



Adolescent Females with Limited Delinquency: A Follow-Up on Educational Attainment and Recidivism

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Abstract

Background Research has established a strong relationship between education and later life outcomes, where the connection between different school problems and delinquency have been widely acknowledged. These studies have often sampled male juvenile offenders exhibiting extensive and/or persistent delinquency. Less is known about the educational attainment of female juvenile offenders, especially those who display limited delinquency. In a previous study (Azad and Ginner Hau in *Child Youth Serv Rev* 95:384–396, 2018), the characteristics of this particular group of offenders were explored where the results showed limited self-reported delinquency but elevated school problems.

Objective The present aim was to conduct a follow-up study of the same sample of female adolescents, in order to study their educational attainment during adolescence and the rate of recidivism within 24 months after being sentenced through registry data.

Method The sample consisted of adolescent females ($N=144$) who were convicted of a crime and sentenced to youth service between 2007 and 2012 in Stockholm, Sweden.

Results The results showed that the majority of the females did not reoffend within 2 years after being sentenced. They did, however, display high educational deficits. Their grade point average at the end of both compulsory education and upper secondary school was much lower than that of young females in general, and the majority had either dropped out, never begun or received zero in all subjects at the end of upper secondary school.

Conclusions The low school results indicate a need to support young delinquent females' educational attainment in order to improve their overall life chances.

Keywords Female delinquency · Limited delinquency · Educational attainment · Recidivism · School and delinquency

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Introduction

The associations between adolescents' academic achievement and later life outcomes are well documented, with, for example, the connection between education and delinquency having been widely acknowledged (e.g., Gottfredson 2001; Hirschfield 2017). However, most studies have studied criminal behaviour in connection with education by sampling male juvenile offenders exhibiting extensive and/or persistent delinquency (e.g., Farrington et al. 1986; Farrington and West 1993). A subpopulation of juvenile offenders that is highly understudied comprises adolescents who display limited delinquency (Piquero et al. 2013), and in particular female offenders. The very limited research available indicates that although not at high risk of offending, this group of delinquents may be at risk of sub-optimal development in other life areas, including education (Moffitt 2001; Odgers et al. 2008). In a previous study (Azad and Ginner Hau 2018), we explored the characteristics of this particular group of female offenders. More specifically, we studied their self-reported problems in different life areas (delinquency, drug and alcohol use, school, peers, family, and mental health) and how the degree of potential problems compared to females in residential care and a reference group of females. The area where they reported the highest level of problems concerned school, which contrasted with the reference group and was more in line with the reporting of young females in residential care. Based on these results, together with previous research showing a strong relation between education and later life outcomes, the aim of the present study is to follow up on these findings with other measures, i.e., official data. More specifically, we intend to study more closely the educational attainment and recidivism following sentencing in this sample of female offenders with limited delinquency.

Education is argued to represent an important foundation for future outcomes and opportunities (Boudon 1974). Scholars have established a connection between educational attainment and overall life chances for young people (Buchmann and Hannum 2001; Forsman et al. 2016; Nilsson and Estrada 2009; Oreopoulos and Salvanes 2011). These studies have pointed to how educational achievement contributes to further competences as well as behaviours, expectations and aspirations (e.g., Hirschfield 2017; Little et al. 2013; Payne et al. 2015). High levels of education not only contribute to a positive development for individuals but also have positive effects for society in general, both in regard to financial benefits and resources in the form of skilled labour (Falch and Strøm 2013; OECD 2012). During the last decades, higher education has become increasingly more important for future prospects in many Western countries, including Sweden (Lager and Bremberg 2009). This is mainly due to increased competition in the labour market and more jobs requiring a university degree. Parallel to these developments, the Swedish school system has undergone substantial changes, including decentralization and privatization (Kornhall 2013; Wikström 2006). At the same time, a sharp decrease has been shown in academic performance among young people, including truancy and lower grades (OECD 2015). For example, recent statistics show that one in four do not graduate from upper secondary school (Statistics Sweden 2017). Low learning skills and motivations as well as familial support have been central explanatory factors for not continuing to higher education (Gustafsson et al. 2017).

There is also consistent evidence supporting an association between poor school performance and different problem behaviours (Gottfredson 2001), including antisocial behaviour, with an emphasis on criminal involvement (Felson et al. 2006; Maguin and Loeber 1996). Although several theories as to why and how educational attainment is

connected with delinquent behaviour have been proposed, the causal order still remains a matter of debate (Felson et al. 2006; Hirschfield 2017; Hoffmann et al. 2013). Both cross-sectional and longitudinal studies support the notion that involvement in delinquency is connected with lower academic performance (Brown et al. 2008; Crosnoe et al. 2002; Nilsson and Estrada 2009; Odgers et al. 2008; Siennick and Staff 2008). There are several educational outcomes that have been linked to poorer life outcomes, such as low or incomplete grades, suspension, truancy and not continuing to different forms of post-secondary education (Felson et al. 2006; Foley 2001; Gottfredson 2001). With regard to the timing of school failure and later outcomes, it has been suggested that worse outcomes are to be expected the sooner the chain of education is broken (Shonkoff et al. 2012). However, performing well in school during the latter years of adolescence may be equally important as earlier academic performance. For example, final school grades during middle and late adolescence have been shown to be predictive of major transitions to come, such as admission into further education, the completion of a college degree and establishing oneself on the labour market (Nilsson and Estrada 2009; Vinnerljung et al. 2010).

Most studies relating to young females' education and the connection with delinquency have sampled incarcerated or detained young people (Acoca 2000; Blomberg et al. 2011; Lanctôt et al. 2007). These studies have shown that a high proportion of detained females have experienced at least one school problem, including expulsion, suspension or being held back (Acoca 2000; Lederman et al. 2004). Additionally, studies have also shown that incarcerated females show an overall low level of education, which is linked to further problems during adulthood (Henneberger et al. 2014). While not specifically focused on educational outcomes, the limited research available on young female offenders who do not exhibit elevated psychosocial and behavioural problems (e.g., adolescents limited and/or sentenced to non-custodial measures) shows somewhat inconsistent results regarding their education. Longitudinal studies have, for example, found that females on the adolescent-onset pathway experience difficulties in adulthood, for example educational deficits, although to a lesser extent than those who exhibit early and persistent delinquency (Moffitt 2003, 2006; Odgers et al. 2008). In line with these findings, cross-sectional studies, conducted on justice-involved females who are not incarcerated, have found that young offenders in the community display high levels of needs in a number of different life areas, including education (Brown et al. 2008; McReynolds et al. 2008). On the other hand, additional studies have found that females defined as adolescents limited in regard to criminality perform at the same level in school as those who do not engage in delinquency at all (Andersson et al. 2013). These contradictory findings suggest a need for further studies on female offenders with limited delinquency with a focus on their educational attainment.

