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Bullying is a growing public health concern for South Korean adolescents. This study examines the effectiveness of a Korean national counseling service program (i.e., WEE project) on reducing student bullying behavior by employing a quasi-experimental design with before-and-after measures of peer victimization and perpetration. Using a representative longitudinal sample of 2972 students from 63 middle schools in Seoul, multivariate regression, fixed-effect regression, and propensity score matching techniques were employed to examine the change in student bullying behavior following random assignment into intervention versus control group schools. Results indicate, however, that the WEE project was not associated with any change in students' likelihood of peer victimization and perpetration in terms of verbal, physical, and relational bullying. Possible reasons for the null findings as well as policy implications are further discussed.

Keywords: bullying; South Korea; WEE project; counseling

Background

The phenomenon of school bullying has been increasing in all parts of the world during the past several decades despite various efforts to reduce and prevent it. As has been widely documented, in 1983, the first nationwide campaign against bullying was conducted in Norway launched by the Ministry of Education (MoE) and coordinated by Olweus (Baldry & Farrington, 2004), followed by more recent national efforts in both 2002 and 2006, called the Manifesto Against Bullying (Roland, 2011). Such efforts to curb the rising tide of school bullying were not unique to Norway. Many countries also attempted to address similar problems by developing national initiatives for school violence prevention. For example, in July 2003, the Australian Ministry of Education (MoE) endorsed the National Safe Schools Framework (NSSF); in 2006, Canadian national organizations established the Promoting Relationships and Eliminating Violence Network (PREVNet); and during 2006–2009, the Finnish MoE and the University of Turku developed the KiVa program, etc. (Cross et al., 2011; Pepler & Craig, 2011; Salmivalli, Kärnä, & Poskiparta, 2011). In line with such trends, research evaluating and systemically reviewing the effectiveness of various anti-bullying programs (sponsored and developed in both the private and public sectors) has proliferated in the academic literature.

Extant research on the effectiveness of school-based anti-bullying programs has been inconclusive given the wide range of program quality and designs as well as

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implementation features. Specifically, there have been quite a few meta-analytic reviews of studies evaluating anti-bullying programs (Ferguson, San Miguel, Kilburn, & Sanchez, 2007; Merrell, Gueldner, Ross, & Isava, 2008; Smith, Schneider, Smith, & Ananiadou, 2004; Ttofi & Farrington, 2011; Vreeman & Carroll, 2007). Findings from these reviews have been mixed with a handful of studies indicating no meaningful change in outcomes (Merrell et al., 2008; Smith et al., 2004), some suggesting a small but significant effect (Ferguson et al., 2007), and those indicating a sizeable and meaningful reduction in bullying (Ttofi & Farrington, 2011; Vreeman & Carroll, 2007). Results from studies evaluating individual school-based anti-bullying programs are no different in terms of the inconsistent findings (Bowllan, 2011; Hunt, 2007). Despite the large variability in anti-bullying programs and their effects, recent efforts have been successful in identifying certain program components deemed effective in reducing student-bullying behaviors. For example, several researchers have argued that whole-school interventions involving program components directed at multiple levels of the school organization are associated with positive reduction in bullying prevalence as well as improvement in the overall school climate (Bowllan, 2011; Ttofi & Farrington, 2011; Vreeman & Carroll, 2007). Whole-school interventions (also referred to as the social-ecological systems approach) view bullying to be a systemic problem which transcends beyond the individual level, and therefore prefer programs to target multiple stakeholders including the victims, perpetrators, parents, school administrators, and even law enforcement (Hong, C. H. Lee, J. Lee, N. Y. Lee, & Garbarino, 2014). As suggested in the review by Ttofi and Farrington (2011), successful program elements include design features such as parent training and meeting, classroom rules and management, teacher training, school conferences, and cooperative group work with peers, each of which involves the individuals, peer groups, parents, teachers, and administration. In addition to the whole-school approach, duration as well as intensity of the program has been implicated to be positively correlated with program success (Fox, Farrington, & Ttofi, 2012).

A potential limitation of the existing evaluation research in this area, however, is that it has been restricted almost entirely to Western settings (Merrell et al., 2008). Aside from studies examining *ijime*, the Japanese form of bullying, research on student bullying has a relatively short history in Asian contexts. Bullying in Japan (i.e., *ijime*) was first described and characterized by Mortia and colleagues as collectivist in nature and commonly involving forms such as verbal teasing and social exclusion (i.e., relational aggression) (Morita, Soeda, Soeda, & Taki, 1999). Compared to bullying in Western countries, the nature of aggression for *ijime* has been argued to be more relation-based and such tendencies have been frequently associated with the collective culture that emphasizes empathy, conformity, and intimacy, most common among East Asian countries (Kawabata, Crick, & Hamaguchi, 2010). More recent studies on student bullying in South Korea (hereinafter, Korea) have observed similar collective features where bullying involves the whole class or a group of students within the same classroom (Koo, Kwak, & Smith, 2008). Bullying in Taiwan has also been described to be similar to *ijime* especially in terms of its form where verbal and indirect bullying was found to be more prevalent than direct bullying (Hokoda, Lu, & Angeles, 2006). In a recent study comparing the consequences of relational victimization (such as exclusion or peer rejection) on students in Japan and in the USA, Kawabata and colleagues found that the negative effects were larger for Japanese youths compared to American youths (Kawabata et al., 2010).

