Community violence and mental health among Iraqi women, a population-based study
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ABSTRACT
Background: The recent events in Iraq following the 2003 war render Iraq as a country with a high level of all types of violence. Exposure to violence, as a witness or a victim, is related to a number of longer term emotional, behavioral and social problems.
Objectives: To investigate the impact of witnessing and experiencing community violence and tragedy as a factor contributing to mental health disorders among Iraqi women in the city of Mosul.
Methods: A population-based cross-sectional study of 500 women were selected by a multi-stage random sampling technique. Four catchment areas of primary health centers of Mosul city were selected. Community violence with nine commonly associated social, economic, emotional, physical and mental health symptoms were recorded by questionnaire.
Results: The study revealed that all the participating women had a history of exposure to at least one type of community violence within the last twelve months. A mainstream consequence of exposure to community violence was transportation difficulties, loss of husband's job, and family displacement. More than half of the women were classified as having severe emotional disturbances that may evolve to mental health problems in future.
Conclusion: Women are bearing the consequences of the violence in Iraq. National commitment and action needs to be taken to curb the violence which is hugely affecting the people of Iraq. Treatment programs targeted at promoting emotional resilience may be effective at preventing mental health problems.

Keywords: mental health, community violence
INTRODUCTION

Violent and destructive behavior have always existed and will always exist on earth. The recent events in Iraq after the 2003 war render Iraq as a country with a high level of all types of violence. Most of the Iraqi citizens have witnessed or experienced at least one consequence of community violence. The sectarian conflicts and factionalism led to the emergence of new forms of violence against women that are threatening Iraqi women's rights to security, mobility, access to healthcare and education, as well as employment.\(^1\)

Violence can be defined as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation. Community violence is defined as exposure to acts of interpersonal violence committed by individuals who are not intimately related to the victim, and who may or may not know each other (acquaintances and strangers). It generally, but not always, takes place outside the home in public places.\(^2,3\)

Exposure to violence, as a witness or a victim, is related to a number of longer term emotional, behavioral and social problems, including mental health symptoms.\(^4,5\) The objective of this study was to investigate the impact of exposure to community violence and tragedy as a factor contributing to mental health disorders among Iraqi women in Mosul city.

METHODS

A population-based cross-sectional study was conducted during the period from June through to December 2012. A total sample of 500 women aged 18 years and above were selected by a multi-stage random sampling technique. Men were excluded from the study as the focus was on identifying the effect of community violence exposure among women in Iraq. There were also no male members in the research team which would have made it difficult interviewing male participants.

Four catchments areas of primary health centers from the right and left health sectors of Mosul city (two PHCCs from each sector) were chosen by a simple random technique which was thought to be representative of other neighborhoods in Mosul.

Systematic random sampling was used for the selection of households that would be approached by including every other house until a total of 25 houses were recorded in a residential street. A team of well-qualified female doctors that were trained under the supervision of a psychiatrist and according to the questions and scope of the questionnaire, were required to carry out direct face-to-face interviews with household adult females that were eligible for inclusion in the study.

The interviewer started the interview by introducing themselves to the participants, explaining the aim of the study, getting their verbal consent, and assuring them that the information would be kept strictly confidential and used only for research purposes. The interviewers conducted the interviews during the afternoon to guarantee the availability of the women. Any homes that were found to be unoccupied or with no adult females present when initial visits were made were excluded from the study. Return visits were not made for security reasons.

Women were primarily asked if they had witnessed or been exposed to various forms of community violence within the last twelve months such as witnessing death, injury, use of weapons or bodily intimidation; hearing violent events such as gun shots or screams, gang shootings, bombings, street muggings; or having knowledge of, or hearing the victimization of someone close to them.

A simple questionnaire form was designed to collect data of women's exposure to violence and the consequences this had on them. The questionnaire consisted of three sections: socio-demographic information; history of recent exposure to community violence (with nine common social, economic and situational consequences of that violence – transportation obstacles, loss of the individuals job, loss of husband's job, job loss of other family members, loss of husband, loss of a member of the household or close relative loss, handicap of a member of the household, harm to the household, displacement of the family) and the third part of the questionnaire contained questions on emotional, physical and mental health symptoms experienced 30 days prior to the study.

The third part of the questionnaire consisted of 20 yes or no questions which was adapted from the self-reported questionnaire 20 items (SRQ 20), English version that was recommended by the WHO, 1994 with a sensitivity of 73% and specificity of 82%.\(^6,7\)
The questionnaire (SRQ 20) has been translated and modified; a modified Angoff procedure was used to assess the validity of each point of the study instrument.\(^8\) For this purpose, the format was locally validated by a team of five experts in the fields of community medicine and medical psychology who gave their opinions about the coverage (predictive) validity of the questionnaire, lucidity of the content and the authenticity of each question in measuring the event. The overall validity value was 88%.

