tests were used for the individual age groups using an American norm population (Varni et al. 2007). Significant differences were found for children aged 8, 9 and 14 years. In addition, significant differences on the psychosocial health dimension were found for 11-year-old children. Results indicate a lower QoL for maltreated children in these age groups, in comparison with the same age groups in the norm population. Effect sizes were small to moderate (see Table 3).

Stepwise Multiple Regression Analysis

Stepwise multiple regression analyses were used to examine whether child and maltreatment characteristics were associated with QoL outcomes for maltreated children, controlling for socio-economic characteristics. Prior to the analyses, we examined the possible influence of three variables: (1) AMK, (2) presence of a parent during child's questionnaire completion, and (3) time between AMK report and questionnaire completion. None of these variables was significantly associated with overall QoL or with the psychosocial health dimension, so they were not included in the analyses. There was no collinearity between the characteristics.

A stepwise multiple regression analysis for overall QoL showed that child and maltreatment characteristics did not contribute significantly to self-reported QoL, but the socio-economic variable of self-reported financial problems in the family did: this variable explained 6.4% of the variance and had a β of -0.268 ($p = 0.003$) (Table 4).

The next analysis examined the psychosocial health dimension. The results showed the same pattern: child and maltreatment characteristics did not contribute to the

Table 3 Results of one-sample *t*-tests on quality of life and psychosocial health outcomes comparing maltreated children with American normative populations by age category (Varni et al. 2007)

Quality of life	Maltreated children		Normative population		<i>t</i>	Cohen's <i>d</i>	<i>p</i>
	Age	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)		
Quality of life	5	13	85.28 (7.75)	693	83.22 (12.18)	0.96	0.356
	6	25	83.08 (8.00)	913	82.12 (12.73)	0.60	0.555
	7	26	81.07 (7.34)	869	80.98 (12.98)	0.07	0.949
	8	22	76.85 (7.11)	864	83.54 (12.95)	−4.41	0.52
	9	26	77.34 (8.52)	827	83.71 (13.76)	−3.81	0.46
	10	17	82.93 (11.14)	825	84.16 (12.72)	−0.46	0.655
	11	20	80.96 (11.47)	675	85.61 (12.47)	−1.81	0.086
	12	24	80.89 (10.03)	669	84.01 (12.97)	−1.53	0.141
	13	15	86.62 (11.87)	609	84.23 (13.15)	0.78	0.449
	14	16	80.23 (10.11)	560	85.71 (11.97)	−2.17	0.46
	15	11	82.16 (9.34)	554	84.70 (12.73)	−0.90	0.388
	16	13	81.59 (11.68)	327	85.76 (11.41)	−1.29	0.222
Psychosocial health	5	13	82.05 (10.23)	696	81.56 (13.76)	0.17	0.865
	6	25	80.71 (9.31)	914	79.91 (14.40)	0.43	0.670
	7	26	77.52 (9.38)	870	78.55 (14.73)	−0.56	0.580
	8	22	72.03 (10.05)	867	81.53 (14.25)	−4.44	0.67
	9	26	73.40 (10.26)	829	81.20 (14.99)	−3.88	0.52
	10	17	82.65 (11.43)	829	82.09 (14.06)	0.20	0.843
	11	20	78.48 (11.86)	675	84.32 (13.45)	−2.20	0.43
	12	24	77.99 (11.18)	672	82.20 (14.45)	−1.85	0.078
	13	15	85.60 (13.08)	610	82.34 (14.69)	0.96	0.352
	14	16	77.60 (10.65)	562	83.98 (13.28)	−2.40	0.48
	15	11	79.43 (9.79)	556	82.72 (14.21)	−1.12	0.290
	16	13	76.67 (14.40)	328	83.98 (13.03)	−1.83	0.092

psychosocial health dimension, but family's financial problems were again associated with poor outcomes on this QoL dimension, explaining 4.3% of the variance with a β of -0.226 ($p = 0.012$) (Table 4).

