Implementation and Evaluation of a Comprehensive, School-wide Bullying Prevention Program in an Urban/Suburban Middle School

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ABSTRACT

BACKGROUND: This intervention study examined the prevalence of bullying in an urban/suburban middle school and the impact of the Olweus Bullying Prevention Program (OBPP).

METHODS: A quasi-experimental design consisting of a time-lagged contrast between age-equivalent groups was utilized. Baseline data collected for 158 students prior to implementation of the OBPP were compared to 112 students who received the OBPP intervention for 1 year. Multiple perspectives on bullying were collected using the Revised-Olweus Bully/Victim Questionnaire. Similarly, a teacher questionnaire collected data for 17 teachers on prevalence of bullying and capacity to intervene pre- and post-OBPP intervention. Descriptive and inferential statistics were generated to analyze findings.

RESULTS: Statistically significant findings were found for 7th grade female students who received 1 year of the OBPP on reports of prevalence of bullying ($p = .022$) and exclusion by peers ($p = .009$). In contrast, variability in statistical findings was obtained for 8th grade females and no statistical findings were found for males. Following 1 year of the OBPP, teachers reported statistically significant improvements in their capacity to identify bullying ($p = .016$), talk to students who bully ($p = .024$), and talk with students who are bullied ($p = .051$). Other substantial percentile changes were also noted.

CONCLUSION: Findings suggest a significant positive impact of the OBPP on 7th grade females and teachers. Other grade and gender findings were inconsistent with previous literature. Recommendations for further research are provided along with implications for school health prevention programming.

Keywords: bullying; middle school; prevention programming.


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Over the past decade, bullying has been identified as the most prevalent form of low-level violence in schools and a precursor to more serious forms of violent behavior. Bullying further carries the potential to have a significant impact on a student's capacity to learn, his or her overall emotional, physical, and psychosocial well-being, as well as the broader school climate. In addition to exploring prevalence rates and the potential impact on the victim, the bully and the bystanders have gained significant attention in the literature. Research studies report high prevalence of bullying both nationally and internationally and resultant increases in somatic complaints, depression, anxiety, school refusal, and an overall lower self-esteem in students who are bullied.

The victim is not the only one to suffer negative effects from bullying. Studies reveal long-term effects for the bully as well, including antisocial behaviors such as vandalism, truancy, and drug use. Significant correlations have been noted between an increase in serious, recidivist criminal activity in early adulthood and earlier reports of being a bully. In more recent years, correlations have been found between perpetrators of school shootings and their reports of being bullied, persecuted, threatened, or injured prior to the violent attack.
More recently, research studies have examined the potential impact of prevention programs on bullying in schools with mixed results.\textsuperscript{1,6-15} In their research on whole-school efforts to reduce bullying, Whitted and Dupper\textsuperscript{1} found that comprehensive, multilevel strategies must target bullies, victims, bystanders, families, and communities to be most effective. They further argued that the most effective bullying prevention programs attempted to change the culture and climate of the school, as well as reach out to individual children. In a systematic review of rigorously evaluated school-based anti-bullying interventions,\textsuperscript{15} findings suggested that school-based interventions that address multiple professional disciplines were more effective than curriculum-specific interventions. However, indirect outcomes related to bullying were not significantly improved by these interventions. Furthermore, in a study that specifically examined the effectiveness of the Olweus Bullying Prevention Program (OBPP) in several public middle schools, though findings suggested some mixed positive effects varying by gender, race/ethnicity, and grade, an overall positive effect was not noted.\textsuperscript{6}

The purpose of this intervention study was to investigate the prevalence of bullying in an urban-suburban, Catholic middle school and to evaluate the impact of a comprehensive school-wide prevention program on the frequency of bullying behavior and its potential impact on the overall school climate and students’ perceived sense of safety. The overarching research question was “Does the implementation of the OBPP change prevalence rates of bullying and students’ perceived sense of safety?” Specific research sub-questions examined whether post-OBPP students (students who received the OBPP intervention for 1 year) reported being bullied less often, excluded less often, and tried to help students who were bullied more often compared to pre-OBPP students (students at baseline who did not receive the OBPP intervention). Further research sub-questions addressed whether post-OBPP students observed teachers trying to stop bullying more often than pre-OBPP students and whether teachers who implemented the OBPP for 1 year reported improvement in their ability to identify, manage, and report bullying incidents.

