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Bullying among people with visual impairment: Prevalence, associated factors and relationship to self-efficacy and life satisfaction

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Abstract

AIM

To examine associated factors of bullying and to determine associations between bullying and psychosocial outcomes among individuals with visual impairments (VI).

METHODS

We conducted an age-stratified cross-sectional survey of adults with VI who were recruited from the Norwegian Association of the Blind and Partially Sighted. Data were collected through structural telephone interviews in the period between February and May, 2017. Linear regression models were used to examine factors related to bullying and associations of bullying with self-efficacy and life satisfaction.

RESULTS

A total of 736 individuals were interviewed. The lifetime and 6-mo prevalence of bullying was 41.7% and 8.2%, respectively. The majority of bullied participants reported VI-specific bullying (65.1%). Victimization of bullying was associated with young age, early onset-age of VI, and having other impairments. Participants who reported bullying had lower levels of self-efficacy [Adjusted relative risk (ARR): 0.40, 95% confidence interval (CI): 0.19-0.85] and life satisfaction (ARR: 0.68, 95%CI: 0.51-0.91).

CONCLUSION

Bullying is highly prevalent among individuals with VI. Our findings suggest that interventions to reduce bullying may be beneficial for improving the well-being and life quality of people with VI.

Key words: Blindness; Bullying; Life satisfaction; Risk factors; Self-efficacy; Victim; Visual impairment

Core tip: People with impairments are at risk of social exclusion. A high rate of bullying of people with visual impairment (VI) demonstrates how deviations from the social norm can lead to sanctions from the environment. The more different, the higher the risk of bullying, illustrated by the fact that people with functional impairments in addition to VI were even more prone to bullying. For those who are victimized, the consequences may be serious in terms of lower self-esteem and lower quality of life. A continuous focus on bullying is necessary to protect people with VI from bullying.

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INTRODUCTION

Bullying represents an extreme form of systematic and enduring social alienation which is assumed to exceed the boundaries of other forms of interpersonal aggression such as incivility, social undermining, and verbal abuse[1]. Formally, bullying is defined as a situation in which one or several individuals persistently and over a period of time, perceives to be on the receiving end of negative actions from another person and where the target of the bullying finds it difficult to defend him/herself against these actions[2]. Although there is no definitive list of bullying behaviors, bullying may involve actions like harmful physical contact, verbal harassment, rumour spreading, and intentionally excluding a person from a group[3]. In many cases, it is the accumulated exposure that constitutes the threat, not the specific behaviours.

Research on bullying has mainly been conducted in school and working life. Based on data from a large cross-national study, the percentage of 11 to 15 year old children who reported bullying at least once in the past 2 mo was 29%, ranging from 8% to 60% across the European countries[4]. Research on bullying among adults has mainly been restricted to working life. A meta-analysis on the occurrence of workplace bullying showed that 11% to 18% of employees on a global basis perceived themselves as victims of bullying[5]. Depending on measurement method, a 6-mo prevalence between 2% and 14% has been established among a representative sample of Norwegian employees[6]. As most studies on prevalence have examined bullying within a six to 12 mo timeframe, there is a shortage of studies on lifetime prevalence of bullying.

Bullying may have considerable impact on the health and well-being for those being affected, including a higher risk of anxiety[7-9], depression[8,9], suicidal ideation[9,10], headache[9,11], and sleep problems[9,12,13]. In a meta-analysis it was found that exposure to bullying predicted subsequent increase in mental health complaints (OR = 1.68; 95%CI: 1.35-2.09) and somatic complaints (OR = 1.77; 95%CI: 1.41-2.22) after adjusting for baseline health status[14]. Insufficient evidence exists of bullying in its association with life satisfaction and psychosocial functions like self-esteem[7,9,15].

Persons with impairments, such as visual impairment (VI), are more likely to be seen as different and of lower social rank by peers, and therefore become trapped into an ongoing victimization of bullying. In a meta-analysis of 7 studies involving people with VI, Pinquart[16] showed that children with VI had an 80% greater risk of experiencing peer victimization compared with sighted children. However, VI is a heterogeneous condition in terms of cause, onset-age, and progression rate of the vision loss[17], and is usually classified into moderate VI, severe VI, blindness, and unspecific VI[18]. Since the previous studies have assessed only a few VI-related (*e.g.*, wearing eye patches) and non-VI related factors[19-21], more research is needed to determine whether some forms of VI are more strongly associated with bullying than others.

