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Research Article

Effect of Household Dysfunction and Community Violence on Mental Health in an Unrest Country

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Abstract

Objective: We set this study to estimate the relation of household dysfunction, community violence and family bonding to adults' mental health in Baghdad city.

Method: A multistage sampling technique resulted in a sample of 1000 adults (58% females, ages 18-59). Adverse Childhood experiences and family bonding were measured via a modified version of the Adverse Childhood Experiences International Questionnaire (ACE-IQ). Depression and anxiety were measured by modified versions of the Center for Epidemiological Studies Depression Scale (CESD) and the Zung Self-Rating Anxiety Scale (SAS) respectively.

Findings: The results revealed that 37.1% of the participants reported depression. Depression score correlated positively with childhood household dysfunction and community violence, and negatively with childhood bonding to family. Regression analysis revealed that adverse experiences at home and exposure to community violence predicted higher levels of depression and anxiety. Family bonding, higher levels of education, and male gender were associated with less depression and anxiety.

Interpretation: These findings imply that efforts to increase bonding and effective functioning within families may contribute to better mental health among Iraqi adults.

Introduction

Childhood Experiences like: child abuse, neglect, domestic and community violence, and serious household dysfunction can be an important source of stress that makes children suffer early in life, and may be negatively reflected on their mental health during adulthood. Child abuse is a global problem with serious life-long consequences. [1,2]. Exposure to multiple risk factors during childhood can be associated with higher rates of depression, alcoholism, cigarette smoking, substance abuse [3], and attempted suicide [4,5] It can increase the risk of attempted suicide by 2-5 fold [6].

Children exposed to domestic violence at home usually have more chance to experience physical assaults, mental humiliation and degradation, threats with guns and knives, threats of suicide, and homicide, those children tend to experience difficulties with internalized and externalized behavior problems, social skills deficits, and difficulties in school [7,8].

One of the important factors that can play a positive effect during childhood is family bonding which can strengthen the resilience during youth. It is often fostered through positive family experiences, like sitting down to family meals, participating together in picnics and recreational activities, and frequently talking about school and friends. A study of urban youth in the United States showed that children and adolescents who had strong bonding with family were more resilient to environmental risks [9-11]. Studies among Palestinian children revealed that parental love and proper discipline increase child's resilience by increasing their creativity and cognitive ability [12].

Rationale of the Study

In both human and financial terms, mental and behavioral disorders of childhood can be very costly, the disease burden of them is complex to calculate as many of these disorders can be precursors to much more disabling problems during later life including impaired lifelong physical and mental health, while the social outcomes can ultimately slow a country's economic and social development [13-15].

Current Situation in Iraq

Iraq is an example of a low income, unrest country with substantial mental health needs. It has been exposed to large-scale traumatic events since 1980. Over the past four decades a rapid demographic and epidemiological transition has occurred in Iraq. Of the total 35 million population

(estimated in 2014) [16] about one quarter live in poverty [17]. The country has also suffered from comprehensive economic sanction and continuous acts of violence. The Iraqis witnessed painful and terrible consequences of car bombing, mass violence, and military operations. In a recent study, only 40% of Iraqis responded that life is worth living [18]. The Internal Displacement Monitoring Centre (IDMC) reported that the number of internally displaced persons in Iraq has almost doubled over the last four years to at least 3.3 million, mainly due to direct threats to life (61%) and generalized violence (47%), this insecurity and violent environment negatively impact the psychosocial health of the Iraqi community, especially that of women and children [19-23]. Although there have been many reports about violence in Iraq during the years of intense conflict; disabilities and mental health trauma stemming from these events have not been widely documented [24].

Thus, the current study was conducted to figure out the relation of childhood experiences like household dysfunction and community violence to adults' mental health in Baghdad city.

