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**ATTACHMENT STYLES OF DIFFERENT GROUPS OF
VOCATIONAL LEARNERS IN BULLYING BEHAVIOR**

Kristi Kõiv (a)*

*Corresponding author

(a) Institute of Education, University of Tartu, Jakobi 5, Tartu 51005, kristi.koiv@ut.ee

Abstract

This research addresses the question of whether or not vocational students who bully others and/or are victimised can be distinguished by their current attachment styles. The aim of the present study is to explore the attachment styles of the different groups of vocational school students involved in bullying behaviour – victims, bullies, bully/victims, and not-involved. A total of 402 vocational school students (195 girls and 207 boys) ages 17 to 28 years old (main age 20.87) completed a self-reported measure (the Revised Adolescent Peer Relations Instrument – Bully and Target) to determine the status of bullying behaviour (bullies N = 57; victims N = 74; and bully/victims N = 41; non-participants of bullying N=230) and a self-reported measure to examine attachment style (the Multiple-item Attachment Scale). Results of the study indicated that: (1) bullies and victims had higher scores in avoidant and anxious/ambivalent attachment scales than bully/victims, whereby all three victim/bullying group members had lower scores than non-participants of bullying; and (2) non-participants of bullying behavior demonstrated higher levels of secure attachment than bullies, victims and bully/victims, whereas the first two bullying group members had lowest level of secure attachment. Findings reflected the role of insecure attachment as a risk factor in the development of bullying behaviour in late adolescence in the context of vocational school settings.

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1. Introduction

Bullying is a growing international phenomenon in schools, and the peak prevalence of bullying and victimization covers more than a quarter of early and middle adolescents, while involvement of bullying others, being bullied and being both a bully and a victim made up nearly 11%, 13% and 4%, respectively (Craig et al., 2009). The prevalence rates of both traditional bullying and cyberbullying indicate that it is a serious problem in primary and high schools internationally covering mean prevalence rates of 35% for traditional bullying involvement and 15% for cyberbullying involvement among adolescents (Modecki et al., 2014). Traditional bullying may include physical, verbal, and social bullying behaviour and cyberbullying refers to use of electronic communication technologies with the use of visual and text forms (e.g. Griezel et al., 2009), whereas any form is considered as act of aggression, and it is only considered forms of bullying when the three characteristics are met: (1) a power differential between the bully and the victim, (2) repeated harm over time, and (3) intention to harm (Olweus, 1999).

Limited recent research has examined the prevalence of bullying and victimization among vocational school students in different countries: in Finland less than 10% were involved as bullies, victims or bully/victims (Aho et al., 2019); in Turkey almost half – 48% were connected to victimization and 52% to bullying (Çevik et al., 2021); in China more than half vocational learners were involved in bullying – nearly 30% were victims, 3% bullies and 23% bully/victims (Xu et al., 2022); in China about half of vocational school learners were involved in cyberbullying and about 70% in cybervictimization (Zhou & Li, 2021), whereas the findings show that vocational school students have a greater tendency to become victims than bullies. Compared with their peers in high school, students studying in vocational schools have a greater risk of developing behavioral patterns that are dangerous to their health (e.g. Horvath et al., 2018) and becoming involved in bullying behavior (Menesini et al., 2009; Yerlikaya, 2014; Zych et al., 2017), whereas bullies in all high school types (included vocational schools) have reported externalizing problems, victims internalizing problems and bully/victims externalizing/internalizing problems (Menesini et al., 2009).

In fact, limited recent studies have confirmed connections between: (1) vocational students' traditional and cyberbullying and their need for stimulation seeking during regular vocational school hours (Graf et al., 2019); (2) vocational school students' cyberbullying and their problematic internet use as parallel increase of these problematic behavior levels (Zhou & Li, 2021); (3) disabled vocational school students' victimization and depression (Zhang & Wang, 2019); and (4) vocational school learners' bullying behavior and smoking habits revealing differences between bully-categories versus not-involved 14-20 year old boys and girls (Aho et al., 2019). Also, it was indicated that a warm parenting style can protect vocational school students from bullying – specifically, a positive relationship with parents and a good parenting style (warmth, democracy, and mutual concern) was a protective factor from bullying others as well as being victim in vocational schools (Xu et al., 2022).

