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ORIGINAL ARTICLE

Social Norms Predict Bullying: Evidence from an Anti-Bullying Intervention Trial in Indonesia

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Abstract

Social norms pertaining to negative or violent interpersonal behaviours constitute a promising target for programs designed to reduce bullying. Yet, there is a lack of evidence on anti-bullying programs targeting social norms in non-Western, low- and middle-income countries. Here, we report findings on the relationship between social norms and bullying from one such large-scale program, the feasibility trial of the ROOTS-Indonesia intervention. This intervention was delivered across 12 secondary schools in two different regions in Indonesia. We report findings based on a total of 7,203 students at baseline (in South Sulawesi, n = 1901, mean age = 13 years, 53% female; and in Central Java, n = 5302, mean age = 13.3 years, 48% female). Via a multilevel analytic approach, we found consistent evidence that the extent to which negative behaviours were considered normative by students was associated with how much they would engage in bullying, both as perpetrators and as victims. Our data reveal some encouraging trends suggesting the ROOTS-Indonesia intervention reduced negative social norms. We note a trend such that where social norms decreased the most at follow-up, the rates of bullying similarly decreased the most. Overall, we provide further evidence that social norms are a promising avenue for the reduction of negative interpersonal behaviours.

Keywords Social norms · Bullying · Anti-bullying intervention · Indonesia

Introduction

Social norms represent our understanding of what behaviours or attitudes are desirable within the social context (Miller & Prentice, 1996; Tankard & Paluck, 2016). As such, they are important drivers of how we act. Research has highlighted the importance of social norms in shaping behaviour from early on and particularly with regards to school children's social behaviours such as bullying. For instance, the existence of negative interpersonal social norms around aggression or spreading rumours could underpin engagement in bullying. In fact, previous work has demonstrated that such social norms can predict bullying perpetration, especially among older elementary school students (ages 11-12; Salmivalli & Voeten, 2004). Longitudinal research on adolescents has revealed that variation in aggressive norms on the classroom level tracks changes in bullying perpetration and victimisation for students over time (Mercer et al., 2009). Taking this together, it may be effective to target anti-bullying efforts via social norm change particularly during adolescence. Adolescence is a critically important developmental period, where individuals acquire more advanced cognitive and social competences, such as, among others, the attribution of complex mental states in others (Blakemore, 2008), emotional perspective taking (Choudhury et al., 2006), and abilities to navigate more sophisticated social interactions (Kilford et al., 2016). In turn, this also means adolescents (as opposed to younger cohorts) likely can report their understanding of social norms and bullying behaviours in a richer and more reliable fashion. Further, certain individual characteristics, such as gender, may moderate the relationship between social norms and bullying involvement. For instance, social norms may exert stronger influence on boys' bullying behaviours compared to girls (Nipedal et al., 2010). Some research has also

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tentatively suggested that boys may be more likely to experience physical bullying (Scheithauer et al., 2006), while relational aggression is more common among girls (James et al., 2011). This could indicate that gender differences in bullying involvement may influence how individuals respond to social norms related to bullying.

Importantly, social norms are not static; rather, they are shaped by the environment and can vary based on context (e.g., country, region, school, classroom). On a micro-level, there is evidence that social norms vary widely between classrooms and schools. Multilevel analyses indicate that 13% of the variance in bullying victimisation and 10% of the variance in bullying perpetration could be captured by differences between school classrooms (Kärnä et al., 2008, 2010). On a macro-level, we might expect cultural factors to similarly drive inter-regional or international differences in social norms relating to bullying behaviours. For instance, differences in social norms pertaining to collectivism or individualism may impact the way that bullying is perceived and addressed. Some theorists have suggested that individualistic cultures could be associated with higher levels of aggression than collectivist cultures, as the latter prioritize harmony and group cohesion (Bergeron & Schneider, 2005). More recently, however, empirical data has indicated there are lower levels of victimisation in individualistic societies, which has been interpreted in light of increased focus on individual rights and protections (Smith & Robinson, 2019). Further, differences in social norms pertaining to the concept of power distance, the extent to which people in a society may accept unequal distribution of power, could also drive differences in bullying (Hofstede, 1980). It is possible that where high power distance is more socially normative, bullying may in turn be more common and accepted, though to our knowledge this has not been formally tested cross-culturally. Although research targeting the relationship between culture and social norms is quite extended, knowledge is still lacking in clarifying how social norms potentially relate to bullying.

Nevertheless, taking all the available evidence into account, if violence and aggression are normalized in the social context, then young people may tend to exhibit these behaviours more frequently. Thus, changing social norms may constitute a promising way to reduce bullying. Several studies have already provided evidence that targeting social norms may help to reduce bullying and aggressive behaviours in schools (Paluck & Shepherd, 2012; Peets et al., 2015; Perkins et al., 2011). However, bullying research has largely focused on high-income, Western countries. Countries that share these contextual characteristics might share similar social norms which are distinct from those in a non-Western, low- or middle-income setting. Here, we turn to a relatively understudied social context for bullying: that of Indonesia, a Southeast Asian middle-income country.

Indonesia is a diverse state comprising a variety of different ethnic groups, cultures, languages, religions (Zulfikar, 2013). Consequently, social norms are likely to vary between regions and even between schools. The Indonesian school system includes over 50 million students and 2.6 million teachers across more than 250,000 schools. It is the fourth largest education system in the world, behind only China, India, and the United States. Secondary education in Indonesia can either follow a general track or a vocational one. Currently, most secondary school graduates come from general track schools (70%), although the Indonesian government has made efforts in the last decade to increase the percentage of graduates from vocational schools as a way to tackle unemployment (Newhouse & Suryadarma, 2011). Nationally representative data on bullying from the Global School Health Survey in 2015 suggests that rates of bullying in Indonesia are high, with over 21% of Indonesian children in grades 7–9 (equal to 18 million children) reporting having experienced bullying in the last month. Norms concerning use of violence at school do not only include peer to peer violence. Reports have indicated that behaviours like corporal punishment from teachers or parents remain prevalent despite efforts to prevent these by legislation and policy initiatives (Paramita et al., 2020).

