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Deniz, Emre and Toseeb, Umar orcid.org/0000-0002-7536-2722 (2024) Sibling Bullying and Mental Health in British and Turkish Autistic Children and Adolescents: The Role of Social and Emotional Functioning. *Research in Autism Spectrum Disorders*. 102392. ISSN: 1750-9467

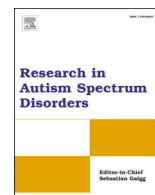
<https://doi.org/10.1016/j.rasd.2024.102392>

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Sibling bullying and mental health in British and Turkish autistic children and adolescents: The role of social and emotional functioning

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ARTICLE INFO

Keywords:

Autism
Cross-cultural
Emotion regulation
Mental health
Sibling bullying
Social functioning

ABSTRACT

Nearly one in two autistic individuals is involved in sibling bullying, which is linked to increased mental health difficulties. Despite its high prevalence, only a handful of studies have focused on the relationship between sibling bullying and mental health in the autistic population. Of these, a vast majority of evidence comes from Western cultures while little is known about non-western cultures. For the first time, the current study investigated the cross-cultural variability in the prevalence and demographic and mental health correlates of sibling bullying between a Western (the United Kingdom) and non-western (Turkey) country. Parents of British ($N = 289$) and Turkish ($N = 171$) autistic individuals, aged 9–20 years, completed online questionnaires. Structural equation models were fitted to test the risk factors for behavioural and mental health correlates of sibling bullying. Overall, sibling bullying was highly prevalent in the lives of both British and Turkish autistic adolescents as more than two-thirds either bullied a sibling or were bullied by a sibling every week. While some potential risk factors for sibling bullying were present in both cultures (e.g., past sibling bullying experiences), some were culture-specific (e.g., having a male sibling (British), higher parental education (Turkish)). Consistent with previous reports, higher rates of sibling bullying were significantly correlated with poorer mental health in both British and Turkish samples. Additionally, sibling bullying was indirectly linked to mental health difficulties through detrimental social behaviours (British and Turkish) and emotion regulation (British-only) in autistic children and adolescents. There were no indirect correlations between sibling bullying and mental health through social skills in either sample. Implications of these findings as well as cross-cultural similarities and differences are discussed in more detail in light of the relevant cross-cultural psychological theory.

Sibling bullying is a form of violence that involves frequently repeated aggression that intends to harm a weaker sibling physically, verbally, relationally, or psychologically (Wolke et al., 2015). As many as one in two children and adolescents, both in the general (Deniz et al., 2023; Duncan, 1999; Toseeb et al., 2020a; Tucker et al., 2013a) and the autistic population (Deniz & Toseeb, 2023; Toseeb et al., 2018), experience sibling bullying. This makes it the most prevalent form of intra-family violence in the lives of children and adolescents (Button & Gealt, 2010). Despite its overwhelmingly high prevalence, bullying amongst siblings has been overlooked as

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many consider it a natural part of daily sibling interaction (Caffaro, 2013; Rypi, 2023). This normalising discourse on sibling bullying has potentially contributed to the delay in the discovery of its antecedents and detrimental effects.

1. Risk factors and consequences of sibling bullying

While the literature is severely limited, the present evidence offers some insight into individual and family-level risk factors for sibling bullying. In terms of individual risk factors, being White, male, first-born, having two or more siblings, and having an older sibling increase the risk for sibling bullying involvement (Bowes et al., 2014; Dantchev et al., 2018; Menesini et al., 2010; Tippet & Wolke, 2015; Toseeb et al., 2020a; Tucker et al., 2013a, 2014). In regard to family-level risk factors, low family income, low parental education, lone parent status, harsh parenting, parental absence, parental differential treatment, and child-parent and inter-parental conflict are identified as risk factors for increased sibling bullying (Dantchev & Wolke, 2019; Qing et al., 2022; Tippet & Wolke, 2015; Toseeb et al., 2020a; Tucker et al., 2014; Wolke et al., 2015). Although several risk factors for sibling bullying have been explored, the available evidence is predominantly based on reports from Western cultures. This is problematic as children's development and behaviour are influenced by several complex factors, including broader societal influences (Bronfenbrenner, 1979).

Sibling bullying is linked to mental health difficulties. More specifically, increased rates of sibling bullying are associated with increased anxiety and depression (Bowes et al., 2014; Dantchev et al., 2019; Liu et al., 2020), internalising and externalising problems (Coyle et al., 2017; Toseeb & Wolke, 2022; Wolke & Samara, 2004), loneliness (Duncan, 1999), and mental health distress (Toseeb & Wolke, 2022; Tucker et al., 2013b). It is also associated with more adverse psychopathological outcomes such as self-harm and suicidal ideation (Bowes et al., 2014; Dantchev et al., 2019) and psychotic and traumatic symptoms (Dantchev et al., 2018; Liu et al., 2021). Not only does sibling bullying result in mental health difficulties, but it also lowers the wellbeing of those involved. For instance, increased rates of sibling bullying are linked to reduced levels of self-esteem (Deniz & Toseeb, 2023; Toseeb & Wolke, 2022) and poorer wellbeing (Deniz & Toseeb, 2023; Duncan, 1999; Toseeb & Wolke, 2022). Collectively, it is clear that individuals who are involved in sibling bullying are at heightened risk for poorer mental health and wellbeing than those uninvolved.

Due to its effects and high prevalence, an urgent need to protect the mental health of those involved in sibling bullying has been repeatedly flagged (Bowes et al., 2014; Deniz et al., 2023; Toseeb & Wolke, 2022; Wolke et al., 2015). Prevention of sibling bullying is a hard task due to the fact that it often happens behind closed doors and parents are often unaware of their children's sibling bullying experiences (Wolke et al., 2015). Therefore, to minimise its negative consequences, researchers have sought to identify mediating factors between sibling bullying and mental health that could potentially serve as a protective mechanism for mental health. In the general population, emotion regulation and family and friend social support have been found to mediate the associations between sibling bullying victimisation and mental health difficulties (Fite et al., 2022; Tucker et al., 2020). Similarly, researchers have shown that self-esteem may play a significant role in the relationship between sibling bullying and mental health in the autistic population (Deniz & Toseeb, 2023). Although not as clear-cut, social skills may be expected to play a role between sibling bullying and mental health as sibling bullying is correlated with reduced social skills (Dantchev & Wolke, 2019) which, in turn, is correlated with increased mental health difficulties in the autistic population (Toseeb et al., 2020a). Hence, there appears to be indirect links between sibling bullying and mental health through third factors, though more research is needed to shed light on these potential indirect paths.

1.1. Sibling bullying roles: bully, victim, bully-victim

Depending on whether they are the perpetrator or the victim of the bullying action, individuals can take three different roles in sibling bullying: *victim*, *bully*, *bully-victim*. Victims (also called passive victims, pure victims, and victim-only) are those who are victimised by their siblings but who do not pursue bullying actions or actively respond to the bully to harm them back. Bullies (also called pure bullies, perpetrators, and bully-only) are those who actively harm their siblings but are not, in turn, harmed by them. Finally, bully-victims (also called proactive victims and victim-perpetrators) are those who are bullied by their siblings but also bully their siblings or actively respond to the bullying actions by their siblings. All these terms have been extensively and commonly used by past researchers when describing the roles of individuals involved in bullying (Dantchev et al., 2018, 2019; Toseeb et al., 2018, 2020a, 2020b; Toseeb & Wolke, 2022; Wolke & Samara, 2004).

For decades, it was falsely believed that only victims of bullying are at risk of adverse outcomes, therefore, bullies were often disregarded or thought to be better off (Cowie & Colliety, 2016). However, recent researchers have shown that experiencing sibling bullying has detrimental outcomes irrespective of the child's bullying role (i.e., the victim or the bully) (Meland et al., 2010). It is important to note that certain bullying roles may imply greater detrimental outcomes than others. For instance, past researchers have found that bully-victims show worse mental health and wellbeing compared to victims and bullies of sibling bullying (Copeland et al., 2013; Toseeb & Wolke, 2022). Notwithstanding, some reported that victims may experience greater mental health difficulties than bullies (Meland et al., 2010) while others found bullies (i.e., autistic) may have higher levels of externalising problems than victims or bully-victims (Toseeb et al., 2020b). Taken together sibling bullying poses detrimental risks for children and adolescents irrespective of individuals' roles, though more research is needed to explore who is affected worse in sibling bullying as the literature is currently not consistent.