Few studies are available on this particular group of female delinquents (e.g., Azad and Ginner Hau 2018; Azad et al. 2018), as this is a hard group to collect data on. Also, no other Swedish longitudinal studies focusing on educational attainment and recidivism are available targeting this particular sample. As our previous study (Azad and Ginner Hau 2018) pointed to the importance of noticing and intervening against problems beyond criminality for this group based on their self-reports, it is important to follow up these results and validated them with other types of measure. The present study thus contributes to the need to know more about the characteristics of adolescent females with limited delinquency, with focus on their educational attainment and rates of recidivism.

The Present Study

The overall aim of the present study is to conduct a 24-month registry-based follow-up on a group of female offenders with limited delinquency, with a focus on females' educational attainment and recidivism and how these factors may be related. Furthermore, the objective is to study how their self-reports from our previous study regarding delinquency, school problems and school satisfaction are related to their rates of recidivism and educational attainment in upper secondary school. The aim is thus to study their level of recidivism, measured by registered criminality, within two years after being sentenced to youth service. We also intend to describe their educational attainment with official data by studying their educational attainment at two points during adolescence: at the end of compulsory education (which ends at age 15–16 in Sweden) and at the end of upper secondary school (which ends at age 18–19 in Sweden). The majority of the females were 16–17 years old when starting youth service, meaning that they had already received grades from compulsory school while grades in upper secondary school are received after their referral. Furthermore, as most studies regarding education in connection with delinquency have sampled those exhibiting more persistent criminal behaviour, we will focus more specifically on those who do not reoffend, and relate how they are faring in school compared to the normal population.

The following research questions will be examined:

1. To what degree do the females reoffend within 24 months after being sentenced to youth service?
2. What is the level of educational attainment at the end of compulsory schooling and their educational attainment at the end of upper secondary school, and how do these compare to the normal population?
3. What is the relation between educational attainment and recidivism and how do those that do not reoffend perform in school compared to the normal population?
4. Do self-reports regarding delinquency, school problems and school satisfaction measured with the ADAD differ depending on educational attainment in upper secondary school?
5. And finally, is there a difference in self-reports regarding delinquency, school problems and school satisfaction measured with the ADAD between those who reoffend and those who do not?

We hypothesise that the majority of the females will not reoffend within 24 months after being sentenced to youth service. Furthermore, we hypothesise that the level of educational attainment at the end of compulsory as well as upper secondary school will be low, both in actual terms as well as in comparison to adolescent females in general. Also, we hypothesise that those who reoffend will show lower educational attainment compared to those who do not reoffend, and that both groups will show lower educational levels than the normal population. Regarding the relation between self-reports of delinquency, school problems and school satisfaction and educational attainment in upper secondary school our hypothesis is that higher self-reported delinquency and school problems as well as lower school satisfaction are related to lower educational attainment. And finally, we hypothesise that those who reoffend will report higher level of self-reported delinquency and school problems and lower school satisfaction compared to those who do not.

Method

The authors declare that they have no conflict of interest. The first author takes responsibility for the integrity of the data and the accuracy of the data analysis.

Participants and Setting

The sample consisted entirely of adolescent females ($N=144$) who were convicted of a crime and sentenced to youth service between 2007 and 2012 in Stockholm, Sweden (15.4% of all youths sentenced to youth service in Stockholm during that period, of whom the rest were males). Of these, six females were excluded, since they had been assigned to youth care in combination with youth service. The final sample consisted of 138 young females aged 15–20 years when starting their referral to youth service ($m=16.8$; $SD\ 1.0$). On average, they were assigned to 35 h of youth service ($SD\ 21.7$) and convicted of one to five crimes ($m=1.4$). The most common crimes leading to a conviction were stealing and assault followed by shoplifting.

Following changes within the Swedish juvenile system in 2007, youth service has become an independent sentence, reserved for those deemed to have limited “special care needs” (Brå 2011). Although the term “special care needs” has not been clearly defined (Holmberg 2013), factors such as substance abuse problems, extensive criminal history, risk of continued offending and mental health problems are examples given (Swedish Government 2006). It is most likely, based on these reforms, that young female offenders exhibiting limited delinquency and low levels of behavioural problems are to be found within youth service. The sentence includes engaging in unpaid work where the intent is to give the young people an opportunity to work off their sentences, as well as a rehabilitative part consisting of a so-called “advocacy programme”, which is envisioned to help the young people reflect upon their situation and find strategies to avoid future recidivism (Swedish Government 2006). The most common types of advocacy programmes used in Stockholm, where the present group of female offenders have completed their sentence, mainly focuses on criminal behaviour, in order to reduce recidivism (Zamora 2011).

Procedure and Measures

Data were extracted from Swedish administrative registries and compiled by combining information from the National Council for Crime Prevention, the National Agency of Education, the National Board of Institutional Care, and the National Board of Health and Welfare. The Swedish personal identity number (in Swedish: “personnummer”) assigned to all Swedish residents enabled data to be linked from the registers with the help of Statistics Sweden. This was done by sending the personal identity numbers of each female to Statistics Sweden, the National Council for Crime Prevention, the National Board of Institutional Care, and the National Board of Health and Welfare, who, based on these, gathered the available information requested from the registries.

Delinquent females are, in many regards, a vulnerable group. Collecting data on them could, for that reason, be a major infringement. However, because they are an exposed group, it is important to conduct further studies in order to gain knowledge of possible support strategies. The material used is based on a group of offenders who had already completed their sentencing some years before the data collection started. For that reason, it would have been practically difficult, not to say impossible, to collect informed consent

from all of them. Based on the scarce information available about this group of offenders, however, the potential knowledge of the studies was considered to outweigh the lack of informed consent. With that being said, measures have been taken to protect participants' confidentiality by omitting all personal information in all the datafiles used for analyses. When sending back the information to the research team, each participant was given a code number in order to protect their anonymity and integrity. The code key was stored in a security cabinet to which only the responsible researchers have access. A separate file with a code number and personal security number linked was kept by Statistics Sweden. When conducting the analysis, only data with code numbers were used. This study was approved by the Stockholm Regional Ethics Committee (2012/1294-31).