Given such differences in the forms and consequences of peer victimization among students in East Asian countries when compared against those of students in North America or Europe, the lack of evaluation research on anti-bullying programs in the Asian setting seems problematic. This is because effective intervention programs for student bullying behavior may vary across cultural contexts, especially when the causes and forms of bullying differ. It could also lead to very different strategies on behalf of the government when attempting to address the problems of school bullying by encouraging collaboration among various stakeholders.

This study attempts to evaluate the effectiveness of a national initiative to reduce school-based bullying in Korea, called the WEE project, by employing a quasi-experimental design with before-and-after measures of peer victimization and perpetration on 2972 students from 63 middle schools in Seoul, Korea. By exploiting a unique education policy in Korea called the Equalization Policy (EP), the change in peer victimization and perpetration rates across students are examined controlling for victimization and perpetration status during their prior school year. The EP dates back to 1969 and assigns students to middle schools within their school districts via a public lottery at the end of sixth grade, irrespective of individual or school characteristics (e.g., public vs private; single-sex vs coeducational, etc.) (Gee & Cho, 2014).[1] As a result, student level variation in attending a middle school that participates in the WEE project at seventh grade is exogenous to individual observed and unobserved characteristics. Below, detailed information on the WEE project and school bullying in the Korean context is provided.

Bullying in Korea and the WEE project

Bullying among school-aged children has become a significant public health concern in Korea associated with psychological and academic maladjustment including lower self-esteem, increased loneliness, higher depression, poorer academic outcomes, and in the extreme even suicide (Hancocks, 2012; Kim, Koh, & Leventhal, 2005; Yang, Kim, Kim, Shin, & Yoon, 2006; Yoo, 2013). The WEE (i.e., "We, Education, Emotion") project was one of the main programs created on behalf of the Korean central government to curb the rising tide of school bullying and its detrimental effects. Specifically, in 2008, the Korean Ministry of Education (MoE) initiated the WEE project, a multilevel counseling service program, which consisted of three stages: stage 1–WEE Class; stage 2–WEE Center; and stage 3–WEE School (Hancocks, 2012; Kim & Kim, 2014). The first stage of the intervention, WEE Class, is implemented at the school level for all grades and focuses on identifying youths who are at risk of bullying (either as a victim, perpetration, or both) and delinquent behavior. Identified students and their parents are provided with various counseling and educational services (Kim, 2013). The second stage, WEE Center, is implemented at the district level and provides additional professional counseling services to students who continue to be *at risk* even after completing the WEE Class interventions. The last stage, WEE School, is implemented at the city/provincial level and provides long-term care and educational services to students with severe problems not addressed by services provided at either the WEE Class or WEE Center. The goal of the WEE project was to create a comprehensive counseling support system for at risk students by aligning the efforts and services of individual schools, districts, and cities/provinces (Chun, Kim, Kim, Jang, & Choo, 2013; Korean Metropolitan Office of Education [KMOE], 2013).

Schools that chose to participate in the WEE project were provided with professional counselors and additional financial resources to create WEE Class programs

(Chun et al., 2013; Seoul Metropolitan Office of Education [SMOE], 2014a). Based upon the Korean Elementary and Secondary Education Act, Article No. 32, schools are given autonomy in deciding upon the actual use of special educational grants such as the WEE project, and as a result, schools had flexibility in deciding which specific program component they would implement based on need and preference. According to official reports, the total number of schools providing the WEE Class program increased rapidly from 530 schools in 2008 to 5276 schools in 2013 which comprised about 40% of all schools in the nation (Chun et al., 2013; Kim & Kim, 2014). This resulted in a threefold increase in governmental expenditure spent on the WEE project since 2008 (Kim & Kim, 2014).

