Does cyberbullying occur simultaneously with other types of violence exposure?

Marlene A. Vieira, John A. Rønning, Jair de J. Mari, Isabel A. Bordin

Departamento de Psiquiatria, Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil. Institute of Clinical Medicine, University of Tromsø, Tromsø, Norway.

Objective: Our study aimed to verify whether cyberbullying victimization among adolescents occurs concomitantly with other forms of violence exposure (at home, at school and in the community).

Methods: A collaborative longitudinal study by Norwegian and Brazilian researchers was conducted in Itaboraí, a low-income city in southeast Brazil. At baseline, trained interviewers applied a semi-structured questionnaire to a population-based sample of 669 in-school adolescents (11-15 years old). The investigated types of violence exposure included cyberbullying, traditional bullying, severe physical punishment by parents and community violence (victimization and eye-witnessed violent events outside the home and school).

Results: In the previous six months, 1.9% of the adolescents had been victims of cyberbullying, and 21.9% had been victims of physical aggression, verbal harassment and/or social manipulation by peers. However, only 5.5% of the adolescents considered themselves bullying victims. In the previous 12 months, 12.4% of adolescents had suffered severe physical punishment, 14.0% had been victims of community violence, and 20.9% eye-witnessed community violence. Multivariable regression analysis showed that victimization by multiple types of traditional bullying and self-perceived bullying victimization were correlates of cyberbullying victimization, while suffering violence at home and in the community were not.

Conclusion: This study provides evidence of an association between cyberbullying, traditional bullying and self-perceived bullying among low-income Brazilian adolescents.

Keywords: Adolescence; cyberbullying; bullying; child abuse; community violence

Introduction

Interest in cyberbullying, the use of electronic communication to bully, has been increasing in the research community. The use of modern technology has enabled the extension of “traditional” bullying from the real world into the virtual world. However, most of the highly cited articles on the topic come from Northern Europe and Northern America, with relatively few publications from low-and-middle-income countries.

Researchers should be aware of the existence of “poly-victims,” i.e., adolescents victimized by different types of violence in different environments. Studies that investigate single forms of violence exposure are likely to underestimate the full burden of victimization and incorrectly specify the risk profiles of victims. The overlap between traditional bullying and cyberbullying has been well documented. However, studies examining the potential association between cyberbullying and other kinds of victimization are rare in the international literature and nonexistent in Brazil. Our study aimed to verify whether cyberbullying victimization occurs concomitantly with other forms of violence exposure among adolescents in a low-income Brazilian city.

Methods

A collaborative longitudinal study between Norwegian and Brazilian researchers (The Itaboraí Youth Study) investigated a population-based sample of 1,409 6-to-15-year olds at baseline (response rate = 87.8%). The study was conducted in Itaboraí, a low-income medium-size city in the state of Rio de Janeiro, Brazil. A three-stage probabilistic sampling procedure (random selection of census units, eligible households and target children) was used to generate sampling weights. At baseline, trained lay interviewers applied a semi-structured questionnaire to the mothers of all participating children (n=689, 6-10 years old) and to 680 of the 720 participating adolescents (94.4%) (11-15-years). More detailed information on the Itaboraí Youth Study methods can be found elsewhere.

How to cite this article: Vieira MA, Rønning JA, Mari JJ, Bordin IA. Does cyberbullying occur simultaneously with other types of violence exposure? Braz J Psychiatry. 2019;41:234-237. http://dx.doi.org/10.1590/1516-4446-2018-0047
Based on different biological aspects of puberty that mark its onset, different definitions of adolescence exist. For the purposes of this study, participants between 11 and 15 years of age were considered adolescents, which was based on the minimum age requirements of internationally-used mental health screening instruments developed for adolescents, such as the Strength and Difficulties Questionnaire (SDQ) and the Youth Self-Report (YSR/11-18). Applying these screening instruments was part of the original study’s methods.

This paper analyzed baseline data (data repository: Norwegian Centre for Research Data) reported by in-school adolescents (n=669). Adolescents out of school (n=11) were not asked about bullying. Measures of the types of violence exposure are described below.

**Measures**

Based on previous work by Hinduja & Patchin, who investigated cyberbullying victimization (main outcome of interest), nine items were considered: being ignored, being disrespected, being called names, being threatened, being e-mail bombed, being picked on, being ridiculed, being scared for safety, and being the target of rumors. The occurrence of at least one event more than once a week over the previous six months expresses repeated exposure. The occurrence of at least one event more than once a month expresses repeated exposure. Measures of the types of violence exposure are described below.

