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# Degree of Discrepancy between Child-, Teacher-, and Parent-Reports of Peer Victimization at School and the Relation with Concurrent and Subsequent Child Self-Esteem

NTNU  
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Graduate thesis in Clinical Psychology  
Supervisor: Jolene van der Kaap-Deeder  
January 2023



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### Abstract

**Background:** Peer victimization at school has been found to be detrimental to children's development. Previous studies have, however, mostly looked at one informant (e.g., child) of peer victimization, thereby disregarding the perspective of different key figures in the child's life. This study aimed to examine the relation between peer victimization at school, as reported by children, teachers, and parents, and child self-esteem at ages 10, 12 and 14. By doing so, both the role of the discrepancy between these three informants as well as their unique predictive value in concurrent and subsequent child self-esteem was investigated.

**Method:** Data were derived from the fourth ( $n = 695$ ,  $M_{\text{age}} = 10.51$ ), fifth ( $n = 644$ ,  $M_{\text{age}} = 12.49$ ) and sixth ( $n = 627$ ,  $M_{\text{age}} = 14.33$ ) assessments of the Trondheim Early Secure Study (TESS), where 52.3% of the children were female. Regarding the analyses,  $t$ -tests and repeated measures ANOVA were performed to shed light on mean-level differences between child-, teacher-, and parent-reports. In addition, several hierarchical regression analyses were conducted to examine the relation between informant discrepancy and self-esteem, as well as the relation between each informant's reports and self-esteem.

**Results:** The results revealed significant mean-level differences between child-, teacher-, and parent-reports of peer victimization at school with teachers overall reporting the highest level of peer victimization. Further, child-adult discrepancy correlated negatively with concurrent child self-esteem at ages 10, 12 and 14. No significant associations were found between child-adult discrepancy and self-esteem two years later. As for the unique predictive value of each informant-report, only child-reports of peer victimization related to concurrent and subsequent child self-esteem.

**Conclusion:** The results of this study point out the importance of discrepancies between child- and adult-reports of peer victimization for children's concurrent (but not later) self-esteem. Moreover, this study emphasizes the role of the child's own perception of peer victimization at school in relation to concurrent and subsequent self-esteem.

*Keywords:* informant discrepancy, child-reports, teacher-reports, parent-reports, concurrent self-esteem, subsequent self-esteem

## Sammendrag

**Bakgrunn:** Det å bli utsatt for mobbing på skolen har vist seg å være skadelig for barns utvikling. Tidligere studier har imidlertid hovedsakelig benyttet seg av én informant (f.eks. barn) når de har undersøkt om barn blir mobbet av jevnaldrende, og dermed utelatt perspektivet til ulike nøkkelpersoner i barnets liv. Målet med denne studien var å undersøke relasjonen mellom det å bli mobbet av jevnaldrende på skolen, rapportert av barn, lærere og foreldre, og selvfølelse hos barn i en alder av 10, 12 og 14 år. Ved å gjøre dette, ble både rollen til diskrepans mellom disse tre informantene, i tillegg til deres unike prediktive verdi på selvfølelse (målt ved sammenfallende og senere tidspunkt) undersøkt.

**Metode:** Studien hentet data fra den fjerde ( $n = 695$ ,  $M_{age} = 10.51$ ), femte ( $n = 644$ ,  $M_{age} = 12.49$ ) og sjette ( $n = 627$ ,  $M_{age} = 14.33$ ) oppfølgingsrunden til studien Tidlig Trygg i Trondheim (TTiT), hvor 52.3% av barna var jenter. Når det gjelder analysene, ble  $t$ -tester og ANOVA for repeterte målinger utført for å se på gjennomsnittsforskjeller mellom barn-, lærer-, og forelderrapporteringer. I tillegg ble flere hierarkiske regresjonsanalyser utført for å undersøke relasjonen mellom informant diskrepans og selvfølelse, samt relasjonen mellom rapporteringene til hver enkelt informant og selvfølelse.

**Resultat:** Resultatene viste signifikante gjennomsnittsforskjeller mellom barn-, lærer- og forelderrapporteringer om hvorvidt barn blir utsatt for mobbing, hvor lærerne rapporterte mest mobbing. Videre viste det seg at diskrepans mellom barn og voksne korrelerte negativt med barns sammenfallende selvfølelse ved alderen 10, 12 og 14 år. Det ble ikke funnet noen signifikante sammenhenger mellom barn-voksen diskrepans og selvfølelse to år senere. Når det gjelder den unike prediktive verdien til hver informant, var det kun barns rapporteringer om å bli utsatt for mobbing av jevnaldrende på skolen som var relatert til sammenfallende og påfølgende selvfølelse hos barn.

**Konklusjon:** Resultatene i denne studien peker på viktigheten av diskrepans mellom barn og voksne sine rapporteringer om at barn blir utsatt for mobbing av jevnaldrende, i forbindelse med barns sammenfallende (men ikke senere) selvfølelse. I tillegg vektlegger denne studien rollen til barnets egen oppfatning av å bli mobbet av jevnaldrende på skolen i forbindelse med sammenfallende og påfølgende selvfølelse.

*Nøkkelord:* informant diskrepans, barnerapporteringer, lærerrapporteringer, foreldrerapporteringer, sammenfallende selvfølelse, langsiktig selvfølelse

## **Degree of Discrepancy between Child-, Teacher-, and Parent-Reports of Peer Victimization at School and the Relation with Concurrent and Subsequent Child Self-Esteem**

Peer victimization is a growing concern in many schools worldwide and occurs when a child is bullied by another peer (Hong & Espelage, 2012). As children gain more independence from their parents and spend more time with their peers in the transition from childhood to adolescence, peer relationships increasingly impact the child's development and maturation (Gifford-Smith & Brownell, 2003). Supportive and inclusive peer relationships can provide a sense of belonging and acceptance, as well as improve health outcomes and well-being (Liem & Martin, 2011; Mitic et al., 2021; Newman et al., 2007). However, children often experience negative peer interactions, such as peer victimization at school (Fandrem et al., 2012; Rasalingam et al., 2017; Roland & Idsøe, 2001), which is associated with numerous negative life outcomes, including depression, anxiety, aggression, sleep disturbances, low self-esteem, poor academic performances, and loneliness (Arseneault et al., 2010; Hong et al., 2015; Nakamoto & Schwartz, 2010; Schwartz et al., 2005; Ttofi et al., 2011; van Geel et al., 2016). While the detrimental impact of peer victimization at school is well-documented, there is a scarcity of studies focusing on the level of discrepancy between different informants reporting on whether a child is victimized at school (Demaray et al., 2013; Løhre, 2021; Rønning et al., 2008). Most studies only consider the report of one informant when collecting information about peer victimization, whereas studies including multi-informant-reports often average across informants without looking at the unique contribution of each source (Huang & Cornell, 2015; Klomek et al., 2009; Ladd & Kochenderfer-Ladd, 2002; Solberg & Olweus, 2003).

This study aimed to explore the role of the degree of discrepancy between different informants regarding peer victimization at school in three ways. First, mean-level differences between reports of different informants were examined to determine, for example, whether children report a higher level of peer victimization at school than parents or teachers. Second, a high level of discrepancy between informants might be problematic, especially if child-reports indicate a higher level of peer victimization than teacher- or parent-reports. Thus, this study investigated whether the degree of discrepancy predicted children's self-esteem, a crucial indicator of children's psychological functioning. Third, the unique predictive value of child-, teacher-, and parent-reports of peer victimization on children's self-esteem was addressed. In short, the present study aimed to examine the level of discrepancy between child-, teacher-, and parent-reports of peer victimization at school, and whether these reports



and the discrepancy predict children's self-esteem concurrently and two years later, thereby employing longitudinal assessments.

### **Peer Victimization at School: Definition and Prevalence**

According to Olweus (1991), bullying can be described as intentional and repetitive physical, verbal, or emotional behaviors that harm another individual or group. These behaviors also involve power imbalance, in person or online, where the bully has more power than the victim in terms of physical strength or social status, such as popularity (Kaufman et al., 2020; Olweus & Limber, 2010). In the case of peer victimization, a victim is bullied by other peers (Olweus, 1992). Peer victimization can be classified as either direct (e.g., physical and verbal) or indirect (e.g., relational such as social exclusion) victimization (Carbone-Lopez et al., 2010; Olweus, 1997; Olweus et al., 2019). Previous research has shown that most of the peer victimization occurs at school (Delfabbro et al., 2006; Solberg & Olweus, 2003; Wendelborg, 2021).

