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Bullying in adolescents: Co-occurrence of bullying roles and associations with special educational needs

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Abstract
This study aims to identify possible profiles of bullying types by clustering different bullying roles (bully, victim, assistant, defender, and outsider) and to determine differences between demographic groups such as age, sex, and special educational needs (emotional and behavioral difficulties and learning difficulties). Data was collected from N = 245 students between 10 and 16 years old, of which 33 (13.5%) had special education needs. The Bully Participant Behavior Questionnaire was used to determine the bullying roles. Post-hoc cluster analytic strategies were applied to determine the co-occurrence of the different bullying roles. Based on the bullying roles, two clusters were formed. The first cluster included adolescents (70%) with low scores on all cluster variables, called involvement low, while the second cluster included highly involved adolescents (30%) with high scores on the victim and defender variables. Significant group differences were found for the two clusters regarding all five cluster variables. The distribution for children with SEN is similar to that for students without SEN, and no significant differences emerged regarding the cluster affiliation. The results of this study may have implications for the development of tailored intervention and prevention strategies for different bullying profiles and demographic groups, like focusing on the group dynamic as a whole and identifying students who are highly involved. The study included students with emotional and behavioral difficulties and learning disabilities and aimed to contribute to a better understanding of the co-occurrence of bullying roles and the implications for students with special educational needs.

Keywords: Bullying roles, social-emotional difficulties, learning difficulties, adolescents, cluster analysis

Bullying bei Jugendlichen: Gemeinsames Auftreten von Bullying-Rollen und Assoziationen mit sonderpädagogischem Förderbedarf

Zusammenfassung
Diese Studie zielt darauf ab, mögliche Profile von Bullying-Typen zu identifizieren, indem verschiedene Bullying-Rollen (Bully, Victim, Assistant, Defender und Outsider) geclustert werden. Zudem werden Unterschiede zwischen demografischen Gruppen wie Alter, Geschlecht und sonderpädagogischem Förderbedarf (emotionale und Verhaltensschwierigkei-

ten sowie Lernschwierigkeiten) ermittelt. Es wurden Daten von N = 245 Schülern im Alter zwischen 10 und 16 Jahren erhoben, von denen 33 (13,5%) sonderpädagogischen Förderbedarf hatten. Der Bully Participant Behavior Questionnaire wurde verwendet, um die Bullying-Rollen zu bestimmen. Zur Bestimmung des gemeinsamen Auftretens der verschiedenen Rollen wurden post-hoc clusteranalytische Strategien angewandt. Auf der Grundlage der Rollen wurden zwei Cluster gebildet. Das erste Cluster umfasste Jugendliche (70%) mit niedrigen Werten bei allen Clustervariablen und wurde als geringes Engagement bezeichnet, während das zweite Cluster stark involvierte Jugendliche (30%) mit hohen Werten bei den Victim- und Defendervariablen umfasste. Bei allen fünf Clustervariablen wurden signifikante Gruppenunterschiede zwischen den beiden Clustern festgestellt. Die Verteilung für Kinder mit SEN ist ähnlich wie die für Schüler ohne SEN. Es ergaben sich keine signifikanten Unterschiede hinsichtlich der Clusterzugehörigkeit. Die Ergebnisse dieser Studie können Auswirkungen auf die Entwicklung maßgeschneiderter Interventions- und Präventionsstrategien für verschiedene Mobbingprofile und demografische Gruppen haben, wie z. B. die Fokussierung auf die Gruppendynamik als Ganzes und die Identifizierung von Schülern, die stark involviert sind. Die Studie schloss Schüler mit emotional-sozialen Problemen sowie Lernbehinderungen ein und sollte zu einem besseren Verständnis des gleichzeitigen Auftretens von Bullying-Rollen und der Auswirkungen auf Schüler mit besonderen pädagogischen Bedürfnissen beitragen.

Schlagwörter: Bullying-Rollen, sozial-emotionale Probleme, Lernschwierigkeiten, Jugendliche, Clusteranalyse