In conclusion, there is a growing body of research to understand the prevalence and nature of bullying behavior in vocational schools, but it is unclear the role of vocational school students' attachment to the bullying involvement in vocational school setting.

Attachment theory as empirically supported developmental theory explains the nature of the parent-child bond throughout the lifespan (Bowlby, 1969; Hazan & Shaver, 1994). Traditionally with beginning research history, attachment has been conceptualized and measured as the parent-child bond (e.g., Troy & Sroufe, 1987), but there is a growing interest in the parent-adolescent relationship and its influence on problematic peer relationships – involvement in bullying. Namely, over the past two decades, efforts have been made in various countries to clarify the connections between attachment and bullying perpetration and victimization among adolescents, however findings vary according to the age of the respondents, the used methodology (categorical or dimensional measurement) and the research design (correlational or nomination research).

Only a limited number of studies have examined the associations between specific characteristics of parent-adolescent attachment and adolescents' peer schoolbullying involvement. Specifically, insecure attachment style was predictive of victimization among 5-6 grade Greek (10-12 years) adolescents (Kokkinos, 2013), and predictive of bullying among 6 grade USA sample (Eliot & Cornell, 2009). Correlations between attachment and involvement in traditional bullying or victimization have been established among elementary and middle school (11-16 years old) students in Canada revealing that high-quality attachment relationship with primary caregiver predicted bullying others or being victimized (Walden & Beran, 2010). Attachment to the family (in terms of primary parent) was a protective factor against traditional bullying victimization but not for cyberbullying victimization in a sample of students in grades 5, 7 or 9 in Australia (Hemphill et al., 2015). For both parents, bullying was associated with insecure attachment to mothers and victimization was associated with insecure attachment to fathers among middle school (11-16 year) Italian adolescents' sample (Innamorati et al., 2018). The effect of the quality of the mother-adolescent attachment relationship on bullying and victimization was not direct but mediated by peer attachment relationships and the student-teacher interaction based in the sample of Greek-Cypriot secondary school (15-18 years old) students (Charalampous et al., 2019).

The other limited branch of studies has examined the specific characteristics of parent-adolescent attachment and adolescents' various roles in bullying involvement. Specifically, characteristics of attachment relationships – alienation from mother and trust from mother, were detected to be higher and lower respectively between Canadian (13-18 year) adolescents involved in bullying compared to their not-involved peers, whereby bully-victims indicated a higher level of maternal attachment in terms of alienation than did the victims and bullies (Marini et al., 2006). Not-involved Belgium school (15-17 year) students reported levels of parent-adolescent attachment (in terms of care) that were nearly as high as those of students who were perpetrators of bullying, but in contrast, victims (especially bully-victims) demonstrated low levels of parent-adolescent attachment (Demanet & Van Houtte, 2012). Research results among Iran school (15-19 year) students were in the same line showing that perpetrators of bullying reported lower attachment (in terms of parental bonding) than victims of bullying, who in turn reported lower attachment than not-involved students (Mohebbi et al., 2016). Also, the analysis of results showed that 6 grade students in Cyprus sample who were involved in bullying either as bullies or as bully/victims showed higher scores on negative aspects of quality of attachment with their both parents, while not-involved students showed

higher scores on positive (i.e., trust and communication) aspects of quality of attachment (Nikiforou et al., 2013).

With regards to attachment styles, high insecure attachment (avoidance or anxious/ambivalent) style in the relationship with both parents were related with bullying risk among Malaysian (13-17 years old) adolescents' samples comparing bullies and victims with not-involved (Mohammadzadeh et al., 2020). Grade 5 and 6 (10-12 year) Greek students who classified themselves as securely attached reported less involvement in bullying and victimization compared to those who classified themselves as insecurely – ambivalently and avoidantly, attached (Kokkinos, 2013). Comparing the four bully-categories among Estonian 4-9 grades (10-18 year), it was found that bullies scored higher on the avoidant attachment scale than victims and non-participants of bullying; and victims showed higher levels of insecure attachment than bullies and uninvolved adolescents (Kõiv, 2012).

