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Quality of Life Research
An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation - Official Journal of the International Society of Quality of Life Research

ISSN 0962-9343
Volume 24
Number 6

Qual Life Res (2015) 24:1419-1429
DOI 10.1007/s11136-014-0878-2

Springer

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Accepted: 24 November 2014 / Published online: 28 November 2014

Abstract
Purpose Practice and research on detained girls has mainly been problem oriented, overlooking these minors' own perspective on and satisfaction with life. The aim of this study was to examine how girls evaluate multiple domains of quality of life (QoL) and how each domain is affected by psychiatric (co)morbidity, trauma, and socioeconomic status (SES).
Methods An abbreviated version of the World Health Organization (WHO) QoL Instrument was used to assess the girls' ($N = 121$; $M_{age} = 16.28$) QoL prior to detention. This self-report questionnaire consists of two benchmark items referring to their overall QoL and health, and 24 remaining items measuring their QoL regarding four domains (physical health, psychological health, social relationships, and environment). The Diagnostic Interview Schedule for Children-IV was used to assess the past-year prevalence of psychiatric disorders and life-time trauma exposure.
Results Detained girls perceived their QoL almost as good as the 12- to 20-year-olds from the WHO's international field trial on all but one domain (i.e., psychological health). They were most satisfied with their social relationships and least satisfied with their psychological health. Psychiatric disorders, trauma, and low SES were distinctively and negatively related to various domains of QoL. The girls' psychological health was most adversely affected by psychosocial and socioeconomic problems, while these variables had an almost negligible impact on their satisfaction with their social relationships.
Conclusions The particularity of each domain of QoL supports a multidimensional conceptualization of QoL. Regarding treatment, psychological health appears as a domain of major concern, while social relationships might serve as a source of resilience.

Keywords Quality of life · Psychiatric disorder · Trauma · Socioeconomic status · Young offenders · Females · WHOQOL-BREF

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Introduction

Girls in detention

Up to now, forensic youth care has focused predominantly on adolescents' problems and deficits, such as criminal behavior and psychiatric disorders [1–3]. Studies among this population have consistently shown that a substantial proportion of detained girls have been involved in severe antisocial activities [4, 5], have at least one psychiatric disorder [3, 6], and have an increased risk of committing future offenses [7] and developing a personality disorder in young adulthood [8]. Hence, the overwhelming majority of studies among detained females started from a problem-oriented approach, focussing on features that, from the perspective of researchers and clinicians, are harmful to the girls and/or their surroundings. However, research is

warranted that also examines these girls' own perspective on and satisfaction with different domains of life [9, 10].

The relevance of studying quality of life among detained girls

Echoing the World Health Organization's definition, quality of life (QoL) can be described as "individuals' perceptions of their position in life, that is rooted in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" [11]. In line with previous publications, we perceive QoL as a multidimensional and dynamic concept that includes various domains, such as physical health, psychological health, and environment [12–14]. During the last decade, QoL has become an important indicator of health care needs, overall well-being, and treatment outcomes [15]. Whereas this concept has gained importance in research among various adolescent populations [16–20], it has largely been ignored in research among adolescents in detention. Yet, there are at least three reasons why research on the self-perceived QoL of detained minors, girls in particular, is needed.

First, psychiatric symptoms/disorders (e.g., anxiety, depression, substance abuse) appear to be the main predictors of poor QoL in adolescents [21–23] and adults [24–27]. In addition, trauma exposure (e.g., child abuse and neglect) and socioeconomic problems (e.g., low socioeconomic status; SES) have been shown to affect individuals' QoL negatively [18, 21, 22, 24, 25, 28–31]. Since a large proportion of detained girls have psychiatric disorders, a history of traumatic experiences, and a low SES [4, 7], it can be hypothesized that the majority of these girls will perceive their QoL as poor. Yet, according to Cummins' theory of subjective well-being [32], this will not always be the case. In short, this theory states that a decrease in one's self-perceived QoL is only to be expected when multiple adverse conditions or problems are at play, but not in the context of a single problem or challenge [12, 33]. Clearly, research among detained girls is warranted to examine to what extent different domains of QoL are affected by psychiatric disorders, trauma exposure, and SES.

