

Dating violence prevalence and risk factors among adolescents (14–19 years) in urban public schools in Panama



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Summary

Background Adolescent dating violence (ADV) can have lasting effects on youth's well-being and development. However, few studies in Latin America have described its prevalence and risk factors for having experienced ADV.

Methods We conducted a multisite, cross-sectional study using two-stage cluster sampling among adolescents (14–19 years) attending public high schools in the urban districts of Panama, San Miguelito, Colón, and Arraiján/La Chorrera from 2015 to 2018 ($N = 2469$). All completed a tablet-based, self-administered questionnaire. Random effects logistic regression was used to identify risk factors for each ADV type among adolescent boys and girls separately.

Findings Participants reported experiencing a range of ADV at least once (girls: emotional 61.6%, physical 7.9%, sexual 21.0%; boys: emotional 73.4%, physical 24.1%, sexual 28.9%). In adjusted models, participants with a history of sexual intercourse had greater odds of ADV than those without such history across types (boys: emotional and sexual; girls: emotional, physical, and sexual). Additionally, participants who reported three or more romantic partners in the past year had greater odds of ADV than those with one partner (boys: emotional, physical; girls: physical). Girls with an earlier sexual debut (≤ 14 years vs ≥ 15 years) had greater odds of reporting ADV (emotional and sexual violence). No associations were found between reporting dating violence survival and the sex of romantic partners in the past year or the age of the current/most recent sex partner.

Interpretation This study reveals a high prevalence of ADV among adolescents in urban public schools in Panama. These findings support the need for program implementation to address ADV.

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Introduction

Worldwide, one-third of women and 3–20% of men have experienced intimate partner violence (IPV) during their lifetime¹; however, these data are not broken down by types of IPV. IPV is highly under-reported worldwide, as survivors often do not report it to authorities. Moreover, violence at the hands of intimate partners can occur at any age; however, less is known about adolescent dating violence (ADV).

Few data exist in Latin America and the Caribbean that describe the prevalence and risk factors for ADV. However, some existing studies have found a range of ADV prevalence. For example, a 2007 study in Mexico found psychological dating violence among 4.2% of adolescent girls and 4.3% of adolescent boys.² Among university students in Chile in 2009, psychological dating violence in the past 12 months was reported by

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Research in context

Evidence before this study

Worldwide, one-third of women and 3–20% of men have experienced intimate partner violence (IPV). However, few data describe the prevalence and risk factors for adolescents who experience IPV (also known as “adolescent dating violence” or ADV), especially in Latin America and the Caribbean.

Added value of the study

We conducted a cross-sectional study with 2496 adolescents (14–19 years) from urban districts in Panama between 2015 and 2018. Participants were randomly selected using two-stage cluster sampling. All participants completed a self-administered, tablet-based questionnaire that included demographics and lifetime dating violence information. Random effect logistic regression was used to account for sample clustering to identify ADV risk factors among boys and girls separately. Results reveal high prevalence of ADV, with 61.6% of girls reporting emotional violence, followed by 7.9% physical violence and 21.0% sexual violence; 73.4% of boys reported emotional violence, followed by 24.1% physical

violence, and 28.9% with sexual violence. Girls with a history of sexual intercourse had higher odds of reporting emotional abuse than girls without such history. Additionally, participants with three or more romantic partners in the past year had greater odds of reporting ADV than those with one partner (for boys: emotional, physical; for girls: physical). Girls with an earlier sexual debut (≤ 14 years vs ≥ 15 years) had greater odds of ADV (emotional violence, sexual violence). No associations were found between the sex of romantic partners in the past year or the age of the current/most recent sex partner and ADV.

Implications of all the available evidence

These findings call for intervention to prevent dating violence among adolescents in Panama. Effective programs used worldwide include community-wide bystander interventions, norms-based interventions that focus on transforming inequitable gender norms, school-based interventions through nurses and athletic coaches, and mental and physical health support for survivors of dating violence.

67% of young women and 80% of young men; physical dating violence by 15% of young women and 25% of young men.³ More recently, studies in Nicaragua ($N = 1799$ young adolescents) and Dominican Republic ($N = 142$ adolescents aged 10–19 years) found prevalence ranging from 14 to 53%, respectively.^{4,5} The Violence Against Children and Youth Surveys in Latin America, which measured ADV in Colombia, El Salvador, and Honduras, found a low prevalence (2–5.5%) of physical adolescent dating violence among those who reported IPV before 18 years.⁶ In Panama, there have been no prior studies that describe ADV. Although dating violence has not been described explicitly in Public Ministry decrees, “relationship violence” is defined in Law 82 of 2013, indicating the legal backdrop to hold perpetrators accountable.

