

## **SCHOOL COMMUNICATION STRATEGIES IMPROVE SCHOOLS' SURROUNDINGS' SAFETY: THE MODERATION OF STUDENTS' PARTICIPATION AND ANTI-BULLYING PROGRAMS IN NORTHERN ITALY**

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**Health Behaviour in School Aged Children Lombardy  
Group 2014, Italy**

### *Abstract*

*In the last decades, research focused on the surroundings' influence over schools, but only a few studies investigated whether the presence of a school may increase its surroundings' safety. Still, the characteristics of the school which could ameliorate the surroundings' safety are still unclear. The current study hypothesizes that: i. a higher number of communication strategies in the school may increase the school surroundings' safety; ii. the students' participation in school decisions and the frequency of anti-bullying programs may strengthen the effect of communication over surroundings' safety. The sample includes data of 62 school principals from the Northern Italian region of Lombardy who answered self-report questions from Health Behaviors in School-Aged Children (2014) protocol. Findings from moderation analysis show that a higher number of communication*

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Health Behaviour in School Aged Children Lombardy Group. *Gruppo Regionale HBSC LOMBARDIA 2014, Italy*. Corrado Celata, Liliana Coppola, Bruna Baggio, Veronica Velasco, Marika Lavatelli, Giusi Gelmi, Luca Biffi, Margherita Marella, Carlo Pellegrini, Ornella Peregò, Walter De Agostini, Manuel Benedusi, Paola Duregon, Alessandra Meconi, Celeste Zaghenò, Montagna Valentina Salinetti, Marina Salada, Elisabetta Mauri, Valter Drusetta, Leone Armando Lisè, Antonella Giannellini, Federica Di Cosimo, Laura Peruzzo, Tullia Guerrini Rocco, Jessica Sala, Claudia Zoppi, Barbara Artioli, Laura Stampini, Maristella Colombo, Emanuela Farina, Daniela Marchesi, Linda Casalini.

*strategies within the school fosters the perception of safer school surroundings. The impact of students' participation in school decisions does not constitute a significant moderator of the relationship. In contrast, the frequency of anti-bullying programs results to impact negatively on the association between communication strategies and surroundings' safety.*

Keywords: school-safety; communication; students; principals; bullying

## **Introduction**

According to Morrison et al. (1994), school safety is both the absence of episodes of violence within the school and the perceived psychosocial wellbeing of people attending that environment. However, a unique cross-cultural definition of school safety is lacking (Shaw, 2001; Bucher & Manning, 2005), and it is not clear whether it encompasses school surroundings' safety or not. In the last decades, numerous studies from all over the world (Harber, 2001; Bucher & Manning, 2003; Johnson, Jabbari, Williams, & Marcucci, 2019; Sadowski, 2020) have clarified that schools aim to be safe from a wide range of internal accidents (*e.g.*, bullying, theft, racial harassment, sexual harassment, LGBTQ students discrimination, mobbing, gang-activities, violence by staff, vandalism, violence against students and staff, intrusion). In this sense, internal school safety can increase by enhancing: school leaders influence (Zengin & Akan, 2019), the dialogue between students and teachers (Bucher & Manning, 2005), the sense of community (Astor, Benbenishty, & Meyer, 2004), the security measures of the infrastructures and the access to school buildings (Potter, 2003; Servoss, 2017; Deakin, Taylor, & Kupchik, 2018).

In the frameworks of different theories, such as Sutherland's Theory of Differential Association (Sutherland, Cressey, & Luckenbill, 1992; Akers & Jensen, 2006), Broken Window Theory by Kelling and Wilson's (1982), and Bandura's Social Learning Theory (1977), research documented the negative impact of socially disordered school-neighborhood (*i.e.*, frequent police interventions, drug, and alcoholic drinks accessibility, presence of gangs, etc.) over schools. Unsafe school surroundings decrease students' achievement (Bowen & Bowen, 1999; Bowen, Richman, Brewster, & Bowen, 1998; Boxer, Drawve, & Caplan, 2020), whereas other findings associated school's location safety with a significant increase in students' academic performance (Milam, Furr-Holden, & Leaf, 2010; Boxer et al., 2020). Furthermore, Gmel et al. (2005) showed that the presence of shops selling alcoholics around high schools favorably shape

adolescents' attitude towards drinking, although research showed that other variables determine adolescents' alcohol consumption patterns (Perasso et al., 2019). This body of evidence assumes that schools are negatively influenced by their surroundings' characteristics (Ennett, Flewelling, Lindrooth, & Norton, 1997; Benbenishty & Astor, 2005).

