Examining adolescent maltreatment and connections to school engagement

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Abstract

This article examines how maltreatment experienced by adolescents is related to school engagement. Maltreatment includes physical, mental, and sexual violence along with sexual harassment, neglect, and witnessing domestic violence. School engagement refers to the students' relationship to all activities in the school. It describes students' thoughts, activities and participation as well as their emotions in relation to school. Analysis is based on the Finnish School Health Promotion data ($N = 155,299$) and analyzed by linear regression analysis. Results indicate that adolescents' maltreatment experiences are related to school engagement, regardless of gender, age, family structure, or immigrant background. Maltreatment increases functional engagement and decreases emotional and cognitive engagement. These results thus confirm that maltreatment can also cause immersion in schoolwork. The results can be used to prevent lower school engagement and maltreatment of adolescents.

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Introduction

Maltreatment experienced by children and adolescents has received increased attention in Finland over the last three decades. Research have found substantial decreases in various measures of maltreatment (Fagerlund et al., 2014; Ikonen & Helakorpi, 2019; Kääriäinen & Danielsson, 2017; Sariola, 1990). However, for example, 27.9% of the eighth and ninth grade students (15–16 years old) in primary schools still reported experiencing mental violence, such as verbal abuse, humiliating, or threatening behavior, by their parents in past year (Ikonen & Helakorpi, 2019). Maltreatment experiences in adolescence are known to cause both short- and long-term consequences and adolescents with maltreatment histories are at greater risk for difficulties across a range of domains, including cognitive and language development. According to previous studies, a young person who has been exposed to domestic violence for a long duration of time may be traumatized or suffer from psychosocial problems and mental disorders (Romano et al., 2015; Ryan et al., 2018).

Maltreatment experienced by adolescents is also known to cause problems in schooling. According to previous studies, adolescents who have experienced maltreatment are more impulsive (Bethell et al., 2014), have more school absences, and experience problems in performing school assignments (Ryan et al., 2018). Maltreatment has also been connected to lower school engagement which as a concept describes students' thoughts, activities, and participation as well as emotions related to schooling and school's key members, goals, and values (Fredricks et al., 2004; Skinner et al., 2009). To date there is only limited amount of Finnish research data available on the subject, although it would be important to have findings from different kind of school contexts. The Finnish education system is mostly public, accessible, and compulsory to everyone and the teaching is based on a thorough nationwide curriculum, which means that content of teaching is same in every school (Kalenius, 2014). Children goes to school nearest to their home and the quality of education is equal in all schools. In addition, teachers in Finnish schools are highly educated and they always must complete pedagogical studies, which also equalizes schools (Sahlberg, 2015).

It is essential to understand the connection between school engagement and maltreatment experienced by adolescents, because in addition to being linked to learning and school success, school engagement has a strong link to individual well-being and health (Carter et al., 2007), economic well-being, and the development of society (Linnakylä & Malin, 2008; Reschly & Christenson, 2006; Willms, 2003). According to a study conducted by World Health Organization in 2012, the primary concern in Finnish school institutions is decreasing students' school engagement when moving to higher classes (Kämppi et al., 2012). Exploring the link between school engagement and maltreatment experiences can also enhance the prevention and identification of youth maltreatment. Teachers as well as other school workers who regularly meet with adolescents and their parents can detect and address these issues in a timely manner. Maltreatment experienced by adolescents is a diverse public health problem as it causes health, social, and economic harm to society and individuals (Gilbert et al., 2009; Paavilainen & Flinck, 2015). Early interventions based on new national research data could enhance student attachment to school culture reducing early school dropouts and increasing school engagement (Fredricks et al., 2004). Research data allows teachers and other professionals as well as parents and other guardians to identify students who are more likely to struggle in their studies or at risk of dropping out of school (Linnakylä & Malin, 2008; Reschly & Christenson, 2006).

This study examines the connection between school engagement and maltreatment experienced by adolescents. The research data used in this study is derived from the 2019 Finnish School Health Promotion Study where the concept of maltreatment includes physical, mental, and sexual violence

as well as measures of sexual harassment, neglect, and domestic violence. School engagement is viewed through the most common model containing functional, cognitive, and emotional dimensions (Fredricks et al., 2004; Skinner et al., 2009).