Delinquency and Recidivism

Measures regarding delinquency and recidivism include two types of information. First, self-reported delinquency was collected at the start of youth service. This is comprised of information indicating whether the females during the previous 12 months had engaged in any of the 23 separate offence categories listed, and if so, how many times per crime. This measure was collected in our previous study and is part of a structured interview, the *Adolescent Drug Abuse Diagnosis* (ADAD) (Friedman and Utada 1989; Hermodsson and Carpelan 2004). ADAD was conducted with every adolescent who was sentenced to youth service in Stockholm, Sweden in accordance with social service standards during that period. Trained social workers administered the interviews. A detailed description of ADAD and the procedure for collecting the self-reports has previously been published (Azad and Ginner Hau 2018, see also Hermodsson and Carpelan 2004, for further description). Our second data regarding delinquency measured recidivism with registered criminality and the timeframe for the follow-up was 24 months from the time of the ADAD interview at the start of youth service. The age of criminal liability in Sweden is 15, hence the registered criminality of the females available to us includes suspicions and convictions from the year the females turned 15 up to the year 2013. That means that we only have access to follow-up data on criminality for all young females who started their referral in 2011 and earlier, i.e., 121 persons. Official data on criminality were requested from the Swedish National Council for Crime Prevention. These include information regarding the number of suspicions and convictions. The index of suspicions is a national register of reported crimes with reasonable suspicion that is maintained after a police investigation regardless of whether eventual prosecutions have taken place or not. The point of time of the suspicion is defined as the date when the crime was reported. We also gathered information on crime type and made a distinction between violent offences (e.g., assault, robbery, unlawful threat, arson) and non-violent offences (e.g., shoplifting, stealing, fraud, property damage). The conviction registry includes details of the crime, the conviction date and the sentence ruled by the court. One conviction may include several crimes and we observed all crimes within a single conviction. We also included information about whether the females had been placed outside the home within 24 months after their sentencing. Information regarding placement was gathered from the National Board of Institutional Care and the National Board of Health and Welfare and included whether the females had been placed outside the home, the reasons for placement and the time in placement. This information was available from the year the females were born up to the year 2012 and therefore the 24-month follow-up data on placement only included 79 of the 138 females.

Educational Attainment

Educational measures include three types of data. One is the grade points in the ninth grade, the final compulsory school year in Sweden, which ends at the age of 15–16. Another is grade points from the last year of upper secondary school, ending at the age of 18–19. These summarize performance in all school subjects with a maximum rating of 320 points in the ninth grade and a maximum rating of 20 in upper secondary school.¹ Information regarding eligibility to apply for upper secondary education as well as eligibility for college/higher education was also collected. Not having a final grade was defined as either lacking grades at the end of the ninth grade and/or upper secondary school (e.g., dropping out or never beginning) or having a grade score of zero (0), equivalent to failing in every subject. These measures were obtained from the Swedish National Agency for Education. We had access to information regarding 135 of the 138 females' registered educational attainment up to the year 2015. A third set of data on educational information included the females' self-reported data at the start of youth service. These comprised self-reported school problems based on a checklist of 16 dichotomous questions measuring school-related problems such as having difficulties in reading and maths, truancy, having trouble with teachers, not doing homework and difficulties keeping up in class. Self-reports also included measures of school satisfaction, which measured the degree (not at all, a little, somewhat, to a great extent) to which the females self-reported enjoying school at three points in compulsory education: primary, middle and secondary school. These two measures are part of the ADAD and were collected in our previous study (see Hermodsson and Carpelan 2004, as well as Azad and Ginner Hau 2018, for further descriptions).

Comparisons with Other Females

The investigated group was compared in terms of their educational attainment with statistics based on all females, of the same age, in Stockholm and Sweden regarding final school grade at the end of compulsory education and upper secondary school as well as eligibility to apply to upper secondary school and higher education during the period 2007–2015. These numbers are available as group-level statistics held by the National Agency of Education.

Analysis

Our analysis strategy was as follows: (1) account for the rate of recidivism with both suspicions and convictions; (2) describe the educational attainment by reporting the point grade average as well as the distribution of grades within the group, and report the proportion that was eligible to apply for further education at two points in adolescence: end of compulsory schooling and end of upper secondary school. Furthermore, we compared these results with young females in general; (3) study the relationship between academic performance and recidivism by comparing the point grade average between the recidivists and those who did not reoffend. In addition, we compared the point grade average for the

¹ In 2011, the Swedish grading system changed from a four-point scale, i.e., not passed=0, passed=10, passed with distinction=15 and passed with special distinction=20, to a six-point scale, from A (highest) to F (lowest), corresponding to F=0, E=10, C=15 and A=20.

non-recidivist group with female adolescents in general; (4) examine the relationship of self-reported school problems, self-reported school enjoyment and self-reported delinquency with educational attainment and recidivism. Non-parametric analyses of variance, including the Mann–Whitney U test, the Kruskal–Wallis test and Spearman’s correlations, were used. The reason for choosing non-parametric tests was mainly that the data used was not normally distributed, including people who could be considered outliers. Also, the items in the self-reports were mostly on an ordinal and categorical scale. For these reasons, non-parametric analyses seemed more appropriate, despite that these have lower power compared to parametric approaches.

Results

Recidivism

The results showed that the majority of the females did not reoffend within 24 months after their rereferral, with 70% of the females having no new suspicions (varying between 0 and 23, $m = 1.23$, $SD 3.45$) and 86% of the females having no new convictions (varying between 0 and 5, $m = 0.22$, $SD 0.63$). Of those who did reoffend, the majority had 1–2 suspicions (17% of the original sample), which mostly included non-violent crimes (81% of the total number of suspicions of reoffences). The same pattern was shown for convictions, with most of those who reoffended being convicted once, and only a few having several convictions. The majority of the crimes leading to convictions involved non-violent crimes and the most common sanction given was a non-custodial sentence. We also checked how many of the females had been placed outside the home by the social services within 2 years after being sentenced to youth service, with only seven females having been placed at an institution or outside the home.

Educational Attainment

The results regarding the young females’ academic performance showed that the point average grade at the end of compulsory education for the entire group was 144 ($SD 80.4$, $median = 163$). This figure was lower than the mean average for young females in Stockholm, who scored 237 ($SD 66.5$) between the years 2007 and 2015, as well as all females in Sweden in total, who scored 223 ($SD 62.4$) during the same time period (see Fig. 1). Of the investigated group, 56% were eligible to apply for upper secondary school after completing compulsory education. In comparison, 90% of females in Stockholm and Sweden are currently eligible to apply for upper secondary education at the end of the ninth grade. The mean grade for those among the investigated females who were eligible to apply for upper secondary school was 188 ($SD 58.2$, $n = 77$, $median = 185$), a figure that is still lower than the mean average for the general population.