Discussion

The primary aim of this study was to examine the self-reported quality of life of maltreated children (aged 5 to 16 years) shortly after a child maltreatment report had been submitted to an advice and reporting center on child abuse and neglect (AMK). To our knowledge, this is the first study to assess QoL by self-report in a sample of maltreated children shortly after a child maltreatment report to an AMK, and one of the few studies to assess the self-reported QoL of maltreated children (Jernbro et al. 2015; Jud et al. 2013; Rajindrajith et al. 2016), in particular of this young age. Comparing the QoL outcomes of maltreated children with those in norm populations comprised of healthy children showed significantly lower QoL for the maltreated children than for the norm populations. The results of this study are in

Table 4 Results of socio-demographic and maltreatment characteristics in stepwise multiple regression analysis

Characteristics	Overall quality of life		Psychosocial health	
	B	<i>p</i>	β	<i>p</i>
Age of child	0.026	0.690	0.032	0.631
Gender of child	0.064	0.336	0.020	0.767
Education level of parents	0.005	0.946	0.004	0.952
Employment status	0.034	0.607	0.050	0.450
Financial problems	−0.268	0.003	−0.226	0.012
Physical abuse	−0.051	0.435	−0.098	0.138
Emotional abuse	−0.008	0.906	−0.023	0.733
Physical neglect	−0.043	0.519	−0.066	0.327
Emotional neglect	−0.060	0.358	−0.097	0.142
Sexual abuse	0.030	0.653	0.016	0.810
Multiple maltreatment	0.027	0.687	0.025	0.713

line with earlier studies using adult reports (Dubowitz and Bennett 2007; Gilbert et al. 2009; Kendall-Tackett et al. 1993; Lamers-Winkelmann et al. 2012; Nelson et al. 2002; Springer et al. 2007), which also suggested that child maltreatment

affects the children's QoL. This supports recent findings by Jud et al. (2013) in their small sample of children of comparable age, although they measured their outcomes with a different HRQoL instrument, Kidscreen27. Jud et al. (2013) found this association using only self-report, not proxy measurement. They argued that discordance between self-reports and parental reports is not likely to be due to differential interpretation of the items, assuming instead that children based their answers on different experiences than their parents or attached different weights to their experiences. They interpreted the differences between parental reports and children's self-reports as being influenced by maltreatment, as a lack of attunement to children's experiences and beliefs may be more prevalent in samples of maltreating parents. They concluded that children's self-assessment should be taken into account, and emphasized that attention should be given to the views of children at this young age.

As only a few studies on self-reported QoL among maltreated children have been published, more studies are needed to find out the extent to which the finding that maltreated children self-report a lower QoL than non-maltreated children can be generalized. This also stems from the limited effect size of the difference between the QoL outcomes of maltreated children in our study and those of the three available norm populations. Since examining the full sample of children aged between 5 and 16 years does not take developmental differences into account, we performed additional comparisons using more age-specific data, resulting in significant findings for the different age groups. A subgroup comparison revealed significantly lower QoL for maltreated children in the 8–11 year age group, but not for those in the 12–16 year age group, compared with their non-maltreated peers. A possible explanation may be the greater dependency of younger children on parental care. Young adolescents become less dependent on adult care and have more opportunities to turn to extra-familial resources (such as peers) for support (Helsen et al. 2000). Furthermore, there is evidence that early onset of maltreatment seems to be more damaging and, as a consequence, has a greater impact on younger children's QoL than at a later age (e.g., Green et al. 2018).

As families reported to child protection services are often faced with many SES-related stressors, we attempted to articulate their socio-economic situation by adding a question about the extent to which they experienced financial problems. Interestingly, the subjective experience of financial problems as reported by parents was found to be associated with lower self-reported QoL for the maltreated children. Several other studies have also found a negative association between financial difficulties and QoL outcomes, both in adults (Havasi 2011; Shen and Sambamoorthi 2012) and in children (Chen et al. 2002; Felder-Puig et al. 2008; Jernbro et al. 2015). Prior studies have also

confirmed the association between financial problems and child maltreatment (e.g., Trickett et al. 1991). Financial problems may put stress upon family life, which is likely to affect children's as well as adults' QoL. Some authors suggest that this stress affects maltreated children more than non-maltreated children, due to an accumulation of stressors (e.g., Margolin and Gordis 2003). Future research should focus on exploring the characteristics more thoroughly, for example by exploring possible interrelatedness between socio-demographic and maltreatment characteristics (Jud et al. 2013).

In addition, given the finding that in the current study significantly lower QoL was observed in younger children (age group 8–11) only it might be important to investigate in future studies whether financial problems are differentially related to QoL in maltreated children of different ages.