1.2. Sibling bullying in cross-cultural context

Ecological systems theory (EST, Bronfenbrenner, 1979) suggests that the immediate environments individuals live in (e.g., family, neighbourhood, culture) shape the way they think, feel, and behave. Based on this argument, intra-family relationships are likely to be

influenced by broader contextual factors such as family characteristics, neighbourhood socio-economic status, and cultural norms. In support of this, the prevalence and correlates of sibling bullying have been found to vary across culturally distinct populations. For example, more American children (30–85%) are involved in sibling bullying (Button & Gealt, 2010; Duncan, 1999; Finkelhor et al., 2006; Tucker et al., 2013a) compared to Chinese children (10–20%) (Liu et al., 2020, 2021; Peng et al., 2022; Qing et al., 2022). That is, although sibling bullying is a universal phenomenon, its prevalence may show cross-cultural variations due to contextual differences in individual, family, and cultural level characteristics.

Likewise, the United Kingdom (UK) and Turkey have two distant cultures (Hofstede Insights, 2022) which is likely to reflect upon sibling relationships (Cicirelli, 1995). For example, British children are more likely to live in cohabiting families or in single-parent households than Turkish children (OECD, 2023a, 2023b), which are identified as risk factors for increased sibling bullying involvement (Tucker et al., 2014). Conversely, Turkish families are larger, have more children, and show higher rates of poverty than British families (OECD, 2023a, 2023b), all of which may put Turkish children at increased risk for sibling bullying than their British counterparts (Bowes et al., 2014; Tippett & Wolke, 2015). Consequently, the cultural distance between British and Turkish cultures is likely to reflect upon the dynamics of sibling bullying in the UK and Turkey.

1.3. Sibling bullying when a child is autistic

Autistic individuals may be more prone to experiencing sibling bullying compared to their non-autistic peers (Nowell et al., 2014; Toseeb et al., 2018). For instance, difficulties in taking other's perspectives may increase autistic children's likelihood of being a target of bullies (Van Roekel et al., 2010). Similarly, social processing difficulties of autistic children may result in inappropriate behaviours towards their siblings while being unaware that their actions harm or upset their siblings (Cook et al., 2010; Coolidge et al., 2004; Frith & Hill, 2004; Humphrey & Hebron, 2015; Toseeb et al., 2018; Van Roekel et al., 2010). Additionally, certain demographic risk factors of sibling bullying in the general population have also been found to apply to families with autistic children such as being White, first-born, having two or more siblings, harsh parenting, lone parent status, and low family income (Toseeb et al., 2018, 2020b). Furthermore, late-diagnosed autistic adolescents and those who share a bedroom with their siblings are also at increased risk for involvement in sibling bullying (Deniz & Toseeb, 2023). Finally, higher parental differential treatment and favouritism could make such families more prone to sibling bullying experiences compared to families formed by non-autistic children (Brody et al., 1992; McHale et al., 1986; McHale & Pawletko, 1992). Hence, there appear to be several individual- and family-level factors contributing to the higher likelihood of sibling bullying in families where a child is autistic compared to non-autistic child families.

To date, there is very limited evidence on the consequences of sibling bullying when a child is autistic. The limited evidence seems to align with the reports from the general population. That is, increased rates of sibling bullying, either as the victim or the bully, show higher levels of mental health difficulties (e.g., internalising and externalising problems) than those not involved (Deniz & Toseeb, 2023; Toseeb et al., 2018, 2020b). Again, similar to what has been found in the general population, sibling bullying may be indirectly associated with mental health difficulties through third factors (e.g., self-esteem) in the autistic population (Deniz & Toseeb, 2023). Given that autistic children may not be aware of their sibling bullying experiences, and may under-report their experiences, intervening in such mediators – e.g., self-esteem – may protect the mental health of those involved in sibling bullying. Hence, the existing evidence draws a clear link between sibling bullying and mental health difficulties in the autistic population, though more research is needed to explore more indirect paths.

1.4. The current study

Despite the extensive research that has been done on sibling bullying in the past decade, it is not yet clear whether sibling bullying is a direct or indirect risk factor for increased mental health difficulties. A growing body of literature points towards potential indirect associations between sibling bullying and mental health through third factors. Apart from this, nearly all existing evidence on the relationship between sibling bullying and mental health comes from Western populations and little to no evidence exists in non-Western cultures. Therefore, a cross-cultural understanding of the associations between sibling bullying and mental health in families from Western and non-Western cultures was greatly needed.

To address this knowledge gap, the current study aimed to investigate the cross-cultural variations in the prevalence, risk factors, and mental health correlates of sibling bullying in families where a child is autistic in the UK and Turkey. Additionally, the present study aimed to examine the mediator roles of emotion regulation and social skills in the relationship between sibling bullying and mental health difficulties in such families. In doing so, the following research questions (RQ) were asked: RQ1: “What is the prevalence of sibling bullying?”, RQ2: “What are the risk factors for sibling bullying?”, RQ3: “What are the behavioural and mental health correlates of sibling bullying?”, and RQ4: “Do emotional and social functioning play a role in the associations between sibling bullying and mental health in British and Turkish autistic individuals?”. Although we expected to find cross-cultural differences between the UK and Turkey, the direction of the differences could not be predicted.

2. Methods

2.1. Ethics statement

This study is part of a larger-scale study in which ethical approval was granted by the Department of Education Ethics Committee, University of York (Ref: FC20/2). In addition to the ethical approval, we sought research permission from the Turkey Ministry of

National Education (Ref: b34d-55f1-3d4e-9ee4-6c65) to recruit participants from Turkish schools.

2.2. Design

To explore the cross-cultural differences in the rates, risk factors, and mental health correlates of sibling bullying, we adopted the *Etic* approach which simply focuses on the presence or absence of between-culture variations on a psychological phenomenon (Kagitcibasi & Berry, 1989). For this, we used a set of universal measures, cross-culturally valid, instead of culture-specific measures, to explore the similarities and differences between the British and Turkish cultures in sibling bullying and mental health. Hence, this study takes an outsider's perspective in exploring the similarities and differences in sibling bullying and mental health between British and Turkish cultures and is not an attempt to in-depth testing of culture-level elements that underlie existing similarities and differences.

2.3. Sampling

Convenience sampling was adopted in recruiting parents of British and Turkish autistic children and adolescents. To be included in the study, families were required to meet all of the following inclusion criteria: 1) at least one child in the family has an autism diagnosis, 2) the autistic child has at least one neurotypical sibling, 3) the autistic child is between nine and 20 years of age,³ 4) both children have lived in the same house in the preceding six months. In cases where families had more than one autistic or neurotypical child, they were asked to choose the ones closest in age and answer the survey questions accordingly. To identify autistic children and adolescents, their parents were asked two screening questions: 1) *Have any of your children been diagnosed with autism, Asperger's syndrome or autistic spectrum disorder?* 2) *What types of special education needs or disabilities does your child have?* Those whose parents answered yes to the former question or *autism spectrum conditions* to the latter question were identified as autistic.

Parents were recruited from schools, autism charities, referral services, and private special education and rehabilitation centres in both countries. All data were collected online using the Qualtrics software. The online survey consisted of pre-developed and validated psychological measures and a set of demographic questions written in participants' native language (English or Turkish). In total, 301 British parents and 202 Turkish parents completed the distributed surveys. Of these, 12 British parents and 31 Turkish parents were removed from the sample due to not meeting the pre-determined inclusion criteria (e.g., autism diagnosis, age range, etc). Thus, all analyses were carried out on a sample of 289 British parents and 171 Turkish parents.

2.4. Participants

Sample characteristics of British and Turkish cultures are summarised here in brief and detailed information is outlined in [Tables S1 and S2 \(Supplementary materials\)](#). In both cultures, over 80% of survey respondents were mothers. Of these, more British parents (50%) than Turkish parents (22%) had a college or above degree. Moreover, the mean age of autistic individuals was comparable across cultures (British=12.9 years, SD=2.4; Turkish=12.4 years, SD=3.2). However, Turkish neurotypical siblings were slightly older (Mean=14.3 years, SD=6.6) than their British counterparts (Mean=12.1 years, SD=3.6).

2.5. Measures

Parents of autistic individuals were asked to answer a wide range of questionnaires in regard to demographics, behavioural characteristics, mental health, and sibling bullying experiences of their autistic child. Parents also reported their children's and their own demographic information. All measures are described here in brief, and detailed information is outlined in Appendix A and [Table S3 \(Supplementary materials\)](#).

2.6. Demographic information

Parents' demographic information included ethnicity, highest educational qualification, marital status, and their relation to the autistic child (e.g., mother). Children's demographic information included age, gender, birth order, and physical power imbalance between siblings (e.g., the autistic child is physically stronger than the neurotypical sibling).