As described by Olweus,\textsuperscript{3} the OBPP provides interventions at multiple levels, including individual-level interventions, classroom-level interventions, school-wide interventions, and community interventions. As a nationally recognized Blueprint “Best Practice” Model Program by the US Department of Juvenile Justice and the Substance Abuse Mental Health Services Administration (SAMHSA), the OBPP has been shown through evidence-based research to significantly reduce the incidence of bullying in schools.\textsuperscript{4,16} The OBPP was also recently recognized by the American Academy of Pediatrics as a successful school-based bullying prevention program.\textsuperscript{17}

In the OBPP strategies are identified to address those who bully, those who are bullied, and those who are bystanders. The main goal is to reduce the prevalence of bully/victim problems that exist within the school setting while improving the overall school climate. A further significant objective of the OBPP is to shift attitudes away from acceptance and/or support of bullying behavior by bystanders to one of the support for defenders of those who are bullied. Other empirical studies have also noted the influence of bystanders on prevalence and degree of bullying.\textsuperscript{18,19}

METHODS

Subjects

The intervention study was conducted in a small Catholic 7th and 8th grade middle-school located in a northeastern section of the US students resided in both urban and suburban settings. A cohort of 158 students served as the pre-OBPP baseline group and a second cohort of 112 students served as the post-OBPP group and received the OBPP intervention for 1 year. Pre-OBPP demographic data included 45.6% female, 54.4% male, 38% Black/Multiracial, 7.6% Hispanic, 51% Caucasian, and 3.4% Native American/Asian. Post-OBPP demographics included 44.6% female, 54.4% male, 48% Black/Multiracial, 10.5% Hispanic, 35.5% Caucasian, and 5.7% Native American/Asian. In addition, 17 teachers participated over the course of the study.

Instruments

Two research instruments collected perspectives on the prevalence of bullying and students’ perceived sense of safety in the school. These included the Revised-Olweus Bully/Victim Questionnaire (R-OBVQ) and the Teacher Questionnaire (TQ).\textsuperscript{10,20} Completion of instruments was voluntary, anonymous, and incorporated a Likert-scale measurement. The R-OBVQ is a 39-item, multiple-choice, pencil-and-paper instrument that took approximately 30-45 minutes for students to complete. In this questionnaire, 36 items specifically addressed multiple aspects of bully/victim problems including (1) exposure to various physical, verbal, indirect, racial, and sexual forms of bullying/harassment, (2) how students bully others, (3) where bullying occurs, (4) pro-bully and pro-victim attitudes, and (5) the extent to which the social environment (teachers, peers, parents) are informed about and react to the bullying incidences. The remaining 4 items addressed gender, grade, degree of liking school, and number of friends.\textsuperscript{3,20}

Studies have examined the reliability and validity of the R-OBVQ in large representative samples.\textsuperscript{21} Strong
Evidence has also been documented for the usefulness and construct validity of the R-OBVQ. Self-report items on being bullied or bullying others have been correlated at the .40-.60 range (Pearson Correlates) with reliable peer ratings on related dimensions. Kyriakides et al also found high internal consistency on students’ responses to the questionnaire. These findings supported the overall reliability and validity of this instrument.

To obtain teacher data the TQ was administered and consisted of 29 items that addressed perceptions on prevalence of bullying, locations of bullying, types of bullying, students’ reports of bullying, and teachers’ and administrations’ response to bullying. Data collected from both instruments generated a profile that included (1) incidence of bullying, (2) “hot spots” within the school, (3) school climate and supervision issues, and (4) information about student and adult attitudes about bullying.