The connection between school engagement and maltreatment experienced by adolescents

The maltreatment experienced by adolescents and their engagement to school have often been studied as separate phenomena (Kisely et al., 2018; Wang & Fredricks, 2014). Maltreatment as a concept includes all intended or unintended acts perpetrated by parents or other adults which cause or could cause damage to adolescents' health, survivor, or development (Gilbert et al., 2009). In recent years, there has been a lot of research on the experiences of violence against children and young people, and although the maltreatment has decreased during the last three decades, violence against children and young people is still widespread and more acceptable than violence against adults (Fagerlund et al., 2014; Ikonen & Helakorpi, 2019).

Maltreatment is known to have both short- and long-term consequences (Gilbert et al., 2009). According to Romano et al. (2015) maltreatment interrupts the normal development of brains and could, therefore, interrupt cognitive basic processes like concentration, memory, and language as well as organizational talents which adolescents need to function well in school. Pervious literature indicates that experiences of maltreatment are negatively related to school success and attachments to school given that adolescents who have experienced maltreatment have more school absences and problems in staying at school and graduating as well as problems in moving to postgraduate studies (Hershberger & Jones, 2018; Raby et al., 2019; Romano et al., 2015; Shonk & Cicchetti, 2001).

School engagement is a broader concept than school success or attachment to schoolwork and describes students' relationship to all activities which happen in school as well as students' thoughts and emotions in relation to schooling (Fredricks et al., 2004; Skinner et al., 2009). The concept of school engagement has several different meanings and is usually divided into subcomponents or dimensions. The most used model includes behavioral or functional, emotional, and cognitive school engagement (Fredricks et al., 2004; Skinner et al., 2009).

Functional engagement prefers to students' observable action and participation, that is general activity in classes, orientation to school activities, participation to club activities outside the school, low absenteeism, and possible interrupting behavior such as making noise during teaching (Fredricks et al., 2004; Hospel et al., 2016). The concepts of emotional and cognitive engagement are partly overlapping. Emotional engagement refers to students' emotions and valuing toward schoolwork (Fredricks et al., 2004) as well as the students' experience of belonging to school (Appleton et al., 2006). Cognitive engagement refers to the value given to the school and contribution to schooling and its significance for the future, as well as learning techniques, coping methods, and beliefs about oneself and the school (Fredricks et al., 2004).

According to several studies, adolescents who have experienced maltreatment are less engaged to school than those who have not experienced maltreatment (Bender, 2012; Bethell et al., 2014). However, school engagement is a strongly context-related phenomenon and both the out-of-school environment and individuals' different features affect it. Possessing several risk factors does not automatically mean weaker school engagement (Woolley & Bowen, 2007) for adolescents are very resilient and, according to studies, school engagement might also be a protective factor for maltreated adolescents (Bender, 2012; Hershberger & Jones, 2018). For example, stress can strengthen cognitive and behavioral engagement (Roeser et al., 2002) and experiencing mental and physical

violence can lead to immersion to schoolwork (Gilbert et al., 2009). In research literature, this is known as the concept of resilience which operates as a compensatory factor for those adolescents whose background predicts non-engagement and exclusion from school (Woolley & Bowen, 2007).

An overall picture of the links between maltreatment and school engagement is difficult to obtain from previous literature, as no consistent theory emerges for the study of school engagement. In several studies the link between experienced maltreatment and school engagement has been maintained even after controlling for age, family factors, socio-economic status, and gender (Boden et al., 2007; Jonson-Reid et al., 2004), but school engagement is also explained by several institutional, structural, social, and individual related factors (Appleton et al., 2006; Fredricks et al., 2004). School engagement appears to be more than only one independent component. Despite the vast amount of research in this area, it remains largely unclear which factors can explain this connection and the directions of these interactions. Additionally, international studies cannot be directly generalized to the Finnish school context since school engagement is a strongly context-related phenomenon and Finnish school culture is very distinctive by international standards, as, for example, public and free primary schools are a rarity in the world and Finnish education system is also known to be equal and based on a thorough nationwide curriculum with highly educated teachers (Kalenius, 2014; Sahlberg, 2015).