In sum, the reviewed research suggests that insecure parent-adolescent attachment have been related to specific peer bullying involvement and bullying-related behaviors in school context, but the quality of attachment in secure-insecure dimension related to adolescents' involvement in perpetrating and/or being targeted by bullying remains unclear evoking new research questions connected with different educational context.

2. Problem Statement

While previous research has examined the relationships between parent-adolescents attachment relationships and adolescents' involvement in the bullying behavior, the relationship between attachment style and bully-categories among vocational school students has not been empirically evaluated before.

3. Research Questions

The present research addresses the question of whether adolescents, who bully others, are victimized and are not-participants of bullying behaviour in vocational school can be distinguished by their current attachment styles. Research question: Does the quality of attachment styles predict vocational learners' bullying and victimizations behavior?

4. Purpose of the Study

The aim of the present study was to investigate differences of vocational school learners' attachment styles among participants (bullies, victims, bully/victims) and non-participants of bullying behavior.

The hypothesis was that attachment style of participants of bullying behavior (bullies, victims, bully/victims) should be more insecure compared to that of non-participants of bullying behaviour among vocational school learners.

5. Research Methods

5.1. Study design and sample

A three-stage stratified cluster design was used for sampling: during stage one randomly selected 21 vocational schools from all 37 vocational schools at Estonia was performed; during stage two in the participating vocational schools all vocational learners was selected, who were present at school at the time and have attended to vocational school more than year to fill out two questionnaires; during stage three vocational school students' different bully-categories were identified.

A sample consisted of 402 vocational learners (195 girls and 207 boys) aged 17 to 28 years ($M = 20.8$, $SD = 2.13$). The target group members of this study individually completed a classroom-administered e-questionnaires. Participants' privacy was protected by allowing anonymous and voluntary participation with informing them of the right to withdraw at any stage of the study.

5.2. Measures

5.2.1. Measure of bullying involvement

Participating vocational school students were required to complete the Revised Adolescent Peer Relations Instrument – Bully and Target (RAPRI-BT; Griezel et al., 2012) that addressed the frequency of bullying behaviour with assessing three (physical, verbal, and social) forms of traditional bully and target behaviors and two (visual and text) forms of cyber bully and target behaviors. The RAPRI-BT was based on the Adolescent Peer Relations Instrument (APRI) developed by Parada (2000) and consists of 62 self-reported items with 31 perpetrator items and 31 victim items on a 6-point Likert-type scale ranging from 1 (never) to 6 (every day). Participants were asked to indicate, in the past year at vocational school, which behaviours they had carried out and which behaviours they had experienced.

The RAPRI-BT was translated into Estonian and back to English to ensure congruence with the original. Griezel et al. (2012) found good psychometric properties for the RAPRI-BT, with Chronbach alphas ranging from .80 to .94 for subscales of the measure. In the current study, Cronbach alphas ranged from acceptable to good: .84 (Bully Traditional Physical), .81 (Bully Traditional Verbal), .81 (Bully Traditional Social), .76 (Bully Cyber Visual), .79 (Bully Cyber Text), .85 (Target Traditional Physical), .79 (Target Traditional Verbal), .82 (Target Traditional Social), and .79 (Target Cyber Text).

According to the definition of bullying as repeated aggressive behavior, students who responded that they had been bullied or bullied other students repeatedly (more than “once or twice a month”) were considered as being bullied or bullied others at vocational school. Measurements of being bullied and being a bully combined to create four bully-categories to clarify the nature of bullying behavior statuses. If respondents reported at least one “bully” item and no “victim” item, they were classified as “bullies”; if they reported at least one “bully” item and at least one “victim” items they were classified “bully/victims”; if they reported at least one “victim” item and no “bully” items they were classified “victims”; and if they reported no “bully” or “victim” items they were classified as “not-involved”.