Procedure

As a school-wide, multilevel program, the OBPP required a sample of participants based on intact classrooms and school-wide participation. This negated the ability to randomly assign students to treatment versus control conditions and thus precluded a true experimental design. Therefore, the research conducted on the OBPP utilized a quasi-experimental design that consisted of a time-lagged contrast between age-equivalent groups. This selection cohort design provided an opportunity to compare successive cohorts of children from a particular grade level. Hence, students who received 1 year of the OBPP intervention were compared to students of the same grade level who did not receive the OBPP intervention. One strength of this quasi-experimental design was that different cohorts could serve both as an intervention and a control/baseline group in different comparisons.

A critical aspect of the OBPP is the engagement of teachers, administrators, and other adult support personnel in the implementation of OBPP. Interventions to enhance engagement included the formation of the Olweus Bullying Coordinating Committee (OBCC), administration of a teacher questionnaire to assess perspectives on the problem of bullying, biweekly to monthly on-site consultation, ongoing teacher and support staff team discussions, school-wide assembly to launch the program, posting of school rules in all classrooms, increase in supervision in areas identified as “hot spots” for bullying, and the development of a system of positive reinforcement for pro-social behavior and disciplinary process for bullying behavior.

Questionnaires were administered to a cohort of 158 students and 17 teachers prior to implementation of OBPP in February 2007 and to a cohort of 112 students and 10 teachers in March 2008 who participated in the OBPP intervention for 1 year. The pre-OBPP baseline measures at time 1 consisted of 59 7th graders and 99 8th graders. The post-OBPP time 2 measurements consisted of 49 7th graders and 62 8th graders (these 8th graders included 7th graders from the pre-OBPP baseline cohort). Group comparisons of measurements were conducted between time 1 pre-OBPP 7th graders and time 2 post-OBPP 7th graders and between time 1 pre-OBPP 8th graders and time 2 post-OBPP 8th graders (Figure 1).

The R-OBVQ was administered in each classroom on the same day. Teachers received training on how to administer the questionnaire to ensure consistency, accuracy, and confidentiality. Directions were read aloud along with a clear definition of bullying that included intention to harm the victim, the repetitive nature of bullying, and the imbalance of power that exists between the bully and the victim. By ensuring clarity in the definition of bullying, objectivity and consistency in self-reporting may have been increased within and across classrooms. To ensure confidentiality, individual names were not noted and numerical codes were assigned to questionnaires based on grade for future comparative analysis.

Parents received a letter that provided an overview of the purpose of the research investigation and an opportunity to inform the school/principal in writing if they did not wish to have their child participate. Child assent was obtained from students by providing
in writing and verbally an overview of the purpose of the questionnaire and giving students the option not to participate.

Strategies to further engage parents included mailing written material on the OBPP, and presentations in a parent open house and at PTSA meetings. A policy was also developed to outline protocols for contacting parents when bullying incidences occurred. At a broader community level the local diocese was involved in describing the OBPP in its local newsletter and providing financial assistance for program materials and training.

Data Analysis

Both descriptive statistics and inferential statistics were used to summarize and analyze the data collected to examine responses of students and teachers in the pre-OBPP cohort compared to the post-OBPP cohort. Frequency measures and percentages were obtained for future comparative analysis. The Statistical Package for Social Sciences, Version 16.0 (SPSS, Chicago, IL), generated descriptive statistics to summarize data. Student data were organized by individual grades and by gender. A dichotomized version of the global measures for degree of bullying was established. This was a consistent practice for interpretation of the R-OBVQ as identified by Solberg and Olweus.23 Using guidelines established by Olweus, the measures were collapsed as follows: students who reported having been bullied or bullying others "2 or 3 times a month" to "several times per week" over the past couple of months were classified as victims/bullies and students who reported "not being bullied or bullying others" or replied "only once or twice in the past couple of months" were classified as non-victims/non-bullies. This was consistent with the repetitive nature of bullying as defined by Olweus.3

Due to the nominal nature of the data collected for 2 distinct groups a Pearson chi-square test for independence was used to evaluate statistical significance for all research items on the R-OBVQ. A phi coefficient (referred to as a contingency coefficient in the SPSS, 16.0 Version) was also used to measure the effect size for a chi-square test for independence.25 Based on a significantly smaller sample size of teachers, a Fisher's Exact Test was used to evaluate statistical significance of data collected with the TQ. Additionally, percentile changes of greater than 15% were examined to identify potential trends for students and teachers who received the OBPP intervention compared to students and teachers who did not receive the OBPP intervention. Reporting of trends by percentile changes of greater than 15% have been noted in multiple research studies.3,4,10,26,27