The results concerning educational attainment at the end of upper secondary school showed that only half of the females (52%) received a final grade between 0 and 20 (see Fig. 2). The point grade average for these females was 7.7 ($SD 6.5$, $median = 10.0$). In comparison, the mean average for young females from all of Sweden is 14.9 ($SD 3.6$), and 14.5 ($SD 3.3$) for females in Stockholm.

The collective picture of the young females’ educational attainment during adolescence, measured at two points, showed that only about half, 56%, of the females were eligible

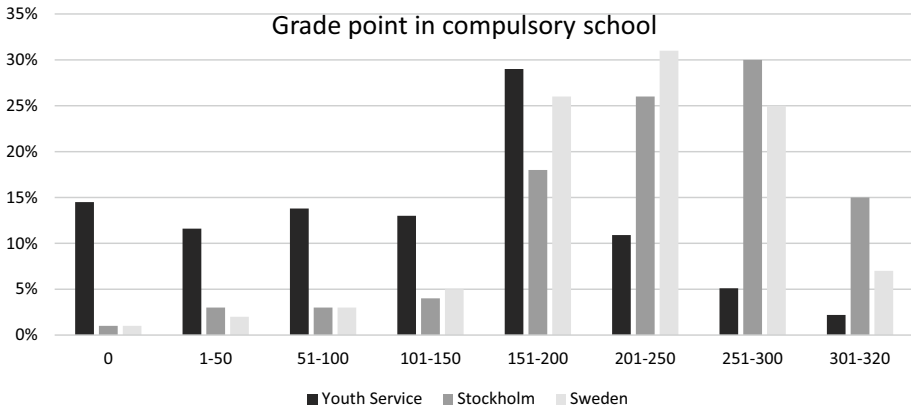


Fig. 1 Distribution of grade points in the last year of compulsory schooling for the youth service females, females in Stockholm and all females in Sweden in total

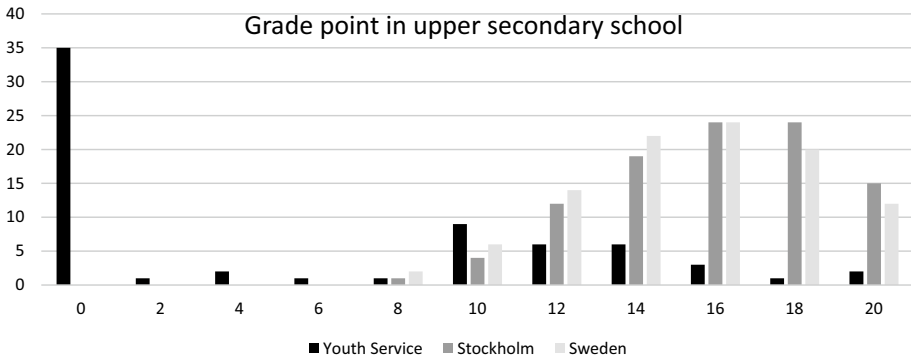


Fig. 2 Distribution of grade points in the last year of upper secondary school for the youth service females, females in Stockholm and all females in Sweden in total

to apply for upper secondary school at the end of the ninth grade, and even fewer, 34%, completed upper secondary school with a grade above zero (receiving 1–20, 20 being the maximum). Of all the females, only 23% were eligible to apply for higher education. That means that the majority, 66%, of the entire group were lacking final grades (i.e., never started, dropped out or received zero in all subjects) at the end of upper secondary school (see Fig. 3). In comparison, 25% of all females in Stockholm do not graduate from upper secondary school with complete grades.

Recidivism and Educational Attainment

To investigate whether there was a difference in educational attainment between the recidivist group and the non-recidivists we performed two Mann–Whitney *U* tests. First, we compared those who reoffended with those who did not in terms of their final grade at the end of compulsory schooling, and second, we compared them in terms of

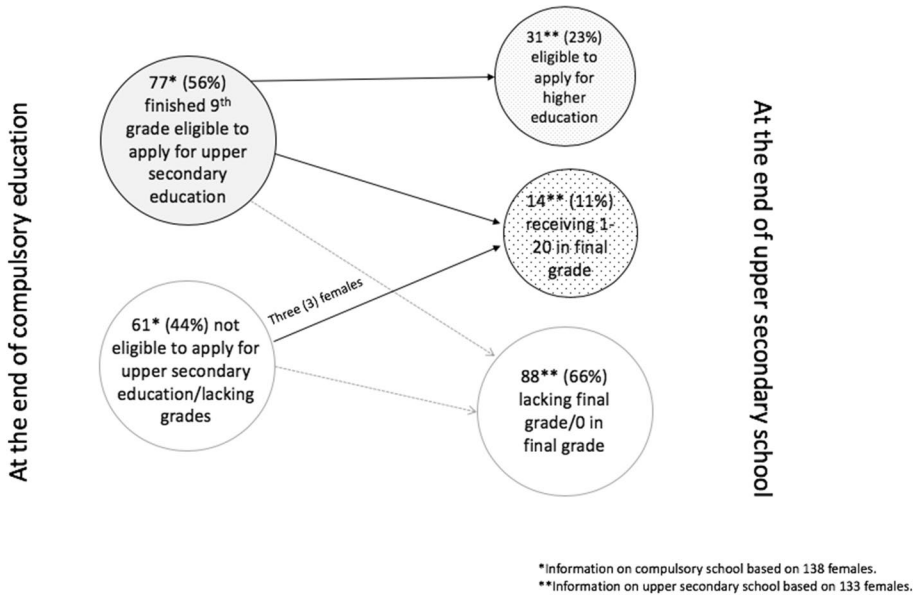


Fig. 3 Illustration of the educational attainment at two points during adolescence for the youth service females

Table 1 Point average grade (M and SD) in compulsory education and upper secondary school for those who reoffended and those who did not

Educational variable	Suspicion ^a				Mann–Whitney <i>U</i>	<i>p</i>
	Reoffended		Did not reoffend			
	<i>n</i>	<i>M</i> (SD)	<i>n</i>	<i>M</i> (SD)		
Final grade at the end of compulsory schooling	30	125 (83.9)	78	150 (76.9)	936	.11
Did not receive a grade (<i>n</i>)	6		7			
Final grade at the end of upper secondary school	13	6.1 (7.4)	52	7.8 (6.4)	1402	.64
Did not receive a grade (<i>n</i>)	23		33			

^aBased on those who started youth service in 2011 and earlier, i.e., 121

their final grade in upper secondary school. No significant differences were found (see Table 1). The same pattern was shown for conviction and will therefore not be presented in detail.