**Statistical analysis**

Statistical analysis was performed by the corresponding author. Information on the study protocol can be found elsewhere. The absolute numbers of subjects were unweighted (referring to the sample) and all percentages were weighted (referring to the city population of in-school adolescents). Multivariable regression analysis was used to verify potential associations between cyberbullying (main outcome measure) and other types of violence exposure (at home, at school and in the community) when considering the effects of age and gender.

**Ethical considerations**

The Brazilian National Committee for Ethics in Research (process 25000.182992/2011-76) and the research ethics committee of Universidade Federal de São Paulo (UNIFESP; process 0324/11) approved the study. Written informed consent was obtained from the mothers of all participants, and written informed assent was obtained from all participating adolescents.

**Results**

This manuscript is focused on a representative sample of in-school 11-to-15-year olds (n=669; mean age: 13.0 ± 0.1 years; 51.7% girls). In the previous six months, 1.9% of the adolescents were victims of cyberbullying and 21.9% were victims of traditional bullying (physical aggression, verbal harassment and or social manipulation). Concomitant physical aggression, verbal harassment and social manipulation affected 4.9% of adolescents. In our study, only 5.5% of the adolescents considered themselves to be bullying victims.

When examining victims of cyberbullying and or traditional bullying (22.8% of the sample), the vast majority (91.5%) suffered only traditional bullying, while 4.1% suffered only cyberbullying and 4.5% suffered both.
Finally, in the previous 12 months, 12.4% of adolescents suffered severe physical punishment, 14.0% were victims of community violence, and 20.9% eye-witnessed community violence. Among victims and/or eye-witnesses of community violence (25.5% of the sample), the majority (44.9%) were only eye-witnesses, while 18.1% were only victims, and 37.0% were both.

The multivariable regression analysis, shown in Table 1, indicates that victims of multiple types of traditional bullying were seven times more likely to be victims of cyberbullying (model 1). Adolescents that perceived themselves as victims of bullying were also seven times more likely to be victims of cyberbullying (model 2). Furthermore, exposure to violence at home and in the community were not associated with exposure to cyberbullying in either model after considering the effects of age, gender, and exposure to traditional bullying or self-perceived bullying.

### Table 1 Logistic regression analysis examining the association between experiencing one or more cyberbullying events that occurred more than once a week in the past 6 months and being exposed to other types of violence considering age and gender (n=669 in-school adolescents)

| Independent variables (self-reported) | Univariate analysis | Multivariate analysis Adjusted OR (95%CI) |
|--------------------------------------|--------------------|----------------------------------------|
|                                      | Crude OR (95%CI)   | Model 1                                | Model 2                                |
| Types of school violence exposure in the past 6 months |                     |                                        |                                        |
| Three types (vs. none)               | 9.77 (2.25-42.35)  | 6.71 (1.38-32.74)                      | NA                                     |
| One or two types (vs. none)          | 2.55 (0.62-10.50)  | 2.12 (0.60-7.55)                       | NA                                     |
| Self-perceived bullying victimization in the past 6 months (more than once a week vs. less than once a week) | 7.13 (2.33-21.83)  | NA                                     | 7.26 (1.58-33.36)                      |
| Severe physical punishment by one or both parents in the past 12 months (any event vs. none) | 3.12 (0.84-11.52)  | 2.01 (0.48-8.39)                       | 2.24 (0.53-9.58)                       |
| Types of community violence exposure in the past 12 months |                     |                                        |                                        |
| Victimization only (vs. none)        | 2.97 (0.44-19.92)  | 2.02 (0.36-11.20)                      | 1.86 (0.33-10.51)                      |
| Eye-witnessed violence only (vs. none) | 2.98 (0.61-14.64) | 1.76 (0.48-6.51)                       | 1.94 (0.45-8.40)                       |
| Both (vs. none)                      | 6.04 (1.67-21.81)  | 2.45 (0.48-12.41)                      | 3.62 (0.70-18.75)                      |
| Age (years)                          | 1.32 (0.86-2.02)   | 1.44 (0.89-2.30)                       | 1.52 (0.87-2.66)                       |
| Gender (male vs. female)             | 1.22 (0.40-3.71)   | 1.07 (0.35-3.30)                       | 1.30 (0.44-3.84)                       |

95%CI = 95% confidence interval; NA = not applicable (variable not in the multivariate model); OR = odds ratio.