Methods

Sampling

A sample of 1000 adults was collected to ensure an adequate sample size (given the limited knowledge of the prevalence of psychological problems in Iraq). The sample was collected from two main community categories; university students, and attendants of Primary Health Care Centers (PHCC) to insure more generalizability (not to compare those groups).

A multistage random sampling technique was adopted. Of the 16 health sectors of Baghdad, five sectors were chosen through a simple random sampling technique. From each of the chosen health sectors; Two to three primary health care centers were nominated using a simple random sampling technique; This resulted in a total of 13 PHCC that represent the central and peripheral sectors of Baghdad. Every fourth attendant (mostly mothers bringing their children for vaccination) was sampled. University students were also recruited through a multistage random sampling procedure via choosing three of the five universities in Baghdad, then three colleges were selected within each university, and, finally, one grade level was randomly chosen from each college. All students of that level, who were present at the time of data collection, were included in the sample. Although university sample is somewhat skewed with respect to age yet, a students' sample was selected for they are always available and willing to participate. A wide age range was planned to increase representativeness of the sample. Those less than 18 years of age were not included because they lack the sufficient time to show the impact of the childhood experiences. On the other hand, individuals age 60 years and more were not included to reduce the likelihood of recall bias.

Ethical issue

After reading a consent form that explains the purpose of the survey and the voluntary nature of participation, a verbal informed consent was obtained from each participant. The questionnaire was anonymous. The researchers explained to the respondents the aim of the research, assuring them that their responses to the questionnaire would be confidential, would only be available to researchers and would not be used for any purpose other than research.

Measures

We designed the cross-sectional study as a retrospective cohort with exposure (child experiences of household dysfunction and community violence) and family bonding treated as predictors of mental disorders (represented by depression and anxiety) [25]. The questionnaires that were adapted from established scales (developed in English), were modified by the authors and then translated to Arabic (the local language). The translation was verified through back translation of the instruments. The questionnaire included items regarding socio-demographic information, adverse childhood experiences occurring before age 16 (household dysfunction, exposure to community and collective violence and family bonding), and current symptoms of depression and anxiety.

Childhood experiences: were measured by applying a modified standardized (ACE-IQ) form [26]. The modified questionnaire was validated by a committee of senior specialists to insure the measure's predictive and content validity (and lucidity) of each question.

The original ACE-IQ consisted of 19 items, but only 14 were applied due to cultural barriers that made it difficult to inquire about sensitive items that refer to unacceptable norms like sexual assault. Those 14 items were organized into two subscales: household dysfunction and abuse (α = .76), community and collective violence (α = .73). Participants responded by indicating whether the event occurred *never, sometimes*, or *often*.

Bonding to family: was measured by a modified five items derived from an instrument by Langrange and white and from questions about relationship with parents [26,27], Responses ranged from "Strongly Disagree" to "Strongly Agree" on a four point scale. Possible responses for parental monitoring items ranged from "almost never" to "often".

Depression: Participants answered nine items derived from the Center for Epidemiological Studies Depression scale (CESD) [28, 29]. On a 4-point scale, responses ranged from not at all or less than one day to most of the time (5-7 days).

Anxiety: was measured with 12 items adapted from the Zung Self-Rating Anxiety Scale (SAS) [30]. On a 4-point scale, responses ranged from *not at all or less than one day to most of the time* (5-7 days).

Analyses

Analysis of data was carried out using the available statistical package of SPSS-22 (Statistical Packages for Social Sciences-version 22). For further analyses, response categories for the household dysfunction and collective and community violence subscales of the ACE-IQ were collapsed to never and sometimes or often.

Cronbach's Alpha reliability was measured for depression and anxiety symptoms scale (0.84).

The interpretation of correlation coefficient was as follows

The value between 0.1 to < 0.3 was considered as small association, value between 0.3 to < 0.5 was considered as moderate, 0.5 to < 0.7 was considered as large, 0.7 to < 0.9 very large, and value between 0.9 to < 1 was considered as "almost perfect" association. [31,32]. Cohen's (d) was used to estimate the effect size for independent samples t-tests [32].