Second, studying the QoL of detained girls may help clinicians to understand why these girls were involved in criminality and may be at risk for future criminality. According to the strength-based 'Good Lives Model of Offender Rehabilitation' [34], humans are striving for the realization of a range of primary goods, such as inner peace and relatedness. The GLM further considers psychiatric disorders, trauma, and a low SES as obstacles that hamper the achievement of a good QoL in a socially acceptable way. Being confronted with a poor QoL, some individuals will become involved in antisocial activities as an alternative strategy to achieve their primary goods (e.g., stealing instead of working to obtain material well-being) [35–37]. The GLM has been applied to a broad range of offender populations [36], yet only scarcely among detained minors. It is relevant to test whether the GLM's assumption of psychiatric disorders, trauma exposure, and a low SES impeding one's QoL also pertains to detained girls.

Third, the study of self-perceived QoL of detained girls is informative for clinicians in youth detention centers and other youth justice/care settings. Given the restrictive and coercive nature of a placement in a youth detention center, resistance and poor treatment engagement are very likely to occur among detained adolescents [38, 39]. Recent qualitative studies on detained minors have, therefore, recommended a strength-based empowering approach, over a more traditional, problem-oriented one [10, 40]. For example, these studies suggest to start off by exploring the youngsters' own perception of QoL, instead of immediately focusing on specific problems and expected behavioral changes. Such an approach is less threatening and has been shown to increase youngsters' treatment motivation and responsiveness [9]. Accordingly, gaining insight in detained girls' QoL is clinically relevant, as it sheds light on the question whether the presence of particular problems actually invokes feelings of burden and suffering among these girls.

Empirical studies on quality of life of detained adolescents

Despite the theoretical and clinical relevance of studying QoL in detained adolescents, we are only aware of one study that examined QoL in this population [41]. This study assessed QoL among detained boys ($N = 132$) and girls ($N = 27$), indicating that these adolescents rated their QoL significantly worse than adolescents in the community (including adolescents from outpatient health care facilities). More specifically, detained minors scored significantly lower on the QoL domains physical and mental health [41]. However, the number of girls was small and no gender-specific QoL results were presented, which hampers the generalizability of the results to other populations of detained girls. Also, the study included only health-related domains of QoL, while recent studies have emphasized the importance of including other domains as well (e.g., social relationships, environment) [12, 13, 25, 42].

This study

The present study aims to inform researchers and clinicians about girls' own perspective on and satisfaction with their

life at the moment they enter the youth detention center. The first objective is to examine how they evaluate multiple domains of QoL (i.e., physical health, psychological health, social relationships, and environment) the last 2 weeks prior to detention. Second, given the high prevalence of psychiatric disorders, trauma exposure, and a low SES among detained girls [4, 7] and given prior empirical and theoretical support for the negative impact of these problems on adolescents' QoL [18, 21, 22, 28, 32, 34], this study also aims to test the hypothesis that detained girls' perceived QoL is negatively affected by past-year psychiatric (co)morbidity, life-time trauma, and low SES. It should be noted that the present study is part of a larger, prospective cohort study focusing on detained girls' QoL, psychopathology, and social adaptation prior to, during, and after detention.

Methods

Participants

The participants were 121 girls who were placed in an all-girl youth detention center (YDC) in Flanders, Belgium. Girls are referred to this YDC by a juvenile judge when charged with a criminal offense or because of an urgent problematic educational situation (e.g., truancy, running away, aggression, or prostitution). Placement in this YDC represents the most severe measure allowable by a juvenile judge and will only be applied in case all other measures have failed or are inappropriate. Only girls demonstrating the most severe criminal and behavioral problems are referred to this YDC.

In line with previous research [43], girls were eligible to participate if the following criteria were met: (1) being adjudicated to be placed in a YDC for at least 1 month; (2) having sufficient knowledge of Dutch; and (3) having sufficient cognitive abilities to read and/or understand the questions. The first criterion was set to provide sufficient time to approach and assess the girls. Between February 2012 and December 2013, 141 girls were eligible to participate. Two girls could not be approached due to acute psychiatric crises, 13 girls refused to participate, and five parents refused their daughter's participation, resulting in a final study sample of 121 girls (participation rate = 86 %).