While anyone could be affected by IPV, there are sex differences in the severity and outcomes of this violence, indicating the need to analyze the data separately by sex. For example, in the U.S., severe effects of IPV have been seen among 25% of women and 14% of men.^{7,8} In the U.S., one study found girls perpetrate physical and emotional abuse at higher rates than boys, whereas boys perpetrate sexual abuse violence against girls at a higher rate than girls.⁹ Although these US-based data are striking, the prevalence of IPV may be under-reported both in official reports and in prevalence studies due to several factors, including attitudes of acceptance and tolerance towards IPV and the perception of violent episodes as unserious actions.¹⁰

Male perpetration of IPV towards women is associated with alcohol abuse, normalization of violence by woman

partners, unemployment, and lower income.¹¹ Additionally, it has been found that the risk of male perpetration of IPV against women increases when the partnership involves an older man and a younger woman.¹² Among adolescents, risk factors for perpetration of ADV include poor management of anger/frustration, inadequate parental supervision, witnessing violence at home or in the community, and traditional gender role attitudes.¹³ Finally, risk factors among those who have experienced ADV include a history of trauma (including childhood sexual violence), poverty, alcohol use, early dating, low age of sexual debut (< 15 years), and victimization in other dating or peer interpersonal violence.¹⁴

While the World Health Organization monitors IPV prevalence across cohabiting and adult women, ADV data are often limited in police surveillance and surveys (especially in Latin America and the Caribbean). Given this gap, between 2015 and 2018 we undertook a school-based, two-stage random cluster sampling study among adolescents aged 14–19 years studying in the urban districts of Panamá, San Miguelito, Colón, and Arraiján/La Chorrera.

Methods

Study design and population

Panama has a total of 75 districts, four of these districts are urban. We conducted a multisite cross-sectional study in Panama’s four urban districts. The study was undertaken between 2015 and 2018, from June to August each year (Panama District in 2015, San Miguelito in 2016, Colón in 2017, and Arraiján/La

Chorrera in 2018). The study design has been previously described.¹⁵ Briefly, a two-stage cluster sample design was used at the school and classroom level, with a random sampling of clusters and an equal probability of selection. The sample size was calculated from a sampling frame of 8619 students in school years 10–12. Each year, schools and classrooms were randomly selected from existing urban schools in the district. Twenty-four schools were randomly selected out of twenty-nine; 309 classrooms from grades 10–12 in the four districts were selected randomly to participate in the study. As classrooms had approximately the same number of enrolled students, all students in each selected classroom were invited to participate if they met the inclusion criteria (14–19 years of age). The sampling frame included 10,625 students; 7678 students met age criteria; of those, 1777 guardians of minor participants (<18 years) came to consent-signing meetings, and 1203 of-age (>17 years) participants gave consent.¹⁵ Of minors, eight guardians did not give consent; 18 minors and 362 of-age participants were absent during the week the study team sampled at the school. A total of 2469 participants met inclusion criteria and were included.¹⁵

Study procedures

The study procedures have been detailed elsewhere.¹⁵ Briefly, guardians of minor participants were invited to attend an informational meeting about the study. They were asked to sign a consent form allowing their minor students to participate. During the week the study team sampled at the school, minor participants were asked to sign an informed assent form. Also, during the sampling week, of-age participants signed their consent form without guardian involvement. Then, consenting adolescents were asked to self-administer a questionnaire on a tablet computer.

Measures

Sociodemographic information included age, sex (we use the terms ‘boys’ to indicate male sex and ‘girls’ to indicate female sex assigned at birth for ease of reading, though gender identity was not assessed), level of study, and district of study. We also characterized partnering behaviours (e.g., ever had a romantic relationship, had sex [ever had penetrative vaginal, anal, or oral sexual relations; used a condom during sexual relations], sex and age of partners in the past year), and violence variables as defined in the *National Sexual and Reproductive Health Survey*.¹⁶ These include: (1) emotional violence (partner had told participant what they could and could not wear, partner had checked the phone or social media or participant, partner did not want the participant to spend time with friends, the partner had destroyed something of sentimental or other value, the partner had said they would hurt themselves or another if the

participant left them, the partner had insulted or made fun of the participant, the participant was afraid their partner would harm them); (2) physical violence (partner had hit, pinched, bitten, strangled, or kicked participant; partner had threatened the participant with a knife or firearm); and (3) sexual violence (partner had kissed or touched sexually when the participant didn’t want them to, the partner had gotten angry because the participant didn’t want to have sex with them, the partner had forced the participant to have sexual intercourse when the participant didn’t want to). The response options for these violence variables were never/once/multiple times/often.