Most of the research on school engagement has focused on behavioral-related school engagement when other levels of engagement like emotional-related factors are less studied (Skinner et al., 2009). However, according to Romano et al. (2015) maltreatment causes lower self-esteem and self-efficacy which are needed when controlling emotions and impact emotional engagement. As a result of this research, a strong consensus is emerging that emotional dimensions play a significant role in a student's overall school engagement, and that emotional engagement is a necessary factor in maintaining student's appropriate behavioral engagement (Li & Lerner, 2013; Skinner et al., 2009). This perspective advocates that school engagement should be further examined at the emotional and experiential levels.

Methods

Data

This research is based on the nationwide School Health Promotion Study conducted by Finnish Institute for Health and Welfare. The data was collected from eighth and ninth grade students in primary schools (15–16 years old) and first and second grade students in high schools (16–17 years old) and from first and second grade students under the age of 21 in vocational schools (15–17 years old). The students answered the survey electronically and anonymously during the school day under the supervision of teachers. The teachers were given an instruction on how to conduct the survey by Finnish Institute for Health and Welfare and they informed parents in advance. Students from special classes, primary special schools and vocational special schools took part in the survey if they were able to answer the survey independently. Answers from plain language forms are not included in the analyses. The study involved 155,299 high school and secondary school students.

Whereas majority of the survey questions were less sensitive (such as questions about hobbies and ways to spend free time) some questions were very sensitive, such as questions used in this analysis. The most sensitive questions were placed in the middle of the questionnaire, followed by more convenient question themes. The respondents were encouraged to answer honestly, and they were told that their response is important. The respondents were also able to skip a question if they

did not feel comfortable to answer to that. The THL Working Group on Research Ethics has approved the study.

This research used official gender, age, family structure and origins as background demographic information. Original questions of these are presented in Appendix. Official gender was categorized as male/female and age was used as a continuous variable. In the original question on family structure, respondents could choose from multiple living situations, but for analysis those were dichotomized so that 'nuclear family' included those living together with their both parents and 'others' included those living somewhere else. Foreign background indicated whether the respondent was born abroad (Finnish background/Foreign background).

Maltreatment was defined to include physical and mental violence, sexual harassment and violence as well as neglect and domestic violence. Experiences of physical and mental violence were asked by a question including a list of acts and a question, whether one of your parents have done any of the following to you in the past 12 months. The acts of physical violence asked were: 'grabbed you so hard that it hurt'; 'pushed or shaken you angrily'; 'pulled your hair'; 'slapped you, hit you with their fist or an object'; 'kicked you'; or 'otherwise hurt you physically'. The acts of mental violence were: 'refused to talk to them for a long time'; 'verbally abused them, for example called them names'; 'humiliated or embarrassed them'; 'threatened to abandon them or leave them alone'; 'thrown, hit or kicked things (e.g. slammed doors)'; or 'locked them up; threatened them with violence'. For both sets of questions a dichotomous variable was created: experiences of physical violence (yes/no) and experiences of mental violence (yes/no). 'Yes' was coded if a responded had experiences at least one of the listed acts.

Experiences of sexual harassment were asked by whether the respondent had experienced inappropriate sexual proposals or harassment during the past 12 months in the following contexts: 'phone or online'; 'at one's educational institution'; 'in hobbies'; 'in the street', 'at a shopping center or in other public place'; or 'in their own home or in some else's home or in other private space'. Experiences of sexual violence were asked by whether the respondent had experienced any of the following during the past 12 months: 'being forced to undress'; 'unwanted touching of intimate parts of the body'; 'being pressured or coerced into sexual intercourse or other sexual acts'; or 'being offered money, goods or intoxicants in exchange for sex'. Both measures were dichotomized: experiences of sexual harassment (yes/no) and sexual violence (yes/no). 'Yes' was coded if a responded had experiences at least one of the listed acts.

Neglect was measured by asking whether respondents' parent has not provided enough food or drink, clean clothes, or a clean and warm place to live for long periods of time. A dichotomous variable (yes/no) was created to describe, whether a respondent had had any of these experiences in their life. Witnessing physical and mental domestic violence were measured by asking whether a respondent had personally seen or heard someone in his/her family doing particular acts to another member of their family in the past 12 months. The list of acts was like the list of acts in questions about respondent's own violence experiences. Two dichotomous variables were created to describe whether the respondent had witnessed at least some physical domestic violence (yes/no) and whether the respondent had witnessed at least some mental domestic violence (yes/no).