Despite the large amount of social attention placed on school bullying and its negative effects, few research studies have evaluated the effectiveness of school-based anti-bullying programs in Korea (Chung, Park, & Jin, 2008; Kim, 2006; Kim & Shim, 2013; Lee, Kim, & Hong, 2002; Lee, Kim, & Lim, 2009; Noh & Kim, 2006; Yu, 2005), and only one evaluated the WEE project (Kim & Kim, 2014). Most evaluations examined the change in student perception and attitude after participating in anti-bullying educational programs which typically composed of watching anti-bullying videos, building communication skills, having group discussions, quizzes, games, and role playing. They generally concluded that educational programs were effective in enhancing student self-control and awareness as well as reducing bullying tolerance. However, implications from these studies are limited given that most of the interventions were usually short-term based (ranging from 1 day to 4 week interventions) and failed to observe change in actual student behavior. The only published research article that evaluated the effect of the WEE project also suffers from many crucial limitations including inability to control for selection bias as well as failure to document change in student behavior due to the use of cross-sectional school-level data (Kim & Kim, 2014).

Methods

Participants

We employed the Seoul Education Longitudinal Study of 2010 (SELS: 2010), an ongoing longitudinal survey sponsored by the Seoul Metropolitan Office of Education in Korea. The SELS first collected data on a representative sample of fourth grade students in the city of Seoul, Korea, in July, 2010. Annual follow-up surveys of students, parents, teachers, and the school administrators were conducted in years 2011, 2012, and 2013. The analytic sample for this study is restricted to students who have non-missing information on bullying victimization and perpetration during the third and fourth wave of surveys since information on bullying was collected only in years 2012 and 2013. The sample is further restricted to students who have non-missing information on their school's WEE Class program participation in seventh grade which is available in the fourth wave school administrator survey. Hence, this study will compare the change in bullying behaviors (from sixth to seventh grade) among seventh graders who attend middle schools participating in the WEE Class program versus those who are not participating in the WEE Class program. A total of 2972 students, a cohort of 2122 seventh grade students in the program intervention group and 850 seventh grade students in the control group, are included in the final analytic sample.

Measures

The SELS collected information on demographic characteristics including gender, parental education levels, household income, maternal or paternal absence, and maternal

employment. The school administrator questionnaire collected detailed information on the WEE Class program including whether the school participated in the program and if so which *type* of program (e.g., professional therapist; alternative education program; student individual counseling; parental individual counseling; student group counseling; psychological testing; student anti-bullying educational program; parental educational training; teacher training; therapy program). School-level information on school type (i.e., private vs public), gender composition (i.e., coeducational vs single-sex), and geographic location (i.e., Gangnam district[2] vs non-Gangnam districts) were also available.

In collecting information on bullying, SELS combined a definition-based self-report strategy with a behavior-based self-report strategy (Felix, Sharkey, Green, Furlong, & Tanigawa, 2011). In the beginning of the school violence questionnaire for students in sixth (2012) and seventh (2013) grade, the following definition of bullying was provided: "Bullying refers to repeated aggression that is committed in a relationship among people with unequal power. It *does not* include pranks and fights among equal peers." Students were then asked to provide information on how often they experienced (i.e., victimization) or engaged in (i.e., perpetration) the following incidents of peer bullying. The statement students responded to for victimization are presented below followed by the variable names (the questionnaire statements for perpetration are directly comparable and therefore are not presented in the main text):

1. I was teased, called names, or made fun of (VERBAL).
2. I was hit, kicked, choked, or locked in (PHYSICAL).
3. I was intentionally left out or excluded from things (RELATIONAL).

The school year starts in March and ends in February in Korea. Students filled out the survey in July of 2012 and 2013, respectively, near the end of the first semester. Frequencies of being bullied (or bullying) were reported on a five category Likert scale, (1) all the time; (2) about once a week; (3) 2–3 times a month; (4) once or twice ever; (5) never. The values were transformed into a binary variable in which bullying victimization (or perpetration) constituted of repeated victimization (or aggression) of at least 2–3 times a month (Likert scales 1–3) following the suggestion of Solberg and Olweus (2003).

Data analysis

Both descriptive statistics and inferential statistics were used to summarize and analyze the data to examine whether the level of student bullying behavior varied significantly across intervention and control schools. In terms of inferential statistics, the present study employs three analytic models. First, given the random allocation of students across middle schools following the EP, a multivariate regression is estimated controlling for demographic characteristics and baseline bullying behavior (i.e., whether the student was a victim or perpetrator in sixth grade). One concern of the multivariate regression is that since the EP assigns students randomly across schools within districts, estimates may be biased if the proportion of WEE Class intervention schools varies across school districts due to unequal probability of being assigned to the intervention versus control groups. For example, if a greater proportion of intervention schools are found in school districts with severe student problem behaviors (or vice versa), the multivariate regression model may under- (or over-) estimate the program effect. Therefore, the second model estimates an elementary school fixed-effect regression which

essentially compares students who had equal probability of being assigned to intervention versus control schools at sixth grade since they were attending the same school at the time of random assignment. This specification should also control for any difference in elementary school-level characteristics (including whether the elementary school provided WEE Class programs to sixth graders) as well as neighborhood characteristics since students attending the same elementary school are compared against each other and these youths reside within the same neighborhood. The final model is a propensity score matching (PSM) model which quantifies the similarities or dissimilarities of students across school type, further reducing bias in the estimation of the program effect by preventing comparisons of students who lack appropriate matches (Heckman, Ichimura, Smith, & Todd, 1998). The propensity score is estimated using a logistic model specified to meet the balancing property and thereby produce a balanced sample between students in the intervention and control groups (Rosenbaum & Rubin, 1984). Students were matched using the kernel-weighted matching algorithm.