We then compared the educational attainment of those who did not reoffend to the normal population. The results showed that of those who did not reoffend (*n* = 85), 33% did not receive a final grade at the end of high school, and 18% received zero in all grades. The point grade average was 7.8 (SD 6.4), a grade that is lower than the normal population, with 14.7 for females in Sweden and 15.4 for females in Stockholm.

Table 2 Descriptive information (M and SD) on self-reports regarding delinquency, school problems and school satisfaction for those who did not receive a grade at all, those who received zero in all subjects and those who received 1–20

Areas in ADAD	Grade in upper secondary school ^a						Kruskal–Wallis χ^2	<i>p</i>
	No grade		Zero in all subjects		Receiving 1–20 in grade			
	<i>n</i>	<i>M</i> (SD)	<i>n</i>	<i>M</i> (SD)	<i>n</i>	<i>M</i> (SD)		
Delinquency	64	2.9 (8.3)	23	1.9 (3.5)	45	1.9 (4.2)	0.70	.71
School problems	63	7.2 (3.9)	24	6.6 (3.5)	45	4.9 (3.2)	8.94	.01
School satisfaction	62	6.6 (2.2)	24	6.3 (2.6)	45	7.4 (1.8)	3.59	.17

^aBased on those who were supposed to graduate from upper secondary school prior to 2015, i.e., 133 females

Self-reports and Educational Attainment

Next, we wanted to study the relation between the young females' self-reports of delinquency, school problems and school satisfaction measured with the ADAD in our previous study and their educational attainment and registered criminality. We started by conducting a correlation between their final grade at the end of upper secondary school and their self-reports. The results showed that self-reported school problems were significantly and negatively correlated with educational attainment ($r_s = -.293$, $N = 69$, $p = .015$, two-tailed). There was no significant correlation between the final grade in upper secondary school and school satisfaction ($r_s = .141$, $N = 69$, $p = .247$, two-tailed) or self-reported delinquency ($r_s = .052$, $N = 68$, $p = .67$, two-tailed).

Since about half of the females did not receive a final grade in upper secondary school, and of those who did, a large proportion received zero in all subjects, we also wanted to check whether there was any difference in self-reports between those not receiving a grade at all, those receiving zero and those receiving 1–20. The results from the Kruskal–Wallis test showed that self-reported school problems differed among the three groups ($\chi^2(2) = 8.94$, $p = .01$). A post hoc test with pairwise comparisons showed that those who did not receive a grade at all reported a higher number of school problems than those receiving a grade of between 1 and 20 ($p = .01$). No differences between the other groups were found. No differences regarding school satisfaction and self-reported delinquency were found among the three groups either (see Table 2).

Self-reports and Recidivism

Finally, we wanted to know if there was a difference in self-reports between those who reoffended and those who did not, and applied Mann–Whitney *U* tests to see whether the scores for self-reports differed between the two groups. The results showed no significant difference in self-reports between those who reoffended and those who did not (see Table 3). The same pattern was shown for conviction and will therefore not be presented in detail.

Table 3 Descriptive information (M and SD) on self-reports regarding delinquency, school problems and school satisfaction for those who reoffended and those who did not

Self-reports in ADAD	Recidivism based on suspicion ^a				Mann–Whitney <i>U</i>	<i>p</i>
	Reoffended		Did not reoffend			
	<i>n</i>	<i>M</i> (SD)	<i>n</i>	<i>M</i> (SD)		
Delinquency	36	1.7 (2.6)	84	2.7 (7.7)	1503	.96
School problems	36	6.3 (3.7)	85	6.5 (3.7)	1474	.75
School satisfaction	36	6.7 (1.8)	84	6.9 (2.3)	1337	.30

^aBased on those who started youth service in 2011 and earlier, i.e., 121

Discussion

The objective of the present study was to follow up on our previous results regarding self-reported school problems and delinquency for all young female offenders sentenced to youth service in Stockholm, Sweden, during the period 2007–2012. Our aim was to study their level of recidivism within two years after being sentenced to youth service as well as to describe their educational attainment at two points during adolescence: at the end of compulsory education and at the end of upper secondary school. In addition, we also aimed to investigate the potential difference in educational attainment between those who reoffended and those who did not, and relate these to adolescent females in general. Furthermore, the aim was to study how their self-reports regarding delinquency and school from our previous study related to their educational attainment and recidivism measured with registry data.

In sum, the results showed, in line with our hypotheses, that the females displayed limited delinquency, in that the majority did not reoffend within two years after being sentenced to youth service. They did, as we hypothesised, however, have significantly lower educational attainment than adolescent females in general, both at the end of compulsory education and upper secondary school. This was true for both those who reoffended and those who did not. Based on their self-reports from our previous study (Azad and Ginner Hau 2018) regarding delinquency, school problems and school satisfaction we only found a significant relation between self-reported school problems and educational attainment in upper secondary school, which in some parts contradicted our hypotheses. In contrast to our final hypothesis regarding self-reports and recidivism, we found no difference concerning the level of self-reported school problems, school satisfaction and delinquency between the recidivist group and those who did not reoffend.

The low levels of recidivism support and validate our previous results and the assumption that this is a group of offenders with limited delinquency. There is empirical support, in line with our findings, showing that young females do not reoffend to a high degree and that the majority of female delinquents tend to desist from further criminality in young adulthood (Brå 2017; Moffitt 2001). As we have argued before, perhaps the criminal involvement for this group of offenders can best be understood as a normative, although not optimal, part of development (Laub and Sampson 2001) rather than a criminal lifestyle. Nevertheless, desistance from criminal behaviour may not necessarily imply an escape from maladjustment in other areas of life (Lanctôt 2015). Taken together, our findings regarding educational attainment, in line with previous results (Siennick and Staff 2008),

showed that the females performed more poorly in school than their conventional peers. As research regarding the educational attainment of this group of offenders is scarce, and has been shown to be inconsistent, the present results make a contribution to the state of knowledge regarding an under-researched group. What is noteworthy about our findings is that the low level of education found in our group of female delinquents is in line with findings from samples of female delinquents with more extensive behavioral problems (Giordano et al. 2004). For example, Henneberger et al. (2014) found that 62% of their sample of incarcerated females had an education level lower than upper secondary school. Although the youth service females differ from these samples of young offenders, in regard to level of delinquency, they seem to be similar in regards to their low levels of education. This finding is important, as previous research has mostly focused on the educational attainment of female offenders who display more persistent and/or extensive criminal behavior.