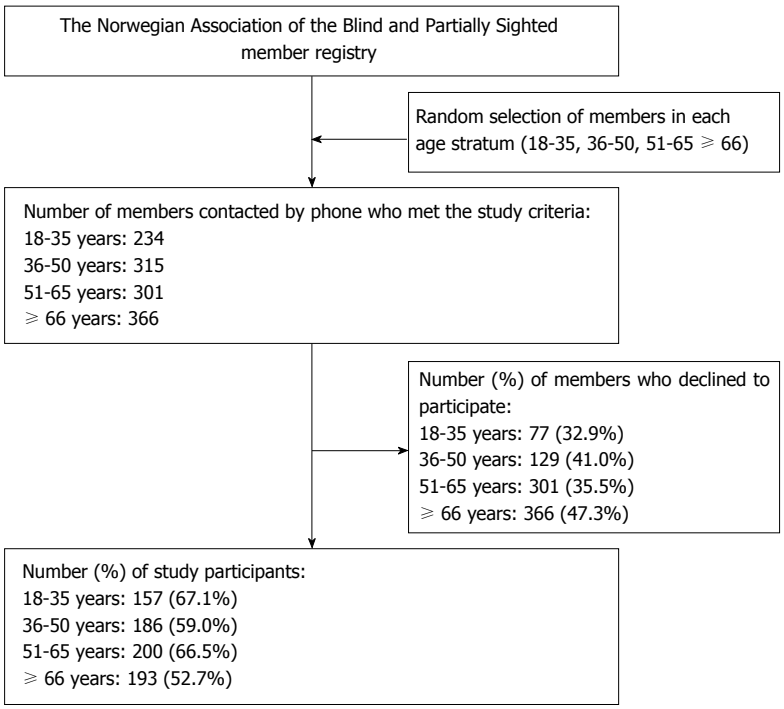

Figure 1 Selection of study participants.

To our knowledge, the possible consequences of bullying among people with Ⅵ have been assessed in two studies[21,22], and both studies included convenience samples of children or adolescents. Consequently, the impact of bullying on the health and functioning in adult life remains to be studied. In order to add to the current knowledge, this cross-sectional study examined prevalence, associated factors, and psychosocial outcomes of bullying using a large age-stratified, probability sample of adults with Ⅵ. The study had the following three aims: (1) To study the prevalence of bullying; (2) to describe demographic and visual factors associated with lifetime bullying; and (3) to examine the association of lifetime bullying with self-efficacy and life satisfaction.

MATERIALS AND METHODS

Ethical considerations

The study was carried out anonymously and at request the Regional Committee for Medical and Health Research Ethics required no further formal ethical approval (Reference number: 2016/1615A). All participants gave their informed consent for taking part in the study. Study participation was voluntarily, and the participants were informed that they could withdraw from the study at any time.

Design and participants

This cross-sectional observational study included a sample of adults who were members of the Norwegian Association of the Blind and Partially Sighted. The organization has about 10000 members[23], which comprise 0.2% of the Norwegian population. Adults were eligible if they were aged ⩾ 18 years and reporting a degree of Ⅵ. Data were collected *via* telephone interviews in the period between February and May, 2017. The interviews were carried out by experienced interviewers hired at a private survey company. The structured interview guide included questions about the participants' sociodemographic characteristics, type and nature of Ⅵ, bullying, and various aspects of quality of life. To ensure inclusion of participants at all age groups, a random sampling technique was performed within each of the following age strata: 18-35, 36-50, 51-65, and ⩾ 66. A total of 1216 adults with Ⅵ were contacted, and 736 (61%) participated by completing the interview. The response rate for each age group is displayed in Figure 1.

Assessment and evaluation

Bullying: Victimization from bullying was assessed by a single-item question retrieved from the General Nordic Questionnaire for Psychological and Social Factors at Work[24]. This self-labelling approach has been considered a valid measurement of bullying[25]. Before being presented to the question, the following definition of bullying were given to the participant: "To label something bullying or harassment, the offensive behaviour has to occur repeatedly over a period of time, and the person confronted has to experience difficulties defending himself/herself." Lifetime bullying was assessed through asking the participants whether they have been subjected to any bullying or harassment. The response alternatives were "yes" and "no". Those who responded "yes" to the question about

bullying were then asked to report whether they had been victims to bullying in the past 6 mo and whether the bullying was targeted towards their VI.