Numerous prevalence studies have shown that peer victimization at school is a global and common phenomenon during childhood (Bjereld et al., 2020; Hosozawa et al., 2021). However, due to different study designs, samples, and new forms of bullying, such as cyberbullying, which involves the use of electronics as a means of contact, there have been inconsistent findings regarding the prevalence of peer victimization (Lien et al., 2009; Rigby & Smith, 2011). While some studies tend to report increasing rates of peer victimization, others suggest that peer victimization in children has decreased over the past century (Rigby & Smith, 2011). Nevertheless, large differences in the prevalence rates of peer victimization at school across countries are apparent (Craig et al., 2009). In a cross-country study of school-aged children from 37 countries, peer victimization at school was in total reported by 12% of the boys and 10% of the girls in 2014 (Cosma et al., 2019). The cross-country variance ranged from 4-7% in countries such as Spain, Italy, Sweden, Iceland, Denmark and Norway, and 15-32% in countries such as Lithuania, Estonia, Latvia, and Belgium (Cosma et al., 2019). Similar prevalence trends were observed in an earlier cross-country study comparing 40 countries (Craig et al., 2009). In general, rates of peer victimization seem to be lower in western European countries compared to eastern European countries (Cosma et al., 2019; Craig et al., 2009).

Based on previous research, Norway has generally been found to have low rates of peer victimization compared to other countries (Craig et al., 2009; Due et al., 2005). A Norwegian prevalence study based on a sample of nearly 5,000 children aged 11 to 15 years reported that 14.7% was involved in bullying at school as bullies, victims, or both (Solberg &

Olweus, 2003). The group of only victims constituted 8.3% (Solberg & Olweus, 2003). According to a more recent study conducted by the Norwegian Directorate of Education and Training, approximately 4.5% of Norwegian children reported being bullied at school as often as three times a month or more in 2020 (“elevundersøkelsen”; the pupil survey). This study also showed that the prevalence of peer victimization among children in Norwegian primary and secondary school has been quite stable since 2016 (Wendelborg, 2021).

### **The Detrimental Outcomes of Peer Victimization at School**

Several studies suggest that experiences of peer victimization at school in childhood is related to a wide range of negative long-term outcomes, such as mental health problems (see also Halliday et al., 2021 for a review; Hawker & Boulton, 2000; Schoeler et al., 2018). In a meta-analysis of 28 longitudinal studies, it was reported that victims of peer bullying at school were at a much higher risk of developing later life depression, compared to children who did not experience such victimization (Ttofi et al., 2011). This increased vulnerability for developing depressive symptoms was even evident 36 years after the victimization occurred (Ttofi et al., 2011). Another meta-analysis reported a positive association between peer victimization, suicidal ideation, and suicidal attempts (van Geel et al., 2014). Moreover, peer victimization has been linked to internalizing problems such as self-harm behaviors and increased failure anticipation (Özdemir & Stattin, 2011), sleep difficulties (van Geel et al., 2016), loneliness, anxiety, and externalizing symptoms (Kretschmer, 2016).

A considerable amount of research has also shown that peer victimization at school is strongly negatively related to self-esteem (Tsaousis, 2016; van Geel et al., 2018). Self-esteem is overall defined as the subjective evaluation of personal value and importance (Rosenberg, 1965; Wang & Ollendick, 2001), and plays a critical role in children’s psychological and physical adjustment and development (Boden et al., 2008; Mann et al., 2004). Individuals with low self-esteem are at an increased risk of developing mental health issues such as depression, anxiety, eating disorders and risk-taking behaviors, whereas high self-esteem facilitates more adaptive behaviors (Boden et al., 2008; Bos et al., 2010; Mann et al., 2004; Rutter, 1987). Several studies have also shown low self-esteem to have a negative impact on the quality of relationships, well-being, academic achievements, social functioning, and life satisfaction (Civitci & Civitci, 2009; Mann et al., 2004; Orth et al., 2012). Childhood is an essential period for the development of self-esteem, and children who are victimized by their peers may be more prone to low self-esteem (Baldwin & Hoffman, 2002; Dubois & Tevendale, 1999; Magro et al., 2019; Orth et al., 2010; Tsaousis, 2016; van Geel et al., 2018). This was indeed evident in a Norwegian study which included a representative sample of

2,464 children aged 12-15 (Undheim & Sund, 2010). Victims of peer bullying in this study reported lower scores on a global self-worth scale compared to children who did not experience peer victimization at school (Undheim & Sund, 2010). Additionally, several studies have found self-esteem to act as a mediating variable between peer victimization and mental health outcomes such as suicidal ideation, depression, and anxiety (Jones et al., 2014; Nepon et al., 2020; Pan et al., 2020; Zhong et al., 2021). Thus, peer victimized children are more likely to report low self-esteem, which is a potential risk factor for developing mental health issues (Nepon et al., 2020). These findings are consistent with the sociometry theory (SMT) proposed by Leary and Baumeister (2000), which posits that people have a fundamental need to belong and that self-esteem is influenced by the quality of social relations to others.

### **Informant Discrepancy Concerning Peer Victimization at School**

Whereas numerous studies have investigated the prevalence of peer victimization, as well as the association between peer victimization and self-esteem, few researchers have compared multiple informant data concerning reports of peer victimization at school. Including data from multiple informants regarding peer victimization not only provides information from different perspectives (e.g., from the child and the teacher), but also an opportunity to examine the degree of mean-level discrepancy between informants.

Being the most common method of assessing bullying and victimization, self-reports can provide firsthand information that might be unfamiliar to others (Branson & Cornell, 2009; Paljakka et al., 2021). This allows for direct access to children's perception of unpleasant incidents in school (Jia & Mikami, 2018; Ladd & Kochenderfer-Ladd, 2002). However, self-reports may also limit the validity of information, as indicated by overreporting or underreporting (Bouman et al., 2012; Solberg & Olweus, 2003). Thereby, the use of multi-source data (e.g., parent- and teacher-reports), can provide a more accurate assessment of peer victimization at school by including various viewpoints and more information (Achenbach, 2006; Rønning et al., 2008).

Studies considering the mean-level differences between reports from multiple informants have found low to moderate degrees of congruence between children's and adults' reports (both parents and teachers) regarding peer victimization at school (Cornell & Brockenbrough, 2004; Gregus et al., 2017; Holt et al., 2008; Løhre et al., 2011; Rønning et al., 2008; Shakoor et al., 2010; Totura et al., 2008). Notably, the correlation is usually ranging from .20 to .50 (Cornell & Brockenbrough, 2004; Løhre et al., 2011; Rønning et al., 2008; Shakoor et al., 2010; Totura et al., 2008). The degree of congruence seems to be somewhat

higher between child- and parent-reports compared to child- and teacher-reports, with the greatest agreement observed between parents and teachers (Løhre, 2021; Paljakka et al., 2021). This was evident in a study which examined cross-informant agreement among Norwegian schoolchildren, teachers, and parents regarding victimization at school (Løhre, 2021). The correlation (Spearman's  $p$ ) estimates revealed low to moderate agreement among the informants, with the lowest agreement observed between children and their teachers ( $p = .17$ ). Further, the results indicated a slightly stronger correlation between children and parents ( $p = .29$ ), with the strongest correlation being observed between teachers and parents ( $p = .36$ ; Løhre, 2021). Moreover, in most studies, children generally tend to report a higher degree of victimization than both parents and teachers (Bradshaw et al., 2007; Demaray et al., 2013; Ilola & Sourander, 2013; Peets & Kikas, 2006; Rupp et al., 2018). Despite literature reporting high discrepancy between different informants, it is suggested that each informant may contribute with unique information reflecting different perspectives and contexts (Wegge et al., 2015; Totura et al., 2008).