The School Health Promotion Study does not have a separate question module for school engagement. However, the questionnaire includes several questions reflecting school engagement. In order to examine the phenomenon as broadly as possible, all questions even mildly reflecting school engagement based on previous research were used. Those variables from the questionnaire are presented in Table 1, with their original question numbers.

Based on the previous research, the selected variables are distributed among the dimensions of school engagement, therefore, a principal component analysis was conducted to construct the variables of school engagement. As the School Health Promotion Study does not directly measure

Table 1. The variables of school engagement and their distribution to dimensions.

Variable	Dimensions		
	Cognitive	Emotional	Functional
6. How do you like studying at this moment? I like studying			
Very much		X	
Quite a lot			
Fairly little			
Not at all			
7. What do you think about your group?		X	
(a) It's peaceful to work in my group			
(b) The atmosphere in our group is such that I dare to express my opinion freely			
(c) The students in my group get along well			
8. What do you think about your teachers?		X	
(a) Teachers encourage me to express my opinions in class			
(b) Teachers are interested in how I am doing			
(c) Teachers treat us students fairly			
9. What possibilities have you had to influence the following things at your school during this school year?			
(a) Contributing to lesson arrangements (e.g. working methods)			
(b) Study planning (placement of lessons, starting time of the day, examination arrangements, etc.)			
(c) Design or implementation of activities during recess or break			
(d) Drawing up ground rules for the school			
(e) Designing or improving outdoor areas at the school			
(f) School meals (menus, making the lunch room pleasant, etc.)			
(g) Organizing theme days, celebrations, excursions, or school trip			
10. I feel I am an important member of		X	
(a) My classroom community			
(b) My school community			
11. How do you feel about recesses and breaks?			
(a) I am frightened of recesses or of going to recess			
(b) I feel lonely at recesses			
(c) I would like to have more organized program at recesses			

Table 1. (Continued)

Variable	Dimensions		
	Cognitive	Emotional	Functional
12. Are you experiencing difficulties in any of the following things in your studies?			
(a) Following the teaching in class	X		
(b) Doing homework or other school tasks			
(c) Preparing for exams			
(d) Performing tasks that require writing			
(e) Performing tasks that require reading			
(f) Performing tasks that require calculation			
(g) Oral presentations			
(h) Answering in class			
(i) Using devices used for studying (digital technology or software)			
14. During this school year, how often have you experienced the following?			
(a) Being late			X
(b) Being absent without permission, skipping school			
15. Have you had any of the following feelings relating to your studies?			
(a) I feel overwhelmed by schoolwork	X		
(b) It feels like my studies have no meaning			
(c) I feel inadequate at my studies			
18. How often have you participated in bullying other students during this semester?			X
Several times a week			
About once a week			
Less frequently			
Not at all			
26. Which of the following do you find easy or difficult?	X		
(a) Do you have difficulty learning things?			
(b) Do you have difficulty remembering things?			
(c) Do you have difficulty concentrating on an activity that you enjoy doing?			
97. During this school year, have you been given support and help for your wellbeing by the following adults at your school?			
a) Teacher			
111. How often do you do the following things outside of school hours			
I participate in the activities of a club, association, or organization, including the scouts, the 4H club, volunteer firefighters, volunteering, and parish activities			
112. How often do you engage in art or cultural activities led by an instructor or on your own initiative in your leisure time?			

school engagement and there was no validated measure to be used, the suitability of the data for the main component analysis was tested with Kaiser–Meyer–Olkin procedure which measures sampling adequacy for each variable in the model and for the complete model and the value should be near to 1. Bartlett's test was used to test the homogeneity of variances. Both tests supported the analysis. Three negatively charged variables (9, 11, 18) were translated positive to facilitate further analysis and variables which charge was under 0, 3 were excluded from the model right at the beginning. In order to find the best solution, the rotation of the data was conducted with both oblimin and promax for both of the methods allow the factors to correlate but promax is usually used for large datasets. Missing data was omitted using pairwise deletion. Based on the definition of the concept of school engagement models of three and four main components were examined.