Self-efficacy: The participants' general perception of self-efficacy was measured by the General Self Efficacy Scale (GSE scale). The Norwegian version of the GSE scale has been shown to have a high test-retest reliability (r = 0.82) and acceptable correlations with life satisfaction (r = 0.26) and positive affect (r = 0.40)[26]. The scale consists of 10 statements about the participant's belief in one's ability to adequately respond to novel or challenging situations and to cope with a variety of stressors, and is scored on a 4-point Likert scale from 1 (not at all true) to 4 (exactly true). A sum score was calculated based on all 10 items, with higher scores representing greater self-efficacy. The sum score was treated as an untransformed continuous variable in our main analyses. The GSE scale had a Chronbach's alpha of 0.89.

Life satisfaction: Cantril's Ladder of Life Satisfaction (CLLS) was used to measure current life satisfaction[27]. The participants were asked to imagine themselves a ladder with 10 steps, of which the bottom of the ladder represented the worst possible life for them (a score of 0) and the top of the ladder represented the best possible life for them (a score of 10). Life satisfaction was treated as an untransformed continuous variable in the main analyses.

Covariates: The following covariates were identified as relevant in the current study: Gender, age (18-35, 36-50, 51-65, ≥ 66), current education level (< 10 years, 10-13 years, ≥ 14 years), marital status (single, married/partner, former married/partner), parental ethnicity (Norwegian, non-Norwegian), working or studying (no, yes, retired), urbanicity (< 50000 inhabitants, ≥ 50000 inhabitants), having other impairments (no, yes), severity of VI (moderate VI or other types of VI, severe VI, blindness), onset-age of VI (since birth, 1-24 years, ≥ 25 years), and VI stability (progressive, stable).

Statistical analysis

We tabulated lifetime and 6-mo prevalence of bullying with corresponding 95% binomial confidence intervals (CIs). Associated demographic and visual factors of past bullying experiences were assessed by using generalized linear models (GLMs) with a binomial distribution and log-link function. We selected a few important covariates prior to the analyses (age, gender, and severity of VI), as well as covariates having the best fit to the data in terms of Akaike's Information Criterion[28].

GLMs with a Gaussian distribution and identity-link function were used to estimate mean scores of self-efficacy and life satisfaction among individuals who had experienced bullying compared with the referent category of individuals not being bullied. The choice of distribution was determined by searching for the model that fitted the data best in terms of log-likelihood. The selection of possible confounding factors was based on previous publications and a priori reasoning[12,16,19,21,29-31]. In order to produce better confidence limits[28], we bootstrapped the CI estimates with 10000 replacements and a variance adjustment of 1.

A supplementary analysis was conducted of the association between bullying and self-efficacy and life satisfaction by using binomial GLM in order to check whether the choice of statistical model influenced our findings. In this analysis, all outcomes were dichotomized by its median value.

All regression analyses were either univariable or multivariable. The results were presented in terms of relative risks (RRs) and corresponding 95%CIs. The significance level was set at P = 0.05. The statistical analyses were carried out using Stata Version 14 (Stata Corp., Texas, United States).

RESULTS

Table 1 shows the characteristics of the study population. The lifetime prevalence of bullying was 41.7% (95%CI: 38.1-45.3) and the 6-mo prevalence of bullying was 8.2% (95%CI: 6.3-10.4). The majority of participants being bullied reported that the bullying experience was partly or completely related to their visual impairment (65.1%).

Associated factors of previous bullying experiences are presented in Table 2. In the univariable analyses, a significantly higher risk of bullying was found among participants with a lower age, having other impairments, having severe VI or blindness, and the onset of VI occurring early in life. All covariates, except for VI severity and residence, remained statistically significant in the multivariable models. The two strongest associated factors were lower age and early onset-age of VI. Bullying was not related to gender, parental ethnicity, or VI stability.

As shown in Table 3, compared with those not being bullied, individuals with past experiences of bullying had significantly lower scores on self-efficacy and life satisfaction. The strength of the associations remained fairly similar after adjusting for gender, age, current education level, working or studying, other impairments, marital status, severity of VI. The findings from the supplementary analysis showed that the association of bullying with self-esteem and life satisfaction became weaker, but remained statistically significant, in the binomial GLMs compared with the Gaussian GLMs (results not shown).

