



The Association Between Social Outsiderhood and School Absence is Mediated by Internalizing Symptoms

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Abstract

Internalizing symptoms and school absenteeism often co-occur. This study explores their detailed associations and examines whether internalizing symptoms (depression and anxiety) mediate the relationship between social outsiderhood (loneliness and ostracism) and school absence. It also investigates the links between various types of school absence (truancy, emotion-based absence, school withdrawal, and school exclusion) and experiences of loneliness and/or ostracism. Data were collected from 1,866 Finnish middle school adolescents (M age = 14.95, SD = 0.86). Findings indicate that both loneliness and ostracism are associated with school absences, with internalizing symptoms serving as a mediator, however, with a low effect size (indirect association: $\beta = 0.05$ and $\beta = 0.02$ respectively), implying that other factors contribute to school absences too. Students experiencing school exclusion reported the highest levels of social outsiderhood. These results underscore the importance of addressing students' social situations when assessing school absence and developing preventive interventions within the school context.

Keywords Loneliness · Ostracism · School absence · Internalizing symptoms · Adolescence

Introduction

School Attendance Problems

'School attendance problems' (SAP) is an umbrella term for the difficulties youths can experience when it comes to getting to school or staying in school (Heyne et al., 2019; Kearney, 2016; Kearney & Graczyk, 2020). SAPs range from verbally expressing distress for going to school, to occasional school avoidance, to continuous periods of longer absences (Kearney, 2016). SAPs have been related to a range of both short- and long-term negative problems, including academic-, and mental health problems, social

isolation and difficulties completing secondary education (Heyne et al., 2019; Kearney, 2016). It is often difficult to separate pre-existing symptoms from symptoms arising as a consequence of SAPs. School attendance problems (SAPs) are often operationalized as absence from school, which can include partial days, full days, or extended periods of time away from school.

Heyne et al. (2019) outlined 4 main types of SAPs, namely school refusal (hereafter referred to as emotion-based absence), truancy, school withdrawal, and school exclusion. Emotion-based absence (EBSA) refers to when a young person is reluctant or refuses to attend school because of emotional distress. Truancy (T) refers to being absent without the permission of parents or school. School withdrawal (SW) refers to a situation in which a parent directly or indirectly supports absence and school exclusion (SE) to a situation in which school directly or indirectly supports the absence of a student.

Our approach to understand SAPs builds on Bronfenbrenner's ecological systems model, and Heyne's typological approach. Factors related to SAPs may be detected on all system levels, including that of the individual (such as individual needs, and internalized symptoms), the family (such as parental psychopathology and family socioeconomic

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situation), the school (such as bullying and dislike of a specific school), as well as community (such as school policies) and factors related to the socio-historical context (such as impact of pandemics) (Bronfenbrenner & Morris, 1979; Melvin et al., 2019).

Besides types and symptoms, researchers have also pinpointed functions associated with SAPs (Kearney, 2007; Knollmann et al., 2019). Whereas symptoms refer to the observable or self-experienced indicators of distress, functions can be conceptualized as the underlying reasons for the SAP, or what the young person achieve or avoid through not attending school. Although symptoms and functions often align, they may also diverge. For example, a young person might exhibit depressive symptoms (the symptom), but the primary function of their school absence may be to avoid an ongoing conflict at school. Conversely, two adolescents might both show signs of anxiety, but for one, the function is to avoid social evaluation at school, while for the other, it is to gain closeness with a parent during school hours.

Maintaining a conceptual distinction between symptom and function may provide deeper insight into how adolescents perceive and relate to their situation. In a previous study, some differences between symptom and function were found when analyzing how adolescents with ADHD perceived their SAPs (Niemi et al., 2022), suggesting that treating symptoms alone may not address the broader context or motivations sustaining school absenteeism.

Social Outsiderhood: Loneliness and Ostracism

Loneliness can be described as a discrepancy between actual and desired feelings of belonging, companionship and social acceptance (Favotto et al., 2019; Stoekli, 2009; Weiss, 1973). Loneliness is known to activate behavioral, cognitive and emotional maladaptive processes, leading to a vicious cycle in which the child is not given the opportunity to practice important social skills in peer interactions and, thus, cannot correct dysfunctional perceptions of oneself and others (Qualter et al., 2015). A wide range of negative concomitants, such as anxiousness, social anxiety, depression, self-harm, suicide attempts, school drop-out and lower perceived general health have been linked with continuous feelings of loneliness during childhood and adolescence (S. Cacioppo et al., 2015; Heinrich & Gullone, 2006). It is also notable that increasing levels of loneliness among adolescents has been reported worldwide, with a particularly steep increase in the last decade (Twenge et al., 2021).

A related concept to loneliness is ostracism, which has been defined as the experience or perception of being intentionally kept apart from other people either psychologically (e.g., being ignored) or physically (e.g., social isolation) (Arslan & Yıldırım, 2022; Williams, 2007). Perceived by the victim as an insidious form of social aggression, experiences

of ostracism has been found to activate social pain reactions in the brain (MacDonald & Leary, 2005), and if prolonged, to have adverse consequences on the person's well-being and health, including e.g. increased risk for psychiatric disorders, impaired immune functioning and even the risk for radicalization and violence (Baumeister et al., 2005; Williams, 2007). In the school setting, ostracism is often referred to as indirect aggression, peer victimization, social exclusion or rejection.

