



Empirical Article

Children and adolescents weathering the storm: Resilience in the presence of bullying victimization, harassment, and pandemic lockdown in northern NorwaySTEINAR THORVALDSEN,¹  KARL T. HANSEN² and JUNE T. FORSBERG¹ ¹UiT The Arctic University of Norway, Tromsø, Norway²Pedagogical and Psychological Service Troms (PPT), Tromsø, NorwayThorvaldsen, S., Hansen, K. T. & Forsberg, J. T. (2024). Children and adolescents weathering the storm: Resilience in the presence of bullying victimization, harassment, and pandemic lockdown in northern Norway. *Scandinavian Journal of Psychology*, 65, 735–746.

Resilience is a concept of growing interest because it can systematically inform prevention measures and psychosocial interventions for children and adolescents. The aim of this study was to explore resilience factors among young people who are victims of bullying and harassment (age 9 to 16 years old). In 2021 the burden of the pandemic lockdown became an additional adversity. The study used a repeated cross-sectional design. Two datasets with a total of 2,211 participants from 2017 ($N = 972$) and 2021 ($N = 1,239$) were included. The strengths and difficulties questionnaire (SDQ) was applied to define the resilient and non-resilient groups, and the quality-of-life questionnaire (KINDL) was used to map resilience factors. A total of 227 participants reported that they were being bullied, and 604 participants reported harassments from their peers. We used correlation and regression analyses to identify which factors predicted the highest resistance to the negative effects of bullying and harassment. The results were that 77.2% of the participants stayed resilient when facing these maladjustments, but this dropped to 61.7% during the pandemic. The most important resilience factors before the pandemic were the school environment, emotional well-being, and good relations with their friends. The impact of these predictors changed during the pandemic. Emotional well-being increased in strength, school environment was reduced, and friends did not predict resilience anymore. The effect sizes were generally large to medium. As it is common to experience adversity at some stage in life, it is vital for families, schools, social and healthcare workers to be aware of the factors associated with resilience. The results of this study may contribute towards an evidence base for developing plans to increase the capacity of resilience among young people.

Key words: Resilience, bullying, harassment, quality of life, mental health, SDQ, KINDL.

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INTRODUCTION

Psychological resilience is the ability to positively deal with adversity and stress (Southwick, Bonanno, Masten, Panter-Brick & Yehuda, 2014). It is also referred to as the process of adapting and/or succeeding despite exposure to adversity (Fritz, de Graaff, Caisley, van Harmelen & Wilkinson, 2018). Exposure to adversity during childhood is associated with both short-term and long-term mental health risks (Reiss, Meyrose, Otto, Lampert, Klasen & Ravens-Sieberer, 2019), and can be particularly harmful when the adversity is prolonged and occurs early in important neurodevelopmental phases or in sensitive cognitive and social development periods during adolescents (Oh, Jerman, Silvério Marques *et al.*, 2018). Adversity can be experienced through bullying victimization, harassment, assault/abuse, war, poverty, or illness, often aligning with unfavorable life conditions related to adaptation difficulties (Barger, Vitale, Gaughan & Feldman-Winter, 2017). Despite exposure to adversity, some people manage to stay resilient, and several studies have shown that young people who develop characteristics associated with resilience are more likely to enter adulthood with a greater capacity to handle difficult circumstances (Masten, 1994; Shiner & Masten, 2012). In Norway the term *løvetambarn* or “dandelion children” is used for children who have stayed resilient despite prolonged and cumulative adversity. Dandelions are known to grow and flourish despite very harsh climates and bad soil, even being known to break through bitumen and asphalt cement to get sunlight (Borge, 2018; Kvello, 2016).

Resilience is a dynamic process characterized by fluctuating factors in different circumstances and at different points in time (Stainton, Chisholm, Kaiser *et al.*, 2019). The ecological theory of Bronfenbrenner can be applied to understand resilience in young people, because development and adaptation are influenced by factors which occur not only at the individual level, but also across a young person’s environment (Bronfenbrenner, 2005). The idea behind Bronfenbrenner theory is a system of layers, that starts with a young person’s characteristics (e.g., gender, age, and personal traits), thereafter continues to the environmental context, influence from cultural and contextual ideologies, and development over time.

The aims of this study can be framed within three of the five Bronfenbrenner systems, that is, the micro, exo, and macro systems (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006), in addition to individual characteristics. The micro system, which is the immediate environmental surroundings that have the greatest influence on the child’s development, such as family, school situation, and peer situation. Thus, who directly interacts with the child (Cicchetti & Valentino, 2006). The exo system encompass the environmental context that influence a child’s life, such as the environmental situation at school, and the macro system is the larger social and cultural context (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Cicchetti & Valentino, 2006). A comprehensive review by Fritz *et al.* (2018) have identified resilience factors not only on individual level (e.g., self-esteem, low rumination), but also at the micro level (e.g., parental

support, parental involvement) and exo level (e.g., parental and teacher support) to benefit young people exposed to adversity.

According to Bluth, Mullarkey & Lathren (2018), there are three major models of adolescent resilience: (1) *compensatory*, where a positive factor exerts a direct opposite impact on a negative outcome, that is, compensate for risk exposure; (2) *protective*, where a positive factor adjusts the effect of risks; and (3) *challenge*, where exposure to risk helps to develop coping mechanisms which allow for successful growth and navigation through future adversity. An example of the first model is that children with friends who get into fights (risk factor) is more likely to be involved in aggressive behaviors themselves, but parents' support compensates for this risk factor because it predicts less aggressive behavior independent of friends' behavior (Zimmerman, Steinman & Rowe, 1998). The present study will focus on the second model via examining several protective factors associated with better adjustment for young people. The third model can be exemplified by an interpersonal conflict that is resolved harmoniously, subsequently helping children to overcome social tensions and avoid an aggressive response later in more serious social conflicts.