Procedure

This study was approved by the directors of the YDC and by the Institutional Review Board of the Faculty of Psychology and Educational Sciences at Ghent University (2011/59). Participants were approached and assessed following a standardized protocol. The girls were addressed individually and received oral and written information about the aims, content, and duration of the study. The girls were assured that the data would be treated confidentially and that refusal to participate would not affect their judicial status or stay in the YDC. Written informed consent was given before starting the assessment. At the moment the girls entered the YDC, their parents also received a letter including information about the aims and practical aspects of the study and could refuse participation. Participants did not receive any financial compensation. Participants were interviewed in a private area in the YDC between 3 days and 3 weeks after the start of detention. The interview was conducted by the first author or final-year university students, who were all trained in using the Diagnostic and Statistical Manuals of Mental Disorders-IV (DISC-IV). None of the interviewers were YDC staff.

Measures

Quality of life (QoL)

QoL was assessed using the WHOQOL-BREF, an abbreviated version of the WHOQOL-100 (The World Health Organization QoL Instrument) [11]. The WHOQOL-BREF includes 26 items and has been demonstrated to be a reliable and valid self-report instrument in adults [44] and adolescents [45, 46]. In this study, we were interested in the situation of the girls at the moment they entered the YDC. Therefore, the reference period of the WHOQOL-BREF was changed from the 'last 2 weeks' to 'the 2 weeks before detention.' By doing so, we tried to avoid as much as possible that the girls' self-perceived QoL was biased by the context of detention itself (e.g., low self-perceived quality of social relationships because they are not allowed to have any contact with their friends [35]). In agreement with previous studies [24], two benchmark items were used as an indication of one's overall perception of QoL and health: (1) 'How would you rate your QoL?'; and (2) 'How satisfied are you with your health?' [range 1 ('very poor')–5 ('very good')]. Hereafter, these benchmark items are referred to as 'overall (perception of) QoL' and 'overall (perception of) health.' The 24 remaining WHOQOL-BREF items are organized into four domains. The domain of 'physical health' refers to one's physical well-being (e.g., 'To what extent do you feel that physical pain prevents you from doing what you need to do?'; 'How satisfied are you with your ability to perform your daily living activities?'), the domain of 'psychological health' to one's mental well-being (e.g., 'How satisfied are you with yourself?'; 'How often do you have negative feelings such as blue mood, despair, anxiety, depression?'), the domain of 'social relationships' to one's satisfaction with social networks (e.g., 'How satisfied are you with your personal

relationships?'; 'How satisfied are you with the support you get from your friends?'), and the domain of 'environment' to one's satisfaction with his/her neighborhood (e.g., 'How satisfied are you with the conditions of your living place?'; 'To what extent do you have the opportunity for leisure activities?') [11]. Domain scores range from 0 to 100, with higher scores indicating a better QoL. The internal consistency of these four scales was good (Cronbach's alpha's ranging from .73 to .86). The correlation between the different QoL scores (i.e., both benchmark items and domains of life) ranged from .37 to .72, indicating the existence of distinct, yet interrelated, QoL ratings (details available upon request from the first author). To enhance the readability of this paper, we will refer from here on to 'QoL' instead of 'QoL before detention.'

Psychiatric disorders

The past-year prevalence of psychiatric disorders was assessed using the Dutch translation of the Diagnostic Interview Schedule for Children-IV [47]. The DISC-IV is a highly structured diagnostic interview, designed to assess whether children and adolescents meet criteria for DSM-IV disorders [48]. In the present study, the DISC-IV was used to assess the past-year prevalence of major depressive disorder (MDD), dysthymic disorder, post-traumatic stress disorder (PTSD), separation anxiety disorder (SAD), attention-deficit/hyperactivity disorder (ADHD), conduct disorder (CD), oppositional defiant disorder (ODD), alcohol use disorder, marijuana use disorder, and substance disorders other than alcohol and marijuana. In agreement with previous research [49], four dichotomous variables were created to indicate the past-year presence (vs. absence) of mood disorders (MDD or dysthymic disorder), anxiety disorders (PTSD and/or SAD), disruptive behavior disorders (DBD) (ADHD, CD, and/or ODD), and substance use disorders (SUD). General comorbidity refers to the past-year presence of at least two of the ten assessed disorders. Comorbidity of internalizing and externalizing disorders refers to the past-year presence of at least one internalizing disorder (i.e., mood and/or anxiety disorder) and one externalizing disorder (i.e., DBD and/or SUD).

