

Bullying Prevention and School Climate: Correlation between Teacher Bullying Prevention
Efforts and their Perceived School Climate

Dziuginta Baraldsnes^{1*}

Western Norway University of Applied Sciences, Bergen, Norway

* Address for Correspondence: Dziuginta Baraldsnes, Western Norway University of
Applied Sciences, Inndalsveien 28, 5063 Bergen, Norway.

E-mail: dziuginta.baraldsnes@hvl.no

¹ <https://orcid.org/0000-0002-8475-9596>

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Abstract

This study investigates the correlation between teachers' efforts to prevent bullying and their perceptions of school climate. The quantitative data were collected from 82 teachers (76.8% females, respondents' mean age = 44.91 years [$SD = 9.91$]) from 13 Norwegian schools running the Olweus Bully Prevention Program (OBPP). Descriptive analysis of the teachers' efforts within OBPP at the school, classroom, and individual levels, and simple linear as well as multiple regression analyses were applied. The current study revealed that teachers acted differently within OBPP at the school, classroom, and individual levels, and that their perceptions of school climate differed. A significant positive correlation was found between the teachers' efforts within OBPP at the all-level variable and the general school climate variable. Implications for the teachers' efforts to prevent school bullying through OBPP and the significance of the study results for the whole school community are discussed, and limitations of the current study are pointed out.

Keywords: Bullying, bullying prevention, school climate, research-based whole-school approach anti-bullying programme, Olweus Bullying Prevention Program

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For years, schools have faced a complex and systemic problem of bullying, which is defined as an act of aggression involving repeated intentional, hurtful behaviour and an imbalance of power between a stronger student who bullies and a bullied student (cf. Olweus, 1993, 2001). In the current study, the phenomenon of bullying was explored from the socio-ecological perspective (Bronfenbrenner, 1979; Espelage, 2014) as complex behaviour with multiple causes and risk factors, ranging from individual characteristics to school settings and to broader social contexts (Espelage, 2014; Thornberg, Baraldsnes, & Saeverot, 2018). Bullying prevention should, therefore, also be a complex and multifaceted undertaking requiring targeted interventions toward the students involved, as well as consistent application of policies against bullying at the school and community levels (Thornberg et al., 2018).

Although quite a number of researchers (Burger, Strohmeier, Spröber, Bauman, & Rigby, 2015; Kallestad & Olweus, 2003; Olweus & Limber, 2010; Yoon, Sulkowski, & Bauman, 2016) have acknowledged the crucial role of teachers in bullying prevention and intervention, insufficient attention has been paid to this issue (Yoon & Bauman, 2014). Few studies have been published on teachers' interventions in bullying incidents (e.g., Bauman & Del Rio, 2006; VanZooeren & Weisz, 2018; Wachs, Bilz, Niproschke, & Schubarth, 2019; Yoon & Barton, 2008; Yoon et al., 2016) and even fewer on teachers' bullying prevention efforts through a whole-school anti-bullying programme (e.g., Kallestad & Olweus, 2003). Moreover, some studies (e.g., Bauman, Rigby, & Hoppa, 2008; Burger et al., 2015; Yoon, Bauman, Choi, & Hutchinson, 2011) confirmed that female teachers were more likely to take action in a bullying incident than male teachers. In the current study, teachers' bullying prevention efforts are explored in the framework of the Olweus Bullying Prevention Program at the school, classroom, and individual levels (hereinafter referred to as OBPP) (Olweus, 2001; Olweus & Limber, 2010).

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Research in bullying reduction highlights the development of a positive school climate as an important factor (e.g., Low & Van Ryzin, 2014; Konishi, Miyazaki, Hymel, & Waterhouse, 2017; Wang, Berry, & Swearer, 2013). In the school environment, teachers have a unique and prominent position: They hold the key both to bullying prevention and to creating a positive school climate (Bosworth & Judkins, 2014; Troop-Gordon & Ladd, 2013). However, there is gap in the investigation of the relation between bullying prevention in school and the school climate. Some studies have revealed that school climate could have both a positive (Olweus, 1993) and negative impact (Swearer, Espelage, Vaillancourt, & Hymel, 2010) on students' bullying behaviour; fewer studies focused on the influence of school climate on teacher interventions (cf. VanZooeren & Weisz, 2018). Consequently, a focus not merely on teachers' responses to bullying incidents, but also on teachers' bullying prevention activities at the school, classroom, and individual levels, may contribute to the further development of a positive school climate and a comprehensive approach to school bullying prevention.