Research on resilience factors has gained attention over the past decade because of its potential for systematically informed prevention measures and psychosocial interventions/programs for children and adolescents (Elbau, Cruceanu & Binder, 2019). Interest remains in policies that can strengthen resilience in young people, both at micro, exo and macro levels, such as toward families, via the schools or relevant health and/or social services (Lewis, Ormerod & Ecclestone, 2021).

Risk

Research on resilience is required to incorporate considerations of adversity and risk (Stainton *et al.*, 2019; Wright, Masten & Narayan, 2013). Several risks may appear at the same time, known as multiple risks (Fritz *et al.*, 2018). The present study investigates exposure to bullying victimization and harassment to study resilience. Bullying victimization is often defined as verbal or physical aggression, as intentional acts or behaviors repeatedly carried out by a group or an individual over time against a person who cannot easily defend himself or herself (Olweus, 1993). Bullying victimization may be an abstract and complex concept for young people, whilst harassment refers to several specific offences that may be easier for school children to report (Smith, Madsen & Moody, 1999). Both bullying victimization and harassment are forms of adversity of great distress, which negatively affect mental health and quality of life in both short and long term (Allison, Roeger & Reinfeld-Kirkman, 2009; Branwhite, 1994). In Norway close to 30% rapport harassment, 6–10% report bullying at school, and up to 6% report digital bullying (Bakken, 2021; Forsberg & Thorvaldsen, 2022; Thorvaldsen, Stenseth, Egeberg, Pettersen & Rønning, 2016).

Protective factors

Protective factors are qualities in an individual's life that mitigate the development of difficulties and psychopathology despite the existence of risk and adversity (Grossman, Beinashowitz,

Anderson, Sakurai, Finnin & Flaherty, 1992). The protective factors appear when the individual is assailed by adversity stressors and will reduce or eliminate the negative effects of the stressors and facilitates coping strategies (Masten, Lucke, Nelson & Stallworthy, 2021). Several protective factors are at play simultaneously (Masten *et al.*, 2021; Ungar & Theron, 2020), and interact at different levels, as described in Bronfenbrenner's theory above (Bronfenbrenner, 2005). Psychological research differs on the relative importance of nature and nurture (biology and environment), and there is strong agreement that both perspectives should be recognized in relation to protective factors (Lewis *et al.*, 2021; Newsome & Sullivan, 2014).

Protective factors on an individual level include both psychological – and cognitive factors, and social abilities, such as social and emotional competence, emotional well-being, self-esteem, positive self-perception, and cognitive abilities, which researchers explain as the individual drive for cognitive flexibility, creativity, analytical capacity, and the development of coping strategies (Strainton *et al.*, 2018). Motivation has also been discussed as being among the individual characteristics connected to resilience (Elbau *et al.*, 2019; Niitsu, Rice, Houfek, Stoltenberg, Kupzyk & Barron, 2019; Zheng, Cai, Zhao *et al.*, 2021).

A child's environment and social relationships are further important protective factors, such as active parenting and good relationships with other caring adults, connections to prosocial peer groups, socioeconomic stability, and a safe neighborhood environment (Bluth *et al.*, 2018). Early studies of children exposed to serious abuse showed that positive friend-relationships played a crucial role in resilience, and were thereby an important environmental protective factor, in contrast to those who were exposed to serious abuse and had harmful friendships (Hogg, Rutter & Richman, 1998; Rutter, Tizard & Whitmore, 1970). This protective element was also identified among those with close and healthy family bonds (Rutter *et al.*, 1970). Similarly, Kim-Cohen, Moffitt, Taylor, Pawlby & Caspi (2005) emphasized that the warm, sensitive, stimulating, and responsive care of parents is among the most important elements for building resilience in a child.

Many of the protective factors are expressed in the "7 Cs" model of adolescent resilience: competence, confidence, character, connection, contribution, coping, and control (or self-efficacy) (Barger *et al.*, 2017). Studies generally agree that the perception of emotional and social support may be an important protective factor in the development of resilience, and the absence of this perception regarding teachers and others close to the children was noted as a deficiency and associated with low resilience (Hildebrand, Rubello, Celeri, Morcillo & Zanolli, 2019; Lewis *et al.*, 2021). Bowes, Maughan, Caspi, Moffitt and Arseneault (2010) found that warm family relationships and positive home environments help to buffer children from the negative outcomes associated with bullying. They further argued identifying protective factors promoting resilience to bullying victimization could lead to improved intervention strategies.

Risk and resilience during the pandemic

This study also explores resilience one year into the COVID-19 pandemic. Vinkers, van Amelsvoort, Bisson *et al.* (2020)

emphasized that distress and anxiety are normal reactions to a situation as threatening and unpredictable as the pandemic was. In an earlier study (Forsberg & Thorvaldsen, 2022) we describe the societal situation during the pandemic, with total lockdown for 2 months, followed by almost a full school year with strict infection control measures along with quarantine regulations, that is, the infection measures and regulations severely influenced the daily routines at the schools. There were several long periods of homeschooling, and reduced abilities to interact with friends and peers. The overall findings of this study, that was conducted on the same data set as the present paper, were increased prevalence of bullying and harassment, and mental health difficulties during the pandemic compared to before (Forsberg & Thorvaldsen, 2022).

Risk and resilience during the pandemic in children and adolescents have been explored in several studies. Overall findings are that young people who already had a difficult life situation, for example, low socioeconomic status, lack of social network, a challenging situation at school, and mental health difficulties, had increased risk of more difficulties during the pandemic (Cusinato, Iannattone, Spoto *et al.*, 2020; Prime, Wade & Brown, 2020; Tso, Wong, Tung *et al.*, 2020). Protective factors were caregiver well-being, stable family situation, emotional support, and close relationships to family and friends (Yusuf, Wright, Steinman *et al.*, 2022).

Several researchers have found that cumulative risk of two or more risk factors portends numerous negative outcomes for children (Appleyard, Egeland, van Dulmen & Alan Sroufe, 2005). Cumulative risk approaches examine how risk factors operate in the context of one another to influence the outcomes. However, we have not been able to find resilience studies that have explored the pandemic as a co-occurring additional risk to bullying victimization and harassment.