Nevertheless, according to the Social-Ecological Theory (Bronfenbrenner, 1979; Garbarino & Abramowitz, 1992), the school and its surroundings are mutually interacting systems. Accordingly, literature has started questioning the possibility of a reversal influence between the school and its surroundings (Stattin, Svensson, & Korol, 2019). In fact, literature has not explored whether the school could play a crucial role in increasing safety and counteracting social disorders in its location. For example, Roncek and LoBosco (1983) documented that crime is lower in private schools' surroundings. However, the study did not deepen the causal relationship between the school and the context's characteristics.

Giving that Cohen and Felson's (1979) Routine Activity Theory postulated deviance as the convergence of a motivated offender, a suitable target, and the absence of monitoring guardians, schools may work as sources of control capable of diminishing social disorders in their surroundings. Schools may foster informal social control (Kornhauser, 1978; Triplett, Gainey, & Sun, 2003) as their staff and students may monitor and or press charges about social disorders in the surrounding area. Research supports similar evidence regarding places of worship (*e.g.*, churches): by promoting social bonds and shared moral values (Warner & Konkel, 2019), religious institutions increase the neighborhood's safety. Though, the characteristics that may enable schools to improve their surroundings' safety need further exploration.

For such purpose, the school principals' perspective represents a crucial contribution. The school principal is the most influential authority within the school (Syed, 2015) since he/she multi-dimensionally operates in a complex system (Stringer & Hourani, 2016). The school principal must understand the school context's challenges and base goal-directed actions on data (Sun, Johnson, & Przybylski, 2016; Sanchez, Paul, & Thornton, 2020). Principals should assure the quality of education (Romero & Krichesky, 2018), promote values (*i.e.*, respect, trust, students engagement, safety), and effectively communicate with students, their families, and school staff (Marzano, Waters, & McNulty, 2005; Finnigan & Layner, 2012). These aspects grow even more relevant in disadvantaged and turbulent high school (Romero & Krichesky, 2018). In other

words, the school principal is the most aware person about the school context in terms of school communication strategies, students' participation in school board decisions, and ongoing health promotion programs (*e.g.*, against bullying). In the present research, these school characteristics will be tested in association with school surroundings' safety. Moreover, in the region of Lombardy (northern Italy), investigating the safety of schools surroundings is particularly urgent because data from the Ministry of the Interior (2019) reported that the district of Milan holds the highest rate of crime (a mean of 228.084 of charges pressed every 100.000 citizens) in Italy.

### *Communication strategies*

The school's communication strategies are fundamental to create collaborative and successful schools (Halawah, 2005) because they maximize participation, innovation, collaboration and allow to gather complaints (Hargie & Tourish, 1998). A high number of active communication strategies within the school is also likely to invite students and school staff to report unsafe characteristics of schools' surroundings to the school leaders. In this way, school principals could gather such data and create a bridge between the individual and the local institutions, officializing the reported problems. Commonly, schools offer three levels of communication: websites, surveys, and counseling sessions.

According to Taddeo and Barnes (2014), digitalization represents one fundamental strategy for the school to communicate and increase parental involvement in sons' and daughters' education since primary school (O'Toole, Kiely, & McGillicuddy, 2019). Despite criticism about the marketing aspects of schools' webpages (Tubin & Klein, 2007), websites allow visitors to communicate with the school anywhere and anytime (Piper, 2012). Plus, school websites implement forums to request and share information (Padgett, 2006).

Another critical communication strategy is the implementation of surveys. Public health literature describes surveys as useful methods to measure youths' at-risk behaviors (Anatale & Kelly, 2015; Lowry, Michael, Demissie, Kann, & Galuska, 2015). School-based surveys can be commissioned by school leaders or by health and political institutions on a local, national, or international level (Rasberry, Tiu, Kann, McManus, Michael, Merlo, et al., 2017). Despite possible logistical challenges (Rasberry et al., 2017), these instruments allow school principals to shape institutional goals on statistical findings (Sun, Johnson, &

Przybylski, 2016; Sanchez, Paul, & Thornton, 2020), such as solve problems that concern the school neighborhood.