Despite the strong overlap between these two concepts of social outsiderhood, loneliness and ostracism may be viewed as unique concepts with different operationalizations. Ostracism is used to describe the social context or the behaviors of the people surrounding the individual, whereas loneliness refers to the inner experience of the individual. In the present article, we use social outsiderhood, when appropriate, as an umbrella term to capture the overlapping experiential terrain of loneliness and ostracism.

The Association Between SAP, Loneliness, Ostracism, and Internalizing Symptoms

A few studies have examined the association between ostracism, feeling lonely at school and being absent from school, generally finding a significant association between them (Egger et al., 2003; Havik et al., 2015; Leduc et al., 2022). In a recent study by Kiuru et al (2024) the highest prevalence for school absence due to truancy, sickness or other reasons, as well as internalized and externalized problems and intentions for school dropout was found among the adolescents who had chronic feelings of being ostracized or excluded by their peers. Also, compared to the adolescents with no peer problems, the adolescents with chronic feelings of loneliness generally had more absence from school, and/or internalized or externalized symptoms. Internalized symptom increased in middle school, especially among students with profiles of high and increasing social loneliness (Kiuru et al., 2024).

Further, studies have linked internalizing symptoms, such as depression and anxiety, to both school absence (Finning, Ukoumunne, Ford, Danielsson-Waters, et al., 2019a, 2019b; Finning, Ukoumunne, Ford, Danielsson-Waters, et al., 2019a, 2019b), as well as loneliness (Gijzen et al., 2021; Mullarkey et al., 2019) and ostracism (Stillman et al., 2009). Besides the risk posed by loneliness and ostracism as causes of school absenteeism (Kearney, 2016), students who frequently miss school tend to encounter challenges in social interactions, particularly in the realms of forming and maintaining friendships (Carroll et al., 2022; Egger et al., 2003; Wilson et al., 2003), and therefore experience higher levels of loneliness (Havik et al., 2015; Place et al., 2002). Bidirectional causality is thus suggested, as there is a possibility that depression and anxiety can contribute to school absences and social outsiderhood, and conversely,

that school absence, loneliness, and ostracism might lead to the development of depression and anxiety. In the longitudinal study by Kiuru et al. (2024) social outsiderhood preceded internalizing symptoms. However, up until now, no research has delved into the potential role of symptoms related to depression and anxiety as mediators in the connection between loneliness and school absenteeism.

The mediation hypothesis rests on evidence that social exclusion and feelings of outsiderhood are associated with, and precede, internalizing symptoms such as anxiety and depression (Arslan & Yildirim, 2022; J. T. Cacioppo et al., 2006; Kiuru et al., 2024). These symptoms, in turn, have been linked to increased risk of school disengagement and absence, suggesting a psychologically plausible pathway from social outsiderhood to behavioral withdrawal. We chose this directionality based on research highlighting the centrality of social connectedness in adolescence, where disruptions to peer belonging can precede emotional distress and subsequent avoidance behaviors (J. T. Cacioppo et al., 2006; Kiuru et al., 2024). It is, however, also possible that SAP and absence contribute to social outsiderhood.

Loneliness and Ostracism According to Type of SAP

While the general association between SAP and maladaptive functioning and ill-health is well established, the 4 types of SAP (emotion-based absence, truancy, school withdrawal, and school exclusion), have also been associated with different risk factors and consequences (reviewed in Heyne et al., 2019). Below, we will shortly review findings on type of SAP and loneliness and ostracism.

The first type, emotion-based absence (EBSA) has been connected to social isolation (Granell de Aldaz et al., 1987; Havik et al., 2015), especially in middle school (Granell de Aldaz et al., 1987; Havik et al., 2015). EBSA has been linked to socially withdrawn temperament, anxiousness, as well as poor interpersonal skills (Carpentieri et al., 2022). Furthermore, comparing anxious children who were attending school, with anxious non-attenders, Ingul et al. (2013) found that school attenders had more friends, but also that non-attenders had more severe psychiatric problems, comorbid behavioral problems and negative personality traits (Ingul & Nordahl, 2013). Arguably, EBSA could be related to both feeling lonely, having few friends, as well as being ostracized, when compared to youth not reporting EBSA.

For the second type, truancy (T), a qualitative study found that truant youth reported feeling as “strangers” in the classroom, and having poor peer relationships within school, while at the same time having friendships with other truant

youth outside of school (Strand, 2012). In two quantitative studies by the same research group, an association was found between social isolation and truancy in one of the studies (Havik et al., 2015), but not in the other (Havik et al., 2015). However, a number of studies report bullying victimization and perpetration among truant youth, implying difficulties in the social sphere (Havik et al., 2015).

For the third type, school withdrawal (SW), the association to loneliness or ostracism has not been established directly, but it has been noted, for instance, that the group of SW students that withdraw from school in order to care for a family member or close person may experience consequences on their social life due to the caretaking (Casu et al., 2021; Leu & Becker, 2017).

The fourth type of SAP, school exclusion (SE), has been linked to behavioral problems (Heyne et al., 2019). Students with behavioral problems often also experience problems in peer relationships (Schwartz-Mette et al., 2020), and difficulties in school (Greene et al., 2002), as well as increased comorbidities such as anxiety disorders, mood disorders and language disorder (Greene et al., 2002).

While there is various evidence of a connection between different types of SAP and loneliness and ostracism, no study to date has explicitly compared these connections within the same sample to disentangle the differences in experienced social outsiderhood between the types.