Bullying Prevention and School Climate

A whole-school anti-bullying approach aims to develop a safe, secure, supportive, respectful and bullying-resistant school climate (Bosworth & Judkins, 2014; Burger et al., 2015). Wang et al. (2013) indicate two key elements of a positive school climate: positive relationships between students and teachers, and negative attitudes toward inappropriate behaviour (such as bullying). A review of the school climate research confirmed that, in schools with consistent positive school climate policies and practices, students were less likely to experience violence, peer victimisation and punitive disciplinary actions; they also demonstrated lower levels of absenteeism and increased academic achievement (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013).

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In several studies a correlation between school bullying and school climate has been confirmed. For example, Low and Van Ryzin (2014) validated a socio-ecological perspective on bullying prevention and suggested that establishing a positive school climate was fundamental to reducing bullying. Furthermore, a recent study by Konishi et al. (2017) found significant correlations with many school climate dimensions at both the student and the school level. More specifically, at both levels, lower rates of reported involvement in bullying (either as a student who bullied others or a bullied student) were associated with greater school safety, peer support, school belonging, students' acceptance of diversity, discipline/ fairness/ clarity of rules, autonomy, and opportunities. Based on the results of those studies, bullying can be seen as a systemic school climate issue, expanding the options for school bullying prevention and intervention (Bosworth & Judkins, 2014).

There is no consensus regarding the definition and domains of school climate (Bradshaw, Waasdorp, Debnam, & Johnson, 2013; Thapa et al., 2013). Nevertheless, a number of researchers (e.g., Bradshaw et al., 2013; Cohen, 2014) have recognised school climate as a multifaceted construct. In the current study, school climate has been defined as the summation of the perceived experiences and relationships of everyone within the school environment and a construct consisting of eight sub-aspect has been measured. The *Physical Environment* variable, examines the relationship between the physical characteristics and the environment of the school as well as the climate it promotes. *Teacher Interactions* focus on the effects of the faculty members' relationships on the school climate, while *Student Interactions* examine the relationships between student expectations, peer interactions, their place at school, and the school climate. The variable *Leadership and Decisions* explores the effects of the quality of leadership on school life and the variable *Discipline and Management* examines teacher-student interactions as a source of management and motivation. The subscale *Learning and Assessment* focuses on the relationships between the instructional

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strategies, the assessment methods at school, and the resulting climate, while the subscale *Attitude and Culture*, examines the pervasive attitudes and cultures within the school and their relationship to the climate. Last but not least, the sub-scale *Community* focuses on the relationship between the external perception of the school and its climate (ASSC, 2016).

Anti-Bullying Programmes: Whole-School Approach

A review of the academic literature revealed that research-based, anti-bullying programmes following a whole-school approach have been widely regarded as the flagship approach for bullying prevention (Smith, Salmivalli, & Cowie, 2012; Ttofi & Farrington, 2009, 2011). According to Menesini and Salmivalli (2017), these programmes are often complex, consist of various components, target different levels (individual students, parents, classrooms, whole schools) and include a variety of methods. The meta-analysis by Ttofi and Farrington (2009, 2011), including effect sizes of 44 such programmes, indicated that on average bullying decreased by 20–23%, and victimisation by 17–20%. Ttofi and Farrington (2009, 2011) revealed that OBPP inspired 17 of the 44 anti-bullying programmes evaluated. An updated systematic and meta-analytical review of the effectiveness of the school bullying intervention and prevention programmes with 103 independent effect sizes, done by Gaffney, Ttofi and Farrington (2019) obtained similar results and indicated that these programmes were effective in reducing bullying perpetration by approximately 19–20% and victimisation by approximately 15–16%. Meanwhile, some individual programmes (e.g., OBPP in Norway, KiVa in Finland) yielded reductions of 40–50%, at least in some age groups (Smith et al., 2012, p. 434; similar results for Fairplayer.manual in Germany: Bull, Schultze, & Scheithauer, 2009).