The purpose of the present study

There is a gap in the empirical literature related to multiple risks and resilience in children and adolescents in various contexts, where more regional aspects are taken into account (Masten, 2014), and the purpose of the present study was to explore resilience and potential protective factors among children and adolescents in North Norway, who had personal experiences with bullying victimization and/or harassment before and during the COVID-19 pandemic. The research aims were as follows:

- Explore prevalence of difficulties and resilience before and during the COVID-19 pandemic.
- Explore what kind of protective factors that were present in the participants who were bullied and/or harassed and stayed resilient, and if the same protective factors continued to be protective factors during the pandemic.

Based on an earlier study we considered the COVID-19 pandemic to be a cumulative risk factor to bullying victimization and harassment (Forsberg & Thorvaldsen, 2022). We hypothesized increased prevalence of difficulties during the pandemic and reduced ability to stay resilient compared to before the pandemic. Based on the literature above, we further

hypothesized that emotional well-being, good relationship to family and friends, and school environment would be protective factors in staying resilient (Bluth *et al.*, 2018; Fritz *et al.*, 2018; Hildebrand *et al.*, 2019; Lewis *et al.*, 2021). We also hypothesized that the impact of the protective factors would be reduced during the COVID-19 pandemic.

METHOD

Project and design

The analysis presented in this paper is a part of the project “Well-being in Tromsø” (WiT) (*Trivsel i Tromsø*) of the Department of Education at The Arctic University of Norway (UiT). WiT collected data on quality of life (QoL), mental health indicators, bullying victimization, and harassment once a year during the period of 2012–2018, and during the pandemic year of 2021. The same schools ($N = 6$) and grades 4–10 (children aged between 9 and 16 years old) participated throughout the project period. Although the WiT project has a longitudinal design, the present study was designed as a repeated cross-sectional study between two data collections.

Participants and procedure

In the present study, we used data collected in the spring of 2017 and 2021, with a total $N = 2,211$. The data set from 2017 included 972 participants (46.5% females) and data set from 2021 included 1,239 participants (46.2% females). The response rates were 65% in 2017 and 85% in 2021.

The procedures were similar in 2017 and 2021, but with some distinctions. We first recruited school leaders to join the study. Thereafter the teaching staff at each school were invited to meetings of 30 min (physical meetings in 2017 and digital meetings in 2021) where the purpose of the study and procedure were presented, and the teachers could ask questions. Further, study information was forwarded to the parents via a digital information channel (Transponder). In 2017, personal information was collected, therefore, we acquired approval by the Regional Ethical Committee for Medical Research, REK-Nord, along with written consent from the parents. In 2021, no personal data were collected, and participation was anonymous, therefore, no ethical approval was required.

The data collections were carried out digitally in the classrooms using Questback (in 2017) and Nettskjema (in 2021). Both Questback and Nettskjema are commercial tools developed for use in a wide range of investigations and have good reputation for data security. However, due to changes in UiT license agreements, Questback was replaced with Nettskjema between the data collections. All questions had to be answered by the participants and hence no “missing data” to handle afterwards. Before the participants filled out the questionnaire they were informed of the purpose of the study and some basic ethical principles in research, that is, that participation was voluntarily, their possibility to withdraw, that all data were protected and only accessible to the researchers. In 2017, this information was provided by the teachers. In 2021, the researchers prepared a short information video where the purpose and ethics were presented. Since data collection was anonymous in 2021, this was also emphasized in the video. The data collections were carried out over a period of 2 months during the spring of 2017 and 2021. The participants, design, and procedure of the data collections are also presented in Forsberg & Thorvaldsen (2022).

Measures

WiT used several measures to collect information about self-perceived bullying victimization and harassment (both traditional and digital), emotional and behavioral difficulties, and the subjective perception of life quality (QoL). The questionnaire contains four self-reporting tools of measurement: (1) SDQ, the strengths and difficulties questionnaire (Goodman, 1997); (2) KINDL, which measures QoL for children and

adolescents (Ravens-Sieberer & Bullinger, 2000); (3) prevalence of traditional and digital bullying; and (4) more specific types of harassment using 22 descriptive events. The measures are also presented in earlier publications in the WiT project (Forsberg & Thorvaldsen, 2022; Thorvaldsen et al., 2016).

Strength and difficulties questionnaire (SDQ). Difficulties and resilience were measured with the SDQ. The SDQ (Goodman, 1997) consists of a 20-item scale on participants total difficulties ($\alpha = 0.80$) that assess emotional problems, conduct problems, hyperactivity, and peer problems. We also used SDQ's five-item scale on prosocial skills ($\alpha = 0.66$). The reliability was above or close to the cut-off of 0.7 for obtaining acceptable reliability for both scales (Cohen, Manion & Morrison, 2018). All items were scored on a three-point Likert scale (0 = *not true*, 1 = *somewhat true*, 2 = *certainly true*). The total difficulties scale was generated by summing scores from its items with results ranging from 0 to 40. In accordance with the SDQ scoring procedure, total difficulty scores were grouped into three categories: "normal" (0–15); "borderline" (16–19); and "clinical" (20–40) (Goodman, 2001). The SDQ prosocial score was used as a protective factor.

SDQ has been a widely used tool since it was developed and several studies have used the SDQ to study resilience in recent years (Fogarty, Woolhouse, Giallo, Wood, Kaufman & Brown, 2019; Hildebrand et al., 2019; Kirby, Wright & Allgar, 2020; Miller-Graff, Scheid, Guzmán & Grein, 2020; Vreeman, Nyandiko, Marete et al., 2019; Young, Craig, Clapham, Banks & Williamson, 2019).

This self-report version of SDQ is tailored for young people aged around 11–17 years old depending on their level of understanding and literacy. Some participants in our study were in their second semester of grade 4, that is, in the year they will reach age 10. A teacher was available when the questionnaire was filled out to help with explaining difficulties in the text.