Due to the dire consequences that bullying, victimization, and perpetration have (e.g., Zych et al., 2017), it has been increasingly focused on in pedagogical research over the last few years. However, research has been largely focused on the roles of perpetrator and victim, whereas the roles identified by Salmivalli et al. (1996; e.g., bystander, assistant, reinforcer, defender) have only recently been investigated in terms of the influencing factors and risks associated with these roles. Additionally, the possible variation in roles depending on the social context (Salmivalli et al., 1999) complicates the research on influencing factors and risks associated with taking part in the bullying dynamic. Adolescents cannot necessarily be assigned to just one type of bullying role. For example, bully-victims have also been increasingly studied in research (see, for example, Haynie et al., 2001). However, other combinations of roles, e.g., defender and victim, are also possible, depending on the social context. Adolescents with victim experiences can probably also act as defenders if they observe bullying because they do not want others to have the same negative experiences with bullying as they did (Ma et al., 2019; Meter & Card, 2016). However, there has been little research so far analyzing combined bullying roles. The question arises as to which roles occur most frequently together. The current study therefore tries to identify possible clusters of participating roles in traditional bullying to better understand the bullying process by following the research question: Can clusters of participating roles in bullying (bully, victim, assistant, defender, and outsider) be identified, and which roles tend to occur most frequently together? Additionally, research focusing on at-risk groups for bullying participation (i.e., students with special educational needs [SEN]) has been the focus of international studies (e.g., Eilts et al., 2022; Rodrguez-Hidalgo et al., 2019). These studies indicate that students with SEN are overrepresented in the bullying dynamic. Students with emotional and behavioral difficulties (EBD) and learning disabilities

have been the focus of studies indicating a higher risk of being involved in the bullying dynamic because of the characteristics associated with EBD (Rose & Espelage, 2012; Turunen et al., 2019; Weinreich et al., 2023). Therefore, the analysis of differences in the clusters regarding students with and without emotional and behavioral difficulties tries to expand the understanding of the bullying dynamic in a special needs (SEN) context. Additionally, student age and sex seem to influence the role-taking process (e.g., Nansel et al., 2001; Pellegrini & Long, 2002; Schreithauer et al., 2006; Wolke et al., 2000).

Studies indicate that bullying peaks during the transition from elementary to middle school, declining as adolescents age, possibly due to status re-evaluation within peer groups and a shift towards relational and indirect forms of bullying during adolescence, a trend observed similarly among students with disabilities, who consistently exhibit higher involvement in bullying dynamics compared to their peers without disabilities (Nansel et al., 2001; Pellegrini & Long, 2002; Rivers & Smith, 1994; Rose & Gage, 2017; Wang et al., 2016).

The influence of gender on bullying manifests in that male students more frequently perpetrate and experience physical forms of bullying, while female students tend to report verbal and indirect forms of bullying more often (Schreithauer et al., 2006; Wolke et al., 2000). Thus, student sex and age are also used to analyze differences in the clusters, and the second research question is: What are the differences in the identified bullying profiles among demographic groups, including age, sex, and special educational needs (emotional and behavioral difficulties and learning difficulties)?

Bullying Roles

Bullying has been defined as repeated aggressive behavior by a superior person (the perpetrator) towards an inferior one (the victim) with the goal of intentionally harming the victim (Olweus, 2013). In addition to the roles of the perpetrator and the victim, Salmivalli et al. (1996) identified further roles: assistant, reinforcer, outsider, and defender. The identification of these roles is a result of the group dynamics in which bullying occurs: The bully is characterized as someone who is proactive, takes initiative, and is like a leader. On the other hand, the assistant tends to be active too but leans more towards following rather than leading. Reinforcers are individuals who inadvertently support bullying behavior by actions such as laughing, observing the situation, or providing an audience, thereby encouraging the bully. Defenders, on the contrary, offer support, console the victim, and actively intervene to stop the bullying. Finally, outsiders are those who choose to remain uninvolved and stay outside of bullying situations (Salmivalli et al., 1996). However, the classification as bully, assistant, reinforcer, defender, victim, and outsider is based on which role the students were cast in most frequently (Salmivalli et al., 1996). Therefore, students could be identified in different roles depending on the student nominating them. The same problem arises when students are asked to rate their own behavior. The majority of students tend to rate themselves as partially possessing the traits of the victim, assistant, reinforcer, defender, bully, or outsider. The co-occurrence of the bullying roles has not been analyzed so far; therefore, the current study seeks to expand the knowledge of the bullying process.