The high numbers of females in the present study who are failing to meet appropriate academic milestones during adolescence is concerning, particularly since educational attainment has been shown to be predictive of higher levels of later well-being and development (e.g., Tyler et al. 2008). The present results suggest that although female offenders may not reoffend to a high degree, they are likely to need other types of support—in this case, educational support. In contrast to previous studies (Katsiyannis et al. 2008), we found no difference in educational attainment between recidivists and those who did not reoffend. This could perhaps be due to a matter of statistical power since the groups compared were not equally distributed in that those who reoffended were smaller in numbers. Still, what is most striking is that both groups displayed lower educational attainment than the average female adolescent regarding grade points both in compulsory education and upper secondary school.

In Sweden, grades from the final year of compulsory schooling are the main selection criteria for studies at the upper secondary education level, thereby determining future opportunities for further education and employment (Nilsson and Estrada 2009; SOU 1997). School performance in the ninth grade can therefore be seen as a strong indication of a young person's future socio-economic situation and for those performing at very low levels also include considerable risks of being excluded from the labour market (Vinnerljung et al. 2010). Although the females on average showed low levels of school performance in both compulsory education and upper secondary school, the results showed a bigger decline in performance in the latter years of school. As the transitions from different school levels have been shown to be challenging for young people in general, resulting in declines in grades (Anderson et al. 2000), our findings, together with suggestions from previous scholars, imply that it is important to help the young females through these transitions (Leve et al. 2015). We also found that self-reported school satisfaction in compulsory education was not significantly related to educational attainment in upper secondary school and that there was no difference in reported school satisfaction among those who did not receive a grade at all, those who received zero in all subjects and those who received grades between 1 and 20. This indicates that how much the females report enjoying school may have little to do with their actual school performance later on.

The focus of interventions in general, as well as for the present group, has largely been on criminogenic needs, in order to reduce recidivism (Andrews and Bonta 2010; Zamora 2011). However, our results suggest that this focus may not be ideal for this group of young offenders. Our results indicate the additional importance of non-criminogenic needs for adolescent females, especially those with limited delinquency, and we suggest that in addition to the risk of recidivism, service providers should focus on the risk of school failure. Although previous studies have also suggested that the promotion of school performance

may be a viable support for offenders in general (Wilson et al. 2001), these studies have mainly pointed to school as a good way of reducing the risk of offending. As the majority of the present group did not reoffend, perhaps applying the Good Lives Model (Van Damme et al. 2017; Ward and Brown 2004) is a better fit, where the promotion of school achievement is not merely a way to reduce recidivism but rather a goal in itself.

Previous studies have found support for the notion that delinquent youths overestimate their academic performance (Siennick and Staff 2008). Our results, in that higher levels of self-reported school problems were negatively associated with lower grade points in upper secondary school, suggest that the females may have a conception of their school functioning that is in line with their actual performance. This, together with the finding that the females reported enjoying compulsory schooling to a high degree, indicates that interventions aimed at enhancing their education may be feasible.

Limitations and Future Directions

There is a great need to address this study population and examine all available information about the characteristics of adolescent females with limited delinquency. As it is rare to obtain comprehensive information about this group of young offenders, and females in particular, the results shown here contribute to this need, which is the main contribution of the study. Another strength is that it includes a total population of all young females sentenced to youth service in a major city during a 5-year period, thus including a large sample that otherwise would have been difficult to collect data on. These strengths aside, there are some limitations to the study that need to be addressed. First, the Swedish school system changed in several ways in 2011. One such change was the grade system, which went from a four-point scale to a seven-point scale. Another change was regarding the admission requirements for upper secondary school as well as education post upper secondary level. These further admission requirements, being stricter, may have led to an increase in the proportion of students from compulsory education who are not qualified to apply for a national programme at upper secondary school. However, we checked for differences in educational attainment for those finishing school prior to or after 2011 and found none, and we have therefore no reason to believe the present results are due to these changes. Another limitation is that we did not have access to 24-month follow-up data on all individuals regarding recidivism or educational attainment in upper secondary school. This means that only subpopulations of the entire group could be included in some of the analysis. The self-reports regarding delinquency, school problems and school satisfaction were gathered at the start of youth service and asked for retrospective information. It could be that school satisfaction, for example, had declined in upper secondary school, thereby leading to different results regarding the connection between school satisfaction and educational attainment. Self-reports are also in general prone to social desirability biases and as the self-reports were gathered by social service personal in connection to the females starting their referral, it is possible that the willingness and motivations of the females in sharing certain information was impacted by the setting. Also, non-parametric tests were chosen as the means of analysis as the data used were not normally distributed, and the items in the ADAD were mostly on ordinal scales. These approaches have lower power than parametric tests, which, in combination with small sample sizes for some of the subgroups, could have led to some of the lack of significant differences between subgroups. And finally, the multiple statistical comparisons used increase the risk of making a Type I

error. However, we found it important to avoid losing additional power and making Type II errors, thereby missing significant results, and did consequently not correct for multiple comparisons (such as Bonferroni correction). The results need, therefore, to be replicated and validated in order to draw more conclusive conclusions about the relation between educational attainment and the rates of recidivism of this group at large.

Female offenders' academic development has been suggested to be delayed compared with their non-delinquent peers (Beyer 2001). It would therefore be of interest to conduct a further follow-up at the age of 21 or older, and to examine both their level of education and their employment status, in addition to their involvement in delinquency over time. Follow-up studies should include both self-reported and official data on rates of involvement in crime and level of education as these would give a more comprehensive understanding of both the level of delinquency and education for this group of offenders. It would also be interesting to follow up on the results regarding school satisfaction by, for example, conducting qualitative studies asking the females themselves how they view their education in connection to their delinquency and what role satisfaction seems to play.

Conclusions

Schools are one of the locations where it is theoretically possible to address the educational, emotional and behavioural needs of children and youths (Adelman and Taylor 2010; Little et al. 2013). It is thus an important social context for development. The major conclusions that stand out from the present study are the following. The investigated group of female offenders were shown to be limited in their delinquency, in that the majority did not reoffend within two years after their sentencing. However, both those who reoffended and those who did not displayed lower levels of educational attainment than adolescent females in general. Earlier evidence of the impact of poor school performance on later outcomes, together with the present findings, provides validation to address young delinquent females' educational attainment as possible ways of support for improving their overall life chances.