Statistical analyses

The χ^2 test was used to describe sociodemographic variables between study districts. The sample design included self-weighting samples and an equal probability of selection. Random effects logistical regression was used in six models at the school level to describe the correlates of each violence type (emotional, physical, and sexual violence) by participant gender using odds ratios (OR).¹⁷ For bivariable analyses, violence was grouped as never/once/more than once. For variables with more than two categories, an overall test was not performed in the models. For multivariable analyses, violence was grouped as never or once/more than once. The multivariable models were adjusted by the participant district of study. All variables independently associated with the violence type in bivariable analyses at $p < 0.05$ were included at once in the final model in distal (sociodemographic), then proximal (behavioural) order to provide adjusted OR (AOR) and 95% confidence intervals (CI). The total sample size in the regression varied due to handling missing variables in the predictors through listwise deletion.

Ethical considerations

All participants were provided educational materials on how and where to report violence. According to national guidelines, when participants retrieved their STI results, those who reported violence were referred to medical personnel for reporting to national authorities. The Research Bioethics Committee of the Gorgas Memorial Institute (N701/CBI/ICGES/15) approved this study protocol.

Role of funding source

The funding source had no role in the study design, collection, analysis, interpretation, writing of the report, or the decision to submit for publication.

Results

This study included a total of 1751 minor participants and 718 of-age participants; 56.9% were female. The

median age of the participants was 17 years, interquartile range (IQR) was 16–18 years.

The majority (87.0%) of the participants in each district reported having partnered (had a romantic relationship or a lifetime history of sexual intercourse), with significant differences between districts ($p < 0.01$). In addition, significant differences were seen between districts in the number of sex partners that participants reported, where in San Miguelito, 59.6% reported three or more romantic partners in the past year, compared to 32.0% in Arraiján/Chorrera ($p < 0.01$). However, no differences in the age of sexual debut were seen between districts (Table 1).

Prevalence of reported dating violence

In all, 37.7% of girls and 52.2% of boy participants reported emotional dating violence more than once, 2.4% of girls and 12.3% of boys reported physical dating violence more than once, and 8.6% of girls and 15.8% of boys reported sexual dating violence more than once (Table 2, Supplementary Table S1).

Among girls who reported emotional dating violence, 11.3% reported physical violence, and 27.4% reported sexual dating violence. Of those who reported physical dating violence, 94.8% reported emotional dating violence, and 85.7% reported sexual dating violence. Among girls who reported sexual dating

	Total		District of Panamá		District of San Miguelito		District of Colón		Districts of Arraiján/ La Chorrera		p-values difference between urban regions
	N = 2469 ^a	%	N = 592 ^a	%	N = 635 ^a	%	N = 589 ^a	%	N = 653 ^a	%	
Participant sex	N = 2469		N = 592		N = 635		N = 589		N = 653		0.04
Female	1405	56.9	356	60.1	360	56.7	346	58.7	343	52.5	
Male	1064	43.1	236	39.9	275	43.3	243	41.3	310	47.5	
Age	N = 2469		N = 592		N = 635		N = 589		N = 653		<0.01
14–15	398	16.1	84	14.2	97	15.3	97	16.5	120	18.4	
16	631	25.6	133	22.5	131	20.6	144	24.5	223	34.2	
17	722	29.2	145	24.5	208	32.8	188	31.9	181	27.7	
18–19	718	29.1	230	38.9	199	31.3	160	27.2	129	18.8	
Level of study	N = 2469		N = 592		N = 635		N = 589		N = 653		<0.01
10th grade	654	26.5	166	28.0	169	26.6	144	24.5	175	26.8	
11th grade	710	28.8	159	26.9	155	24.4	157	26.7	239	36.6	
12th grade	1105	44.8	267	45.1	311	49.0	288	48.9	239	36.6	
Ever partnered	N = 2469		N = 592		N = 635		N = 589		N = 653		<0.01
Romantic relationship	1954/2413	84.4	490/558	87.8	516/601	85.9	465/537	86.6	583/618	78.2	<0.01
Ever had sex	1421/2469	57.6	356/592	60.1	343/635	54.0	360/589	61.1	362/653	55.4	<0.01
Ever partnered (romantic relationship and/or had sexual intercourse)	2012/2314	87.0	502/558	90.0	524/601	87.2	479/537	89.2	507/618	82.0	<0.01
Age of sexual debut	N = 937		N = 259		N = 236		N = 234		N = 208		0.58
≤14 years	285	30.4	81	31.3	64	27.1	77	32.9	63	30.3	
≥15 years	652	69.6	178	68.7	172	72.9	157	67.1	145	69.7	
Sex of romantic partners in the last year	N = 1766		N = 450		N = 472		N = 431		N = 413		<0.75
Same-sex	35	2.0	11	2.4	12	2.5	7	1.6	5	1.2	
Different sex	1715	97.1	435	96.7	456	96.6	421	97.7	403	97.6	
Both sexes	16	0.9	4	0.9	4	0.9	3	0.7	5	1.2	
Number of romantic partners in the past year	N = 1907		N = 480		N = 500		N = 462		N = 465		<0.01
1	393	20.6	88	18.3	74	14.8	86	18.6	145	31.2	
2	548	28.7	128	26.7	128	25.6	121	26.2	171	36.7	
3 or more	966	50.7	264	55.0	298	59.6	255	55.2	149	32.0	
Age of current or most recent romantic partner	N = 1557		N = 406		N = 397		N = 338		N = 416		<0.01
10–14 years	15	1.0	1	0.3	4	1.0	3	0.9	7	1.7	
14–19 years	1312	84.3	337	83.0	330	83.1	274	81.0	371	89.2	
>19 years	230	14.8	68	16.8	63	15.9	61	18.1	38	9.1	