2.6.1. Autistic traits

The Autism Quotient-10 (AQ-10), which consists of 10 items with responses recorded on a four-point Likert-type scale (1 = *definitely disagree*, 2 = *slightly disagree*, 3 = *slightly agree*, 4 = *definitely agree*) was used to assess the autistic characteristics of British and Turkish autistic individuals. The AQ-10 was originally developed in English (Allison et al., 2012) and later translated into Turkish and validated in a Turkish sample (Cetinoglu & Aras, 2022). In the current study, given the age range of the target autistic sample was between 9–20 years, the AQ-Child-10 was used to measure the autistic traits of those aged 9–11 years and the AQ-Adolescents-10 was

³ This inclusion criterion was originally defined to recruit autistic adolescents. According to the [World Health Organisation \(2023\)](#), adolescence is the period of life between childhood and adulthood which covers ages 10 and 19. Since the current study was designed as a 1-year longitudinal study, the lower and upper age bounds were moved 1 year and set as 9 and 20 to maximise the sample power.

used for those aged 12 + years. An overall autistic traits test scale was generated by summing the child and adolescent AQ scores. The overall test scores ranged from 10 to 40 with higher scores indicating more autistic traits. In the current study, the autistic traits variable was used as a potential confounder in the analyses. The autistic traits test scale showed good internal consistency in the British sample ($\alpha=.72$) while its internal consistency was “not satisfactory” in the Turkish sample ($\alpha=.54$) (Taber, 2018). This is acknowledged as a limitation of the current study.

2.6.2. Sibling bullying

The Sibling Bullying Questionnaire (SBQ) was used to evaluate the sibling bullying victimisation and perpetration experiences of autistic individuals. The SBQ is a 14-item – sibling bullying victimisation (7 items) and sibling bullying perpetration (7 items) – Likert-type scale (1 = *never*, 2 = *only ever once or twice*, 3 = *2 or 3 times a month*, 4 = *about once a week*, 5 = *several times a week*). The SBQ was originally developed in English (Dantchev et al., 2019a), adapted from Olweus’s bullying questionnaire, and was later translated into Turkish and validated in a Turkish sample of adolescents (Deniz et al., 2023). In the present study, the SBQ showed good internal consistency reliability for both victimisation (UK $\alpha=.90$, TR $\alpha=.80$) and perpetration (UK $\alpha=.88$, TR $\alpha=.75$) subscales. In the current analyses, sibling bullying victimisation and sibling bullying perpetration were used as predictors with higher scores indicating higher rates of sibling bullying involvement.

Additionally, parents were also asked to respond to two questions in regard to past sibling bullying experiences of their autistic child: 1) “*Has your autistic child ever talked to you about being bullied by their sibling?*” and 2) “*Has your neurotypical child ever talked to you about being bullied by their autistic sibling?*”. The former question was used to construct the past sibling bullying victimisation experiences of the autistic child while the latter question corresponds to their past sibling bullying perpetration experiences.

2.6.3. Emotion regulation

The Emotion Regulation Checklist (ERC), which is an 8-item four-point Likert-type scale (1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *almost always*), was used to measure the emotion regulation skills of autistic individuals. The ERC was originally developed in English (Shields & Cicchetti, 1997) and has been used extensively in measuring the emotion regulation skills of autistic children and adolescents. The ERC was later translated into Turkish and validated in a Turkish sample of children (Kapci et al., 2009) and has been widely used to measure the emotion regulation skills of neurotypical and neurodiverse Turkish children and adolescents aged 0–17 years old. In this study, the emotion regulation subscale of the ERC showed acceptable internal consistency reliability in both the British ($\alpha=.64$) and Turkish ($\alpha=.70$) samples. The total scores ranged from 8 to 32 with higher scores meaning better emotion regulation skills. Emotion regulation was used as a potential mediator in the current analyses.

2.6.4. Social skills

The Autism Social Skills Profile (ASSP), which consists of 45 items that are answered on a four-point Likert-type scale (1 = *never*, 2 = *sometimes*, 3 = *often*, 4 = *very often*), was used to measure social functioning and detrimental social behaviours of autistic individuals. The ASSP was originally developed in English (Bellini & Hopf, 2007) and later translated and validated in a Turkish sample of autistic children and adolescents (Demir, 2014). In the current study, the social participation and social reciprocity subscales of the ASSP were combined to generate the positive social functioning test scale, and the detrimental social behaviours scale was used as an indication of negative social functioning. Both test scales were further modified according to item-test loadings. In the social functioning test scale, three items were dropped due to showing a weak item-test correlation ($<.20$) in either the British or the Turkish sample. Upon modifications, the social functioning test scale showed excellent internal consistency in the British ($\alpha=.93$) and Turkish ($\alpha=.96$) samples. Similarly, in the detrimental social behaviours test scale, two items were removed due to showing a weak item-test correlation ($<.20$) in either sample, which provided good internal consistency and reliability in the British ($\alpha=.79$) and Turkish ($\alpha=.76$) samples. Both social functioning and detrimental social behaviours were used as mediators in the proposed model.

2.6.5. Mental health

The Strength and Difficulties Questionnaire (SDQ; Goodman, 1997), which is a 25-item, three-point Likert-type scale (0 = *not true*, 1 = *somewhat true*, 2 = *certainly true*), was used to measure the internalising and externalising problems of autistic individuals. The original form of the SDQ was developed in English (Goodman, 1997) which was then translated into Turkish and validated in a sample of Turkish adolescents (Güvenir et al., 2008). While the internal consistency of the externalising problems subscale was at an acceptable level in both cultures (UK=.68, TR=.68) internalising problems showed questionable internal consistency in the UK (.60), but not in Turkey (.71), which is also addressed in the limitations section.

Following the SDQ scoring guidelines, emotional (5 items) and peer problems (5 items) subscales were summed to generate the internalising problems (10 items) test scale with higher scores indicating higher internalising problems. Additionally, conduct problems (5 items) and hyperactivity/inattention (5 items) subscales were summed to generate the externalising problems (10 items) test scale with higher scores meaning higher levels of externalising problems.

2.7. Data analyses

All statistical analyses were conducted using STATA/ MP 17. First, the prevalence of sibling bullying, overall and by demographic characteristics, was reported in both cultures (RQ1). Second, a structural equation model (SEM) was fitted to test the individual and cumulative risk factors⁴ for sibling bullying (RQ2). Third, Pearson's correlation coefficients were used to test the zero-order correlations between sibling bullying, emotion regulation, social functioning, detrimental social behaviours, and mental health (RQ3). Fourth, a further two SEMs and Sobel's tests were fitted to test the indirect associations between sibling bullying and mental health through emotional and social functioning in both cultures (RQ4). A recently developed MEDSEM package (Mehmetoglu, 2018) was used to report the indirect associations between sibling bullying and mental health difficulties. Monte Carlo simulation was used to replicate MEDSEM results on randomly generated samples ($N = 5000$) to correct parameter estimates due to non-normal distribution in interest variables (see Table S4). To indicate how well the data fit the pre-hypothesised models, the following goodness of fit indices of the SEMs were reported: the root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI), Standardized Root Mean Square Residual (SRMR), and the coefficient of determination (CD) were reported. All missing data were handled using two advanced statistical techniques: multiple imputations by chained equations and full information maximum likelihood. Prior to handling missing data, logistic regression models were fitted, independently, to test whether the missingness in the data was missing at random. More information concerning data analyses can be found in Appendix A and Tables S4–S6 (Supplementary materials).

3. Results

3.1. Prevalence of sibling bullying

To answer RQ1, the descriptive analysis showed that sibling bullying was highly prevalent in the lives of autistic individuals in both countries. In regard to sibling bullying victimisation, nearly 53% of British and 45% of Turkish autistic individuals were victimised by their neurotypical siblings every week. Concerning sibling bullying perpetration, about 65% of British and 56% of Turkish autistic individuals bullied their neurotypical sibling every week. Of those involved in sibling bullying, in both cultures, being the bully-victim of sibling bullying was the most common role for autistic individuals while being the victim-only was the least common role. More details regarding the prevalence of sibling bullying, by sibling bullying roles and demographic characteristics, can be found in Table S7 (Supplementary materials).

3.2. Risk factors for sibling bullying

To address RQ2, an SEM was fitted to test the individual risk factors for sibling bullying, victimisation and perpetration, and to construct cumulative risk factor indices (see, Fig. 1). Findings indicated cross-culturally common and culture-specific risk factors for sibling bullying. Regarding cross-cultural similarities, for instance, being victimised by their neurotypical sibling in the past was a significant risk factor for present sibling bullying victimisation in both British and Turkish autistic individuals. In regard to sibling bullying perpetration, being involved in sibling bullying, both victimisation and perpetration, were risk factors for present sibling bullying perpetration in both British and Turkish autistic individuals.

