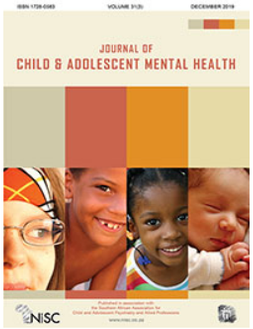

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Associations between mental distress, poly-victimisation, and gender attitudes among adolescent girls in Cambodia and Haiti: an analysis of Violence Against Children surveys

Christina Juan[1]*, Jeffrey Edmeades[2], Suzanne Petroni[3], Chisina Kapungu[4], Rebecca Gordon[5], and Daniela Ligiero[5]

[1]*The Demographic and Health Surveys Program, ICF, Washington, USA*
[2]*Demografix, Arlington, USA*
[3]*Gender Equality Solutions, Falls Church, USA*
[4]*International Center for Research on Women, Washington, USA*
[5]*Together for Girls, Washington, USA*
**Corresponding author email: christina.p.juan@gmail.com*

This study aims to explore the effects of poly-victimisation (defined as the experience of multiple different forms of violence, including physical, emotional, and/or sexual) and gender attitudes on mental distress and suicidal ideation among adolescent girls, using cross-sectional nationally representative household survey data from Cambodia and Haiti. Data used were from 555 and 675 adolescent girls aged 13 to 19 from the 2013 Cambodia and 2012 Haiti Violence Against Children Surveys, respectively. Weighted bivariate and multivariate logistic regression analyses were used to assess the relationship between poly-victimisation and gender attitudes with severe mental distress and suicidal ideation, controlling for a range of factors. The results suggest that poly-victimisation is associated with severe mental distress and suicidal ideation among adolescent girls in both countries. Gender attitudes can serve as either a risk or protective factor. For example, in Haiti, respondents who agreed that women should tolerate violence to keep their family together were more likely to experience mental distress, but less likely to have had suicidal thoughts. The study's findings illustrate the need for further research on how gender norms and attitudes as well as experiences of multiple different forms of violence impact adolescent mental health.

Introduction

At the global level, the causes and consequences of poor mental health among adolescents remain poorly understood. This is despite an increasing body of evidence suggesting higher levels of mental health disorders in low- and middle-income country (LMIC) settings than previously thought (Kieling et al., 2011; Rathod et al., 2017; Steel et al., 2014). An estimated 13.4% of the world's adolescents have a mental health disorder (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015), with about half of lifetime disorders beginning before age 14 (UNICEF, 2011). Nineteen percent of adolescents in the Maldives and 15% in Thailand reported having planned suicide, while 13% (Maldives) to 14% (Thailand) reported having attempted suicide (World Health Organization, 2017). Globally, suicide is a leading cause of adolescent deaths (World Health Organization, 2017). Adolescent girls are particularly vulnerable to poor mental health outcomes, with girls twice as likely as boys to experience anxiety and up to three times as likely to have depressive disorders (World Health Organization, 2014). A school-based study in LMICs found that, compared to boys, adolescent girls were between two and six times more likely to ever make suicide plans (Juan, Kapungu, Jessee, & Edmeades, 2018). Consistent with this pattern, suicide is now among the top

three causes of death, globally, among older adolescent girls (Kapungu & Petroni, 2017; Rhodes, 2014; World Health Organization, 2017).

While a notable body of research has documented the drivers of poor mental health outcomes among adolescents in high-income countries (Sherr, 2018; Sidebotham et al., 2014), there is less evidence in LMICs, despite the unique vulnerabilities adolescent girls often face in those settings. These include inequitable gender norms that disadvantage girls in terms of physical, sexual, and emotional abuse, neglect, violence, gender-based discrimination, exclusion from education and school absenteeism, familial relationships, socioeconomic status, decision-making, and overall physical health (Aggarwal & Berk, 2015; Kågesten, et al., 2016; Kapungu, Juan, Jessee, & Edmeades, 2018; Kapungu & Petroni, 2017; Landstedt, Asplund, & Gillander Gådin, 2009; Petroni, Patel, & Patton, 2015; Reiss, 2013; Rhodes, 2014; UNICEF, 2010). As a result, the field's understanding of the drivers of adolescent mental health in LMICs and why these outcomes differ between boys and girls remains limited, even in situations where both groups are disadvantaged.