Aims of the Present Study

The aim of the present study was to examine the relationship between school attendance problems, social outsiderhood (loneliness and ostracism), and internalizing symptoms. Specifically, the study seeks to:

1. Investigate the associations between school absence, internalizing symptoms and feelings of loneliness and ostracism.
2. Explore how different types of school attendance problems (emotion-based absence, truancy, school withdrawal and school exclusion) relate to loneliness and ostracism.

Based on previous research, our hypotheses were: H1a: Loneliness and ostracism are associated with number of days absent from school. H1b: The relationship between loneliness/ostracism and school absence is mediated by internalizing symptoms. H2: Different types of school attendance problems (e.g., emotion-based absence, truancy, school withdrawal, and school exclusion) are associated with loneliness and ostracism.

Method

Participants, Sampling, and Process

Survey data were collected from 2,137 youths. Data from 271 youths were excluded due, for example, to lack of consent, implausible reported age, and missing responses on all the relevant study variables. After this, the sample comprised 1,866 youths. The average age was 14.95 years ($SD=0.86$). Participant gender was male (44.4%), female (48.9%), or other or missing (6.6%). The respondents reported on their parent's highest educational level: 45% reported university or higher education, 26% upper secondary school or vocational studies, 3% on comprehensive school or equivalent and 0.9% none of the above or unknown, the rest having no answer (25.9%). Almost three quarters (72%) lived with both parents, 12% interchangeably with 2 parents, 9% with one parent, 0.6% in residential child care and 0.6% with other arrangements.

The current study is based on data from the project 'School Absence in Finland' (described in Niemi et al., 2022). Participants were recruited by a two-step process. First, school principals and teachers were contacted with information about the study, and an invitation to participate in an online seminar on school absenteeism. Information about the study, and the invitation to the seminar was shared by email as well as via social media by teacher organizations and various Facebook groups for school professionals. The seminar was conducted in January 2021 and included, in addition to lectures about school absenteeism, information about the upcoming study. A total of 15 upper primary schools, all located in southern and western Finland, decided to participate in the project. Next, participating schools emailed parents with information about the study and to gain consent for their child's participation. In accordance with the Finnish guidelines on research integrity (TENK), parents of youths below 15 years were asked to complete an informed consent for their child's participation in the study. In addition, all youths provided informed written consent at the time of data gathering. Survey data were collected from youths during school time, in May 2021. A research assistant or teacher was present in class during the data collection, so that they could clarify questions and help if technical assistance was needed. To obtain data from persistently absent students, school personnel contacted absent students, went to their house if needed, and filled in the questionnaire with the students, if the student needed help. In total, 42 responses were collected this way.

The study was approved by the research ethics committee of Åbo Akademi University (2020/06/26).

Measures

Absence from School

To assess absence from school, participants were asked to estimate how many days they had been absent from school during the prior 12 school weeks, for whatever reason. Responses were given on a scale from 1 to 6, where 1 = Not at all, 2 = Sometimes (up to 4 days), 3 = Often (5–12 days absent), 4 = Very often (13–36 days absent), 5 = Mostly (37–48 days absent), and 6 = Always (more than 48 days absent). This item is included in the ISAP questionnaire (see below).

Typology of School Attendance Problems

To assess different types of SAP, definitions of types according to Heyne et al., (2019) were provided (see Appendix 1). All respondents, regardless of amount of absence, could choose one or several options among the provided descriptions to describe their own SAP. Participants could also choose not to select any type of SAP. Each typological group consisted of yes-replies to the specific item. The control group consisted of those with a no-response to the typological item. This means, that in the control group, some participants could have indicated another type of SAP. This choice was due to the low number of yes-responses to the typological questions.

Loneliness and Ostracism

To assess loneliness and ostracism, participants were administered the Inventory of School Attendance Problems (ISAP; Knollmann et al., 2019). The questionnaire was constructed as a screening tool for identifying problems linked to emerging and existing SAPs. The ISAP contains 13 symptom subscales (ISAP-S) and 13 function subscales (ISAP-F). Questions are presented on the same line, so that the first part relates to the symptoms and the second to the impact (= function) the symptoms hold on absence. Factor structure, convergent and divergent validity, as well as internal consistency of the subscales has been found to be adequate or good, in previous studies on the same sample (Laine 2023), or different samples (Knollmann et al., 2019; Strömbeck et al. 2024).

In the present study, we used only two two-part items from the ISAP scales, measuring the symptoms of loneliness or ostracism, and the function these symptoms hold on absence. Participants were asked to rate, on a 4-point Likert scale (from 1 = never to 4 = most of the time), to what extent they agreed with the statements "Before or at school I feel excluded by my classmates" (ostracism) and "Before

or at school I feel unhappy because I don't have friends at school" (loneliness). To assess the function of loneliness and ostracism, the same descriptions were used, and participants indicated on a similar 4-point Likert scale to what extent they experienced that the symptoms impacted school attendance. Given the limited number of items, Cronbach's alpha reflects the inter-item correlation and should be interpreted with caution. Nonetheless, The internal consistency was acceptable for the symptoms subscale ($\alpha=.76$) and good for the functions subscale ($\alpha=.81$).

Internalizing Symptoms

To assess internalizing symptoms, participants completed the emotional symptoms subscale of the Strengths and Difficulties Questionnaire (SDQ; (Goodman, 1997). The 5 items were answered on a 3-point Likert scale from 0 (not true) to 2 (certainly true), which yielded a summary score ranging from 0 to 10. Cronbach's alpha for the Emotional symptoms' subscale was acceptable, $\alpha=.77$. As a marker of slightly raised or clinically significant scores, we used a cutoff of $>=5$ points on the emotional symptoms subscale (Arnfred et al., 2019; Bryant et al., 2020).