<table>
<thead>
<tr>
<th>Question</th>
<th>Grade</th>
<th>%Change</th>
<th>p Value</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being excluded</td>
<td>7th</td>
<td>34.4 †</td>
<td>.009</td>
<td>.362</td>
</tr>
<tr>
<td>Being bullied</td>
<td>7th</td>
<td>31.1 †</td>
<td>.022</td>
<td>.317</td>
</tr>
<tr>
<td>Being physically bullied</td>
<td>8th</td>
<td>20.0 †</td>
<td>.035</td>
<td>.241</td>
</tr>
<tr>
<td>Frequency of being bullied</td>
<td>8th</td>
<td>25.0 †</td>
<td>.038</td>
<td>.233</td>
</tr>
<tr>
<td>Indirect verbal bullying</td>
<td>8th</td>
<td>35.0 †</td>
<td>.035</td>
<td>.241</td>
</tr>
<tr>
<td>Taken part in bullying</td>
<td>8th</td>
<td>35.6 †</td>
<td>.003</td>
<td>.325</td>
</tr>
</tbody>
</table>

* † = % decrease; † = % increase; 7th grade n = 49; 8th grade n = 64.

RESULTS

A summary of statistically significant findings on prevalence of bullying and exclusion by grade and gender are presented in Table 1. Two statistically significant findings were reported for 7th grade females post-OBPP compared to 7th grade females pre-OBPP: (1) a 34.4% decrease in reports of being excluded and (2) a 31.1% decrease in reports of being bullied. Another statistically significant finding was a 17.8% increase in reports of being talked to by a teacher about bullying others by 7th grade males post-OBPP compared to 7th grade males pre-OBPP. For 8th grade females in the post-OBPP group compared to 8th females in the pre-OBPP group, 4 statistically significant findings were noted. These included (1) a 25% increase in reports of being bullied, (2) a 20% increase in reports of being physically bullied, (3) a 35% decrease in reports of being indirectly verbally bullied, and (4) a 35.6% increase in reports of taking part in bullying others. In contrast, there were no statistically significant findings for 8th grade males in the post-OBPP group compared to 8th grade males in pre-OBPP group.

Though not statistically significant, percentile changes of 15% or more were noted on several items on exclusion and/or prevalence of bullying for 7th grade students post-OBPP compared to 7th grade pre-OBPP students (Table 2). No percentile changes of 15% or greater were noted for 8th grade students on these items. However, a 15.4% increase in having observed teachers or other adults intervene to try and stop bullying was noted by 8th grade males post-OBPP compared to 8th grade males pre-OBPP. Furthermore, 8th grade males post-OBPP reported a 15.7% increase in "feeling a bit sorry for" and/or wanting to help students who were bullied.

A summary of statistically significant findings for teachers is presented in Table 3. These findings included (1) 48.8% increase in reports of having observed bullying more frequently, (2) 46.5% increase in reports of having talked with students who bullied...
Table 2. Summary of Percentile Changes Greater Than 15% on Exclusion and Prevalence of Bullying for 7th Grade Students on Post-OBPP Measurements Compared to Pre-OBPP Measurements*

<table>
<thead>
<tr>
<th>Question</th>
<th>Gender</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being bullied for at least 1-2 weeks</td>
<td>Female</td>
<td>270 ↓</td>
</tr>
<tr>
<td>Being afraid of being bullied</td>
<td>Female</td>
<td>174 ↓</td>
</tr>
<tr>
<td>Being racially bullied</td>
<td>Male</td>
<td>176 ↑</td>
</tr>
<tr>
<td>Taking part in bullying others</td>
<td>Male</td>
<td>218 ↑</td>
</tr>
<tr>
<td>Feeling students deserve to be bullied</td>
<td>Male</td>
<td>195 ↓</td>
</tr>
</tbody>
</table>

*1 = % decrease; † = % increase; 7th grade n = 49; 8th grade n = 64.

OBPP, Olweus Bullying Prevention Program.

