

More than Just Sticks and Stones: Sexual Harassment and Mental Health among Adolescent Girls and Young Women in Egypt before and after the Revolution

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Abstract

Globally, mental health disorders are the largest contributor to disability-adjusted life years among adolescents, particularly among girls. Sexual harassment is shown to contribute to poor mental health by lowering girls' self-esteem and sense of satisfaction and security. Egypt, with its youth population having experienced massive societal changes during the Arab Spring, presents a unique context for analyzing the relationship between mental health and sexual harassment. Using data from the 2009 and 2013/14 Survey of Young People in Egypt, we explored the association between sexual harassment and mental health among females aged 15-29 in bivariate and multivariate regression analyses. Respondents experiencing sexual harassment had higher odds of poor mental health than their peers after adjusting for potential confounders. Using longitudinal data, we used fixed effects regression models to approximate a causal relationship between harassment and changes in mental health. After controlling for unobserved factors, the coefficient of sexual harassment remained highly significant.

I. Introduction

Approximately three-quarters of mental health disorders begin before the age of 24 and half begin by age 14 (Belfer 2008; Kessler et al. 2005). Globally, mental health disorders are the largest cause of healthy years of life lost among adolescents (Gore et al. 2011) and are associated with multiple additional negative outcomes among this demographic, including lower educational attainment, substance abuse, violence, and poor sexual and reproductive health (Patel et al. 2007). Despite the high burden of mental health disorders among adolescents, more work is needed to improve mental health among this subgroup, particularly in low- and middle-income countries, where the bulk of this population lives, and the mental health burden is most heavily concentrated (Patel et al. 2007). Addressing mental health disorders during adolescence is critical because of their confluence in social, cognitive, and physical development as well as the risks they pose for continued impairment in adult life.

A gender gap also exists in the mental disease burden experienced by adolescents: girls suffer a disproportionately greater burden of mental disorders than boys (Gore et al. 2011; Parker et al. 2014). Many common mental health disorders, including depression, are more common among females than males, due to a combination of biological and social reasons (Parker et al. 2014). Additionally, the onset of puberty and entry into adolescence coincide with increased risk of violence and harassment, which have been shown to be closely associated with mental health disorders, including a broad range of negative behaviors such as self-harm (Nixon et al. 2008; Bucchianeri et al. 2014; Kears 2014; Gruber et al. 2008).

Research has indicated that experiencing sexual harassment contributes to lower self-esteem and sense of satisfaction and security, often leading to symptoms of depression and anxiety among adolescents,

particularly girls (Nixon et al. 2008). The relationship between mental health and sexual harassment has been mainly documented in higher-income country contexts and among older adolescent or adult populations (Nixon et al. 2008; Bucchianeri et al. 2014; Kearl, 2014; Gruber et al. 2008). Further, there is limited understanding of how this relationship plays out in settings undergoing political turmoil.

Egypt, with its bulging youth population having ushered in and experienced massive political and societal changes during the Arab Spring, presents a unique context in which to analyze the relationship between mental health and sexual harassment among adolescents and young people. The 2011 Revolution is believed to have “lifted a veil on sexual violence and harassment,” with the social and political momentum leading to greater acknowledgement of these problems in mainstream and social media (Afify 2017; Lynch 2013). Despite the introduction of a law in 2014 criminalizing sexual harassment, levels of sexual harassment of women in Egypt remain among the highest in the world, with nearly all women reporting having ever experienced harassment (El Deeb 2013; Henry 2017).

Furthermore, while the political motivations and economic circumstances of adolescents and young people received attention during and in the aftermath of the Egyptian Revolution, little focus was given to their mental health and emotional well-being. Between 2009 and 2013/14, the Survey of Young People in Egypt (SYPE) documented a decline in the prevalence of poor mental health among females age 15-29 years (Liu, 2017). Although the prevalence of sexual harassment remains high, reports of sexual harassment among adolescent girls and young women declined during the same period (Roushdy et al. 2015).

To further elucidate the situation of mental health among adolescent and young women in Egypt, this analysis explores the association between recent experiences of sexual harassment and mental health using data from the 2009 and 2013/14 Survey of Young People in Egypt (SYPE). Understanding the relationship between sexual harassment and mental health among adolescent girls and young women in Egypt will shed light on these societal challenges and inform policy and programming efforts to address them.