For each form of bullying victimization and perpetration (i.e., verbal, physical, and relational), the three models were estimated separately. Exploratory analyses indicated that data were originally missing for 3–4% on any given variable except for the outcome variables as well as the indicator variable of anti-bullying program participation.[3] Missing values were imputed under missing-at-random (MAR) assumptions using the "ice" command in Stata version 13 (Royston, 2005). The results were substantively the same across analyses with and without the imputation.

Results

Descriptive statistics of students attending both the WEE intervention schools and control schools are presented in Table 1. As is presented, all of the socio-demographic and school level characteristics variables were significantly different between intervention and control group students indicating that schools with more disadvantaged students self-selected into the WEE Class program. Among these variables, difference in average values of parental education level, household income, and the indicator variable for high-income school district (i.e., Gangnam district) in Seoul were noticeably higher for students in the control group as compared to students in the intervention group. This is not surprising given that schools voluntarily participated in the WEE project, and therefore the financial incentives to participate were probably stronger for schools with low student socio-economic status.

Yet, it is interesting that none of these differences in student background translated into statistically significant differences in bullying behavior by program participation status. That is, at baseline when students were in sixth grade the probability of being victimized (or being a perpetrator) was around 37–38% for verbal bullying, 6–7% for physical bullying, and 8% for relational bullying across students in both the intervention and control groups. Following random assignment into middle schools at seventh grade, the prevalence of bullying decreased across all forms of bullying (i.e., 21–22% for verbal bullying, 3–4% for physical bullying, and 4% for relational bullying), but the rate of decrease was pretty much identical across students in both the intervention and control groups for the three forms of bullying. This implies that students were less likely to display peer victimization and perpetration as they were promoted from sixth to seventh grade, but probably such a decline was not due to the WEE project. Among the ten different program components of WEE Class, student individual counseling (99%), psychological testing (99%), parental individual counseling (97%), and student

Table 1. Descriptive statistics of students in WEE project intervention versus control schools.

	Students in the WEE intervention schools		Students in the control schools		p-value
	Mean	Std	Mean	Std	
Socio-demographic Controls					
Male	0.50	0.50	0.50	0.50	<0.01
Parental Education					<0.001
High school graduate or less	0.30	0.46	0.21	0.41	
Two-year college	0.16	0.36	0.14	0.35	
Four-year university	0.41	0.49	0.46	0.50	
Graduate school or more	0.14	0.35	0.19	0.39	
Logarithm of household income	15.2	0.01	15.32	0.02	<0.001
Mother at home	0.95	0.22	0.96	0.19	<0.1
Father at home	0.92	0.27	0.95	0.22	<0.01
Mother works	0.58	0.49	0.50	0.50	<0.001
School-level Characteristics					
Private school	0.20	0.40	0.38	0.49	<0.001
Coed (i.e., Mixed-gender) school	0.85	0.36	0.70	0.46	<0.001
High income (i.e., Gangnam) school district	0.14	0.35	0.29	0.46	<0.001
Victimization by Forms of Bullying					
Baseline (Sixth Grade)					
Verbally Bullied	0.38	0.01	0.37	0.02	0.67
Physically Bullied	0.06	0.01	0.07	0.01	0.29
Relationally Bullied	0.08	0.01	0.08	0.01	0.94
Follow-up (Seventh Grade)					
Verbally Bullied	0.21	0.01	0.22	0.01	0.63
Physically Bullied	0.03	0.00	0.04	0.01	0.43
Relationally Bullied	0.04	0.00	0.04	0.01	0.57
Perpetration by Forms of Bullying					
Baseline (Sixth Grade)					
Verbally Bullied	0.29	0.01	0.29	0.02	0.94
Physically Bullied	0.07	0.01	0.08	0.01	0.20
Relationally Bullied	0.06	0.01	0.05	0.01	0.22
Follow-up(Seventh Grade)					
Verbally Bullied	0.22	0.01	0.21	0.01	0.79
Physically Bullied	0.05	0.00	0.04	0.01	0.49
Relationally Bullied	0.04	0.00	0.03	0.01	0.13
Wee Class program component					
Professional therapist	0.84	0.37			
Alternative education program	0.70	0.46			
Student individual counseling	0.99	0.08			
Parental individual counseling	0.97	0.18			
Student group counseling	0.94	0.23			
Psychological testing	0.99	0.08			
Student anti-bullying educational program	0.97	0.17			
Parental educational training	0.87	0.33			
Teacher training	0.93	0.26			
Therapy program	0.81	0.39			
Total number of WEE Class program components (Min 2; Max 10)	9.02	1.23			
Number of Students	2,122		850		