...others, and (3) 37.5% increase in reports of having talked with students about being bullied.

Though not statistically significant, there were also percentile changes of greater than 15% on 4 research items for teachers who received the OBPP intervention for 1 year. These included a 23.3% increase in reports of counteracting bullying, a 30.1% increase in reports of talking to their class about bullying, a 33.3% increase in discussing bullying incidents with other teachers, and a 29.4% increase in reports of school providing clearer rules regarding bullying (Table 4).

**DISCUSSION**

Findings suggest 7th grade females respond more positively to the OBPP intervention than did other grade or gender cohorts on multiple dimensions of bullying. Similar findings have been noted in the literature. However, inconsistent with prior research findings, 8th grade female students reported more negative outcomes following 1 year of OBPP intervention on several prevalence measures and 7th grade males reported negative trends on certain prevalence measures. These results coalesce to suggest the possibility of specific gender and grade differences in response to the OBPP intervention on prevalence rates and types of bullying experienced and warrant further research. One potential interpretation for increased reports in prevalence of bullying is that older female students may not respond as quickly or positively to this type of school-wide primary prevention intervention. In addition, the OBPP may initially result in an increase in reports of bullying secondary to enhancing students' understanding and capacity to accurately identify bullying. This concept is further supported in the literature by other researchers. These findings underscore the need for further research on this population, earlier intervention, and further examination of developmental programmatic considerations based on age and grade level to enhance pro-social behavior change.

In contrast to variability in students’ response to bullying following 1 year of OBPP intervention, teachers report consistent and substantial improvements, many at the statistically significant level, that reflect an overall improvement in teachers’ capacity to identify, manage, and report bullying incidents. This positive finding is further supported by students’ reports on increases in being talked to by teachers about bullying others and observing teachers intervening more frequently in bullying situations. One possible interpretation of these findings is that teachers gain the competence to evaluate and respond more effectively to bullying more quickly following OBPP intervention than students.

**Limitations**

Despite the positive outcomes associated with the provision of the OBPP intervention, potential limitations of this study need to be acknowledged. One limitation was a significant decrease in completion of the R-OBVQ and TQ following 1 year of OBPP intervention due to attrition and a significant smaller teacher sample size. Another limitation was the lack of a true randomized sample resulting in the inability to generalize these findings to a larger population.

Since a 1-year period existed from the time of implementation of the OBPP intervention to follow-up data collection, the potential for alternative factors to impact measured outcomes was examined. For example, students may have been exposed, in addition

Table 3. Summary of Statistically Significant Findings for Teachers’ Reports of Response to Bullying on Post-OBPP Measurements Compared to Pre-OBPP Measurements*

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-OBPP</th>
<th></th>
<th>Post-OBPP</th>
<th>Post-OBPP</th>
<th>% Changes</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Observing bullying more frequently</td>
<td>n = 10</td>
<td>n = 7</td>
<td>n = 1</td>
<td>n = 9</td>
<td>48.8%†</td>
<td>.016</td>
</tr>
<tr>
<td></td>
<td>58.8%</td>
<td>41.2%</td>
<td>10%</td>
<td>90%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Talking with students who bullied others</td>
<td>n = 13</td>
<td>n = 4</td>
<td>n = 3</td>
<td>n = 7</td>
<td>45.5%†</td>
<td>.024</td>
</tr>
<tr>
<td></td>
<td>76.5%</td>
<td>23.5%</td>
<td>30%</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Talking with students who are bullied</td>
<td>n = 14</td>
<td>n = 2</td>
<td>n = 5</td>
<td>n = 5</td>
<td>37.5%†</td>
<td>.051</td>
</tr>
<tr>
<td></td>
<td>87.9%</td>
<td>12.5%</td>
<td>50%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Due to small sample size, counts and percentages from the cells are included in this table. 0 = not observing bullying at all or once to twice. 1 = observing bullying 2-3 times a month to several times a week. † = increase.