Relatively few theoretical frameworks have been developed specifically to understand multi-informant discrepancy. However, the “Discrepancies in Victimization Implicate Developmental Effects” (DiVIDE) model suggests various factors that may contribute to high discrepancy between reports of different informants (Goodman et al., 2010). According to the model, these may include lack of child disclosure and low-quality relationships between children and significant adults (Goodman et al., 2010). Former research has provided promising support for the DiVIDE model (De Los Reyes et al., 2013a; De Los Reyes et al., 2013b; Ehrlich et al., 2016; Lohaus et al., 2019; Ren & Fan, 2021). Another model considering multi-informant discrepancy was developed approximately 20 years ago by Kraemer et al. (2003) in the context of psychiatric assessment and research on children. The satellite model posits that factors such as different perspectives, the context in which informants observe behavior, child characteristics and methodological variance may be the primary sources of multi-informant discrepancy (Kraemer et al., 2003). Despite its longevity, there has been limited research on the satellite model, however, the studies conducted in this area have provided supporting evidence (Charamut et al., 2022; De Los Reyes et al., 2022).

### **The Predictive Value of Informant Discrepancy and Multi-Informant-Reports**

Examining the predictive value of informant discrepancy can provide important insights, especially in two ways. First, analyzing the degree of informant discrepancy as a predictor can indicate whether mean-level discrepancy between multiple informant-reports of peer victimization at school is related to child outcomes such as low self-esteem. Second,

comparing the unique predictive value of child-, teacher-, and parent-reports on self-esteem, can reveal whether any particular informant-report is more strongly related to child outcomes.

Research in various domains has found higher levels of child- and parent discrepancy to be associated with adjustment problems, such as low self-esteem and higher levels of internalizing disorders and aggression (Castagna et al., 2019; Ceballo et al., 2001; Cooley & Jackson, 2022; De Los Reyes et al., 2019; Ferdinand et al., 2006; Guion et al., 2008; Howard et al., 1999; Lindstrom et al., 2016; Zimmerman & Pogarsky, 2011). Focusing on victimization, a study examining general violence exposure showed that a higher degree of discrepancy between parent- and child-reports was related to higher anxiety, depression, aggression, and delinquent behavior, irrespective of which informant reported the highest rates of victimization (Goodman, 2013). Interestingly, measured 2.5 years later, child maladjustment was most pronounced when child-reports of victimization were lower than parent-reports (Goodman, 2013). According to the DiVIDE model, emotional- and social support provided by significant adults can potentially affect the relation between informant discrepancy and child adjustment (Goodman et al., 2010). In line with this, previous research has shown that positive social and emotional support from parents and teachers may reduce the risk of maladaptive adjustment in peer victimized children (Davidson & Demaray, 2007; Desjardins & Leadbeater, 2010; Hansen et al., 2012; Van Aalst et al., 2021; Yeung & Leadbeater, 2010). To the best of this researcher's knowledge, no studies to date have examined the impact of informant discrepancy on general child adjustment or self-esteem in the context of peer victimization at school.

There is also a lack of research on the unique predictive value of child-, teacher-, and parent-reports of peer victimization at school on self-esteem. Some preliminary studies focusing on the predictive value of multi-informant-reports of peer victimization on other outcomes have found small differences between the predictive value of different informants. To illustrate, one study assessing whether child-, teacher- and parent-reports of peer victimization at the age of 8 predicted psychiatric disorders 10-15 years later, found all informant-reports to relate to the outcomes, with teacher-reports having a slightly higher predictive power compared to others (Rønning et al., 2008). Another study including Norwegian school children aged 7 to 16 years did not find any notable differences regarding the predictive value of multi-informant-reports of peer victimization and internalizing symptoms measured two years later (Løhre, 2021). Equal predictive value between child-, teacher- and parent-reports of peer victimization at ages 8 and 10 and development of broad internalizing symptoms measured at 11, 12, 13 and 14 years was also reported in a study

including children from the UK (Zwierzynska et al., 2012). However, regarding more severe internalizing problems, child self-reports showed a stronger predictive value compared to adult-reports (Zwierzynska et al., 2012). Although previous studies suggest that both child- and adult-reports of peer victimization at school relate significantly to child functioning, only a few studies have addressed this issue. Moreover, these studies have several limitations which might impact generalizability, such as poorly established or inconsistent research instruments to assess peer victimization at school from different informants (Rønning et al., 2008; Zwierzynska et al., 2012), modest sample sizes (Løhre, 2021), and samples limited to one gender (Rønning et al., 2008).

### **The Present Study**

The overall aim of this thesis was to investigate the relation between peer victimization at school, as reported by children, teachers and parents, and child self-esteem. First, by focusing on mean-level discrepancy between informant-reports on victimization at school the current study aimed to shed light on possible differences between child- and adult-reports. Second, this study examined whether informant discrepancy predicted child psychological functioning, focusing on concurrently self-esteem and self-esteem assessed 2 years later. Third, the predictive value of each informant-report on self-esteem was determined to see whether any informant-report had a higher predictive value compared to others.

Based on previous studies documenting high discrepancy between child- and adult-reports of victimization at school (e.g., Cornell & Brockenbrough, 2004; Shakoor et al., 2010; Totura et al., 2008) and between parent- and teacher-reports (e.g., Løhre, 2021; Paljakka et al., 2021), a significant discrepancy (i.e., mean-level differences) between all informants was expected, with the lowest agreement anticipated between child- and teacher-reports (i.e., *Hypothesis 1*). In addition, it was expected that significant informant discrepancy related negatively to concurrent self-esteem and self-esteem assessed 2 years later, independent of which informant reported the highest occurrence of victimization (i.e., *Hypothesis 2*). Finally, this study expected to find significant predictive value of each informant-report of peer victimization at school on concurrent and later self-esteem (i.e., *Hypothesis 3*).

## **Method**

### **Procedure and Recruitment**

The present study employed data from the Trondheim Early Secure Study (TESS). TESS is a long-term research project in the city of Trondheim, Norway that aims to investigate children's psychosocial development and mental health from preschool to

adolescence (Steinsbekk & Wichstrøm, 2018). All children born in 2003 and 2004 living in Trondheim received an invitation letter to participate in the study ahead of an ordinary health check at the age of 4. The invitation included the Strengths and Difficulties Questionnaire (SDQ) 4-16 version, which is considered an important screening instrument for negative and positive psychological attributes in children (Goodman et al., 2000). Parents were asked to bring the completed questionnaires to the health check where they received further information about the TESS study from a health nurse. A total of 2,477 parents (82.2% of invited households) provided written consent to participate in the study. Parents who were not proficient in Norwegian and therefore unable to complete the SDQ were excluded from the study.

Based on the SDQ, children's total scores were divided into four strata of 0-4, 5-8, 9-11 and 12-40. Higher SDQ-scores as represented in the four strata (respectively, 37%, 48%, 70%, 89%) increased the likelihood of being included in the study. Thus, children with mental health problems were oversampled to increase variability and statistical power. A representative subsample of 1,250 children were randomly selected from this group. The sample was found to be representative of, and comparable to the Norwegian population concerning factors such as parental educational level, employment rate, household size, and household income (Steinsbekk & Wichstrøm, 2018). The first data were collected in 2007/2008 from children, their parents and their teachers using various information gathering tools including questionnaires, observations, and interviews. A total of 1,007 (80.2%) children were interviewed at the first assessment at age 4. The dropout rate from written consent to the first data collection did not differ by gender ( $\chi^2 = 0.23$ ,  $df = 1$ ,  $p = .63$ ) or SDQ stratum ( $\chi^2 = 5.70$ ,  $df = 3$ ,  $p = .13$ ; Hygen et al., 2022).

Data collection was performed by skilled personnel ( $n = 7$ ), and took place at the Department of Psychology, at the Norwegian University of Science and Technology. Data has been collected biennially from the age of 4 to the age of 16. The project was approved by the Regional Committees for Medical and Health Research Ethics (REK). For a more detailed description of the procedure see Steinsbekk and Wichstrøm (2018).

### **Participants**

In the present study, data from the fourth (T4;  $n = 698$ ,  $M_{\text{age}} = 10.51$ ,  $SD = 0.15$ ), fifth (T5;  $n = 649$ ,  $M_{\text{age}} = 12.49$ ,  $SD = 0.15$ ), and sixth (T6;  $n = 618$ ,  $M_{\text{age}} = 14.33$ ,  $SD = 0.58$ ) follow-up were employed. The sample included 47.6% boys and 52.3% girls. A total of 689 parents participated in the assessment at T4, while 651 parents attended at T5, and 616 at T6. Most parents were married or had lived together in the past 6 months, and nearly all were of

Norwegian ethnicity. Before teachers responded to questions about peer victimization, parents consented. It was requested specifically to select the teacher who knew the child best. A total of 657 teachers participated at T4, while 633 attended at T5, and 555 at T6.