II. Data & Methods

Our study uses data from the SYPE that are nationally representative for both 2009 and 2013/14. Stratified multi-stage cluster sampling was conducted using primary sampling units drawn from the Central Agency for Public Mobilization and Statistics’ master sample based on the 2006 census (Roushdy et al. 2015). The [2009 SYPE](#) interviewed 15,029 adolescents and young people aged 10-29 on a range of key areas, including education, employment, migration, health, family formation, social issues, and political participation (Population Council 2010). [The 2013/4 survey](#) re-interviewed 10,916 (72.6%) of those same respondents (then aged 13-35) on the same range of topics as well as on some additional issues emerging since the January 2011 Revolution. For the 2013/14 survey, weights based on the probability of non-response were constructed to adjust for sample attrition (Roushdy et al. 2015).

In both survey rounds, the survey team administered the Self Reporting Questionnaire (SRQ), which was developed by the World Health Organization to screen for mental disorders in developing countries among respondents aged fifteen and older (Beusenberg et al. 1994). Respondents were asked a series of twenty yes/no questions (no=0; yes=1) about their mental health. We summed responses to these questions to create a continuous index ranging from zero to 20 (see Table 1 for complete list of items). A score of eight or higher is considered indicative of a mental health disorder based on previous research conducted in the Egyptian context (Vizcarra et al. 2005; Population Council 2010). Both the continuous

and dichotomous measures are used as outcomes in this analysis. As part of a module on public safety administered in both surveys, female respondents were also asked to report on whether they had experienced any sexual harassment in the past six months (no=0; yes=1).

We first explored the bivariate association between experience of sexual harassment in the past six months and mental health using the cross-section of female adolescents and young adults aged 15-29 at the time of each survey round. We also conducted multivariate regression analysis (logistic and linear) to control for background characteristics that could be associated with mental health. Control variables include: age (continuous); place of residency (urban; rural; or informal settlements); household wealth quintile; marital status (currently married or engaged; never married; separated/divorced, or widowed), current employment status (employed; unemployed; out of the labor force), and educational attainment (none or primary; secondary; tertiary or higher).

Taking advantage of the longitudinal data, we built fixed effects regression models that control for unobserved factors influencing both sexual harassment and mental health. These models estimate the association between sexual and mental health (continuous score) while controlling for fixed observed and unobserved characteristics. We ran fixed effects regression models separately by place of residence (rural and urban¹) because place of residence is strongly associated with both the primary outcome (mental health score) and exposure of interest (experience of sexual harassment). All fixed effects regression models are restricted to female respondents aged 15-35 (aged 15-29 in 2009 who were then aged 18-35 in 2013/14) who participated in both survey waves. Use of these models allows us to approximate a causal relationship between experience of harassment and changes in mental health during follow-up.

III. Preliminary Results

Characteristics of the study population

As shown in table one, the number of female respondents aged 15-29 at the time of the survey who were interviewed in 2009 was 6,072 and in 2013/14 was 4,460. Regarding marital status, in 2009, 46% of female respondents aged 15-29 were married at the time of the survey. In 2013/14, 39% of female respondents aged 15-29 were reportedly married. No substantial changes regarding place of residence or current employment status among adolescent girls and young women aged 15-29 were noted when comparing the data from 2009 to 2013/14. The vast majority of adolescent girls and young women aged 15-29 surveyed in 2009 and 2013/14 were reportedly out of the labor force; more than half were living in rural areas with the remainder living in urban areas or informal urban settlements (slums).

Descriptive statistics

Experience of mental health: As shown in table two, prevalence of poor mental health among adolescent girls and young women aged 15-29 declined from 27% in 2009 to 10% in 2013/14. In 2009, the prevalence of poor mental health was highest among respondents living in urban areas or informal settlements compared to those in rural areas, with differences statistically significant. In 2013/14, prevalence remained highest among those in urban areas but lowest among respondents in informal settlements, although differences were not statistically significant. In both survey rounds, prevalence appeared higher among those with none or only primary schooling compared to those with secondary or higher education, although differences were only significant in 2013/14. Although some variation in prevalence of poor mental health was observed by household wealth quintile, these differences were not statistically significant in either survey round. In 2009 and 2013/14, mental health appeared worse among

¹ In fixed effects regression models, the categories of urban and informal settlements (slums) were combined.

respondents currently employed (compared to those unemployed or out of the labor force) and among those widowed, divorced or separated (compared to those never married, married, or engaged to be married), although differences were only significant in 2013/14. The prevalence of poor mental health was higher among respondents who reported having experienced any sexual harassment in the past six months [compared to those who experienced no harassment] in 2009 and 2013/14.