As with their peers in higher-income settings, adolescence for girls in LMICs is often when inequitable gender norms are first encountered directly, with gender role differentiation and conflict typically intensifying in ways that may worsen mental health (Kapungu et al., 2018; Kapungu & Petroni, 2017; Petroni, et al., 2015; Pinhas, Weaver, Bryden, Ghabbour, & Toner, 2002). Additionally, adolescence is when the types of violence experienced by boys and girls increasingly differ. Adolescent girls are more likely to encounter various forms of gender-based violence (GBV), including physical, sexual, and emotional abuse, with an increasing proportion of violent experiences perpetrated by romantic and intimate partners (Raising Voices, 2017). Globally, almost one third of girls aged 15 to 19 report having experienced physical and/or sexual violence by an intimate partner (World Health Organization, 2013). This has both immediate and long-term implications for health outcomes, including increased odds of depressive symptoms and suicidality (Campbell & Lewandowski, 1997; Devries, Mak, Bacchus, et al., 2013; Devries, Mak, Garcia-Moreno, et al., 2013; Dillon, Hussain, Loxton, & Rahman, 2013; McLaughlin, O'Carroll, & O'Connor, 2012; Pico-Alfonso et al., 2006). Prior research has found both that experiences with violence and neglect during childhood and adolescence are important determinants of physical and mental health (Fry, McCoy, & Swales, 2012; Mersky, Topitzes, & Reynolds, 2013), and that the specific types of violence experienced by girls may play an important role in the higher levels of mental distress they report (Ameli, Meinck, Munthali, Ushie, & Langhaug, 2017; Dubow et al., 2012; Jewkes, 2013; Mersky et al., 2013).

Girls' experiences of violence very often take place in a context of multiple exposures to violence (Chapman, et al., 2004; Finkelhor, Ormrod, & Turner, 2007; Kamndaya, et al., 2017), referred to in the literature as poly-victimisation (PV). In this study, we define PV as having directly experienced multiple different forms of violence. While there is relatively little research focussing directly on PV in LMICs, a recent systematic review suggests that PV among children and adolescents is both more common in these contexts (relative to higher income countries), and is associated with increased health risk behaviours, mental health problems, and suicidal behaviours (Le, Holton, Romero, & Fisher, 2016). Other research on violence supports these conclusions with experiences of violence against children (VAC) and intimate partner violence (IPV) commonly co-occurring in households (Guedes, Bott, Garcia-Moreno, & Colombini, 2016; Namy, et al., 2017). Furthermore, PV has been shown to have a greater effect on mental health impacts for adolescent girls than experiences of single forms of violence (Itani, Fischer, & Kraemer, 2017; Kamndaya et al., 2017). This suggests that PV may be a particularly important factor to examine in terms of the mental health of adolescent girls in ways that are distinct than for boys.

Goal of the study

In this study, we aim to address the current research gap in terms of the intersection of gender, violence, and mental health in LMICs through examining the role that self-held gender attitudes and experience/s with violence play in determining both severe mental distress[1] and suicidal ideation for girls aged 13 to 19 in Haiti and Cambodia. In contrast to prior research in this area, we examine both gender attitudes and experiences of violence together, hypothesising that both

poly-victimisation and holding unequal gender attitudes will increase the likelihood of experiencing poor mental health outcomes.

Methods

The data used in this study were drawn from the Violence Against Children Surveys (VACS) conducted in Haiti (2012) and Cambodia (2013). The surveys are nationally representative cross-sectional surveys on youth aged 13 to 24. The focus of the VACS is the prevalence of lifetime estimates of violence before age 18, past 12-month incidence, circumstances of violence (including perpetrators), the reporting of sexual, physical, and emotional violence, and factors that may shape the experience with violence. Both surveys used a multi-stage cluster survey design with a probability proportional to size approach, and sampling frames based on the census. Households within enumeration areas and respondents were randomly selected using the Kish method (Kish, 1949; Gaziano 2005). Data were collected from 1 121 and 1 457 girls and young women in Cambodia and Haiti, respectively.[2] Analyses for this study were restricted to adolescent girls aged 13 to 19, resulting in a sample of 555 girls in Cambodia and 675 in Haiti after accounting for missing data.[3] Haiti and Cambodia were selected based on the comparability of mental health measures and their different social and economic contexts.