Whilst there is a lack of evidence-based anti-bullying interventions in Indonesia, there is currently a strong national commitment to eliminate all forms of violence, including bullying, in schools in Indonesia, for instance, through the Child Friendly Schools initiative, the Prevention and Elimination of Violence in Schools National Strategy, and the National Strategy on the Elimination of Violence against Children. These strategies include a focus on changing the current social norms which accept, tolerate, and ignore violence in a multitude of environments, including in schools.

Here, we present evidence on the relationship between social norms and bullying in schools in Indonesia. We use baseline data collected from the feasibility trial of the ROOTS-Indonesia intervention, the details and results of which are available elsewhere (Bowes et al., 2019). ROOTS-Indonesia is an anti-bullying program that targets social norms. It is a culturally adapted version of the ROOTS program originally developed and successfully implemented across 56 schools in the United States (Paluck et al., 2016). It follows a 'bottom up' approach whereby adolescents themselves identify the issues and drive behavioural change. The ROOTS-Indonesia intervention further incorporates a teacher-training element designed to enhance teachers' knowledge and self-efficacy for using positive discipline practices.

In this paper, we first use baseline data from the ROOTS-Indonesia intervention to examine the effect of social norms on bullying, and second, assess how the feasibility trial of the intervention affected social norms. Our multilevel analytic strategy considers the variation in social norms on the level

of classroom separately in each school. We also take into consideration macro-level differences between regions in Indonesia and present our results separately for the two sites of the intervention, Central Java and South Sulawesi. The limited number of schools in the feasibility trial limits our ability to reliably detect changes in social norms between baseline and follow-up, but we provide preliminary evidence for the effect of the ROOTS-Indonesia intervention on social norms.

Hypotheses

We hypothesized that negative social norms would be positively associated with engagement in bullying, both as a perpetrator and victim. We anticipated that gender would moderate the relationship between social norms and bullying, such that the relationship between negative social norms and bullying involvement would be weaker for girls. We were underpowered to detect a change in social norms post-intervention but anticipated to see trends about reductions in negative social norms at follow-up compared to baseline.

Methods

The ROOTS-Indonesia Intervention

The ROOTS-Indonesia anti-bullying intervention was designed and implemented together with the Indonesian Ministry of Women's Empowerment and Child Protection following a development and feasibility phase, as well as a piloting phase. As part of the process, we carried out needs assessment sessions, meetings with teachers, school staff, and students and an intervention development workshop. We worked with adolescents currently enrolled in secondary schools for this trial because the evidence about the effectiveness of the original ROOTS interventions comes specifically from adolescents in schools (Paluck et al., 2016). We carried out this intervention during 2015 to 2016. Due to the lack of randomised control trials targeting bullying in a low or middle-income setting, we chose to adapt and implement the ROOTS intervention which is a relatively affordable program originally developed and implemented across 56 schools in the United States (Paluck et al., 2016). Despite being devised in a different cultural setting, we chose to implement ROOTS because of a number of practical, empirical, and theoretical considerations. Practically, the ROOTS intervention is comparably low-cost and adapting it for a different cultural context was considered a feasible and relatively straightforward process. Empirically, the ROOTS intervention has been found to be acceptable and effective: in the States, objective measures such as disciplinary reports of student conflict at intervention schools were reduced by 30% over 1 year as compared with control schools (Paluck et al., 2016). Finally, the theory underlying the ROOTS intervention is one that centers the empowerment of students by addressing conflict resolution through fostering positive prosocial norms.

ROOTS-Indonesia combined an adapted version of the ROOTS intervention with a teacher training component designed to strengthen teachers' knowledge and self-efficacy for using positive discipline practices (Bowes et al., 2019). The ROOTS intervention relies on selecting students who are highly influential among their peers. In ROOTS-Indonesia, this was achieved by asking all students to nominate ten peers from their year group with whom they spend the most amount of time (Bowes et al., 2019). The students with the highest number of nominations were selected as "agents of change" and were invited to weekly meetings with a trained facilitator. During those meetings, the students identified conflict behaviours at their school and were encouraged to take a public stance against those behaviours. Student agents of change were provided with examples and support to develop activities against the identified bullying behaviours (e.g., creating posters, giving pencils as rewards to students engaging in friendly or conflict-mitigating behaviours) and they were further encouraged to involve their parents and teachers.

Sample

Twelve schools in total were included in the study, four of which in South Sulawesi (at baseline: 1901 students, 53% female, mean age = 13 years) and eight in Central Java (at baseline: 5302 students, 48% female, mean age = 13.3 years). Schools were selected after consultation with the Local Education Office in order to ensure the availability of referral services the case that any serious cases were identified. Most of the schools were located in rural areas (2 in South Sulawesi and 6 in Central Java; remaining in urban areas). The predominant religion in these areas was Muslim. We conducted a waitlist-controlled trial, whereby half of the schools in our sample were selected as control schools and received the intervention at a later stage following data collection. Randomisation was not possible in South Sulawesi due to school scheduling constraints. Intervention allocation was randomised in Central Java. Quantitative assessments (via our questionnaires) were carried out at baseline and follow-up. Follow-up data were collected at the beginning of the new academic year (approximately 7 months later on average). In both regions, more than half of the students at baseline reported being bullied, with verbal and social bullying being most common (e.g., name calling, teasing, spreading false rumours to damage social standing).