Data Analysis

All data preparation and analyses were performed in R version 4.2.0. The following R packages were used for data analysis and plotting: *tidyverse* (data cleaning; Wickham et al., 2019), *lavaan* (mediation analysis; Rosseel, 2012) and *psych* (significance testing of correlation coefficients; Revelle, 2015). Analyses were independent t-tests, Pearson product moment correlations and mediation models. Missing data occurred primarily due to dropout and the remaining missing values were inspected using the *mice* (Buuren & Groothuis-Oudshoorn, 2011) and *VIM* (Kowarik & Templ, 2016) packages in R. A considerable amount of respondents had missing information on the gender variable ($n=84$), which due to its categorical nature is not appropriate to impute, thus no missing values were imputed. The exception was the ISAP-F scale, where respondents could have reported not experiencing a given symptom and then skipped the corresponding function question. In this case, the function question was imputed with the value 1 (never), since you cannot experience a function of a symptom if you do not experience the symptom itself. Missing values were handled by pairwise deletion, so that each analysis had maximum statistical power. The sample size for each analysis is reported with the analysis.

In the mediation analyses, ISAP symptom variables were used.

Transparency and Openness

Materials and analysis code for this study are available upon request from the first author.

Results

Descriptive Statistics of School Absences, Internalizing Symptoms, Loneliness and Ostracism, and Gender Differences

Among the respondents, 54.3% reported absence from school at least once during the last 12 weeks. Girls reported more absence than boys (girls: $n=913$, $M=1.96$, $Mdn=2$, $SD=0.92$, range: 1–6, boys: $n=829$, $M=1.82$, $Mdn=2$, $SD=0.87$, range: 1–6, $t(1607.8)=3.15$, $p=.002$, $d=0.16$). Mean level of internalizing symptoms was relatively low, however, more internalizing symptoms were reported by girls ($n=913$, $M=4.15$, $Mdn=4$, $SD=2.50$, range: 0–10) than boys ($n=829$, $M=2.20$, $Mdn=2$, $SD=2.12$, range: 0–10, $t(1552.8)=16.61$, $p<.001$, $d=0.84$). Regarding internalizing symptoms, 44% of girls and 16% of boys reported values above the clinical cut-off scores of $>=5$ points on the emotional symptoms subscale.

Respondents could indicate whether they experienced loneliness and ostracism (symptom), and in addition, if this impacted their absence from school (= function, see Appendix 2). In total, 19% reported experiencing loneliness and 30% reported experiencing ostracism. Both symptom and function of loneliness was reported by 8%, and ostracism by 11%. In other words, about 1 in 10 of the students both felt lonely or ostracized at school and felt that this impacted their school attendance.

When comparing mean levels of loneliness and ostracism, the gender differences were not statistically significant, neither for symptom, nor function (See Appendix 3), when the participant had reported a score higher than one on the scale (range 1–4). The results indicate that boys and girls experience similar levels of loneliness and ostracism and that loneliness and ostracism affect their school attendance in a similar way.

Table 1 Bivariate correlations between study variables, separate for boys and girls

	1	2	3	4
1. Ostracism	–	.59	.34	.09
2. Loneliness	.68	–	.27	.08
3. Internalizing symptoms	.39	.35	–	.19
4. School absence	.14	.17	.15	–

Correlations for boys ($n=649$ –711) below the diagonal, correlations for girls ($n=779$ –816) above the diagonal. All correlations are significant at $p<.05$. Bolded numbers indicate significant differences in correlation for boys and girls at $p<.001$

Correlations Between Symptoms of Internalizing Problems, Loneliness, Ostracism, and School Absence

The correlations between loneliness and ostracism were large (Table 1). Loneliness and ostracism correlated moderately with internalizing symptoms, and to a small degree with days absent.

The Mediating Role of Internalizing Symptoms for the Association of Loneliness and Ostracism with School Absence

The direct associations were modeled in a linear regression, both symptoms of ostracism and loneliness had significant associations with missed school days ($\beta = 0.08$, $p = .020$ and $\beta = 0.07$, $p = .036$ respectively).

A saturated, just-identified path model was fit to estimate if the association of symptoms of loneliness and ostracism with days absent were mediated by internalizing problems. All reported regression coefficients are standardized. The complete path model can be found in Fig. 1, with associated statistics found in Table 2.

The results indicated that being ostracized had a stronger association with having more internalizing symptoms compared to loneliness. The indirect association of ostracism with school absence was $\beta = 0.05$, $p < .001$ and of loneliness with days absent $\beta = 0.02$, $p = .003$, implying no or extremely low meaningful associations. Exploratively, separate path analyses were run for girls and boys, to see if any associations differed between the groups based on confidence intervals for each parameter estimate, however, none were found, indicating similar associations between the study variables for both genders. Thus, only the combined data is reported here (Table 2).

Typology of School Attendance Problem, Loneliness and Ostracism

In order to answer research question two, we explored how students classified their absence in terms of SAP typology. Most absences did not fall under any specific type, as the percentage reporting any of the 4 types of SAP was 14.8. In other words, most absences were likely unproblematic. Prevalence of types of SAPs, when participants had read the definition provided and checked if they agreed, were: Emotion-based absence (6.6%), Truancy (2.6%), School Withdrawal (3.9%), and School Exclusion (1.7%). There were some overlaps in SAP typologies, in the whole sample, 0.5% reported all 4 typologies, 1% reported three typologies and 2% reported two typologies. Emotion-based absence and school withdrawal were the typologies that most often occurred together (in 66% of cases who reported two or more SAP typologies), followed by emotion-based absence and truancy (reported by 49% of cases with two or more SAP typologies) (Table 3).