We modelled the effect of poly-victimisation and gender attitudes on two dependent dichotomous variables – current severe mental distress and lifetime suicidal ideation – controlling for additional variables and accounting for the complex survey design. Multivariate logistic regression was used for analyses. The same set of independent variables were included in each model, except for the inclusion of severe mental distress status in the suicidal ideation model.

Measures

Key independent variables

Severe mental distress was assessed using the Kessler 6 (K6) scale, which consists of six questions exploring feelings of hopelessness, restlessness, worthlessness, depression, effort, and sadness by the respondent during the previous 30 days. The K6 is an instrument that measures psychological distress, and it has demonstrated validity and reliability in a several contexts, including in many LMICs (Easton, Safadi, Wang, & Hasson, 2017; Krieger, Kosheleva, Waterman, Chen, & Koenen, 2011; Muth et al., 2017; Van der Auwera, Debacker, & Hubloue, 2012; Vissoci et al., 2018). Responses were recorded using a four-point Likert scale, and scores on individual questions were summed to create an index ranging from 0 to 24, following the approach used in previous studies (Furukawa, Kessler, Slade, & Andrews, 2003; Swartz & Lurigio, 2006). Based on these scores, a dichotomous variable was constructed indicating severe mental distress (K6 score ≥ 13).

Suicidal ideation was measured using the following question: “Have you ever had thoughts of ending your own life?”. This was used to construct a dichotomous variable indicating if the respondent had ever had suicidal thoughts.

While the mental distress variable reflects the situation of the respondent at the time of the interview, the suicidal ideation measure reflects lifetime experience. As a result, care should be taken when interpreting the influence of individual determinants on suicidal ideation, as these may not necessarily be temporally related to infer a causal relationship.

Key dependent variables

Internalised gender attitudes were measured using ten questions drawn from the 24-item Gender Equitable Men Scale (GEMS), which was originally developed in Brazil and has been adapted and used in multiple countries such as Cambodia and Haiti to measure gender norms (Pulerwitz & Barker, 2008).[4] The GEMS aims to examine individual gender attitudes around domestic chores and daily life, sexual relationships, and IPV. Exploratory factor analyses identified two main domains based on the questions used: (i) the first focused primarily on attitudes towards household chores and relationships,[5] and (ii) the second focused on sexual behaviour.[6] One item, a question

asking if a woman should "tolerate violence to keep her household together" did not load strongly on either factor and was included separately in the analyses. Individual scores were calculated based on factor loadings across the two combined factors (Haiti: Cronbach's alpha = 0.74 for relationship-related items, 0.69 for sex-related items; Cambodia = 0.57 for both factors). These scores were then used to construct a categorical variable indicating whether individuals held relatively low levels of unequal gender attitudes (lower tercile of the distribution of scores), moderately unequal attitudes (middle tercile), or highly unequal attitudes (upper tercile).

Experience with poly-victimisation was measured through a series of questions asking about experiences with physical, sexual, or emotional violence from a family member, romantic partner, adult relative, or authority figure in the 12 months prior to the survey. Types of violence were categorised under the following domains: physical, emotional, and sexual. Physical violence included experiences of being punched, choked, burned, or threatened with a weapon. Emotional violence included experiences of a parent saying the daughter was not loved, wished she were dead, ridiculed her, or threatened to abandon her. Sexual violence drew from experiences of unwanted sexual touching, attempted unwanted sex, and physically forced sex. A four-category variable was created to measure poly-victimisation: (i) no experience with physical, emotional, or sexual violence; (ii) experience with one form of violence; (iii) experience with two forms; and (iii) experience with all three forms of violence in combination.

Additional independent variables included demographic and socioeconomic characteristics (age, ever having worked for pay, and household wealth quintile[7]); potentially risky life experiences (ever having had sex; substance use); and potential protective factors (completion of primary school, co-residence with parents, and having friends with whom she discusses important things).

Results

Characteristics of the sample

Table 1 provides information on characteristics of the samples of adolescent girls in the VACS 2013 Cambodia and 2012 Haiti datasets.