Measures

We used several self-report measures, including the Forms of Bullying Scale and a questionnaire about descriptive social norms, both of which were developed for the original ROOTS intervention. We translated and adapted these measures for use in the Indonesian context through an iterative process to ensure all items were clearly understood and presented in a culturally and age-appropriate manner. This process entailed researcher discussion, face validation, questionnaire testing and item-by-item discussion with an independent group of students in South Sulawesi.

The Form of Bullying Scale (FBS)

The Forms of Bullying Scale (FBS) comprises two subscales of 10 questions each. The first, FBS-V, provides a measure of frequency of exposure to bullying victimisation. Students respond how frequently (ranging from Never to Several Times a Week) they experienced various types of aggression or bullying, such as cyberbullying, social isolation, and physical harm. The second subscale, FBS-P, provides a measure for bullying perpetration. Students are asked how often they engage in various bullying and aggressive behaviours towards others and can similarly report the frequency of each behaviour on a 1–5 scale (ranging from Never to Several Times a Week). We have assessed the internal consistency of our measures via Cronbach's alpha and generally find these to be satisfactory for our sample (Central Java FBS-V: $\alpha = 0.82$, FBS-P: $\alpha = 0.78$; in South Sulawesi FBS-V: $\alpha = 0.81$, FBS-P: $\alpha = 0.77$).

Descriptive Norms

We provided students with a 14-item questionnaire regarding descriptive social norms. This was the Descriptive Norms Scale used in the original ROOTS trial which we translated, adapted (e.g., included pictures of Indonesian adolescents) and validated for the current context. Two items were removed due to inconsistencies due to the way they were coded. We asked participants to report how often they see students in their school engaged in various behaviours, such as posting hurtful messages through social media, arguing, fighting, or spreading gossip. Descriptive norms questions could be answered on a 1–5 scale regarding the frequency of the observed behaviours (Never, Once or twice per month, Once per week, Two or three times per week, Everyday). Items from the descriptive norms questionnaire relating to negative behaviours were coded per the 1–5 scale, whereas items relating to positive behaviours were reverse coded. Thus, a high total score on the descriptive norms questionnaire corresponds to a high degree of perceiving negative behaviours as normative. The reliability of our descriptive norms was also acceptable and good based on Cronbach's alpha (Central Java: $\alpha = 0.77$; South Sulawesi: $\alpha = 0.80$).

Analyses

First, we investigated the relationship between social norms and bullying (perpetration and victimisation) at baseline. We carried out this analysis via a multilevel regression at the school level, where each individual was nested within a class. We included age and gender in our model and random effects at the class level. We applied a square root transformation to the outcome variables, bullying perpetration and victimisation, prior to estimating the model, as analyses revealed that the residuals in a model based on raw social norms were not normally distributed. Second, we investigated the outcome of our intervention in terms of the change in social norms at baseline and follow-up.

We report our results at the school level for both analyses, as we could not ascertain that the students who comprised a single class at baseline overlapped with the students comprising that class at follow-up. This was due to the fact that, in order to maintain confidentiality, we did not collect individually identifying information. Our feasibility trial reports data from four schools in South Sulawesi and eight schools in Central Java. Thus, we are underpowered for statistical tests to detect significant changes in social norms at follow-up. Consequently, for follow-up we report descriptive statistics for each school.

Our analyses were implemented in R version 3.6.1 (R Core Team, 2019) and we relied on the nlme package (Pinheiro, 2012) and the lme4 package (Bates et al., 2014) to carry out multilevel regressions, the psychometric package (Fletcher & Fletcher, 2013) to compute intraclass correlation coefficients, the MuMIn (Barton, 2009) package to compute the variance explained by our models, and the ggplot2 package to produce visualisations (Wickham, 2009).

Results

Relationship Between Social Norms and Bullying at Baseline

We report the results on the relationship between social norms and bullying at baseline separately for the two sites due to the significant cultural and regional differences across the sites. Within each region, our analysis is carried out separately for each school.

South Sulawesi

Bullying Victimisation

We first carried out a multilevel regression of social norms on bullying victimisation for each of the four schools in the region (see Table 1 for regression results and see Supplementary Information: Table S1 for descriptive statistics of bullying victimisation). Our regressions included fixed effects, which applied to all individuals within the school, of social norms, age, gender and the interaction between social norms and gender. We further included random effects in our model, whereby we allowed each classroom within a school to have its own intercept and its own slope for the effect of social norms on bullying victimisation. Each school in South Sulawesi was comprised of two classrooms that we were able to test. An intraclass correlation coefficient (ICC) revealed that 4.24% of the total variance in social norms and 4.40% of the total variance in bullying victimisation were accounted for by clustering at the school level.

Across all schools in South Sulawesi, the only statistically significant predictor of bullying victimisation among the variables we considered was social norms (see Table 1). Our results indicate that an increase in negative social norms was associated with an increase in bullying victimisation. Note that the square root transformation in our analyses suggests that the impact of a unit increase in negative social norms has a relatively stronger impact on bullying when the starting level of bullying is lower. The remaining fixed effect parameters in our model, age, gender, as well as the interaction between gender and social norms, did not reliably predict bullying victimisation. Moreover, the variability between classrooms within a school was overall negligible.

Bullying Perpetration

Further, we carried out a multilevel regression of social norms on bullying perpetration for each of the four schools in the region (see Table 2 for regression results and see Supplementary Information Table S2 for descriptive statistics of bullying perpetration), following the modelling approach described for bullying victimisation. An intraclass correlation coefficient (ICC) revealed that 4.24% of the total variance in social norms and 1.65% of the total variance in bullying perpetration were accounted for by clustering at the school level.