Welch's t-test were done to find if those who had a particular school absence typology differed on loneliness/ostracism from those who did not have the typology. Group comparisons can be found in Table 3. All comparisons of typologies were significant and had large effect sizes, indicating that any type of absence is associated with more loneliness/ostracism. The strongest association of typology with both ostracism and loneliness was school exclusion ($d = 1.04$ and 0.91 respectively), although the effect sizes did not significantly differ based on bootstrapped confidence intervals.

Discussion

The present study aimed to explore the relationships between school absences, internalizing symptoms and social outsiderhood among adolescents. All 3 variables were associated.

Fig. 1 Path model of symptoms.
Note Standardized estimates of the path model. *** $p < .001$

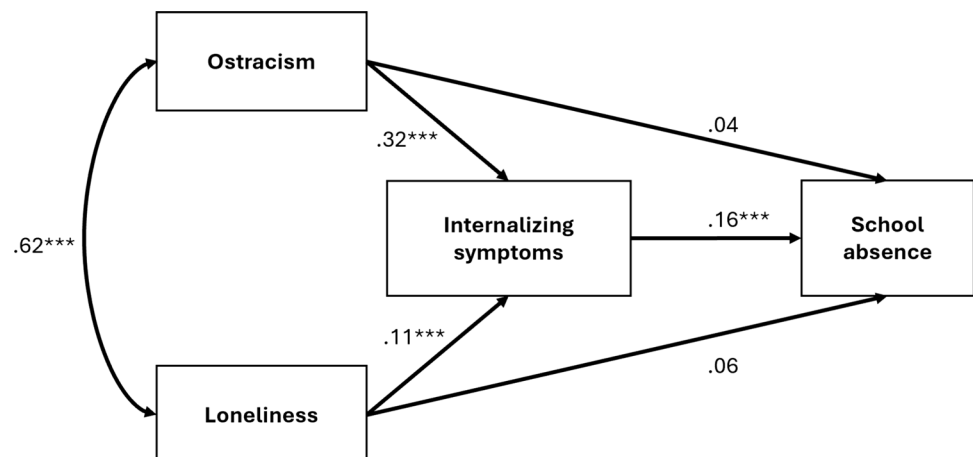


Table 2 Path model parameter estimates symptoms

Path	B	SE	Beta	p
Direct associations				
Ostracism → School absence	0.04	0.04	0.04	.301
Loneliness → School absence	0.08	0.05	0.06	.065
Internalizing symptoms → School absence	0.06	0.01	0.16	<.001
Ostracism → Internalizing symptoms	1.12	0.11	0.32	<.001
Loneliness → Internalizing symptoms	0.42	0.12	0.11	<.001
Indirect associations				
Ostracism → Internalizing symptoms → School absence	0.05	0.01	0.05	<.001
Loneliness → Internalizing symptoms → School absence	0.02	0.01	0.02	.003

N = 1,451. Goodness-of-fit: $R^2_{\text{School absence}} = .04$, $R^2_{\text{Internalizing symptoms}} = .16$

Table 3 Loneliness and Ostracism according to SAP Typology

	Typology present	Typology not present	Group comparison			
	M (SD)	M (SD)	t	df	p	d [95% CI]
Emotion-based absence						
Ostracism	2.15 (1.05)	1.35 (0.66)	7.95	121,50	<.001	0.91 [0.87, 1.44]
Loneliness	1.81 (1.05)	1.24 (0.60)	5.68	119,03	<.001	0.67 [0.59, 1.19]
Truancy						
Ostracism	2.09 (1.06)	1.39 (0.71)	4.36	45,20	<.001	0.78 [0.58, 1.46]
Loneliness	1.78 (1.00)	1.27 (0.64)	3.42	45,13	<.001	0.61 [0.36, 1.25]
School withdrawal						
Ostracism	2.14 (1.02)	1.38 (0.70)	5.94	67,78	<.001	0.87 [0.73, 1.46]
Loneliness	1.74 (0.93)	1.26 (0.64)	4.25	67,82	<.001	0.60 [0.42, 1.12]
School exclusion						
Ostracism	2.37 (1.11)	1.40 (0.71)	4.52	26,38	<.001	1.04 [0.77, 1.94]
Loneliness	2.08 (1.08)	1.27 (0.64)	3.76	24,29	<.001	0.91 [0.62, 1.93]

N = 1518 for Ostracism (ISAP 22) and N = 1508 for Loneliness (ISAP 26) due to dropout. CI = percentile bootstrapped confidence interval using 1000 samples, LL = lower limit and UL = upper limit. Typology based on responses to description of the SAP (present = yes, not present = no)

Furthermore, internalizing symptoms were found to mediate the association between social outsiderhood and school absence. In addition, the aim was to explore how different SAP types were related to social outsiderhood. All 4 types of school attendance problems (SAPs) were linked to experiences of ostracism and loneliness. Thus, the findings supported all proposed hypotheses (H1a, H1b, and H2).