This tool was tested in a pilot study on 25 female participants not included in the study sample and was conducted to assess the suitability of the questionnaire to suit the cultural context and language. The questionnaire consisted of 20 yes/no questions. Women that had experienced less than eight symptoms in the past four weeks were classified as having mild emotional disturbances according to the classification of a similar study in Chile.\(^9\) Eight or more symptoms classified women as having severe emotional disturbances.

Absolute, relative and cumulative frequencies were computed. Chi square analysis was used to test the effect of demographic variables e.g. age, marital status, occupation and types of habitation on development of various fears and other principal somatic experiences among respondents after exposure to violence. A p-value below or equal to 0.05 was considered to be statistically significant. Odds ratios with 95% confidence intervals was used to test the effect of incidents of witnessing community violence as a risk factor for the development of mild or severe emotional symptoms. Data was analyzed using Statistical Package for Social Sciences (SPSS Inc, version 11 Chicago, IL, 1999).

**RESULTS**

The response rate was 100% as all the women that were approached agreed to participate in the study. The results revealed that 33.8% of women were in the age group of 18 – 24 years, 24% were between 25 – 34 years, 19.8% were between 35 – 45 years and 22.4% were 45 years or above. The majority of the women were married 58.4%, and singles made up 32.6% of the sample. Widowed and divorced women formed only 8.8% of the sample collectively. Of the sample, 57.2% were housewives, 51.2% own their own homes, 22.4% rent, 16.6% live with relatives, 7.8% live in a residential compounds and 2% were found to live in factories and schools (Table 1).

The results revealed that all the women (500) had a history of exposure to at least one type of community violence within the last twelve months (not tabulated). Figure 1 indicates that a mainstream consequence of exposure to community violence among respondents was transportation obstacles (75%) which resulted in 15% losing or having to leave their jobs. About one-half reported that the job of the breadwinner or husband had been lost. Up to 23% of respondents experienced the loss of their husbands, partners, a member of their household, or a close relative. One-third of women had suffered the harm...
and crippling of a member of their household or a close relative, and 26% of were affected by family displacement.

The study found that almost all respondents had experienced at least two or three symptoms of emotional disturbance. With a cut-off point of eight, more than half of the sample (54.4%) were classified as having severe emotional or health disturbances (including psychological disorders). Fear was the principal disturbance reported among the women, such as: fear from going outside (77.8%), fear of being unsafe at home (63.8%), fear of the future (76.8%) and insecurity (80.6%).

Other commonly reported disturbances included appetite disturbances (either loss or increasing appetite) and fatigue both 64.4%, sleep disturbances (55.2%), headaches 55%, GIT upsets 44.4% and disturbing thoughts 43%. This was followed by 41.2% of women reporting deprivation related to economic or insecurity issues. Around one-quarter of women in the study sample reported having had a desire to die at some point (Table 2).

Table 3 shows the type of fears reported from women in the study. There was an increased feeling of fear from going outside recorded among young women in the age group of 18 – 24 years, while women >45 years of age experienced significantly increased fear of the future and a feeling of insecurity (X2 = 35.1, P = 0.000). The same Table shows that employed women were more likely to experience fear from going outdoors and insecurity than housewives and others (X2 = 26.9, P = 0.000). There was no significant association between types of fears related to marital status and types of habitation.

Table 4 highlights the significant increase in the frequency of appetite disturbances, GIT upsets and even the desire to die with increasing age of the study sample >45 years (X2 = 18.5, P = 0.030). The frequency of somatic symptoms was significantly higher among the widowed and to a lesser extent the divorced, in comparison to single and married women in private work as well as those in rented homes (X2 = 51.4, P = 0.000; X2 = 23.4, P = 0.001; X2 = 29.5, P = 0.003 respectively).

Table 5 shows a significant association between the severity of emotional conflicts and the frequency of the consequence resulting from exposure to various types of community violence such as transportation.