Individual Factors

Special Educational Needs

In Germany, SEN is an educational term used to describe students that experience impairments in their educational, developmental, and learning opportunities so that they cannot be educated in the general classroom without special educational support (KMK, 2020). German students with EBD (as an educational term) can be

described as having externalizing (e.g., aggressive and hyperactive behavior) or internalizing (e.g., anxiety and somatoform disorders) symptoms (Myschker & Stein, 2018). Students show behaviors that deviate from age-appropriate norms in society: lack of social and emotional skills, increased impulsiveness, and aggressive behavior (KMK, 2020; Myschker & Stein, 2018). Students with learning disabilities are described as having impairments in learning and often having impairments in motor, sensory, cognitive, language, social, and emotional skills (KMK, 2019). These impairments can have a direct impact on all basic developmental areas and can include similar symptoms to EBD (KMK, 2019; KMK 2020). The symptoms and characteristics accompanying the diagnosis of EBD and learning disabilities lead to an overrepresentation of students with SEN in the bullying dynamic (e.g., Eilts et al., 2022; Rodriguez-Hidalgo et al., 2019; Rose et al., 2011; Rose & Gage, 2017). Only a few studies have nationally focused on the investigation of the involvement of students with SEN in the bullying dynamic (e.g., Eilts et al., 2022; Margraf & Pinquart, 2016).

Eilts et al. (2022) identified that students with EBD are more likely to be bully as well as victim and students with learning difficulties show no differences compared to adolescents without SEN. A meta-analysis on bullying and victimization in students with emotional and behavioral disabilities shows that they are more likely to be both victims and perpetrators with a small to moderate effect (Eilts & Koglin, 2022). Additionally, studies identified that students with EBD were more likely to be bullies or victims of bullying at special schools than at general schools (e.g. Margraf & Pinquart, 2016). However, there are gaps in the research on the other bullying roles.

Analyzing possible differences in cluster affiliation between students with and without EBD could indicate further research directions for students with special educational needs.

In contrast to the international approach to EBD, adolescents with SEN in Germany do not necessarily have a psychological diagnosis. The condition for a SEN classification is a special educational support need of children and adolescents that focuses on emotional and social development and learning as well as on the behavior of the adolescents in the school setting (KMK, 2020).

Age and Sex

An analysis of a representative sample of youth in the United States revealed that the peak of bullying is reported between the 6th and 8th grades (Nansel et al., 2001). Bullying therefore increases in the transition from elementary to middle school and then decreases the older the adolescents get (Nansel et al., 2001; Pellegrini & Long, 2002). Studies indicate that these peaks after transitions from one social group to another might be explained by the re-evaluation of status within the peer group (Wang et al., 2016). Additionally, there seems to be a shift from physical and direct bullying to relational and indirect bullying during adolescence (Rivers & Smith, 1994). Rose and Gage (2017) found similar age trends for students with disabilities in their studies, although the involvement of students with SEN in the bullying dynamic was consistently higher than for students without SEN.

Nansel et al. (2001) found significant sex differences at the expense of the male students. Studies differentiating between different forms of bullying perpetration and victimization show that males report physical forms of bullying more frequently than females, whereas females report verbal forms more often (e.g., Scheithauer et al., 2006). Additionally, females report similar or a higher frequency of indirect and relational forms of bullying than males (e.g., Schreithauer et al., 2006; Wolke et al., 2000).

Current Study

The aims of this study are to cluster the bullying roles of a sample in order to identify possible profiles of bullying types. A secondary aim is to determine differences between demographic groups (e.g., age, sex, and SEN). Due to the social nature of bullying, an overlap of participant roles seems likely. Different students rate their peers as holding different roles, which leads to the artificial attribution of the role with the most nominations (Salmivalli et al., 1996). Similarly, students rating their own behavior do not attribute themselves to only one of the roles. However, there is a research gap concerning the co-occurrence of these roles and the involvement of students with SEN. With this study, we therefore aim to exploratively (a) identify groups of students regarding the co-occurrence of the bullying roles and (b) analyze differences in the cluster affiliations between students with and without SEN, age, and sex. In this study, students with EBD and learning disabilities (as categorized by their teachers) are included. We pursue to contribute to a better understanding of the co-occurrence of bullying roles and the implications for (a) students with SEN and (b) prevention and intervention programs.

Method

The project was approved by the Commission for Research Assessment and Ethics and the state education authority. Randomly selected inclusive schools in Bremen and Lower Saxony, Germany, were contacted via mail and asked to participate in the study. Schools that approved participation handed out information letters and consent forms to the students and their parents. The information letters contained information regarding the questionnaire, the handling of the data, and the procedure of the study. Students were only allowed to participate when the signed consent form was handed in. Due to data protection measures, the school names could not be recorded. Seven secondary schools participated in the study.

Participants and procedure

Data collection took place from January 2022 until February 2023 in person in the schools. The students were sitting in the same room with spaces between them, so no one was able to look at the questionnaire of another student. Students filled out the questionnaires in a small group. The data was processed pseudonymously. The sample consists of $N = 245$ students (51.8% female) between 10 and 16 years old ($M = 12.89$; $SD = 1.36$). Teachers were asked to indicate whether a student had a diagnosed special educational need. 33 (13.5%) students have special education needs. Within those 13.5% students, 62.5% had a primary diagnosis of learning disabilities, and 37.5% had a primary diagnosis of emotional and behavioral difficulties.