The main goal of OBPP is to make school a safe and positive learning environment (Olweus, 1993, 2001; Kallestad & Olweus, 2003). The OBPP consists of specific interventions at four levels. The school level components aims to promote a whole-school

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approach in dealing with bullying by implementing an anonymous self-report questionnaire survey of students, adult supervision during recess, and teacher Study and Supervision Groups [hereinafter referred to as SSG]. On the classroom level rules against bullying, class meetings with students led by the class teacher, and meetings with students' parents are implemented. On the individual level serious conversations with students involved in bullying and with their parents, and following up bullying incidents are installed. In some contexts, the community level is also targeted by involving community members to look for ways to support the programme and to collaborate by spreading bullying prevention strategies and messages into other community settings that involve children and youth (Olweus & Limber, 2010). However, since the measures at the community level are not specified in the documents of the OBPP explored in this study, this level has not been investigated.

Teachers' Role in Bullying Prevention and the School Climate

As observed by researchers, teachers are "key agents of change" (Kallestad & Olweus, 2003, p. 19) and should be considered as targets of bullying preventive interventions (Hektner & Swenson, 2012; Yoon et al., 2016). However, many teachers are unaware of serious and extensive bullying at their schools, and are often ineffective at identifying bullying incidents (Bradshaw et al., 2013). Therefore, a research-based anti-bullying programme following a whole-school approach could serve as a useful instrument to develop teachers' competence in addressing school bullying. When teachers are better aware of and more responsive to school bullying, the rates of bullying decrease significantly (Olweus, 2001).

Teachers are in a position to prevent and intervene in school bullying (Yoon & Bauman, 2014); however, we need to know more about teachers' responses to bullying and the factors influencing their responses (Yoon et al., 2016). Findings from earlier studies indicated that school staff did relatively little to intervene in bullying incidents (e.g., Bauman & Del Rio, 2006; Yoon & Kerber, 2003), and teachers were unsure of how to respond when

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bullying occurred (Hektner & Swenson, 2012). Recently, some positive changes in teachers' effort to prevent, and intervene in, bullying situations have been identified, yet teachers' responses differ depending on the types of bullying incidents (e.g., Troop-Gordon & Ladd, 2013). Thus, teachers are less likely to intervene when bullying is not physical (Bauman & Del Rio, 2006). Moreover, they take social exclusion less seriously and are less likely to intervene in such cases than in incidences of verbal and physical aggression (Yoon & Kerber, 2003).

Teachers doubtlessly play a major role in preventing and intervening in bullying, and are responsible for developing a positive school climate, which is crucial in order to prevent bullying effectively. A comprehensive understanding of teacher bullying prevention efforts and of school climate is therefore essential in helping them develop the skills and competences needed to address school bullying and to create a positive school climate.

The Present Study

In the current study, teachers' bullying prevention efforts have been investigated within the OBPP (Olweus, 2001; Olweus & Limber, 2010). School climate has been measured by applying the School Climate Assessment Instrument [hereinafter referred to as SCAI], developed by the Alliance for the Study of School Climate [hereinafter referred to as ASSC] (ASSC, 2014). The current study is based on a Lithuanian study conducted by Baraldsnes (2019); it strictly follows the same research design and data collection procedures and applies the same instrument, which was translated into Norwegian and validated. It focuses on the correlation between teachers' efforts in Norwegian schools to prevent school bullying through OBPP and their perceptions of school climate. The following hypotheses have been formulated:

Hypothesis 1: Female teachers are more active in school bullying within OBPP than male teachers (cf. Bauman et al., 2008; Burger et al., 2015; Yoon et al., 2011).

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Hypothesis 2: Primary education teachers are more active in school bullying prevention within OBPP than lower secondary education teachers.

Hypothesis 3: The perception of school climate is more positive among female than male teachers.

Hypothesis 4: The perception of school climate is more positive among primary than lower secondary education teachers.

Hypothesis 5: Higher levels of the teachers' perceived overall school climate are associated with more anti-bullying efforts within OBPP at all three levels.

Method

Participants

The Norwegian Research Centre AS, responsible for the implementation of OBPP in Norway, provided a list of relevant schools (N = 83). The number of schools was limited by means of a probability (random) sampling technique. Following a two-stage cluster sampling during the first stage, 13 schools working with the OBPP were randomly selected.

During the second stage of selection, only primary and lower secondary education teachers who were responsible for the class (in Norway referred to as contact teachers) and who worked within OBPP were chosen for the study. In total 278 contact teachers were invited to complete an online self-assessment questionnaire; 82 responded, yielding a response rate of 29.5%. On school level, four to 28 teachers participated. The age of the sampled teachers ranged from 25 to 64 (mean age = 44.91 years [$SD = 9.91$]). The teaching experience of the teachers varied from two to 40 years (mean teaching experience = 17.32 years [$SD = 9.10$]). Socio-demographic characteristics of the participants are presented in Table 1.