KINDL. In the context of this study, protective factors are variables that are associated with beneficial emotional and social well-being. KINDL (Ravens-Sieberer & Bullinger, 2000) consist of a 24-item scale ($\alpha = 0.84$) that measures six different dimensions (subscales) of QoL: relationship to family ($\alpha = 0.76$); relationship to friends ($\alpha = 0.74$); relationship to school ($\alpha = 0.64$); experienced emotional well-being ($\alpha = 0.68$); physical health ($\alpha = 0.63$); and self-esteem ($\alpha = 0.75$). Every question ask about the previous week's experiences and is scored on a five-point Likert scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *always*). Ten of the QoL items have reverse-order scaling, meaning a higher item score implies poorer QoL, and these item scores were reversed. Mean item scores were calculated for each of the subscales. Correlations with comparable QoL scales have shown acceptable reliability as well as satisfactory discriminant validity (Jozefiak et al., 2009). KINDL is adapted for participants of different ages, and we applied Kid-KINDL (age between 7 and 13), and Kiddo-KINDL (age 14–17).

Bullying victimization and harassment. Prevalence of bullying victimization was measured with two items from the Olweus bully/victim questionnaire (Olweus, 1996/2006) for traditional bullying (I am being bullied at school and I am being bullied outside of school hours). Further with two items to measure digital bullying by mobile phone or internet (I am being digitally bullied at school day and I am being digitally bullied outside of school hours). These four items employed a five-point Likert scale (1 = *never*, 2 = *only once or twice*, 3 = *two or three times a month*, 4 = *about once per week*, and 5 = *several times a week*). The time frame was set for the past 3 months. The overall bullying score was determined by the *highest* score within the bullying items (traditional or digital). In this way a maximum score of 3 or above will indicate being bullied or not. This is a well-established threshold value used in the literature (Aurora, 1994; Olweus, 1993; Rønning, Handegaard & Sourander, 2004; Smith, Cowie, Olafsson & Liefvooghe, 2002).

Harassment was explored with items for verbal (five items), social (six items), and physical harassment (four items). Further, digital harassment was measured with seven items from Menesini, Nocentini and Calussi (2011). Harassment was measured with the same Likert scale as bullying victimization. All 22 items are presented in the Appendix. The overall

harassment score was determined by the highest score of the harassment items, with the same threshold as for the items for bullying victimization.

Target groups exposed to bullying victimization and harassment. The threshold for being bullied or harassed was set at "two or three times a month" or more often. We measured resilience in the target groups, who have experienced significant bullying victimization or harassment. Given the well-documented adversities related to bullying victimization and harassment (e.g. Allison et al., 2009; Branwhite, 1994), we defined resilience by two steps: (1) The participants that reported repeated bullying or harassment; and (2) SDQ total difficulties within the normal scoring area. Both bullying/harassment and SDQ were measured at the same time point. The participants who did not report being bullied or harassed, and scored SDQ total difficulties within the normal category, were used as a normative "control group." The term normative does not imply that the groups exposed to bullying/harassment are to be considered "not normal."

Data processing and analysis

Data were analyzed in SPSS (Version 28.0, IBM, Armonk, NY, USA). The participants were categorized into three groups – bullied, harassed, and control. Descriptive statistics were used to report the adversity and level of resilience of the groups. Differences in prevalence between groups were tested with a chi-square test. An independent sample *t*-test was conducted in order to examine the differences in the mean score between the groups. Effect sizes were estimated by Cohen's *d*, with conventions: 0.2 = *small effect*, 0.5 = *medium effect*, and 0.8 = *large effect* (Cohen et al., 2018), to express the standardized difference between two means.

We calculated Pearson's correlations between the protective factors (i.e., KINDL subscales and prosocial SDQ subscale) and maladjustment scores for each group. Correlations were screened for significant candidates for a multivariable regression analysis. The strength of the correlations was estimated by Pearson's standard coefficient with conventions: ± 0.1 = *small effect*, ± 0.3 = *medium effect*, and ± 0.5 = *large effect* (Cohen et al., 2018).

Linear regression analysis was conducted with the SDQ total difficulties score as the dependent variable. The KINDL subscales were included as independent variables. This multiple regression analysis examined the variables contributing to the score within the resilient sample. Effect sizes were estimated by the standardized beta coefficients, with conventions: 0–0.1 = *weak effect*, 0.1–0.3 = *modest effect*, 0.3–0.5 = *moderate effect*, and >0.5 = *strong effect* (Cohen et al., 2018).

We did not make corrections of the significance level because of multiple testing. Retrospective power analyses were performed with the convention of using 0.80 or higher as a standard for acceptability.

RESULTS

Participants and groups

The participants who matched the criteria for the target group of the resilience inquiry (harassed/bullied) are presented in the gray area of Table 1. Most of the participants who reported they were being bullied also reported harassment, as indicated by the overlap column between harassed and bullied of the table. In 2017, a small group of 16 (= 79–63) participants report bullying without any specific form of harassment, and in 2021 this was the case for 14 (= 148–134) participants. Hence, we observe that the participants reporting being harassed or bullied amount to 237 in 2017, and 397 in 2021 (cf. the harassed/bullied groups in Table 2).

Prevalence of difficulties

The SDQ difficulty scores for the target and non-target groups are presented in Table 3. There were large differences in the means

Table 1. Overview of the sample in the target groups of harassed and bullied participants (grey area) where “Non-target” shows the complementary group outside the target

	Total sample	Non-target	Harassed	Bullied	Overlap
2017	972	735 (75.6%)	221 (22.7%)	79 (8.1%)	63 (6.5%)
2021	1,239	842 (68.0%)	383 (30.9%)	148 (11.9%)	134 (10.8%)

Note: The non-target refers to the participants not reporting being harassed or bullied. The Overlap refers to the participants reporting both harassment and bullying.