Finally, attention should be paid to school counseling. As school psychologists, counselors help students think about their future (*e.g.*, planning academic future or job placement), ameliorate their life in school, or advise them about personal problems (Halawah, 2005). School counselors' influence is often underutilized or misunderstood (Dahir & Stone, 2009; Dollarhide, Smith, & Lemberger, 2007; Bowers, Lemberger-Truelove, & Brigman, 2017; Ruiz, Peters, & Sawyer, 2018). Nevertheless, several studies demonstrated positive outcomes from the alliance between school principals and school counselors (Militello & Janson, 2007; Dahir, Burnham, Stone, & Cobb, 2010; Rock, Remley, & Range, 2017). Both professionals work with data from the school community (Militello & Janson, 2007), which is crucial to focus on its organizational goals and problems. Following ethical standards to protect data confidentiality (Armstrong, MacDonald, & Stillo, 2010), the school counselors collect data and evaluate students' perceptions of life in school, communicating the key-findings to the school leaders (Young & Bryan, 2015), and also the eventual complaints by students over school surroundings' safety.

#### *Students' participation in school decisions*

Frequent students' participation in the school decisions and governance is likely to promote a civic sense of ethos in the community. In other words, including students in school decisions may enhance students' intent to communicate to school authorities the occurring surroundings' issues. In the Nineties, students' participation in school decisions was rarely considered (Mitra, 2004). Adults were not prone to involve students in institutions' governance (Noddings, 1992; Poplin & Weeres, 1992). This gap between adults and adolescents lead students to perceive themselves as powerless and anonymous (Heath & McLaughlin, 1993; Nightingale & Wolverson, 1993; Pope, 2001), to drop out of school, to have lower self-esteem and lower academic achievement (Rudduck, Day, & Wallace, 1997; Fullan, 2001).

Nowadays, Mayes (2018) identified students' participation in school governance as a crucial educational process in all school life stages and for future professionalization. Engaging students in school governance associates with positive outcomes for the following targets: i. the individuals (*e.g.*,

increased self-esteem, self-efficacy, sense of responsibility, and feeling of belonging) (Mayes, 2018); ii. the institution (*e.g.*, improving the quality of teacher-student relationships, fostering discipline, improving the school competitiveness) (Bäckman & Trafford, 2006); ii. the society because it increases next generations' civic virtues (Torney-Purta, 2001).

Students participating in school decisions have a better academic achievement, are more willing to listen and open to change, and more capable of expressing their opinions, and more motivated to participate in school activities (Yuen & Leung, 2010). Thus, by engaging students, schools allow them to understand that they have responsibilities about the situations they live in (Roche, 1999; Leung & Yuen, 2009), included the safety of the places they attend.

Several scholars pointed out that many schools are not prone to involve students in school governance, preferring to communicate to them already decided plans (Leung, Yuen, Cheng, & Guo, 2016). Moreover, recent literature has argued that the security procedures (*e.g.*, presence of security guards, metal detectors, alarms, electronic school gates, closed-circuit television, security lighting) introduced in schools to face the advent of contemporary threats (*e.g.*, terrorism, mass-murders, etc.) (Mayes, 2018) have averted students' participation in school governance. According to this perspective, students may feel hypercontrolled, frustrated, and mistrusted.

However, as argued by Cheng and collaborators (2016), students may preciously contribute to a better understanding of the whole school context (*e.g.*, internal and external) and a successful improvement. Indeed, Bradshaw et al. (2014) have stated that school safety, school environment, and students' engagement in school governance are interlaced school climate dimensions. In this view, students' voice actively monitors what happens inside the school, promoting mutual trust with the school authorities (Mayes, 2018). Still, the relationship between the school surroundings' external safety and the students' participation in school governance is neglected by literature. Students' participation in the school decisions is likely to promote a civic sense of ethos (Torney-Purta, 2001), which could foster their surveillance over the school neighborhood: being more involved in school governance may lead students to use school communication strategies to report school surroundings' social disorders.

*Promoting safety within the school: Anti-bullying programs*

School surroundings impact the likelihood of bullying victimization, especially when schools are located in areas of socio-economical decay (Andershed, Kerr, & Stattin, 2001; Perren & Hornung, 2005; Cook, Williams, Guerra, Kim, & Sadek, 2010; Holt, Turner, & Exum, 2014). Despite anti-bullying programs being crucial to keep the school safe from internal episodes of violence, no evidence proved their efficacy in improving school surroundings' safety.