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References

- Acoca, L. (2000). *Educate or incarcerate? Girls in the Florida and Duval County juvenile justice system*. San Francisco: National Council on Crime and Delinquency.
- Adelman, H. S., & Taylor, L. (2010). *Mental health in schools: Engaging learners, preventing problems, and improving schools*. Thousand Oaks: Corwin.

- Anderson, L. W., Jacobs, J., Schramm, S., & Splittgerber, F. (2000). School transitions: Beginning of the end or a new beginning? *International Journal of Educational Research*, 33(4), 325–339.
- Andersson, F., Levander, S., & Torstensson Levander, M. (2013). A life-course perspective on girls' criminality. Revised from the original work published in A-K. Andershed (Ed.), *Girls at risk. Swedish longitudinal research on adjustment* (pp. 119–137). New York: Springer.
- Andrews, D. A., & Bonta, J. (2010). Rehabilitating criminal justice policy and practice. *Psychology, Public Policy, and Law*, 16(1), 39–55.
- Azad, A., & Ginner Hau, H. (2018). Adolescent females with limited delinquency: At risk of school failure. *Children and Youth Services Review*, 95, 384–396.
- Azad, A., Hau, H. G., & Karlsson, M. (2018). Adolescent female offenders' subjective experiences of how peers influence norm-breaking behavior. *Child and Adolescent Social Work Journal*, 35(3), 257–270.
- Beyer, M. (2001). Delinquent girls: A developmental perspective. *Kentucky Children's Rights Journal*, 9, 17.
- Blomberg, T. G., Bales, W. D., Mann, K., Piquero, A. R., & Berk, R. A. (2011). Incarceration, education and transition from delinquency. *Journal of Criminal Justice*, 39(4), 355–365.
- Boudon, R. (1974). *Education, opportunity, and social inequality: Changing prospects in western society*. New York: Wiley-Interscience.
- Bråttsförebyggande rådet (Brå). (2011). Ungdomsvård och ungdomstjänst. En utvärdering av 2007 års påföljdsreform för unga lagöverträdare. [Youth care and youth service. An evaluation of the 2007 reform penalty for young offenders]. Stockholm: National Council of Crime Prevention.
- Bråttsförebyggande rådet (Brå). (2017). Brottsutvecklingen i Sverige fram till 2015. [Crime development in Sweden up till 2015]. Stockholm: National Council of Crime Prevention.
- Brown, J. D., Riley, A. W., Walrath, C. M., Leaf, P. J., & Valdez, C. (2008). Nonincarcerated youth involved with the juvenile justice system. *Journal of Education for Students Placed at Risk*, 13(1), 59–75.
- Buchmann, C., & Hannum, E. (2001). Education and stratification in developing countries: A review of theories and research. *Annual Review of Sociology*, 27(1), 77–102.
- Crosnoe, R., Erickson, K. G., & Dornbusch, S. M. (2002). Protective functions of family relationships and school factors on the deviant behavior of adolescent boys and girls: Reducing the impact of risky friendships. *Youth and Society*, 33(4), 515–544.
- Falch, T., & Strøm, B. (2013). Schools, ability, and the socioeconomic gradient in education choices. *Journal of Socio-Economics*, 43, 49–59.
- Farrington, D. P., Gallagher, B., Morley, L., Ledger, R. J. S., & West, D. J. (1986). Unemployment, school leaving, and crime. *The British Journal of Criminology*, 26(4), 335–356.
- Farrington, D. P., & West, D. J. (1993). Criminal, penal and life histories of chronic offenders: Risk and protective factors and early identification. *Criminal Behaviour and Mental Health*, 3(4), 492–523.
- Felson, R. B., Staff, J., Farkas, G., Ulmer, J., & Osgood, D. W. (2006). Explaining the academic performance–delinquency relationship. *Criminology*, 44(2), 299–320.
- Foley, R. M. (2001). Academic characteristics of incarcerated youth and correctional educational programs: A literature review. *Journal of Emotional and Behavioral Disorders*, 9(4), 248–259.
- Forsman, H., Brännström, L., Vinnerljung, B., & Hjern, A. (2016). Does poor school performance cause later psychosocial problems among children in foster care? Evidence from national longitudinal registry data. *Child Abuse and Neglect*, 57, 61–71.
- Friedman, A. S., & Utada, A. (1989). A method for diagnosing and planning the treatment of adolescent drug abusers (the Adolescent Drug Abuse Diagnosis [ADAD] instrument). *Journal of Drug Education*, 19(4), 285–312.
- Giordano, P. C., Cernkovich, S. A., & Lowery, A. R. (2004). A long-term follow-up of serious adolescent female offenders. In M. Putallaz & K. L. Bierman (Eds.), *Duke series in child development and public policy. Aggression, antisocial behavior, and violence among girls: A developmental perspective* (pp. 186–202). New York, NY: Guilford Publications.
- Gottfredson, D. C. (2001). *Schools and delinquency*. Cambridge: University Press.
- Gustafsson, B., Katz, K., & Österberg, T. (2017). Why do some young adults not graduate from upper-secondary school? On the importance of signals of labour market failure. *Scandinavian Journal of Educational Research*, 61(6), 701–720.
- Henneberger, A. K., Oudekerk, B. A., Reppucci, N. D., & Odgers, C. L. (2014). Differential subtypes of offending among adolescent girls predict health and criminality in adulthood. *Criminal Justice and Behavior*, 41(2), 181–195.
- Hermansson, A., & Carpelan, K. (2004). ADAD och utvecklingen av ett dokumentationssystem för ungdomar. [ADAD och development of a dokumentationsystem for young people]. *Nordisk Socialt Arbid*, 24, 110–123.
- Hirschfield, P. J. (2017). Schools and crime. *Annual Review of Criminology*, 1, 149–169.