[Table 1]

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According to Statistics Norway (2019), in 2018, 75,727 teachers were teaching at Norwegian primary and lower secondary schools (74.8% females). Of them, 67.4% of teachers had short-cycle tertiary education, 8.5% had long-cycle tertiary education and a teaching qualification, and 7.8 % had only upper secondary education (Statistics Norway, 2019). As shown in Table 1, the characteristics of the respondents in the current study were similar to the national situation. The majority were females, which corresponded to the national figures. Nevertheless, the distribution of the respondents' educational background differed slightly from the national figures: 53.6 % of the respondents had short-cycle and 18.3 % long-cycle tertiary education with a teaching qualification. The range of the respondents' ages covered all teachers' age groups.

Measures

The measure of teachers' efforts to prevent school bullying was constructed on the basis of the *OBPP Implementation Manual*, the *OBPP Manual for School Staff* and the *OBPP Quality Assurance System Document*. OBPP measures at school level included participation in staff meetings (3 items) where issues related to school bullying were discussed, participation in the Study and Supervision Group (SSG) (5 items), evaluation of the Olweus survey results (2 items), participation in adult supervision during recess (1 item), adherence to OBPP procedures and routines for suspecting bullying (3 items), and collaboration with parents/legal guardians (1 item). OBPP measures at classroom level included implementation and following class rules against bullying (5 items), classroom management (5 items), organisation of Olweus class meetings (4 items), and collaboration with parents (4 items). OBPP measures at the individual level included measures taken upon suspicion of bullying (5 items), intervention in situations of bullying (3 items), organisation of confrontational

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conversations with students involved in bullying and/or their parents (5 items), and following up the bullying cases over time (5 items).

The responses to each item were estimated on a 5-point Likert scale; response options varied from *I do not do it* to *I do it very actively*. The alpha coefficient of the internal reliability of OBPP at the school level scale was .80 (15 items), .78 at the classroom level (18 items), and .91 at the individual level (18 items).

The school climate measure, the ASSC SCAI, was slightly modified, and 78 items were used in the survey. Similarly to the measure of teachers' efforts to prevent school bullying, the responses to each item were also estimated on a 5-point Likert scale. The internal reliability of the school climate assessment instrument had previously been measured by the ASSC (ASSC, 2014). Therefore, the summary of the internal reliability of eight school climate sub-scales, measured with Cronbach's α , are presented in Table 2 and analysed in comparison with Cronbach's α of the SCAI (ASSC, 2014).

[Table 2]

In accordance with the ASSC (2014), the SCAI had good internal consistency, reported as .98 with Cronbach's α . In the current study, the reliability of all the SCAI sub-scales was slightly higher (.99). The Cronbach's α , measured by the ASSC, demonstrated good values of internal reliability for all sub-scales and varied from .73 (*Community*) to .96 (*Leadership and Decisions*). The measurement of internal reliability for all sub-scales in the current study showed higher reliability value in comparison to the ASSC and varied from .85 (*Physical Environment*) to .96 (*Leadership and Decisions*). *Leadership and Decisions* reliability, measured by the ASSC, had a slightly higher value of internal consistency in comparison to the internal reliability value measured in the current research.

Procedures

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The study was carried out using a quantitative, non-experimental, cross-sectional survey approach in which data were collected through a standardised, anonymous, online, self-administered questionnaire using Questback between January and February 2018.

The researcher aligned the study with the statutory codes of ethics and carried out professional ethical judgments and procedures of the study in accordance with the regulations from the Norwegian Centre for Research Data (NSD). Permission to conduct the study was obtained and the researcher's obligations to NSD were strictly followed throughout the entire research process. Written permission to use the SCAI was issued by the ASSC.