DISCUSSION

Key findings

Data from this cross-sectional study showed that four

Table 1 Study characteristics (n = 736)

Characteristics	n (%)
Age (yr)	
18-35	157 (21.3)
36-50	186 (25.3)
51-65	200 (27.2)
⩾ 66	193 (26.2)
Gender	
Male	333 (45.2)
Female	403 (54.8)
Marital status	
Single	260 (35.3)
Married/partner	347 (47.2)
Former married/partner	129 (17.5)
Working or studying	
No	248 (33.7)
Yes	295 (40.1)
Retired	193 (26.2)
Urbanicity	
< 50000 inhabitants	400 (54.4)
⩾ 50000 inhabitants	336 (45.7)
Parental ethnicity	
Norwegian	645 (87.6)
Non-Norwegian	91 (12.4)
Education	
< 10 yr	115 (15.6)
10-13 yr	286 (38.9)
⩾ 14 yr	335 (45.5)
Age at VI onset	
Since birth	329 (44.7)
Childhood or youth (1-24 yr)	143 (19.4)
Adulthood (⩾ 25 yr)	264 (35.9)
VI severity	
Moderate VI/other	186 (25.3)
Severe VI	296 (40.2)
Blindness	254 (34.5)
Stability of VI	
Progressive	231 (28.9)
Stable	523 (71.1)
Other impairments	
No	478 (65.0)
Yes	258 (35.0)

in ten Norwegian individuals with VI have experienced bullying, one in ten have experienced bullying during the past 6 mo, and more than sixty percent of those who have been bullied said that bullying was related to their VI. Bullying was associated with young age, early onset-age of VI, and having other impairments. Those who had experienced bullying had lower levels of self-efficacy and life satisfaction compared with those who had not experienced bullying.

Comparison with the literature

To our knowledge, this is the first study with a nation-wide probability sampling addressing the prevalence and associated factors of bullying among individuals with VI, as well as the relation of bullying with well-being. Our findings demonstrate that bullying is frequent and potentially detrimental problem among people with VI, showing somewhat higher 6-mo prevalence rates than what have been found in comparable studies of general Scandinavian populations (2.8%-8.2%)[6,32-34]. Thus, our results are in agreement with previous research suggesting that VI is a risk factor for bullying[16].

The findings that early onset-age of VI, young age, and having additional impairments were associated with the risk of being bullied support the notion that childhood and young adulthood are vulnerable periods in life for persons with some sort of deviance from the social norm[35,36] and that having additional impairments may reinforce those differences.

Some of the non-significant covariates need to be discussed. A noteworthy finding of this study was that the occurrence of bullying was similar for women and men with VI. This is in line with previous research[19,20], and indicates that the risk of bullying following VI is not determined by gender.

The lack of association between severity of vision loss and the occurrence of bullying are not in line with the findings from previous research[19,21]. For example, in an age-matched sample of 196 German students, Pinquart and Pfeiffer[21] found that students with low vision reported on average more relational and overt bullying compared with students who were blind and students without vision loss. As we examined the lifetime prevalence of bullying, a possible explanation for our null findings may be that specific VI characteristics are important risk factors for bullying at different points in life.

Our findings of bullying being associated with poorer life satisfaction are in agreement with that of previous research including people with different impairments[21,37]. Life satisfaction is a general evaluation of one's own life[27] and bullying may have negative consequences on a wide-range of life domains[9]. Furthermore, to our knowledge, this is the first study that have examined the relationship between bullying and general self-efficacy in populations with VI, showing lower levels of self-efficacy for those being bullied compared with those who have not been bullied.

Assuming bullying as a potential causal factor, as well as ignoring the possibilities for residual confounding and reversed effects, there may be several explanatory hypotheses for these relationships. First, models on stress and coping suggest that prolonged exposure to a given stressor, such as bullying, leads to a sustained cognitive activation[38]. Problems handling this unbearable state of mind may reduce one's belief in coping with challenging situations, and the persistent activation could be subsequently manifested as reductions in well-being and unwanted behavioural reactions like social withdrawal[7]. Second, the theory of learned helplessness may also explain the associations between bullying and the above indicators of well-being. Learned helplessness is a state of mind that may evolve when exposed to repeated and enduring painful or otherwise aversive stimuli which the targeted person is unable to escape or avoid[39]. Consequently, a target of bullying who perceives him-/herself to be unable to defend him-/herself against the systematic