Bold values are significant at <0.05. ^aDenominator values may differ as some participants did not answer all questions.

Table 1: Sociodemographic characteristics of participants from four urban districts of Panama, 2015–2018.

	Girls ^a			Boys ^a		
	Never	Once	More than once	Never	Once	More than once
	n/N (%)	n/N (%)	n/N (%)	n/N (%)	n/N (%)	n/N (%)
Emotional violence	504/1314 (38.4)	315/1314 (24.0)	495/1314 (37.7)	259/974 (26.6)	207/974 (21.2)	508/974 (52.2)
Physical Violence	1124/1220 (92.1)	67/1120 (5.5)	29/1220 (2.4)	681/897 (75.9)	106/897 (11.8)	110/897 (12.3)
Sexual violence	968/1226 (79.0)	152/1226 (12.4)	106/1226 (8.6)	639/899 (71.1)	118/899 (13.1)	142/899 (15.8)
Any violence (physical, sexual, or emotional)	464/1314 (35.3)	318/1314 (24.2)	532/1314 (40.5)	226/974 (23.2)	199/974 (20.4)	549/974 (56.4)

^aDenominator values may differ as some participants did not answer all questions.

Table 2: Reported dating violence among adolescents in urban districts in Panama (by participant sex), 2015–2018.

violence, 85.7% reported emotional dating violence, and 21.3% reported physical dating violence. Overall, 6.6% of girls reported all three types of violence in their lifetime.

Among boys who reported emotional dating violence, 28.5% reported physical dating violence, and 33.3% reported sexual dating violence. Of those who reported physical dating violence, 94.0% reported emotional dating violence, and 40.0% reported sexual dating violence. Among boys who reported sexual dating violence, 33.5% reported physical dating violence, and 91.2% reported emotional violence. Overall, 11.7% of boys reported all three types of violence in their lifetime.

Dating violence associations

Among girls in the independent analysis, participants in Colón (compared to Panama) had lower odds of emotional dating violence, AOR = 0.63, 95% CI [0.43, 0.91]. After adjusting for the district of study, participants who reported a history of sexual intercourse had greater odds of reporting emotional violence than those who did not report sexual intercourse, AOR = 2.40, 95% CI [1.81, 3.19] (Table 3). Among girls who reported previous sexual intercourse and responded to their age of sexual debut, the independent multivariable analysis found that those who reported a debut at 14 years or younger had higher odds of reporting emotional violence (86.3%) compared to those with a debut of ≥ 15 years (72.7%), AOR = 0.52, 95% CI [0.29, 0.95].

Among boys, after an independent analysis, we found that those who studied in Arraiján/Chorrera had greater odds (86.5%) of reporting emotional violence than those in Panamá (69.1%), AOR = 1.94, 95% CI [1.08, 3.49]. In addition, after adjusting for the district of study, boys who reported a history of sexual intercourse (83.8%) had greater odds of reporting emotional dating violence than those who did not report such history (57.6%), AOR = 1.58, 95% CI [1.07, 2.33]. Additionally, participants who reported having had two partners in the past year (82.3%) and three or more romantic partners in the past year (86.8%) had greater odds of reporting emotional dating violence than those who reported one partner (67.3%), AOR = 2.32, 95% CI [1.38, 3.90] and AOR = 3.34, 95% CI [2.08, 5.35] respectively (Table 4).

Among girls, after adjusting for the district of residence, greater odds of physical dating violence were found among girls who reported having had three or more romantic partners in the past year compared to those who had only one partner, AOR = 2.12, 95% CI [1.09, 4.13] (Table 3).