Data Analysis

Data were analysed using IBM SPSS-26 version. A descriptive analysis of the study's results and one-way repeated measures (ANOVA) were used in order to obtain whether there was a significant difference among teachers' efforts towards OBPP at the school, classroom, individual, and all-level variable as well as among eight *School Climate* sub-factors (Cohen, Manion, & Morrison, 2011; Pallant, 2016). Further, a multilevel analysis of variance (MANOVA) was used in order to compare whether the mean differences between the groups (male and female teachers, as well as primary education and lower secondary education teachers) on the combination of teachers' efforts towards OBPP at the school, classroom, individual, and all-level variables as well as eight sub-factors of *School Climate* were likely to have occurred by chance (Field, 2018; Pallant, 2016). Normality was tested using the Kolmogorov-Smirnov test; the outliers were checked by inspecting Cook's distance and Mahalanobis distance. Collinearity was tested using Tolerance and Variance inflation factor (VIF) (Pallant, 2016). Finally, simple linear and multiple regression analyses was conducted. In order to exclude explanatory variables in suppressor effects and to avoid a higher risk of making a type II error (Field, 2018), the backward method was used in the multiple regression analysis.

Results

Gender and School Type Differences in Teachers' Effort to Prevent School Bullying

Descriptive analysis revealed that teachers made the greatest effort at the individual level ($M = 4.32$; $SD = 0.39$, $M_{\min} = 3.44$, $M_{\max} = 5.00$) and the least at the classroom level ($M = 3.96$; $SD = 0.36$, $M_{\min} = 3.22$, $M_{\max} = 4.78$). The mean of the teachers' efforts to prevent school bullying at the school level was 4.01, where $SD = .48$, $M_{\min} = 2.29$ and $M_{\max} = 4.93$. The mean of teachers' efforts towards OBPP at the all-level variable was 4.10; $SD = .32$, $M_{\min} = 3.20$ and $M_{\max} = 4.59$. A one-way repeated measures ANOVA was conducted to compare the teachers' activities within OBPP at the school, classroom, individual and all-levels. There was a statistically significant difference between teachers' activities within the OBPP at the school, classroom, individual and all-level variables, Wilks' Lambda = .46, $F(3, 79) = 31.15$, $p < .001$, multivariate partial eta squared .54. Post hoc comparisons using the Bonferroni correction indicated that teachers were most active within OBPP at the individual level compared to teachers activities within OBPP at the school ($I-J = .31$, $SD = .52$, $p < .001$), classroom ($I-J = .37$, $SD = .04$, $p < .001$) and the all-level ($I-J = .22$, $SD = .02$, $p < .001$). Moreover, teachers were more active within OBPP at the all-level compared to teachers' activities within OBPP at the classroom level ($I-J = .15$, $SD = .02$, $p < .001$). However, teachers activities within OBPP at the school level did not significantly differ from teachers activities within OBPP at the classroom ($I-J = .06$, $SD = .05$, $p = 1.00$), and teacher activities within OBPP at the all-levels ($I-J = -.09$, $SD = .04$, $p < .07$).

In order to identify whether there was a statistically significant difference between teachers' efforts towards OBPP, their gender (*Hypothesis 1*), and whether they taught at primary or lower secondary level (*Hypothesis 2*), a MANOVA was performed. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity,

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with no serious violations noted. However, a MANOVA did not indicate a statistically significant difference between male and female teachers and their activities within OBPP at the school, classroom, individual and all-level, $F(4, 77) = 1.02, p = .40$; Wilks' Lambda = .95; partial eta squared = .05, nor between primary and lower secondary education teachers and the combined dependent variables, $F(4, 77) = 1.51, p = .21$; Wilks' Lambda = .93; partial eta squared = .07. When the results for the dependent variables were considered separately, using a Bonferroni adjusted alpha level of .03, a statistically significant difference was between primary and lower secondary teachers and their activities within OBPP at the classroom level $F(1, 80) = 5.45, p = .02$, partial eta squared = .06, as well as at the all-level $F(1, 80) = 4.35, p = .04$, partial eta squared = .05. An inspection of the mean scores indicated that primary education teachers reported slightly higher activity within OBPP at the classroom level ($M = 4.00, SD = .36$) than lower secondary education teachers ($M = 3.76, SD = .31$). Similarly tendency obtained within OBPP at the all-levels between primary ($M = 4.14, SD = .32$) and secondary ($M = 3.94, SD = .32$) education teachers.

Gender and School Type Differences in Teachers' Perception of School Climate

The current study aimed to discover whether the teacher respondents had different perceptions of the eight *School Climate* sub-factors. Descriptive statistics of the said sub-factors obtained through the mean and standard deviation revealed that the *Student Interactions* variable had the highest mean ($M = 4.33, SD = .32$), while the *Community* variable had the lowest ($M = 3.90, SD = .45$). Descriptive statistics of other *School Climate* sub-factors are presented in the descending order as following: *Leadership and Decisions* ($M = 4.25, SD = .54$), *Teacher Interactions* ($M = 4.20, SD = .49$), *Discipline and Management* ($M = 4.18, SD = .41$), *Attitude and Culture* ($M = 4.17, SD = .41$), *Learning and Assessment* ($M = 4.10, SD = .39$), and *Physical Environment* ($M = 4.03, SD = .51$).