OBPP, Olweus Bullying Prevention Program.
Table 4. Summary of Percentile Changes of Greater Than 15% for Teachers on Post-OBPP Measurements Compared to Pre-OBPP Measurements*

<table>
<thead>
<tr>
<th>Question</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers attempt to counteract bullying</td>
<td>23.2 †</td>
</tr>
<tr>
<td>Teachers talk with their class about bullying</td>
<td>30.1 †</td>
</tr>
<tr>
<td>Teachers discuss bullying incidents with other teachers</td>
<td>33.3 †</td>
</tr>
<tr>
<td>School provided clearer rules about bullying</td>
<td>29.4 †</td>
</tr>
</tbody>
</table>

* † = % increase. Total n = 17.

OBPP, Olweus Bullying Prevention Program.

to the OBPP, to changes in educational, administrative, or school routine and disciplinary action procedures that influenced their behavior. In order to minimize threats to internal validity, school administration committed to not initiating other bullying prevention programs or parallel interventions during the implementation of the OBPP intervention. Additionally, through extensive training and ongoing, monthly, on-site consultation the investigator was able to remain actively engaged with school administration and staff regarding implementation and fidelity of the OBPP intervention. Another aspect considered was the threat of instrument reactivity since the 7th graders in the pre-OBPP year would be the same group (as 8th graders) in the following OBPP year. A 1-year period existed between administrations of the questionnaires and was assumed to minimize the potential test-retest effect.

Conclusion

Due to the increase in violence involving youth in our nation, it is essential that early interventions that may substantially reduce this significant societal problem are investigated. Multiple prevention and intervention programs have recently been developed to address the issue of bullying within schools. Programs vary in several ways including timeframe for implementation, curricular approach versus school-wide approach, and degree of evidence-based practice. Although these research findings reflect variability in students’ response to the OBPP intervention by both grade and gender, there are significant positive findings for both students and teachers which suggest that the OBPP has the potential to reduce prevalence rates of bullying and reduce subsequent negative consequences for students while improving the overall school climate. Further research is warranted to examine other factors that may affect the potential success of bullying prevention programs. This investigator also suggests further research in the area of cross-institutional collaboration in bullying prevention efforts to decipher strategies that strengthen community partnerships and enhance positive outcomes for students and the larger school community.

IMPLICATIONS FOR SCHOOL HEALTH

The high prevalence of bullying coupled with the potential for negative academic and psychosocial outcomes for students supports the importance of further education and training for school health practitioners, teachers, administrators, researchers, and policy makers regarding effective prevention programming. When considering a school-wide bullying prevention program it would be important to include appropriate stakeholders such as parents, students, teachers, and support personnel along with school administration throughout the decision-making, planning, implementation, and evaluation phase of the program. Furthermore, provision of comprehensive training and ongoing consultation to an identified bullying prevention committee can reinforce potential positive outcomes while ensuring ongoing fidelity of program implementation.

In addition, clear policies and communication mechanisms need to be established in schools to address specific responses to bullying behavior for the student who is bullying others, the students who are being bullied, and the bystanders. School administration and resource personnel, such as guidance counselors who follow up on bullying incidents, need to be clearly identified. Also, written guidelines that address engagement of parents in response to bullying incidences should be outlined.

As a 1-year intervention does not provide sufficient time to adequately reduce prevalence of bullying at a school-wide level, individual schools and districts need to consider their capacity to make a long-term commitment in order to successfully achieve a significant reduction in bullying and an overall improvement in school climate. This suggestion has been further supported in the literature.7,10,22,28 Committed funding mechanisms need to be established to ensure the continuity of any long-term bullying prevention program with regard to training, programmatic materials, consultation, and ongoing evaluation.

Last, there are implications at an organizational level. As a professor in higher education, this investigator found that multidisciplinary collaboration with school administrators and teachers provided a positive, enriching experience and created a community partnership across educational settings that may potentially enhance the successful outcomes of a bullying prevention program. By establishing other cross-institutional, multidisciplinary collaborative partnerships schools can be in a position to generate further research in the area of bullying and bullying prevention programming and potentially make significant contributions to establishing processes to effectively improve the overall school climate and students’ capacity to feel safe in their own schools.
**Human Subjects Approval Statement**

This study was approved by the St. John Fisher College institutional review board.

**REFERENCES**