Measures

The bullying roles were determined using the *Bully Participant Behavior Questionnaire* (BPBQ, Summers & Demaray, 2008), a self-report measure in which students were asked to answer questions regarding the different roles in the bullying dynamic. Although Salmivalli et al. (1996) identified six bullying roles, the BPBQ only captures five. The characteristics of the reinforcer and assistant roles are summarized in one role.

Each role (Bully $\alpha = .80$, Victim $\alpha = .90$, Assistant $\alpha = .81$, Defender $\alpha = .91$, and Outsider $\alpha = .89$) assessed in the questionnaire consists of 10 items (e.g., bully: "I have called another student bad names"; outsider: "I pretended not to notice when someone else tripped another student on purpose"; assistant: "I have made fun of someone when they were pushed, punched, or slapped"). Students were asked how often they engaged in these behaviors in the last 30 days (0 = never, 1 = once to twice, 2 = three to four times, 3 = five to six times, and 4 = seven or more times). No prior definition of bullying was given to avoid priming the students (Demaray & Malecki,

2003; Espelage & Holt, 2001; Houbre et al., 2006; Kert et al., 2010). However, the questions contain the characteristics of bullying behaviors. The scales were calculated by adding the items in each role, thus leading to a range of min. 0 and max. 40 per role. The authors of the instrument provide evidence for the congruent, convergent, and divergent validity of the scores (Demaray et al., 2016). The instrument was translated into German using a back translation.

Data analytic strategy

The data was analyzed with STATA 14. To determine the co-occurrence of the different bullying roles, post-hoc cluster analytic strategies were applied. The five scales – bully, assistant, victim, defender, and outsider – served as cluster variables. Missing items were replaced with the participant mean for that subscale when at least 70% of the subscale was completed (Summers & Demaray, 2008). Before clustering, all variables were checked for multicollinearity. According to Field (2018), a threshold of .8 for correlation must be exceeded to speak of multicollinearity. All intercorrelations among the cluster variables are below this value, so no multicollinearity is assumed.

For the clustering, a combination of hierarchical and non-hierarchical clustering techniques was chosen (Hair et al., 2010). In the first step, the hierarchical single-linkage method and graphical dendrogram analysis were used to identify outliers in order to obtain homogeneous clusters. Four cases were identified and eliminated for cluster fusion. The hierarchical Ward's linkage method was applied to determine the number of clusters. The duda-hart index as a statistical criterion defines the optimum number of clusters and suggests a two-cluster solution. For both the single-linkage method and Ward's linkage method, the squared Euclidean distance was used as the distance measure for metric data. For cluster optimization, the non-hierarchical k-means method with $k = 2$ clusters was applied. Each adolescent was assigned to the cluster with the nearest mean value. As a distance measure, the squared Euclidean distance was again chosen. Based on the cluster assignment of the k-means methods, new group averages can be determined. By performing t-tests, significant group differences as well as differences regarding SEN, age, and sex (chi^2-test) were tested for each cluster. To control for age differences, the adolescents were divided into two groups using a median split (group 1 ranging from 10 to 13 years; group 2 ranging from 14 to 16 years).

Additionally, a post hoc descriptive analysis of the response behavior of the students in each of the roles was done.

Results

Based on the bullying roles of bully, assistant, victim, defender, and outsider, two clusters were formed. The clusters are presented in Figure 1. Descriptive statistics and intercorrelations are summarized in Table 1. The first cluster includes $N = 170$ adolescents with averagely low scores on all cluster variables. Accordingly, this cluster is described as low involved. The second cluster includes $N = 67$ highly involved adolescents with especially high scores on the victim and defender variables. Significant group differences are found for the two clusters regarding the five cluster variables: bully ($t_{(235)}= -6.975$; $p < .001$), assistant ($t_{(235)}= -6.707$; $p < .001$), victim ($t_{(235)}= -19.171$; $p < .001$), defender ($t_{(235)}= -11.273$; $p < .001$), and outsider ($t_{(235)}= -5.962$; $p < .001$).

There are a total of 32 adolescents with special educational needs in the clusters, 10 of whom are assigned to the cluster of highly involved adolescents. However, no significant group differences for adolescents with/without SEN are found in the clusters ($\chi^2 = 1.162$, $p > .05$). Likewise, no significant group differences are to be reported for gender ($\chi^2 = 2.948$, $p > .05$) and age ($\chi^2 = 2.121$, $p > .05$).