## Measures

### *Peer Victimization at School*

Children's victimization by peers at school was reported by children, parents, and teachers using the Olweus Bully/Victim Questionnaire (OBVQ; Solberg & Olweus, 2003), a widely used instrument to measure bullying and victimization (Gaete et al., 2021; Kyriakides et al., 2006). The OBVQ provides a definition of bullying before examining different types and frequencies of bullying/victimization (Crothers & Levinson, 2004). Previous research has indicated the OBVQ to have excellent psychometric properties (Green et al., 2013; Kyriakides et al., 2006; Solberg & Olweus, 2003). The original version of the OBVQ, developed by Dan Olweus in 1983, consists of 39 items, including ten victimization items and ten bullying items, as well as additional items which provide more details about victimization and bullying experiences (Solberg & Olweus, 2003).

TESS employs a subset of items of the OBVQ where children filled out ten items, teachers filled out five items, and parents filled out one item about peer victimization at school. To answer the research questions, a selection of items included in the child- and teacher-reports was made in terms of similarity as to be able to compare reports of victimization across informants. Three items referring to, respectively, physical, verbal, and relational victimization were selected that were highly similar across these two reports (see Appendix A). For example, for verbal victimization the item "How often has your student been exposed to the following within the past 3 months: verbal bullying by other peers (e.g., made fun of, called mean names, teased)" (i.e., teacher-report) was comparable to the item "How often were you bullied at school the past months? I was called mean names, was made fun of, or teased in a hurtful way" (i.e., child-report). Unlike child- and teacher-reports, parents only responded to one general item about peer victimization, namely "How often has your child been bullied within the past 6 months"? To enable a comparison between all three reports (including the parent-report), the three items from the child-report and the three items of the teacher-report were averaged at T4 ( $\alpha = .61$ ;  $\alpha = .72$ ), T5 ( $\alpha = .65$ ;  $\alpha = .70$ ) and T6 ( $\alpha = .51$ ;  $\alpha = .54$ ), respectively, to create global scores for peer victimization at school separate for children and teachers. Thus, besides the domain-specific scores of peer victimization as reported by the children and teachers, this study also examined global scores of peer victimization regarding all three informants. All questions were answered using a five-point



scale ranging from one to five. To standardize the rating scales, option four (“About once a week” for child- and parent-reports; “1 to 4 times a week” for teacher-report) and five (“Several times a week” for child- and parent-reports; “Everyday” for teacher-report) were merged into “at least once a week” for all included questions (see Appendix A).

### ***Self-Esteem***

In this study, self-esteem was measured by child self-reports at the age of 10, 12 and 14. The general-self subscale of the Self Descriptive Questionnaire (SDQ-I; Marsh, 1990), was employed at age 10. The SDQ consists of 7 items (e.g., “Overall, I have a lot to be proud of”) rated on a five-point Likert scale ranging from 1 (False) to 5 (True) and has displayed adequate validity and reliability in previous research (Arens et al., 2013). At ages 12 and 14, self-esteem was measured using the Norwegian version (Wichstrøm, 1995) of the Revised Self-Perception Profile for Adolescents (SPPA-R; Harter, 1988), which is considered a more developmentally appropriate measure. Specifically, general self-esteem was assessed using the “Self-Worth” subscale of the SPPA-R, which contains five statements (e.g., “I am often disappointed in myself”) rated on a scale from 1 (Describes me very well) to 4 (Describes me very poorly). The SPPA-R has demonstrated good validity in previous research (Harter, 1988; Wichstrøm, 1995). The reliability of the SDQ-I (age 10:  $\alpha = .87$ ) and SPPA-R (age 12:  $\alpha = .77$ ; age 14:  $\alpha = .84$ ) were adequate in the current study.

### **Statistical Analyses**

First, mean-level differences between child-reports and teacher-reports at different time points (T4, T5, T6) was analyzed using paired *t*-tests. Both variables “child-reports” and “teacher-reports” were defined using three questions representing physical, verbal, and relational victimization. Then, repeated measures ANOVA were used to examine the mean-level differences between child-, teacher-, and parent-reports. As all informant-reports were included, “child-reports” and “teacher-reports” were defined using total scores, while “parent-reports” was defined by one question asking about general peer victimization. Both paired *t*-tests and repeated measures ANOVA were conducted using SPSS version 27.

Second, to determine whether child-teacher discrepancy and child-parent discrepancy predicted concurrent and longitudinal self-esteem at different time points, several hierarchical regression analyses were conducted. The first six analyses were performed to assess the predictive value of child-teacher and child-parent discrepancy on concurrent self-esteem at different time points (T4, T5, T6), while controlling for gender. Specifically, these regression analyses included two blocks of predictive variables: gender (model 1) and informant discrepancy at time point T4, T5 or T6 (model 2), with self-esteem measured at the same time

point serving as the dependent variable. The predictive association between child-teacher and child-parent discrepancy and future self-esteem was then examined, by conducting four additional analyses, controlling for gender and concurrent self-esteem. Specifically, these analyses included three blocks of predictive variables: gender (model 1), self-esteem measured at time point T4, T5 or T6 (model 2), and informant discrepancy measured at the same time point (model 3), with self-esteem measured at the following time point serving as the dependent variable. Before examining the predictive value of informant discrepancy, standardized informant discrepancy scores were created by subtracting teacher- and parent-reports from child-reports per time point.

Finally, to test the unique predictive value of each informant-report of peer victimization at school on concurrent and longitudinal self-esteem, five separate hierarchical regression analyses were conducted. Three out of five analyses examined the predictive value of informant-reports on concurrent self-esteem at ages 10, 12 and 14, including two blocks: gender (model 1) and child-, teacher-, and parent-reports (model 2), with self-esteem measured at the same time point serving as the dependent variable. The remaining analyses investigated the predictive value of informant-reports on longitudinal self-esteem at ages 12 and 14, including three blocks: gender (model 1), self-esteem (model 2), and child-, teacher-, and parent-reports (model 3), all measured at the same time point (ages 10 and 12, respectively), with self-esteem measured at the following time point serving as the dependent variable. The analyses were controlled for children's gender at all time points, while the prospective analyses also controlled for concurrent self-esteem. All hierarchical regression analysis were conducted using SPSS version 27.

## **Results**

### **Preliminary Analyses**

Table 1 and Table 2 display descriptive statistics of and bivariate correlations between the study variables. With respect to stability in reported peer victimization across time, child-reports showed weak positive correlations, while adult-reports showed weak to moderate positive correlations. The results also showed weak to moderate correlations between child-, teacher- and parent-reports at ages 10, 12, and 14. In terms of child-reported self-esteem at ages 10, 12 and 14, overall, low to moderate relations were found between self-esteem at all three time points. As for the associations between peer victimization at school and self-esteem, only child-reported peer victimization at age 10 showed significant correlations with self-esteem at all three time points. In addition, child-reported peer victimization at ages 12 and 14 correlated significantly negatively with self-esteem measured at ages 12 and 14,

respectively. Finally, there was a low negative correlation between teacher-reported peer victimization at age 12 and self-esteem measured at age 12, and parent-reported victimization at age 12 and self-esteem measured at age 10.

**Table 1**

*Descriptive Statistics for C-OBVQ, T-OBVQ, P-OBVQ, and Self-Esteem at Ages 10, 12 and 14*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>
<i>Victimization</i>			
C-OBVQ T4	698	1.11	0.37
T-OBVQ T4	657	1.34	0.47
P-OBVQ T4	689	1.30	0.70
C-OBVQ T5	469	1.12	0.34
T-OBVQ T5	633	1.30	0.44
P-OBVQ T5	651	1.21	0.56
C-OBVQ T6	618	1.17	0.35
T-OBVQ T6	555	1.18	0.33
P-OBVQ T6	616	1.20	0.63
<i>Self-esteem</i>			
SDQ-I T4	700	35.11	4.30
SPPA T5	649	3.55	0.48
SPPA T6	619	3.25	0.59

*Note.* C-OBVQ = Child-reported Olweus Bullying/Victim Questionnaire; T-OBVQ = Teacher-reported Olweus Bullying/Victim Questionnaire; P-OBVQ = Parent-reported Olweus Bullying/Victim Questionnaire; SDQ-I = Self Description Questionnaire; SPPA = Self-Perception Profile for Adolescents; T4 = 10 years; T5 = 12 years; T6 = 14 years.