Trauma exposure

In agreement with prior research in detained adolescents [50], the PTSD module of the DISC-IV was used to assess the life-time prevalence of eight potentially traumatic events: (1) ever experienced a natural disaster and thought you would die or be injured seriously; (2) ever been in a situation wherein you thought that someone you know well would be killed or wounded badly; (3) ever been attacked or beaten up by someone; (4) ever been upset because someone forced you to do sexual things you really did not want to do; (5) ever been threatened with a weapon; (6) ever had a serious accident; (7) ever saw or heard someone get killed, dying, or seriously injured; and (8) ever been upset by seeing a dead body or images of the dead body of someone you knew well. In line with prior research [50–52], a continuous variable was created by summing the eight above-mentioned items (score 0–8), in order to get an indication of the total number of traumatic events experienced by the girls.

Socio-demographics

Standardized information regarding socio-demographic variables was gathered by means of a self-report questionnaire that was used in previous research among detained adolescents [50]. Age refers to the girl's age at the time the interview and questionnaires were administrated. Origin was operationalized by dichotomizing the girls' ethnic descent (i.e., Belgian versus non-Belgian). The dichotomous variable 'intact family' refers to living (versus not living) with both parents prior to detention. School attendance refers to attending (versus not attending) school during the month before detention. The dichotomous variable 'past detention' indicates whether or not the girl had been detained in the past. SES was made operational by dichotomizing parental/primary caregiver's occupation. Adolescents were placed in the low SES category when both parents/primary caregivers were unemployed or holding a low-level job (unskilled and skilled labor). They were placed in the moderate-to-high category when at least one parent/primary caregiver held a moderate-to-high-level job, working as an employee, manager, self-employed, or practitioner of a liberal profession (e.g., lawyer or doctor).

Statistical analyses

First, we presented descriptive statistics regarding the girls' QoL, psychiatric disorders, trauma exposure, SES, and other socio-demographic characteristics. Detained girls' QoL scores were compared with the World Health Organization (WHO)'s international field trial [53], being the only cross-national study that used the WHOQOL-BREF among different age groups, including 12- to 20-year-olds. The sample consists of individuals from the general population, as well as from outpatient and inpatient health care facilities [53]. Second, biserial correlation coefficients (r_b) were used to explore the relation between continuous variables and dichotomised variables. Pearson's correlation coefficients (r) were used to determine the relationship between two continuous variables. Third, to test to what extent the girls' QoL was influenced by psychiatric disorders, trauma exposure, and SES, a series of six ordinary

least squares linear regression analyses were performed with one of the six QoL scores as dependent variable. This approach converges with the conceptualization of QoL as a multidimensional construct. In each of these six analyses, psychiatric disorders (i.e., mood disorders, anxiety disorders, DBD, SUD, general comorbidity, comorbidity of internalizing and externalizing disorders), trauma exposure, and SES were included stepwise as independent variables, using both forward selection ($p < .05$) and backward elimination ($p > .01$). The adjusted R^2 was used to indicate the variation in QoL scores that was accounted for by the selected model. Multi-collinearity was examined and all model assumptions were satisfied. SPSS 20.0 was used for all analyses, with a $p < .05$ as the standard for statistical significance.

Results

Descriptives

Study participants ($N = 121$) did not differ significantly from girls that did not participate in the study with respect to age, origin, and detention history (details available upon request from the first author). An overview of the main sample characteristics is presented in Table 1. Participants were between 13.81 and 17.89 years old ($M = 16.28$; $SD = 1.04$) and were predominantly of Belgian origin (64.5 %). Thirty-eight percent of the girls were placed in the moderate-to-high SES category. On average, participating girls experienced 2.86 potentially traumatic events, with 85.1 % who reported at least one life-threatening events. Regarding psychiatric morbidity, the prevalence of having at least one psychiatric disorder was 86.8 %. Prevalence rates for SUD and DBD were the highest, followed by mood disorders and anxiety disorders. Also 66.1 % of the girls had at least two psychiatric disorders (general comorbidity), and 43.0 % met comorbid internalizing and externalizing disorders.