Characteristics of adolescent girls in Cambodia

Among the 555 adolescent girls aged 13 to 19 included in the Cambodia analyses sample, 65% were age 15 to 19. Approximately two-fifths of the sample (41%) completed primary schooling and 45% had ever worked for pay, while 6% had ever had sexual intercourse. Over half (54%) of the sample used a substance (alcohol and/or cigarettes) in the previous 30 days. Seventy-six percent of adolescent girls reported living with both parents as well as having friends that they could talk with about important things. Fourteen percent reported experiencing one form of violence, and 3% reported experiencing two forms. None reported experiencing all three forms of violence.

In terms of gender attitudes, 69% of the sample agreed that a woman should tolerate violence to keep her family together. A third of girls agreed with statements indicating highly inequitable gender attitudes pertaining to relationships (e.g. whether a woman should be hit if she burns food or argues with her male partner), and sex (whether a woman is considered promiscuous if she carries condoms). Five percent of the sample reported severe levels of mental distress in the previous 30 days and/or experience of suicidal ideation at least once in their lifetime.

Characteristics of adolescent girls in Haiti

Among the 675 adolescent girls aged 13 to 19 in the Haiti analysis sample, 75% were age 15 to 19. Nearly half of the sample (46.81%) completed primary school, and 9.78% reported having worked. Approximately one-third reported ever having sex (32.15%), and 4.15% reported using a substance (alcohol and/or cigarettes) in the previous 30 days. Forty-one percent of adolescent girls lived with both parents, and 70% had friends they felt they could connect with about important things. Regarding experiences of violence, 28% reported experiencing some form of violence, 19% experienced two forms, and 7% experienced three different forms of violence during the previous 12 months. Fourteen percent agreed that a woman should tolerate violence to keep her family together, and 32% held highly unequal attitudes pertaining to relationships and sex. In terms of

Table 1: Characteristics of adolescent girls included in the analyses of severe mental distress and suicidal ideation, Cambodia (*n* = 555) and Haiti (*n* = 675)

Characteristic	Cambodia *n* (%)	Haiti *n* (%)
Level of mental distress in the past 30 days		
Severe	29 (5.23)	94 (13.93)
No, low, moderate	526 (94.77)	581 (86.07)
Lifetime experience of suicidal ideation	28 (5.05)	152 (22.52)
Adolescent age group		
13–14 years	196 (35.32)	169 (25.04)
15–19 years	359 (64.68)	506 (74.96)
Lifetime employment status		
Never worked	307 (55.32)	609 (90.22)
Ever worked	248 (44.68)	66 (9.78)
Household wealth quintile index (1st = poorest to 5th = wealthiest)*		
1st	115 (20.72)	141 (20.89)
2nd	114 (20.54)	126 (18.67)
3rd	115 (20.72)	141 (20.89)
4th	102 (18.38)	132 (19.56)
5th	109 (19.64)	135 (20.00)
Ever had sex	33 (5.95)	217 (32.15)
Used a substance in the past 30 days (alcohol and/or cigarettes)	302 (54.41)	28 (4.15)
Status of living with parent(s)		
Not living with a parent	46 (8.29)	161 (23.85)
Living with mom or dad – single parent	85 (15.32)	240 (35.56)
Living with mom and dad	424 (76.40)	274 (40.59)
Primary education status		
Completed primary	230 (41.44)	316 (46.81)
Did not complete primary	325 (58.56)	359 (53.19)
Has friends to talk to about important things	418 (75.32)	473 (70.07)
Exposure to multiple different forms of violence in the last 12 months		
None	459 (82.70)	312 (46.22)
Any one of physical, sexual, or emotional	79 (14.23)	189 (28.00)
Any two forms of violence	17 (3.06)	126 (18.67)
Three forms of violence	0 (0.00)	48 (7.11)
Gender unequal attitudes pertaining to relationships		
Low unequal	208 (37.48)	262(38.81)
Moderately unequal	159 (28.65)	208 (30.81)
Highly unequal	188 (33.87)	205 (30.37)
Gender unequal attitudes pertaining to sex		
Low unequal	196 (35.32)	229 (33.39)
Moderately unequal	192 (34.59)	227 (33.63)
Highly unequal	167 (30.09)	219 (32.44)
Gender unequal attitude on whether a woman should tolerate violence to keep her family together	381 (68.65)	95 (14.07)

Note: *Countries slightly differ in terms of household wealth quintile definitions

poor mental health, 14% reported experiencing severe mental distress in the previous 30 days, and 23% reported ever having suicidal thoughts.