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When comparing the eight *School Climate* sub-factors, repeated analyses of variance (ANOVA) revealed a statistically significant difference Wilks' Lambda = .44, $F(7, 75) = 13.51$, $p < .001$, multivariate partial eta squared .59. Post hoc comparisons using the Bonferroni correction indicated that the *Community* sub-factor significantly differed from the following *School Climate* sub-factors: *Teacher Interactions* ($I-J = -.30$, $SD = .06$, $p = .001$), *Student Interactions* ($I-J = -.43$, $SD = .05$, $p < .001$), *Leadership and Decisions* ($I-J = -.34$, $SD = .07$, $p < .001$), *Discipline and Management* ($I-J = -.27$, $SD = .06$, $p < .001$), *Learning and Assessment* ($I-J = -.19$, $SD = .05$, $p = .003$), and *Attitude and Culture* ($I-J = -.27$, $SD = .05$, $p < .001$). The *Student Interactions* sub-factor significantly differed from *Physical Environment* ($I-J = .30$, $SD = .05$, $p < .001$), *Discipline and Management* ($I-J = .15$, $SD = .04$, $p = .009$), *Learning and Assessment* ($I-J = .24$, $SD = .04$, $p < .001$), and *Attitude and Culture* ($I-J = .16$, $SD = .04$, $p = .002$) sub-factors. Meanwhile, the *Physical Environment* sub-factor significantly differed from *Leadership and Decisions* ($I-J = -.21$, $SD = .06$, $p = .019$) sub-factor.

A MANOVA was conducted to investigate whether the eight sub-factors of school climate differed depending on gender (*Hypothesis 3*), and school type (primary vs. lower secondary education teachers) (*Hypothesis 4*). Multivariate tests revealed that there were no statistically significant differences in any of the eight scales depending on gender, $F(8, 73) = .77$, $p = .63$; Wilks's Lambda = .92; partial eta squared = .08; nor when the results for the dependent variables were considered separately. Similarly, MANOVA was conducted to investigate whether primary education or lower secondary education teachers perceived differently the school climate. MANOVA indicated a statistically significant difference between those two groups and the eight sub-factors of school climate, $F(8, 73) = 2.77$, $p = .01$; Wilks' Lambda = .77; partial eta squared = .23. When the results for the dependent variables were considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted alpha level of .12, was the *Physical Environment*, $F(1, 80) =$

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12.19, $p = .001$, partial eta squared = .13. An inspection of the mean scores indicated that primary education teachers reported slightly better perception of the physical environment ($M = 4.12$, $SD = .47$) than lower secondary education teachers ($M = 3.63$, $SD = .54$).

Teachers' Perceptions of School Climate and School Bullying Prevention

The main aim of the current study was to test whether teachers' efforts within OBPP positively correlated with their perceptions of school climate (*5th hypothesis*). The result of the Kolmogorov-Smirnov statistics was .119. $p = .006$, suggesting violation of the assumption of normality. The inspection of the outliers using Mahalanobis distance indicated only one case, with value 6.70, which was higher than the recommended critical value of 6.31 for one predictor variable (Tabachnick & Fidell, 2014). Moreover, the largest value of the Cook's distance in the current regression model was .09, suggesting no major problem. Thus, all cases were taken in the simple linear regression model. Finally, the VIF and tolerance value was 1.00; thus, the multicollinearity assumption was not violated.

The Pearson correlation of the teachers' global efforts to prevent school bullying and teachers' global perceived school climate indicated a positive correlation ($r = .45$, $p < .001$). A simple linear regression analysis indicated adjusted $R^2 = .195$, while r -square = .204. Based on these results, one could argue that teachers' perceptions of school climate explained 19.5% of the variance. The analysis of variance (ANOVA test) indicated for the model, the F-ratio was 20.563, $p < .001$.

A multiple regression analyses was conducted to predict teachers' global efforts to prevent school bullying with the eight sub-scales of school climate, gender, school type and teachers' qualification as predictors. The results of the multiple regression for teachers' school bullying preventative efforts within OBPP, where the backward method was applied, are provided in Table 3.