Experience of sexual harassment: The prevalence of sexual harassment among female respondents aged 15-29 declined from an estimated 51% in 2009 to 43% in 2013/14. In both survey rounds, the prevalence of sexual harassment was higher among respondents living in urban areas and informal settlements (slums) compared to those in rural areas, with differences statistically significant. The prevalence of sexual harassment was lowest among respondents who were currently married and highest among those never married or engaged to be married in 2009 and 2013/14, with differences significant. Although the differences in prevalence by household wealth quintile were significant in 2009, the 2013/14 survey indicated less and inconsistent variation across these groups. Regarding employment status, the prevalence of sexual harassment was lowest among respondents who were out of the labor force compared to those reportedly employed or unemployed.

Linear and logistic regression analyses

As shown in table three, in 2009 and 2013/14, female respondents aged 15-29 who experienced sexual harassment in the past six months had higher odds of having poor mental health than their peers who reported no harassment even after adjusting for their current age, household wealth quintile, employment status, level of educational attainment, marital status, and place of residence (2009 OR: 1.37; 2013/14 OR: 1.44). In linear regression analyses for both survey rounds (table four), after adjusting for the aforementioned background characteristics, the experience of sexual harassment remained associated with an increase in the continuous mental health measure, meaning a worse mental health score (2009 coefficient: 0.80; 2013/14 coefficient: 0.91).

Fixed-effects regression analyses using longitudinal data

Table five presents the results of fixed-effects regression models of association between mental health score and experience of sexual harassment in the past six months for all female respondents as well as for those living in urban areas/informal urban settlements and those living in rural areas. In models on *all female respondents* and *only female respondents living in urban areas/informal settlements*, even after controlling for potential confounders, the coefficient of sexual harassment remains highly significant—those recently experiencing sexual harassment are significantly more likely to have a higher (worse) mental health score. This finding was not observed for female respondents living in rural areas.

IV. Discussion and future directions

The results of this analysis contribute to our understanding of the link between experiences of sexual harassment and mental health among adolescent girls and young women in Egypt. Our finding that experiences of sexual harassment are associated with poor mental health is largely consistent with findings from studies conducted in other country contexts (Bucchianeri et al. 2014; Gruber et al. 2008). Having a strong understanding of mental health and its connections to other issues facing adolescent girls and young women in their living environments is critical to implementing policies and interventions aimed at protecting and supporting them.

In the completed paper, the prevalence of sexual harassment and mental health will be assessed for younger and older adolescents separately to identify any differences in age-related exposures or outcomes. We will further explore how changes experienced during the Arab Spring may have influenced

this relationship—for example, whether those who became employed were likely to experience changes in sexual harassment and mental health. We will also explore whether females with poor mental health are more or less inclined to tell someone about their sexual harassment experience, and whether other public safety risks (i.e. street crowdedness, theft, etc.) contribute to poor mental health among adolescent girls and young women.

Table 1: Background characteristics of females aged 15-29 in 2009 and 2013/14 surveys

	2009	2013/14
Wealth quintile		
Poorest	19.0%	17.9%
Second	20.5%	20.4%
Middle	20.8%	19.4%
Fourth	20.8%	19.1%
Richest	18.9%	23.3%
Educational attainment		
None or primary	49.6%	32.0%
Secondary schooling	38.0%	44.9%
Higher than secondary schooling	12.4%	23.2%
Residence		
Urban	34.3%	29.0%
Rural	56.2%	60.8%
Informal urban settlements (slums)	9.6%	10.2%
Marital Status		
Married	45.5%	38.5%
Widowed, divorced, or separated	1.2%	1.0%
Engaged to be married	10.1%	3.8%
Never Married	43.2%	56.7%
Current employment		
Employed	9.2%	9.0%
Unemployed	4.1%	4.0%
Out of labor force	86.7%	87.0%
Total population of females aged 15-29	6,072	4,460

Table 2: Prevalence of poor mental health* and prevalence of recent sexual harassment among females aged 15-29 in 2009 and 2013/14, by background characteristics