Concerning the cross-cultural differences, having an opposite-gendered sibling, a physically more powerful sibling, a male sibling, and having been involved in sibling bullying perpetration in the past were significant risk factors for present sibling bullying victimisation in the British sample, but not in the Turkish sample. Moreover, having a physically weaker sibling was a risk factor for sibling bullying perpetration for British autistic individuals but not for their Turkish peers. Furthermore, high parental education was a risk factor for sibling bullying victimization in the Turkish sample but not in the British sample. Finally, having a younger sibling was a risk factor for sibling bullying perpetration for Turkish autistic individuals but not for their British peers.

Taken together, in the British sample, the cumulative victimisation risk index consisted of having an opposite-gendered sibling, having a physically more powerful sibling, having a male sibling, and having previously been involved in sibling bullying victimisation and perpetration. In the Turkish sample, however, the cumulative victimisation risk index consisted of high parental education and having previously been involved in sibling bullying victimisation. With reference to the cumulative perpetration risk index, it consisted of having a weaker sibling and having previously been involved in sibling bullying victimisation and perpetration. In the Turkish sample, however, the cumulative perpetration risk index consisted of having a younger sibling and having been previously involved in sibling bullying victimisation and perpetration.

3.3. Behavioural and mental health correlates of sibling bullying

Answering RQ3, direct correlations between sibling bullying, emotion regulation, social functioning, detrimental social behaviours, and mental health were tested using Pearson's correlation coefficients (see Table 1). Findings indicated striking similarities and differences between the two cultures regarding the correlates of sibling bullying. In terms of similarities, increased rates of sibling

⁴ The significant individual risk factors for sibling bullying victimisation and sibling bullying perpetration were later combined to generate cumulative victimisation risk index and cumulative perpetration risk index.

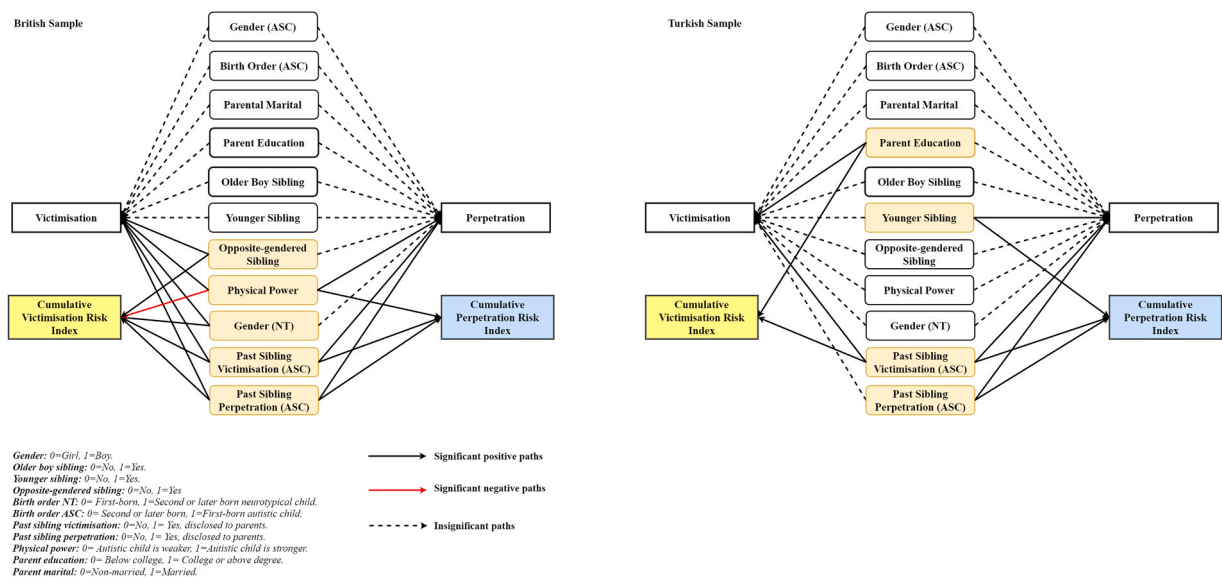


Fig. 1. Risk Factors for Sibling Bullying, Victimization and Perpetration, by Country.

Table 1
 Behavioural and Mental Health Correlates of Sibling Bullying: Direct Associations.

	UK (N = 289)		TR (N = 171)	
	Victimisation	Perpetration	Victimisation	Perpetration
Autistic traits	-.42 * **	-.11	-.07	-.15
Emotion regulation	-.05	-.27 * **	.03	.04
Social Functioning	.29 * **	.02	.18 *	.19 *
Detrimental Social Behaviours	.09	.45 * **	.26 * **	.42 * **
Internalising Problems	.09	.25 * **	.13	.25 * **
Externalising Problems	.17 * *	.51 * **	.10	.24 * *

Note. Path coefficients are reported on full sample size using MICE. The significance level is set as $p < .05$.

bullying perpetration were directly correlated with increased detrimental social behaviours and internalising and externalising problems in both British and Turkish autistic individuals. Unexpectedly, being a victim of sibling bullying was not directly correlated with reduced emotion regulation or increased internalising problems in either sample. Finally, autistic traits were not correlated with sibling bullying perpetration in either sample.

In terms of cross-cultural differences, increased sibling bullying victimisation was linked to increased externalising problems in British autistic individuals but not in Turkish ones. Additionally, increased sibling bullying perpetration was directly associated with reduced emotion regulation in British but not in Turkish autistic individuals. Moreover, while increased sibling bullying victimisation was a positive correlate of increased detrimental social behaviours in Turkish autistic individuals, this was not the case for their British peers. Finally, sibling victimisation was negatively correlated with autistic traits in the British sample but not in the Turkish sample.

3.4. Sibling bullying and mental health: indirect associations

To address RQ4, two distinct SEMs (SEM-I⁵ & SEM-II⁶) were fitted to investigate the indirect associations between sibling bullying and mental health through emotion regulation, social functioning, and detrimental social behaviours. Additionally, the autistic traits variable was controlled as a potential confounder in the models. Moreover, cumulative bullying risk indices (CVRI⁷ & CPRI⁸) were also controlled as covariates of sibling bullying in the SEMs. The SEMs indicated acceptable fits to the data in both samples: British SEM-I ($B\text{-SEM-I}$) = χ^2 (p) = .23, RMSEA = .03, CFI = .99, TLI = .98, CD = .51; British SEM-II ($B\text{-SEM-II}$) = χ^2 (p) = .15, RMSEA = .04, CFI = .99, TLI = .97, CD = .46. Turkish SEM-I ($T\text{-SEM-I}$) = Saturated, χ^2 (p) = .57, RMSEA = .000, CFI = 1.00, TLI = 1.02, CD = .56; Turkish SEM-II ($T\text{-SEM-II}$) = χ^2 (p) = .40, RMSEA = .01, CFI = 1.00, TLI = .99, CD = .61. Overall, Sobel's test indicated significant indirect associations

⁵ SEM-I: Sibling bullying victimisation and mental health

⁶ SEM-II: Sibling bullying perpetration and mental health

⁷ CVRI: Cumulative victimisation risk index

⁸ CPRI: Cumulative perpetration risk index

between sibling bullying and mental health in both British and Turkish samples. The Sobel's test findings are outlined in Table 2 and detailed path coefficients are shown in Figs. 2 and 3 and Tables S8 and S9 (Supplementary materials).

In terms of cross-cultural similarities, sibling bullying perpetration, but not victimisation, was indirectly correlated with internalising and externalising problems through detrimental social behaviours in both British and Turkish autistic individuals. That is, British and Turkish autistic individuals who bullied their neurotypical siblings showed high rates of detrimental social behaviours which, in turn, were correlated with high internalising and externalising problems.

In regard to cross-cultural differences, higher rates of sibling bullying, victimisation and perpetration, were indirectly linked to increased internalising problems through reduced emotion regulation in the British but not in the Turkish sample. That is, being involved in sibling bullying is a direct risk factor for reduced emotion regulation and, thus, an indirect risk factor for increased mental health difficulties for British autistic individuals but not for their Turkish peers. Moreover, sibling bullying victimisation was indirectly linked to internalising and externalising problems through detrimental social behaviours in the Turkish sample, but not in the British sample. This shows that being a victim of sibling bullying was indirectly linked to mental health difficulties in Turkish autistic individuals through increased detrimental social behaviours, which was not the case in the British sample.