The first definition of bullying by Olweus (1978) described it as the sudden aggression of a victim by one or more offenders. Nowadays, the literature defines bullying as a complex multidimensional phenomenon (Olweus, 1993; Salmivalli, 2010; Reijntjes, Vermande, Goossens, Olthof, van de Schoot, Aleva, et al., 2013; Volk, Dane, & Marini, 2014), that is typified by four main attributes: i. The *Repetitiveness* of the episodes; ii. The *Intensity* of the attacks, that differ from playful interactions among peers; iii. *Power Imbalance* as victims are physically or socially weaker individuals; iv. The *Goal-directedness* of the actions to strategically harm the victim. Bullying includes physical aggression, social exclusion, verbal aggression, threats, name-calling (Patchin & Hinduja, 2011), and it can be associated with cyberbullying (Ybarra & Mitchell, 2004; Olweus & Limber, 2018; Perasso et al., 2020).

Schools adopt many different programs to prevent problematic behaviors, such as bullying, among children and adolescents (*i.e.*, mentoring, service learning, social-emotional learning, outdoor adventures) (Gutman & Schoon, 2015). A meta-analysis of Ttofi and Farrington (2011) illustrated that intensive school programs - that promote disciplinary methods, involving the family, and providing direct supervision - are the most effective in counteracting school bullying. For example, longitudinal benefits have been demonstrated in elementary school four years after implementing the Olweus Bullying Prevention Program (OBPP) (Olweus, Solberg, & Breivik, 2020). This program positively influences the school culture by enhancing pupils' and staff's awareness and competence in handling and preventing bullying behaviors. However, when it comes to counteracting bullying among adolescents, scholars argue that anti-bullying programs may not be as beneficial as for elementary students, or in some cases, they may even be harmful (Yeager, Fong, Lee, & Espelage, 2015). In fact, these programs may end up triggering teens' rebel reactions against the adults' attempts to control and shape their interactions (Erikson, 1968; Larson, Wilson, Brown, Furstenberg, & Verma,

2002). The debate around the effectiveness of anti-bullying programs during adolescence is open and needs further clarification.

Literature showed that being a victim of bullying predicts adolescents' suicidal ideation, loneliness, lower sense of school belonging, lower perceived school support, lower trust towards school, internalizing problems (Vanderbilt & Augustyn, 2010; Winsper, Lereya, Zanarini, & Wolke, 2012; Copeland, Wolke, Angold, & Costello, 2013; Wang, Iannotti, & Luk, 2011; Schwartz, Lansford, Dodge, Pettit, & Bates, 2015). Moreover, the fear of being victimized or re-victimized leads many students to bring weapons at school to defend themselves, decreasing school environment safety of (Carbone-Lopez, Esbensen, & Brick, 2010; Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003). In line with this evidence, several studies associated bullying victimization with the perception of a less safe school environment (Astor, Meyer, Benbenishty, Marachi, & Rosemond, 2002; Esselmont, 2014). On the other hand, further evidence is needed to shed light on anti-bullying programs' influence on school surroundings' safety. It is not clear whether a school that is internally active against adolescents' bullying may ameliorate the adolescents' awareness around other forms of violence in the school neighborhood and their promptness to communicate what they know to school staff. To date, it has been demonstrated that school surroundings play a crucial role in influencing the perception of school safety and the likelihood of bullying victimization, especially when schools locate in areas of socio-economical decay (Andershed, Kerr, & Stattin, 2001; Perren & Hornung, 2005; Cook, Williams, Guerra, Kim, & Sadek, 2010; Holt, Turner, & Exum, 2014).

### **Aims and hypothesis**

The current study aims at examining the association between school communication strategies and school surroundings' safety. Furthermore, the study aims at investigating the impact of students' participation in school decisions and the influence of anti-bullying programs on the relationship between school communication and school surroundings' safety. Precisely, the following hypotheses will be tested: i. A higher number of school communication strategies may increase school surroundings' safety; ii. Higher levels of students' participation in school decisions and frequent anti-bullying programs may contribute to strengthening the effect of school communication strategies to improve surroundings' safety.



## Method

### *Sample*

A-priori power-analysis with software G-Power 3.1.9.4 was run to detect the ideal sample size for the moderation model. Sample size was calculated given the following parameters: number of predictors (five including the principal effects and the interactions), probability of  $\alpha$  (type 1 error) set at .05, power ( $1-\beta$ ) set at .80, and a medium-large effect size ( $.35 > f^2 > .15$ ). The resulting sample size from a-priori power analysis was  $n=65$ . However, sixty-two high-school principals data were available from HBSC data (2014). The majority ( $n=56$ ) hold the role of the school principal, the others hold the position of vice-principals ( $n=4$ ) or other non-specified leadership roles ( $n=2$ ). Most of the high schools are technical vocational training institutes or artistic institutes ( $n=33$ ), while the remaining ( $n=29$ ) are labeled “Liceo” in the Italian school systems (e.g., an academic curriculum of high school, specialized in literature, or science, or languages, etc.). Sixty among the participating schools (96.8%) are public, whereas only  $n=2$  are private institutes. As regards the school location,  $n=9$  schools are in metropolitan urban areas,  $n=11$  in urban areas,  $n=32$  in towns,  $n=9$  in the small cities,  $n=1$  in a small village.