Effect of poly-victimisation and gender attitudes on mental distress

The results of the multivariate logistic regression analyses of the determinants of mental distress for Cambodia and Haiti are displayed in Table 2. Findings show an association between poly-victimisation and mental distress, though the specific form of this relationship differs between the two countries. In Cambodia, experience with any form of violence by a parent, adult relative,

Table 2: Results from a logistic regression predicting severe mental distress in the prior 30 days among adolescent girls, Cambodia (*n* = 555) and Haiti (*n* = 675)

Variable	VACS country			
	Cambodia		Haiti	
	OR	99% CI (*p*-value)	OR	99% CI (*p*-value)
Background				
Females aged 15–19 (ref = 13–14)	5.33	1.88–15.14 (0.002)	0.59	0.27–1.27 (0.174)
Socioeconomic status				
Ever worked (binary)	0.35	0.13–0.95 (0.039)	2.72	1.12–6.62 (0.028)
Household wealth quintile index (ref. = 1st – poorest)				
2nd	1.40	0.52–3.79 (0.506)	1.02	0.36–2.90 (0.965)
3rd	1.28	0.43–3.83 (0.650)	1.39	0.48–4.00 (0.536)
4th	0.17	0.26–1.53 (0.069)	4.05	1.66–9.88 (0.003)
5th (wealthiest)	0.46	0.12–1.80 (0.263)	3.34	1.20–9.33 (0.022)
Sexual and substance behaviours				
Ever had sex (binary)	1.23	0.25–6.13 (0.799)	2.52	1.25–5.09 (0.011)
Substance used in past month – alcohol and/or cigarettes (binary)	5.54	1.51–20.31 (0.010)	0.42	0.09–1.99 (0.271)
Protective factors				
Completion of primary education (binary)	0.40	0.15–1.06 (0.065)	0.55	0.31–1.00 (0.047)
Living with parent(s) (ref = not living with parent)				
Living with mom or dad – single parent	0.28	0.05–1.54 (0.143)	0.89	0.43–1.88 (0.764)
Living with mom and dad – both	0.31	0.10–0.95 (0.040)	0.77	0.32–1.83 (0.544)
Talks with friends about important things (binary)	1.18	0.35–3.86 (0.787)	0.75	0.40–1.40 (0.363)
Violence				
Experience with multiple different forms of violence (ref = none)				
One form of violence (sexual, physical, or emotional)	3.03	0.90–10.23 (0.074)	1.32	0.53–3.29 (0.547)
Any two forms of violence	21.81	5.69–83.63 (<0.001)	2.62	1.24–5.50 (0.012)
Three forms of violence	N/A		3.59	1.40–9.21 (0.009)
Gender attitudes				
Gender unequal attitudes pertaining to relationships (ref = low unequal)				
Moderately unequal	1.93	0.43–8.65 (0.387)	1.12	0.38–3.31 (0.833)
Highly unequal	2.61	0.57–11.91 (0.211)	0.61	0.20–1.87 (0.377)
Gender unequal attitudes pertaining to sex (ref = low unequal)				
Moderately unequal	1.38	0.39–4.93 (0.612)	0.82	0.32–2.11 (0.671)
Highly unequal	1.67	0.46–6.08 (0.435)	0.97	0.28–3.32 (0.960)
Gender unequal attitude around tolerating violence to keep family together (binary)	0.60	0.24–1.53 (0.283)	2.87	1.34–6.15 (0.007)

Notes: OR = odds ratio; CI = confidence interval; N/A = not applicable (data unavailable, e.g. due to small sample size)

authority figure, or romantic partner increases the likelihood of mental distress, and the magnitude of this effect increases as poly-victimisation occurs. For those experiencing one form of violence, the odds of severe mental distress were 3.03 (95% confidence interval [CI]: 0.90–10.23) relative to those who had not experienced any form of violence; while for those experiencing at least two forms, the odds were 21.81 (95% CI:5.69–83.63). A similar pattern is evident in Haiti, though only with strong statistical evidence of association for those who experienced two (adjusted odds ratio [OR] 2.62; 95% CI: 1.24–5.50) or all three forms of violence (adjusted OR: 3.59; 95% CI:1.40–9.21).

