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ORIGINAL ARTICLE

The Relations of Teacher Use of Anti-bullying Components at Classroom and Individual Levels with Teacher and School Characteristics

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Abstract
In the literature about bullying prevention and intervention, still little is known about teacher and school characteristics possibly affecting an implementation of a whole-school approach anti-bullying programme. This study investigates the relations of teachers' anti-bullying components at classroom and individual levels with teachers' sociodemographics (gender, age, work experience and teaching in primary vs lower and upper secondary school) and school features (size, and duration of working with a whole-school approach anti-bullying programme). Teachers ($n = 1576$) in 99 Lithuanian schools implementing the Olweus Bullying Prevention Program answered a standardised online self-administered questionnaire. Through an Exploratory Factor Analysis (Principal Axis Factoring extraction method), we individuated a model of teachers' implementation of anti-bullying components, consisting of three dimensions: classroom management, tutorship (organisation of class meetings and work with parents) and direct intervention into bullying incidents. In multilevel analyses, significant associations emerged between the three dimensions, teacher socio-demographics and school characteristics. Female teachers put more effort than male teachers into classroom management, tutorship and intervention into bullying incidents. Younger teachers put more effort than older teachers into all the three dimensions. Primary school teachers put more effort into classroom management and tutorship dimensions. Teachers with more working experience put more effort into intervening into bullying incidents. Lastly, teachers from certified Olweus schools with a longer duration of implementing the OBBP put more effort into direct intervention into bullying incidents. These results shed light on relevant characteristics affecting teachers' efforts within anti-bullying components that need to be considered when implementing interventions.

Keywords Bullying · Bullying prevention · Intervention · Whole-school approach anti-bullying programme · Olweus Bullying Prevention Program

Introduction

The phenomenon of school bullying emerges within a complex social system (Hong & Espelage, 2012), of which teachers are an integral part. Olweus (1993) defines bullying as the systematic and intentional negative actions of a more powerful student or group of students directed at a schoolmate who is unable to defend himself or herself. Moreover, it is a widespread phenomenon which has a negative effect on the students' physical, mental, social and emotional well-being, as well as on their academic achievements (e.g. Bradshaw et al., 2018). Bullying also affects the school climate and has a negative impact on the school community as a whole (e.g. Hong & Espelage, 2012).

In several countries, anti-bullying legislation requires schools to develop and implement anti-bullying policies and procedures (Cornell & Limber, 2015; Hektner & Swenson, 2012). Previous research (Gaffney et al., 2019a, b; Ttofi & Farrington, 2009, 2011) has shown that systematic whole-school approach anti-bullying programmes are pivotal in addressing the prevention of and intervention in bullying. Moreover, research acknowledges that teachers play an influential role when they apply such programmes (De Luca

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et al., 2019; Olweus, 2010; Olweus & Limber, 2010; Rigby, 2020). Many factors may influence teachers' attitudes, beliefs and confidence to manage bullying in schools, which in turn predict their efforts to prevent bullying and intervene effectively in bullying incidents. However, previous studies find that teachers still struggle to detect bullying and rarely implement effective strategies in response to bullying when it is detected (Bradshaw et al., 2007; Veenstra et al., 2014).

Teachers' Role in School-Bullying Prevention

Teachers play a critical role in creating a safe and supportive learning environment, by engaging students, establishing relationships, managing the classroom, serving as positive role models for prosocial behaviours and enforcing school rules (Di Stasio et al., 2016). Therefore, teachers should also be viewed as agents of bullying prevention and intervention (De Luca et al., 2019; Kallestad & Olweus, 2003; Rigby, 2020; Yoon et al., 2016).

However, early studies have found that school staff did relatively little to intervene in bullying incidents (Bauman & Del Rio, 2006; Yoon & Kerber, 2003), and teachers were unsure of how to respond when bullying occurred (Hektner & Swenson, 2012). A common reason for teachers being ineffective at reducing school bullying is that they often believe bullying to be part of a normative developmental process and they expect bullied students to handle the bullying on their own (Hektner & Swenson, 2012). Teachers are more likely to intervene when they feel confident about addressing a bullying situation in school (self-efficacy) (cf. Yoon, 2004), perceive the bullying situation to be serious or when they sympathise/empathise with a bullied student (cf. VanZoeren & Weisz, 2018; Yoon, 2004).

Several researchers (e.g. Hong & Espelage, 2012; Thapa et al., 2013) have pointed out that proper classroom management is crucial for the prevention of school bullying and the development of a positive school climate. The meta-analysis conducted by Ttofi and Farrington (2011) indicated that disciplinary methods and cooperative group work as classroom level measures were those most associated with success in reducing rates of both bullying and of being bullied. Moreover, classroom management and classroom rules were regarded as effective in reducing the incidence of bullying others, while parental involvement was associated negatively with the bullied pupil incidence rates (Ttofi & Farrington, 2009). Olweus and Limber (2010) supported the findings of earlier research by Ttofi and Farrington (2009, 2011) and indicated that classroom rules against bullying, classroom meetings with students and meetings with the parents were important classroom level measures for the successful prevention of school bullying.

Teacher sociodemographic factors are assumed to play a role in school bullying prevention and intervention. An early study carried out by Boulton (1997) and several more recent studies (Bauman et al., 2008; Burger et al., 2015; Yoon et al., 2011) indicate that female teachers are more concerned, feel more responsible and are more likely to act if a bullying incident occurs. However, Borg and Falzon (1989) found that male teachers rated bullying as a significantly more serious phenomenon than female teachers did. Evidence also suggests that teachers' responses differ, depending on the type of bullying incident (Troop-Gordon & Ladd, 2013). For instance, 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 instances of social exclusion than of verbal and physical aggression (Yoon & Kerber, 2003). Recent research indicates that regardless of the type of bullying, the perceived seriousness of bullying is associated with greater empathy for bullied students and the likelihood of intervention (Begotti et al., 2017).

The duration of teachers' work experience may be another factor that influences their efforts to prevent school bullying. However, research is rather controversial. The study by Borg and Falzon (1990) showed that teachers with longer teaching experience tended to be more tolerant of misbehaviour and perceived fewer types of behaviour as problematic. Meanwhile, Burger et al. (2015) indicated that teachers with more than 25 years' teaching experience reported a greater likelihood of working with students who bullied and with bullied students, as compared with inexperienced teachers who had just started their professional career.