Among boys, after adjusting for the study district, there were greater odds of physical dating violence were found among participants who reported three or more romantic partners in the past year (28.2%) compared to one partner (18.9%), AOR = 1.62, 95% CI [1.00, 2.65] (Table 4).

Among girls who reported having a history of sexual intercourse and responded to their age of sexual debut, the independent multivariable analysis found that those who reported a debut at 14 years or younger had greater odds of reporting sexual violence (34.3%) compared to those with a debut of ≥ 15 years (22.7%), AOR = 0.51, 95% CI [0.31, 0.82].

Among boys, after adjusting for the participant's district of study, participants who reported a history of sexual intercourse had greater odds of reporting sexual dating violence (33.9%) than those who reported no history of sexual intercourse (20.3%); AOR = 1.82, 95% CI [1.27, 2.63] (Table 4). Among boys who reported to have had sex and responded to their age of sexual debut, in bivariable analyses, those who reported a debut at 14 years and younger had greater odds of reporting sexual violence (42.5%) compared to those with a debut of ≥ 15 years (31.0%), OR = 0.61, 95% CI [0.39, 0.94].

No associations were found between dating violence and the sex of romantic partners in the past year or the age of the current/most recent sex partner.

Discussion

The current study establishes the prevalence of a range of ADV types (emotional, sexual, and physical) among adolescent girls and boys. It is the first in Panama to examine ADV and one of the few in Latin America to address the topic using probabilistic sampling strategies and significantly contribute to our understanding of ADV. This work is critical as ADV can have a range of consequences, including detrimental effects on mental health, decreased academic performance, increased

	Emotional violence ^a (n = 1314)				Physical violence ^a (n = 1220)				Sexual violence ^a (n = 1226)			
	n/N (%) ^b	OR	AOR	p-value ^c	n/N (%) ^b	OR	AOR	p-value ^b	n/N (%) ^b	OR	AOR	p-value ^b
District of study ^d												
Panamá	229/356 (64.3)	1	1		34/318 (10.7)	1	1		71/319 (22.3)	1	1	
San Miguelito	215/360 (59.7)	0.83 (0.58–1.19)	0.79 (0.55–1.15)	0.30	28/320 (8.8)	0.80 (0.47–1.35)	0.84 (0.48–1.47)	0.54	78/321 (24.3)	1.12 (0.78–1.62)	1.10 (0.69–1.76)	0.68
Colón	197/346 (56.9)	0.75 (0.52–1.08)	0.63 (0.43–0.91)	0.02	20/337 (5.9)	0.53 (0.30–0.94)	0.68 (0.37–1.24)	0.21	64/338 (18.9)	0.82 (0.56–1.19)	0.98 (0.63–1.54)	0.95
Arraiján/La Chorrera	169/252 (67.1)	1.16 (0.79–1.70)	0.78 (0.53–1.15)	0.21	14/245 (5.7)	0.51 (0.26–0.97)	0.65 (0.33–1.31)	0.23	45/248 (18.2)	0.77 (0.51–1.17)	0.91 (0.56–1.46)	0.69
Age												
14–15	115/208 (55.3)	1	1		11/185 (5.9)	1			30/185 (16.2)	1	1	
16	193/320 (60.3)	1.22 (0.85–1.75)	0.93 (0.61–1.44)	0.76	19/298 (6.4)	1.08 (0.50–2.32)			60/300 (20.0)	1.31 (0.81–2.12)	1.20 (0.72–2.01)	0.48
17	255/403 (63.3)	1.46 (1.03–2.07)	1.04 (0.68–1.60)	0.84	34/367 (9.3)	1.62 (0.80–3.29)			63/369 (17.1)	1.08 (0.67–1.75)	0.83 (0.49–1.38)	0.47
18–19	247/383 (64.5)	1.47 (1.03–2.09)	0.71 (0.53–1.15)	0.13	32/370 (8.6)	1.49 (0.73–3.05)			105/372 (28.2)	2.08 (1.31–3.28)	1.46 (0.89–2.39)	0.14
Ever had sex												
No	205/780 (26.3)	1	1		22/456 (4.8)	1	1		56/459 (12.2)	1	1	
Yes	492/587 (83.8)	3.78 (2.78–5.14)	2.40 (1.81–3.19)	<0.01	74/764 (9.7)	2.11 (1.29–3.46)	1.54 (0.90–2.63)	0.11	202/767 (26.3)	2.62 (1.89–3.63)	2.09 (1.46–2.98)	<0.01
Sex of romantic partners in the last year												
Different sex	707/1021 (69.2)	1			87/1012 (8.6)	1			5/15 (33.3)	1		
Same sex	13/15 (86.7)	2.89 (0.65–12.87)			1/15 (6.7)	0.76 (0.10–5.84)			219/1015 (21.6)	0.56 (0.19–1.70)		
Both sexes	7/8 (87.5)	3.11 (0.38–25.37)			1/8 (12.5)	1.52 (0.18–12.49)			1/8 (12.5)	0.30 (0.03–3.26)		
Number of romantic partners in the past year												
1	149/243 (61.3)	1	1		12/239 (5.0)	1	1		38/240 (15.8)	1	1	
2	225/360 (62.5)	1.05 (0.75–1.47)	1.00 (0.71–1.41)		18/357 (5.0)	1.00 (0.47–2.12)	0.96 (0.45–2.05)	0.93	72/359 (20.1)	1.32 (0.85–2.04)	1.25 (0.80–1.93)	0.33
3 or more	377/495 (76.2)	2.01 (1.45–2.81)	1.65 (1.15–2.35)		57/491 (11.6)	2.48 (1.31–4.72)	2.12 (1.09–4.13)	0.03	130/492 (26.4)	1.89 (1.26–2.83)	1.52 (1.00–2.32)	0.05
Age of current or most recent romantic partner												
<15 years	2/3 (66.7)	1			0/3 (0.0)	1			0/3 (0.0)	1		
15–18 years	494/720 (68.6)	1.09 (0.10–12.11)			59/712 (8.3)	0.70 (0.42–1.17)			153 (21.4)	0.85 (0.58–1.23)		
>18 years	151/202 (74.8)	1.48 (0.13–16.67)			23/202 (11.4)	-			49/202 (24.3)	-		