The results for gender attitudes suggest a much weaker direct influence on mental distress than is the case for violence. In Haiti, one item asking the respondent whether she agrees with tolerating violence for the purposes of family unity had strong statistical evidence of associating with mental

distress, after controlling for other factors (adjusted OR: 2.87; 95% CI: 1.34–6.15). This suggests that inequitable gender attitudes are positively associated with severe mental distress among adolescent girls.

The association of covariates was broadly consistent with expectations, with variation between the two countries. These findings likely reflect differences between the two contexts and underscore the complexity of mental health pathways. For example, in Haiti, children commonly act as live-in, unpaid domestic servants (*restaveks*), a practice associated with increased risk of childhood violence among boys and girls (Centers for Disease Control and Prevention, 2014). Adolescent girls aged 15 to 19 had higher odds of mental distress in Cambodia than 13 to 14-year-olds (adjusted OR: 5.33; 95% CI: 1.88–15.14); and lower odds in Haiti, though the statistical evidence of association is weak.

Effect of poly-victimisation and gender attitudes on suicidal ideation

Table 3 presents the results of the multivariate logistic regression analyses for suicidal ideation. While these results must be interpreted with caution due to the challenges with temporal causation associated with the measure referenced previously, the analyses generally further support an association of PV with severe mental distress. As expected, in both countries, having ever considered suicide is strongly associated with experiences of severe mental distress in the past month. There is strong statistical evidence of association of PV and suicidal ideation in Haiti only, with the odds of having considered suicide increasing monotonically as the number of different forms of violence increases (adjusted OR for 1 form of violence: 2.12; 95% CI: 1.12–3.99; adjusted OR for 2 forms: 3.28; 95% CI: 1.74–6.16; and, adjusted OR for 3 forms: 15.09; 95% CI: 6.10–37.33). Despite the lack of strong statistical evidence in Cambodia, the direction of the effect suggests that the association of PV and suicidal ideation found in Haiti may also be broadly true there. Gender attitudes did not show strong statistical evidence of association with suicidal ideation, apart from agreeing that women should tolerate violence to keep her family together in Haiti, which reduces the likelihood of suicidal ideation (adjusted OR: 0.26; 95% CI = 0.10–0.67).

Discussion

The results reinforce and extend findings from prior research, indicating that experiences with violence, including poly-victimisation, play a major role in shaping mental health outcomes among adolescent girls across different contexts (Fry et al., 2012; Le et al., 2016; Mersky et al., 2013). Our study adds to this limited evidence base in a number of ways. First, unlike much of the prior research on violence in LMICs, which typically examines individual or isolated experiences of violence or violence among all adolescents (i.e. both girls and boys), we focus on adolescent girls and poly-victimisation. Secondly, we examine how gender attitudes may interact with poly-victimisation to affect the mental health of adolescent girls in LMICs, reflecting the overarching role that gender plays in both shaping experiences of violence and the ways this may play out in terms of mental health outcomes.

The analyses strongly suggest that poly-victimisation and, to a lesser degree, gender attitudes play important roles in shaping mental health outcomes for adolescent girls in both countries. This is particularly clear for mental distress, where the results suggest that levels of mental distress significantly increase as girls experience additional types of violence. While this relationship is less clear for suicidal ideation, the results are suggestive of a similar relationship with experiences with violence.

While the direct influence of gender norms and attitudes measured in this study are less clear, the results offer some limited support for a direct effect on mental distress. This may be because these norms limit the life options adolescent girls feel they have or because of the effects of inequitable norms on self-worth and self-esteem. These attitudes may also have an indirect effect on mental health outcomes through experiences of violence, shaping the types of violence experienced by males and females, the social meanings attached to these experiences, and what may be deemed culturally acceptable or appropriate. In this sense, experiences of violence can be considered to be inherently

"gendered", perhaps especially so as the fluid nature of gender becomes better understood, and further calling to action how gender discrimination impacts mental health (Heise et al., 2019). These findings suggest that a renewed focus on how gender inequality shapes mental health is long overdue.