### *Measures*

*School Communication Strategies.* School communication strategies were assessed as the number of modalities that are active to gather students/staff complaints and to communicate school initiatives. School principals were asked to respond whether their school had the following items: an internet page (including homepage, forum, blog), office hours (e.g., school’s counseling), the use of student surveys, and other modalities. The obtained sum from the dichotomous responses permitted to evaluate how much the school was active (from 0 to 5) in communication with students/staff.

*School Surroundings’ Safety.* The school surroundings’ safety was measured by asking school principals how much they perceived the school location safe from 1=absolutely not safe, 2=not safe, 3=safe, 4=absolutely safe.

*Students participation in school decisions.* The school principals were asked how frequently: i. students were informed about the school board’s decisions; ii. students’ opinion was considered in the school board’s decisions; iii. students had a say in school governance. The responses were ordered from

1=always to 5=never. The scale values were reversed to facilitate statistical analysis interpretation. A comprehensive index was obtained by calculating the mean of the three items, given the good internal consistency (Cronbach's  $\alpha=.74$ ).

*Frequency of anti-bullying programs.* The school principals were asked how often programs against bullying were carried out as health-promoting measures. Answers were ordered as 1=yes, often, 2=yes, sometimes, 3=never carried out. The scale values were reversed to facilitate statistical analysis interpretation.

#### *Procedure*

The Health Behaviour in School-Aged Children protocol is an international surveillance study promoted by the World Health Organization. HBSC data are collected every four years since 1982 in a rising number of countries (*e.g.*, Europe, USA, Israel, Canada, etc.). The school principals' self-report questionnaire concerns questions about schools' main characteristics (*e.g.*, number of students, number of classes, number of teachers, private or public school, etc.), schools' infrastructure and environment, the frequency of health-promotion programs within the school, the characteristics of schools' surroundings, the attitude of students towards the school, and the school communication modalities. 2014 HBSC data collection was conducted in Lombardy thanks to the collaboration between the Local Prevention Network, Regional School Office, Territorial School Offices, and local medical and prevention institutions under the leadership of the University of Turin (P.I., Professor Franco Cavallo) for the Italian data collection. School selection was based on random clustering from the alphabetically ordered lists of schools within the region of Lombardy. School principals completed the self-report protocol in May 2014. Following HBSC ethical standards, confidentiality was guaranteed to schools' principals about their data.

#### *Analytic plan*

The IBM Statistical Package for Social Science (SPSS) 25th version was used to perform the regression analyses. PROCESS macro for SPSS (Hayes, 2012) was run to perform a moderation model. Model number 2 (by Hayes, 2012) was computed to detect whether the school communication (X, independent variable) impacted on school surroundings' safety (Y, dependent

variable), also testing the impact of students' participation (Moderator 1) and the frequency of anti-bullying programs (Moderator 2).

## Results and discussion

Descriptive statistics are displayed in Table 1. Correlations between school safety, school communication, the frequency of anti-bullying programs, and students' participation in school decisions are displayed in Table 2.

Table 1. Frequency of responses (n=62)

Variable		Frequency	Percentage
<i>Number of school communication strategies</i>	None	15	24.2
	At least 1	13	21.0
	At least 2	17	27.4
	At least 3	16	25.8
	At least 4	1	1.6
<i>School safety</i>	Absolutely not safe	2	3.2
	Not safe	11	17.7
	Safe	42	67.7
	Absolutely safe	1	1.6
	Missing	6	9.7
<i>Frequency of Anti-Bullying programs</i>	Never	1	1.6
	Sometimes	33	53.2
	Often	28	45.2
<i>Frequency of students' participation</i>	Never	0	0
	Seldom	0	0
	Sometimes	3	4.8
	Often	27	43.5
	Always	32	51.6

Note: n=6 missing data in School Safety have not been treated as inferior to 10% (see Schlomer, Bauman, & Card, 2010).

Table 2. Pearson's product-moment correlations between School Safety, frequency of Anti-Bullying Programs, frequency of Students' participation in school's decisions

	1.	2.	3.	4.
1. School safety	1			
2. Anti-bullying programs	.22	1		
3. School communication	-.11	-.24	1	
4. Students' participation	.16	-.01	-.37**	1

Note: \*\*p<.01; n=62.