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[Table 3]

In the Table 3, only the first and the final model are presented. As shown in Table 3, none of the predictors reached statistical significance when entering them together (model 1). However, in the final regression model, only two explanatory variables of *School Climate* were statistically significant: *Teacher Interactions* recorded a higher beta value ($beta = .35, p < .001$) than the *Community* variable ($beta = .26, p = .014$). Those two sub-factors explained 20.5% of the variance ($F(2, 79) = 11.44, p < .001$). Importantly, none of the socio-demographic variables was statistically significant and included in the final multiple regression model. Considering school climate to be a multifaceted factor, the ASSC SCAI was developed in order to measure the whole-school climate consisting of the eight domains mentioned above. It could therefore be assumed that the overall *School Climate* variable would measure teachers' perceptions of school climate more accurately than an individual sub-factor would do.

Discussion

The current study revealed that teachers acted differently within OBPP at the school, classroom, and individual levels and that their perceptions of school climate were different. Teachers were most active in response to bullying incidents at the individual level, and least active at the classroom level. Further, the results of the current study did not supported *Hypothesis 1*. No difference in bullying prevention and the teachers' gender was revealed. The fact contradicted the findings of Burger et al.'s (2015) study conducted with teachers from Austria and southern Germany, those of Yoon et al.'s (2011) study conducted with teachers from South Korea, and those of a study in the United States (Bauman et al., 2008) reporting that female teachers were more likely than male teachers to work with pupils who bullied. Meanwhile, the results of the current study indicate that, in general, primary education teachers are more active than lower secondary education teachers in bullying

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prevention within OBPP (*Hypothesis 2*). No studies were found to support or reject this finding; however, it could be assumed that primary education teachers spend much more time together with students and are more focused on social emotional learning, while lower secondary education teachers are more focused on subject teaching and only have a small number of teaching hours per week in each class. Consequently, many lower secondary education teachers share responsibility for student safety at school and the development of a positive learning environment in the classroom, which may also affect their efforts towards the prevention of bullying at school.

Next, the results of the current study reveal that teachers have differing perceptions of the eight-sub-factors of school climate, with *Student Interactions* accepted most positively. No differences between the teachers' gender and their perceptions of school climate were identified (*Hypothesis 3*); *Physical Environment* was more positively perceived by the primary education teachers than by the lower secondary education teachers (*Hypothesis 2*). This fact was in line with a previous finding of the current study concerning primary education teachers being more active in the prevention of bullying at school and, consequently, more so than lower secondary education teachers, who are preoccupied with creating a positive learning environment for their students.

Finally, the current study indicated a significant positive correlation between teachers' bullying prevention efforts within OBPP and their perceptions of school climate (*Hypothesis 5*). In the academic literature, findings regarding the correlation between school climate and teachers' efforts to prevent school bullying have been rather controversial. Thus, VanZoeren and Weisz (2018) found no relationship between perceptions of organisational characteristics and teachers' likelihood of intervention. Meanwhile, other researchers (e.g., Bradshaw et al., 2013; Yoon et al., 2016) have argued that teachers' perceptions of school climate predicted their responses to bullying incidents. However, the results of the current cross-sectional study

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do not render it possible to draw causal inferences, and it is therefore impossible to say whether school climate accounts for teachers' greater efforts towards bullying prevention, or vice versa, or, indeed, whether this is a case of a bidirectional relationship. On the one hand, a positive school climate is necessary in order to prevent bullying behaviours effectively (Wang et al., 2013); on the other, creating and maintaining a positive, trusting school climate can function as a form of bullying prevention (Low & Van Ryzin, 2014). Moreover, the results of the current follow-up study confirm the results of the previous one (Baraldsnes, 2019), with a positive correlation between Lithuanian teachers' bullying prevention efforts and their perceptions of school climate, where teachers' perceptions of school climate explained 16.5% of the variance. Still, the percentage of the explained variance was slightly higher in the present study (19.5%). Thus, additional comparative research on teachers' efforts to prevent bullying through OBPP in Lithuanian and Norwegian schools is needed.

In a way, the results of the current study supported Yoon and Barton's (2008) statement concerning the important role of teachers in the development of a positive school climate and in preventing school violence by promoting academic success for all students, building a prosocial, non-aggressive environment in which caring relationships are fostered at every level, promoting tolerance of sensitivity to individual differences, and implementing appropriate management of aggressive behaviours.