Table 2. An overview of the frequency distribution in the SDQ areas

	Normal	Borderline	Clinical
2017 Non-target (N = 735)	698 (95.0%)	19 (2.6%)	18 (2.4%)
Harassed/bullied (N = 237)	183 (77.2%)	32 (13.5%)	22 (9.3%)
2021 Non-target (N = 842)	726 (86.2%)	64 (7.6%)	52 (6.2%)
Harassed/bullied (N = 397)	245 (61.7%)	82 (20.7%)	70 (17.6%)

Notes: ‘SDQ Normal’ (0–15), ‘SDQ Borderline’ (16–19), and ‘SDQ Clinical’ (20–40). Bold statistic shows the groups compared in the subsequent tables.

Table 3. Level of SDQ total difficulties between the non-target and the target groups of Table 1

	Non-target M (SD)	Harassed M (SD)	Bullied M (SD)	p	d
2017	7.4 (4.7)	11.8 (5.7)	13.5 (5.9)	<0.001	0.85/1.15
2021	10.0 (5.4)	14.2 (6.0)	15.7 (6.9)	<0.001	0.74/0.93

between the bullied and the non-target groups ($d = 1.15$ in 2017, and 0.93 in 2021) ($p < 0.001$). The differences in means between the harassed and non-target group were also large, but somewhat smaller ($d = 0.85$ in 2017, and 0.74 in 2021) ($p < 0.001$). The mean score for all groups was within the SDQ normal area (0–15), except for the bullied group in the pandemic year who scored 15.7, which is right above the range for normal area.

Prevalence of resilience

Given the high overlap in Table 1 between the target groups (harassed/bullied), the groups were merged in the subsequent

analysis. An overview of the frequency distribution between the SDQ areas, grouped as normal, borderline, and clinical, for both the target groups (harassed/bullied) and non-target groups for each year are presented in Table 2. As indicated by the SDQ normal area, 77.2% of the participants stayed in the normal range in 2017 when faced with bullying or harassment. This number dropped to 61.7% in 2021. For the Non-target groups, the percentage were 95.0% and 86.2%, respectively. In the SDQ clinical area, the percentages were 9.3% in 2017 and 17.6% in 2021 for the target groups, and 2.4% and 6.2% for the non-target groups, respectively. In 2021, the participants were more likely to report SDQ in borderline or clinical range than in 2017.

There was a significant difference between incidences of SDQ total difficulties (Table 2) in 2017 and 2021 for the harassed/bullied groups, $X^2(2, N = 634) = 16.6, p < 0.001$; and also for the non-target groups, $X^2(2, N = 1,577) = 34.4, p < 0.001$.

In the subsequent analysis, we omitted the group who scored in the SDQ borderline area while only comparing SDQ normal area group (resilient) with the SDQ clinical area group (non-resilient). By this procedure of extreme case sampling (Cohen et al., 2018) we create two deviant groups that are marked with boldface in Table 2. As the normative Control group, we apply the non-target groups with participants who scored in the SDQ normal area, also marked with boldface in the same table.

Protective factors

As shown in Tables 4 and 5, there were no significant differences in the SDQ prosocial score factor between the resilient and non-resilient participants in the harassed/bullied target groups. But SDQ total difficulties were significantly associated with all QoL factors among the participants, both in 2017 and 2021, mainly with large effect sizes. Still, the control group compared with the

Table 4. Comparing potential protective factors for non-resilient, resilient, and control participants in 2017

Protective factors	Harassed/bullied (N = 205)				Control group (N = 698)		
	Non-resilient (N = 22) Mean (SD)	Resilient (N = 183) Mean (SD)	p	d	Mean (SD)	p	d
SDQ Prosocial	2.47 (0.37)	2.54 (0.40)	0.23	0.17	2.65 (0.34)	<0.001	-0.31
KINDL – Family	3.67 (0.81)	4.05 (0.51)	<0.01	0.69	4.36 (0.51)	<0.001	-0.61
KINDL – Friends	3.06 (0.82)	3.94 (0.66)	<0.001	1.30	4.25 (0.57)	<0.001	-0.54
KINDL – School	2.57 (0.55)	3.65 (0.69)	<0.001	1.59	3.89 (0.63)	<0.001	-0.38
KINDL – Emotional w-b	3.03 (0.88)	3.97 (0.56)	<0.001	1.55	4.28 (0.50)	<0.001	-0.60
KINDL – Physical w-b	2.86 (0.84)	3.56 (0.75)	<0.001	0.92	3.90 (0.65)	<0.001	-0.51
KINDL – Self-esteem	2.89 (1.04)	3.60 (0.77)	<0.001	1.00	3.84 (0.73)	<0.001	-0.33

Note: The p-values from the t-tests, and Cohens’ d-values, are run between the non-resilient and resilient groups (columns 4 and 5), and the resilient and control groups (columns 7 and 8).

Table 5. Comparing potential protective factors for non-resilient, resilient, and control participants in 2021

Protective factors	Harassed/bullied (N = 315)				Control group (N = 726)		
	Non-resilient (N = 70) Mean (SD)	Resilient (N = 245) Mean (SD)	p	d	Mean (SD)	p	d
SDQ Prosocial	2.55 (0.34)	2.49 (0.43)	0.29	-0.14	2.52 (0.39)	0.31	-0.08
KINDL – Family	3.38 (0.70)	4.09 (0.65)	<0.001	1.07	4.28 (0.63)	<0.001	-0.31
KINDL – Friends	3.03 (0.80)	3.80 (0.64)	<0.001	1.14	4.01 (0.61)	<0.001	-0.33
KINDL – School	2.85 (0.82)	3.58 (0.70)	<0.001	1.02	3.73 (0.68)	<0.05	-0.21
KINDL – Emotional w-b	2.86 (0.80)	3.79 (0.66)	<0.001	1.35	4.00 (0.59)	<0.001	-0.35
KINDL – Physical w-b	2.84 (0.69)	3.66 (0.66)	<0.001	1.22	3.82 (0.63)	<0.001	-0.26
KINDL – Self-esteem	2.51 (0.97)	3.49 (0.85)	<0.001	1.12	3.55 (0.83)	0.35	-0.07

Note: The *p*-values from the *t*-tests, and Cohens' *d*-values, are run between the non-resilient and resilient groups (columns 4 and 5), and the resilient and control groups (columns 7 and 8).

resilient group reported even higher means in all QoL categories, except KINDL self-esteem in the 2021 sample. However, this was with mainly small to medium effect sizes. SDQ prosocial scores also had a significantly higher mean score for the control group in 2017 (but not in 2021) in comparison to the resilient group.