4. Discussion

4.1. Prevalence of sibling bullying

Looking at sibling bullying victimisation, we found that nearly one in two British and Turkish autistic individuals were bullied by their sibling at least once a week. This well aligns with previous reports from the UK as previous researchers have also indicated that about 50% of British autistic adolescents experience sibling bullying every week (Deniz & Toseeb, 2023; Toseeb et al., 2018, 2020b). In terms of sibling bullying perpetration, similar to the victimisation rates, we found about half of Turkish autistic individuals bullied a sibling during the pandemic. However, in the UK, this rate was much higher as about 2/3 of British autistic individuals bullied a sibling. The rates found in the UK were also much higher than previous reports from autistic children and adolescents in the UK. Given that the data collection timeline of the current study coincided with the Covid-19 pandemic, we anticipate that this may be attributed to the deteriorating effects of Covid-19 on the daily functioning of British autistic individuals as recent reports from the UK have shown increased rates of aggression and sibling conflict for autistic individuals during the pandemic (Asbury & Toseeb, 2023; Toseeb, 2022). One may argue that the Covid-19 pandemic may have deteriorated sibling relationships more in the UK compared to Turkey. However, it is important to consider that sibling bullying experiences of autistic individuals prior to the pandemic were unknown in Turkey. Taken together, our findings support the notion that sibling bullying is a common form of intra-familial violence in the lives of autistic children and adolescents and this appears to be the case in culturally distanced (i.e., Western and non-Western) countries.

Table 2
Psychosocial Correlates of Sibling Bullying: Indirect Associations.

	Standardised Coefficients									
	X -> M β	M -> Y β	X -> Y β	Indirect effect	Direct effect	Total effect	Standard error	Z	P	95% CI
British Sample										
Sibling Victimization → Emotion Regulation → Internalising Problems	-.18 **	-.21 ***	.13 *	.038	.133	.171	.01	2.14	.03	.01,.07
Sibling Perpetration → Emotion Regulation → Internalising Problems	-.29 ***	-.23 ***	.04	.066	.043	.109	.02	2.99	< .01	.02,.11
Sibling Perpetration → Detrimental Social Behaviours → Internalising Problems	.48 ***	.36 ***	.04	.173	.043	.216	.03	5.03	< .001	.10,.24
Sibling Perpetration → Detrimental Social Behaviours → Externalising Problems	.48 ***	.39 ***	.35 ***	.187	.354	.541	.03	5.82	< .001	.12,.25
Turkish Sample										
Sibling Victimization → Detrimental Social Behaviours → Internalising Problems	.30 **	.38 ***	.09	.115	.091	.206	.05	2.22	.02	.01,.22
Sibling Victimization → Detrimental Social Behaviours → Externalising Problems	.30 **	.26 **	.18 *	.078	.176	.255	.04	1.90	.05	-.00,.16
Sibling Perpetration → Detrimental Social Behaviours → Internalising Problems	.38 ***	.35 ***	.18 *	.136	.185	.321	.04	3.08	< .01	.05,.22
Sibling Perpetration → Detrimental Social Behaviours → Externalising Problems	.38 ***	.21 *	.29 ***	.079	.288	.367	.04	1.99	.04	.00,.15

Note. Significance level: * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

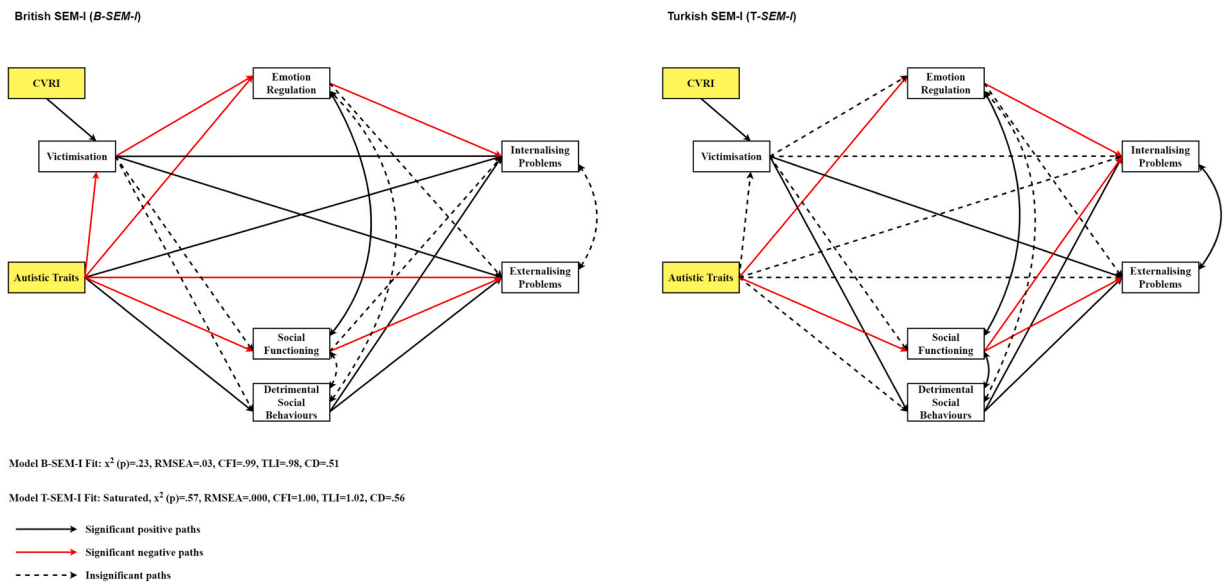


Fig. 2. Sibling Bullying Victimisation and Mental Health: Indirect Links through Emotional and Social Functioning.

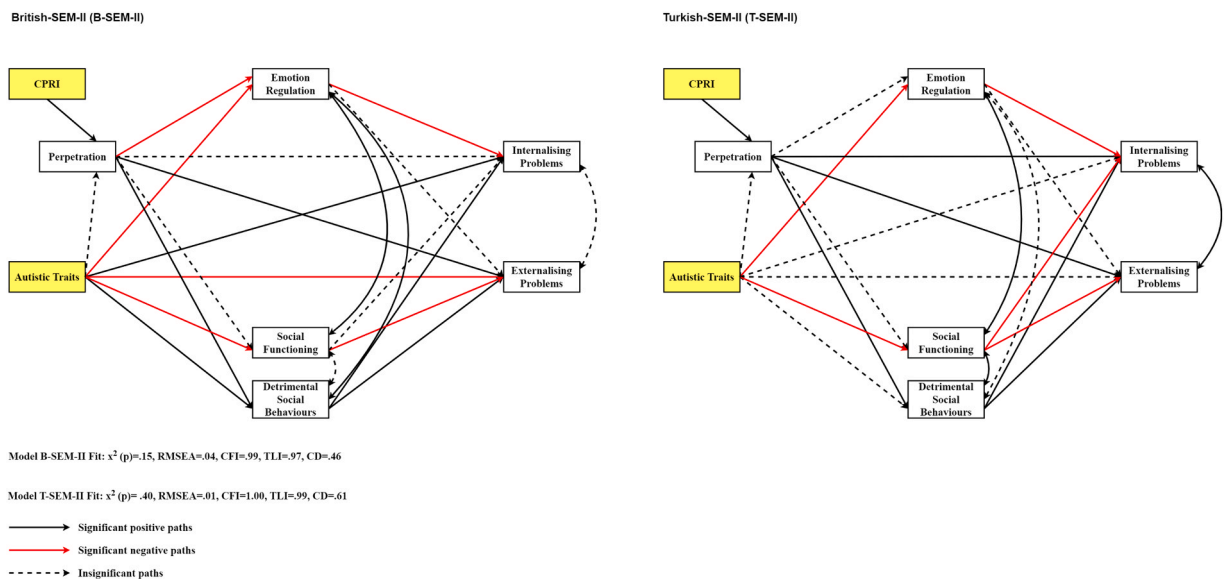


Fig. 3. Sibling Bullying Perpetration and Mental Health: Indirect Links through Emotional and Social Functioning.