The analyses also found that protective factors, particularly regarding living with parents and completing primary school, were associated with mental well-being, reducing the odds of experiencing mental distress and suicidal ideation. For suicidal ideation, protective factors had an effect independent of that of mental distress, suggesting that these protective factors influence mental distress and suicidal thoughts in different ways. The findings are generally consistent with previous research indicating that healthy family functioning serves as a critical protective factor from

Table 3: Results from a logistic regression predicting lifetime experience of suicidal thoughts among adolescent girls, Cambodia (*n* = 555) and Haiti (*n* = 675)

Variable	VACS country			
	Cambodia		Haiti	
	OR	99% CI (*p*-value)	OR	99% CI (*p*-value)
Background				
Females aged 15–19 (ref = 13–14)	0.85	0.23–3.19 (0.807)	0.97	0.48–1.98 (0.939)
Socioeconomic status				
Ever worked (binary)	0.68	0.30–1.50 (0.330)	0.65	0.28–1.51 (0.315)
Household wealth quintile index (ref. = 1st – poorest)				
2nd	0.13	0.02–1.05 (0.055)	1.33	0.40–4.40 (0.641)
3rd	0.33	0.83–1.33 (0.119)	1.28	0.47–3.44 (0.624)
4th	0.39	0.10–1.58 (0.186)	1.76	0.59–5.25 (0.307)
5th (wealthiest)	0.69	0.17–2.74 (0.593)	2.00	0.62–6.42 (0.243)
Sexual and substance behaviours				
Ever had sex (binary)	6.24	1.34–28.98 (0.020)	1.92	1.21–3.03 (0.006)
Substance used in past month – alcohol and/or cigarettes (binary)	0.40	0.15–1.08 (0.071)	1.68	0.61–4.59 (0.310)
Protective factors				
Completion of primary education (binary)	1.76	0.58–5.37 (0.317)	1.39	0.74–2.60 (0.302)
Living with parent(s) (ref. = not living with parent)				
Live with mom or dad – single parent	1.51	0.29–7.81 (0.621)	1.53	0.87–2.70 (0.139)
Live with mom and dad – both	0.70	0.15–3.24 (0.640)	1.20	0.65–2.23 (0.551)
Talks with friends about important things (binary)	0.21	0.09–0.48 (<0.001)	3.74	2.07–6.77 (<0.001)
Violence				
Experience with multiple different forms of violence (ref. = none)				
One form of violence (sexual, physical, or emotional)	1.50	0.50–4.49 (0.465)	2.12	1.12–3.99 (0.021)
Any two forms of violence	6.31	0.65–61.30 (0.111)	3.28	1.74–6.16 (<0.001)
Three forms of violence	N/A		15.09	6.10–37.33 (<0.001)
Mental distress				
Severe mental distress	5.80	1.12–29.95 (0.036)	3.74	2.07–6.77 (<0.001)
Gender attitudes				
Gender unequal attitudes pertaining to relationships (ref = low unequal)				
Moderately unequal	2.28	0.33–15.96 (0.395)	0.80	0.33–1.94 (0.619)
Highly unequal	1.30	0.15–11.58 (0.811)	0.62	0.20–1.86 (0.380)
Gender unequal attitudes pertaining to sex (ref. = low unequal)				
Moderately unequal	1.58	0.36–6.91 (0.536)	0.94	0.37–2.36 (0.893)
Highly unequal	1.70	0.28–10.28 (0.554)	1.47	0.42–5.19 (0.543)
Gender unequal attitude around tolerating violence to keep family together (binary)	0.78	0.29–2.11 (0.620)	0.26	0.10–0.67 (0.006)

N/A = not applicable (data unavailable, e.g. due to small sample size)

interpersonal violence and mental health problems across all country income groups (World Health Organization, 2010, 2016). However, systematic reviews suggest more evidence is needed on the effectiveness of family-based interventions in LMICs (Knerr, Gardner, & Cluver, 2013; Mejia, Calam, & Sanders, 2012).

These findings have several implications for future research. In particular, more research is needed to better understand the mechanisms around how experience with different forms of violence, especially in the context of strongly held inequitable gender norms at particularly young ages (Blum & Mmari, 2017), differentially influences the mental health of both boys and girls. Further research is needed on aspects of experiences of violence that may be particularly influential in terms of mental health. For example, exploring who perpetrated violent acts would allow for a clearer distinction between different forms and types of violence, as well as a more nuanced assessment of how violence is motivated by inequitable gender norms and attitudes. Additionally, assessing severity levels of the different forms of violence or the frequency of various forms may be indicative of mental health impacts. Further information and measures on gender norms, inequitable beliefs, and behaviours related to violence might illuminate mental health pathways more strongly.