Overall, analysis of sociodemographic teacher factors related to the prevention of and intervention against bullying has revealed controversial findings regarding teachers' responses to students who bully and students who are bullied, and teachers' willingness to intervene against school bullying. Therefore, further studies must be carried out to find the correlations between teacher sociodemographic factors on the one hand, and teacher efforts to prevent bullying or to intervene in bullying situations, on the other.

The Effectiveness of Whole-School Approach Anti-bullying Programmes

Some positive changes over time in teachers' efforts to prevent, and intervene in, bullying incidents have been identified. Evidence suggests that when teachers are more aware of bullying and intervene personally, they also communicate that there is no acceptable justification for bullying at school and, therefore, the incidence of bullying decreases significantly among their students (Bradshaw et al., 2007; Di Luca et al., 2019; Veenstra et al., 2014). However, there is variation between schools and between individual teachers in respect of how they implement a whole-school approach anti-bullying programme, which is often complex, consisting

of various components targeted at different levels of influence and including a variety of components (Menesini & Salmivalli, 2017). Some researchers (Cecil & Molnar-Main, 2015; Slee & Skrzypiec, 2016) have argued that dosage (i.e. length and intensity of the programme) and fidelity (i.e. lessons being taught as intended), as well as professional development (teachers having opportunities for professional development on the topic), are the key components of quality implementation. Consequently, it should be considered that teachers who implement more of the core programme components are likely to achieve greater reductions in bullying (Olweus, 2001, 2005). However, this statement is controversial, as a recent meta-analysis by Gaffney et al. (2021) concluded that interventions which included many, or all, of the intervention components did not result in significantly greater effectiveness.

The effectiveness of such programmes may depend on the supportiveness of the school environment (Olweus & Limber, 2010). Research conducted by Ertesvåg and Roland (2015) confirmed that school leadership, collaborative activity and affiliation between teachers are all directly related to bullying incidence rates. Teachers at schools where students reported high bullying rates reported weaker leadership than teachers at schools with low bullying rates (Ertesvåg & Roland, 2015). Variation may also depend on differences in the quality and fidelity of the implementation of whole-school approach anti-bullying programmes among schools (Tolmatcheff et al., 2023).

A previous meta-analysis of an evaluation of 44 programmes provided evidence of the effectiveness of systematic whole-school approach anti-bullying programmes (Ttofi & Farrington, 2011). An updated systematic and meta-analytical review by Gaffney et al. (2019a) to investigate the effectiveness of school-bullying intervention and prevention programmes that examined 103 independent effect sizes obtained similar results and indicated that these programmes were effective in reducing bullying perpetration by approximately 19–20% and victimisation by approximately 15–16%. Moreover, Gaffney et al. (2019b) also identified that, in relation to bullying perpetration outcomes, the Olweus Bullying Prevention Program (OBPP) was overall the most effective intervention programme and that it reduced bullying perpetration by approximately 26%. With regard to school-bullying victimisation, the OBPP was the third most effective anti-bullying programme in terms of reducing victimisation outcomes (Gaffney et al., 2019b).

Finally, a rigorous evaluation of the effectiveness of whole-school approach anti-bullying programmes should be utilised and a system for ascertaining the effectiveness of such programmes should be developed (Hong & Espelage, 2012; Menesini & Salmivalli, 2017; Ttofi & Farrington, 2009, 2011). The OBPP has developed such an assurance system, called the Quality Assurance System of the OBPP (QAS, 2010), and systematic monitoring of the OBPP has been carried out in Olweus-certified schools in Lithuania and Norway (Baraldsnes, 2021). A school is certified as an Olweus School if it can demonstrate that the OBPP practices performed by the school adhere to the Olweus Standard and the School's Quality Plan (QAS, 2010).

The Olweus Bullying Prevention Program as the Background to the Study

The OBPP is an internationally recognised, multi-level, multi-component bullying prevention programme that demonstrates a positive effect in reducing bullying (Limber et al., 2018; Olweus et al., 2021). The OBPP is designed to reduce and prevent bullying in primary and lower secondary schools (grades 3 to 10). Studies of the OBPP have shown a substantial reduction in bullying problems after 8 to 9 months of work with the programme, as well as long-term school level effects up to 8 years after original implementation (Limber et al., 2018; Olweus et al., 2021). Moreover, the OBPP is not a "programme" in the narrow sense of this term, but rather a coordinated collection of research-based components that form a unified whole-school approach to bullying, combined with selective interventions (Olweus et al., 2021, p. 412). Therefore, the main goal of the OBPP is to make school a safe and positive learning environment in which adults display warmth, positive interest and engagement, where there are clear boundaries as regards unacceptable behaviour, where there is consistent use of non-physical and non-hostile, but negative sanctions when rules are broken, and where the adults at the school (and ideally also in the home) act with authority and serve as positive role models (Kallestad & Olweus, 2003; Olweus, 1993, 2001, 2005; Olweus & Limber, 2010). These principles have been translated into a number of specific components at the school, classroom, individual and, in some contexts, community levels. These components are specified in the documents of the OBPP (e.g. Olweus, 2008; Olweus et al., 2008a, b). They are intended to reduce risk factors (such as low school commitment, poor academic performance and anti-social behaviour) and to increase protective factors (prosocial involvement, development of social skills and interaction with prosocial peers, etc.), as documented in the *OBPP Implementation Manual* (Olweus et al., 2008a, b), the *OBPP Manual for School Staff* (Olweus et al., 2008a, b) and the *OBPP Quality Assurance System Document* (QAS, 2010).

While several studies have examined the effectiveness of OBPP, fewer studies have examined its implementation, and even fewer studies have examined which characteristics at the school and individual levels are associated with differences in the implementation of the OBPP components by teachers. However, investigating these aspects would make

it possible to improve the implementation of the OBPP and other whole-school approach anti-bullying programmes.