**Table 2***Bivariate Pearson Correlations Between C-OBVQ, T-OBVQ, P-OBVQ and Self-Esteem at Different Time Points*

Variable	C-OBVQ T4	C-OBVQ T5	C-OBVQ T6	T-OBVQ T4	T-OBVQ T5	T-OBVQ T6	P-OBVQ T4	P-OBVQ T5	P-OBVQ T6	SDQ-I T4	SPPA-R T5
C-OBVQ T4	1										
C-OBVQ T5	.16**	1									
C-OBVQ T6	.15**	.21**	1								
T-OBVQ T4	.25**	.20**	.14**	1							
T-OBVQ T5	.18**	.20**	.17**	.30**	1						
T-OBVQ T6	.08	.08	.26**	.20**	.24**	1					
P-OBVQ T4	.27**	.08*	.10*	.34**	.19**	.19**	1				
P-OBVQ T5	.14**	.23**	.14**	.13**	.31**	.15**	.38**	1			
P-OBVQ T6	.09	.14**	.30**	.13**	.22**	.40**	.27**	.26**	1		
SDQ-I T4	-.08*	.01	-.04	.03	-.02	.01	-.07	-.14**	-.10	1	
SPPA-R T5	-.09*	-.17**	-.12**	-.06	-.09*	-.02	-.05	-.07	.00	.24**	1
SPPA-R T6	-.17**	-.14**	-.30**	-.00	-.01	-.08	-.06	-.01	-.05	.21**	.37**

*Note.* C-OBVQ = Child-reported Olweus Bullying/Victim Questionnaire; T-OBVQ = Teacher-reported Olweus Bullying/Victim Questionnaire; P-OBVQ = Parent-reported Olweus Bullying/Victim Questionnaire; SDQ-I = Self Description Questionnaire; SPPA = Self-Perception Profile for Adolescents; T4 = 10 years; T5 = 12 years; T6 = 14 years.

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

## Primary Analyses

### *Mean-Level Differences*

First, mean-level differences between child- and teacher-reports were analyzed using paired *t*-tests, focusing on the three domains of peer victimization. As displayed in Table 3, results indicated that there were significant mean-level differences between teacher- and child-reports of physical, verbal, and relational peer victimization at school at ages 10 (T4) and 12 (T5) but not at age 14 (T6). Informant discrepancy was higher at age 10 compared to age 12, for all types of victimization. These results indicate that there was a higher discrepancy between child- and teacher-reports at a younger age. The highest level of discrepancy was observed for relational victimization, followed by verbal victimization and physical victimization. Additionally, teachers reported significantly higher levels of peer victimization at school than children did for all types of victimization.

**Table 3**

*Mean-Level Differences Between Child- and Teacher-Reports of Physical, Verbal, and Relational Victimization*

	Child-report		Teacher-report		<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
<i>Physical victimization</i>								
T4	1.06	0.36	1.19	0.48	647	-6.10	.00	-.24
T5	1.05	0.29	1.15	0.41	597	-4.82	.00	-.20
T6	1.07	0.29	1.05	0.24	534	1.10	.27	.05
<i>Verbal victimization</i>								
T4	1.17	0.60	1.42	0.66	647	-8.39	.00	-.33
T5	1.18	0.54	1.37	0.58	595	-6.38	.00	-.26
T6	1.25	0.58	1.26	0.53	537	.32	.75	-.01
<i>Relational victimization</i>								
T4	1.10	0.47	1.42	0.61	646	-11.21	.00	-.44
T5	1.11	0.41	1.35	0.60	600	-9.27	.00	-.38
T6	1.19	0.57	1.24	0.54	533	-1.67	.10	-.07

*Note.* T4 = 10 years; T5 = 12 years; T6 = 14 years.

Next, mean-level differences in the overall level of victimization were examined between the three informants using repeated measures ANOVA. Child-, teacher- and parent-

reports of peer victimization at school differed significantly at ages 10 ( $F(1.86, 1195.89) = 50.65, p < .001.$ ) and 12 ( $F(1.91, 1140.03) = 31.39, p < .001.$ ), but not at age 14 ( $F(1.74, 922.73) = 0.93, p = .39$ ) (see Table 4 and 5). More specifically, pairwise comparisons showed a significant difference between child- and adult-reports at ages 10 and 12, but not at age 14. Teacher- and parent-reports only differed significantly at age 12. Further, results showed that the lowest level of agreement existed between child- and teacher-reports, followed by child- and parent-reports, and teacher-parent-reports. Finally, results indicated that teachers reported the highest levels of peer victimization, while children reported the lowest levels of victimization. Since sphericity was violated ( $\epsilon > .75$ ), Huynh-Feldt correction results were reported.

**Table 4**

*Mean-Level Differences Between Child-, Teacher-, and Parent-Reports of Peer Victimization at School*

Conditions	Mean-level difference				
	<i>M (SD)</i>	Epsilon	<i>df</i>	<i>F</i>	<i>p</i>
T4		.93	1.86	50.65	.00
Child-reports	1.11 (0.38)				
Teacher-reports	1.35 (0.47)				
Parent-reports	1.30 (0.66)				
T5		.95	1.91	31.39	.00
Child-reports	1.11 (0.32)				
Teacher-reports	1.29 (0.42)				
Parent-reports	1.20 (0.54)				
T6		.87	1.74	.93	.39
Child-reports	1.17 (0.53)				
Teacher-reports	1.18 (0.53)				
Parent-reports	1.20 (0.59)				

*Note.* T4 = 10 years; T5 = 12 years; T6 = 14 years.

**Table 5**

*Pairwise Comparisons of Mean-Level Differences Between Child-, Teacher-, and Parent-Reports of Victimization at T4, T5 and T6*

Condition	Informants								
	Child-Teacher			Child-Parent			Teacher-Parent		
	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>MD</i>	<i>SE</i>	<i>p</i>	<i>MD</i>	<i>SE</i>	<i>p</i>
T4	-0.23	0.02	.00	-0.19	0.03	.00	0.05	0.03	.21
T5	-0.17	0.02	.00	-0.09	0.02	.00	0.09	0.02	.00
T6	-0.02	0.02	1.00	-0.03	0.03	.68	0.02	0.02	1.00

*Note.* T4 = 10 years; T5 = 12 years; T6 = 14 years; *MD* = Mean-Difference; *SE* = Standard Error.

### ***The Predictive Value of Informant Discrepancy***

Multiple hierarchical regression analyses were conducted to examine the predictive value of informant discrepancy on both concurrent and subsequent self-esteem, while controlling for gender and for concurrent self-esteem when predicting self-esteem two years later. As shown in Table 6, significant relations were found between child-teacher discrepancy and concurrent self-esteem at ages 10 and 14, but not at age 12. There were also significant associations between child-parent discrepancy and concurrent self-esteem at age 14. These results indicate that a significant discrepancy between child- and adult-reports of victimization related negatively to child self-esteem. However, these effects were rather weak. Moreover, child-teacher and child-parent discrepancy did not relate to self-esteem measured two years later. With regard to the effects of gender, findings showed that gender related significantly to concurrent self-esteem at age 14, both when examining child-teacher discrepancy ( $\beta = -.23, p < .001$ ) and child-parent discrepancy ( $\beta = -.24, p < .001$ ). Additionally, significant gender differences were found for later self-esteem at age 14, both when examining child-teacher discrepancy ( $\beta = -.23, p < .001$ ) and child-parent discrepancy ( $\beta = -.23, p < .001$ ). These findings indicate that boys reported a higher level of self-esteem than girls, and that boys' self-esteem increased more from age 12 to 14.

**Table 6**

*Predictive Value of Multi-Informant Discrepancy on Concurrent Self-Esteem and Self-Esteem Two Years Later*

Predictor	Current Self-Esteem			Self-Esteem Two Years Later		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
C-TD T4	-.10*	.01*	.01*			
C-PD T4	-.01	.00	.00			
C-TD T5	-.04	.01	.00	-.01	.07	.00
C-PD T5	-.08*	.01*	.01*	-.03	.07	.01*
C-TD T6	-.16**	.08**	.03**	-.07	.19	.01
C-PD T6	-.18**	.07**	.03**	-.07	.18	.01

*Note.* C-TD = Child-Teacher Discrepancy; C-PD= Child-Parent Discrepancy; T4 = 10 years; T5 = 12 years; T6 = 14 years.