Methodological considerations and implications for the future research and practice

Some general limitations of the current study should be pointed out. Firstly, since the response rate of the current study was only 29.5%, the representativeness of the Norwegian teachers in Olweus schools is questionable. In general, the response rate for an online survey is typically lower than for a paper-based survey (Cohen et al., 2011). In order to increase the response rate, the researcher contacted every school principal and asked him/her to encourage

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teachers to fill in the online questionnaire; however, some of them were reluctant to provide the staff with the appropriate time.

Secondly, the study only used the teachers' self-reports as the data source. An extension of the respondent range and scope would be of benefit for future research. It would also be beneficial to include school principals and other school staff's perceptions of school bullying prevention in further research, and students and parents' voices should also be heard.

Thirdly, the effect size was small or modest in the current study. It can be assumed that there were more individual and contextual factors contributing to teachers' efforts to prevent school bullying. Additional research into other potentially significant factors, obtained through both quantitative and qualitative research methods, would therefore give a deeper understanding of teachers' efforts to prevent school bullying.

Despite those methodological limitations, the current study contributes to the research in school bullying issues and takes a step further in the process of understanding the correlation between teachers' efforts to prevent school bullying and their perceptions of school climate. Finally, the current study promotes the empowerment of teachers to play a crucial role in school bullying prevention and to ensure students' psychological and physical safety at school.

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Bio Sketch:

Dziuginta Baraldsnes is a PhD candidate and works as assistant professor at the Department of Pedagogy, Religion and Social Studies, Faculty of Education, Arts and Sports, Western Norway University of Applied Sciences, Norway. The main research interests focus on the school (cyber)bullying phenomenon, teachers' efforts to prevent school bullying, and the development of a positive school climate.

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Table 1

Socio-demographic characteristics of the participants

Variables	n	%
<i>Gender</i>		
Male	19	23.2
Female	63	76.8
<i>Educational background</i>		
Higher non-university bachelor	42	51.2
Higher non-university master	9	11.0
University bachelor	2	2.4
University master	6	7.3
Other	23	28.0
<i>Teachers' qualification</i>		
Teacher	2	2.4
Senior teacher	74	90.3
Lector	6	7.3
<i>Teaching educational level</i>		
Primary education	68	82.9
Lower secondary education	14	17.1

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Table 2

Internal reliability of the sub-scales of the School Climate Assessment Instrument (SCAI) (N = 82)

Scale	N of Items	Cronbach's Alpha	Chronbach's Alpha Reliability measured by ASSC (2014) study*
1. Physical Environment	8	.85	.80
2. Teacher Interactions	11	.94	.89
3. Pupil Interactions	10	.91	.83
4. Leadership and Decisions	11	.96	.96
5. Discipline and Management	10	.94	.80
6. Learning and Assessment	12	.95	.88
7. Attitude and Culture	10	.93	.88
8. Community	6	.87	.73
All dimensions included	78	.99	.98

Source: *data from survey and Alliance for the Study of School Climate (2014) study, N = 342.

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Table 3

Multiple regression results for teachers' school bullying preventative efforts within

OBPP

Variable	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	β	Adjusted <i>R</i> ²	Anova	
		<i>LL</i>	<i>UL</i>				<i>F</i>	<i>P</i>
Step 1								
Constant	2.37***	1.22	3.51	.57		.165	2.46	.01
Physical Environment	.09	-.10	.27	.09	.14			
Teacher Interactions	.17	-.09	.36	.09	.26			
Student Interactions	-.02	-.29	.26	.14	-.02			
Leadership and Decisions	-.04	-.22	.14	.09	-.07			
Discipline and Management	.09	-.18	.36	.14	.18			
Learning and Assessment	.06	-.20	.32	.13	.07			
Attitude and Culture	-.05	-.30	.20	.13	-.06			
Community	.13	-.05	.32	.09	.19			
Gender	.07	-.11	.24	.09	.09			
Teaching Educational Level	-.09	-.30	.13	.11	-.10			
Teachers' Qualification	-.02	-.24	.19	.11	-.02			
...Step 10								
Constant	2.43***	1.73	3.14	.35		.205	11.44	.00
Teacher Interactions	.23***	.10	.36	.07	.35			
Community	.18**	.04	.33	.07	.26			

Note: CI = confidence interval; *LL* = lower limit; *UL* = upper limit; ***p* < .01 *** *p* < .001