5.2.2. Measure of attachment styles

Target group of vocational school students were also required to complete a measure of attachment styles, namely the Multiple-item Attachment Scale (Simpson, 1990) exploring secure, avoidant and anxious/ambivalent styles. The participants were asked to rate 13 items based on Hazan and Shaver's (1987) attachment measure: five items for secure attachment and four items for insecure and anxious/ambivalent attachment style on a seven-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (7). This self-reported three-category measure items can be decomposed into secure, avoidant and anxious/ambivalent attachment sub-scales.

6. Findings

6.1. Bully-categories

The number of vocational learners who were identified as non-participants of bullying behavior, bullies, victims, or bully/victims was 230 (57.2%; 118 boys and 112 girls), 57 (14.2%, 28 boys and 29 girls), 74 (18.4%, 39 boys and 35 girls), and 41 (10.2%, 22 boys and 19 girls), respectively.

Research results indicated that nearly 43% of vocational school learners (N = 172) were connected with bullying behaviour: 14% were bullies, 18% were victims of bullying, and 10% were both bullies and victims (bully/victims). More than half of vocational students – 57%, were not involved in bullying behaviour (Table 1).

Table 1. Number and percentage of bullies, victims, bully/victims and non-participants of bullying behaviour among the whole sample of vocational school learners type your title

Bully-category	Bullies	Victims	Bully/victims	Not-participants	All
N	57	74	41	230	402
%	14.18	18.41	10.20	57.21	100

6.2. Attachment styles across bully-categories

The mean scores on the attachment measure sub-scales were displayed across bully-categories (victims, bullies, bully/victims, and uninvolved students) in the Table 2, whereby the higher scores were associated with an increased tendency to demonstrate each attachment style.

Table 2. Mean scores on the three attachment styles across the status of bullying category

Attachment style	Victims (N = 74)		Bullies (N = 57)		Bully/victims (N = 41)		Not-participants (N = 230)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Secure	2.66	1.64	2.54	1.57	3.12	1.92	4.23	1.78
Avoidant	5.26	1.70	5.25	1.78	4.81	1.91	3.58	1.84
Anxious/ambivalent	4.64	2.01	4.48	2.11	3.92	2.07	2.98	1.55

A series of paired *t*-tests were carried out to assess bully-categories (bullies, victims, bully/victims and non-participants) differences for total scores on the subscales of the measure of attachment styles to

reveal where the significant differences could be found. The results, as shown in Table 3, indicated that there were several statistically significant differences with regards to respondents' attachment styles and their status of bullying behavior: (1) not-participants of bullying behavior reported higher secure attachment scores compared with bullies, victims and bully/victims; (2) bullies and victims reported lower secure attachment scores than bully/victims, whereby secure attachment style did not differentiate significantly bullies and victims; (3) not-participants of bullying behavior reported lower avoidant and anxious/ambivalent attachment scores compared with bullies, victims and bully/victims; and (3) bullies and victims reported lower avoidant and anxious/ambivalent attachment scores than bully/victims, whereby avoidant and anxious/ambivalent attachment style did not differentiate significantly bullies and victims.

Table 3. *T*-values and *p* values comparing different bully-categories on the three attachment styles

Attachment style	<i>t</i> / <i>p</i> value	Not-participant versus victims	Not-participant versus bullies	Not-participant versus bully/victims	Victims versus bullies	Victims versus bully/victims	Bullies versus bully/victims
Secure	<i>t</i>	15.67	15.54	7.48	0.93	2.86	3.48
	<i>p</i>	0.00	0.00	0.00	0.17	0.01	0.01
Avoidant	<i>t</i>	14.17	12.69	7.65	0.01	2.47	2.35
	<i>p</i>	0.00	0.00	0.00	0.49	0.01	0.01
Anxious/ambivalent	<i>t</i>	12.67	8.99	5.52	0.57	3.53	1.95
	<i>p</i>	0.00	0.00	0.00	0.23	0.01	0.02

7. Conclusions

The focus of the present study was on the vocational school late adolescents' attachment quality (measured as an attachment style) relations with peer bullying and victimization (measured as traditional bullying and cyberbullying involvement) in vocational school settings.