Bold values are significant at <0.05. ^aDenominator values may differ as some participants did not answer all questions. ^bDating violence variables categorized never in lifetime, once or more in lifetime. ^cp-values refer to AOR. ^dDistrict of study AOR are independent correlates.

Table 3: Associations of sociodemographic variables with reported dating violence among adolescent girls aged 14–19 years in urban regions of Panama, 2015–2018.

	Emotional violence ^a (n = 974)				Physical violence (n = 897)				Sexual violence (n = 899)			
	n/N (%)	OR	AOR	p-value ^b	n/N (%)	OR	AOR	p-value ^b	n/N (%)	OR	AOR	p-value ^b
District of study ^c												
Panamá	163/236 (69.1)	1	1		55/201 (27.4)	1	1		62/204 (30.4)	1	1	
San Miguelito	188/275 (68.4)	1.06 (0.65–1.72)	0.88 (0.52–1.51)	0.65	60/245 (24.5)	0.86 (0.56–1.32)	0.86 (0.51–1.45)	0.51	76/245 (31.0)	1.08 (0.60–1.92)	1.24 (0.73–2.10)	0.42
Colón	172/241 (71.4)	1.14 (0.70–1.87)	0.75 (0.44–1.28)	0.30	52/234 (22.2)	0.76 (0.49–1.17)	0.75 (0.43–1.28)	0.29	60/232 (25.9)	0.74 (0.40–1.36)	0.80 (0.46–1.40)	0.43
Arraiján/La Chorrera	192/222 (86.5)	3.00 (1.71–5.24)	1.94 (1.08–3.49)	0.03	49/217 (22.6)	0.77 (0.50–1.21)	0.83 (0.49–1.41)	0.49	62/218 (28.4)	1.01 (0.56–1.82)	1.08 (0.63–1.84)	0.78
Age												
14–15	103/148 (69.6)	1			31/131 (23.7)	1			35/131 (26.7)	1		
16	175/241 (72.6)	1.19 (0.75–1.91)			55/220 (25.0)	1.07 (0.64–1.78)			64/220 (29.1)	1.18 (0.72–1.95)		
17	208/277 (75.1)	1.34 (0.85–2.13)			58/265 (21.9)	0.91 (0.55–1.49)			77/264 (29.2)	1.11 (0.68–1.78)		
18–19	229/308 (74.4)	1.47 (0.93–2.32)			72/281 (25.6)	1.10 (0.68–1.80)			84/284 (29.6)	1.17 (0.72–1.87)		
Ever had sex												
	223/387 (57.6)	1	1		67/326 (20.6)	1	1		66/326 (20.3)	1	1	
	492/587 (83.8)	1.33 (1.02–1.64)	1.58 (1.07–2.33)	0.02	149/571 (26.1)	1.37 (0.99–1.91)	1.14 (0.79–1.64)	0.49	194/573 (33.9)	2.00 (1.43–2.77)	1.82 (1.27–2.63)	<0.01
Sex of romantic partners in the last year												
Different sex	580/688 (84.3)	1			174/683 (25.5)	1			5/20 (25.0)	1		
Same sex	14/20 (70.0)	0.43 (0.16–1.16)			6/20 (30.0)	1.25 (0.47–3.34)			206/684 (30.1)	1.21 (0.42–3.44)		
Both sexes	7/8 (87.5)	1.27 (0.15–10.63)			0/8 (0.0)	-			2/8 (25.0)	0.95 (0.14–6.50)		
Number of romantic partners in the past year												
1	99/147 (67.3)	1	1		27/143 (18.9)	1	1		31/145 (21.4)	1	1	
2	153/186 (82.3)	2.32 (1.38–3.90)	2.21 (1.30–3.73)	<0.01	40/185 (21.6)	1.20 (0.70–2.08)	1.16 (0.67–0.59)	0.60	51/184 (27.7)	1.39 (0.83–2.33)	1.24 (0.73–2.09)	0.43
3 or more	406/468 (86.8)	3.50 (2.21–5.55)	3.34 (2.08–5.35)	<0.01	131/465 (28.2)	1.71 (1.06–2.74)	1.62 (1.00–2.65)	0.05	149/466 (32.0)	1.71 (1.09–2.69)	1.43 (0.89–2.28)	0.14
Age of current or most recent romantic partner												
<15 years	8/12 (66.7)	1			1/12 (8.3)	1			3/12 (25.0)	1		
15–18 years	498/586 (85.0)	2.92 (0.84–9.82)			156/589 (26.9)	3.97 (0.50–31.22)			171/580 (29.5)	1.33 (0.35–5.09)		
>18 years	23/27 (85.2)	2.98 (0.58–14.62)			4/27 (14.8)	1.85 (0.18–18.72)			10/27 (37.0)	1.85 (0.39–8.70)		