Table 1

Descriptive statistics for the cluster and the total sample and intercorrelations among cluster variables

	Cluster 1[a] (low involvement)	Cluster 2[b] (high involvement)	Total sample
Total sample, *n* (%)	170 (71.73%)	67 (28.27%)	237 (100%)
Adolescents with SEN	22 (68.75%)	10 (31.25%)	32 (100%)
Male	87 (76.99%)	26 (23.01%)	113 (100%)
Female	83 (66.94%)	41 (33.06%)	124 (100%)
Age group 1[1]	102 (68.46%)	47 (31.54%)	149 (100%)
Age group 2[2]	68 (77.27%)	20 (22.73%)	88 (100%)
Bully, *M* (*SD*), Range	.379 (.028)	.811 (.070)	.536 (.543), 0-3.1
Assistant, *M* (*SD*), Range	.151 (.015)	.422 (.052)	.259 (.399), 0-2.8
Victim, *M* (*SD*), Range	.432 (.029)	1.798 (.086)	.848 (.838), 0-4
Defender, *M* (*SD*), Range	.565 (.037)	1.589 (.111)	.879 (.802), 0-4
Outsider, *M* (*SD*), Range	.319 (.037)	.835 (.102)	.464 (.642), 0-4

|	1	2	3	4	5
1 Bully	1				
2 Assistant	.706***	1			
3 Victim	.574***	.446***	1		
4 Defender	.212**	.084	.566***	1	
5 Outsider	.374***	.457***	.324***	-.038	1

Note. SEN=Special educational needs; M = Mean (of 10 items; range 0 - 4); SD = Standard deviation; [1] Adolescents from 10 to 13 years; [2] Adolescents from 14 to 16 years; [a] In Cluster 1 n = 87; 51.18% were male and n = 83; 48.82% female; [b] In Cluster 2 n = 26; 38.81% were male and n = 41; 61.19% female *p < .05; **p < .01; ***p < .001***; Sidak-corrected intercorrelations.

Due to the generally low mean values regarding the roles Bully and Assistant a descriptive post hoc analysis of the response behavior for the children was done. Of particular interest are the items the majority of the children answered with 'never' or '7 or more times'. An analysis of the response behavior might shed light on certain behaviors that students either do not engage in, do not want to report on or think 'it's done in good fun'. The analysis was done based on the cluster categorization of the students. In Cluster 1 72.5% of students answered 'never' to Bully items, while 87.44% answered 'never' to Assistant items. Specific behaviors where over 80% of students answered 'never' in the Bully category include purposely leaving out another student, telling lies about another student, trying to make people dislike another student, and stealing things from another student. Similarly, in the Assistant category, two items had less than 80% answering 'never' (laughing when someone was tripping someone else or joining when someone was made fun of). In the victim category, behaviors such as trying to make others dislike a student and being threatened were answered 'never' by at least 80% of students. However, there were no defender items answered 'never' by at least 80% of students. In the outsider category, answering 'never' to behaviors such as pretending not to notice situations or ignoring destructive behavior towards others were common.