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

### ***The Unique Predictive Value of Informant-Reports***

To investigate the unique predictive value of victimization as reported by each informant on concurrent and subsequent (two years later) self-esteem, several hierarchical regression analyses were performed. As displayed in Table 7, only child-reported peer victimization at school related negatively to concurrent self-esteem at ages 10, 12 and 14. With respect to subsequent self-esteem, only child-reports of peer victimization at age 12 significant related to lower self-esteem two years later, while controlling for gender and concurrent self-esteem. No significant relations were found between teacher- and parent-reports of peer victimization at school and concurrent or subsequent self-esteem. Children's gender was significantly associated with concurrent self-esteem ( $\beta = -.23, p < .001$ ) and subsequent self-esteem ( $\beta = -.22, p < .001$ ) at age 14 (but not at other ages). These findings indicate that boys had a higher level of self-esteem than girls.



**Table 7**

*Unique Predictive Value of Informant-Reports on Concurrent Self-Esteem and Self-Esteem Two Years Later*

Predictor	Current Self-Esteem			Self-Esteem Two Years Later		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
T4		.01*	.02*			
Child-reports	-.08*					
Teacher-reports	.08					
Parent-reports	-.07					
T5		.04**	.03**		.08*	.01*
Child-reports	-.13**			-.08		
Teacher-reports	-.06			-.05		
Parent-reports	-.06			-.02		
T6		.13**	.07**		.19	.01
Child-reports	-.26**			-.10*		
Teacher-reports	-.02			.03		
Parent-reports	.01			.02		

*Note.* T4 = 10 years; T5 = 12 years; T6 = 14 years.

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

### Discussion

The overall aim of this study was to provide a nuanced perspective on the relation between peer victimization at school and children's self-esteem. Specifically, the study aimed to investigate (1) the degree of mean-level discrepancy between child-, teacher-, and parent-reports of peer victimization at school, (2) the relation between informant discrepancy and children's self-esteem, and (3) the unique predictive value of each informant-report of peer victimization on concurrent and later self-esteem.

In line with the first hypothesis, the current study revealed significant discrepancies between all three informant-reports of peer victimization at school. In terms of child- and teacher-reports of physical, verbal, and relational forms of victimization, significant mean-level differences were observed at ages 10 (T4) and 12 (T5). When considering the total scores of child-, teacher-, and parent-reports of peer victimization at school, mean-level differences remained significant for child-teacher and child-parent reports at age 10 (T4) and 12 (T5). Teacher-parent reports, on the other hand, were only significantly different at age 12

(T5). As expected, the highest levels of discrepancy existed between child- and teacher-reports, while teacher- and parent-reports showed the highest agreement. In line with the second hypothesis, child-teacher discrepancy related negatively to concurrent self-esteem at ages 10 and 14, while child-parent discrepancy was negatively associated with concurrent self-esteem at age 14. However, informant discrepancy did not relate to self-esteem assessed two years later. Lastly, the third hypothesis was not confirmed, as only child-reports of peer victimization related negatively to self-esteem. Specifically, child-reports of victimization at ages 10, 12 and 14 were concurrently associated with self-esteem (negatively), while child-reports measured at age 12 were also longitudinally related to self-esteem (negatively). There were no significant associations found between teacher- or parent-reports of peer victimization at school and self-esteem. Related to child self-esteem, boys overall reported a higher level of self-esteem than girls in this study.

### **Informant Discrepancy Concerning Reports of Peer Victimization at School**

Collecting data from multiple informants to assess peer victimization at school can help determine whether information held by different informants is shared (low discrepancy) or unique to each informant (high discrepancy). The current findings displaying significant discrepancies between child-, teacher-, and parent-reports of peer victimization at school are in line with previous research (Løhre et al., 2011; Rønning et al., 2008; Shakoor et al., 2010). Considering child- and teacher-reports of physical, verbal, and relational peer victimization at school, significant mean-level differences were found for all types of peer victimization at ages 10 and 12. Further, the results indicate that children and teachers were more congruent in their reports of physical victimization as compared to relational victimization. Accordingly, past research has shown that teachers are more likely to recognize physical and verbal forms of peer victimization (Bilz et al., 2016; Paljakka et al., 2021) and consider physical peer victimization as more serious than relational victimization (Bauman & Del Rio, 2006; Duy, 2013).

Regarding the total scores of child-, teacher- and parent-reports of peer victimization, child-reports were found to differ significantly from both teacher- and parent-reports at ages 10 and 12, while teacher- and parent-reports differed significantly at age 12. Overall, child- and adult-reports were less congruent than teacher- and parent-reports. This is in line with previous research demonstrating higher agreement between adult-reports (e.g., teacher and parent), than between child- and adult-reports of peer victimization (Løhre et al., 2011). Besides teachers and parents having similar roles and environments (Achenbach, 2006; Kraemer et al., 2003), the current findings could be explained by the obligated teacher-parent

cooperation in Norway (Forskrift til opplæringsloven, 2006, § 20-1) which could foster information transfer (e.g., on the child's peer victimization) between these adults. That is, teachers are responsible to arrange for cooperation between teachers and parents to increase children's welfare at school and facilitate the child's development (Forskrift til opplæringsloven, 2006, § 20-1). Moreover, significant discrepancies between the reports of children and adults might be explained by their relationship quality or level of communication (De Los Reyes et al., 2013a; De Los Reyes et al., 2013b; Ehrlich et al., 2016; Goodman et al., 2010; Lohaus et al., 2019). In sum, different informants may have access to unique contexts and perspectives, which might affect their reports of peer victimization (Achenbach, 2006; Kraemer et al., 2003).

The overall reported levels of peer victimization at school in the current study were low across all three informants. This is in line with studies demonstrating a relatively low prevalence of peer victimization in Norway, as compared to other countries (Craig et al., 2009; Due et al., 2005; Wendelborg, 2021). Interestingly however, children reported lower peer victimization than adults. In contrast, most studies indicate that children tend to self-report higher levels of peer victimization compared to other informants (Demaray et al., 2013; Rønning et al., 2008; Rupp et al., 2018; Totura et al., 2008). As a notable exception, a study conducted in Norway found that teachers and parents reported higher levels of peer victimization than children, although parents showed the highest mean-level scores (Løhre, 2021). Similarly, an Australian study indicated that teachers provided higher estimates of peer victimization prevalence than children (Rigby, 2020). One explanation for why children reported lower peer victimization than adults, may be that children often deny (even towards themselves) being victimized due to feelings of guilt and shame (Bouman et al., 2012; Solberg & Olweus, 2003). Moreover, children might feel pressure to present a positive image of themselves (van de Mortel, 2008). Additionally, children may not fully understand when they are being bullied and misinterpret situations due to cognitive distortions (Ladd & Kochenderfer-Ladd, 2002).

Concerning adult-reports in the current study, teachers reported more peer victimization than parents. This may be explained by teachers' ability to observe peer victimization in the school setting (Yoon & Bauman, 2014; Wachs et al., 2019), as well as the increased emphasis on children's psychosocial environment in Norwegian schools. According to the Norwegian education act, teachers are responsible to ensure that children have a safe and supportive school environment, with zero tolerance for peer victimization or other violations (Opplæringsloven, 1998, § 9A-4). Parents, on the other hand, often acquire

information about peer victimization through indirect sources, such as parental control, monitoring, or children's own disclosures (Kaiser et al., 2020b; Stavrinides et al., 2015). Unfortunately, many children hesitate to share such experiences with their parents (Bjereld, 2018; Blomqvist et al., 2020; Cassidy, 2009; Larrañaga et al., 2018; Shaw et al., 2019; Unnever & Cornell, 2004). Therefore, parents may be less aware of victimization than teachers, due to lack of access to information. In sum, existing studies are inconclusive regarding which group of informants (i.e., children, teachers, parents) report the highest level of peer victimization. This might be due to cultural factors, such as social expectations and the level of attention given to bullying in different countries (Rigby, 2020). However, further research is needed to gain a better understanding of these conflicting study outcomes.