When considering the Lithuanian context, the prevalence of bullying in Lithuanian schools is mostly measured by international surveys that are also estimated in many different countries. For example, every fourth year, the Health Behaviour in School-aged Children (HBSC) conducts a large-scale quantitative survey, using anonymous, self-reported classroom-based questionnaires in groups of 11-, 13- and 15- year-old students, across different countries. Lithuania has been involved in the current survey since 1992. According to the HBSC survey, Lithuania has been and remains a country with one of the highest percentages of students who were bullied two or three times or more in the previous couple of months. Results of the HBSC survey indicate that overall, 32.38% of adolescents were bullied in 2001/2002 (HBSC, 2004), while 27% of adolescents were bullied, and the same percentage of students were cyberbullied, in 2021/2022 (HBSC, 2024). Finally, the rate at which boys were bullied was higher than the rate for girls in all age groups and in all HBSC studies (except the 13-year-old age group in the 2021/2022 survey; HBSC, 2024).

The education system in Lithuania is governed by the *Law on Education* of the Republic of Lithuania (LR Seimas, 2011). According to Section 49 of the *Law on Education*, teachers must ensure students' safety and the quality of education, and they must respect the student as a person, and not violate the student's legitimate rights and interests (LR Seimas, 2011). In accordance with the law, the implementation of the OBPP started in 2008, in 29 schools from three Lithuanian municipalities, and a kind of "train-the-trainer" model was used (Olweus & Limber, 2010). Since 1 September 2017, some changes in Lithuanian legislation have been made requiring all students to participate in a consistent and long-lasting preventive programme for risky behaviour, including bullying, of which the OBPP is one of the 22 recommended programmes (LR Seimas, 2016).

The Present Study

Several studies have confirmed that the likelihood of a teacher intervening in bullying is influenced by a number of individual factors: how serious the teacher perceives the bullying to be, the teacher's level of empathy for the student who is being bullied (De Luca et al., 2019), their efficacy beliefs (Begotti et al., 2017; Fischer & Bilz, 2019; Hawley & Williford, 2015; VanZoeren & Weisz, 2018) and their self-confidence (Bradshaw et al., 2007; Cecil & Molnar-Main, 2015), personal experience (Yoon et al., 2016) and gender and age (Borg & Falzon, 1990; Boulton, 1997; Green et al., 2008). However, only a few studies have been published about teachers' beliefs about and attitudes to hypothetically intervening in school-bullying incidents (Bauman & Del Rio, 2006; Kollerová et al., 2021; Yoon et al., 2016) and about how teachers do in fact intervene in bullying incidents (Burger et al., 2015; Rigby, 2020; Wachs et al., 2019). Even fewer studies have analysed the impact of those interventions (Menesini & Salmivalli, 2017) or investigated teachers' efforts to prevent bullying by applying a whole-school approach anti-bullying programme (Kallestad & Olweus, 2003; Olweus, 2001, 2010). Nevertheless, this is a pivotal element to investigate, to improve the implementation of a multi-level, multi-component bullying prevention programme.

In an effort to fill these research gaps and expand knowledge about teachers' efforts to prevent school bullying, the present study aims to investigate the relationship of teacher use of anti-bullying components within the OBPP at classroom and individual levels, with teacher (gender, age, teaching experience, teaching at the primary vs. lower and upper secondary education levels) and school characteristics, that is the size of school, being a certified Olweus school, and having completed 18 months of implementation of the OBPP. Only components at the classroom and individual levels were investigated because teachers play a crucial role in the implementation of the OBPP within those two levels, while components of the OBPP at the school level are often dependent on the school leadership decisions. The following hypotheses were made:

Hypothesis 1: Use of the OBPP components by teachers differs according to their sociodemographic characteristics. In accordance with previous literature, we expect that female, older and more experienced teachers will use the OBPP components more than male, younger and less experienced teachers.

Hypothesis 2: Use of the OBPP components by teachers differs in terms of dependence on school characteristics. Based on previous literature, we expect that teachers in schools with longer implementation of the OBPP will put more effort into bullying prevention and intervention than teachers in schools with a shorter OBPP implementation time. With regard to school size, due to the scarcity of literature on this topic we did not formulate specific hypotheses, but we did more exploratively examine the hypothesis that the OBPP components implemented by teachers can differ by school size.

Method

In the current study, a non-experimental, cross-sectional survey design was applied, and data was collected anonymously using a self-administered, standardised online questionnaire over the period from 7 March 2017 to 1 June 2017. It took around 30 min to complete it in the *Questback* software.

Participants

Participants were 1576 teachers from 99 schools. The response rate among teachers was 88.94%.

As Table 1 shows, most of the study participants were female, lower and upper secondary school teachers. In Lithuania, the process of certification and the criteria for teacher certification (with four qualification categories, such as teacher, senior teacher, teacher-supervisor and teacher-expert, being defined) are laid down in the *Order on Appraisal of Teachers and Specialists Providing Assistance to Pupils (Except Psychologists)* (MES, 2008). Newly educated teachers start their professional career as a teacher—the lowest qualification category. On the fulfilment of specific criteria, a teacher can be certified for the higher category as a senior teacher, and so on. In terms of their qualifications, the majority of the respondents were senior teachers and teacher-supervisors and had a university degree. Meanwhile, several of the respondents indicated other educational backgrounds without specifying them (most likely education acquired in the former pedagogical institutes, academies or conservatories). The age of the respondents ranged from 23 to 72, with a mean age of 47.96 years ($SD = 8.59$), and their teaching experience varied from 1 to 50 years ($M = 24.21$, $SD = 9.61$). However, due to the overlapping diversity of school types, in the present study, it was not possible to distinguish between school types, so that primary, as well as lower and upper secondary, school teachers were examined as different groups in the data analysis. In 2008–2016, more than 356 schools implemented the OBPP, and there were 72 certified Olweus schools from five stages of the OBPP implementation in Lithuania, which continued the OBPP by conducting the Olweus Quality Assurance System (QAS, 2010) as a 12-item Olweus standard management tool for systematic follow-up of the OBPP (Baraldsnes, 2021). In the current study, the participants were 54 certified Olweus schools and 45 schools from stage 5, which had just finished the OBPP implementation during the research completion and had not started the QAS of the OBPP before 2017.