The most theoretical solution was provided by the four-component model of principal component analysis (Table 1). The cognitive dimension of school engagement includes variables 12 a–i, 15 a–c, and 26 a–c. The emotional dimension includes variables 6, 7 a–c, 8 a–c, and 10 a–b. The functional dimension includes variables 14 a–b and 18. During the analysis variables 9 a–g (Table 1), were excluded because they forced other variables to the wrong dimensions in terms of content/making it difficult to form the dimensions of school engagement. Excluding the variables did not weaken the structure of the dimensions. The communalities of the variables signify the factors capability to explain the variables, and they varied between .305 and .796 being fairly low, but in acceptable ranges when the highest value is 1 (Costello & Osborne, 2005). Variables 11 a–c, 97 a, 111, and 112 (Table 1) from the fourth component were excluded because based on the previous research the aim was to form three main components, that is three dimension of school engagement. The component structure of the instrument was stated like the original Student Engagement Instrument (Appleton et al., 2006).

Analysis

Statistical analyses were performed using SPSS Statistics 25. Frequency and percentage figures were used to describe background variables and experienced maltreatment. The connection between experienced maltreatment and school engagement was examined using linear regression analysis. Variables based on the main component scores and describing school engagement were dependent variables and they were constant and normally distributed based on histograms. The small values of the scales of the principal component variables described a greater engagement to school. Variables describing experienced maltreatment were independent variables. Linear regression analysis was conducted separately to each dimension of school engagement so that different forms of maltreatment and background variables remained the same. The assumptions for linearity and normal distribution of residue variances in the linear regression analysis were revised and valid (Kellar & Kelvin, 2012). The limit of statistical significance utilized was $p < .05$.

Results

About half of the students were girls and a half were boys. The eighth graders in basic education accounted for 28.6% and the ninth graders in basic education for 27.6%. About 15.4% were first year high school students and 13.3% were second year high school students. The first graders in vocational school accounted for 9.2% and the second graders in vocational school for 5.9%. About 64.7% lived in a nuclear family and 5.3% had a foreign background.

Results indicated that 20.8% of the adolescents had experienced sexual harassment at least in one place during the past 12 months with 7.3% of the adolescents that had experienced at least one form of sexual violence during the past 12 months. Additionally, 27.5% of the adolescents had

Table 2. Averages of school engagement dimensions by maltreatment and background variables.

	Functional engagement		Emotional engagement		Cognitive engagement	
Maltreatment variables*	Yes	No	Yes	No	Yes	No
Sexual harassment	−.17	.12	.33	−.09	.39	−.13
Sexual abuse	−.45	.10	.46	−.03	.62	−.07
Mental abuse	−.16	.15	.33	−.13	.37	−.17
Physical abuse	−.36	.11	.44	−.05	.49	−.08
Mental domestic violence	−.07	.11	.25	−.09	.25	−.12
Physical domestic violence	−.16	.10	.32	−.04	.32	−.07
Neglect	−.72	.08	.60	−.02	.79	−.05
Background variables						
Gender						
Boy	−.13		−.24		−.21	
Girl	.22		.19		.12	
Family structure						
Other	−.03		.06		.13	
Nuclear family	.11		−.03		−.10	
Origins						
Foreign background	−.16		.06		.18	
Finnish background	.07		−.005		−.04	

Note. Because age is a constant variable, t-test was not suitable. Instead, a correlation coefficient was calculated, and it was .02 in functional engagement, −.173* in emotional engagement, and .103* in cognitive engagement.
*The difference between all groups was statistically significant $p < .01$.

experienced at least one form of mental violence perpetrated by guardians during the past 12 months. Respectively, 10% of the adolescents had experienced at least one form of physical violence. During the past 12 months, 24.8% of the adolescents had experienced mental domestic violence and 9.8% had experienced physical domestic violence. Last, 2.9% of the adolescents had experienced neglect at least once during their lives.

Those adolescents who had experienced maltreatment had lower means of functional engagement but higher means of emotional and cognitive engagement. Low means describe greater engagement. The means are also presented according to the background variables for each dimension separately (Table 2).