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**Table 2. Major complaints reported within the last 30 days among Iraqi women.**

| Complaints                                      | No. (500) | %   |
|------------------------------------------------|-----------|-----|
| Fear from going outdoors                        | 398       | 77.8|
| Feeling unsafe at home                          | 319       | 63.8|
| Fear of the future                              | 384       | 76.8|
| Worry and insecurity                            | 403       | 80.6|
| Headache                                        | 275       | 55.0|
| Appetite disturbance                            | 322       | 64.4|
| Sleep disturbance                               | 276       | 55.2|
| Hand cowering                                   | 117       | 23.4|
| GIT upsets                                      | 222       | 44.4|
| Disturbed thinking                              | 215       | 43.0|
| Tendacies to cry                                | 205       | 41.0|
| Inability to make decisions                     | 179       | 35.8|
| Fatigue                                         | 322       | 64.4|
| Feeling of hopelessness                         | 177       | 35.4|
| Loss of self confidence and value               | 214       | 42.8|
| Death wishes                                    | 120       | 24.0|
| Feeling sad                                     | 134       | 26.8|
| Stress                                          | 143       | 28.6|
| Deprivation                                     | 206       | 41.2|
| Women with more than seven emotional complaints | 272       | 54.4|
| Conjugal problems                               | 64        | 12.8|
| Visits to a psychiatrist                        | 17        | 3.4 |
| Exposure to domestic violence                   | 63        | 12.6|

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obstacles, loss of job, loss of husband, loss of a member of the household or close relative and even conjugal problems. Loss of a husband’s job was strongly associated with the development of severe emotional disturbances (OR = 4.3378, 95% CI = 2.8253–6.6599). The same is also observed with the loss of a job of any other member of a household (OR = 3.1181, 95% CI = 1.8897–5.1451), followed by the effects as a result of family displacement (OR = 2.0924, 95% CI = 1.3783–3.1764). No significant associations were found for emotional disturbances and the disability of a member of the household or close relative, a visit to a psychiatrist and exposure to domestic violence, which was controlled for any possible confounding factors.

**DISCUSSION**

Few studies relate the experiences of women that are exposed to community violence in Iraq and the effect this has on their mental health. Damage to women’s confidence and the insecurity felt as a consequence of the violence will damage their productivity in society and will negatively impact further development in the Iraqi community. Understanding the risk and protective factors related to women’s mental health problems is important for improving the well-being of mothers and their children.\(^{(10)}\)

Iraq has been exposed to a long severe course of violence through the successive wars, the civil war, and the repeated waves of terrorism. Mosul is the center of the Nineveh governorate which is the second largest Iraqi governorate. It was chosen for this study as it is considered a hot spot for violence in Iraq.

All the women of the study sample reported having been exposed to community violence either directly or indirectly by hearing at least one form of community violence such as gun shots, bombings,

| Table 3. Types of fears according to the age and social status of the study sample. |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Groups                         | Total 500 | Fear of going outside (%) | Fear in (%) | Fear of the future (384) | Insecurity (403) | P-value         |
| – 18 – 24                      | 169      | 92.9                          | 45.6                      | 55.0                      | 60.9                      | X² = 35.1 D.F. = 9 P = 0.000 |
| – 25 – 34                      | 120      | 72.6                          | 62.5                      | 75.0                      | 80.8                      |                  |
| – 35 – 45                      | 99       | 88.9                          | 79.7                      | 91.0                      | 94.0                      |                  |
| – > 45                         | 112      | 66.0                          | 78.6                      | 99.1                      | 98.2                      |                  |
| Marital status                 |          |                               |                           |                           |                           |                  |
| – Married                      | 293      | 73.3                          | 62.8                      | 72.0                      | 76.5                      | X² = 2.79 D.F. = 9 P = 0.972 n.s |
| – Single                       | 163      | 85.9                          | 59.6                      | 79.1                      | 85.2                      |                  |
| – Widowed                      | 33       | 97.0                          | 81.9                      | 100.0                     | 91.0                      |                  |
| – Divorced                     | 11       | 100.0                         | 100.0                     | 100.0                     | 91.0                      |                  |
| Occupation                     |          |                               |                           |                           |                           |                  |
| – Housewives                   | 286      | 71.3                          | 60.9                      | 65.3                      | 92.0                      | X² = 26.9 D.F. = 6 P = 0.000 |
| – Employed                     | 165      | 91.6                          | 67.9                      | 95.1                      | 63.0                      |                  |
| – Others                       | 49       | 87.8                          | 67.3                      | 81.7                      | 73.4                      |                  |
| Types of habitation            |          |                               |                           |                           |                           |                  |
| – Home owned                   | 256      | 92.6                          | 72.2                      | 81.2                      | 90.2                      | X² = 11.2 D.F. = 12 p = 0.514 |
| – Rented home                  | 112      | 61.7                          | 67.9                      | 78.6                      | 81.2                      |                  |
| – Living with relatives        | 83       | 68.6                          | 42.1                      | 61.4                      | 59.9                      |                  |
| – Residential compound         | 39       | 69.2                          | 46.1                      | 79.4                      | 74.3                      |                  |
| – Schools or factories         | 7        | 100.0                         | 71.4                      | 85.8                      | 42.9                      |                  |
street muggings, skirmishes, intimidation and murder within the last twelve months. This exposure to violence is much higher than that reported in lower-income urban areas in the USA, of which the prevalence of witnessing community violence (WCV) amongst urban populations is considered striking.\(^{(11)}\)