Table 1: Socio-Demographic Characteristics (N=1000).

	n	%
Gender		
Female	583	58.3
Male	417	41.7
Total	1000	100.0
Age group (years)		
18-29	498	49.9
30-39	227	22.7
40-49	177	17.7
50-59	96	9.6
Total	998*	100.0
Highest level of education		
Primary school	135	13.5
Intermediate	127	12.7
Secondary	122	12.2
University/ Post graduate	615	61.6
Total	999*	100.0
Father's education		
Less than primary school	188	19.0
Primary school	201	20.3
Secondary/High school	285	28.8
University/Post-graduate	315	31.8
Total	989*	100.0

*Missing responses have been omitted from totals.

Multivariate analysis was used to measure the associations/differences between the resilient factors and demographic variables, risk factors and health status of the participants. P value of less than 0.05 was considered statistically significant. Correlations were computed between childhood experiences and adult mental health outcome: Multiple regressions were performed with the demographic variables, the home environment and family bonding as predictors, while anxiety and depression scores served as the outcomes. P value of less than 0.05 was considered as the cutoff point for statistical significance.

Results

We defined 1040 subjects to be interviewed, but 40 of them were not interesting to participate giving a response rate of 96.2 %. Women constituted 58.3% of the study sample and participants' ages ranged from 18 to 59 years (M = 32.08, SD = 11.17) (Table 1).

Frequency of adverse childhood experiences

(Table 2) shows the number and frequency of participants stating items related to household dysfunction and abuse, and exposure to community and collective violence. Common experiences included being yelled, screamed, or sworn at, insulted or humiliated (38.7%) and observing a parent or household member being yelled, screamed, or sworn at, insulted, or humiliated (46.9%). The most commonly reported community violence was seeing or hearing someone being beaten up (48 %). About three quarters (74.8 %) of the participants wanted to be the kind of people their parents were, 83.4% reported that their parents made them feel that they are trusted (Table 3).

Frequency of depression and anxiety

37.1% of the respondents reported feeling depressed. This percentage was calculated based on participants who indicated that

Table 2: Number and Percentage of Participants Reporting Household Dysfunction and Abuse and Exposure to Community and Collective Violence (N = 1000).

	n	%
Household dysfunction and abuse items (age below 16 years):		
Father died when the subject was below 16 years of age…….	104	10.4
Mother died when the subject was < 16 years old……..	21	2.1
Parents separated when the subject was <15 years of age.....	30	3
Live with a household member who was a problem drinker, alcoholic, or misused street or prescription drugs.....	133	13.3
Lived with a household member who was depressed, mentally ill or suicidal....	83	8.3
Lived with a household member who was ever sent to jail or prison.....	105	10.5
Saw or heard a parent or household member in home being yelled at, screamed at, sworn at, insulted or humiliated.....	469	46.9
Saw or heard a parent or household member in home being slapped, kicked, punched or beaten up.....	331	33.1
Saw or heard a parent or household member in home being hit or cut with an object (stick, bottle, club, knife, whip, etc.)	175	17.5
Threatened by a parent, guardian or other household member with abandonment or actually thrown out of the house	137	13.7
Yelled, screamed at, insulted, or humiliated by a parent, guardian, or other household member	387	38.7
Spanked, slapped, kicked, punched or beat by a parent, guardian or other household member	335	33.5
Hit or cut with an object such as a stick, bottle, club, knife, or whip by a parent, guardian or other household member	162	16.2
Received mistreatment that resulted in injury.	33	3.3
Community and collective violence (age below 16years):		
Exposed to bullying?	176	17.6
Saw or heard someone being beaten up in real life	483	48.3
Saw or heard someone being threatened with a knife or gun in real life	181	18.1
Forced to go and live in another place	107	10.7
Beaten up by soldiers, police, militia, or gangs	27	2.7
A family member or friend kidnapped or beaten up by soldiers, police, militia, or gangs	148	14.8
A family member or friend killed by soldiers, police, militia, or gangs	172	17.2