Further, the present work identified variations in informant discrepancy across different time points. Specifically, it was observed that child-reports were significantly different from teacher- and parent-reports at ages 10 and 12, but not at age 14. These findings suggest that the discrepancy between child- and adult-reports might be influenced by the child's age where adults and children tend to disagree more when children are younger. This aligns with previous cross-sectional (Bradshaw et al., 2007; Hu et al., 2021; Williford et al., 2015) and prospective (Ladd & Kochenderfer-Ladd, 2002) studies, showing higher discrepancies between child- and adult-reports in younger children. However, other studies have shown that child- and mother-reports of peer victimization are more congruent when children are younger (Shakoor et al., 2010). Conflicting results might be caused by distinctive study designs, the inclusion of different types of informant dyads (e.g., child-parent, child-teacher) or age differences among studied child-cohorts (Bradshaw et al., 2007; Hu et al., 2021; Ladd & Kochenderfer-Ladd, 2002; Shakoor et al., 2010; Williford et al., 2015). Future research may want to take these factors into account to gain a more comprehensive understanding of the relation between children's age and informant discrepancy.

### **The Predictive Value of Informant Discrepancy**

As hypothesized, this study found significant associations between informant discrepancy and concurrent self-esteem across different time points. Child-teacher discrepancy related negatively to concurrent self-esteem at ages 10 and 14. Further, child-parent discrepancy related negatively to concurrent self-esteem at age 14. Although previous studies have examined the negative effect of informant discrepancy and self-esteem in other domains such as mental disorders (Berg-Nielsen et al., 2003; Castagna et al., 2019), this was the first study to examine informant discrepancy and self-esteem in the domain of peer victimization. When investigating the relation between informant discrepancies and child self-

esteem in the context of mental disorders, Berg-Nielsen et al. (2003) and Castagna et al. (2019) included two different informant-groups (i.e., children and mothers). The current study adds to previous research by examining the associations between informant discrepancy and child self-esteem with three different informant-groups (i.e., children, teachers, and parents). Moreover, prior studies considering the impact of cross-informant-reports have mainly found that children tend to report higher levels of various negative concepts, compared to adults (Howard et al., 1999; Laird & De Los Reyes, 2013). Thus, the current results extend prior literature by suggesting that cross-informant discrepancy relates to maladaptive child outcomes, independent of which informant reports the highest level of peer victimization. The negative effects of cross-informant discordance might result from decreased communication between children and adults or lack of effective interventions to help protect and support peer victimized children (Goodman et al., 2010). Moreover, low cross-informant agreement could impede children from feeling understood and accepted, which in turn may affect their coping strategies and self-esteem (Goodman et al., 2010). Unfortunately, this is only speculative, and it would be interesting for future research to examine more aspects of this relation.

As for the longitudinal associations between informant discrepancy and self-esteem, child-adult discrepancy did not relate to subsequent self-esteem at any time point. This might indicate that cross-informant discrepancy has more of a temporary effect on self-esteem. However, according to De Los Reyes (2011), former studies have shown that informant discrepancies might predict poor outcomes in children over longer periods ranging from a few months to four years. For instance, De Los Reyes et al. (2010) found that discrepancies between mother-child-reports were associated with children reporting higher levels of delinquent behaviours two years later. One potential explanation for the lack of longitudinal associations between informant discrepancy and self-esteem in this study, could be that self-esteem stability has shown to be low and fluctuating during middle childhood (Cheng & Furnham, 2017; Huang, 2010; Trzesniewski et al., 2003). To this researcher's knowledge, the current study was the first to investigate the direct relation between informant discrepancy and self-esteem in the context of peer victimization at school. Therefore, more studies should be conducted to better understand how the relation between cross-informant discrepancy and self-esteem changes across time during childhood.

### **The Unique Predictive Value of Child-, Teacher-, and Parent-Reports**

By examining the predictive value of each informant-report concerning peer victimization on self-esteem, this study was able to identify the unique relations between child-, teacher-, and parent-reports of peer victimization and self-esteem across a four-year

period. In contrast to expectations, only child self-reports of peer victimization at school were uniquely associated with concurrent and subsequent child self-esteem. Regarding concurrent associations, child-reports related significantly and negatively to self-esteem at ages 10, 12 and 14. Moreover, child-reports at age 12 also related negatively to self-esteem two years later. These findings support previous research showing significant associations between self-reported peer victimization and negative child outcomes (Tsaousis, 2016; van Geel et al., 2018). However, the concurrent associations between child-reports of peer victimization and self-esteem were lower at ages 10 and 12 as compared to age 14. Thus, children's age might affect this relation. For example, Tsaousis (2016) found correlations between child-reported peer victimization and self-esteem to be stronger for children (younger than 12.5 years) compared to adolescents (older than 12.5 years). In contrast, van Geel et al. (2018) did not find age to be a significant moderator of the prospective relation between peer victimization and low self-esteem among children aged 8 to 16 years. Published studies have provided inconsistent results regarding the effect of children's age in the relation between peer victimization and self-esteem. Thus, more research is needed to clarify how children's age may influence this relation. Further, the current study supports literature suggesting that concurrent associations between self-reported peer victimization and child outcomes are slightly stronger than longitudinal associations (Lee & Vaillancourt, 2018; Schoeler et al., 2018; Singham et al., 2017). This might indicate that the negative effects of peer victimization dissipate over time.

Surprisingly, teacher- and parent-reports of peer victimization did not relate significantly to child self-esteem. These results deviate from prior studies showing similar predictive effects for child-, teacher-, and parent-reports of peer victimization (Løhre, 2021; Rønning et al., 2008; Zwierynska et al., 2012). In general, few studies across various domains have examined the predictive validity of different informants on child behaviour. The current evidence on this topic is conflicting, with some studies suggesting that child-reported data have the strongest predictive value for child outcomes (DiBartolo & Grills, 2006), while others find parent- and teacher-reports to be more accurate in predicting child outcomes (Feng et al., 2022; Shakoor et al., 2010). The current results need to be interpreted with caution and do not necessarily indicate that teacher- and parent-reports lack predictive validity for child self-esteem. Shared-method variance might be an explanation for why child-reports were the strongest predictor in the current study. That is, effect sizes tend to be larger when the same person reports on two constructs (e.g., child-reported peer victimization and child-reported self-esteem), than when different persons are used to rate the predictor and

outcome variables (Podsakoff et al., 2003). Shared-method variance has been demonstrated in previous research examining the associations between peer victimization and negative child outcomes (Hawker & Boulton, 2000; Reijntjes et al., 2010; Schoeler et al., 2018).

### **Strengths and Limitations**

This study has several strengths. First, the use of a three-wave longitudinal design enabled the examination of prospective pathways between cross-informant discrepancy and child self-esteem (i.e., at ages 10, 12 and 14). This is advantageous, as most previous studies addressing the association between peer victimization at school and self-esteem have used cross-sectional data (Tsaousis, 2016). Second, the current study included a large and representative community sample. However, it is important to note that the participants were mainly drawn from the city of Trondheim in Norway, which may limit the generalizability to other countries, cultures, or societal contexts. Another strength involves the use of multiple informants, which enabled examination of informant discrepancy as well as comparisons across different informant-reports (Ladd & Kochenderfer-Ladd, 2002). Although this study had several strengths, some limitations should be considered when interpreting the results.

First, a limited set of questions were used to assess peer victimization at school. While children and teachers responded to three questions each about physical, verbal, and relational victimization, parents were asked one question about peer victimization. As a result, the informant-reports were based on fundamentally different measures, making it challenging to compare victimization across informant groups, especially for parent-reports. Another limitation concerns the reliability of children's and teachers' total score of peer victimization at school. Children's total score displayed a quite low reliability due to the item representing physical bullying not relating sufficiently to the other two items (i.e., verbal and relational victimization). In comparison, teachers' total score showed better reliability except at T6, but this was not caused by one item specifically. Ideally, additional comparable questions measuring different domains of victimization at school should be included for all informant-groups. Future research should also focus on cyberbullying, as recent studies have shown that cyber-victimization is related to negative mental health problems in children (Kaiser et al., 2020a).

Another limitation of the current study is that peer victimization at school and self-esteem were measured using questionnaires. The use of more comprehensive methods to assess the constructs, such as interviews or observations could be beneficial. This would allow for more nuanced comparisons and improved understanding of the relation between

cross-informant-reports, peer victimization and self-esteem. However, it would be more time- and cost-consuming.