- Hoffmann, J. P., Erickson, L. D., & Spence, K. R. (2013). Modeling the association between academic achievement and delinquency: An application of interactional theory. *Criminology*, *51*(3), 629–660.
- Holmberg, S. (2013). Påföljdssystemet för unga. In F. Estrada & J. Flyghed (Eds.), *Den svenska ungdomsbrottsligheten [The Swedish juvenile delinquency]* (pp. 313–331). Lund: Studentlitteratur.
- Katsiyannis, A., Ryan, J. B., Zhang, D., & Spann, A. (2008). Juvenile delinquency and recidivism: The impact of academic achievement. *Reading & Writing Quarterly*, *24*(2), 177–196.
- Kornhall, P. (2013). *Barnexperimentet: Svensk Skola i Fritt Fall [Child Experiment: Swedish School in Freefall]*. Stockholm: Leopardförlag.
- Lager, A. C., & Bremberg, S. G. (2009). Association between labour market trends and trends in young people's mental health in ten European countries 1983–2005. *BMC Public Health*, *9*(1), 325–331.
- Lancôt, N. (2015). Development of antisocial behavior in adolescent girls. In J. Morizot & L. Kazeiman (Eds.), *The development of criminal and antisocial behavior: Theory, research and practical applications* (pp. 399–411). New York: Springer.
- Lancôt, N., Cernkovich, S. A., & Giordano, P. C. (2007). Delinquent behavior, official delinquency, and gender: Consequences for adulthood functioning and well-being. *Criminology*, *45*(1), 131–157.
- Laub, J. H., & Sampson, R. J. (2001). Understanding desistance from crime. *Crime and Justice*, *28*, 1–69.
- Lederman, C. S., Dakof, G. A., Larrea, M. A., & Li, H. (2004). Characteristics of adolescent females in juvenile detention. *International Journal of Law and Psychiatry*, *27*(4), 321–337.
- Leve, L. D., Chamberlain, P., & Kim, H. K. (2015). Risks, outcomes, and evidence-based interventions for girls in the US juvenile justice system. *Clinical Child and Family Psychology Review*, *18*(3), 252–279.
- Little, S. G., Akin-Little, A., & Lloyd, K. (2013). School performance in adolescence. In W. T. O'Donohue, L. T. Benuto, & L. Woodward Tolle (Eds.), *Handbook of adolescent health psychology* (pp. 223–234). New York: Springer.
- Maguin, E., & Loeber, R. (1996). Academic performance and delinquency. *Crime and Justice*, *20*, 145–264.
- McReynolds, L. S., Wasserman, G. A., DeComo, R. E., John, R., Keating, J. M., & Nolen, S. (2008). Psychiatric disorder in a juvenile assessment center. *Crime & Delinquency*, *54*(2), 313–334.
- Moffitt, T. E. (2001). *Sex differences in antisocial behaviour: Conduct disorder, delinquency, and violence in the Dunedin Longitudinal Study*. Cambridge: University Press.
- Moffitt, T. E. (2003). Life-course-persistent and adolescence-limited antisocial behavior: A 10-year research review and a research agenda. In B. B. Lahey, T. E. Moffitt, & A. Caspi (Eds.), *Causes of conduct disorder and juvenile delinquency* (pp. 49–75). New York: Guilford Press.
- Moffitt, T. E. (2006). A review of research on the taxonomy of life-course-persistent versus adolescence-limited antisocial behavior. In F. T. Cullen, J. P. Wright, & K. R. Blevins (Eds.), *Taking stock: The status of criminological theory* (pp. 277–311). New Brunswick: Transaction.
- Nilsson, A., & Estrada, F. (2009). Kriminalitet och livschanser. Uppväxtvillkor, brottslighet och levnadsförhållanden som vuxen [Criminality and life prospects. Childhood conditions, crime and living conditions in adults age]. Arbetsrapport 2009:20. Stockholm: Institute for Future Studies.
- Ogders, C. L., Moffitt, T. E., Broadbent, J. M., Dickson, N., Hancox, R. J., Harrington, H., et al. (2008). Female and male antisocial trajectories: From childhood origins to adult outcomes. *Development and Psychopathology*, *20*(2), 673–716.
- OECD. (2012). *Equity and quality in education. Supporting disadvantaged students and schools*. Paris: OECD Publishing.
- OECD. (2015). *Improving schools in Sweden: An OECD perspective*. Paris: OECD Publishing.
- Oreopoulos, P., & Salvanes, K. G. (2011). Priceless: The nonpecuniary benefits of schooling. *Journal of Economic Perspectives*, *25*(1), 159–184.
- Payne, A. A., Welch, K., & Payne, A. A. (2015). How school and education impact the development of criminal and antisocial behavior. In J. Morizot & L. Kazeiman (Eds.), *The development of criminal and antisocial behavior: Theory, research and practical applications* (pp. 237–251). New York: Springer.
- Piquero, A. R., Diamond, B., Jennings, W. G., & Reingle, J. M. (2013). Adolescence-limited offending. In C. L. Gibson & M. D. Krohn (Eds.), *Handbook of life-course criminology: Emerging trends and directions for future research* (pp. 129–142). New York: Springer.
- Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., Garner, A. S., et al. (2012). The lifelong effects of early childhood adversity and toxic stress. *Paediatrics*, *129*(1), 232–246.
- Siennick, S. E., & Staff, J. (2008). Explaining the educational deficits of delinquent youths. *Criminology*, *46*(3), 609–635.
- SOU (1997). *Den nya gymnasieskolan - problem och möjligheter. [The new upper secondary school—problems and possibilities]*. Rapport 107. Stockholm: Statens Offentliga utredningar.

- Statistics Sweden (2017). *Unga utanför? Så har det gått på arbetsmarknaden för 90-talister utan fullföljd gymnasieutbildning. [Young people left outside? Development on the labour market for those born in the 90s without complete upper secondary education]*. Stockholm: Temarapport 2017:4.
- Swedish Government. (2006). *Ingripanden mot unga lagöverträdare. [Interventions against young offenders]*. Proposition 2005/06:165.
- Tyler, K. A., Johnson, K. A., & Brownridge, D. A. (2008). A longitudinal study of the effects of child maltreatment on later outcomes among high-risk adolescents. *Journal of Youth and Adolescence*, 37(5), 506–521.
- Van Damme, L., Fortune, C. A., Vandeveldde, S., & Vanderplasschen, W. (2017). The good lives model among detained female adolescents. *Aggression and Violent Behavior*, 37, 179–189.
- Vinnerljung, B., Berlin, M., & Hjern, A. (2010). *Skolbetyg, utbildning och risker för ogynnsam utveckling hos barn. [School performance, education, and risks for unfavourable development among children]*. Social Rapport 2010. Socialstyrelsen, Stockholm.
- Ward, T., & Brown, M. (2004). The good lives model and conceptual issues in offender rehabilitation. *Psychology, Crime and Law*, 10(3), 243–257.
- Wikström, C. (2006). Education and assessment in Sweden. *Assessment in Education*, 13(01), 113–128.
- Wilson, D. B., Gottfredson, D. C., & Najaka, S. S. (2001). School-based prevention of problem behaviors: A meta-analysis. *Journal of Quantitative Criminology*, 17(3), 247–272.
- Zamora, Y. (2011). Att få en ny chans – förändringsarbete och påverkansprogram för unga lagöverträdare. [Getting a new chance—working with young offenders]. *Mellanrummet*, 24, 42–47.

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