Table 2 Univariable and multivariable regression analyses of factors associated with lifetime bullying among individuals with VI (*n* = 736)

Covariates	% of bullying	Univariable RR (95%CI)	Multivariable RR (95%CI)
Age (yr)			
18-35	58.0	2.62 (1.95-3.51)	2.09 (1.53-2.85)
36-50	51.1	2.26 (1.68-3.05)	2.04 (1.51-2.77)
51-65	38.5	1.77 (1.30-2.41)	1.66 (1.12-2.26)
≥ 66	22.8	1.00	1.00
Gender			
Male	38.7	1.00	1.00
Female	44.2	1.14 (0.96-1.36)	1.15 (0.98-1.34)
Parental ethnicity			
Norwegian	41.2	1.00	1.00
Others	45.1	1.09 (0.86-1.40)	1.00 (0.81-1.25)
Urbanicity			
< 50000 inhabitants	46.3	1.00	1.00
≥ 50000 inhabitants	36.3	0.79 (0.66-0.94)	1.01 (0.84-1.21)
Other impairments			
No	38.1	1.00	1.00
Yes	48.5	1.27 (1.07-1.51)	1.35 (1.15-1.57)
Severity of VI			
Blind	41.9	1.19 (0.93-1.50)	1.05 (0.84-1.30)
Severe VI	47.0	1.33 (1.08-1.63)	1.18 (0.97-1.42)
Moderate VI/other	35.4	1.00	1.00
Age at VI onset			
Since birth	52.0	1.91 (1.53-2.38)	1.55 (1.22-1.96)
Childhood or youth (1-24 yr)	44.8	1.64 (1.26-2.15)	1.27 (0.98-1.68)
Adulthood (≥ 25 yr)	27.3	1.00	1.00
VI stability			
Stable	43.0	1.00	1.00
Non-stable	38.5	0.90 (0.74-1.19)	0.92 (0.76-1.11)

RR: Relative risk; VI: Visual impairment.

Table 3 Unadjusted and adjusted regression analyses addressing bullying exposure and its association with self-efficacy and life satisfaction among individuals with VI (*n* = 736)

Lifetime bullying	Mean (SD)	Unadjusted[1] RR (95%CI)	Adjusted[1,2] RR (95%CI)
Self-efficacy			
No (*n* = 429)	32.0 (4.8)	Reference	Reference
Yes (*n* = 307)	30.8 (5.4)	0.28	0.41 (0.19-0.87)
Life satisfaction			
No (*n* = 429)	7.0 (1.9)	Reference	Reference
Yes (*n* = 307)	6.5 (2.2)	0.60	0.69 (0.52-0.91)

[1]CI estimates were bootstrapped with 10000 replications and a variance multiplied by 1; [2]Adjusted for gender, age (18-35, 36-50, 51-65, ≥ 66), current education level (< 10 years, 10-13 years, ≥ 14 years), working or studying (no, yes, retired), other impairments (no, yes), marital status (single, married/partner, former married/partner), and severity of VI (moderate VI/other, severe VI, blindness). RR: Risk ratio; SD: Standard deviation; VI: Visual impairment.

mistreatment should be more likely to resign and go into a state of helplessness. A third theory on the consequences of bullying is that of internalization, in which people accepts a belief or behavior and agrees with others both privately and publicly[40]. For example, when perpetrators repeatedly tell the bully victim that he/she is useless or unworthy, the victim may in turn accept and personally agree with the public opinion about his/her uselessness or unworthiness.

Strengths and limitations

The main strength of this study is the size and nature of the sample, which was selected through a probability mechanism and stratified on age. Furthermore, the use of validated assessment tools and the data collection procedure increase the credibility of our findings. While these characteristics may represent strengths of the study, it should be noted that studies using probabilistic sampling, including a definition of bullying, and recruiting participants from Scandinavian countries have established the lowest prevalence rates with regard to bullying[5]. Hence, it is likely that our prevalence is relatively low compared to studies using other methods and samples.