Across all schools in South Sulawesi, social norms statistically significantly predicted bullying perpetration, whereby an increase in negative social norms was associated with an increase in bullying perpetration. Our findings were mixed for the remaining fixed effects parameters in our model. More specifically, we found evidence in one of the four schools in our South Sulawesi sample that age was positively associated with bullying perpetration, whereby older students engaged in bullying perpetration more. In terms of gender, we found that in two schools of our South Sulawesi sample, gender moderated the relationship between social norms and bullying perpetration, whereby the relationship was weaker for female students compared to male students. Again, the variability between classrooms within a school was overall negligible.

Table 1 Multilevel Regression of Social Norms on a Square Root Transformation of Bullying Victimisation in South Sulawesi

	School 1	School 2	School 3	School 4
Fixed effects	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)
Intercept	0.22 (-1.89 to 2.33)	0.56 (-1.53 to 2.66)	1.49 (-0.49 to 3.48)	1.00 (-0.44 to 2.44)
Norms	0.04*** (0.02 to 0.06)	0.03** (0.01 to 0.05)	0.03** (0.01 to 0.04)	0.05*** (0.03 to 0.06)
Age	0.11 (-0.06 to 0.27)	0.12 (-0.03 to 0.27)	0.03 (-0.12 to 0.18)	0.03 (-0.08 to 0.14)
Gender	-0.31 (-0.92 to 0.30)	0.05 (-0.51 to 0.61)	-0.13 (-0.55 to 0.49)	0.02 (0.42 to 0.46)
Gender* Norms[a]	0.00 (-0.02 to 0.02)	0.00 (-0.02 to 0.02)	0.00 (-0.02 to 0.02)	-0.02 (-0.04 to 0.00)
Random effects	*SD*	*SD*	*SD*	*SD*
Intercept	0.00	0.28	0.08	0.13
Norms	0.00	0.01	0.00	0.00
R^2	.13	.08	.06	.12

Coefficients are unadjusted and unstandardised and therefore not directly comparable

*p < .05; **p < .01; ***p < .0001

[a]Gender = Female coded as 1

Table 2 Multilevel Regression of Social Norms on a Square Root Transformation of Bullying Perpetration in South Sulawesi

	School 1	School 2	School 3	School 4
Fixed effects	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)
Intercept	-0.51 (-2.51 to 1.50)	-0.41 (-2.43 to 1.60)	0.42 (-1.48 to 2.32)	-1.42 (-2.98 to 0.14)
Norms	0.05*** (0.04 to 0.07)	0.03* (0.00 to 0.04)	0.03*** (0.02 to 0.04)	0.04*** (0.02 to 0.05)
Age	0.10 (-0.05 to 0.25)	0.14 (0.00 to 0.28)	0.05 (-0.09 to 0.19)	0.19** (0.07 to 0.31)
Gender	0.08 (-0.42 to 0.58)	-0.50 (-1.00 to 0.01)	-0.05 (-0.51 to 0.42)	-0.08 (-0.50 to 0.33)
Gender* Norms[a]	-0.03** (-0.05 to -0.01)	0.01 (-0.01 to 0.03)	-0.01 (-0.03 to 0.01)	-0.02* (-0.04 to 0.00)
Random effects	*SD*	*SD*	*SD*	*SD*
Intercept	0.05	0.42	0.30	0.18
Norms	0.01	0.01	0.00	0.00
R^2	.22	.14	.12	.14

Coefficients are unadjusted and unstandardised and therefore not directly comparable

*p < .05; **p < .01; ***p < .0001

[a]Gender = Female coded as 1

Central Java

Bullying Victimisation

Following our analysis plan for South Sulawesi, we carried out a multilevel regression of social norms on bullying victimisation for each of the eight schools in the region (see Table 3 for regression results and see Supplementary Information Table S1 for descriptive statistics of bullying victimisation). The schools in Central Java were also comprised of two classrooms that we were able to test. An intraclass correlation coefficient (ICC) revealed that 3.63% of the total variance in social norms and 0.73% of the total variance in bullying victimisation were accounted for by clustering at the school level.

Table 3 Multilevel Regression of Social Norms on a square root transformation of Bullying Victimisation in Central Java

	School 1	School 2	School 3	School 4	School 5	School 6	School 7	School 8
Fixed effects	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)
Intercept	-0.01 (-1.69 to 1.66)	0.00 (-1.62 to 1.63)	1.28 (-0.31 to 2.87)	0.36 (-1.26 to 1.98)	2.12** (0.52 to 3.71)	0.88 (-0.62 to 2.39)	2.98** (1.51 to 4.46)	0.09 (-1.23 to 1.42)
Norms	0.04*** (0.02 to 0.05)	0.03** (0.01 to 0.05)	0.05*** (0.03 to 0.06)	0.03*** (0.02 to 0.05)	0.05*** (0.03 to 0.06)	0.04*** (0.02 to 0.05)	0.03*** (0.02 to 0.05)	0.03** (0.01 to 0.05)
Age	0.13* (0.01 to 0.25)	0.14** (0.03 to 0.26)	0.04 (-0.07 to 0.15)	0.10 (-0.01 to 0.22)	-0.04 (-0.16 to 0.07)	0.08 (-0.04 to 0.19)	-0.07 (-0.17 to 0.03)	0.14** (0.04 to 0.23)
Gender[a]	-0.14 (-0.51 to 0.23)	-0.02 (-0.41 to 0.38)	-0.68 (-1.42 to 0.06)	-0.05 (-0.42 to 0.31)	-0.01 (-0.34 to 0.33)	0.01 (-0.36 to 0.39)	-0.50* (-0.94 to -0.06)	0.23 (-0.59 to 0.13)
Gender[a] * Norms	0.01 (-0.01 to 0.03)	0.01 (-0.01 to 0.03)	0.02 (-0.01 to 0.05)	0.01 (-0.01 to 0.03)	0.00 (-0.01 to 0.02)	0.00 (-0.02 to 0.02)	0.02 (0.00 to 0.04)	0.02* (0.00 to 0.03)
Random effects	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*
Intercept	0.15	0.45	0.22	0.43	0.44	0.15	0.37	0.13
Norms	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01
R^2	.15	.18	.20	.16	.20	.09	.19	.20