Figure 1

Two-cluster solution with mean values of the cluster variables.
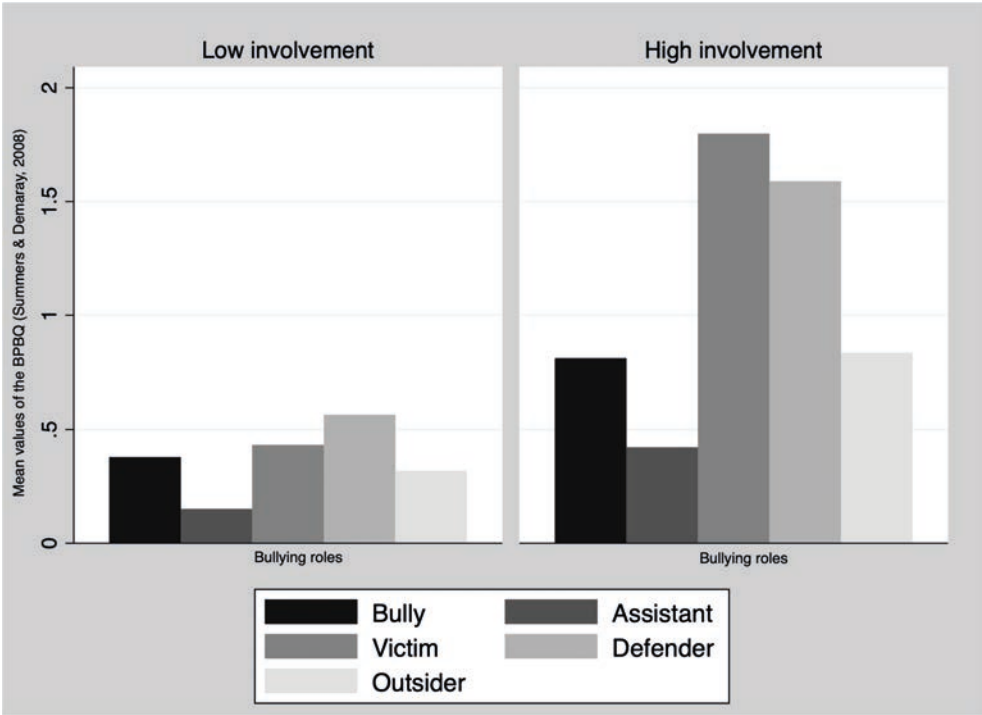
In Cluster 2, where the highly involvement group resides, a diverse range of responses is observed. For instance, 56.3% of students answered 'never' to bullying items, while 72.6% answered 'never' to assistant items. However, only 23.7% of students answered 'never' to victim and defender items, and 54.1% to outsider items, indicating higher exposure to behaviors described in those items for students in those roles. Specific behaviors where over 80% of students answered 'never' in the bully category included telling lies about another student, trying to make people dislike another student, and stealing things from another student. In the assistant category, five out of ten items had over 80% answering 'never', such as joining in when someone was verbally threatening another student or throwing something at another student. However, for defender and victim roles, there were no items where over 80% of students answered 'never'. For the outsider role, the only item where more than 80% answered 'never' was related to pretending not to notice when someone was destroying another student's property.

In Cluster 2, the analysis also considered the percentages of students who responded with '7 or more times' to each item. The values indicate that 7.5% of the sample responded with '7 or more times' to the bully items, 2.9% to the assistant items, 21.1% to the victim items, 14.3% to the defender items, and 7.2% to the outsider items. This suggests that students in Cluster 2 experience the actions described in the victim and defender items more frequently compared to those described for the other roles. An overview of the percentages of students who either answered 'never' or '7 or more times' to a certain item in the clusters can be found in Table 2.

Table 2.
Answers per item

Item	Cluster 1 'never'	Cluster 2 'never'	'7 or more times'	Item	Cluster 1 'never'	Cluster 2 'never'	'7 or more times'
1 Bully, verbal	50.50%	25.40%	29.90%	26 Victim, physical	69.60%	17.90%	7.50%
2 Bully, verbal	49.70%	37.30%	10.40%	27 Victim, relational	68.70%	19.70%	21.20%
3 Bully, relational	85.10%	74.60%	1.50%	28 Victim, relational	82.80%	38.80%	9.00%
4 Bully, physical	69.80%	45.50%	7.60%	29 Victim, verbal	91.10%	49.30%	6.00%
5 Bully, relational	96.40%	86.60%	0.00%	30 Victim, stealing	75.70%	41.80%	9.00%
6 Bully, relational	92.90%	87.90%	0.00%	31 Defender, verbal	60.10%	25.40%	9.00%
7 Bully, stealing	95.80%	86.60%	1.50%	32 Defender, verbal	54.80%	10.90%	16.40%
8 Bully, physical	75.60%	63.10%	6.20%	33 Defender, physical	45.80%	10.40%	26.90%
9 Bully, relational	57.10%	28.40%	7.50%	34 Defender, stealing	58.60%	25.80%	18.20%
10 Bully, relational	52.10%	27.30%	10.60%	35 Defender, verbal	45.00%	9.10%	25.80%
11 Assistant, verbal	74.60%	47.00%	4.50%	36 Defender, relational	49.40%	22.40%	11.90%
12 Assistant, verbal	99.40%	95.50%	0.00%	37 Defender, property damage	76.90%	41.50%	4.60%
13 Assistant, physical	95.90%	85.10%	0.00%	38 Defender, physical	67.90%	38.80%	4.50%
14 Assistant, physical	91.70%	79.10%	0.00%	39 Defender, physical	57.10%	27.30%	18.20%
15 Assistant, verbal	83.40%	68.70%	1.50%	40 Defender, relational	53.30%	25.40%	7.50%
16 Assistant, property damage	83.30%	55.20%	4.50%	41 Outsider, stealing	78.10%	46.30%	7.50%
17 Assistant, physical	66.90%	44.80%	16.40%	42 Outsider, relational	79.30%	44.80%	4.50%
18 Assistant, property damage	97.60%	87.90%	0.00%	43 Outsider, verbal	69.60%	49.30%	7.50%
19 Assistant, physical	91.70%	82.10%	1.50%	44 Outsider, relational	84.50%	65.70%	4.50%
20 Assistant, physical	89.90%	80.30%	1.50%	45 Outsider, property damage	84.00%	53.70%	3.00%
21 Victim, verbal	39.60%	4.50%	62.10%	46 Outsider, physical	84.40%	54.50%	9.10%
22 Victim, verbal	48.80%	4.50%	32.80%	47 Outsider, physical	77.40%	53.70%	13.40%
23 Victim, relational	76.80%	25.80%	15.20%	48 Outsider, physical	74.40%	52.20%	10.40%
24 Victim, relational	63.70%	10.40%	23.90%	49 Outsider, relational	64.90%	47.80%	10.40%
25 Victim, physical	72.20%	24.20%	24.20%	50 Outsider, property damage	87.50%	73.10%	1.50%