4.2. Correlates of sibling bullying

For the first time, we found that risk factors for sibling bullying may vary across distant cultures. For instance, in line with the existing literature (Bowes et al., 2014; Dantchev & Wolke, 2019; Dantchev et al., 2019; Menesini et al., 2010; Tippet & Wolke, 2015; Toseeb et al., 2018, 2020a; Tucker et al., 2014, Wolke et al., 2015) having a male sibling and physical power imbalance between siblings were significant risk factors for increased sibling bullying, in the British, but not the Turkish, sample. Additionally, British, but not Turkish, autistic individuals who had an opposite-gendered sibling were at increased risk for involvement in sibling bullying than those with same-gendered siblings. Although the literature is severely limited, partially confirming this, a study also indicates that males are more likely to bully their female siblings than their male siblings (Menesini et al., 2010). It is important to bear in mind that this does not align with what Tucker and colleagues (2013a) reported as they found the risk for sibling bullying to be higher in male-male sibling pairs than male-female sibling pairs. One might argue that there may be other dynamics that triggered higher sibling bullying rates between opposite-gendered sibling pairs in the current study, such as power imbalance. That said, having a male sibling appears to be a significant risk factor for sibling bullying, though more research is needed to clarify whether having an

opposite-gendered sibling is also a risk factor for sibling bullying.

We found fewer individual- and family-level risk factors for sibling bullying in Turkish, compared to British, families of autistic individuals. At the family level, high parental education appears to be a risk factor for sibling bullying for Turkish, but not British, autistic individuals. This is well-supported as some researchers also found higher parental education to be related to increased sibling bullying (Tippett & Wolke, 2015; Tucker et al., 2013a, 2014). Since the majority of our respondents were mothers, we strongly suspect that this may relate to the primary caregiver role of mothers in Turkey as about 94.4% of Turkish mothers take the caregiving responsibilities of their children alone (Türkiye İstatistik Kurumu, 2023). That is, a college or above degree for Turkish mothers potentially means decreased primary caregiver supervision for Turkish autistic individuals, which is a risk factor for increased sibling bullying (Tucker et al., 2014; Wolke et al., 2015). In terms of individual risk factors, having a younger sibling was a risk factor for sibling bullying in Turkish families of autistic individuals, which is also supported by existing reports (Dantchev et al., 2018; Deniz et al., 2023a; Menesini et al., 2010; Toseeb et al., 2020). Hence, Turkish autistic individuals appeared to be exposed to fewer risk factors for sibling bullying which may explain their slightly lower prevalence rates, compared to British ones, in the current study.

Although the current study applied the Etic approach, reporting cross-cultural variations at the psychometric scale level, some speculations could still be made on the cross-cultural differences found in this study. For example, the reason for varying prevalence rates between the two cultures may be attributed to culture-specific risk and protective factors for sibling bullying. More specifically, British autistic individuals were exposed to more individual-level risk factors than their Turkish peers, therefore, they may be more prone to sibling bullying compared to their Turkish peers. Similarly, there may be certain culture-specific family-level protective factors for sibling bullying. For instance, an overwhelming majority of Turkish parents were found to have low educational degrees (i.e., below college) which was a negative correlate of sibling bullying in the current as well as in previous findings (Eriksen & Jensen, 2006; Tucker et al., 2014a). One could speculate that, although controversial, this could have been due to higher parental supervision (i.e., time spent together between parent and child) in Turkish, compared to British, families of autistic adolescents. Dynamics of sibling bullying, i.e., prevalence and correlates, appear to show variation across two distanced cultures, though more research is needed from a larger sample of countries to generalise these findings across Western and non-Western cultures.

4.3. Sibling bullying and mental health: indirect associations

The current findings, for the first time, suggest an indirect path between sibling bullying and mental health through emotion regulation, in British families of autistic individuals. This well aligns with previous sibling and peer bullying literature in the Western general population (Fite et al., 2022; Schwartz & Proctor, 2000). The role of emotion regulation in between sibling bullying and mental health was almost certainly explained by Kennedy and Kramer (2008, p.568) who argued that “The ability to engage in appropriate social behaviors rests strongly on one’s ability to manage emotional experiences and behaviors”. Supporting this, researchers have suggested that bullies of sibling bullying have difficulties regulating their emotions (Menesini et al., 2010; Toseeb et al., 2020b) and, in return, experience higher mental health difficulties (Mazefsky et al., 2014; McLaughlin et al., 2011). Given that the link between sibling bullying and emotion dysregulation appears to exist in Western cultures, both in previous studies and in the current study. That is, future researchers are advised to explore whether the link between sibling bullying and mental health through emotion regulation is specific to Western populations.

Also, for the first time, we found that sibling bullying links indirectly to mental health through detrimental social behaviours. This link was stronger in the Turkish than in the British sample. Although the literature is extremely limited, these finding perhaps have some foundational roots in proxy outcomes in the literature. For example, sibling bullying is linked to increased social dysfunction, antisocial behaviours, and reduced prosociality (Dantchev & Wolke, 2019; Schwartz & Proctor, 2000; Toseeb et al., 2020a). Such detrimental social outcomes, in turn, are linked to increased mental health difficulties (Tucker et al., 2014b; Wolke & Skew, 2012). It, however, remains unclear why sibling bullying perpetration, but not victimisation, was associated with detrimental social behaviours in the British sample. Future researchers could look into this matter to shed light on the reasons for cross-cultural variability in the role of detrimental social outcomes between sibling bullying and mental health across distinct cultures.

4.4. Strengths and limitations

The present study has several strengths. First, to the best of our knowledge, it has been the first-ever study focusing on cross-cultural variances in the prevalence and psychosocial correlates of sibling bullying in autistic individuals. Additionally, it is the first study to investigate the indirect associations between sibling bullying and emotional difficulties through emotion regulation, social functioning, and detrimental social behaviours in autistic individuals. Moreover, all missing data were handled, in the present analyses, which minimised potential biases in parameter estimates. Furthermore, using pre-developed and cross-culturally validated psychological measures made the results of the current study more reliable and valid. Finally, using a parent-report sibling bullying measure might be considered as another strength as parents may be better reporters of children’s bullying experiences, where the sample shows high emotional symptoms, as such children may be more likely to perceive or report a higher victimisation rate than the actual rate (Bowes et al., 2014).

Some limitations should be borne in mind when interpreting the findings. Although using parent-report measures was defined as one strength of the study, it is important to consider that parents may as well be less aware of their children’s sibling bullying experiences, and thus, may underreport sibling bullying rates as it usually happens behind closed doors (Wolke et al., 2015). Additionally, low to moderate agreement between parent and child reports of child mental health has been reported, that is, the parent reports may not represent the actual rates of mental health difficulties children experience (Van der Meer et al., 2008). It is also

important to note that the internal consistency of the autistic traits measure was found to be below the generally accepted threshold – i.e., not satisfactory – in the Turkish sample. We believe that several factors may have contributed to this, such as sample characteristics, item wording, or potential cultural differences in the interpretation of the items. Additionally, similar to what previous researchers have reported (e.g., Deighton et al., 2014) internalising problems subscale of the SDQ showed poor internal consistency (i.e., Cronbach's $\alpha < .70$) in the British culture, therefore its limitations should be taken into account in the interpretation of the current findings. Hence, the limitation of this measure should be borne in mind when interpreting the current findings. Furthermore, the indirect correlations between sibling bullying and mental health reported in the current study may have differed by gender, for which the current study sample was not powered enough to be stratified. Future researchers should test whether these associations differ for autistic boys and girls. Also, the data used in the current study was cross-sectional, thus, causal inferences on the findings of the present study should be avoided. Finally, given that both samples were recruited conveniently and the sample sizes from both cultures were not nationally representative, findings from the current study should not be generalised within or across cultures.

5. Conclusions and suggestions

Taken together, sibling bullying is prevalent and leads to detrimental mental health outcomes in families of British and Turkish autistic individuals. Therefore, researchers, parents, and practitioners should refrain from conceptualising sibling bullying as a normative and harmless part of daily sibling interactions. Additionally, the existing literature suffers from inconsistent prevalence estimates of sibling bullying, both within and across cultures. It is clear that, this, at least partly, arises from inconsistent practices in the conceptualisation and measurement of sibling bullying which degrades the scale of the problem. Therefore, there is a great need for standardised conceptualisation and measurement of sibling bullying to reveal the scale of the problem both within and across cultures. Also, given that the prevention of sibling bullying is not a straightforward task for researchers, practitioners, and parents, the current findings are promising in terms of alternative preventative measures such as manipulating factors that link sibling bullying to mental health difficulties. Finally, one of the major problems that today's society faces is mental health difficulties experienced at early ages and carried into later years in life. We believe that directing more societal resources into research on sibling bullying could help prevent a major threat to the mental health of children and adolescents, especially in families where a child is autistic.

Funding source

This study has been conducted as a part of a PhD study that is fully funded by the Republic of Turkey Ministry of National Education, Directorate-General for Higher and Foreign Education.

CRediT authorship contribution statement

Umar Toseeb: Writing – review & editing, Supervision, Methodology. **Emre Deniz:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of Competing Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability

The authors do not have permission to share data.