It was of practical significance to select vocational learners as the targets, given their high incidence of bullying involvement and the fact that they were rarely targeted for research for analysing the nature of bullying in vocational school context. Present results suggest high self-reported bullying rates for vocational school students, namely less than half – 43% of vocational learners were involved in bullying, whereas the tendency of becoming a victim (18%) was higher than becoming a bully (14%) or victim and bully (10%) supporting previous studies (Çevik, et al., 2021; Xu et al., 2022; Zhou & Li, 2021) in vocational schools.

Previous research attempts to follow adolescents' close relationships from the perspective of attachment lays the groundwork for the hypothesis of the present study that attachment style of participants of bullying (bullies, victims, bully/victims) should be more insecure compared to that of non-participants of bullying behaviour among vocational school learners. The results obtained from the research confirmed and specified this prediction with indication that the vocational school learners' attachment style was more insecure among participants of bullying (bullies, victims, bully/victims) compared to that of non-participants of bullying behaviour with perpetrators and victims reported lower level of attachment than bully/victims. It was also revealed that participants of bullying behavior reported higher levels of avoidant and anxious/ambivalent attachment than did not-involved vocational learners, however bullies and victims indicated a higher level than bully/victims.

In general, vocational school late adolescents' attachment insecurity (measured as an attachment style via self-reports) was related with peer bullying and victimization (measured as traditional bullying and cyberbullying involvement via self-reports) in vocational school settings. This general finding is consistent with previous findings revealing associations between parent-adolescent attachment and early/middle adolescents' peer bullying involvement (measured via self-reported, peer-reported or principal and teachers reports) in school context (Charalampous et al., 2019; Eliot & Cornell, 2009; Hemphill et al., 2015; Innamorati et al., 2018; Walden & Beran, 2010).

Our findings strengthen the evidence suggesting that late adolescences' insecure attachment styles – avoidant and anxious/ambivalent, were associated with involvement of peer bullying and victimization in vocational school settings, whereas bullies and victims were most likely to display avoidant and anxious attachment style compared with bully/victims.

The finding generally affirmed previous studies in school context revealing that bullies, victims and bully/victims had lower quality parent-adolescent attachment relationships than middle/late adolescents who did not engage in bullying behavior with lowest quality of attachment relations among bullies (Mohebbi et al., 2016) or bullies/victims (Demant & Van Houtte, 2012; Nikiforou et al., 2013) or victims and bullies (Marini et al. (2006). Previously, it was revealed that insecure – avoidant and anxious/ambivalent, attachment differentiated bullies and victims from not-involved middle/late adolescents in school context (Mohammadzadeh et al., 2020); early adolescents who classified themselves as securely attached reported less involvement in bullying and victimization in schools compared to those who classified ambivalently and avoidantly attached (Kokkinos, 2013); and early/middle/late adolescents who were classified as schoolbullies had most likely avoidant and victims insecure attachment style (Kõiv, 2012).

Present study revealed that vocational students who had insecure (avoidant, anxious/insecure) attachment style were more likely involved in bullying as a perpetrators or victim in vocational school settings. This finding extends the literature by identifying insecure attachment as risk factor in late adolescence associated with bullying and victimization in vocational school setting contexts. Specifically, the type of insecure attachment, whether anxious/ambivalent or avoidant, may impact vocational school learners' bullying behavior.

A limitation of the study is the usage of self-report data by reporting prevalence of bullying and victimization with the possibility of under-reporting of bullying behaviours and it is possible that self-reports differ from peer-reports. Future research might consider including additional informants, such as parents and teachers, to obtain a more comprehensive picture. Additionally, the cross-sectional survey using cluster sampling of the current study does not allow for causal conclusions.

Investigating differences between bullying involvement in relation to the role of intraindividual risk factors is crucial in order to inform the development of prevention and intervention strategies to focus how vocational school learners' attachment processes continue to be important in late adolescence, but this issue still needs further research.

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