Several limitations should be considered. In resemblance with all observational studies that analyses cross-sectional data, we had limited possibilities to address relationships of cause and effect, and, although we controlled for some potentially confounding factors, we cannot rule out the possibility of residual confounding. Second, the use of self-reports may have affected the accuracy of the estimates, and could lead to information biases like disclosure bias and recall bias. The possible impact of recall bias may have been greatest among the oldest participants, reflecting the low rates of bullying in this age group. Further, our data on bullying relied on a few validated questions about the overall exposure to bullying or harassment. We also lacked information about the perpetrator, as well as information related to how, when, where, and how often the participants had experienced bullying. With regard to the latter, including a behavioural experience checklist such as the Negative Acts Questionnaire[41] would have provided specific information about the nature and content of the bullying. Third, we had limited information about the non-responders and do not know how non-responding might have influenced our results. Advance information contained general descriptions of topics such as coping with traumatic events, mental health and wellbeing, and did not specifically pinpoint bullying. Thus, we think it is less likely that prevalence estimates of bullying were biased by participations' motivation to share their history of being bullied. Also, we believe that bias in sample selection more likely may have affected the prevalence estimates of socioeconomic factors or VI characteristics and to lesser extent their associations to bullying[42,43]. Fourth, the generalizability in studies of membership organizations may be questionable. We have no knowledge about how bullying and psychological consequences in people with VI who are not organized in the Norwegian Association of the Blind and Partially Sighted.

Implications

Bullying is a social problem with detrimental implications for the individual being affected. People with VI are at higher risk of bullying compared to the general population, and there should be increased awareness about this issue in school, social, and working life. There may be a need for interventions to prevent bullying, and for those who have been bullied, measures to increase self-efficacy.

In summary, our findings showed that bullying is highly prevalent among individuals with low vision and blindness, and especially among those with a young age, early onset-age of VI, and having other impairments. Furthermore, we found strong associations between lifetime bullying and lower levels of self-efficacy and life satisfaction. Increased awareness of bullying in school, social, and working life is recommended to protect people, and especially people from social minorities, from bullying. Future research should include longitudinal studies, focusing particularly on the risk and impact of bullying among those who have lost their vision at birth or during childhood.

ARTICLE HIGHLIGHTS

Research background

Persons with impairments, such as visual impairment (VI), may be more likely to be seen as different and of lower social rank by peers, and therefore become trapped into an ongoing victimization of bullying. To our knowledge, previous studies of risk of bullying in people with VI are restricted to include convenience samples of children and adolescents.

Research motivation

In order to add to the current knowledge, we conducted a cross-sectional study in the adult population of people with VI, having the following three main aims: (1) To study the lifetime prevalence of bullying, (2) to describe demographic and VI-related factors associated with lifetime bullying, and (3) to examine the association of lifetime bullying with self-efficacy and life satisfaction.

Research methods

The study was a cross-sectional interview-based survey conducted between February and May, 2017, including an age-stratified probability sample of adults with VI. All participants were recruited through the members list of the Norwegian Association of the Blind and Partially Sighted. A total of 736 (61%) adults with VI participated by completing the interview.

Research results

The lifetime and 6-mo prevalence of bullying was 41.7% and 8.2%, respectively. The rates are greater than what have been found in comparable studies of general Scandinavian populations. The majority of bullied participants (65.1%) reported that bullying was related to their vision loss. Victimization of bullying was associated with young age, early onset-age of VI, and having additional impairments. The findings illustrate that being different in terms of having visual impairment or other impairments in addition to the vision loss put individuals at increased risk of being victimized to bullying. Bullying was negatively associated with self-efficacy [adjusted relative risk (ARR): 0.40, 95% confidence interval (CI): 0.19-0.85] and life satisfaction (ARR: 0.68, 95%CI: 0.51-0.91). If bullying was the underlying causal factor, our results suggest that bullying may have profound adverse effects on personality and wellbeing in adult life.

Research conclusions

To our knowledge, this is the first research study demonstrating high rates of bullying in people with VI, both in a lifetime perspective and in adult life. Individuals with young age, early onset age of VI, or other additional impairments were at greatest risk of bullying. Most of those who had been exposed perceived that bullying was related to their vision loss. Efforts should be made to increase awareness about this issue in school, social, and working life. Our findings that bulling was negatively related to outcomes of self-efficacy and life satisfaction emphasize the need of professional assistance of those who have been bullied. Universal design and access to professionals who are trained to the needs and challenges of people with VI are recommended.

Research perspectives

Our research findings should be supported by population-based cohort studies of individuals with and without VI. Moreover, future research should include longitudinal studies of the risk and impact of bullying in people with VI, especially among those who have lost their vision at birth or during childhood.

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