According to the Table 3, the maltreatment experiences of adolescents are connected to school engagement. Apart from physical domestic violence, all forms of maltreatment had a negative connection with functional school engagement which means maltreated students were more engaged functionally. Sexual harassment ($\beta = -.119$) was most strongly connected to functional engagement. All form of maltreatment had a positive connection both with emotional and cognitive engagement which means maltreated students were less engaged emotionally and cognitively. Mental violence was most strongly connected to both emotional ($\beta = .110$) and cognitive ($\beta = .140$) engagement.

The connection between maltreatment experiences and school engagement was maintained when students' gender, age, family structure, and origins were considered. Gender was statistically significantly associated with all three dimensions of engagement ($p < .001$) and boys were more engaged than girls. Age was statistically significantly associated only with emotional ($p < .001$) and cognitive engagement ($p < .001$) and according to the results older students were more engaged emotionally, but less engaged cognitively. Those living outside a nuclear family were more functionally engaged while those living in nuclear family were more engaged emotionally and

Table 3. The link between forms of maltreatment and the dimensions of school engagement.

	Functional engagement		Emotional engagement		Cognitive engagement	
Maltreatment variables	β-Coefficient[a]	p-Value	β-Coefficient[a]	p-Value	β-Coefficient[a]	p-Value
Sexual harassment	−.119	<.001	.053	<.001	.089	<.001
Sexual abuse	−.077	<.001	.043	<.001	.064	<.001
Mental abuse	−.093	<.001	.110	<.001	.140	<.001
Physical abuse	−.060	<.001	.031	<.001	.057	<.001
Mental domestic violence	−.016	<.001	.026	<.001	.014	<.001
Physical domestic violence	−.005	.157	.007	.039	.008	.027
Neglect	−.062	<.001	.050	<.001	.064	<.001
Background variables						
Gender	.256	<.001	.162	<.001	.093	<.001
Age	.000	.944	−.173	<.001	.103	<.001
Family structure	.046	<.001	−.024	<.001	−.074	<.001
Origins	.026	<.001	−.002	.411	−.025	<.001

Note. Reference group to gender: boy. Reference group to family structure: other than those living in a nuclear family. Reference group to origins: foreign background.
[a]Standardized β-coefficients.

cognitively. Students with foreign backgrounds were more engaged functionally, but less engaged emotionally and cognitively than those with Finnish background.

Discussion

Consistent with past studies of maltreatment experienced by adolescents and connections to school engagement, those adolescents who had experienced maltreatment were emotionally and cognitively less engaged than those who had not experienced maltreatment. They liked schooling less, they had more problems with student-teacher relationships and difficulties in applying learning strategies. The results of this research are in line with previous research (Gilbert et al., 2009; Romano et al., 2015).

However, the result of maltreated adolescents being functionally more engaged and having less absences and delays as well as less tendency to bully others is in part inconsistent with previous studies, because in several studies maltreatment experiences have been found to cause more absences and disturbing behavior such as aggression and restlessness (Boden et al., 2007). The results of this study support the previous knowledge that indicates that maltreatment can also lead to immersion to schoolwork (Gilbert et al., 2009), which suggests the adolescents escape the maltreatment experiences in the school environment. This study also challenges the traditional model of school engagement where emotional engagement always follows functional engagement (Finn, 1993) or vice versa (Li et al., 2010).

Interestingly, sexual harassment was the strongest predictor to functional engagement. This might be because sexual harassment is known to cause stress, but in difficult circumstances resiliency has been found to be a compensative factor for those adolescents who have experienced maltreatment, in which case they are cognitively and functionally engaged despite the stress (Roeser et al., 2002; Woolley & Bowen, 2007). The experiences of mental violence were most

strongly connected to emotional and cognitive engagement, and this could be partly explained by the high prevalence of mental violence, but mental violence is also known to cause mental and emotional disorders, which are related to self-efficacy and self-regulation as well as peer- and teacher relationships (Gilbert et al., 2009) which are needed in emotional and cognitive engagement.

The connection between maltreatment experiences and school engagement were maintained regardless of gender like the results of Crozier and Barth (2005). However, interestingly, in this study girls were less engaged than boys in every dimension, although according to previous studies males were more at risk for weaker engagement (Romano et al., 2015). This indicates that the assumed typical differences between genders are not always valid and that we do not yet know enough about the individual factors affecting the construction of school engagement. It is still unclear how the different home and school environments are connected to school engagement.