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

anti-bullying educational programs (97%) were most common. About 84% of intervention schools reported having a professional therapist at school. On average, intervention schools were found to implement around 9 individual programs with a minimum of 2 and maximum of 10. This implies that although schools theoretically had flexibility in deciding which type of program they provide, specific program components did not vary much across participating schools.

To explore the effectiveness of the WEE project in a rigorous manner, the results from multivariate regression, elementary school fixed-effect regression, and the PSM model are presented in Tables 2 and 3. First, in Table 2, it is apparent that even after controlling for observed student and school-level characteristics as well as for unobserved neighborhood and elementary school characteristics (via the elementary school fixed-effect regression)there is no significant difference between students in the WEE intervention and control groups in terms of the probability of experiencing bullying victimization and perpetration. On the other hand, factors associated with greater likelihood of bullying behavior included being a boy, having an employed mother, and one's victim/perpetrator status during the prior year (at sixth grade). Results also indicated that attending a private school was associated with fewer incidences of verbal perpetration and physical victimization, while attending a coeducational school was associated with fewer incidences of physical victimization.

Next, results from estimating the propensity score via logistic regression are presented in the Appendix Table A1. Assignment to the intervention group is found to be negatively associated with attending a private school and living in the high-income (i.e., Gangnam) district, whereas it is positively associated with being a boy and having an employed mother. In Figure 1, distributions of the estimated propensity scores prior to and following matching are presented (the scores ranged between 0.32 and 0.92). It is apparent that PSM markedly improved the alignment of the estimated propensity scores between the intervention and control groups by re-weighting students in the control group. 8 students in the intervention group (among the original 2122 students) were dropped from the PSM analyses due to a lack of appropriate matches in the control group. Results from estimating the effectiveness of the WEE project using the PSM weighted sample are presented in Table 3. Estimates indicate that attending a school that participated in the WEE Project is not associated with any significant change in student verbal, physical, and relational bullying victimization or perpetration.

Last, to check on the sensitivity of the findings, elementary school fixed-effect regressions were estimated on student bullying victimization and perpetration outcomes controlling for the 10 individual program components of WEE Class and the total number of program components in place of the intervention school status dummy variable (*results available upon request*). Again, null effects were found for seventh grade participants in all of the individual program components as well as for the total number of program components.

Discussion

Using a quasi-experimental study design with before-and-after measures of bullying, findings from this study suggest that the Korean multilevel counseling service program called the WEE project was ineffective in reducing students' likelihood of peer victimization and perpetration. These results were robust to a number of model specifications that attempted to address the issue of selection bias given voluntary participation of schools into the program.

Table 2. Effects of WEE project on student victimization and perpetration: Multivariate regression and school fixed effects regression.