The mean score for overall QoL and overall health was 3.21 and 3.76, respectively. Taking a closer look to their self-perceived QoL on the four different domains of the WHOQOL-BREF, the girls were most satisfied with their social relationships, followed by satisfaction with their environment, physical health, and psychological health. Considering both mean scores and *SD* reported in the WHO's field trail for the age group of 12- to 20-year-olds, detained girls' mean scores for physical health ($M = 63.44$; $SD = 15.91$), social relationships ($M = 76.17$; $SD = 19.88$), and environment ($M = 63.93$; $SD = 18.25$) were (very) close to the scores reported in the trial (i.e., $M = 72.50$; $SD = 18.12$, $M = 68.13$; $SD = 19.38$, and $M = 65.00$; $SD = 15.00$, respectively) [53]. However, detained girls' mean score for psychological health was substantially lower than the mean score in the WHO's field trial (i.e., $M = 53.51$; $SD = 21.72$ vs. $M = 67.50$; $SD = 17.5$) [53].

Table 1 Characteristics of the study sample ($N = 121$)

	N (%)
Mean age (SD); Min–Max	16.28 (1.04); 13.81–17.89
Origin (Belgian)	78 (64.5)
Intact family (yes)	17 (14.0)
School attendance (yes)	68 (56.2)
Past detention (yes)	28 (23.1)
Primary reason for detention	
Criminal offense	40 (33.1)
Defiant behavior	21 (17.4)
Persistent attempts to escape parent's/caregiver's/institution's surveillance	49 (40.5)
Other (e.g., being entangled in dangerous gangs)	11 (9.1)
SES (moderate-to-high)	46 (38.0)
Mean number of potentially traumatic events (SD); Min–Max	2.86 (1.96); 0–7
Mood disorders	50 (41.3)
Anxiety disorders	43 (35.5)
Disruptive behavior disorders	73 (60.3)
Substance use disorders	76 (62.8)
General comorbidity	80 (66.1)
Comorbidity of internalizing and externalizing disorders	52 (43.0)
	M (*SD*); Min–Max
Overall perception of QoL	3.21 (1.03); 1–5
Overall perception of health	3.76 (.98); 1–5
Physical health	63.44 (15.91); 18–100
Psychological health	53.51 (21.72); 4–100
Social relationships	76.17 (19.88); 17–100
Environment	63.93 (18.25); 6–100

SES socioeconomic status

Total item nonresponse: intact family ($N = 1$; .83 %); SES ($N = 13$; 10.74 %); substance use disorders ($N = 1$; .83 %)

QoL in relation to psychiatric disorders, trauma exposure, and SES

Table 2 presents bivariate correlations between QoL scores and psychiatric disorders, trauma exposure, and SES. With a few exceptions, psychiatric disorders and trauma exposure were negatively related to overall QoL, overall health, and all four domain-specific QoL scores. The exceptions were that DBD and general comorbidity were not significantly correlated with social relationships and that SUD

Table 2 QoL in relation to psychiatric disorders, trauma exposure, and SES: Biserial (r_b) and Pearson's (r) correlation coefficients

	Mood disorders	Anxiety disorders	Disruptive behavior disorders	Substance use disorders	General comorbidity	Comorbidity of internalizing and externalizing disorders	Trauma exposure	SES
	r_b	r_b	r_b	r_b	r_b	r_b	r	r_b
Overall perception of QoL	−.47**	−.37**	−.28**	−.22*	−.35**	−.51**	−.31**	.05
Overall perception of Health	−.48**	−.38**	−.32**	−.23*	−.30**	−.42**	−.33**	.13
Physical health	−.39**	−.37**	−.52**	−.26*	−.41**	−.47**	−.28**	.08
Psychological health	−.49**	−.38**	−.48**	−.16	−.38**	−.49**	−.30**	.34**
Social relationships	−.32**	−.28*	−.17	.00	−.15	−.25*	−.19*	.19
Environment	−.37**	−.29**	−.45**	−.30**	−.44**	−.41**	−.25**	.31**

Cases with missing observations were excluded pairwise

* $p < .05$; ** $p < .01$

SES socioeconomic status

Total item nonresponse: substance use disorders ($N = 1$; .83 %); SES ($N = 13$; 10.74 %)

was not significantly correlated with psychological health and social relationships. SES was positively related to psychological health and environment.