A significant negative correlation emerges between school safety and students' participation ( $r=.37, p<.001$ ). The two variables have opposite scorings: school safety is measured from 1=absolutely not safe, to 4=absolutely safe, while student participation is measured from 1=always to 5=never. Thus, the interpretation is that the more the students participate to school decisions, the safer the school is.

Table 3. The interplay of school communication (X), the frequency of anti-bullying programs (M1), and students' participation (M2) in predicting school safety (Y): moderation model

Variable	B	SE	t	p	95% CI	
					Uper	Lower
School communication	.87**	.32	2.75	.008	.23	1.51
Anti-bullying programs	.65**	.22	2.96	.005	.21	1.11
School communication * Anti-bullying programs	-.25*	.11	-2.43	.022	-.46	-.03
Students' participation	.18*	.08	2.15	.035	.01	.35
School communication * students' participation	-.07	.04	-1.73	.088	-.16	.01

Note: \*\* $p<.01$ ; \*\*\* $p<.00$ ;  $n=62$ .

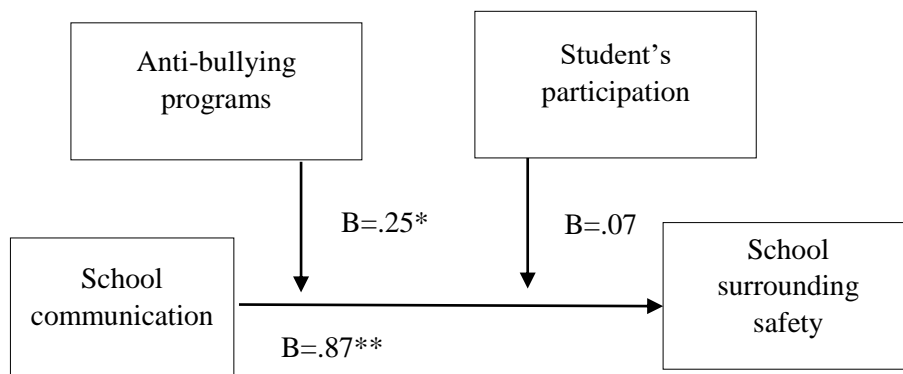


Figure 1. Moderation Model of School Communication (X, Independent Variable) associating with School Surroundings' Safety (Y, dependent Variable), moderated by the frequency of Anti-bullying programs (Moderator 1) and the frequency of Students' Participation in school's decisions (Moderator 2).

Overall, the moderation model (Table 3) resulted being a statistically significant  $F(5,56)=2.68$ , Findings show that a higher number of school communication strategies, more frequent anti-bullying programs, and higher students' participation in school decisions associate with higher school surrounding safety. Contrarily from what expected, the frequency of anti-

bullying programs resulted negatively moderating school communication and school surrounding safety association  $F(1,56)=5.47, p<.05, R^2=.08$ . Students' participation in school decisions did not constitute a significant moderator between school communication and school surrounding safety  $F(1,56)=3.01, p>.05, R^2=.04$  (see Figure 1).

The current findings show that the number of active school communication strategies positively associates with the perceived safety of the school surroundings. Students' participation in school board decisions does not moderate such association, while the impact of the frequency of anti-bullying programs emerged to be negative.

This study is inserted in a controversial theoretical framework. Firstly, literature still lacks a shared scientific consensus to univocally define the meaning of school safety (Morrison et al., 1994; Bucher & Manning, 2005), which does not include the safety of school surroundings. Numerous studies have documented outcomes from procedures to maintain the schools' internal safety (Servoss, 2017; Deakin et al., 2018; Potter, 2003; Astor et al., 2004; Bucher & Manning, 2005; Zengin & Akan, 2019) against many different threats (*e.g.*, episodes of violence due to racial, sexual, bullying, discrimination, mobbing, gangs, vandalism, intrusion matters). Both theoretical (Kelling & Wilson, 1982; Sutherland et al., 1992; Bandura, 1977) and empirical contributions (Bowen et al., 1998; Boxer et al., 2020; Bowen & Bowen, 1999) point out that schools are likely to be negatively influenced by the neighborhood's problems.