Both ostracism and loneliness were significantly associated with school absenteeism (H1a), and internalizing symptoms. This finding aligns with a robust body of literature suggesting that social outsiderhood is a precursor of internalizing symptoms such as depression and anxiety (Mullarkey et al., 2019), as well as behavioral outcomes, such as school absence (Kiuru et al., 2024). For instance, in a longitudinal study, increased internalizing symptoms were detected in middle school, especially among those students with profiles of high and increasing social loneliness, and absences were most common among students with chronic feelings of loneliness (Kiuru et al., 2024). The moderate-sized correlations

observed in our data may also be understood in terms of a bidirectional relationship between social outsiderhood and internalizing symptoms, reinforcing the theoretical framework that social isolation exacerbates emotional distress, and even neural pain reactions (J. T. Cacioppo et al., 2006; MacDonald & Leary, 2005) while individuals experiencing internalizing symptoms may also be more prone to perceiving or experiencing social exclusion (Beeson et al., 2020; Finning, Ukoumunne, Ford, Danielsson-Waters, et al., 2019a, 2019b).

Subsequent analyses examined whether the associations between loneliness, ostracism, and school absence were direct or mediated by internalizing symptoms (H1b). Although loneliness and ostracism were significantly associated with days absent in the linear regressions, the path model indicated that these relationships were mediated by internalizing symptoms. However, the indirect effects were statistically significant but small ($\beta = 0.05$ for ostracism; $\beta = 0.02$ for loneliness), suggesting limited practical relevance. This implies that while loneliness and ostracism may

contribute to school absences, other factors are significant contributors to school absences.

However, as internalizing symptoms independently have been found to be associated with school absence (Finning, Ukoumunne, Ford, Danielsson-Waters, et al., 2019a, 2019b; Finning, Ukoumunne, Ford, Danielsson-Waters, et al., 2019a, 2019b), it is important to discuss the pathways by which this association occurs. It is also possible that school absence may contribute to internalizing symptoms and increased feelings of outsiderhood. Internalizing symptoms may relate to youth well-being on a functional level, and for some, difficulties in attending school. The symptoms may disrupt daily functioning by generating intense emotional and psychological distress that interferes with a student's ability to engage in routine activities, including academic responsibilities (Avenevoli et al., 2008). For example, anxiety can manifest as overwhelming fears or worries about social interactions or academic performance, making the school environment feel intimidating and unsafe (Egger et al., 2003). This heightened emotional state can lead to avoidance behaviors, where students may choose to stay home to escape the perceived stress of attending school (Kearney, 2007). Similarly, depression can sap motivation, energy, and concentration, making it difficult for students to complete schoolwork, participate in classroom activities, or even find the strength to get out of bed (Kessler et al., 2012). As internalizing symptoms escalate, students may struggle with a sense of hopelessness or worthlessness, which further isolates them from their peers and the learning environment (Rubin et al., 2009).

The distinct relationships observed between loneliness, ostracism, and internalizing symptoms suggest that these experiences may have unique emotional consequences, distinguishing them as qualitatively different phenomena. While both loneliness and ostracism can lead to internalizing symptoms, the mechanisms by which they impact individuals may differ. Ostracism, as an explicit form of exclusion, involves a clear, direct rejection by others, which may trigger more immediate and acute psychological distress. This overt social exclusion could evoke a stronger emotional response because it directly challenges an individual's sense of belonging and acceptance (MacDonald & Leary, 2005). The experience of ostracism may also be more difficult to rationalize or dismiss, leading to heightened feelings of shame, rejection, and even anger (Williams, 2007). In contrast, loneliness is a broader, more subjective experience characterized by a perceived lack of meaningful connections, even in the absence of explicit exclusion. It is possible to feel lonely even while surrounded by others, making it a more generalized and diffuse emotional state that may build gradually over time (Cacioppo et al., 2006, 2015). This external clarity may explain why ostracism has a stronger association with school absence: students who are actively

excluded may experience their school environment as hostile or threatening, prompting avoidance behaviors such as avoiding school.

Despite these differences, the high correlation between loneliness and ostracism suggests significant overlap between the two constructs. Loneliness may often be a byproduct of ostracism, as individuals who are socially excluded are likely to experience feelings of isolation and disconnection. However, ostracism may exert a more immediate and powerful influence on behavior. Ostracism's direct link to school absence, as demonstrated by Kiuru et al. (2024), suggests that being actively excluded from peer interactions may create a hostile or unwelcoming school environment, prompting students to disengage or avoid attendance. In contrast, loneliness, while emotionally distressing, may not have as strong of an impact on school absence because it is less tied to specific social dynamics and may not immediately compel avoidance behaviors. Ultimately, these findings support the idea that ostracism and loneliness, while related, operate differently in their influence on emotional well-being and school attendance.

All four types of school attendance problems (SAPs) were linked to experiences of ostracism and loneliness (Hypothesis 2), with those reporting school exclusion exhibiting the highest levels of both. The associations between each type of SAP, emotion-based absence, truancy, school withdrawal, and school exclusion, and experiences of ostracism and loneliness were significant. This indicates that all respondents with problematic school absence, regardless of the type, also struggled with social relationships, manifested here as loneliness or ostracism. These social challenges could be both a cause and a consequence of their absenteeism. Regardless of the direction of causality, it is crucial to address the social relationships of young individuals facing attendance issues. The association between social outsiderhood and attendance issues align with models of school engagement that emphasize the importance of belongingness and peer acceptance (Allen et al., 2018; Caldwell et al., 2019).