Table 3 shows the six regression models predicting the overall QoL and health, and the domain-specific QoL scores. Psychiatric disorders, trauma exposure, and SES were included stepwise, with the remaining significant determinants being presented in the table. Comorbidity of internalizing and externalizing disorders and trauma exposure had a negative effect on detained girls' overall QoL (*adjusted* $R^2 = .17$). Trauma exposure and mood disorders were found to affect their overall health negatively (*adjusted* $R^2 = .19$). DBD and comorbidity of internalizing and externalizing disorders influenced their physical health negatively (*adjusted* $R^2 = .22$). Also, DBD, low SES, and mood disorders affected the girls' psychological health (*adjusted* $R^2 = .32$) and environment (*adjusted* $R^2 = .25$) negatively, while only mood disorders showed a negative effect on their social relationships (*adjusted* $R^2 = .04$).

Discussion

This study examined girls' self-perceived QoL on multiple domains prior to detention and tested to what extent each of these domains was affected by psychiatric (co)morbidity, trauma exposure, and SES. Psychiatric disorders, trauma exposure, and a low SES were highly prevalent among detained girls, which converge with findings of prior studies [4, 7]. Notwithstanding these multiple problems, the self-perceived QoL of these detained girls suggests that they are quite satisfied with their life on most domains. This study also showed that psychiatric disorders, trauma exposure, and low SES distinctively and negatively impacted the domains of QoL. The most important findings of this study will be reflected upon below.

The prevalence of traumatic experiences (85.1 %) and psychiatric disorders (86.8 %) in this population of detained adolescents is considerably higher than that in adolescent community samples (i.e., 30–42 % [28, 54] and 6.0–44 % [55], respectively). Interestingly, detained girls perceived their QoL almost as good as the 12- to 20-year-olds from the WHO's international field trial on all but one domain (i.e., psychological health) [53]. This contrasts the findings of a prior study, which showed that detained adolescents had a significantly lower QoL than their counterparts from the general population (including those who attend outpatient health care facilities) [41]. Yet, it should be noted that the WHO's field trial did not present scores for female 12- to 20-year-olds only, did not recruit participants living in Belgium, and did not present age-specific scores for community versus clinic-referred inpatient and outpatient respondents [53]. Therefore, the comparison of our study findings with the WHO's field trial should be interpreted with caution. Second, it is possible that differences in time-frame to assess QoL are at play. Whereas we used a 'prior to detention' time-frame to assess QoL, Sawyer and colleagues [41] did not. As mentioned in the Methods section, it is likely that the context of detention (e.g., overwhelming intake, being far away from parents and friends [35]) may explain why participants in the Sawyer study [41] reported much lower QoL scores than general population adolescents. Third, gender differences have been demonstrated regarding many various psychological constructs [56]. Studies that disregarded potential gender differences in the QoL of detained adolescents, such as the Sawyer study [41], may yield different outcomes than girl-only studies, such as the current one.

The girls' satisfaction with their QoL on most domains prior to detention may reflect resilience, which suggests that these girls may have developed specific capabilities to cope with adverse experiences and multiple problems [57].

Table 3 Linear regression models predicting the overall perception of QoL and health, and the domain-specific QoL scores

	B	*SE*	*Beta*	*t*	*p*	R^2 *(adjusted)*	*F (df)*
Overall perception of QoL							
(Constant)						.19 (.17)	12.19 (2)
Comorbidity of internalizing and externalizing disorders	−.35	.10	−.33	−3.52	.001		
Trauma exposure	−.10	.05	−.19	−2.03	.045		
Overall perception of health							
(Constant)						.20 (.19)	13.23 (2)
Trauma exposure	−.14	.05	−.28	−3.00	.003		
Mood disorders	−.27	.09	−.28	−2.97	.004		
Physical health							
(Constant)						.23 (.22)	15.65 (2)
Disruptive behavior disorders	−5.03	1.53	−.31	−3.29	.001		
Comorbidity of internalizing and externalizing disorders	−4.18	1.51	−.26	−2.76	.007		
Psychological health							
(Constant)						.34 (.32)	17.94 (3)
Disruptive behavior disorders	−7.86	1.82	−.36	−4.32	.000		
SES	6.90	1.74	.32	3.96	.000		
Mood disorders	−6.72	1.80	−.31	−3.74	.000		
Social relationships							
(Constant)						.05 (.04)	5.73 (1)
Mood disorders	−4.50	1.88	−.23	−2.39	.018		
Environment							
(Constant)						.27 (.25)	12.64 (3)
Disruptive behavior disorders	−6.64	1.60	−.36	−4.16	.000		
SES	5.25	1.53	.29	3.44	.001		
Mood disorders	−3.83	1.58	−.21	−2.43	.017		