Correlations between QoL and SDQ total difficulties in resilient and non-resilient participants. There was a negative correlation between all QoL factors and SDQ total difficulties across all three groups (non-resilient, resilient and control) in both 2017 and 2021, as shown in Table 6. This observation provides indication of the general relevance of protective factors to SDQ total difficulties. For the non-resilient participants, the correlation was significant for *KINDL Emotional w-b* in 2017 and for *KINDL Friends, School, Emotional w-b and Physical w-b* in 2021. For the resilient group, all correlations were significant except SDQ prosocial in 2021. For the control group, all correlations were significant. *KINDL School* had a large correlation ($r = -0.515$) for the resilient participants in 2017 but dropped to medium sized $r = -0.395$ in the pandemic year of school lockdown in 2021. *KINDL Emotional w-b* stayed more stable ($r = -0.461$ versus -0.451) between the two data sets. *KINDL Friends* had a medium correlation ($r = -0.456$) in the 2017 sample but lowered to -0.277 in the pandemic. However, for the non-resilient participants, *KINDL Physical w-b* changed the opposite way in the two samples, from $r = -0.198$ in 2017 to -0.392 in 2021.

This may be understood as reduced physical stress because of less contact with stressful persons during the lockdown.

Regression models. Multiple regressions were conducted in order to predict the SDQ total difficulties scores of the resilient participants based on the KINDL categories as independent variables. Adjusted R^2 values for the multiple regression model were 0.38 in 2017 and 0.26 in 2021, which tells us that 38 and 26% of variation in the output variable (SDQ total difficulties) can be explained by the predictors in the models. The regression models therefore have a large explanatory power in 2017 (Cohen *et al.*, 2018), although it dropped towards medium power during the pandemic. *KINDL School* was a significant predictor with moderate to modest effect in 2017 and 2021, while *KINDL Emotional w-b* was a significant predictor of modest size in both 2017 and 2021. *KINDL Friends* was observed to be significant with modest effect in 2017 but was not observed as significant predictor during the pandemic. The results of the multiple regression are presented in Table 7.

DISCUSSION

This present study aimed to explore resilience and protective factors among children and adolescents in North Norway who had personal experiences with bullying victimization or harassment from peers before and during the COVID-19 pandemic.

Table 6. Correlations between potential protective factors and SDQ total difficulties in non-resilient, resilient, and control participants for 2017 and 2021

Protective factors	Harassed/bullied				Control group	
	Non-resilient		Resilient		2017	2021
	2017	2021	2017	2021		
SDQ Prosocial score	-0.195	-0.098	-0.245**	-0.068	-0.273**	-0.248**
KINDL – Family	-0.227	-0.226	-0.255**	-0.203**	-0.380**	-0.308**
KINDL – Friends	-0.346	-0.315**	-0.456**	-0.277**	-0.411**	-0.428**
KINDL – School	-0.145	-0.312**	-0.515**	-0.395**	-0.491**	-0.484**
KINDL – Emotional w-b	-0.429*	-0.381*	-0.461**	-0.451**	-0.434**	-0.473**
KINDL – Physical w-b	-0.198	-0.392**	-0.393**	-0.348**	-0.385**	-0.373**
KINDL – Self-esteem	-0.247	-0.151	-0.393**	-0.285**	-0.343**	-0.387**

Notes: Bold statistic shows the highest correlations ($r < -0.4$) for the resilient group.

* $p < 0.05$,

** $p < 0.01$.

Table 7. Results from multiple regression analysis of SDQ total difficulties for the resilient groups in 2017 and 2021

Resilient groups	2017 $R^2 = 0.38$		2021 $R^2 = 0.26$	
	β	p	β	p
KINDL – Family	–0.090	0.14	0.012	0.85
KINDL – Friends	–0.147	0.02	–0.092	0.14
KINDL – School	–0.327	<0.001	–0.215	<0.001
KINDL – Emotional w-b	–0.197	0.01	–0.271	<0.001
KINDL – Physical w-b	–0.096	0.17	–0.095	0.16
KINDL – Self-esteem	–0.004	0.96	–0.045	0.48

Note: R^2 is the adjusted model fit for each model.

Resilience was based on the SDQ total difficulties scores which have been used to study resilience in several studies in the last few years (Fogarty *et al.*, 2019; Hildebrand *et al.*, 2019; Kirby *et al.*, 2020; Miller-Graff *et al.*, 2020; Vreeman *et al.*, 2019; Young *et al.*, 2019). Some studies, on the other hand, argue that although low difficulties scores can be an indicator of resilience it is not necessarily the case. Maladjustment can also be the risk factor that leads to adversity and victimization. However, high quality longitudinal studies support the conclusion that social difficulties, behavioral problems, and aggression, are consequence rather than a cause of being bullied (Le, Tran, Campbell, Gattton, Nguyen & Dunne, 2019; Shen, Xiao, Su, Tam & Lin, 2023).

Prevalence of difficulties and resilience

This study found significantly increased prevalence in difficulties for all participants (bullied, harassed and non-target group) in 2021 compared to 2017, which is a result that is also displayed in Forsberg & Thorvaldsen (2022). This is in line with findings from several other studies that have explored prevalence in difficulties during the pandemic, that is, reduced quality of life, higher anxiety levels, more depression symptoms, loneliness, and behavioral problems already after the first three months of the pandemic (Cooper, Hards, Moltrecht *et al.*, 2021; Hafstad, Sætren, Wentzel-Larsen & Augusti, 2021; Luijten, van Muilekom, Teela *et al.*, 2021; Ravens-Sieberer, Erhart, Devine *et al.*, 2022).