| | Victimization | | | | | | Perpetration | | | | | |
| | Multiple Regression | | | Fixed-effects Regression | | | Multiple Regression | | | Fixed-effects Regression | | |
	Verbal	Physical	Relational	Verbal	Physical	Relational	Verbal	Physical	Relational	Verbal	Physical	Relational
WEE Project	−0.018 (0.017)	−0.007 (0.008)	0.002 (0.008)	−0.030 (0.027)	−0.006 (0.013)	−0.002 (0.014)	−0.011 (0.017)	0.004 (0.008)	0.005 (0.008)	−0.014 (0.028)	−0.001 (0.014)	0.002 (0.014)
Private school	−0.039 (0.025)	−0.027*** (0.009)	−0.020* (0.012)	−0.020 (0.035)	−0.042*** (0.016)	−0.018 (0.017)	−0.061** (0.025)	−0.015 (0.015)	−0.008 (0.013)	−0.088** (0.035)	−0.023 (0.018)	−0.025 (0.017)
Coed (i.e., Mixed-gender) school	−0.012 (0.028)	−0.025** (0.012)	−0.009 (0.013)	0.041 (0.039)	−0.035* (0.018)	−0.013 (0.019)	−0.005 (0.028)	−0.001 (0.016)	0.025* (0.013)	−0.014 (0.039)	−0.009 (0.020)	0.005 (0.017)
High-income (i.e., Gangnam) school district	−0.001 (0.020)	−0.013 (0.009)	0.001 (0.010)	0.120* (0.062)	−0.036 (0.029)	−0.005 (0.031)	0.000 (0.020)	−0.005 (0.011)	−0.006 (0.010)	−0.063 (0.062)	0.008 (0.032)	−0.020 (0.019)
Male	0.005 (0.015)	0.032*** (0.006)	−0.008 (0.007)	0.004 (0.015)	0.033*** (0.007)	−0.009 (0.007)	0.071*** (0.015)	0.046*** (0.007)	0.023*** (0.007)	0.076*** (0.015)	0.046*** (0.008)	0.025*** (0.007)
Parental Education(Omitted group: High school graduate or less)												
Two-year college	−0.004 (0.023)	0.013 (0.011)	0.003 (0.011)	−0.001 (0.024)	0.011 (0.011)	0.005 (0.012)	−0.015 (0.024)	0.010 (0.013)	0.009 (0.012)	−0.012 (0.024)	0.010 (0.012)	0.008 (0.012)
Four-year university	0.019 (0.019)	0.002 (0.009)	0.010 (0.010)	0.026 (0.020)	0.005 (0.009)	0.015 (0.010)	0.009 (0.020)	−0.003 (0.010)	0.000 (0.009)	0.015 (0.020)	0.001 (0.010)	0.002 (0.012)
Graduate school or more	0.044 (0.027)	0.020 (0.013)	0.013 (0.013)	0.061** (0.027)	0.028** (0.013)	0.016 (0.013)	−0.010 (0.026)	0.001 (0.013)	0.017 (0.014)	0.006 (0.027)	0.004 (0.010)	0.018 (0.010)
Logarithm of household income	−0.017 (0.014)	0.001 (0.008)	−0.013* (0.007)	0.002 (0.015)	0.005 (0.007)	−0.010 (0.008)	0.004 (0.015)	0.009 (0.008)	−0.005 (0.009)	0.008 (0.015)	0.008 (0.014)	−0.003 (0.014)
Mother at home	−0.050 (0.037)	0.012 (0.015)	0.020 (0.015)	−0.043 (0.036)	0.015 (0.016)	0.024 (0.018)	−0.080** (0.038)	−0.014 (0.020)	−0.044* (0.024)	−0.075** (0.036)	−0.016 (0.018)	−0.047*** (0.018)

(Continued)

Table 2.   (Continued).

	Victimization						Perpetration					
	Multiple Regression			Fixed-effects Regression			Multiple Regression			Fixed-effects Regression		
	Verbal	Physical	Relational	Verbal	Physical	Relational	Verbal	Physical	Relational	Verbal	Physical	Relational
Father at home	0.015	−0.012	−0.015	−0.005	−0.015	−0.018	0.038	−0.017	0.020	0.031	−0.017	0.022
	(0.031)	(0.017)	(0.017)	(0.031)	(0.014)	(0.015)	(0.031)	(0.018)	(0.013)	(0.031)	(0.016)	(0.015)
Mother works	0.046***	−0.005	−0.006	0.037**	−0.006	−0.005	0.063***	0.002	−0.002	0.055***	0.002	−0.002
	(0.015)	(0.007)	(0.007)	(0.015)	(0.007)	(0.008)	(0.015)	(0.007)	(0.007)	(0.015)	(0.008)	(0.008)
Verbally victimized in 6th	0.204***			0.202***								
	(0.016)			(0.015)								
Physically victimized in 6th		0.106***			0.109***							
		(0.025)			(0.014)							
Relationally victimized in 6th			0.114***			0.113***						
			(0.024)			(0.014)						
Verbally perpetrated in 6th							0.220***			0.216***		
							(0.018)			(0.017)		
Physically perpetrated in 6th								0.119***			0.119***	
								(0.025)			(0.015)	
Relationally perpetrated in 6th									0.085***			0.080***
									(0.026)			(0.016)

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table 3. Effects of WEE Project on student victimization and perpetration: Propensity Score Matching (PSM) technique.

	Victimization			Perpetration		
	Verbal	Physical	Relational	Verbal	Physical	Relational
Wee Project	−0.016	−0.007	0.002	−0.000	0.005	0.006
	(0.012)	(0.006)	(0.006)	(0.012)	(0.006)	(0.006)
Verbally Victimized in 6th	0.227***					
	(0.013)					
Physically Victimizedin 6th		0.108***				
		(0.012)				
Relationally Victimizedin 6th			0.096***			
			(0.011)			
Verbally Perpetrated in 6th				0.246***		
				(0.013)		
Physically Perpetratedin 6th					0.114***	
					(0.012)	
Relationally Perpetratedin 6th						0.078***
						(0.014)
score_b	0.041	0.040*	0.021	0.141***	0.035	0.086***
	(0.050)	(0.024)	(0.025)	(0.050)	(0.025)	(0.025)
N	4,228	4,228	4,228	4,228	4,228	4,228