Table 3: Number and Percentage of Affirmative Responses to Family Bonding (N = 1000).

	n	%
Bonding to family (age below 16 years)		
Would like to be the same kind of person as his/her parents	748	74.8
Parents made participant feel trusted	834	83.4
Parents understood participant's problems and needs	775	77.5
Participants depended on their parents for advice and guidance	835	83.5
Parents encouraged participant to go to school	917	91.7
Parents spent time talking with the participants about school	805	80.5
Parents spent time talking with the participants about activities of the day and spent time playing and traveling	692	69.2
Parents knew the friends of their sons/daughters (participants)	906	90.6

Table 4: Correlations between Predictor and Criterion Variables.

	1	2	3	4	5
Depression score (/100)	1				
Exposure to community violence score (/100)	.19**	1			
Home environment (/100)	.34**	.23**	1		
Family bonding (/100)	-.42**	-.20**	-.46**	1	
Anxiety score (/100)	.77**	.15**	.30**	-.36**	1

**p < .001 (2-tailed).

they felt this way sometimes (3-4 days/week) or most of time (5-7 days). Only 15.5% of participants reported thinking "they would be better off dead" or "hurting themselves in some way." A higher percentage (35.8%) reported trouble focusing, 45.6% felt more anxious than usual, and 42% reported being easily upset. Table 4 depicts the correlations between variables. Depression scores correlated positively with household dysfunction and abuse, r (998) = .34, p < .001 and with exposure to community violence, r (978) = .19, p < .001, but negatively with family bonding, r (997) = -.42, p < .001. The multiple linear regression in table (5) shows that being in the fourth (highest) quartile of household dysfunction and abuse score is expected to significantly increase depression symptoms score by a mean of (10.4) compared to subjects with the lowest (first) quartile after adjusting other explanatory variables.

Being in fourth quartile of community violence; exposure score is expected to significantly increase depression symptoms score by a mean of (6.69) compared to subjects with the lowest quartile score after adjusting other explanatory variables (Table 4).

Being in the fourth quartile of family bonding score is expected to significantly decrease depression symptoms score by a mean of (-22.5) compared to subjects with the first quartile after adjusting other explanatory variables, being in the third quartile of family bonding score is expected to significantly decrease depression symptoms score by a mean of (-14.145) compared to subjects with the first quartile, and being in the second quartile is expected to significantly decrease depression symptoms score by a mean of (-8.002) compared to subjects with the first quartile.

Being a male is expected to significantly decrease depression symptoms score by a mean of (-11.359) compared to females. Father's education and mother's education showed statistically insignificant association with the mean score of depression.

When depression scores were regressed on gender, educational attainment, father's education, mother's education, household dysfunction and abuse, exposure to community violence, and family bonding, 27% of the variance was explained. Significant predictors included female gender, mother's education, household dysfunction and abuse, exposure to community violence, and (low) family bonding (Table 5).

Table 5: Multiple linear regression model with score of depression symptoms (/100) as dependent variable and selected explanatory (independent) variables.