### Discussion

In our study, the prevalence of cyberbullying victimization was 1.9%, a much lower rate than exposure to traditional bullying (21.9%). These results agree with Olweus’ assertion that the prevalence of cyberbullying is low compared to traditional bullying. Because students suffering peer harassment do not always interpret it as acts intended to cause harm, the rate of adolescent self-perceived bullying victimization was lower than the reported rate of victimization by traditional bullying (5.5 vs. 21.9%).

When considering the group of adolescents exposed to cyberbullying and/or traditional bullying, the great majority (91.5%) suffered only traditional bullying, while 8.6% suffered cyberbullying alone or concomitantly with traditional bullying. This suggests that in Brazilian low-income communities, electronic communication by adolescents is not as widespread as in high-income communities and that harassment occurs more frequently in person.

It should be pointed out that regional and class-based inequalities in household Internet access persist in Brazil. The Information and Communication Technology Kids Online Brazil survey, conducted between 2013 and 2014 by the Regional Center for Studies on the Development of the Information Society (Centro Regional de Estudos para o Desenvolvimento da Sociedade da Informação [Cetic.br]), focused on Internet use by children. This survey showed that the proportion of Internet users among 10- to 15-year-olds reached 75%, but among the children who had never accessed the web, 48% reported never having done so due to difficulties in acquiring and affording Internet access. Internet access, including mobile phones, was 81% for high socioeconomic status households and 8% for low socioeconomic status households. Because our study was conducted with 11- to 15-year-olds living in a low-income city, limited Internet access may have affected our cyberbullying results, which should be considered a study limitation.

In addition, if the prevalence of cyberbullying were higher in Itaboraí, the association between cyberbullying and maltreatment would be significant, since exposure to violence at home was associated with cyberbullying when sampling weights were not applied. Studies have found an association between traditional bullying and maltreatment. One hypothesis is that, to avoid retaliation, maltreated children learn not to react in the face of violence, and therefore, become an easy target for peer harassment.

Among the adolescents exposed to community violence as victims and/or eye-witnesses, the majority (44.9%) were only eye-witnesses, 18.1% were only victims, and 37.0% were both. The fact that eye-witnessing community
Cyberbullying and other types of violence exposure

The Itaboraí Youth Study was supported by the Research Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30). Marlene Apolínário Vieira received a doctoral scholarship (process Council of Norway (grant 201470/H30).

Schwartz & Proctor, who also used a similar instrument, investigated the relation between community violence exposure and peer group social maladjustment (peer rejection, bullying by peers and aggressive behavior) in 285 U.S. inner-city children in grades 4-6. The authors found that deficits in emotion regulation capacity mediated the association between community violence victimization and social difficulties with peers, including bullying victimization. They also found that eye-witnessed community violence was not linked to bullying by peers. In our study, the concomitant presence of victimization and eye-witnessed community violence was associated with cyberbullying in univariate analysis, but lost significance in the multivariable model. Again, a higher prevalence of cyberbullying in Itaboraí would have increased the probability of finding an association between cyberbullying and community violence. Because Internet access among low-income children is rapidly increasing, particularly through the growing use of mobile phones, it will soon be possible to confirm the existence of an association between community violence and cyberbullying among low-income adolescents.

In conclusion, this study provides evidence of an association between cyberbullying, traditional bullying and self-perceived bullying victimization among low-income Brazilian adolescents, even when maltreatment and community violence are considered.

Acknowledgements

The authors report no conflicts of interest.