Nevertheless, the Social-Ecological perspective (Bronfenbrenner, 1979; Garbarino & Abramowitz, 1992) allows considering a reversal influence between the school and its surroundings as two interplaying systems. Accordingly, this work has investigated whether the presence of a school may temper the safety of the area in which it is located. A similar finding was obtained by Warnel and Konkel (2019) in a study demonstrating that the presence of a place of worship decreases social disorders in its surrounding. Plus, a study in Sweden by Stattin et al. (2019) underlines that the school environment can counteract the effects of disadvantaged suburbs on adolescent students. Given the high incidence of criminality in the north-Italian region of Lombardy (as reported by the Ministry of Interior data, 2019), this study pursued two aims: (a) to investigate whether the number of school communication strategies could improve the safety of their surroundings, and (b) by which extent students' participation to school governance and the frequency of anti-bullying programs could influence such association.

Noticeably, the HBSC dataset has allowed us to investigate the phenomenon from school principals' perspective because they hold an in-depth and data-based knowledge of the school context (Sun et al., 2016; Sanchez et al., 2020).

School communication strategies have been measured by counting whether the school had a webpage, a school counselor and if surveys were implemented. Other non-specified modalities have also been calculated. Digital resources (Tubin & Klein, 2007; Padgett, 2006), surveys (Rasberry et al., 2017; Anatale & Kelly, 2015; Michael et al., 2015), and the presence of a school counselor or a school psychologist (Militello & Janson, 2007; Dahir et al., 2010; Rock et al., 2017), all represent communication strategies helping school leaders to shape their goals on data (Sun et al., 2016; Sanchez et al., 2020). The present study demonstrated that the higher is the number of modalities to communicate and gather data within the school, the safer school surroundings are perceived. This result leads to the speculation that providing students with multiple ways to communicate with school staff and school authorities may facilitate them to report what they see in the school surroundings. Thus, students may actively monitor the school neighborhood with the possibility to refer issues anonymously (*e.g.*, through the internet) or under guaranteed confidentiality (*e.g.*, in school surveys or speaking with counselors). It is also possible to speculate that - whether disorders in the school surroundings are seen and reported to the school authorities by students, their families, or the school staff - the principal sets his/her goals to make the school neighborhood safer (*e.g.*, dialoguing with the police or other local institution).

Students' participation in school decisions does not strengthen the effect of school communication strategies in improving school surroundings' safety. Contrarily from what is expected from the literature, linking "students' voice" to an improved sense of civic ethos (Torney-Purta, 2001; Bradshaw et al., 2014; Cheng et al., 2016), students' engagement in school governance did not influence school surrounding safety. One explanation may be due to the fact that students' participation in school governance is a limited parameter of evaluation for civic sense (Torney-Purta, 2001), which needs to be integrated with qualitative and quantitative assessments of civic education practice. In fact, only class-presidents are likely to have a say in school decisions, whereas other students are indirectly represented; differently, lessons in civic educations are attended by all students, constituting a more reliable parameter of civic sense and ethos. Plus, students may feel hypercontrolled and mistrusted by schools' internal security procedures

(Mayes, 2018), which could lead them to passively participate in school decisions without developing a real sense of affiliation. Another explanation is logistical: many students coming from suburbs far from the school are likely to spend only a little time in the school surroundings (*e.g.*, when entering school, when exiting school), and this may limit their civic awareness over school surroundings.

Finally, the frequency of anti-bullying programs negatively impacts the association between school communication and school surroundings' safety. This result partially confirms Yeager et al. (2015) study, which pointed out that adolescents often do not get the same benefits as pupils from anti-bullying programs. In some cases, this practice is correlated with a growth in victimization episodes in the school (Yeager et al., 2015). Adolescents, in fact, may see anti-bullying programs as an intent of manipulation by adults, against which they are triggered to rebel (Erikson, 1968; Larson et al., 2002). By the same token, frequent anti-bullying programs are likely to widen the gap between adolescent students and the school staff, discouraging adolescents' from communicating to the school what happens in its surroundings.

### **Limitations**

The study presents some limitations that need to be examined. First, the HBSC protocol (2014) is a self-report study, and it presents a consequent risk for participants' social desirability in completion (Van de Mortel, 2008). For example, the school principals could have answered to maximize the positive aspects of their school and minimizing the negative ones. Effects like acquiescence and the attraction of the extreme points in the Likert scales could also have influenced the completion (Dicken, 1963). Thusly, replicating the study with the integration of qualitative measures is recommendable for future research on the same variables. As regards the self-report items, sociodemographic information of school principals (*e.g.*, age, sex, nationality, city of birth) were not asked, hindering the possibility to add statistical comparisons between categories (*i.e.*, males and females school principals).