Measures

The research instrument for data collection was constructed by the first author on the basis of the OBPP implementation materials (Olweus, 2008; Olweus et al., 2008a, b) and the QAS (2010). Participants answered a self-reported questionnaire on their efforts in implementing the different components within the OBPP at the levels of classroom (18 items) and individuals (18 items). For each item, the response scale included five options with responses varying from *I do not do it* (coded 1) to *I do it very actively* (coded 5). The content of all items is reported in Table 3. At the classroom level, four items were related to the implementation of class rules against bullying, and six items to classroom management. The organisation of Olweus class meetings and the implementation of specific Olweus components each consisted of two items. The teachers' collaboration with parents component consisted of four items. At the individual level, three items were related to teachers' intervention into bullying incidents, while the rest of the items were equally related to the teachers' efforts on suspicion of bullying, follow-up on bullying incidents and organisation of the confrontational conversations with students who bullied others. In order to individuate the latent dimensions underlying teachers' efforts in implementing the OBPP components, we ran an Exploratory Factor Analysis (EFA; MPLus; MLR estimator, Complex option to control for the within-cluster correlation, Goemin oblique rotation method), asking for the estimation of models from one-factor solution to five-factor solution. The solutions with three, four and five factors obtained a satisfactory fit (Table 2).

The three-factor solution had an interpretable solution, while the four-factor and five-factor solutions did not provide interpretable results with one and three factors, respectively, but solely collected residual variance from items that better loaded the three main factors, which, in turn, mainly replicated the solution emerging in the

Table 1 Sociodemographic characteristics of the teachers involved in the study

Characteristics			Characteristics		
Gender	*n*	%	Teaching educational level	*n*	%
Male	75	4.8	Primary education	570	36.2
Female	1501	95.2	Lower or upper secondary education	1006	63.8
Educational background	*n*	%	Teacher qualifications	*n*	%
Professional bachelor	90	5.7	Teacher	147	9.3
Bachelor	1002	63.6	Senior teacher	727	46.1
Master	447	28.4	Teacher-supervisor	681	43.2
PhD	2	.1	Teacher-expert	21	1.3
Other	35	2.2			

Table 2 Fit indices of the one- to five-factor solutions emerged in the Exploratory Factor Analysis

Model	Chi-square(df) *p*-value	CFI	TLI	RMSEA (90% C.I)	SRMR	Satorra-Bentler scale diff. test against the previous model: Δchi-square(df), *p*-value
1-factor	7556.114(594) .000	.0.733	0.716	0.086 (0.085–0.088)	0.080	-
2-factor	4815.021(559) .000	0.837	0.816	0.070 (0.068–0.071)	0.055	1760.118 (35), .000
3-factor	2330.741(525) .000	0.931	0.917	0.047 (0.045–0.049)	0.026	3329.290 (34), .000
4-factor	1902.241(492) .000	0.946	0.931	0.043 (0.041–0.045)	0.023	371.696 (33) .000
5-factor	1692.833(460) .000	0.953	0.935	0.041 (0.039–0.043)	0.020	167.561 (32), .000

three-factor solution. In the chi-square comparison (with Bentler and Tucker correction) of the model fits, the largest decrease in chi-square was registered for the three-factor solution, compared to the two-factor solution (Satorra-Bentler's difference-test: $\Delta\chi^2$ (3329.290)). Chi-square also decreased significantly for the four-factor solution compared to the three-factor solution (Satorra-Bentler's difference-test: $\Delta\chi^2$ (33) = 371.696), and for the five-factor solution compared to the four-Satorra-Bentler's difference-test: $\Delta\chi^2$ (32) = 167.561), but decreased at a lower rate than for the previous models. Factor eigenvalues were only higher than 1 for the first three factors emerging (factor 1 = 16.150; factor 2 = 2.693; factor 3 = 2.269) and the analysis of the eigenvalue plot indicated the three-factor solution as the best solution. The three-factor model was therefore retained as our final dimensionality structure. Loadings of the items in the three-factor, rotated solution are reported in Table 3, as well as means and standard deviations.

The three factors consisted of a first factor we named Classroom Management, loaded with items assessing implementation of activities at the classroom level and expressing the ability to take leadership in the OBPP implementation; a second factor we named Tutorship loaded with the remaining items regarding activities at the classroom level and related to the organisation of class meetings with students and working with parents; a third factor we named Direct Intervention, that was loaded with the activities performed as direct intervention with individuals involved in bullying episodes. The three factors were positively correlated (all correlations $p < 0.05$). Tutorship was associated 0.338 with Direct Intervention, and Classroom Management was associated 0.318 with Tutorship and 0.609 with Direct Intervention. Hence, if Tutorship was more independent of the other two factors, Classroom Management and Direct Intervention showed a greater overlap.

Analysis Strategy

The data was analysed using Mplus 8.4 (Muthén & Muthén, 1998-2017). As the first step of the analyses, we ran the Exploratory Factor Analysis (EFA) of the measure concerning teachers' efforts in implementing the OBBP components at the classroom and individual levels, by taking account of the hierarchical structure of the data (teachers nested within schools). We used the Complex option available in MPlus that controls for the within-cluster correlation, and the Robust Maximum Likelihood estimator (MLR) to compute the standard errors, with a sandwich estimator correcting for the non-normality of the data. The Goemin oblique rotation method was used (results about the EFA were reported in the Measure section).

We then computed descriptive statistics. As the last step of data analysis, we ran multilevel path analyses (MLR estimator). First, we tested a model on all the teachers from the 99 schools, where the variance of the latent dimensions of the OBPP components' implementation was predicted at the individual level (level 1) by teachers' gender (where 0 = female and 1 = male teachers), age, work experience and school level of teaching (where 0 = lower and upper secondary school teachers and 1 = primary school teachers), and at the schools' level (level 2) by the size of the schools and whether the school was certified or not. We then tested the same model (with the exclusion of being certified schools among predictors at level 2) for the 45 schools that were OBPP non-certified and the 54 OBPP-certified schools. In the model run for the 54 OBPP-certified schools, we also included among the level 2 predictors the certified status of the school with the year of the OBPP implementation (lower values indicate older implementation), to examine whether the teachers' implementation efforts varied with the length of the OBPP implementation by the school. This information was not available for the 45 non-certified schools, because they had just completed the OBPP's implementation, and

Table 3 Descriptive statistics and loadings of the OBPP components in the three-factor solution (Geomin rotation)