	2009			2013/14		
	Prevalence of poor mental health*	Prevalence of sexual harassment in the past six months	N	Prevalence of poor mental health*	Prevalence of sexual harassment in the past six months	N
Total	26.8%	50.9%	6,072	10.3%	42.7%	4,460
Wealth quintile						
Poorest	30.2%	33.6%	1,153	11.6%	38.5%	729
Second	26.7%	44.9%	1,244	11.8%	43.3%	875
Middle	26.4%	48.0%	1,263	10.6%	45.8%	911
Fourth	24.9%	59.5%	1,263	9.7%	41.8%	899
Richest	25.9%	68.6%	1,149	8.1%	43.5%	1,046
	p = 0.047	p < 0.001		p = 0.110	p = 0.012	
Educational attainment						
None or primary	27.8%	43.5%	3,010	13.0%	35.1%	930
Secondary schooling	25.8%	55.9%	2,310	8.9%	44.5%	2,033
Higher than secondary schooling	25.4%	65.2%	752	9.3%	49.6%	1,497
	p = 0.184	p < 0.001		p = 0.002	p < 0.001	
Residence						
Urban	29.3%	62.1%	2,080	11.9%	50.0%	1,304
Rural	24.2%	41.7%	3,412	9.7%	35.5%	2,703
Informal urban settlements	32.6%	65.2%	580	9.4%	64.8%	465
	p < 0.001	p < 0.001		p = 0.104	p < 0.001	
Marital Status						
Married	25.7%	44.1%	2,762	9.7%	31.6%	2,093
Widowed, divorced, or separated	37.0%	50.7%	73	25.0%	33.8%	45
Engaged to be married	24.4%	61.4%	614	17.5%	60.0%	137
Never Married	28.1%	55.7%	2,623	9.9%	49.2%	2,185
	p = 0.021	p < 0.001		p = 0.001	p < 0.001	
Current employment						
Employed	29.0%	61.5%	556	15.7%	48.5%	357
Unemployed	25.6%	60.0%	250	13.3%	51.6%	163
Out of labor force	26.6%	49.4%	5,266	9.6%	41.7%	3,940
	p = 0.444	p < 0.001		p = 0.006	p = 0.011	
Sexual harassment						
Experienced no sexual harassment in past six months	23.8%	-	2,980	9.0%	-	2617
Experienced sexual harassment in past six months	29.6%	-	3,092	12.2%	-	1843
	p < 0.001			p = 0.002		

Table 3: Results of logistic regression models using 2009 and 2013/14 data on females aged 15-29, using poor mental health (binary) as the outcome

	2009 (N=6072)				2013/14 (N=4460)			
	Odds Ratio	P value	Conf.	Interval	Odds Ratio	P value	Conf.	Interval
Sexual harassment in past 6 months (ref. group: none)								
Experienced sexual harassment	1.37	<0.001	1.22	1.55	1.44	0.002	1.15	1.81
Current age	1.03	0.004	1.01	1.04	1.02	0.203	0.99	1.06
Wealth quintile (ref group: poorest)								
Second	0.81	0.026	0.68	0.98	1.08	0.644	0.77	1.53
Middle	0.75	0.003	0.63	0.91	1.02	0.905	0.72	1.45
Fourth	0.61	<0.001	0.50	0.74	0.96	0.843	0.67	1.38
Richest	0.57	<0.001	0.45	0.71	0.83	0.365	0.55	1.24
Current employment (ref group: employed)								
Unemployed	0.89	0.497	0.63	1.25	0.95	0.872	0.49	1.82
Out of labor force	0.93	0.497	0.76	1.14	0.61	0.008	0.42	0.88
Education group (ref group: none or primary)								
Secondary schooling	0.90	0.136	0.79	1.03	0.64	0.001	0.50	0.83
Higher than secondary schooling	0.84	0.120	0.67	1.05	0.59	0.008	0.41	0.87
Residence (ref group: urban)								
Rural	0.66	<0.001	0.57	0.77	0.78	0.071	0.61	1.02
Informal urban settlements	1.13	0.251	0.92	1.38	0.73	0.110	0.50	1.07
Marital Status (ref group: married)								
Widowed, divorced, or separated	1.48	0.118	0.91	2.42	2.42	0.031	1.08	5.38
Engaged to be married	1.01	0.928	0.81	1.27	1.95	0.017	1.12	3.37
Never married	1.23	0.013	1.05	1.44	1.10	0.544	0.81	1.48

Table 4: Results of linear regression models using 2009 and 2013/14 data on females aged 15-29, using mental health score (continuous) as the outcome