Notably, the vast majority of absences (85.2%) were not identified as fitting any specific SAP category, suggesting that most student-reported absences may be situational or otherwise unproblematic. Among those who did endorse a typology after reviewing the provided definitions, emotion-based absence was the most prevalent (6.6%), followed by school withdrawal (3.9%), truancy (2.6%), and school exclusion (1.7%). These relatively low prevalence rates are consistent with previous findings indicating that SAPs, while impactful, affect a minority of students. Prior research has also reported comparable rates of EBSA and truancy, while studies on SE and SW are scarce (Alanko et al., 2023; Egger et al., 2003; Havik et al., 2015; Heyne et al., 2019). While the study was not primarily designed to investigate the overlap between different types of school

attendance problems (SAPs), our data suggest that such overlaps do occur and may have implications for interpretation and intervention. Although most participants did not report SAPs, a small subset of students endorsed multiple SAP typologies simultaneously. Specifically, 0.5% reported experiencing all 4 types, 1% reported 3, and 2% reported 2 types. Among those reporting two or more SAPs, the most common overlap occurred between emotion-based absence and school withdrawal (66%), followed by emotion-based absence and truancy (49%).

These findings highlight that SAP categories are not always mutually exclusive in students' lived experiences. Overlapping classifications may indicate complex or multifactorial attendance issues that do not fit neatly into a single category. This nuance is important for both researchers and practitioners: treating SAP types as distinct may oversimplify students' realities and risk overlooking co-occurring challenges.

Furthermore, the negative impact of emotions related to social outsiderhood, and internalizing symptoms, compounded by the shame often associated with being unable to attend school, may make it difficult for students to continue at, or return to, their original school. This could explain why many students with complex SAPs opt to change schools as part of their effort to return, potentially seeking a fresh start in a new social environment (Kearney, 2016).

Participants who reported SE also tended to report higher levels of loneliness and ostracism. This finding is novel, as SE has not previously been examined in a community study of adolescents, nor has its association with loneliness and ostracism been established. It is perhaps unsurprising that students experiencing SE struggle the most, as they are directly and actively excluded by the school. Importantly, such exclusion does not necessarily stem from disciplinary actions but may reflect instances where the school unfairly excludes the student (Heyne et al., 2019). Heyne et al. (2019, p. 16) outline that SE as problematic school-based decision making may revolve around: "the use of disciplinary measures; the allocation of resources for students in need; and the need to satisfy school-based performance requirements".

A notable finding, beyond our research questions, was that 19% of participants reported feeling lonely, and 30% reported experiencing ostracism. Furthermore, loneliness was cited as the reason for absence by 8% and ostracism by 11%. These findings suggest that loneliness and ostracism are impactful enough to disrupt daily functioning, raising concerns about the number of students who are affected by the emotional and functional challenges posed by social outsiderhood.

Gender differences were observed across the entire sample, with more girls reporting feelings of loneliness and ostracism. This finding is consistent with previous Finnish

studies (Lyyra et al., 2022), highlighting the particular vulnerability of Finnish girls to social exclusion, especially in the form of ostracism. However, among participants who reported experiencing symptoms, there were no significant gender differences in the intensity of loneliness or ostracism. This suggests that when such symptoms are present, both boys and girls experience them at similar levels. Additionally, there were no gender differences in the frequency with which these symptoms impacted school attendance, indicating that the functional consequences of loneliness and ostracism on school absenteeism are comparable between genders.

The findings of the present study also carry important practical implications, particularly for the design of school-based interventions. Mental health services can play a critical role in supporting students at risk of social withdrawal or emotional distress. In addition, preventive efforts such as anti-bullying initiatives and social skills programs are essential for reducing the risk of social marginalization. To address the specific challenges faced by ostracized students, targeted social integration programs, including peer mentoring and inclusive group activities, may help foster a stronger sense of belonging and promote re-engagement with the school community.

Future Studies

Given the cross-sectional nature of this study, causal inferences cannot be drawn. Future research should employ longitudinal designs to explore the temporal relationships between loneliness, ostracism, internalizing symptoms, and school absenteeism. This would help to determine whether feelings of ostracism and loneliness are consequences of school absence or if they contribute to the development of absenteeism over time. The current findings suggest that school attendance problems might evolve from social exclusion and lack of friendships, which can lead to internalizing symptoms and reduced motivation or ability to attend school. Therefore, interventions aiming to improve school attendance should focus on enhancing student relationships and fostering a supportive school community, as these factors are crucial for maintaining attendance. It's worth noting that this situation may differ in clinical samples, where higher symptom levels might be more common.

Future studies should consider the experiences of groups at risk to experience social outsiderhood or internalizing symptoms, such as ethnic, sexual, and gender identity minorities, students with learning difficulties or physical disability, as well as cross-cultural replication to provide a more comprehensive understanding of school-related issues across different groups at risk.