Coefficients are unadjusted and unstandardised and therefore not directly comparable

*p < .05; **p < .01; ***p < .0001

[a]Gender = Female coded as 1

Across all eight schools in Central Java, negative social norms significantly predicted bullying perpetration. Age was positively associated with bullying victimisation in three schools in Central Java. In terms of gender, in one of the eight schools we found a main effect on bullying victimisation, whereby girls were bullied less overall, and we also found, in another school, that gender moderated the effect of social norms on bullying victimisation, whereby the effect was weaker for girls. Effects were broadly similar across classrooms, with little variability.

Bullying Perpetration

Finally, we applied the same multilevel analysis approach to estimate the effect of social norms on bullying perpetration for each of the eight schools in Central Java (see Table 4 for regression results and see Supplementary Information Table S2 for descriptive statistics of bullying perpetration). An intraclass correlation coefficient (ICC) revealed that 3.63% of the total variance in social norms and 1.13% of the total variance in bullying perpetration were accounted for by clustering at the school level.

Again, across all schools in Central Java, we found that social norms were a statistically significant predictor of bullying perpetration. In four schools, we found evidence that as students grew older, they were more likely to bully. In terms of gender, in one school there was evidence for a main effect of gender, whereby girls were less likely to bully overall. Moreover, we found that gender moderated the effect of social norms on bullying perpetration in two schools, whereby the relationship between social norms and bullying perpetration was weaker for girls. Here too, effects were broadly similar across classrooms, with little variability.

Change in Social Norms Between Baseline and Follow-Up

Our study was underpowered to detect statistically significant differences in social norms at follow-up (our sample consists of only four schools in South Sulawesi and eight schools in Central Java), thus we report only descriptive statistics pertaining to the mean and standard deviations of social norms for each of the schools in our sample (see Table 5).

In all four schools in South Sulawesi, social norms reflecting negative behaviours decreased from baseline to follow-up (from $M = 22.64$, $SD = 10.66$ to $M = 18.04$, $SD = 8.39$). Social norms for negative behaviours decreased in the control schools by 5.6 points on average ($M = 24.25$, $SD = 10.57$ to $M = 18.68$, $SD = 9.80$) and 3.8 points on average in intervention schools together ($M = 21.01$, $SD = 10.51$ to $M = 17.27$, $SD = 9.54$).

Similarly, in all eight schools in Central Java, negative social norms decreased from baseline to follow-up (from $M = 18.95$, $SD = 9.90$ to $M = 16.64$, $SD = 9.12$). This was again true when

Table 4 Multilevel Regression of Social Norms on a square root transformation of Bullying Perpetration in Central Java

	School 1	School 2	School 3	School 4	School 5	School 6	School 7	School 8
Fixed effects	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)	*b* (95% CI)
Intercept	-1.24* (-2.44 to -0.03)	-0.70 (-2.07 to 0.66)	1.55* (0.25 to 2.86)	-0.54 (-2.00 to 0.91)	1.30 (-0.24 to 2.84)	-0.43 (-1.77 to 0.91)	1.03 (-0.19 to 2.26)	0.63 (-0.53 to 1.79)
Norms	0.04*** (0.03 to 0.05)	0.03* (0.00 to 0.06)	0.04*** (0.03 to 0.06)	0.05*** (0.03 to 0.06)	0.03** (0.01 to 0.05)	0.04*** (0.03 to 0.05)	0.04*** (0.03 to 0.06)	0.04** (0.02 to 0.06)
Age	0.18** (0.09 to 0.27)	0.14** (0.05 to 0.23)	-0.02 (-0.11 to 0.06)	0.12* (0.01 to 0.23)	0.00 (-0.11 to 0.10)	0.12* (0.02 to 0.22)	0.00 (-0.09 to 0.09)	0.03 (-0.05 to 0.12)
Gender[a]	-0.18 (-0.51 to 0.16)	0.07 (-0.26 to 0.40)	-0.41 (-0.99 to 0.18)	-0.30 (-0.61 to 0.01)	-0.49** (-0.77 to -0.21)	-0.10 (-0.43 to 0.22)	-0.36 (-0.74 to 0.02)	-0.28 (-0.59 to 0.03)
Gender[a,*] Norms	-0.01 (-0.03 to 0.01)	-0.02** (-0.04 to -0.01)	0.00 (-0.02 to 0.03)	-0.01 (-0.03 to 0.00)	0.02 (0.00 to 0.03)	-0.02* (-0.04 to 0.00)	0.00 (-0.01 to 0.02)	0.00 (-0.02 to 0.01)
Random effects	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*	*SD*
Intercept	0.03	0.56	0.25	0.23	0.60	0.04	0.20	0.18
Norms	0.00	0.02	0.00	0.01	0.02	0.00	0.00	0.02
R^2	.14	.17	.28	.27	.25	.14	.21	.26

Coefficients are unadjusted and unstandardised and therefore not directly comparable