Bold values are significant at <0.05. ^aDating violence variables categorized never in lifetime, once or more in lifetime. ^bp-values refer to AOR. ^cDistrict of study AOR are independent correlates.

Table 4: Associations of sociodemographic variables with reported dating violence among adolescent boys aged 14–19 years in urban regions of Panama, 2015–2018.

sexual risk behaviour, increased substance use, and increased risk of continued ADV and IPV into later adolescence and adulthood.¹⁴

In this sample, the overall prevalence of ADV is high, with 70% of respondents reporting at least one instance of any type of ADV. One strength of the study is the inclusion of a measurement for emotional violence, as most ADV studies often focus on physical and sexual violence only.¹⁸ Like other forms of violence, emotional violence can have severe consequences such as depression and anxiety,¹⁹ rendering emotional violence a neglected but essential dimension of ADV research. In fact, in our sample, the most prevalent form of violence was emotional violence (67% of respondents reporting to have experienced at least one instance), followed by physical violence (23% of respondents reporting to have experienced at least one instance), then sexual violence (17% of respondents reporting at least one instance). These estimates appear to be higher for overall violence, based on a global systematic review in 2017 of ADV studies on large samples (500+ participants) and probabilistic sampling strategies.¹⁸ That review found a range from 0.1% to 97%, with physical violence estimates ranging from 8.5% to 79.9% in the few studies based in Latin American countries.¹⁸ Estimates of ADV may range widely in part due to the varying instruments and definitions of violence employed.

Experience of multiple instances of ADV is prevalent. Overall, 47% reported two or more experiences of any form of violence. However, existing reviews on ADV tend to focus on lifetime experience rather than the nuances of revictimization.¹⁸ There is evidence that earlier experiences of ADV put individuals at risk for future ADV.²⁰ ADV is also associated with IPV experiences in adulthood.²¹ Future studies should examine the experience of multiple instances of violence and the experience of violence across multiple relationships among adolescents.

Among the correlates examined, being sexually active and having a higher number of romantic partners are significantly correlated with the experience of ADV. These results are consistent with previous literature, which indicates that younger age of sexual debut puts adolescents at higher risk for ADV.²² A higher number of sexual partners has also been linked to the experience and perpetration of dating violence among young adults. This association highlights risk factors that may be common between STI, HIV, and violence risk in adolescents in Panama. It may also indicate the potential to integrate STI and violence services to identify populations who experience common risk factors.

One significant contribution of this work is the inclusion of adolescent boys. We found that 77% of boys experienced some form of violence, with 56% experiencing multiple instances of any form of violence. Even when excluding emotional violence, which is less commonly examined in the ADV literature, 24%

experienced sexual violence, and 29% experienced physical violence, with no correlation with same-sex romantic partners. These estimates exceed other previous global estimates of IPV in adult men's lifetime, which were 3–20%,¹ highlighting the importance of examining ADV in boys, especially in Panama. Nonetheless, we would like to caution against making direct comparisons between girls and boys regarding ADV prevalence for a couple of reasons. First, previous literature has raised the issue of validity in detecting IPV in men using tools designed and validated among women.²³ Second, men can face significant barriers due to social norms that promote traditional male social roles. For example, research has documented dismissive or even hostile responses to male survivors by providers.²⁴ These factors can contribute to underreporting violent experiences among men and boys.