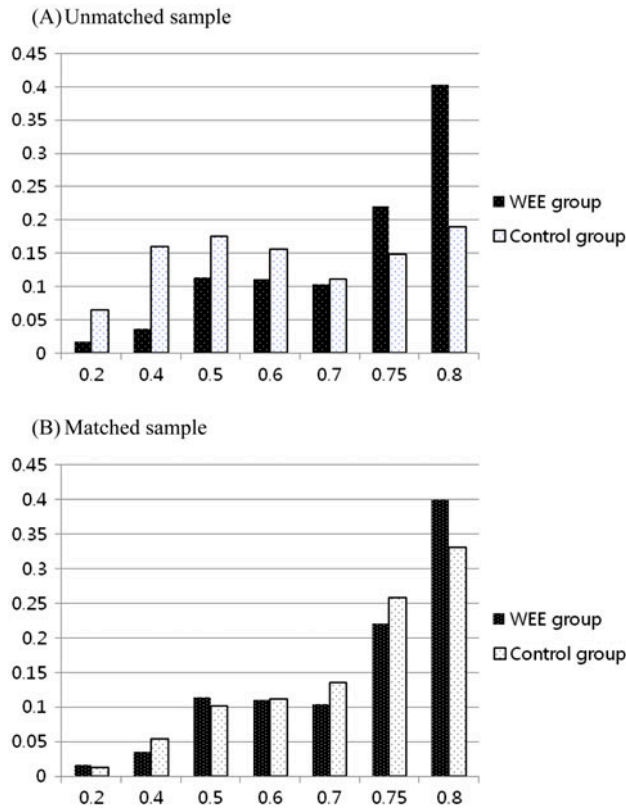*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Figure 1. Distribution of the estimated propensity scores for seventh graders in the WEE intervention and control groups– matched and unmatched samples.
Notes: (A) The *x*-axis represents the lower bound of the estimated propensity score. The intervals of the *x*-axis are chosen to ensure that the two groups do not differ in propensity scores within each interval at the 1 percent significance level. The mean of each covariate included in the propensity score model is not different at the 1 percent significance level between students in the intervention and control groups. (B) Each point on the *x*-axis represents the lower bound of the estimated log odds ratio of the propensity score weighted by a Gaussian kernel function with bandwidth 0.06. Approximately 8 students in the intervention group dropped from the matched sample by imposing the common support condition at the 2% trimming rule.

There could be a couple of reasons why the WEE project yielded null effects on overall student bullying behavior. The first reason may be related to problems with program implementation in which critical program components were diluted or compromised in some intervention schools. The large amount of autonomy given to individual schools in terms of program fund usage coupled with the lack of any built-in measures for service quality monitoring may have failed to prevent certain schools or districts from taking advantage of the system in ways that were not helpful in reducing bullying (Chung, 2012a). For example, problems associated with the lack of continuity in the provision of school-based counseling services due to short-term (i.e., less than one year) contracts between professional therapists and WEE Class schools as well as with the misuse of professional therapists' time by having them conduct administrative tasks have been raised as challenges in schools across various cities and provinces (Choi, 2012; Choo, 2014; Chung, 2012b; Kang, 2014).

In addition, there is the possibility that the WEE project was ineffective due to deficiencies in program design. Many prior reviews of anti-bullying programs in Western contexts have suggested that the involvement of multiple stakeholders (including bullies, victims, bystanders, teachers, school administrators, and parents, etc.) is an important element in successful interventions commonly referred to as the whole-school or system-wide approach (Dake, Price, & Telljohann, 2003; Kilian, Fish, & Maniago, 2007; Smith et al., 2004; Ttofi & Farrington, 2011). Such ecologically valid interventions are predicated on the assumption that bullying is a group process involving both children and adults, and therefore must be addressed by interventions directed at the entire school rather than just at individual bullies or victims (Smith et al., 2004). Based upon the logic of these studies, the limited impact of the WEE project may be related to its lack of integration of key members in the school settings such as children not directly involved in the bullying process (i.e., bystanders/outsiders) or teachers and school staff, etc. For example, peers who are neither bullies nor victims may play an important role in school bullying either by reinforcing bullying actions or by censoring them (Gini, Pozzoli, Borghi, & Frnzoni, 2008), and similarly teachers' responses to bullying incidences may socialize students in ways that affect their future behaviors thereby setting the classroom social climate (Yoon, Bauman, Choi, & Hutchinson, 2011). Considering the societal emphasis placed on group conformity and collectivism present in East Asian countries, the importance in engaging indirect stakeholders such as bystanders may be even more pronounced.