Acknowledgements

The authors are grateful to all British and Turkish autistic adolescents and their parents for taking part in the present study.

Financial disclosure

The authors have no financial relationships relevant to this article to disclose.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.rasd.2024.102392](https://doi.org/10.1016/j.rasd.2024.102392).

References

- Allison, C., Auyeung, B., & Baron-Cohen, S. (2012). Toward brief “red flags” for autism screening: the short autism spectrum quotient and the short quantitative checklist in 1,000 cases and 3,000 controls. *Journal of the American Academy of Child & Adolescent Psychiatry*, 51(2), 202–212. <https://doi.org/10.1016/j.jaac.2011.11.003>
- Asbury, K., & Toseeb, U. (2023). A longitudinal study of the mental health of autistic children and adolescents and their parents during COVID-19: Part 2, qualitative findings. *Autism*, 27(1), 188–199. <https://doi.org/10.1177/13623613221086997>
- Bellini, S., & Hopf, A. (2007). The development of the Autism Social Skills Profile: A preliminary analysis of psychometric properties. *Focus on Autism and Other Developmental Disabilities*, 22(2), 80–87. <https://doi.org/10.1177/10883576070220020801>
- Bowes, L., Wolke, D., Joinson, C., Lereya, S. T., & Lewis, G. (2014). Sibling bullying and risk of depression, anxiety, and self-harm: A prospective cohort study. *Pediatrics*, 134(4), e1032–e1039. <https://doi.org/10.1542/peds.2014-0832>
- Brody, G. H., Stoneman, Z., & McCoy, J. K. (1992). Associations of maternal and paternal direct and differential behavior with sibling relationships: Contemporaneous and longitudinal analyses. *Child Development*, 63(1), 82–92. <https://doi.org/10.1111/j.1467-8624.1992.tb03597.x>
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard university press.
- Button, D. M., & Gealt, R. (2010). High risk behaviors among victims of sibling violence. *Journal of Family Violence*, 25(2), 131–140. <https://doi.org/10.1007/s10896-009-9276-x>
- Caffaro, J. V. (2013). *Sibling abuse trauma: Assessment and intervention strategies for children, families, and adults*. Routledge.
- Cetinoglu, E., & Aras, S. (2022). The Autism-Spectrum Quotient (AQ) adolescent’s version in turkey: Factor structure, reliability and validity. *Journal of Autism and Developmental Disorders*, 52(7), 3260–3270. <https://doi.org/10.1007/s10803-021-05257-5>
- Cicirelli, V. G. (1995). Sibling relationships in cross-cultural perspective. In *Sibling relationships across the life span* (pp. 69–85). Boston, MA: Springer.
- Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65. <https://psycnet.apa.org/doi/10.1037/a0020149>
- Coolidge, F. L., DenBoer, J. W., & Segal, D. L. (2004). Personality and neuropsychological correlates of bullying behavior. *Personality and Individual Differences*, 36(7), 1559–1569. <https://doi.org/10.1016/j.paid.2003.06.005>
- Copeland, W. E., Wolke, D., Angold, A., & Costello, E. J. (2013). Adult psychiatric outcomes of bullying and being bullied by peers in childhood and adolescence. *JAMA Psychiatry*, 70(4), 419–426. <https://doi.org/10.1001/jamapsychiatry.2013.504>
- Cowie, H., & Colliety, P. (2016). Who cares about the bullies? *Pastoral Care in Education*, 34(1), 24–33. <https://doi.org/10.1080/02643944.2015.1119880>
- Coyle, S., Demaray, M. K., Malecki, C. K., Tennant, J. E., & Klossing, J. (2017). The associations among sibling and peer-bullying, social support and internalizing behaviors. In *In Child & Youth Care Forum* (Vol. 46, pp. 895–922). Springer US. <https://doi.org/10.1007/s10566-017-9412-3>
- Dantchev, S., Hickman, M., Heron, J., Zammit, S., & Wolke, D. (2019). The independent and cumulative effects of sibling and peer bullying in childhood on depression, anxiety, suicidal ideation, and self-harm in adulthood. *Frontiers in Psychiatry*, 10, 651. <https://doi.org/10.3389/fpsy.2019.00651>
- Dantchev, S., & Wolke, D. (2019). Sibling bullying at 12 years and high-risk behavior in early adulthood: A prospective cohort study. *Aggressive Behavior*, 45(1), 18–32. <https://doi.org/10.1002/ab.21793>
- Dantchev, S., Zammit, S., & Wolke, D. (2018). Sibling bullying in middle childhood and psychotic disorder at 18 years: a prospective cohort study. *Psychological Medicine*, 48(14), 2321–2328. <https://doi.org/10.1017/S0033291717003841>
- Deighton, J., Croudace, T., Fonagy, P., Brown, J., Patalay, P., & Wolpert, M. (2014). Measuring mental health and wellbeing outcomes for children and adolescents to inform practice and policy: A review of child self-report measures. *Child and Adolescent Psychiatry and Mental Health*, 8, 1–14. <https://doi.org/10.1186/1753-2000-8-14>
- Demir. (2014). Assessing social skills of children with autism. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 47(2), 1–22.
- Deniz, E., Derinalp, P., Gulkanat, I., Kaz, C., Ozhan, N., & Toseeb, U. (2023). Sibling bullying in Turkish adolescents: Translation and cross-cultural validation of the sibling bullying questionnaire. *Journal of Family Violence*, 38(2), 379–392. <https://doi.org/10.1007/s10896-022-00360-2>
- Deniz, E., & Toseeb, U. (2023). A longitudinal study of sibling bullying and mental health in autistic adolescents: The role of self-esteem. *Autism Research*, 16(8), 1533–1549. <https://doi.org/10.1002/aur.2987>
- Duncan, R. D. (1999). Peer and sibling aggression: An investigation of intra-and extra-familial bullying. *Journal of Interpersonal Violence*, 14(8), 871–886. <https://doi.org/10.1177/088626099014008005>
- Eriksen, S., & Jensen, V. (2006). All in the family? Family environment factors in sibling violence. *Journal of Family Violence*, 21, 497–507. <https://doi.org/10.1177/0886260508316298>
- Finkelhor, D., Turner, H., & Ormrod, R. (2006). Kid’s stuff: The nature and impact of peer and sibling violence on younger and older children. *Child Abuse & Neglect*, 30(12), 1401–1421. <https://doi.org/10.1016/j.chiabu.2006.06.006>
- Fite, P. J., Cooley, J. L., Tampke, E. C., Hesse, D. R., & Doyle, R. L. (2022). The role of emotion dysregulation in the links between sibling victimization and internalizing symptoms in middle childhood. *Journal of Psychopathology and Behavioral Assessment*, 44(2), 560–569. <https://doi.org/10.1007/s10862-022-09956-w>
- Frith, U., & Hill, E. (Eds.). (2004). *Autism: Mind and Brain*. OUP Oxford.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38(5), 581–586. <https://doi.org/10.1111/j.1469-7610.1997.tb01545.x>
- Güvenir, T., Özbek, A., Baykara, B., Arkar, H., Şentürk, B., & İncekaş, S. (2008). Güçler ve güçlükler anketi’nin (gga) Türkçe uyarılmasının psikometrik özellikleri. *Turkish Journal of Child and Adolescent Mental Health*, 15, 65–74.
- Hofstede Insights. (2022). *Country Comparison - Hofstede Insights*. (<https://www.hofstede-insights.com/country-comparison/turkey,the-uk/>)
- Humphrey, N., & Hebron, J. (2015). Bullying of children and adolescents with autism spectrum conditions: A ‘state of the field’ review. *International Journal of Inclusive Education*, 19(8), 845–862. <https://doi.org/10.1080/13603116.2014.981602>
- Kagitcibasi, C., & Berry, J. W. (1989). Cross-cultural psychology: Current research and trends. *Annual Review of Psychology*, 40(1), 493–531.
- Kapci, E. G., Uslu, R., Akgun, E., & Acer, D. (2009). Psychometric properties of the Turkish adaptation of the emotion regulation checklist. *Turk J Child Adolesc Men Health*, 16(1), 13–20.
- Kennedy, D. E., & Kramer, L. (2008). Improving emotion regulation and sibling relationship quality: The more fun with sisters and brothers program. *Family Relations*, 57(5), 567–578. <https://doi.org/10.1111/j.1741-3729.2008.00523.x>
- Liu, X., Peng, C., Yu, Y., Yang, M., Qing, Z., Qiu, X., & Yang, X. (2020). Association between sub-types of sibling bullying and mental health distress among Chinese children and adolescents. *Frontiers in Psychiatry*, 11, 368. <https://doi.org/10.3389/fpsy.2020.00368>
- Liu, X., Wolloh li, M. G., Lin, X., Qiu, X., Qing, Z., Wang, W., ... Lu, D. (2021). The association between sibling bullying and psychotic-like experiences among children age 11–16 years in China. *Journal of Affective Disorders*, 284, 31–37. <https://doi.org/10.1016/j.jad.2021.01.073>
- Mazefsky, C. A., Borue, X., Day, T. N., & Minshew, N. J. (2014). Emotion regulation patterns in adolescents with high-functioning autism spectrum disorder: Comparison to typically developing adolescents and association with psychiatric symptoms. *Autism Research*, 7(3), 344–354. <https://doi.org/10.1002/aur.1366>
- McHale, S. M., & Pawletko, T. M. (1992). Differential treatment of siblings in two family contexts. *Child development*, 63(1), 68–81. <https://doi.org/10.1111/j.1467-8624.1992.tb03596>
- McHale, S. M., Sloan, J., & Simeonsson, R. J. (1986). Sibling relationships or children with autistic, mentally retarded, and nonhandicapped brothers and sisters. *Journal of Autism and Developmental Disorders*, 16(4), 399–413. <https://doi.org/10.1007/BF01531707>
- McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: A prospective study. *Behaviour Research and Therapy*, 49(9), 544–554. <https://doi.org/10.1016/j.brat.2011.06.003>
- Mehmetoglu, M. (2018). Medsem: A Stata package for statistical mediation analysis, 234 *International Journal of Computational Economics and Econometrics*, 8(1), 63–78. <https://doi.org/10.1504/IJCEE.2018.10007883>