Future research should include comparative analyses between boys and girls that examine how the internalisation of patriarchal norms interacts with experiences and understandings of violence, and whether these gendered experiences differently impact adolescent mental health. Understanding how inequitable norms and attitudes influence factors such as IPV, gender norm conflict (Pinhas et al., 2002), and the perpetration of violence, will provide researchers with insights into how mental health can be conceptualised and addressed through a gendered perspective. Research should include pervasive forms of violence that are often not considered to be gender-based, such as physical disciplining of children, and adolescents hitting one another (Namy et al., 2017). Furthermore, constructing a poly-victimisation measure that includes severity, repeated experiences of different forms of violence, and perpetrator relationship, could hone our understanding of the pathways between cumulative violent experiences and mental health outcomes. Finally, more research is needed on how localised understandings of gender, VAC, and mental health impact adolescents' mental health outcomes, as the differences between Cambodia and Haiti in this study illustrate (Singh, 2015). Research must be based on culturally-adapted instruments and scales (Wagenaar, Hagaman, Kaiser, McLean, & Kohrt, 2012) that reflect the realities of adolescence in LMICs.

Limitations

While this study extends our knowledge of the ways in which gender attitudes and experiences of violence, including poly-victimisation, influence adolescent mental health, there are limitations to the analyses conducted. In particular, the measures of gender attitudes and norms were limited, having captured only some aspects of the gendered environment girls live in. As noted above, the data also did not allow for a clear temporal order to be established between experiencing mental distress and ever having suicidal thoughts, meaning that those findings must be interpreted with care.

Conclusion

To our knowledge, this is the first time the VACS has been used to examine the role of poly-victimisation and gender attitudes on mental health outcomes. These data allow for an examination of how multiple different forms of violence may influence behaviour, with information on gender attitudes and other factors that may influence adolescent mental health and suicidal ideation. The nationally representative nature of the data also allows for cross-country comparisons to assess the robustness of findings and to draw broader conclusions. The findings indicate that inequitable gender attitudes, poly-victimisation, and adolescent girls' mental health and suicidal ideation are linked in complex ways that affect pathways to poor mental health outcomes for adolescent girls. Given the importance of the study's findings for research, policy, and practice, it is recommended that more research examine how gender norms and attitudes and poly-victimisation globally impact the mental health and well-being of adolescents.

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Notes

1. While mental distress can be defined in multiple ways, we rely here on the Kessler 6 (K6) scale, which is described in detail in the Methods section.
2. For more information on the country-specific VACS study design and sampling strategy, visit the following reports: http://www.togetherforgirls.org/wp-content/uploads/2017/10/Haiti_Final-Report_English.pdf; and http://www.togetherforgirls.org/wp-content/uploads/2017/09/1-VAC-Cambodia_Full-Report-English-Final-web.pdf.
3. The total sample of adolescent girls aged 13–19 was 682 in Cambodia and 898 in Haiti, not accounting for missing values.
4. Survey instruments for the VACS, for instance, were translated into Kreyol in Haiti and Khmer in Cambodia (CDC, et al., 2014; Ministry of Women's Affairs, et al., 2014).
5. Questions included a woman's feelings about whether a man is justified to hit or beat his wife if she: goes out without telling him; neglects their children; argues with him; refuses to have sex with him; and, burns the food.
6. The respondent was asked to agree or disagree with the following statements: "It is the man who decides when to have sex"; "Men need more sex than women do"; "A man needs other women, even with things with his wife are fine"; and "Women who carry condoms are 'loose'".
7. The wealth quintile variable was calculated based on asset weights for each country drawn from the Equity Tool, with adjustments for the availability of data for specific types of assets (http://www.equitytool.org/).
8. The VACS in Haiti and Cambodia were funded by the President's Emergency Plan for AIDS Relief (PEPFAR).

ORCID

Christina Juan https://orcid.org/0000-0003-4899-9178
Jeffrey Edmeades https://orcid.org/0000-0003-4092-7700
Suzanne Petroni https://orcid.org/0000-0001-7617-7740
Rebecca Gordon https://orcid.org/0000-0001-8483-4069
Daniela Ligiero https://orcid.org/0000-0002-2209-0268

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