Item	*M*	*SD*	Factor 1	Factor 2	Factor 3
Classroom level components					
I apply for class rules against bullying	4.16	.673	0.670*	0.053	0.039
I work systematically in order to create a positive group identity or sense of community in the class	4.24	.605	0.815*	0.035	−0.103*
I hold the class meetings with students at least twice in a month, in order to raise awareness of issues surrounding bullying and how to deal with it	4.02	.980	0.522*	0.499*	−0.138*
In the class meetings, I use simulations and role-play as effective methods to demonstrate and proceed various processes in bullying among students	3.67	1.019	0.426*	0.623*	−0.189*
I exert an authoritative leadership which is characterized by a combination of kindness, care, and strength	4.08	.612	0.697*	0.095*	−0.045
I justify and explain the rules of behaviour, which are used in the class, so that students would be aware of the consequences of any violation	4.22	.612	0.841*	−0.013	−0.043
I follow well established rules of behaviour and routines in class	4.29	.600	0.822*	−0.068*	0.022
I invite students to discuss the relevant rules and possible negative consequences/ sanctions for violation of rules	4.02	.688	0.650*	0.238*	0.006
I monitor consistently and enforce the rules in class and treat all students in the most equitable and fair manner	4.26	.596	0.819*	−0.034	0.023
In teaching, I often focus on the class as a whole, but I can switch flexibly between the focus on the group and attention to an individual student	4.18	.605	0.683*	−0.066	0.038
I use the Bullying Circle in order to get a better and more nuanced comprehension of possible reaction of students or roles in an acute bullying situation	3.36	.953	0.284*	0.437*	0.042
I confirm the desired behaviour frequently and consistently and show enthusiasm and warmth when I do it	4.12	.619	0.647*	0.025	0.024
I try to figure out what constitutes positive consequences both for the individual student and for the whole class	4.01	.702	0.546*	0.295*	0.018
I involve students in discussions about possible negative consequences, so that they could regard those possible sanctions as more fair	3.99	.679	0.534*	0.301*	0.031
I invite parents to collaborate, so they can feel as a valuable members of a team in helping students	3.69	.841	0.352*	0.576*	−0.012
I work toward a goal to increase parent's awareness, knowledge and competence when it is generally related to bullying among students issues	3.74	.769	0.343*	0.593*	0.013
I ensure that a report of what has emerged at the parents' meeting and what they have planned to do will be sent out after parents' meeting to all parents	3.40	1.073	0.215*	0.571*	0.011
In the meeting with student's parents, I inform and discuss about ongoing work against bullying at least once per school year	3.79	.898	0.316*	0.586*	0.066
Individual level components					
On suspicion of bullying I together with the school administration plan and implement a systematic observation of the bullied student	3.79	.808	0.008	0.244*	0.483*
On suspicion of bullying I survey students' social relations in the group	3.61	.880	0.047	0.316*	0.425*
On suspicion of bullying I interrogate with my colleagues if they have noticed something special and ask them to pay an extra attention to the bullied student	4.02	.667	0.183*	0.081*	0.532*
On suspicion of bullying I contact parents/ guardians of the bullied student in order to provide and get some more information	3.91	.829	0.041	0.379*	0.479*
I make conversations with the students who I think are involved in bullying	4.20	.629	0.298*	−0.003	0.555*
I intervene immediately and stop bullying	4.34	.601	0.382*	−0.198*	0.517*
I notify the school administration about bullying	3.94	.767	0.066	0.089*	0.534*
I secure and help students who have been bullied in the bullying situation	4.21	.612	0.235*	−0.076*	0.630*
In the confrontational conversation with students who bully others, I set limits and control the conversation as OBPP recommends	4.09	.707	0.192*	0.101*	0.601*
In the confrontational conversation with students who bully others, I put forward collected documentation about bullying	3.91	.767	0.018	0.167*	0.704*
In the confrontational conversation with students who bully others, I require that students who bully others should immediately stop bullying	4.24	.671	0.141*	−0.105*	0.706*

Table 3 (continued)

Item	*M*	*SD*	Factor 1	Factor 2	Factor 3
In the confrontational conversation with students who bully others, I introduce consequences for students who bully others if they do not stop bullying and what school does further to pursue this case	4.12	.663	0.132*	0.000	0.746*
In the confrontational conversation with students who bully others, I make an appointment for new meeting after a day or two, as well as I inform about that it will be set up several follow-up meetings with and without parents	3.74	.903	−0.124*	0.341*	0.669*
I follow up the case with new meetings with students who bully others and the student who have been bullied until I am absolutely sure that bullying has stopped	3.90	.743	−0.004	0.257*	0.691*
I inform well and frequently involved parents	3.86	.834	−0.024	0.414*	0.598*
I initiate further sanctions if bullying doesn't cease, in order to cease the bullying case	3.89	.754	−0.014	0.163*	0.683*
I document all the work, which have been done in a bullying case	3.35	1.030	−0.027	0.409*	0.413*
I ask about bullying in the permanent conversation with a student	4.00	.735	0.162*	0.193*	0.506*

*$p < .05$

it was therefore not included among predictors in the non-certified school model.

Ethics

Approval to conduct the study was obtained from the Norwegian Agency for Shared Services in Education and Research (protocol number 50989) and obligations were adhered to strictly throughout the research process. Informed consent was obtained from school principals and all the individual participants involved in the study.

Results

Descriptive Statistics

Mean scores and standard deviations of the intervention components are reported in Table 3. The analysis of the mean scores of components loading Classroom Management indicated that teachers were most concerned about compliance with the rules at classroom level and working systematically to create a positive group identity or sense of community in the class. A slightly lower mean score was detected for teachers' efforts in teaching and focusing on the class as a whole. The components loading Tutorship had score means slightly below the score means of the components loading Classroom Management. Teachers put less effort into organising class meetings and working with parents, in particular sending out a report to all parents of what had emerged at the parents' meeting and what they planned to do after the parents' meeting. Inspection of the score means of the components loading Direct Intervention showed that the highest score mean was for intervening immediately and stopping bullying, while the lowest score mean was for documenting all the work that had been done in a bullying case.

Multilevel Path Analysis

As the first step of multilevel analyses we ran null multilevel models to examine the ICCs of the three OBPP activity factors among the 99 schools, and the 45 OBPP non-certified schools and the 54 OBPP-certified schools separately. Among the 99 schools, examination of the ICCs indicated that 8% of the variance of Classroom Management, 17% of the variance of Tutorship and 8% of the variance of Direct Interventions lay at the level of schools. Among the 45 OBPP non-certified schools, variance among schools was 5% for Classroom Management, 14% for Tutorship and 7% for Direct Interventions; and among the 54 OBPP-certified schools, variance among schools was 8% for Classroom Management, 18% for Tutorship and 8% for Direct Interventions.