Strengths and Limitations

A key strength of this study is its large sample size from Finnish schools, which enhances the generalizability of the findings. However, the recruitment of volunteer schools may have introduced bias, as those more actively engaged with attendance-related issues were likely more inclined to participate. Another limitation is the operationalization of loneliness and ostracism. The measures used are indirect, which may impact the results and their comparability with other studies. The items focused on feelings of unhappiness due to a lack of friends and social exclusion within the school context, which aligns with the study's main aim. However, the impact of loneliness or exclusion outside of school on overall well-being and school attendance remains unclear. Additionally, the measure of loneliness did not explicitly use the term "lonely," which could both mitigate stigma but also affect validity and comparability. Another limitation concerns the measurement of SAPs. The categorical items were developed based on Kearney's theoretical definition of SAP; however, it was not possible to assess the validity and reliability of these items. Although we provided definitions for the various types of SAPs and allowed participants to select multiple options, this led to some individuals in the comparison group reporting a different type of SAP. As a result, the typology analyses may have been affected by this overlap. It is important to acknowledge the potential for self-report bias in this study, particularly given the adolescent population. Adolescents may have varying levels of self-awareness and may be influenced by social desirability or fear of stigma when reporting sensitive issues such as loneliness, ostracism, and internalizing symptoms. Self-report measures rely on individuals' perceptions and willingness to disclose their experiences, which can introduce biases affecting the accuracy of the data. Furthermore, memory bias may have affected responding to the question about number of days absent from school. In addition, our questionnaire was lengthy, which might have affected the motivation to respond.

Data collection occurred during the COVID-19 pandemic, which likely exacerbated feelings of social exclusion and internalizing symptoms, as indicated by previous research (Racine et al., 2021), and may have contributed to increased school absenteeism.

Lastly, as mean levels of internalizing symptoms were relatively low, a restriction of range may limit statistical conclusions. Regarding school absence, while 22% of the total sample reported that they had been absent from school at least 5 days in the past 12 weeks (roughly 10% absent days) only 4% ($n = 72$) had responded that they were absent very often or more frequently (13 days or absence or more). While the proportion is small, we still consider this to be a relatively large sample considering

the difficulties in surveying this population, however, future studies should strive to achieve even larger sample sizes.

Considering the internalizing symptoms, a large percentage of girls (44%) reported internalizing symptoms scores above the clinical cut-off scores of $> = 5$ points, while only 16% of boys did so. Thus, it is unclear how well the result in the present study can be generalized to boys high in internalizing symptoms. However, considering that we found no differences in correlations between internalizing symptoms and the other study variables nor differences in the exploratory path models when comparing genders, it is likely that the 2 genders react similarly to changes in internalizing symptoms. Future research could strive to oversample boys with substantial internalizing symptoms, as they seem to occur less frequently in the general population.

Conclusion

This study established significant associations between loneliness, ostracism, internalizing symptoms, and school absences, applicable to all types of school attendance problems: emotion-based absence, truancy, school withdrawal, and school exclusion. The highest levels of ostracism and loneliness were reported by those experiencing school exclusion. The relationship between loneliness, ostracism, and school absences was mediated by internalizing symptoms, albeit with a very low effect size. Future research should further investigate these dynamics, as well as causality and explore effective interventions to support students in overcoming social and emotional challenges, ultimately promoting better attendance and overall well-being.

Appendix 1

Definitions used in the study (according to Heyne et al., 2019) for type of School Attendance Problem.

School refusal	I can't go to school because of anxiety, moodiness or stress, even though I want to—I don't try to hide my absence from my parents—I feel anxious about going to school—My parents try to make me go to school
Truancy	I'm sometimes out of school for a whole day—other times I just skip certain classes—I'm out without permission—my parents don't know I'm truant

School withdrawal	My parents don't try to get me to school/they need me at home—My parents know I'm absent from school
School exclusion	The school sometimes sends me home for no reason
School withdrawal	The school cannot meet my needs (e.g. physical, mental or learning)
School exclusion	The teachers sometimes seem to want to keep me away from school (e.g. when we go on an excursion or when there is an exam)

		Boy			Girl					
		<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>t</i> (<i>df</i>)	<i>p</i>	<i>d</i>
Ostracism	Symptom	2.24	0.52	93	2.13	0.41	186	1.65 (152.03)	.100	0.23
	Function	2.57	0.73	51	2.80	0.84	109	1.77 (111.20)	.079	0.29
Loneliness	Symptom	2.42	0.64	50	2.28	0.60	103	1.28 (91.62)	.205	0.23
	Function	2.72	0.76	50	2.68	0.81	73	0.24 (110.30)	.807	0.05

Appendix 2

Frequencies of symptoms and their functions on social outsiderhood, separately for boys and girls

Group	ISAP ostracism			ISAP loneliness		
	<i>N</i> (%)			<i>N</i> (%)		
	Boy	Girl	Total	Boy	Girl	Total
No symptom or function	529 (79)	501 (63)	1030 (70)	566 (85)	614 (78)	1180 (81)
Symptoms but no function	93 (14)	186 (23)	279 (19)	50 (8)	103 (13)	153 (11)
Symptoms and function	51 (8)	109 (14)	160 (11)	50 (8)	73 (9)	123 (8)
Total	673 (100)	796 (100)	1469 (100)	666 (100)	790 (100)	1456 (100)

N = 1469 for Ostracism (ISAP 22) and *N* = 1456 for Loneliness (ISAP 26) due to dropout. Percentages may not add up to 100 due to rounding. Cut-off for inclusion in group with symptoms or both symptoms and functions was 1 on either the symptoms scale, or both the symptoms and the functions scales. Scale range: 1–4.

Appendix 3

Gender differences in symptoms and their impact of loneliness and Ostracism

Author Contributions All authors whose names appear on the submission made substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data; drafted the work or revised it critically for important intellectual content; approved the version to be published; and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Data Availability Data may be made available upon requests from the first au.

Declarations

Competing of interest The authors have no competing interests to declare that are relevant to the content of this article.

Ethical Approval.

The study was approved by the research ethics committee of Åbo Akademi University (2020/06/26).

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