Finally, when interpreting the current results, it is necessary to recognize that standardized scores of informant discrepancy were created by subtracting one informant-score from the other, which is a common method used to measure multi-informant discrepancy (De Los Reyes & Kazdin, 2004; Dickson et al., 2018; Berg-Nielsen et al., 2012). However, there is ongoing research analyzing which methods are best suited to assess informant discrepancy, and whether certain methods may be more prone to bias (De Los Reyes & Kazdin, 2004; Laird & De Los Reyes, 2013).

### **Implication for Practice and Suggestions for Future Research**

The present findings have several practical implications. First, significant discrepancies between child- and adult-reports point to the relevance of including multiple informants to assess child experiences. The use of multiple sources reduces the reliance on individual informants (e.g., child) and might provide more nuanced and accurate information about peer victimization (De Los Reyes, 2011). Further, discrepancies between child- and adult-reports of peer victimization at school might be problematic as it relates negatively to child self-esteem. Given that no previous studies have addressed this specific relation, more research is needed to replicate and extend these findings in different social and geographical contexts. Moreover, future studies should aim to uncover underlying mechanisms and investigate why differences between child- and adult-reports of peer victimization relate to negative child outcomes (De Los Reyes, 2013). Overall, these results emphasize the need for increased awareness as well as an accepting attitude towards diverse perspectives on peer victimization. Moreover, this could help create an environment where children feel accepted and are comfortable with disclosing their experiences of victimization to teachers and parents.

The present study also provides insight into the validity of different informant-reports of peer victimization on child self-esteem. Surprisingly though, only child-reports of peer victimization related significant negatively to self-esteem. This finding illuminates the importance of including self-reports when assessing child behaviour. However, the current study was not in position to conclude whether children provide more valid information of peer victimization than teachers and parents. Published studies to date show conflicting results regarding the predictive strength of child-, teacher- and parent-reports on negative child outcomes (DiBartolo & Grills, 2006; Feng et al., 2022; Shakoor et al., 2010; van Dulmen & Egeland, 2011). Therefore, it would be interesting for future research to investigate the potential impact of shared method variance on the predictive validity of different informant-



reports on self-esteem. Some recent studies have also found a bidirectional prospective link between peer victimization and self-esteem (Boulton et al., 2010; Guo et al., 2022; van Geel et al., 2018). Children with low self-esteem might be more susceptible to bullying as they may be perceived as easy targets due to their vulnerability and potentially struggle to defend themselves (van Geel et al., 2018). Future research is needed to consider the complexity of this relation to provide a more nuanced understanding of the predictive strength of informant-reports on child self-esteem. Another important step for future research is to examine possible moderators in the relation between peer victimization and self-esteem. The current study found a significant relation between the constructs, but it was not particularly strong. In a recent study Guo et al. (2022) found teacher support to buffer the detrimental effects of peer victimization on self-esteem. This finding highlights the need for future studies to shed light on potential moderators such social and emotional support from peers, teachers, and parents.

### **Conclusion**

The aim of the present study was to examine the relation between peer victimization at school, as reported by children, teachers, and parents, and child self-esteem at ages 10, 12 and 14. Significant mean-level differences were found for all three informant-reports, with children reporting the lowest levels of peer victimization at school. Moreover, discrepancies between child- and adult-reports related negatively to concurrent (but not later) self-esteem at ages 10, 12 and 14. These results highlight the importance of using multi-informant data and motivate to increase awareness on discrepancies between child- and adult-reports. Further, child-reports were related to both concurrent and later self-esteem across different time points, emphasizing the role of the child's own perception of peer victimization in their self-esteem. Future research should attempt to replicate these findings in various samples of children, to clarify the role of informant discrepancy as well as the predictive value of different informant-reports on child self-esteem.

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## Appendix A

### Victimization questions: OBVQ

(Note: Text in bold and italic letters show which questions were used in this study)

#### Child-Report

The child version of the Olweus Bully/Victim Questionnaire employed in the TESS study comprised ten questions about peer victimization at school. In order to make different informant-reports comparable, the current study made a selection of three items representing physical, verbal or relational victimization. The following questions were included in the TESS study: (1) How often have you been bullied at school the past couple of months?; (2) Other students told lies or spread false rumors about me and tried to make others dislike me; (3) I had money or other things taken away from me or damaged; (4) I was threatened or forced to do things I did not want to do; (5) I was bullied with mean or hurtful messages, calls or pictures, or in other ways on my mobile phone or over the Internet (computer; Please remember that it is not bullying when it is done in a friendly and playful way) and; (6) In case you were bullied on your mobile phone or over the Internet, how was it done? (Please describe in what way); (7) Have you been bullied in another way different from the previously mentioned questions?; (8) ***I was hit, kicked, pushed, shoved around, or locked indoors (i.e., physical victimization)***; (9) ***Other students left me out of things on purpose, excluded me from their group of friends, or completely ignored me (i.e., relational victimization)***; (10) ***I was called mean names, was made fun of, or teased in a hurtful way (i.e., verbal victimization)***.

The questions were answered on a five-point scale ranging from 1 to 5; ***1 = It has not happened to me in the past couple of months***; ***2 = Only once or twice***; ***3 = 2 or 3 times a month***; 4 = About once a week; 5 = Several times a week. Because of differences in the rating scales used for different informants, this rating scale of the child-report was recoded to make it comparable to the teacher- and parent-reports. Thus, alternative 4 and 5 were merged into “***At least once a week***”.

#### Teacher-Report

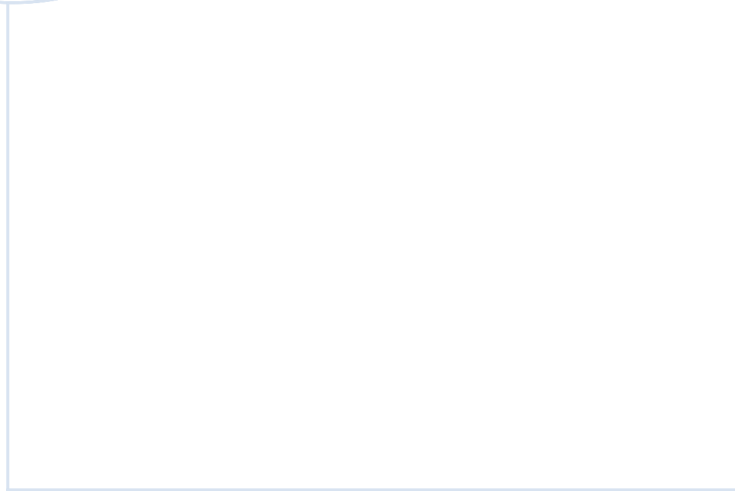
The teacher version of the Olweus Bully/Victim Questionnaire employed in the TESS study contained five questions about peer victimization at school. As to make teacher-reports comparable to child-reports, the current study selected three questions, representing physical, verbal, and relational victimization. The following questions were included in the TESS study, all beginning with the stem “How often has your student been exposed to the following within the past 3 months”: (1) Ignored by other peers; (2) Had his/hers belongings taken from

them or damaged; (3) *Physical bullying by other peers (e.g., hit, kicked, pinched, bitten)(i.e., physical victimization)*; (4) *Verbal bullying by other peers (e.g., made fun of, called mean names, teased)(i.e., verbal victimization)*; (5) *Social exclusion by other peers (i.e., relational victimization)*).

The questions were answered using a five-point scale ranging from 1 to 5; *1 = Never*; *2 = Rarely*; *3 = 1 to 3 times a month*; 4 = 1 to 4 times a week; 5 = Every day. Because of differences in the rating scales used for different informants, this rating scale of the teacher-report was recoded to make it comparable to the child- and parent-reports. Thus, alternative 4 and 5 were merged into “*At least once a week*”.

### **Parent-Report**

The parent version of the Olweus Bully/Victim Questionnaire involved one general item about peer victimization at school: *How often has your child been bullied within the past 6 months?*. Similar to the other versions, the question was answered using a five-point scale numbered 1 to 5; *1 = Never*, *2 = Once or twice*, *3 = Sometimes*, *4 = About once a week*, *5 = Several times a week*. Because of differences in the rating scales used for different informants, this rating scale of the parent-reports was recoded to make it comparable to the child- and teacher-reports. Thus, alternative 4 and 5 were merged into “*At least once a week*”.



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