Limitations

The present study has several limitations that should be noted. First, the SELS dataset lacks detailed information on the length and frequency of WEE Class programs and the number of students and parents who received such services. Second, information on services provided by the district or city/province via the WEE Center and WEE School programs were also unavailable in the dataset. However, information on service usage in all of the 17 WEE Centers located in Seoul was available and indicated that a total of 20,366 students received counseling and testing about 2.09 times, on average, from the 654 WEE Class participating schools in 2013 (SOME, 2014b). This indicates that the service provided from the district was also fairly limited in size and intensity, possibly resulting in the lack of effect in reducing the overall incidence of school bullying. Third, the measures of bullying used in this study are self-reported which introduces measurement error into our results (Bovaird, 2010). And lastly, given the longitudinal nature of the dataset, there was attrition in each wave of data collection with response rates of 98.2%, 92%, 85.6%, and 73.6%, respectively, in 2010, 2011, 2012, and 2013. Statistical tests were conducted on various student demographic characteristics such as gender, parental education levels, household income, maternal or paternal absence, and maternal employment at baseline when students were in fourth grade (2010) to see if the retained sample of students is comparable to those students who dropped out of the survey before seventh grade in 2013. Findings revealed that students with higher parental education levels and household income were more likely to drop out of the survey and results were significant at the 1% level (*results available upon request*). This potentially limited the external validity of our results and therefore caution should be given when generalizing the findings to the entire population of students in Korea.

Conclusion and policy implications

It is important to emphasize that the lack of statistically significant associations between WEE project participation and reduced likelihood of peer victimization and perpetration in this analysis does not negate the potential importance of student counseling in preventing bullying. This is especially relevant since nearly all forms of anti-bullying programs involve some type of counseling for the victims and perpetrators of bullying (Greene, 2003; Kim, 2006). Rather, in line with programs adopting whole-school approaches, we argue that the success of any intervention program may be conditional on the social context in which bullying occurs. That is, prior to implementing student counseling programs for at risk youths, the presence of strategies to change the comprehensive social climate of schools to one that reduces support for bullying behavior among students, teachers, school administrators, and parents may be a critical element for success (Greene, 2003). A number of prior studies on counseling in Western contexts have also corroborated such insight and have found individual counseling to be ineffective in addressing bullying unless it is articulated with a school-wide prevention strategy (Clarke & Kiselica, 1997; Olweus, 1993). As the WEE Project was a government initiated program primarily composed of targeted counseling services, the appropriate stakeholders such as students, teachers, administrative staff, and parents were not involved throughout the decision-making, planning, and implementation phase of the program. In such a setting, the majority of stakeholders was probably not invested in the proposed changes nor equipped to implement the new programming. From a policy perspective, therefore, it should be critical to encourage stakeholder participation during all phases of program development, implementation, and evaluation (Lee, 2006). This may be especially important in East Asian countries with Confucian influence where obedience is emphasized between parent–child relationships and teachers are regarded as authority figures receiving respect from their students (Hokoda et al., 2006). It should be important to conduct additional research to further explore contextual factors that may affect the potential success of counseling programs in Asia aimed at reducing bullying.

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Notes

1. In some cities and provinces in Korea, the Equalization Policy has been recently relaxed to accept a certain percentage of enrollments in a school to students who showed preferences for that school. However, the city of Seoul has not implemented this modification of randomization to any of its middle school districts.
2. The Gangnam school district refers to the most affluent school district within Seoul which has been reported to have the highest academic achievement levels in Korea (Lee, 2005).
3. The analytic sample was restricted to students who have non-missing information on the three types of bullying variables as well as on whether their school participated in the WEE Class program.

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Appendix

Table A1.   Results from logistic regression estimating the propensity score for being assigned to a WEE class intervention school in seventh grade.

	Assigned to WEE intervention school
Private school	−0.421**
	(0.185)
Coed (i.e., Mixed-gender) school	0.129
	(0.160)
High income (i.e., Gangnam) school district	−0.929***
	(0.167)
Parental Education(Omitted group: High school graduate or less)	
Two-year college	−0.142
	(0.144)
Four-year university	−0.205*
	(0.119)
Graduate school or more	−0.176
	(0.153)
Male	0.351***
	(0.122)
Logarithm of Household Income	−1.493
	(2.068)
Mother at Home	−0.263
	(0.226)
Mother Works	−0.242
	(0.201)
Mother Works	0.237***
	(0.088)
(Logarithm of Household Income) Squared	0.047
	(0.068)
Private school*High income (i.e., Gangnam) school district	−0.215
	(0.324)
Gender*Private school	−1.143***
	(0.206)
Gender*High income (i.e., Gangnam) school district	−0.225
	(0.230)
Gender*Private school*High income (i.e., Gangnam) school district	0.950*
	(0.517)
LR chi2(16)	274.98***

$*p < 0.1$, $**p < 0.05$, $***p < 0.01$.
Note: To meet the balancing property, a higher order term for household income and interaction terms across male, private school, and high income (i.e., Gangnam) school district were included.