The engagement to school has been found to decrease when moving to higher grades (Wang & Eccles, 2012), and this has generally been explained by the positivity of younger students (Blumenfeld et al., 2005) and the fact that puberty involves a decline in the importance of the teacher and home relationships, as well as in school values (Blakemore & Choudhury, 2006). In contrary to previous research literature, older students were more engaged emotionally. This may perhaps be explained by the growing importance of peer relationships (Korkiamäki, 2013), which are well established in school surroundings and by the fact that the compulsory education ends after primary school and high school and vocational school students have applied to training voluntarily which usually makes studying meaningful and purposeful. The School Health Promotion Study verifies this as it indicates that the students in vocational school liked the school the most and eighth and ninth year students the least (Ikonen & Helakorpi, 2019).

This study brings new perspective to the school engagement of adolescents living outside the nuclear family or with foreign background because both groups are more engaged functionally. The maltreatment experienced by special groups and its connection to school success has been extensively studied (i.e. McGuire & Jackson, 2018; Threlfall et al., 2017) and the characteristics of young people belonging to minorities (Reschly & Christenson, 2006) and in foster care (McGuire & Jackson, 2018), together with maltreatment, have predicted poorer school engagement. The results of this study may be influenced by both higher-than-average experiences of maltreatment of those living outside the nuclear family and foreigners. However, it can be assumed that maltreatment experiences could drive adolescents to school to escape the threatening atmosphere of the home. It is also possible that those adolescents living outside the nuclear family for example in child welfare institutions find their living arrangements unsatisfactory in general which drives them to school environment.

This study provides new data about the connection between experienced maltreatment and school engagement and describes the connection between maltreatment and Finnish school context. However, school engagement is a multidimensional phenomenon, and it cannot be considered as a unidimensional or one-way only because in this study the consideration of the background variables did not alter the connection. Some dimensions can be causes or consequences of another dimension or they can be causes and consequences of each other at the same time (Li & Lerner, 2013). School engagement is always related to the interaction between the student and his or her environment, as well as to social processes in which the student's relationship to schoolwork is built and being subjected to maltreatment does not automatically mean weaker engagement to school. More information is needed on how meeting the basic needs of the student and the home and school environment are related to school engagement and what is the direction of the interaction when considering all the background factors affecting the connection.

Despite the challenges, research into school engagement and perceived maltreatment is important and even necessary, as school engagement is related to learning and school success and also strongly related to adolescents' well-being and health (Carter et al., 2007) along with financial success in adulthood and the development of society (Linnakylä & Malin, 2008; Reschly & Christenson, 2006; Willms, 2003). Independently, the maltreatment experienced by adolescents is a public health problem which causes a great deal of harm in the short and long term both to the child herself and to society (Paavilainen & Flinck, 2015). Understanding the link between the maltreatment of adolescents and their engagement to school can better identify in schools and at home those traits that may point to maltreatment and thus prevent the maltreatment targeting to adolescents. Teachers are in key position to enhance school engagement alongside parents. According to this study maltreatment is connected to school engagement and since maltreated adolescents are less connected emotionally and cognitively, teachers should pay attention to those individuals who seem to value school less and to those who have troubles with learning techniques or coping methods. These features may indicate problems at home although as is stated before school engagement is never an unambiguous phenomenon. If maltreatment is known to be the cause behind diminished engagement, school environment should support students' self-confidence and help to improve their skills and techniques. Research based early interventions could reduce school dropouts and lead to better understanding of students' school experiences and enhance students' school engagement (Fredricks et al., 2004).

Teachers should also pay attention to any differences in school engagement since maltreatment can also drive students to escape in school world. This study highlights the fact that teachers need time and desire to get to know students, and teachers and parents should cooperate more frequently. It is also recommended that teachers cooperate with school nurses and psychologists to detect any signs of indisposition. In the future interprofessional cooperation is needed even more.