As a second analysis step, as predictors, we introduced characteristics of individuals (gender, age, work experience and level of teaching) at level 1, and school characteristics at level 2: school size and certification of the school in the model tested among teachers in all the 99 schools; school size in the model tested among teachers in the 45 OBPP non-certified schools; school size and year of certification in the model tested among teachers in the 54 OBPP-certified schools. The results of the three multilevel models are displayed in Table 4.

All three models were satured: 99 schools, chi-square(0) = 0.161, $p = 0.000$, CFI = 1.00, TLI = 1.00, RMSEA = 0.000 SRMR = 0.000 (within) 0.002 (between); 45 OBPP non-certified schools, chi-square(0) = 0.146, $p = 0.000$, CFI = 1.00, TLI = 1.00, RMSEA = 0.000 SRMR = 0.000 (within) 0.005 (between); 54 OBPP-certified schools chi-square(0) = 0.192, $p = 0.000$, CFI = 1.00, TLI = 1.00, RMSEA = 0.000 SRMR = 0.000 (within) 0.002 (between).

Table 4 Associations between the three latent dimensions of the use of the OBPP components and sociodemographic and school characteristics

	Classroom man			*Tutorship*			*Direct intervention*		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
All schools									
Within level (individuals)									
Gender	−0.215	0.059	> .001	−0.303	0.082	> .001	−0.166	0.068	.015*
Age	−0.007	0.004	.040*	−0.016	0.005	.003*	−0.015	0.004	> .001*
Work experience	0.004	0.003	.240	0.008	0.004	.082	0.010	0.004	.008*
Teaching level	0.102	0.028	> .001	0.172	0.044	> .001	−0.010	0.035	.786
Between level (schools)									
School size	0.000	0.000	.178	0.000	0.000	.202	0.000	0.000	.104
OBPP certification	0.071	0.036	.049*	0.098	0.075	.194	0.076	0.044	.082
OBPP non-certified schools									
Within level (individuals)									
Gender	−0.252	0.070	> .001	−0.230	0.140	.101	−0.248	0.103	.016*
Age	−0.002	0.006	.722	−0.009	0.009	.302	−0.010	0.006	.091
Work experience	−0.002	0.004	.648	.0.000	0.007	.995	0.005	0.006	.385
Teaching level	0.118	0.004	.007*	0.225	0.082	.006*	−0.001	0.058	.989
Between level (schools)									
School size	0.000	0.000	.614	0.000	0.000	.243	0.000	0.000	.799
OBPP-certified schools									
Within level (individuals)									
Gender	−0.196	0.083	.017*	−0.344	0.099	> .001	−0.122	0.088	.164
Age	−0.010	0.004	.019*	−0.020	0.006	.002*	−0.017	0.005	> .001
Work experience	0.006	0.004	.103	0.012	0.005	.023*	0.013	0.005	.007*
Teaching level	0.091	0.037	.013*	0.138	0.049	.005*	−0.015	0.044	.728
Between level (schools)									
School size	0.000	0.000	.423	0.000	0.000	.476	0.000	0.000	.290
Year of OBPP implementation	−0.022	0.027	.414	−0.020	0.053	.708	−0.051	0.026	.050*
Association indices									
All schools									
Classroom manag	–			0.031 ($p < .001$)			0.017 ($p < .001$)		
Tutorship	0.191 ($p < .001$)			-			0.034 ($p < .001$)		
Direct intervention	0.154 ($p < .001$)			0.208 ($p < .001$)			-		
OBPP non-certified schools									
Classroom manag	-			0.028 ($p = .010$)			0.015 ($p = .015$)		
Tutorship	0.200 ($p < .001$)			-			0.035 ($p = .002$)		
Direct intervention	0.144 ($p < .001$)			0.217 ($p < .001$)			-		
OBPP-certified schools									
Classroom manag	-			0.033 ($p = .001$)			0.018 ($p = .005$)		
Tutorship	0.185 ($p < .001$)			-			0.034 ($p = .003$)		
Direct intervention	0.159 ($p < .001$)			0.203 ($p < .001$)			-		

$p < .05$; gender: female = 0, male = 1; teaching level: primary education = 1, lower and upper secondary education = 0; year of OBPP implementation: from 2008 to 2013

Association indices: below the diagonal, within (individual) level; above the diagonal between (school) level

Use of the OBPP Components and Teachers' Sociodemographic Characteristics

When considering the predictors introduced at the individual level (i.e. sociodemographic characteristics) to examine Hypothesis 1, among teachers in all the 99 schools (Table 4), Classroom Management was associated with being female, being younger and being a primary school teacher. Tutorship was associated significantly with being female, being younger and being a primary school teacher.

Direct Intervention was associated with being female, being younger and having longer work experience.

Among teachers in the OBPP non-certified schools (Table 4), Classroom Management was associated significantly with being female and being a primary school teacher. Among teachers in these schools, being a primary school teacher was also associated positively with Tutorship, and being female was also associated with Direct Intervention.

When considering the teachers from the 54 OBPP-certified schools (Table 4), Classroom Management was associated with being female, being younger and being a primary school teacher. Tutorship was associated with being female, being younger, with older work experience and being a primary school teacher. Direct Intervention was significantly associated with being younger and having longer work experience.

Use of the OBPP Components by Teachers and School Characteristics

When examining the predictors introduced at school level (level 2) to examine Hypothesis 2, among the teachers in all the 99 schools, Classroom Management was associated with being a teacher in a certified school, and no other significant associations emerged.

Among the teachers in the 45 OBPP non-certified schools, only school size was introduced as a predictor at the school level, and this school characteristic was not associated significantly with any of the three latent dimensions of the OBPP component implementation.

Among the teachers in the 54 schools, at the level of schools, Direct Intervention was associated significantly and negatively with the year of OBPP implementation, indicating higher rates of direct intervention activities with individuals involved in bullying episodes for the teachers belonging to the certified schools, with the longer duration of the OBPP implementation.