	2009 (N=6072)				2013/14 (N=4460)			
	Coefficient	P value	Conf.	Interval	Coefficient	P value	Conf.	Interval
Sexual harassment in past 6 months (ref. group: none)								
Experienced sexual harassment	0.80	<0.001	0.57	1.04	0.91	<0.001	0.66	1.17
Current age	0.07	<0.001	0.03	0.10	0.02	0.406	-0.02	0.05
Wealth quintile (ref group: poorest)								
Second	-0.37	0.045	-0.73	-0.01	0.14	0.521	-0.29	0.56
Middle	-0.54	0.004	-0.90	-0.17	-0.05	0.814	-0.45	0.36
Fourth	-0.88	<0.001	-1.27	-0.48	-0.20	0.348	-0.61	0.22
Richest	-1.25	<0.001	-1.69	-0.80	-0.19	0.366	-0.61	0.23
Current employment (ref group: employed)								
Unemployed	0.00	0.990	-0.66	0.67	-0.03	0.946	-1.02	0.95
Out of labor force	-0.08	0.691	-0.49	0.33	-0.78	0.005	-1.32	-0.24
Education group (ref group: none or primary)								
Secondary schooling	-0.27	0.039	-0.54	-0.01	-0.65	<0.001	-0.94	-0.35
Higher than secondary schooling	-0.57	0.010	-1.01	-0.14	-0.93	<0.001	-1.34	-0.53
Residence (ref group: urban)								
Rural	-1.03	<0.001	-1.31	-0.74	-0.23	0.126	-0.53	0.06
Informal urban settlements	-0.01	0.973	-0.42	0.41	0.01	0.974	-0.37	0.39
Marital Status (ref group: married)								
Widowed, divorced, or separated	1.40	0.008	0.39	2.44	1.71	0.017	0.31	3.11
Engaged to be married	0.31	0.162	-0.13	0.74	0.88	0.041	0.04	1.74
Never Married	0.51	0.001	0.20	0.83	0.02	0.869	-0.31	0.36

Table 5: Results of fixed effects regression models using 2009 and 2013/14 data on female respondents aged 15-35, using mental health score (continuous) as the outcome

	All respondents (N=5,831)				Urban/informal settlements (N=2,298)				Rural areas (N=3,543)			
	Coefficient	P value	Conf.	Interval	Coefficient	P value	Conf.	Interval	Coefficient	P value	Conf.	Interval
Sexual harassment in past 6 months (ref. group: none)												
Experienced sexual harassment	0.59	<0.001	0.31	0.87	1.1	<0.001	0.67	1.53	0.24	0.181	-0.11	0.60
Wealth quintile (ref group: poorest)												
Second	0.33	0.138	-0.11	0.77	1.28	0.004	0.41	2.16	-0.05	0.849	-0.56	0.46
Middle	0.12	0.613	-0.35	0.6	0.76	0.095	-0.13	1.64	-0.17	0.569	-0.74	0.41
Fourth	0.22	0.383	-0.28	0.72	0.62	0.193	-0.31	1.55	-0.07	0.835	-0.71	0.57
Richest	0.47	0.095	-0.08	1.02	0.69	0.232	-0.44	1.82	0.02	0.956	-0.71	0.76
Education group (ref group: none or primary)												
Secondary schooling	-0.16	0.519	-0.64	0.32	-0.14	0.705	-0.89	0.6	-0.28	0.397	-0.93	0.37
Higher than secondary schooling	-0.08	0.700	-0.5	0.33	0.04	0.909	-0.69	0.78	-0.16	0.535	-0.68	0.35
Marital Status (ref group: married)												
Widowed, divorced, or separated	1.72	0.045	0.04	3.4	2.68	0.047	0.04	5.32	1.17	0.284	-0.97	3.32
Engaged to be married	0.82	0.201	-0.44	2.07	1.45	0.116	-0.36	3.27	0.38	0.663	-1.32	2.07
Never Married	-0.04	0.878	-0.51	0.44	0.02	0.954	-0.76	0.8	-0.06	0.836	-0.66	0.54
Current employment (ref group: employed)												
Unemployed	0.63	0.177	-0.28	1.55	0.49	0.443	-0.77	1.76	0.68	0.303	-0.61	1.97
Out of the labor force	-0.14	0.616	-0.69	0.41	-0.02	0.964	-0.88	0.84	-0.21	0.562	-0.94	0.51
Year of survey (ref. group: 2009)												
Year 2013/14	-2.12	<0.001	-2.36	-1.87	-2.32	<0.001	-2.74	-1.9	-1.95	<0.001	-2.31	-1.58

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