This study is a census, and therefore, the estimates presented are not subject to sampling error and the results are generalizable to the entire Finnish population. Generalization to international context should be followed with caution because of the uniqueness of Finnish school context, and the definition and prevalence of maltreatment varies over countries and cultures. The study is of cross-sectional design and it is therefore impossible to determine if the relationships observed are causal. To draw conclusions about the causal links between maltreatment experiences and school engagement, it is desirable that future studies also collect data over time. Some factors related to the research process should also be considered. The dimension of functional engagement consists only of three variables, but on the other hand the factor loadings were quite large, and the variables described the dimension well. Some of the propositions were excluded from the final model but the inner consistency of the dimensions was inspected and stated high and therefore the exclusion did not damage the instruments overall ability to measure the dimension of the engagement. Though the examination of all dimensions did not yield equally precise and substantive questions, the substantive structure of the dimensions was compared with international and domestic indicators of school engagement (Appleton et al., 2006; Nolvi, 2012) and it was stated as similar.

Finally, variables of violence and harassment were used as dichotomous variables in the analysis resulting large variation in adolescents' experiences within one variable. For example, the variable of mental violence combined those, who have experienced multiple types of mental violence and those, who have experienced only one type of mental violence, into a one variable. This is a limitation of this study and in future research accumulation of violence experiences should be taken account in more detailed way.

Despite of these limitations, some important implications can be drawn from the analysis. When teachers identify changes in school engagement, they should take actions to clarify whether changes reflect poor living conditions at home by discussing about it with adolescent and parents.

Although talking about potential maltreatment with parents may be difficult for teachers, it is important to intervene potential maltreatment. Written procedures for the discussion could be created at the school level, which may make discussion easier, when teachers can refer to those rules. Other school staff, for example in Finland a school welfare group, could be useful help in these situations. Finally, overall awareness of the association between school engagement and adolescents' experiences of maltreatment should be increased among teachers.

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Appendix

Original background and maltreatment questions

Gender: What is your official gender? Boy/girl

Age: In what year were you born?

Family structure: Where do you live? With my both parents/I live roughly for the same length of time with both parents, who do not live together, for example in alternative weeks/I mainly live with one of my parents and stay with the other parent from time to time, for example at weekends/With one of my parents/I live with my grandparents or other relatives, without my parents/I live in a foster family/At a children's home, a youth home or a reform school/I live in a family home/In a dormitory/None of the above.

Origins: In which country were you and your parents born? Finland/Sweden/Estonia/Russia/the former Soviet Union/Former Yugoslavia/Other European country/Somalia/Iraq/Iran/Afghanistan/China/Thailand/Vietnam/Other country.

Physical violence: Has one of your parents done any of the following to you in the past 12 months? Answer options were: no, one to two times, three times or more, have but cannot remember the number of times. The acts of physical violence asked were: grabbed you so hard that it hurt; pushed or shaken you angrily; pulled your hair; slapped you, hit you with their fist or an object; kicked you; otherwise hurt you physically.

Mental violence: Has one of your parents done any of the following to you in the past 12 months? Answer options were: no, one to two times, three times or more, have but cannot remember the number of times. The acts of mental violence asked were: refused to talk to them for a long time; verbally abused them, for example called them names; humiliated or embarrassed them; threatened to abandon them or leave them alone; thrown, hit or kicked things (e.g. slammed doors); locked them up; threatened them with violence.

Sexual harassment: Have you experienced inappropriate sexual proposals or harassment during the past 12 months? On the phone or online; at one's educational institution; in hobbies; in the street, at a shopping center or in other public place; in their own home on in some else's home or in other private space.

Sexual violence: Have you experienced any of the following during the past 12 months? Being forced to undress; unwanted touching of intimate parts of the body; being pressured or coerced into sexual intercourse or other sexual acts; being offered money, goods or intoxicants in exchange for sex.

Neglect: Did your parent for long periods of time not provide you with enough food or drink, clean clothes, or a clean and warm place to live? Never; once or twice in my life; several times in my life.

Witnessing physical domestic violence: Have you personally seen or heard someone in your family doing one of the following to another member of your family in the past 12 months? Grabbing you so hard that it hurt; pushing or shaking angrily; pulling hair; slapping, hitting with their fist or an object; kicking; otherwise hurting physically.

Witnessing mental domestic violence: Have you personally seen or heard someone in your family doing one of the following to another member of your family in the past 12 months? Refusing to talk to for a long time; verbally abusing, for example called them names; humiliating or embarrassing; threatening to abandon or leave alone; throwing, hitting or kicking things (e.g. slammed doors); locking somebody up; threatening them with violence.