*p < .05; **p < .01; ***p < .0001

[a]Gender = Female coded as 1

Table 5 Social Norms at Baseline and Follow-up for Schools in South Sulawesi and Central Java

		Descriptive Norms		
		Baseline		Follow-up
School	*n*	*M (SD)*	*n*	*M (SD)*
South Sulawesi (total)	1843	22.64 (10.66)	1986	18.04 (8.39)
Control Schools	901	24.25 (10.57)	1086	18.68 (9.80)
Intervention Schools	942	21.01(10.51)	897	17.27 (9.54)
School 1	421	24.92 (11.02)	457	19.61 (9.70)
School 2	440	22.75 (10.67)	413	16.35 (9.54)
School 3	480	23.67 (10.14)	629	18.01 (9.83)
School 4	502	19.64 (10.16)	485	18.05 (9.48)
Central Java (total)	5066	18.95 (9.90)	5286	16.64 (9.12)
Control Schools	2762	18.73 (9.70)	2824	16.82 (8.85)
Intervention Schools	2304	19.21 (10.13)	2462	16.44 (9.40)
School 1	657	17.82 (9.47)	718	16.12 (8.33)
School 2	583	18.26 (10.94)	707	15.51 (9.53)
School 3	275	21.44 (9.72)	266	15.62 (9.18)
School 4	744	20.15 (9.82)	734	19.82 (9.02)
School 5	801	17.42 (9.52)	807	14.73 (7.75)
School 6	624	16.22 (9.38)	649	15.28 (8.79)
School 7	644	21.38 (9.70)	682	19.75 (10.29)
School 8	738	20.22 (9.54)	722	15.85 (8.55)

Follow-up data were collected at the beginning of the new academic year, when new students join existing classes. This is reflected in the discrepant values for n

looking at control schools together ($M = 18.72$, $SD = 9.70$ to $M = 16.82$, $SD = 8.85$, a reduction of 1.9 points) and intervention schools together ($M = 19.21$, $SD = 10.13$ to $M = 16.44$, $SD = 9.40$, a reduction of 2.8 points). Figure 1 visualises the mean levels of social norms at baseline and follow-up in each school. Figure 2 plots mean change in descriptive norms from baseline to follow-up against mean changes in bullying rates from baseline to follow-up. While our limited sample size precluded formal statistical analysis of the differences between school types, based on our descriptive data and visual inspection we note a trend, such that where social norms decreased the most, rates of bullying similarly decreased the most. This was true for both bullying victimization and perpetration for both Central Java and South Sulawesi.

Discussion

We investigated the relationship between social norms and bullying in the context of an anti-bullying intervention in 12 schools in Indonesia. This is one of the first and largest interventions of its kind in a non-Western context. Across all schools, we found highly consistent evidence that social norms reflecting negative behaviours are positively associated with both bullying victimisation and perpetration – the more students believe their peers endorse negative behaviours, the more likely they are to report experiences of bullying themselves. The square root transformation we implemented in our analyses carries implications regarding the interpretation of our data. Firstly, this means that the coefficients capturing the relationship between social norms and bullying reflect changes in square root space, and thus their magnitude should be interpreted with caution, as they appear misleadingly weak. Further, this also suggests that a unit change in social norms would have a relatively stronger effect on bullying when the overall level of bullying is lower. This finding might relate to similar ideas in the literature pertaining to other negative social behaviours susceptible to peer influence. For instance, the visibility of a small number of students engaging in substance use within a given school could lead to strong proliferation of the behaviour within the school (Shackleton et al., 2016). Similarly, violent social norms might be particularly salient and influential in settings where bullying is less prevalent to begin with, and thus might wield stronger influence. It is also possible schools with the highest prevalence rates of bullying may be those with greater socioeconomic disadvantage, which may outweigh any impacts of peer social norms (Due et al., 2009).

Overall, we found limited evidence for the direct effect of gender on bullying. In terms of bullying victimisation, in only one school in Central Java were girls less likely to be victimised than boys. So too for bullying perpetration, girls were less likely to bully in only one of eight schools in Central Java. Similarly, evidence was limited for the moderating effect of gender. The relationship between social norms and bullying victimisation was significantly weaker for girls in only one of the eight schools in Central Java and in none of the schools in South Sulawesi. For bullying perpetration, there was more evidence that gender moderated the influence of social norms. In two schools in South Sulawesi and two schools in Central Java the relationship between social norms and bullying perpetration was weaker for girls. These findings are situated within a broader literature, which has established gender differences in the relationship between social norms and bullying (Nipedal et al., 2010), whereby negative social norms are more strongly related to boys' bullying behaviours compared to those of girls.

Our other main finding of interest pertains to the change in social norms from baseline to follow-up. We observed a decrease in mean levels of negative social norms (e.g., violent behaviours) at follow-up across all schools in both regions, which was the intended outcome. Further, preliminary visual inspection revealed a pattern whereby both intervention and control group schools with higher levels of negative social norms at baseline experienced the largest decreases in social norms at follow-up. This might tentatively suggest that the intervention would be well suited to schools which have high levels of negative social norms. However, for this analysis, we only had as many datapoints to compare across as there