References

1. Olweus D. Cyberbullying: an overrated phenomenon? Eur J Dev Psychol. 2012;9:520-38.
2. Olweus D, Limber SP. Some problems with cyberbullying research. Curr Opin Psychol. 2017;19:130-43.
3. Zych I, Ortega-Ruiz R, Del Rey R. Scientific research on bullying and cyberbullying: where have we been and where are we going. Aggress Violent Behav. 2015;24:188-98.
4. Turner HA, Finkelhor D, Ormrod R. Poly-victimization in a national sample of children and youth. Am J Prev Med. 2010;38:323-30.
5. Bordin IA, Duarte CS, Ribeiro WS, Paula CS, Coutinho ES, Sourander A, et al. Violence and child mental health in Brazil: the Itaboraí Youth Study methods and findings. Int J Methods Psychiatr Res. 2018;27:e1605.
6. Sawyer SM, Afifi RA, Bearinger LH, Blakemore SJ, Dick B, Ezech AC, et al. Adolescence: a foundation for future health. Lancet. 2012;379:1630-40.
7. Fleitlich-Bliky BW. The prevalence of psychiatric problems in 7-14-year old in the southeast of Brazil [thesis]. London: Department of Child and Adolescent Psychiatry, Institute of Psychiatry, King's College, London University; 2002.
8. Woerner WF, Fleitlich-Bliky B, Martinussen R, Fletcher J, Cucchiaro G, Dalgalarrondo P, et al. The strengths and difficulties questionnaire overseas: evaluations and applications of the SDQ beyond Europe. Eur Child Adolesc Psychiatry. 2004;13:447-54.
9. Bordin IA, Rocha MM, Paula CS, Teixeira MC, Achenbach TM, Rescorla LA, et al. Child behavior checklist (CBCL), youth self-report (YSR) and teacher’s report form (TRF): an overview of the development of the original and Brazilian versions. Cad Saude Publica. 2013;29:13-28.
10. Hinduja S, Patchin JW. Bullying beyond the schoolyard: preventing and responding to cyberbullying. Thousand Oaks: Corwin; 2009.
11. Tokunaga RS. Following you home from school: a critical review and synthesis of research on cyberbullying victimization. Comput Human Behav. 2010;26:277-87.
12. Renning JA, Handegaard BH, Sourander A. Self-perceived peer harassment in a community sample of Norwegian school children. Child Abuse Negl. 2004;28:1067-79.
13. Runyan DK, Shankar V, Hassan F, Hunter WM, Jain D, Paula CS, et al. International variations in harsh child discipline. Pediatrics. 2010;126:e701-11.
14. Richters J, Saltzman W. Survey of exposure to community violence: self report version [Internet]. 1990 [cited 2018 Jan 21]. www.researchgate.net/publication/317316974_Survey_of_Exposure_to_Cyberbullying_Self_Report_Version
15. Finkelhor D, Turner HA, Hamby S. Let’s prevent peer victimization, not just bullying. Child Abuse Negl. 2012;36:271-8.
16. Regional Center for Studies on the Development of the Information Society (Cetic.br). ICT Kids Online Brazil 2013: survey on Internet use by children in Brazil [electronic book]. São Paulo: Comitê Gestor da Internet no Brasil; 2004 [cited 2018 Mar 30]. www.cetic.br/media/docs/publicacoes/2/lc-kids-online-2013.pdf
17. Sozio ME, Ponte C, Sampaio IV, Senne F, Olafsson K, Alves SJ, et al. Children and Internet use: a comparative analysis of Brazil and seven European countries [Internet]. 2015 [cited 2018 Mar 30]. www2.fsch.unlp.eu/ekids/analyzer/docs/Brazil%20-%20ONCGM_COMPARATIVE%20REPORT.pdf
18. Hong JS, Espelage DL. A review of research on bullying and peer victimization in school: an ecological system analysis. Aggress Violent Behav. 2012;17:311-22.
19. Lereya ST, Samara M, Wolke D. Parenting behavior and the risk of becoming a victim and a bully/victim: a meta-analysis study. Child Abuse Negl. 2013;37:1091-108.
20. Löfving-Gupta S, Lindblad F, Stickley A, Schwab-Stone M, Ruchkin V. Community violence exposure and severe posttraumatic stress in suburban American youth: risk and protective factors. Soc Psychiatry Psychiatr Epidemiol. 2015;50:539-47.
21. Schwartz D, Proctor LJ. Community violence exposure and children’s social adjustment in the school peer group: the mediating roles of emotion regulation and social cognition. J Consult Clin Psychol. 2000;68:670-83.
22. Regional Center for Studies on the Development of the Information Society (Cetic.br). ICT Kids Online Brazil 2016: survey on Internet use by children in Brazil [electronic book]; 2017[cited 2018 Mar 30]. cetic.br/media/docs/publicacoes/2/TIC_KIDS_ONLINE_2016_Livro Eletronico

Braz J Psychiatry. 2019;41(3)