Secondly, the statistical moderation model obtained low R-squared values, possibly due to other factors intervening in explaining the study variance (Fairchild & MacKinnon, 2009). Further expanding the sample may ameliorate the R-squared value of the moderation model; still, this study could constitute a forerunner for future research on the topic.

Moreover, analyzing Lombardy data limited the generalizability of data on a national and international level. However, the study purposely focused on this geographical area to investigate schools' safety in the Italian geographical area with the higher rate of crime (accordingly to Ministry of Interior, 2019). Future studies are encouraged to consider comparisons between northern, central, and southern Italy, as well as cross-country research. Finally, the HBSC protocol does not include longitudinal data that contributes to understanding the phenomenon across time. Trend-analysis considering 2010, 2014, 2018 HBSC data are suggested to simulate a longitudinal design for a deeper understanding of the variables' associations.

Notwithstanding these limitations, the results encourage further research on the reversal influence between the school and its surroundings' safety. Our findings point out the importance of providing students with efficient communication strategies, inclusive of different modalities to report problems (*e.g.*, directly and indirectly). This feature plays a crucial part in safeguarding the environment in which the school is located and, consequentially, it could influence students' behavior and achievement.

### **Conclusion**

The current study investigated school surroundings' safety by analyzing data from an HBSC sample of school leaders from Lombardy (Northern Italy). A positive association emerged between the number of school communication strategies and the safety of school surroundings. Contrarily from what was expected, neither the participation of students in school decisions and the frequency of anti-bullying programs strengthen the association between school communication strategies and the safety of school surroundings. Namely, students' participation in school governance does not constitute a statistically significant moderator. On the other hand, the frequency of anti-bullying programs negatively impacts the relation between school communication strategies and school surrounding safety. This data suggests to school principals, counselors, teachers, students, and their families that active processes of communication in the school community are crucial to foster safety in the school neighborhood. Efficient strategies of communication may be proactive for reporting surroundings' deviant behaviors to the school leaders, who could mediate with other local institutions. The lack of a significant impact of students'



participation in school decisions governance possibly points out that students' engagement alone does not promote enough sense of civic responsibility in the students to report neighborhood disorders. Consequently, further studies should also question the effect of civic education lessons. Finally, the negative impact of anti-bullying programs' frequency on the relationship between school communication and surroundings' safety is likely to be due to a sense of rebellion in the teenagers, which is triggered by this kind of intervention. Feeling adults' control over adolescents' peer-to-peer interaction may increase the students' perceived generational gap towards the school teacher/staff and discourage them from using the available school communication strategies to report school surroundings disorders.

### **Acknowledgements**

In Italy, the study was carried out with the coordination of the National HBSC Group and the Ministry of Health under the lead of Prof. Franco Cavallo (Principal Investigator for Italy). The study is part of the Project "Sistema di indagini sui rischi comportamentali in età 6-17 anni" promoted and financed by the Ministry of Health (capitolo 4393/2005-CCM). The Lombardy study was implemented thanks to the coordinated action of the HBSC Lombardy Group, which included the Regional Coordination HBSC study Lombardy: Corrado Celata e Liliana Coppola (Regione Lombardia DG Welfare); the MIUR (Ministry of Education, Universities and Research, Italy) - School Office Region Lombardy: Bruna Baggio; the Regional Research Group: Veronica Velasco, Marika Lavatelli, Giusi Gelmi, and Corrado Celata; the Health Protection Agency Referents: Bergamo Luca Biffi, Brescia Margherita Marella, Brianza Carlo Pellegrini, Ornella Perego, Insubria Walter De Agostini, Manuel Benedusi, Milano Città Metropolitana Corrado Celata, Paola Duregon, Alessandra Meconi, Celeste Zagheno, Montagna Valentina Salinetti, Marina Salada, Pavia Elisabetta Mauri, Val Padana Valter Drusetta, and Leone Armando Lisè; the Territory School Office Referents: UST Bergamo: Antonella Giannellini, UST Brescia: Federica Di Cosimo, UST Como: Laura Peruzzo, UST Cremona: Tullia Guerrini Rocco, UST Lecco: Jessica Sala, UST Lodi: Claudia Zoppi, UST Mantova: Barbara Artioli, UST Milano: Laura Stampini, UST Monza-Brianza: Maristella Colombo, UST

Pavia: Emanuela Farina, UST Sondrio: Daniela Marchesi, and UST Varese: Linda Casalini.

### **Disclosure statement**

The authors have no conflict of interest to report.

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Received June 22, 2020  
Revision January 28, 2021  
Accepted February 5, 2021