An American cohort study found the majority of participants (57%) were exposed to violence greater than twelve months before the study interview, and 19% witnessed events within twelve months of the study.\(^{(12)}\)

The unclear prospect of Iraq's future has resulted in fear among many of the women in the study (76.8%) which is a higher figure than that reported in Egypt (37%).\(^{(13)}\) The cause of which may be attributed to the financial instability of the country and the frequent danger and threat posed to people's daily life. The high frequency of tragic events in Iraq was found to have had a serious impact on the women sampled in this study, with more than half (54.4%) having suffered from severe emotional or heath disturbances which may include psychological and mental disorders. Along with this, 80.6% of the women felt worried and insecure; this insecurity felt inside the home was identified in 63.8% and 77.8% when outside the home, primarily due to the lack of confidence in the security forces.

Fear of crime has been found to limit mobility or activity in a neighborhood which inhibits social interactions.\(^{(14)}\) The current study found that fear from going outside was more prominent among the younger age group of women (18 – 24 years) which may be due to fear of witnessing various types of community violence including intimidation or sexual assaults. A study in London found that neighborhood crimes cause fear, stress, a feeling of being unsafe, and poor mental health. Moreover, the participants who reported feeling unsafe when going out during the day were 64% more likely to be in the lowest quartile of mental health.\(^{(15)}\)

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### Table 4. Distribution of certain somatic reactions according to age and social status.

| Groups           | Total (500) | Appe. dist (322) | GIT upset (222) | Headache (275) | Death wishes (12) | P-Value |
|------------------|-------------|------------------|-----------------|----------------|------------------|---------|
| 18-24            | 169         | 29.5             | 18.3            | 27.2           | 6.0              | \(X^2 = 18.5\) D.F. = 9 P = 0.030 |
| 25-34            | 120         | 64.1             | 36.7            | 54.1           | 20.9             |         |
| 35-45            | 99          | 95.0             | 55.6            | 87.9           | 32.4             |         |
| >45              | 112         | 90.1             | 82.1            | 68.8           | 47.3             |         |

Marital status

| Married          | 293         | 79.1             | 43.3            | 51.6           | 27.0             | \(X^2 = 51.4\) D.F. = 9 P = 0.000 |
| Single           | 163         | 33.1             | 36.1            | 50.3           | 5.0              |         |
| Widowed          | 33          | 84.9             | 81.9            | 94.0           | 75.8             |         |
| Divorced         | 11          | 72.8             | 81.9            | 63.7           | 72.8             |         |

Occupation

| Housewives       | 286         | 54.5             | 31.5            | 51.0           | 18.5             | \(X^2 = 23.4\) D.F. = 6 P = 0.001 |
| Employed         | 165         | 79.4             | 60.0            | 54.0           | 22.5             |         |
| Others           | 49          | 71.5             | 67.4            | 81.4           | 61.3             |         |

Type of habitation

| Home owned       | 256         | 71.5             | 38.7            | 55.6           | 23.9             | \(X^2 = 29.5\) D.F. = 12 P = 0.003 |
| Rented home      | 112         | 73.2             | 77.7            | 79.5           | 33.0             |         |
| Live with relatives | 83      | 56.7             | 37.3            | 38.6           | 14.5             |         |
| Residential compound | 39      | 18.0             | 5.1             | 28.2           | 12.9             |         |
| Schools or factories | 10      | 30.0             | 30.0            | 10.0           | 50.0             |         |
Table 5. Association of emotional disturbances and history of various consequences experienced from exposure to community violence among women in the study sample.