Limitations and Future Research

There are several limitations to the current study. First, selection bias cannot be ruled out. This might be caused by self-selection, since participation to the study was voluntary, or by the recruitment method, i.e. recruitment by phone. As we had expected (Snoeren et al. 2013), we were able to recruit only a small percentage of the total eligible population. The non-response analysis showed some differences between the current study sample and the overall AMK population. A notable difference was the smaller proportion of emotionally abused children in the study sample. A possible explanation might be the definition of emotional abuse as perceived by the parents. Defining emotional abuse is complicated because of the thin line between emotional abuse and poor or dysfunctional parenting (Wolfe and McIsaac 2011). Hence, emotionally abusing parents might not have identified themselves as eligible subjects for the study, and might have been more likely to refuse participation. Therefore, future research on QoL of children with different types of abuse remains relevant.

Another finding of the non-response analysis was that the proportion of cases in which the family was reported by the AMK to child protection services was lower in the study sample than in the AMK population. This finding could also be explained by self-selection. In the Netherlands, families are reported to child protection services if they are unwilling to accept care. As participation in the study was voluntary, it could be expected that families who were open to AMK intervention would be more willing to participate in a study than families who refused the help suggested by the AMK. Hence, it seems likely that maltreatment might be more severe or more chronic in cases in which voluntary care was rejected, and the QoL scores of reported maltreated children may be even lower in the total population of reported maltreated children.

Second, no representative recent Dutch norm population providing information on all the age groups was available. The only Dutch study providing norm data unfortunately did not include children in the 5–7 year age group (Engelen et al. 2009). Hence, norm data from American samples (Varni et al. 2001, 2007) were used for additional analyses. However, it might be unjustified to assume that data obtained in American society are comparable to those for Dutch society. Also, the norm data from Varni and colleagues from 2001 might be somewhat outdated, and their comparison between maltreated and non-maltreated children from individual age groups (Varni et al. 2007) concerned small samples (N between 11 and 26). Three comparisons with different norm populations were made to minimize the extent to which these potential flaws influenced the outcomes. Nevertheless, they should be taken into account when interpreting the results.

A third limitation is the cross-sectional design, which precludes conclusions about causality. In addition, common method bias may have been present as respondents were asked to report on their perceived experiences for multiple constructs in the same survey. This may have led to results confounded by report biases (such as response style and/or social desirability) rather than true relationships (Podsakoff et al. 2003). Therefore, the possibility of common method bias cannot be ruled out.

Fourth, internal consistency for some of the QoL sub-dimensions was unfortunately low. This may have been caused by the relatively small number of items in each sub-dimension (8 items for physical health, 5 items for social, emotional and school functioning), as sufficient internal consistency was found for the larger psychosocial health dimension (15 items) and for overall QoL (23 items). Findings of other studies are in line with this suggestion (Engelen et al. 2009; Roizen et al. 2008). In addition, just like other studies (Coghill et al. 2009; Matza et al. 2004) we found a lower internal consistency for the youngest age group (5–7 years), especially on the sub-dimensions. A substantial percentage of children in our study sample (28.9%) were between 5 and 7 years old.

Fifth, information on whether the children had received therapy or were supported otherwise were not available at baseline. This may have affected the current findings.

Sixth, the current study did not focus on the possible interaction between ethnicity or race and maltreatment and QoL. However, there is accumulating evidence that ethnicity and culture have an impact on child maltreatment and children's QoL. Future studies should not only include ethnicity as a possible confounder in examining the effect of abuse on childhood QoL but also directly address minority groups (see Elliott and Urquiza 2006 for a review on this issue).

Seventh and final, the present research did not aim to study possible individual differences in overcoming the trauma of maltreatment. However, evidence has shown that, although child maltreatment can be very destructive and long-lasting, there are survivors as well showing resilience and long-term growth (Whitelock et al. 2013). Therefore, it might be fruitful for future research to examine thriving after the experience of abuse and the specific role of QoL in this respect.

A major strength of our study was the use of children's self-reports. There is a lack of studies examining the QoL of maltreated children using the children as informants, whereas research findings have shown discrepancies between child and proxy reports when collecting data on QoL (Eiser and Morse 2001; Rajmil et al. 1999; Theunissen et al. 1998; Whiteman and Green 1997). In addition, our study was performed among maltreated children who had recently been reported to an AMK (within 3 months). Few studies have examined outcomes shortly after or during the actual maltreatment (Prosser and Corso 2007), and outcomes may be expected to differ from those obtained years later.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures were in accordance with ethical standards. The research protocol was approved by the Dutch Medical Ethics Committee for Mental Health Care (METiGG; reference number: NL31267.097.10). Maastricht University provided IRB approval for the study.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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