Discussion

Regarding our research question, the results showed that the present sample only allowed for the formation of two clusters. Approximately 30% of the sample is in the high involvement cluster, leaving 70% in the low involvement cluster. The distribution for children with SEN is similar to that for students without SEN, and no significant differences emerged regarding the cluster affiliation for students with and without SEN. These results are not in line with recent research showing differences in involvement in the bullying dynamic for students with and without SEN (e.g., Eilts et al., 2022; Rodríguez-Hidalgo et al., 2019). These non significant differences could be explained by students who do not have a special needs diagnosis but still display characteristics that are associated with SEN (Rose & Espelage, 2012). Eilts et al. (2022) discuss that specific characteristics associated with SEN, like externalizing behavior problems, explain more variance in bullying for bullies and victims than the category of SEN. Thus, instead of using SEN as a control variable, studies might need to look at the underlying factors of SEN (for example externalizing behavior problems) to find differences in the cluster affiliations. This might be necessary, especially when looking at students within the inclusive school system, as some students might not get a SEN diagnosis while still displaying the characteristics associated with higher involvement in bullying (Eilts et al., 2022; Rose & Eseplage, 2012; Turunen et al., 2019; Weinreich et al., 2023).

Additionally, the analysis of age and gender differences revealed no significant group differences. Results regarding age differences point to a peak of bullying during middle school (grades seven and eight) with a decline afterward (Craig et al., 2009; Nansel et al., 2001). However, Swearer et al. (2012) also found no significant age differences in their study. One possible explanation is that studies that identified age effects distinguish between relational and physical bullying. Since a shift from physical and direct bullying to relational and indirect bullying is reported during adolescence (Rivers & Smith, 1994). In this study, the focus was on the different bullying roles and not on different bullying forms; therefore, the age differences might hinge on the form of bullying and not on the role students take on within the dynamic.

Regarding the sex differences, some studies report significant differences (Craig et al., 2009; Silva et al., 2013; Smith et al., 2019) whereas others could not identify significant differences (Crapanzano et al., 2012; Swearer et al., 2012). Again, the different forms of bullying could be a possible factor, since verbal and relational bullying are predominantly associated with girls, whereas physical bullying is associated with boys (Schreithauer et al., 2006; Wolke et al., 2000).

The inequality in the occurrence of bullies and assistants compared to victims and defenders prompts an inquiry into the whereabouts of the perpetrators. One potential explanation is the inadequacy of self-reporting methods for identifying bullies and assistants, as suggested by Cho et al. (2020). Using multi-informant approaches may improve the identification of these roles. Cross-informant methodologies, particularly for students with and without SEN, could offer a more comprehensive understanding of bullying dynamics. While existing studies have primarily focused on traditional bullying roles (bully, victim, bully/victim; Cho et al., 2020), further research encompassing all involved roles may yield varied results concerning rater agreement. Another explanation for these differences might be that bullies have multiple victims. However, Craig et al. (2009) highlight cultural variations in the prevalence of bullies and victims, with certain countries reporting more victims than bullies, similarly to the findings of the present study.

The analysis also looked into the responses per item per cluster due to the low mean

values observed for the bully, assistant, and outsider roles. In the low-involvement group, at least 40% of participants answered each questionnaire item with 'never'. Particularly, over 90% of participants indicated 'never' for relational bullying and stealing in the bully roles, suggesting a perception that these behaviors are not deliberate or socially desirable. Similarly, for assistants, over 80% of participants responded 'never' to eight items, indicating a reluctance to engage in assisting behaviors.