	Partial Regression Coefficient	*P*	Standardised Coefficient
(Constant)	53.288	<0.001	
Household dysfunction and abuse score			
Fourth quartile compared to first (lowest) quartile	10.353	<0.001	0.188
Third quartile compared to first (lowest) quartile	2.638	0.15 [NS]	0.055
Second quartile compared to first (lowest) quartile	3.559	0.14 [NS]	0.049
Community violence exposure score			
Fourth quartile compared to first (lowest) quartile	6.969	0.002	0.115
Third quartile compared to first (lowest) quartile	4.596	0.03	0.075
Second quartile compared to first (lowest) quartile	3.354	0.06 [NS]	0.065
Bonding to family score			
Fourth quartile compared to first (lowest) quartile	-22.504	<0.001	-0.4
Third quartile compared to first (lowest) quartile	-14.145	<0.001	-0.264
Second quartile compared to first (lowest) quartile	-8.002	<0.001	-0.151
Male gender compared to females	-11.359	<0.001	-0.239
Age of the participants	-0.152	0.036	-0.072
Educational level of study subject			
University/Diploma/Higher education compared to less than secondary school	-2.861	0.13 [NS]	-0.059
Secondary school compared to less than secondary school	2.333	0.34 [NS]	0.032
Educational level of father			
University/Diploma/Higher education compared to less than secondary school	-2.148	0.32 [NS]	-0.043
Secondary school compared to less than secondary school	-3.395	0.07 [NS]	-0.065
Educational level of mother			
University/Diploma/Higher education compared to less than secondary school	3.576	0.13 [NS]	0.06

P (Model) <0.001, R^2 = 0.26

Table 6 (A): Multiple Linear Regression with Score of Depression Symptoms as the Criterion and Demographic and Childhood Experiences as Predictor Variables.

	Un-standardized Coefficients		Standardized Coefficients	*p*
	b	S.E	Beta	
(Constant)	58.166	3.638		.000
Gender	-10.950-	1.389	-.229-	.000
Highest level of education completed	-1.083-	.881	-.040-	.219
Education of father	-.385-	.796	-.018-	.629
Education of mother	1.583	.789	.077	.045
Score of home environment ACEs (/100)	.328	.057	.191	.000
Score of exposure to community violence (/100)	.150	.035	.133	.000
Score of parental bonding (/100)	-.365-	.035	-.333-	.000

$R^2 = 0.27$

Table 6 (B): Multiple Linear Regression with Score of Anxiety Symptoms as the Criterion and Demographic and Childhood Experiences as Predictor Variables.

Model	Un-standardized Coefficients		Standardized Coefficients	*P*
	b	S.E	Beta	
(Constant)	52.676	3.478		0
Gender	-13.048-	1.327	-.292-	0
The highest level of education completed	-.718-	0.842	-.029-	0.394
Education of father	-.097-	0.76	-.005-	0.899
Education of mother	0.549	0.754	0.029	0.467
Score of home environment ACEs (/100)	0.294	0.054	0.184	0
Score of exposure to community violence (/100)	0.129	0.034	0.123	0
Score of family bonding (/100)	-.281-	0.034	-.274-	0

$R^2 = .24$

Anxiety scores correlated positively with depression, r (997) = .77, p < 001, with adverse childhood experiences in the home, r (997) = .30, p < .001, and with exposure to community violence, r (977) = .15, p < .001. Like depression scores, anxiety negatively correlated with family bonding, r (996) = -.36, p < .001. When anxiety scores were regressed on gender, educational attainment, father's education, mother's education, household dysfunction, exposure to community violence, and family bonding, 24% of the variance was explained. Significant predictors of anxiety included female gender, adverse childhood experiences at home, exposure to community violence, and low family bonding (Tables 6A & 6B).

Discussion

Symptoms of depression and anxiety were highly correlated and both were predicted by household dysfunction and abuse, as well as by exposure to community violence. The findings are consistent with epidemiological studies that provided evidence on an association between childhood experiences and a dramatic increase in the risk of depression and anxiety in adulthood [33,34].

The prevalence of emotional abuse (38.7%), physical abuse (33.5%) and exposure of mother or a household member to violence through verbal (46.9%) or physical punishment (33.1%) was higher than what had been reported in a study in U.S. where the rates of emotional abuse, physical abuse, and exposure of a household member to violence were 10.6%, 28.3%, and 12.7%, respectively [35]. Our rates were lower than those reported in Albania [36], Peru, and Bangladesh [1].