Discussion

In this study, we investigated teachers' efforts in implementing components at the classroom and individual level of the OBPP as related to individual and school characteristics, to individuate key dimensions in order to consider improving the implementation of anti-bullying intervention. Noticeably, this is the first study exploring the latent dimensions underlying teachers' efforts in implementing classroom and school level components of OBPP. In the exploratory factor analysis, three types of dimensions emerged. The first dimension, Classroom Management, expressed teachers' efforts in implementing components related to classroom leadership. The second dimension, Tutorship, also concerned the implementation of components at the classroom level, but related to holding class meetings with students and meetings with parents, as well as overall teacher-parent collaboration in ensuring a safe learning environment. The last dimension, Direct Intervention, concerned components performed as direct intervention with students involved in bullying incidents. These three dimensions were positively correlated to each other, with Classroom Management and Direct Intervention being largely connected, while Tutorship was only moderately associated with the other two dimensions. The stronger correlation between Classroom Management and Direct Intervention dimensions could be explained by the fact that teachers' responses to bullying incidents reflect the wider context of classroom management and climate (Kollerová et al., 2021) and serve, according to Yoon and Bauman (2014, p. 310), "as socialisation experiences for potential perpetrators, bullied students, and other students, determining students' future behaviours and, accordingly their social and emotional adjustment". Meanwhile, the moderate association of the Tutorship dimension with the other two dimensions suggests that teachers still struggle to involve parents in bullying prevention. The analysis of the item score means in the descriptive analysis has shown that teachers contributed only moderately to keeping parents well-informed about the school's preventive and problem-solving bullying prevention work in at least one group or class parents meeting a year, and at the regular parent/teacher conferences.

Classroom Management

When considering Classroom Management, analysis of the item score means indicated that teachers put most effort into justifying, explaining and following well-established rules of behaviour and routines in class, as well as working systematically to create a positive group identity or sense of community in the class and to exert authoritative leadership characterised by a combination of kindness, caring and strength. This result may be considered in relation to previous research indicating that classroom management and classroom rules are effective in reducing the incidence of bullying and the development of a safe and supportive school climate (Gaffney et al., 2021; Hong & Espelage, 2012; Ttofi & Farrington, 2009). This higher effectiveness may be due to the greater effort that teachers put into implementing these types of components in anti-bullying intervention.

Tutorship

The Tutorship dimension concerns teachers' efforts in organising meetings with students and with their parents, as well as overall collaboration with parents. Item mean scores suggest that teachers adhered to the requirement to

hold class meetings with students at least twice a month, to raise awareness of the issues related to bullying and the ways of dealing with it. However, those classroom meetings were characterised more by discussion with students of the relevant rules and the possible negative consequences and/or sanctions for violating the rules, than by trying out some other effective methods, such as simulations and role play, or the application of the Bullying Circle, a specific OBPP measure to be used in classroom meetings. Olweus (1993) highlighted class meetings to discuss bullying and use lessons to foster social-emotional skills, effective communication and strategies for responding to school bullying as a crucial component of the OBPP. These results suggest that teachers recognise collaborating with students' parents at the classroom level as important, increasing parents' awareness and knowledge of bullying and competence to manage bullying. Nevertheless, teachers' efforts are more limited to discussing and providing information about ongoing work against bullying at least once per school year. Teachers give less priority to inviting parents to collaborate, and even less priority to sending out a report to all parents after parents' meetings, detailing what emerged at the meeting and what they planned to do.

Direct Intervention

Regarding teachers' efforts to implement OBPP components at the individual level, consistent with previous studies (e.g. Bauman et al., 2008), the analysis of the component score means showed that teachers were willing to immediately intervene and stop the bullying. Moreover, teachers protected and helped students who were bullied in bullying situations, and they showed empathy towards bullied students. Furthermore, teachers put more effort into dealing with the consequences of bullying incidents than when responding to a suspicion of bullying. This result is in line with previous research showing that teachers still struggle to detect bullying (Bradshaw et al., 2007; Veenstra et al., 2014).

Teachers' Individual Characteristics and Component Implementation

When it comes to teachers' individual characteristics promoting teachers' efforts in implementing OBPP components, our results confirmed the hypothesis that teacher sociodemographic factors can influence teachers' bullying prevention and intervention efforts. Female teachers put more effort into classroom management, tutorship and direct interventions than older, male teachers. This result is consistent with previous studies conducted in Austria and southern Germany (Burger et al., 2015), South Korea (Yoon et al., 2011) and the USA (Bauman et al., 2008), which reported that female teachers were more likely to work with students who bullied than male teachers were. We can hypothesise that this difference lies in females' greater empathic skills and willingness to help bullied students (De Luca et al., 2019). However, it should be noted that the association between gender and Direct Intervention was significant for teachers in the non-certified schools, but turned out to be non-significant among teachers in the OBPP-certified schools. This may be related to how teachers at certified schools, independent of gender, are more prepared and feel more supported by the school's experience in implementing anti-bullying intervention, also when dealing with the bullied students or the perpetrators.

When considering teachers' age and teaching experience, younger teachers unexpectedly reported higher efforts in implementing OBPP than their older colleagues, but this only concerned teachers at the certified schools. A possible explanation is that younger teachers feel more enthusiastic and engaged in their profession than their older colleagues, devoting more effort to educational activities that are less related to the teaching subject. In the same way, in schools with longer experience in implementing anti-bullying intervention, younger teachers can maintain their greater enthusiasm for the anti-bullying implementation than their older colleagues, for whom these activities are part of the school routine. Furthermore, Borg and Falzon (1990) found that older teachers tend to be more tolerant of misbehaviour, and may devote less effort to anti-bullying intervention than their younger colleagues. This difference due to age, however, was not apparent among teachers at the non-certified schools, possibly because in these schools all the teachers may be equally motivated, regardless of age, to implement anti-bullying actions, since the OBPP implementation is more at an initial stage and a new type of activity.