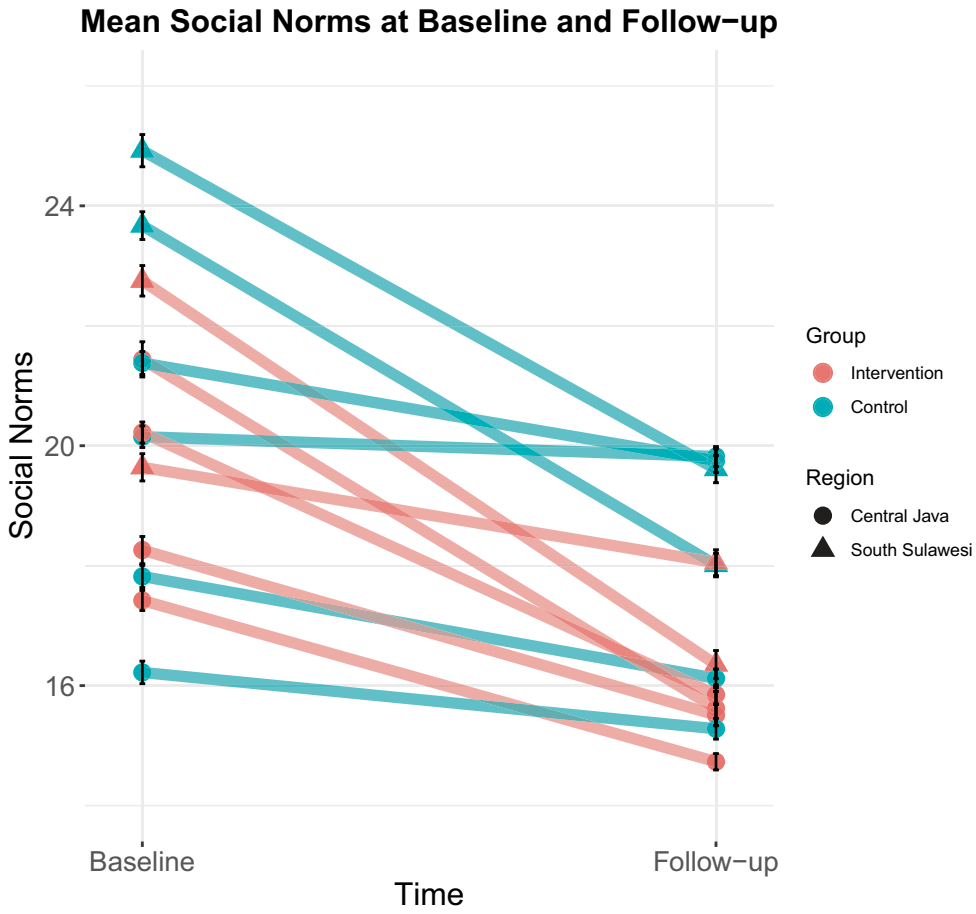

Fig. 1 Mean Social Norms at Baseline and Follow-up for Schools in South Sulawesi and Central Java. ***Notes.*** Bars represent standard errors of the mean

were schools in our sample: four in South Sulawesi and eight in Central Java. Thus, we were considerably underpowered to detect changes in social norms via statistical tests.

School clustering accounted for ~ 4% of the total variability in social norms. Notably, these results from Indonesia, a middle-income non-Western country, are in line with research

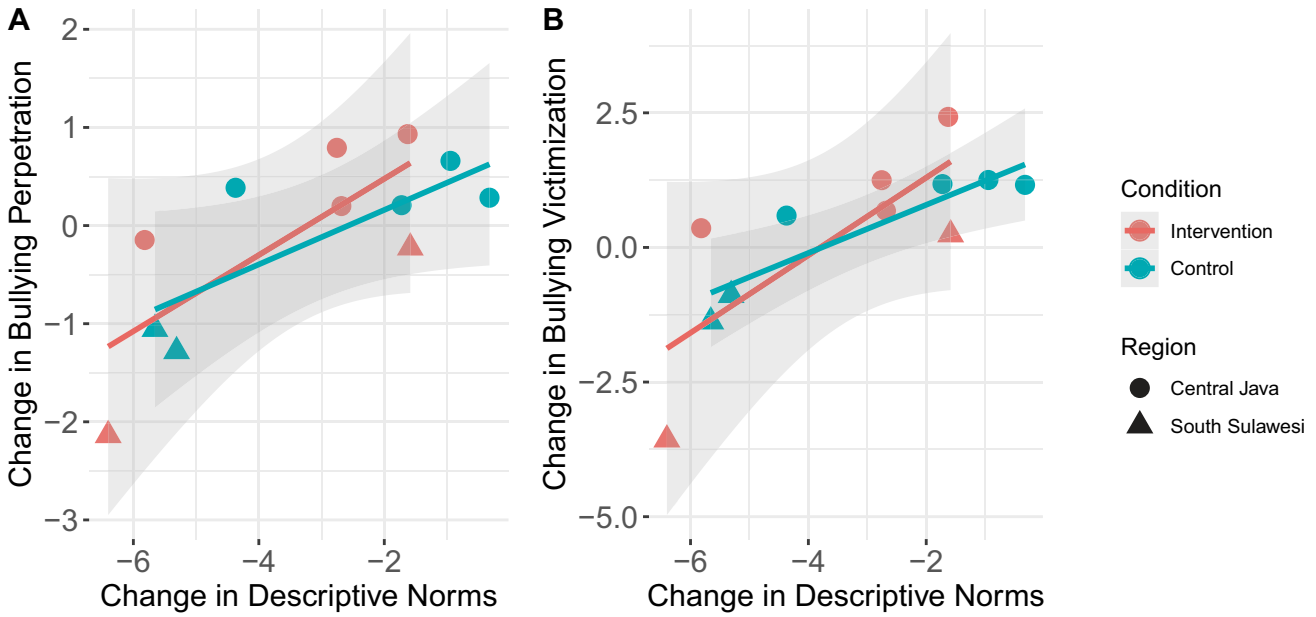

Fig. 2 Mean changes in descriptive social norms from baseline to follow-up against mean changes in bullying perpetration (panel **A**) and bullying victimization (panel **B**) from baseline to follow-up. Average change scores are computed per school