Cases with missing observations were excluded list-wise

SES socioeconomic status

Total item nonresponse: substance use disorders ($N = 1$; .83 %); SES ($N = 13$; 10.74 %)

Alternatively, it may be that detained girls use other standards when evaluating their life conditions (e.g., being delighted to feel part of a tight peer group, even though this group might be an antisocial one [4]). If so, detained girls are truly satisfied with their lives and do not perceive any burden at all, which sharply contrasts with the problems perceived by outsiders such as clinicians and their parents. This discrepancy may explain why detained adolescents are not really engaged in treatment and interventions [38, 39]. If 'non-significant' others point at problems everywhere, but these girls do not see these problems or do not consider them as important, it is not surprising that these girls are not motivated to start treatment or to stay in treatment. Consequently, sufficient time and effort should be invested in creating positive and encouraging treatment environments. In this respect, the application of strength-based empowering approaches is recommended [9, 10, 40]. For example, the Greater Manchester Adolescent Programme (G-MAP), that applies the strength-based Good Lives Model (GLM) to adolescent offenders [10, 40], has been demonstrated to increase these minors' treatment motivation and responsiveness [9]. This program starts off by inviting the youngsters to share their personal interests and goals (i.e., what is important in their life and what do they want to achieve). Next, the youngsters are encouraged to identify personal skills and abilities, thereby challenging their often negative and narrow conception of the self as 'an offender' and creating alternatives for change [9, 40].

Psychiatric disorders, trauma, and low SES were distinctively and negatively related to the girls' QoL on multiple domains. This is in line with previous empirical studies that identified these problems as important predictors of a poor QoL in both adolescents and adults [18, 21–31]. These negative relations also converge with the theory of subjective wellbeing [32] and the GLM [34], which state that QoL is likely to decrease in the presence of multiple psychosocial and socioeconomic stressors. Yet, our findings showed that psychiatric disorders, trauma, and SES

could only explain a relatively small part of detained girls' QoL, ranging from 4 to 32 % of the explained variance. This indicates that the extent to which detained girls are satisfied with their own life is only marginally influenced by problems that clinicians often deem to be important targets for treatment. Various correlates other than psychiatric disorders, trauma exposure, and SES may play an important role in detained girls' QoL. We suggest future work to address other plausible risk factors for a poor QoL, such as personality disorders and physical illnesses [46]. Equally important though, future research should pay particular attention to plausible protective and resilience factors of a good QoL, such as a sense of school belongingness [58] and supportive family and social relationships [25, 59].

In support of a multidimensional approach of QoL, this study also revealed some clear differences between distinct domains of QoL. Detained girls were more satisfied with specific domains, and each domain was affected by specific psychosocial and socioeconomic problems. The most prominent difference emerged between detained girls' satisfaction with their psychological health and their social relationships. Psychological health appeared as a domain of major concern and was the only domain for which detained girls scored substantially lower than their counterparts from the WHO's field trial [53]. Also, detained girls' psychological health was most adversely affected by psychiatric disorders, trauma exposure, and SES. In contrast to the other domains, there is a clear overlap between detained girls' dissatisfaction with their psychological health and outsiders' (e.g., clinicians, researchers) perception of the mental health needs in this population [7, 60]. This may suggest that detained girls may be at least motivated for treatment that aims to address their mental health needs, starting from a shared problem definition [61], in particular because such an agreed-upon definition is associated with treatment engagement and symptom reduction [62]. Our results suggest DBD and mood disorders as prominent problems that deserve priority during treatment. The impact of both DBD and mood disorders on the girls' psychological health challenges clinicians not only to address the salient externalizing behavior, but also to address the underlying internalizing problems, that are often hidden or indistinct at first sight.