More than one third of the participants reported symptoms of depressed mood, and 15.5% reported thoughts that they would be better off dead or that they might hurt themselves in some way. This finding is higher than the rate reported by female heading household in Baghdad, which was only 8.6% [37]. A recent study in Iraq revealed that suicidal thoughts are not uncommon among the Iraqi population (especially women) as a consequence of the continuous stress they are experiencing [38].

Although more than one third of the participants have symptom of depressed mood, anxiety was shown to be more common than depression, this is consistent with the Iraq Mental Health Survey (IMHS) which revealed that anxiety was the most prevalent mental disorder (13.8%) followed by mood disorders (7.5%) [39].

The results showed that adverse experiences both within and outside the home significantly predicted depression and anxiety in adulthood. The experiences of household dysfunction and abuse ranged from unpleasant, acts of conflict, threats, or neglect (physically or emotionally). These experiences are consistent with those reported in other studies [40,41].

The results also suggested that family bonding during childhood may serve as a protective function against depression and anxiety in adulthood. This finding is consistent with previous literatures that demonstrated that low family bonding was associated with higher levels of depression and anxiety during adulthood [42,43].

The Multivariate analysis showed that the magnitude of depression and anxiety symptoms scores significantly and progressively increases with increase household dysfunction-abuse mean score, there is a moderately positive linear correlation between depression symptoms and anxiety symptoms scores with score of household dysfunction and abuse; this result agrees with other studies that provided strong evidences on the association between adverse childhood experiences during childhood such as abuse, neglect or loss, and increase in the risk of depression and anxiety in adulthood [33,34].

The multiple linear regression models revealed that family bonding is the most important determinant (protective) factor to the risk of development of depression and anxiety later on in life, there is an inverse graded relationship between mean score of family bonding with mean scores of depression and anxiety symptoms, this is inconsistent with a study of Herrenkohl et al. in which the multivariate results showed that family conflict is the strongest and most consistent predictor of adult mental health and substance use classes [11]. This could be attributed to the differences in the socio-demographic characteristics.

Age, father's education and mother's education showed no significant association with mean score of depression or anxiety indicating that these factors have no remarkable effect on mental health, while the mean score of community violence exposure was significantly higher among males, which means that men reported a higher exposure to traumatic events than women, yet, they reported lower rates of depression and anxiety. These findings are consistent with overall gender differences in depression and anxiety in previous studies [33,44]. Women in Iraq are exposed to greater psychological stress than men, given that they are less empowered, they also play

the central role in nurturing the family; this responsibility increases when the husband is killed or imprisoned (a situation that is common in Iraq since the 2003 invasion). Moreover, women are more often victims of domestic violence.

Limitations

The data were retrospective and based on self-report. Thus, in addition to either over- or under-reporting of psychological disorders by participants, causality could not be inferred given the study's correlational design. Some confounders could not be evaluated especially that the Iraqis are expected to be depressed as a result of prolonged insecurity, but as this is generalized for the whole sample, we assume that its effect has been diluted.

The sample was somehow biased by including limited groups (students, and PHCC clients), and the security concerns within the country made conducting a house-to house-survey or working in rural areas extremely difficult.

Another limitation was the gender discrepancy in that women comprised a larger proportion of college students and PHCCs clients. This could be attributed to the general demographic shift in Iraq, as violence was a leading cause of death in men [45].

Finally, the lack of standard Iraqi scales to measure the psychological disorders and absence of medical registrations for Iraqi populations were significant obstacles.

Conclusion

Higher levels of exposure to household dysfunction and abuse are associated with symptoms of mental disorders in adulthood. Community violence exposure during childhood was also associated with symptoms of depression and anxiety among adults. Family bonding during childhood was shown to be a protective factor that was associated with less mental disorders in adulthood.

Interventions that target the strengthening, functioning, and mutual bonding of families are needed to aid in mitigating mental health problems among Iraqis. School-based programs that aim to promote adolescent mental health, protecting children from physical harm may be useful to promote good family interactions.

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