We also found that, in the certified schools, more experienced teachers devoted more effort to Direct Interventions with the students involved in bullying, in comparison to their less experienced colleagues. Moreover, among teachers at the OBPP-certified schools, teachers' work experience was significantly associated with the Tutorship dimension, besides Direct Intervention. These results may be due to the fact that teachers with longer experience can feel more confident when intervening in challenging situations such as bullying. In line with this possible explanation, previous research has shown that teachers with more than 25 years' teaching experience are more likely to intervene in bullying incidents (Burger et al., 2015). Overall, this result supports the conclusions from previous literature that effective bullying prevention and intervention programmes must pay attention to teachers' professional development (or work experience) as a critical element, besides the *dosage* and the *fidelity* (Slee & Skrzypiec, 2016). It should be noted, however, that this effect of the experience was only apparent at the certified schools, and thereby the schools with a longer tradition for implementing antibullying intervention,

probably because in these schools more experienced teachers also have greater experience from practising the OBPP components. In schools that are not certified, where the OBPP implementation is more recent, work experience alone may not be enough to make a difference, because even the most experienced teachers do not feel confident about implementing the OBPP components that are also quite new for them.

Generally, in both certified and non-certified schools, primary school teachers reported being more active in Classroom Management and Tutorship dimensions, which is prevention of bullying within the OBPP at classroom level, than the lower and upper secondary school teachers. A follow-up study of 82 Norwegian teachers found a similar trend (Baraldsnes, 2022). One possible explanation for this result might be that primary school teachers are available to their pupils for most of the school day and are directly responsible for guaranteeing a safe and positive learning environment in the classroom, while lower and upper secondary school teachers share this responsibility with other teachers. Furthermore, it is possible that lower and upper secondary school teachers focus more on subject teaching than on generic educational activities, while primary school teachers are more concerned with their role as class leaders and tutors and exert more authoritative class management and tutorship to prevent school bullying.

School Characteristics

Only two school characteristics were measured in the between-level analysis. School size was not significantly associated with Classroom Management, Tutorship or Direct Intervention in both certified and non-certified schools. However, being an Olweus-certified school (vs. a non-certified school that had recently completed the implementation of the OBPP at the point of data collection) was associated positively with Classroom Management. A more detailed analysis of certified Olweus schools indicated that in these schools, the earlier the schools implemented the OBPP, the more effort teachers put into Direct Intervention into school bullying. We could expect that schools with longer experience of the OBPP intervention would be more effective in implementing the OBPP components, as they have more experienced personnel in running these activities, and more consolidated procedures. From another point of view, however, these results may highlight the relevance of certifying schools. Indeed, being a certified school for anti-bullying intervention may increase teachers' confidence in being able to deal with these challenging activities, because the whole school is prepared for this task, by having more consolidated procedures and more experience from anti-bullying intervention. Moreover, being a certified school for anti-bullying intervention might become part of the professional identity of the school as a community, thus promoting teachers' more consistent efforts in implementing the anti-bullying components. In line with this interpretation, the previously mentioned results that, among the teachers of the OBPP-certified schools, teachers' gender was no longer associated significantly with Direct Intervention, and teachers' work experience was associated significantly not only with Direct Intervention, but also with Tutorship, indicating that working in a certified school magnifies the effects of the individual characteristics promoting efforts in anti-bullying intervention.

Limitations and Future Directions

When interpreting these results, it is necessary to address the limitations of this study. We investigated teachers' efforts in implementing OBPP components at the classroom and individual level, but not at the school level. Future studies can investigate whether factors at the school level and the role of the school principal in anti-bullying work can also impact teacher implementation. Moreover, the teachers self-reported their efforts within the OBPP at the classroom and individual levels. Further studies might also include additional sources of information, such as students', as well as parents', reports on bullying experiences and anti-bullying prevention and intervention at school. We need also to consider that the data for the current study was collected in 2017 and was limited to the Lithuanian context; these aspects pose some limitations to the generalisability of our results and call for future research investigating the topic of this study in other contexts and in more recent times.

Our results indicate that female teachers may devote more effort than male teachers to Classroom Management, Tutorship and Direct Interventions into bullying incidents, in accordance with some previous literature (e.g. Burger et al., 2015; Yoon et al., 2016). However, the teachers participating in the study were predominantly female teachers. Even if this gender distribution in the sample is representative of the Lithuanian teacher population, generalising from these results must be approached with caution.

As a further indication for future research, our results concerning teachers' work experience, and the magnifying effect of working in certified schools, calls for more extensive research into other potentially significant contextual factors (e.g. school location, type of schools, private or public schools), as well as crucial factors for the implementation of whole-school approach anti-bullying programmes.

Finally, despite providing important information on individual and school characteristics important for teachers' efforts in implementing anti-bullying components, the current study indicated "what works" in the teachers' opinion, but did not answer "for whom and under what circumstances". Further studies should address these two important questions. Future studies should also widen the investigation by also examining

the outcomes of the programme implementation, for instance by examining self- or peer-reported students' behaviours. Notwithstanding these limitations, this study has provided relevant knowledge of factors that can affect the implementation of anti-bullying intervention actions by teachers, highlighting aspects that need to be considered to further increase the effectiveness of anti-bullying intervention.

Conclusion

Even though this study investigated a limited number of the teacher and school characteristics possibly affecting teachers' efforts within OBPP at the classroom and individual levels, it does highlight the relevance of teachers' work experience and the need to further investigate other individual and contextual characteristics that may affect teachers' efforts in implementing whole-school approach anti-bullying programmes.

Abbreviations HBSC: The Health Behaviour in School-aged Children; OBPP: The Olweus Bullying Prevention Program; QAS: The Quality Assurance System of the OBPP; EFA: Exploratory Factor Analysis; CFI: Comparative Fit Index; MLR: Robust Maximum Likelihood estimator; RMSEA: Root Mean Square Error of Approximation; TLI: Tucker-Lewis Index

Author Contributions Dziuginta Baraldsnes: term; conceptualisation; methodology; validation; investigation; data curation; formal analysis; writing—original draft; visualisation; project administration.

Simona Carla Silvia Caravita: conceptualisation, data curation, formal analysis, visualisation, writing—original draft.

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Data Availability Data cannot be shared openly to protect study participant privacy. However, data can be shared under request by taking contact with corresponding author.

Declarations

Ethics Approval and Consent to Participate The study was approved by the Norwegian Agency for Shared Services in Education and Research, which is a public administrative body under the Ministry of Education and Research in Norway (protocol number 50989).

Consent for Publication Informed consent was obtained from all individual participants included in the study.

We declare that the study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Competing Interests The authors declare no competing interests.

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