- Meland, E., Rydning, J. H., Lobben, S., Breidablik, H. J., & Ekeland, T. J. (2010). Emotional, self-conceptual, and relational characteristics of bullies and the bullied. *Scandinavian Journal of Public Health*, 38(4), 359–367. <https://doi.org/10.1177/1403494810364563>
- Menesini, E., Camodeca, M., & Nocentini, A. (2010). Bullying among siblings: The role of personality and relational variables. *British Journal of Developmental Psychology*, 28(4), 921–939. <https://doi.org/10.1348/026151009X479402>
- Nowell, K. P., Brewton, C. M., & Goin-Kochel, R. P. (2014). A multi-rater study on being teased among children/adolescents with autism spectrum disorder (ASD) and their typically developing siblings: Associations with ASD symptoms. *Focus on Autism and Other Developmental Disabilities*, 29(4), 195–205. <https://psycnet.apa.org/doi/10.1177/1088357614522292>
- OECD. (2023a). *Family Database*. (<https://www.oecd.org/els/family/database.htm>).
- OECD. (2023b). *Poverty rate (indicator)* Accessed on 04 January 2023. (<https://data.oecd.org/inequality/poverty-rate.htm>).
- Peng, C., Wang, Z., Yu, Y., Cheng, J., Qiu, X., & Liu, X. (2022). Co-occurrence of sibling and peer bullying victimization and depression and anxiety among Chinese adolescents: The role of sexual orientation. *Child Abuse & Neglect*, 131, Article 105684. <https://doi.org/10.1016/j.chiabu.2022.105684>
- Qing, Z., Ma, Y., & Liu, X. (2022). Prevalence and associated family factors of sibling bullying among Chinese children and adolescents. *Frontiers in Psychology*, 4169. <https://doi.org/10.3389/fpsyg.2022.892598>
- Ryp, A. (2023). Ambiguous but crucial boundaries-professionals differentiating sibling abuse from sibling quarrels. *Sociological Focus*, 1–17. <https://doi.org/10.1080/00380237.2023.2180466>
- Schwartz, D., & Proctor, L. J. (2000). Community violence exposure and children's social adjustment in the school peer group: the mediating roles of emotion regulation and social cognition. *Journal of Consulting and Clinical Psychology*, 68(4), 670. <https://psycnet.apa.org/doi/10.1037/0022-006X.68.4.670>
- Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: The development and validation of a new criterion Q-sort scale. *Developmental Psychology*, 33(6), 906. <https://doi.org/10.1037/0012-1649.33.6.906>
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Tippett, N., & Wolke, D. (2015). Aggression between siblings: Associations with the home environment and peer bullying. *Aggressive Behavior*, 41(1), 14–24. <https://doi.org/10.1002/ab.21557>
- Toseeb, U. (2022). Sibling conflict during COVID-19 in families with special educational needs and disabilities. *British Journal of Educational Psychology*, 92(1), 319–339. <https://doi.org/10.1111/bjep.12451>
- Toseeb, U., McChesney, G., Dantchev, S., & Wolke, D. (2020a). Precursors of sibling bullying in middle childhood: Evidence from a UK-based longitudinal cohort study. *Child Abuse & Neglect*, 108, Article 104633. <https://doi.org/10.1016/j.chiabu.2020.104633>
- Toseeb, U., McChesney, G., Oldfield, J., & Wolke, D. (2020b). Sibling bullying in middle childhood is associated with psychosocial difficulties in early adolescence: The case of individuals with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 50(5), 1457–1469. <https://doi.org/10.1007/s10803-019-04116-8>
- Toseeb, U., McChesney, G., & Wolke, D. (2018). The prevalence and psychopathological correlates of sibling bullying in children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 48(7), 2308–2318. <https://doi.org/10.1007/s10803-018-3484-2>
- Toseeb, U., & Wolke, D. (2022). Sibling bullying: a prospective longitudinal study of associations with positive and negative mental health during adolescence. *Journal of Youth and Adolescence*, 51(5), 940–955. <https://doi.org/10.1007/s10964-021-01495-z>
- Tucker, C. J., Finkelhor, D., Shattuck, A. M., & Turner, H. (2013a). Prevalence and correlates of sibling victimization types. *Child Abuse & Neglect*, 37(4), 213–223. <https://doi.org/10.1016/j.chiabu.2013.01.006>
- Tucker, C. J., Finkelhor, D., & Turner, H. (2020). Family and friend social support as mediators of adolescent sibling victimization and mental health, self-esteem, and delinquency. *American Journal of Orthopsychiatry*, 90(6), 703. <https://doi.org/10.1037/ort0000502>
- Tucker, C. J., Finkelhor, D., Turner, H., & Shattuck, A. (2013b). Association of sibling aggression with child and adolescent mental health. *Pediatrics*, 132(1), 79–84. <https://doi.org/10.1542/peds.2012-3801>
- Tucker, C. J., Finkelhor, D., Turner, H., & Shattuck, A. M. (2014). Family dynamics and young children's sibling victimization. *Journal of Family Psychology*, 28(5), 625. <https://psycnet.apa.org/doi/10.1037/fam0000016>
- Türkiye İstatistik Kurumu. (January 2023). Türkiye Aile Yapısı Araştırması, 2021. Accessed on: <https://data.tuik.gov.tr/Bulten/Index?p=Türkiye-Aile-Yapisi-Arastirmasi-2021-45813>
- Van der Meer, M., Dixon, A., & Rose, D. (2008). Parent and child agreement on reports of problem behaviour obtained from a screening questionnaire, the SDQ. *European Child & Adolescent Psychiatry*, 17, 491–497. <https://doi.org/10.1007/s00787-008-0691-y>
- Van Roekel, E., Scholte, R. H., & Didden, R. (2010). Bullying among adolescents with autism spectrum disorders: Prevalence and perception. *Journal of Autism and Developmental Disorders*, 40, 63–73. <https://doi.org/10.1007/s10803-009-0832-2>
- Wolke, D., & Samara, M. M. (2004). Bullied by siblings: Association with peer victimisation and behaviour problems in Israeli lower secondary school children. *Journal of Child Psychology and Psychiatry*, 45(5), 1015–1029. <https://doi.org/10.1111/j.1469-7610.2004.t01-1-00293.x>
- Wolke, D., & Skew, A. J. (2012). Bullying among siblings. *International Journal of Adolescent Medicine and Health*. <https://doi.org/10.1515/ijamh.2012.004>
- Wolke, D., Tippett, N., & Dantchev, S. (2015). Bullying in the family: Sibling bullying. *The Lancet Psychiatry*, 2(10), 917–929. [https://doi.org/10.1016/S2215-0366\(15\)00262-X](https://doi.org/10.1016/S2215-0366(15)00262-X)
- World Health Organization. (2023). *Adolescent Health* (Accessed on: <https://www.who.int/health-topics/adolescent-health>).