from high-income Western settings that report similar ICC scores (e.g. Bradshaw et al., 2009; Klein et al., 2012; Payne et al., 2003). School level effects tend to vary in size according to the outcome variable of interest. School-level variability, as measured by ICC, is higher for outcomes that are susceptible to social mimicry, where students might engage in certain behaviours to gain social acceptance by their peers (Moffitt, 1993). By contrast, it is typically lower for psychosocial health outcomes which are less overtly visible and consequently less susceptible to peer influence (Shackleton et al., 2016). Social norms constitute a domain which is shaped by peer influences, and thus, it might be expected to produce the observed levels of ICC. These results demonstrate the importance of driving change in social norms at the school level, which we consider to be one of the policy and future research implications of our research. Working at the school level is important, given that a majority of adolescents spend a significant part of their daily lives in school, and impactful, since our work, alongside previous research, demonstrated that changes in social norms can decrease adolescent bullying behaviours (Paluck et al., 2016; Salmivalli & Voeten, 2004).

Limitations & Future Directions

A limitation of our study is that our data on social norms relies on self-report measures which may carry bias (e.g., students may feel like they are expected to respond in a certain way), and may inflate effect sizes due to common method variance. Integrating information from multiple respondents (e.g., teachers, staff, students) would be important in future studies. Further, we acknowledge that social norms are multifaceted and extend beyond behaviours observed by students. These may include, for instance, beliefs or attitudes about what is acceptable (injunctive norms) and whether complying or not with the norms results in positive or negative reactions from others (sanctions). Given that the current interventions was a feasibility trial, we were limited in the number of norms we could assess. We hope additional consideration of more varied social norms is given in future work, as our findings indicate social norms can be a promising target for reducing bullying behaviours. Given that adolescence is in important developmental period, it would also be important to extend this line of research and assess whether these results replicate in older and younger cohorts.

Similarly, given the somewhat limited scope of the feasibility trial, we were also unable to assess a number of additional potentially important factors. For instance, we do not have data recording how many schools were general or vocational-track schools and it is possible that social norms may vary depending on the school type. Further, we do not have measures for inequality either at the individual-level (due to our inability to collect personally identifying information) or at the school-level. As discussed earlier, socioeconomic disadvantage may underpin high bullying rates prevalence even to extents larger than those of peer social norm impacts (Due et al., 2009). These remain important avenues for further consideration in future work.

It is also pertinent to consider other potential explanations for the observed patterns in our results. For instance, we note a pattern where both intervention and control schools with higher negative social norms at baseline tend to report the largest decreases in social norms at follow- up. On one hand, this might be interpreted as evidence for the suitability of the current interventions to schools which have higher levels of negative social norms. On the other hand, and importantly, this pattern could also be explained in terms of a ceiling and regression to the mean effect. It is possible that when initial levels of negative social norms are high, there may be a greater reduction toward the mean point of a scale at follow-up. Alternatively, given that both intervention and control schools displayed decreases in negative social norms, a further possible consideration pertains to developmental trajectories. It may be possible that some of the observed decreases are underpinned by the natural developmental course of adolescence. While the visual inspection of mean social norms at baseline and follow-up (Fig. 1) suggests a steeper decline in intervention schools rather than control schools, given the fact that the current study was statistically underpowered and we cannot quantitatively confirm this relationship, we recommend caution in interpreting the present results.

Finally, we reiterate that we were limited by practical and feasibility constraints (e.g., being unable to collect further individual data, being underpowered). As such, we see opportunities for future work to replicate the current results and further strengthen the evidence-base pertaining to social norms and anti-bullying efforts. Sufficiently powered future quasi-experimental work can build on the observed trends here and provide more concrete statistical estimation. Different experimental designs, such as randomized controlled studies, can provide stronger evidence for causal mechanisms.

Implications for Practice

Bullying occurs in a social context. Based on our work, we consider that better understanding the social realities of students' lives, as well as how social norms are formed and shaped, should be an important component of future efforts to reduce bullying. In this intervention, we find that embedding interventions within schools can be effective and so we recommend further efforts to foster positive and prosocial norms within schools.

Such efforts, more broadly, can also be undertaken at different levels. At the individual-level, the ROOTS intervention empowers students themselves to be actors for positive change and students' empowerment and prosocial norms should be further encouraged. Teachers and parents could similarly work to this end. In the current intervention, teachers also received

training to improve their knowledge and self-efficacy particularly regarding positive discipline practices. At a policy level, embedding training curriculums addressing social norms in a sustainable, long-term oriented fashion directly in schools could prove effective and should be explored further.

Conclusion

We provide highly consistent evidence for the robust relationship between social norms and bullying perpetration and victimisation from 7,203 pupils across 12 schools in Indonesia. Our descriptive results also suggest that the adapted ROOTS-Indonesia anti-bullying intervention might offer a promising avenue for changing social norms. These findings are particularly encouraging in light of the impact of social norms on bullying and contribute to a limited body of research on bullying and anti-bullying efforts in a non-Western and middle-income setting.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s42380-023-00176-8.

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Declarations

Ethics and Consent The study received ethical clearance from the Medical and Health Research Ethics Committee (MHREC), Faculty of Medicine Gadjah Mada University in South Sulawesi: KE/FK/0255/EC/2017, and from the Health Research Ethic Committee, Universitas Negeri Semarang in Central Java. All adolescents gave informed, written assent. Written informed consent was obtained from teachers, with an opt-out consent process for parents for questionnaire data. All parents of adolescents in the Agents of Change group gave full written consent.

Conflict of Interest All authors declare that they have no conflicting interests.

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