Most of the participants in this study displayed a SDQ total difficulties score within the normal area, that is, they were considered to be resilient. In 2017 9.3% scored within the clinical area, which was an expected prevalence for this sample (Goodman, 2001). During the pandemic the scoring within the clinical area significantly increased to 17.6%. The “double burden” of the pandemic and being bullied/harassed is a plausible explanation of the increased difficulties in 2021 (Ravens-Sieberer *et al.*, 2022; von Soest, Kozák, Rodríguez-Cano *et al.*, 2022; Forsberg & Thorvaldsen, 2022). The results from the present study are also well in line with the systematic reviews from Gartland, Riggs, Muyeen *et al.* (2019) and King, Jolicœur-Martineau, Laplante, Szekely, Levitan & Wazana (2021). However, some variation in proportion is displayed in other studies. A pre pandemic study of a population-based sample (aged 11 to 17 years old) from Australia displayed 10.2% within the clinical area (Lawrence, Johnson, Hafekost *et al.*, 2015), and another study from Young *et al.* (2019) found 16%. The results

from these studies emphasize the importance of exploring risk and resilience in various contexts.

Most of the participants demonstrated resilience (77.2%) when subjected to bullying victimization and harassment in 2017, which was reduced to 61.7% in 2021. The prevalence from 2017 was similar to results from a study from Australia, which found 73% resilience among adolescents (Young *et al.*, 2019). To our knowledge resilience in the presence of bullying victimization and harassment during the pandemic has not been explored in other studies.

Protective factors

All the KINDL well-being variables that were included in this study were negatively correlated with SDQ total difficulties which strengthen the theory that the well-being variables possibly contribute as protective factors. The regression analysis revealed friends, school, and emotional well-being as the most significant factors that lowered SDQ total difficulties in the resilient groups. The contribution from school decreased somewhat during the pandemic, while the impact of emotional well-being increased. Friends did not predict resilience during the pandemic. This may be due to the social distance restrictions and other strict regulations for schools (Forsberg & Thorvaldsen, 2022).

In response to the research aim, participants who experienced a better school environment, more emotional well-being, and have good relationships with friends, are more resilient and have an easier time overcoming challenges. This is consistent with previous research (Hildebrand *et al.*, 2019; Lewis *et al.*, 2021). In line with several earlier studies, this study emphasizes that resilience is associated with social support (Hildebrand *et al.*, 2019; Hopkins, Zubrick & Taylor, 2014; Luthar, Cicchetti & Becker, 2000; Masten, 1994; Orthner, Jones-Sanpei & Williamson, 2004; Pinkerton & Dolan, 2007). Thus, the participants who are more competent to regulate emotional distress (i.e., after experiences with bullying or harassment) and experience support at school and from friends have reduced sense of troubles. They are *weathering the storm*.

Interestingly, research concerning prevention of bullying itself reveals some of the same protective factors as in the present study. School, family, peer, and individual factors are identified as providing important protection against bullying and cyberbullying (Zych, Farrington & Ttofi, 2019). It is plausible that higher school attendance increases resilience by means of regular socialization with peers. Familial environments encouraging children and adolescents to regularly attend school may also be indicative of other factors that build resilience. In line with this, it is evident that support and encouragement from school staff members is one of the most important factors associated with school connectedness and belonging (Castro-Olivo, Tran, Begum, Arellano, Garcia & Tung, 2013).

Limitations of this study and future research

This study reports novel results with implications for children and adolescents in Tromsø and other similar districts of Norway. While showing a range of factors associated with resilience, there are some limitations related to this study, leaving opportunities for future research.

The generalizability of this study is limited by the geographical location of the sample. All the schools are in the City of Tromsø in the northern region of Norway. This lack of diversity in the sample does not allow results to be generalized for the entire Norwegian or Nordic population. It should also be acknowledged that all the measures in this study are self-reported and thus may be subject to respondent bias. Additionally, as the questionnaire was administered in a classroom setting, peer effects may be present in the participant responses. However, self-report may be the most reliable source when it comes to reporting on students' own experiences and feelings.

There may be shortcomings in using the SDQ to study resilience as the interpretation of resilience in the current study is defined as the reduction of dysfunction or difficulties and does not recognize several other of the dynamic processes behind resilience. More dynamic processes would involve measures of positive adjustment rather than the absence of mental or behavioral problems. This involves measures of positive adjustment rather than the absence of mental or behavioral problems (Gartland *et al.*, 2019; King *et al.*, 2021). The short six-item brief resilience scale (Smith, Dalen, Wiggins, Tooley, Christopher & Bernard, 2008) describes resilience as the ability to bounce back or recover from stress, trouble, etc. However, there are limitations to such an approach as well concerning the concrete assessment of resilience, because it is a complex phenomenon, and could be more precisely investigated with other methods. READ (Hjemdal, Friborg, Stiles, Martinussen & Rosenvinge, 2006) is a scale with positively formulated items organized in five subscales (personal competence, social competence, social support, family cohesion, and structured style), to some degree like KINDL. Another example of a resilience measurement scale is CYRM-R, which is a questionnaire designed especially for resilience research across countries and cultures (Renbarger, Padgett, Cowden *et al.*, 2020). Here, for example, religion/spiritual belief is noted in the questionnaire as a possible factor fostering resilience (Miller & Gur, 2002; Pearce, Jones, Schwab-Stone & Ruchkin, 2003).

Some of the results in the present study may partly be explained by a certain conceptual overlap between the items used in the SDQ and KINDL (e.g., both ask about physical symptoms), and this overlap may be curtailed by reducing the number of items in the SDQ. However, the concepts involved in the present analysis are not considered to be independent and distinct from one another, and some overlap is therefore unavoidable.

There is a risk for some of the statistical analyses to be underpowered to detect significant results, and we performed a simple power analysis retrospectively. The data from 2017 in Table 4 is unbalanced ($N = 22$ versus $N = 183$), and the test power to detect medium effects with 0.05 significance was found low (0.60). However, the power of the 2021 dataset was strong (0.96). Also, a power analysis of the correlations in Table 6 between protective factors and maladjustment showed that there was not enough power to detect any medium effects in the *non-resilient* groups (0.27 for the 2017 data, and 0.70 for the 2021 data). Hence, it is possible that these analyses missed some real associations, but there are no main conclusions made from these groups. There is only a minor risk for the resilient group in 2017 to be underpowered (0.87).