Additionally, adolescent girls may have underreported dating violence in this study. The normalization and acceptance of IPV may be due to the socialization of hegemonic gender norms where female sexuality is associated with passivity and submissiveness while male sexuality with aggression and dominance.²⁵ Further qualitative research should be included to explore these attitudes and norms. Lastly, more contemporary forms of dating violence, such as cyber-based partner violence, were not included.

Implications for the field/interventions

Despite the risk to healthy development among adolescents, there are only a few evidence-based prevention programs in Latin America for this population. Early intervention programs evaluated for effectiveness include programs where educators train youth leaders to develop programs where bystanders step in when they witness potentially abusive behaviours.²⁶ Other programs that have shown reductions in ADV perpetration and normalization include training parents of young children exposed to IPV to manage aggression.²⁷ Other programs include cognitive behavioural therapy, including trauma-focused therapy among girls who have survived ADV, which has decreased future ADV incidents and depression.²⁸ Effective school-based messengers for ADV prevention, identification, reporting, and support may include school personnel.²⁹ Successful educational school-based interventions with adolescents and youth in North America include the Safe Dates and Real Consent programs.^{30,31} However, options are limited for out-of-school youth. One exception is the Stepping Stones program, which was found to be successful in educational community-based youth in rural South Africa.³² Furthermore, due to the close association between inequitable gender attitudes and IPV perpetration worldwide, interventions that focus on transforming inequitable gender norms through norms-based interventions could prevent the perpetration of

ADV. These norm-based interventions could be advantageous even among young adolescents, later in adolescence, and into adulthood.

Strengths and limitations

This study has notable strengths, including a large sample size using a probability-based sampling strategy (two-stage cluster sample design with a random sampling of clusters). However, some limitations should also be considered. First, this analysis is from cross-sectional data; therefore, the temporal relationship between correlates and ADV experiences cannot be determined. Second, the instrument used sex assigned at birth rather than gender identity. Therefore, analyses cannot account for transgender or non-binary identities. Third, due to the length of the questionnaire (which focused mainly on sexual behaviours as the study's primary outcome), only questions related to the victimization of ADV were included; questions pertaining to the perpetration of ADV were not. Therefore, we were unable to associate perpetration with the victimization of ADV. Fourth, the multivariable analyses included dichotomous violence occurrence (Never or once/more than once), which limits our ability to describe factors associated with having experienced violence by the number of times experienced. Future studies with larger sample sizes could examine once/multiple violence by the number of times in which it occurred. Fifth, the questions included in the questionnaire are limited in scope and therefore do not include all types of possible dating violence. Sixth, missing data may lead to biased results, particularly for variables related to physical and sexual violence, which had between 12 and 16% missing results. Seventh, temporal trends may have influenced differences in violence prevalence between districts. However, no formal dating-violence prevention programs have been implemented in schools or communities in Panama during the time of the study. Lastly, this study was among urban public school-going adolescents 14–19 years; therefore, results cannot be extrapolated to all adolescents in Panama, especially those in rural districts or non-school-going (37% of adolescents are non-school going in urban districts). Nevertheless, in the Republic of Panama, the high-school enrolment rate is relatively high in urban areas; 63% of adolescents attend school.¹⁵

Conclusion

Our findings present the first national study of ADV in Panama, revealing a high prevalence among girls and boys. These findings support the need for program recommendations and implementation to address ADV across the country.

Contributors

A.G. and J.M.P. designed and coordinated the study and collected data; A.G., C.X.H., A.Y., E.M., and F.Y.W. designed the analyses; A.G.

performed statistical analyses; and A.G., C.X.H., E.M., and F.Y.W. participated in statistical interpretation; and J.M.P. oversaw funding acquisition and data collection. A.G., A.Y., and C.X.H. wrote the first draft; all authors participated in the manuscript revision and final manuscript approval. All authors had full access to the data and approved the final version of the manuscript.

Data sharing statement

De-identified participant data that underlie the results reported in this article, beginning three months and ending 5 years following article publication will be provided to researchers who provide a methodologically sound proposal in order to achieve the aims of the approved proposal. Proposals should be directed to agabster@gorgas.gob.pa; data requestors will need to sign a data access agreement.

Declaration of interests

All authors declare no conflicts of interest.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.lana.2022.100383>.

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