| Consequences of community violence | Total | Severe emotional disturbance | % | Mild emotional disturbance | % | OR | 95% CI |
|-----------------------------------|-------|-----------------------------|---|---------------------------|---|----|-------|
| Transportation obstacles          | 375   | 213                         | 56.8 | 162                      | 43.2 | 1.4708 | 0.9797–2.208 |
| Loss of job                       | 77    | 42                          | 54.5 | 35                       | 45.5 | 1.007 | 0.6183–1.6399 |
| Loss of husband's job             | 158   | 122                         | 77.2 | 36                       | 22.8 | 4.3378 | 2.8253–6.6599 |
| Job loss of another member of the family | 113 | 78                          | 69.5 | 35                       | 30.5 | 2.2171 | 1.4197–3.4625 |
| Loss of husband                   | 30    | 19                          | 63.5 | 11                       | 36.5 | 1.481 | 0.6898–3.1818 |
| Loss of a member of the household or close relative | 87 | 56                          | 64.6 | 31                       | 35.4 | 511.6476 | 1.0201 to 2.661 |
| Disability of a member of the household or close relative | 65 | 35                          | 53.5 | 30                       | 46.5 | 0.9747 | 0.5778–1.6442 |
| Harm inflicted on a member of the household | 97 | 73                          | 75.5 | 24                       | 24.5 | 3.1181 | 1.8897–5.1451 |
| Displacement of the family        | 132   | 89                          | 67.4 | 43                       | 32.6 | 2.0924 | 1.3783–3.1764 |
| Conjugal problems                 | 64    | 43                          | 67.2 | 21                       | 32.8 | 1.8509 | 1.063–3.2229 |
| Visit to a psychiatrist           | 17    | 2                           | 11.8 | 15                       | 88.2 | 0.1052 | 0.0238–0.4651 |
| Exposure to domestic violence     | 63    | 31                          | 46.0 | 32                       | 54.0 | 0.7879 | 0.4644–1.3368 |
The loss of self-confidence of women sampled in this study was considered to be one of the most significant issues identified (42.8%) which carries with it a dangerous implication for the progress of the Iraqi society. Low self-esteem can affect quality of life, impact on career success and productivity of women who are believed to be psychologically distressed and perhaps even depressed. (16)

Positive responses to questions on fear of the future, feelings of insecurity and various somatic problems such as an upset GIT and appetite disturbances were raised with the increasing age of women. Similar results were found in the Iraqi family health surveillance (IFHS) (17) which was conducted by the Iraqi Ministry of Health in cooperation with the WHO in 2006. This survey found that all types of emotional disturbances studied among the sample of Iraqi women were positive among age groups of more than fifty years. The same survey found that 40.4% of Iraqi women suffered from severe mental health distress (more than seven emotional disturbances). (17) The elevated figure detected in the present study (54.4%) may be due to time differences and cohort effect of increased exposure to a variety of community violence.

The risk of severe emotional disturbances was significantly higher among women whose husbands' lost their job as a consequence of exposure to current violent events (OR = 4.3378, P = 2.8253- 6.6599), poor security and economic situation. The same was reported in a study conducted in Paraguay where unemployment amongst women's partners was found to simultaneously increase their risk for poor mental health by increasing the financial stress in their households. (18)

The higher frequency of women losing a husband, a member of the household or a close relative as a result of murder, assassination or other violence, was also significantly associated with severe emotional disturbances. Family displacement as a result of sectarianism and threats of ransom that lead to migration to seek a better life however was significantly associated with a higher risk of severe emotional distress among the study sample.

Women with severe emotional disturbances were identified as having significantly increased conjugal struggles with their spouses and struggles with other family members more than those not suffering from any emotional disturbances. This may be due to anger, a natural emotion as a result of exposure to violence. Intense feelings of anger and aggressive behaviour however can cause problems with family, friends, or co-workers. For this reason, getting help is very important for improving mental health.

The study found that 54.4% of the sample suffered from severe emotional disturbances yet, only 3.4% of them had attempted to visit a psychiatrist. This may be due to the stigma attached to seeking psychiatric help as it is perceived a sensitive issue for discussion in the conservative Iraqi society. Poor education, economic and security levels are all factors that result in women being unaware of the need to seek medical or psychiatric help.

Wishing death was another major emotional disturbance reported by 24% women in the study in comparison with that in IFHS, (17) where the positive answer for the question; “do you have the desire to die”, was 4% for Iraqi women in 2006. This large difference in the findings could be due to the dissimilarity in the format of the question and time difference between both studies. In Britain however, despite the better standard of living and level of security, it was reported in one study that 8% of women have suicidal ideations. (19)

CONCLUSION

It can be concluded from this study that women are bearing the consequences of the daily violence they are being exposed to in Iraq. Transportation difficulties, loss of a husband's job, and family displacement were identified as prominent issues of most women in the study. The increased incidence of exposure to various community violence was significantly associated with the development of more severe mental health disturbances. National commitment and action needs to be taken to curb the violence which is hugely affecting the people of Iraq. Treatment programs targeted at promoting emotional resilience may be effective at preventing mental health problems.

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