The study was designed as a repeated cross-sectional study and causality cannot be inferred with confidence due to the possibility of bidirectional effects. By applying our extended longitudinal data collection some opportunities to investigate causal pathways are available (Egeberg *et al.*, 2019). Furthermore, including longitudinal methods has the potential to identify protective factors contributing to the development of resilience in the long-term, as well as to identify adolescents who may experience the greatest benefit from prevention and intervention programs. To introduce the risk status in a better way, that is, the level of adversity, may also provide a deeper understanding of resilience.

Exploring the differences between the children and the adolescent groups were not a part of the present study. It would be interesting to assess age and gender differences as in bullying victimization research (Smith *et al.*, 2002). Wille, Bettge, Ravens-Sieberer and BELLA Study Group (2008) also reference such differences regarding protective factors.

CONCLUSIONS

This study found that most of the participants who were subjected to bullying victimization or harassment remained resilient (77%), but this was reduced (62%) during the pandemic. An increased prevalence within the SDQ clinical area was observed for all groups (exposed to adversity or not) during the pandemic, compared to before.

This study also investigated what kind of protective factors that were present in participants that were exposed to bullying victimization and harassment. The findings were that school, emotional and physical well-being, friends, family, and a perception of good self-esteem were factors significantly associated with resilience. School environment, emotional well-being, and good relationships with friends were found to be the most significant predictors of resilience. School environment and emotional well-being continued to be protective factors during the pandemic, but the strength was somewhat reduced for school and increased for emotional well-being. Friends was not found as a significant predictor for resilience during the pandemic.

The present paper may give some perspectives and guidelines on how children and adolescents can cope with upcoming adversities of their future. Despite some hard struggles, most young people are able to thrive, as we have witnessed.

Implications of this study

In the Norwegian context, the schools facilitate children and adolescents' socio-emotional development fostering their resilience. Schools represent a miniature society, although providing exposure to risk of bullying victimization, also represent a buffer against negative outcomes and thus promote resilience among those children who are at risk. A greater understanding of resilience factors will enhance the opportunities for support and preventive measures. As it is common to experience adversity at some stage in life, it is vital for families, schools, social and healthcare workers to be aware of the factors associated with resilience. The results of this study may contribute towards an evidence base for developing plans to increase the capacity of resilience among young people.

To enhance emotional well-being and other factors associated with resilience, the Norwegian Directorate of Education has updated the school curricula and added a new subject called “Public health and life-mastery” (*Folkehelse og livsmestring*) (Utdanningsdirektoratet, 2020). Partly, this subject was made mandatory to satisfy the political focus on well-being among children and adolescents and to prevent and possibly reverse the increasing statistics in mental health difficulties that has been observed over the last decade (Bakken, 2021). The National Institute of Public Health in Norway regards schools as a good environment in which to assess the prevention of maladaptation during adversities of life (e.g., bullying victimization); as an endeavor to increase the health of the coming generation (Madsen, 2020) – in other words, fostering resilience through the facilitation of protective factors in the schools (Danielsen, 2021).

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CONFLICT OF INTEREST STATEMENT

The authors declare no competing interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS APPROVAL STATEMENT

This study was conducted according to the principles of the Declaration of Helsinki. Written information about the project was provided to the students and parents, and they gave consent for their children to participate. Both the students and parents were able to withdraw consent at any time and require collected data to be deleted. Ethical approval to conduct this study was obtained from the Regional Ethical Committee for Medical Research, REK-Nord (2011/2496). Data collection 2017: Personal information was collected; However, no personal data from the data collection in 2017 was included in this study. Data collection 2021: No personal data were collected; therefore, no ethical approval was required.

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APPENDIX

MEASURING BULLYING AND HARASSMENT

Experiences of being bullied as introduced for the participants:

Pupils may experience mean or hurtful things. Such bullying can be verbal (e.g., name-calling, threats), to your body (e.g., hitting) or otherwise (rumors, banning someone). Answer how you have been in the last 2–3 months.

Bullying:

How often have you been bullied at school?

How often have you been bullied outside of school hours?

Digital bullying happens with mobile phones or the internet when someone is teased, or if someone puts things online that you don't like. Answer how you have been in the last 2–3 months.

How often have you been digitally bullied at school?

How often have you been digitally bullied outside of school hours?

Special experiences of being harassed.

How often have you been harassed in these ways:

Physical aggression

Tried to kick me

Threatened me

Tried to trip me up

Tried to hit me

Verbal harassment

Called me names

Teased me about my family

Teased me because I am different

Teased me

Tried to hurt me

Social manipulation

Ganged up on me

Tried to make me hurt other people

Tried to get me into trouble

Made me do something I didn't want to

Threatened to tell on me

Told a lie about me

Digital harassment

Sent me creepy or unpleasant messages, pictures, or videos on the phone

Creepy or unpleasant calls on my phone

Sent me frightening e-mails

Teased or insulted me on social media

Teased or insulted me when playing digital games

Someone sharing unpleasant pictures or videos of me on social media

Blocked me from Facebook groups or other online groups that I wanted to join

The items on harassment were presented in a different order than listed above. Both the bullying and the harassment items employed a five-point Likert scale (1 = 'never', 2 = 'only once or twice', 3 = 'two or three times per month', 4 = 'about once per week', and 5 = 'several times per week').

The final score of the bullying variables was determined by the maximum value of the four bullying items. Similarly, the final harassment variable was computed by the maximum score of the 22 harassment items. The threshold for being bullied or harassed was set at "two or three times a month" or more often. This is a well-established threshold value used in the literature (Aurora, 1994; Olweus, 1993; Rønning *et al.*, 2004; Smith *et al.*, 2002).