Conversely, in the highly involved groups, the percentage of students answering 'never' varied between five and 95%. Notably, defenders and victims answered fewer questions with 'never', consistent with the mean values reported in the second cluster. The majority of students also responded 'never' to physical bullying questions for assistants, indicating a greater tendency to engage in relational bullying. Consequently, prevention and intervention efforts should prioritize addressing relational bullying, given its underestimation by teachers. Moreover, the analysis of items answered '7 times or more' by participants in the high-involvement cluster revealed that victims and defenders experienced the described situations more frequently than other bullying roles. This raises questions about who instigated these experiences. Possible explanations include perpetrators not recognizing their behaviors as harmful, potential social desirability biases in reporting, or a higher likelihood of participation among those experiencing victimization or defending behavior. The hypothesis that bullies might not identify their behavior as bullying is supported by the discussions held in the classrooms following the completion of the questionnaire. Students discussed how many behaviors were perceived as harmless or unintentional (and therefore not bullying), despite the potential to cause harm and the perception of students experiencing these behaviors.

This analysis brings to light the differing viewpoints and experiences associated with various roles in bullying, underscoring the necessity for nuanced approaches in both measurement and intervention. It highlights the need for further investigation into how students perceive and define bullying and its related behaviors. According to Naylor et al. (2006), students commonly link bullying with direct forms of physical and verbal aggression, often neglecting factors like social exclusion or power dynamics. Additionally, a significant portion of students may not consider aspects such as intent to harm or the impact on the victim when defining bullying (Naylor et al., 2006). The alignment between these findings and the outcomes of the current study suggests a broader trend in students' conceptualization of bullying, emphasizing the importance of understanding these perspectives in efforts to tackle and prevent bullying behaviors.

Limitations and further directions

Although the study contributes to current knowledge about bullying and tries to identify clusters that could explain the high intercorrelations between the roles, some limitations should be noted. The sample size is too small to identify students who rate highly on the pro-bullying scales. Additionally, it should be noted that the overall number of students with SEN was relatively small, which could limit the generalizability of the study findings.

The survey via self-disclosure does not appear to appropriately identify students who occupy pro-bullying roles. Furthermore, the use of the descriptor `roles` can be confusing as it can lead to the expectation that one person can only have one role (categorial). However, Salmivalli et al. (1996) specify that students can have more than one bullying role depending on the context of the situation. Nevertheless, students cannot, for example be a bully and a victim at the same time. The words used to describe bullying in international literature should therefore be critically reflected.

Future studies should examine cluster structures with large samples, which could lead to more or different clusters being identified. It is plausible that pro-victim (victim and defender) and pro-bully (bully, assistant, and outsider) clusters exist. However, these could not be identified with the present sample. Additionally, it would be interesting to examine whether the cluster affiliations differ as a function of situational, affectedness, or ingroup/outgroup factors. Since it could be possible that students switch roles depending on situational factors (Salmivalli et al., 1996). Another interesting point for future research could be analyzing the cluster affiliations for students with SEN in inclusive and exclusive schools and investigating whether these differ. In addition to teacher-assigned SEN (educational term), standardized tests could be used to classify students with SEN, therefore providing a clearer picture of whether certain characteristics could lead to affiliation with a certain cluster.

In addition to self-reports, future studies should use a multi-method, multi-informant approach to clearly identify the pro-bully roles in the sample. Especially with assertions like 'It's only fun' the tendency to answer socially desirable or not grasping the consequences of their own actions becomes obvious. Multi-informant approaches would eliminate the subjective perception of students who are identified as bullies or assistants by their peers but do not consider themselves to be acting according to the items presented.

Moreover, this study exclusively examined traditional bullying. Future research endeavors should incorporate cyberbullying into the analysis to ascertain whether individuals who engage in face-to-face bullying also exhibit similar behavior online. Additionally, investigations could delve into the various roles present in cyberbullying scenarios. Given the growing prevalence of cyberbullying among older adolescents and its implications for school digitalization, including the use of school devices/platforms for bullying, it warrants considerable attention in future research endeavors and policy formulation for educational institutions.

Conclusion

The presented study manages to identify two bullying clusters. One high and one low involvement group. Students therefore seem to either be minimally involved in bullying or highly involved in all the roles. Therefore, bullying prevention and intervention strategies should focus on the group as a whole and identify all the students that are involved in the dynamic, as they seem to be the ones that occupy different roles depending on external factors.

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