Social relationships emerged as a potential source of resilience. Detained girls were most satisfied with this domain, which coincides with the idea that antisocial minors often feel popular among peers and surrounded by close friends [63]. Furthermore, the explained variance for social relationships was remarkably lower (4 %) than for other domains (17–32 %). It can be speculated that social well-being is a potential buffer against negative experiences or conditions, such as traumatic events or a low SES. A sense of popularity and belonging is likely to foster these girls' sense of self-worth and instigate personal resilience. This is especially the case in adolescence, when peers become increasingly important and influential [64]. However, detained girls often affiliate with peers who are engaged in criminal activities [4, 65]. Therefore, treatment should support youngsters to build, strengthen, and extend constructive, instead of destructive, social contacts. This can be realized by offering peer-helping programs, such as EQUIP, in which antisocial youngsters help each other and learn from one another how to decrease self-serving cognitive distortions, reach a higher stage of moral reasoning, and strengthen their social skills [66].

To conclude this study, we summarize what we have learned and what still needs to be learned. The rationale for exploring QoL in detained girls was threefold (see "Introduction"). A first rationale was that the QoL of detained girls is likely to be strongly predicted by psychiatric disorders, trauma exposure, and SES. The findings showed that these girls' QoL is only modestly predicted by these variables. Future studies, thus, need to search for other, more influential determinants of the QoL of detained girls. A second rationale was that studying QoL may help clinicians to understand girls' involvement in criminality. The GLM argues that a poor QoL will trigger some individuals to involve in antisocial activities as an alternative strategy to achieve their primary goods. Studies are needed to test whether poor QoL in detained girls indeed helps to predict future criminality, an issue that we will address in the near future. A third rationale was that understanding of QoL can provide an alternative framework for clinical interventions. This study addressed this issue to some extent by showing that detained girls and clinicians may have different views on these girls' QoL. Future research is needed to test how QoL in detained girls relates to treatment engagement.

As always, the results of this study should be interpreted in the context of some limitations. First, the cross-sectional design of the current study does not allow causal inference regarding the relation between QoL and psychiatric disorders, trauma exposure, and SES. Longitudinal studies are needed to address potential bi-directional associations between these variables and to test the relation between low QoL and criminality [34]. Third, all data were gathered by means of self-report. While this can be considered a limitation of the present study, self-report has been deemed appropriate for tracing adolescents' personal perceptions. Also, other informants, such as parents, are rarely available when working with detained youth and self-report has been shown to be a valid source of information [67]. Fourth, the narrow operationalization of SES as parental/primary caregiver's occupation, in combination with the missing data for this variable, may limit our understanding of the

impact of SES on girls' QoL. We recommend adopting a more nuanced operationalization of SES in future research, including indicators such as parental education, familial wealth, and social and cultural capital [31]. Fifth, future research should use semi-structured in-depth interviews to assess QoL in detained girls' QoL rather than self-report questionnaires with a highly structured answering format and a priori defined life domains. Finally, the small sample size forced us to only include a strict selection of predictors (based upon prior theoretical and empirical support [18, 21, 22, 28, 32, 34]). For example, we could not include interaction effects between independent variables. As a consequence, we were not able to explore the role of mental health as a potential mediator of the relation between trauma and QoL. Up to now, only a limited number of studies have addressed interaction effects of psychiatric disorders, trauma, and SES on QoL. These studies yielded mixed results [13, 68, 69], which underscore the need for further research.

Acknowledgments We would like to thank Ghent University FIRE (Fostering Innovative Research based on Evidence) and Jan Lammertyn (researcher at the Department of Data Analysis at the Faculty of Psychology and Educational Sciences, Ghent University) for providing statistical support.

Ethical standard This study was approved by the Institutional Review Board of the Faculty of Psychology and Educational Sciences at Ghent University (2011/59) and by the Board of the YDC. The girls provided written informed consent before starting the assessment. At the moment the girls entered the YDC, the girls' parents also received a letter including information about the aims and practical aspects of the study and could refuse participation.

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