

Evaluation of Anxiety and Depression Among Female Spouses of Iranian Male Drug Dependents

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Received: June 30, 2014; Revised: August 24, 2014; Accepted: October 1, 2014

Background: Existing evidences suggest the more vulnerability of spouses of drug dependents, in exposure to mental disorders.

Objectives: This study aimed to evaluate the associated parameters of anxiety and depression among female spouses of male drug dependents.

Patients and Methods: With a cross-sectional design in 2010, a total of 237 Iranian women were selected and divided into three groups: 1. non-drug-dependent wives who had non-drug-dependent husbands (Group I), 2. non-drug-dependent wives who had drug-dependent husbands (Group II), and 3. drug-dependent wives who had drug-dependent husbands (Group III). Socio-demographic characteristics were collected by a checklist, and the levels of anxiety and depression were measured through the Hospital Anxiety and Depression Scale (HADS). Linear regression was applied for determination of anxiety and depression predictors.

Results: Mean age of the participants was about 35 years, and mean duration of marriage was 14 years. Drug dependence of the husband ($P = 0.010$) and lower monthly income of the family ($P = 0.007$) predicted the higher level of anxiety among the participants, while older age ($P = 0.031$), shorter marital duration ($P = 0.016$), and lower educational level ($P = 0.045$) in addition to spousal drug dependence ($P = 0.023$), and lower family income ($P = 0.014$) were significantly associated with higher levels of depression.

Conclusions: Findings of the present study demonstrate that spousal drug dependence and lower monthly income were common predictors of anxiety and depression among spouses of drug dependents in Iran, while older age, shorter marital duration and lower educational level were predictors of depression. However, more research is needed to find casual relationships between spousal drug dependence and mental health in Iran.

Keywords: Mental Health; Anxiety; Depression; Spouses; Drug Users

1. Background

Although positive impact of marriage on better health and decreased risk taking (such as substance use) among couples has frequently been suggested in the literature, possibly due to the involved socio-cultural norms (1, 2), some existing theories have also pointed to its likely negative effects. In this regard, Stein et al. suggested that if one side of the couples has a health behavior problem, it is possible that the other side has the same problem as well (3). In line with this suggestion, Siegel et al. suggested that having a spouse with more depressive symptoms is significantly associated with higher follow-up depressive symptoms among couples (4). Homish et al. also believed that addition of a new adult role (such as spouse, parent, or etc.) might lead to more stress, and consequently substance use among couples (5). Therefore, it seems that the positive and negative impact of marriage on mental, physical, and behavioral health outcomes of individuals is still a subject of debate. The possible relationship between drug dependence and psychological well-being

seems to be clear. Firstly, numerous clinical and biological studies have suggested a higher prevalence of mental disorders among substance dependents (6-8). For instance, "higher risk of delayed diagnosis, more severe psychopathological symptoms, less compliance with treatment, poorer effects of treatment, more impairment of social functioning, increased admissions to emergency departments, higher prevalence of physical comorbidity, and suicidal ideation" as well as unemployment, homelessness, and involvement in violent or criminal behavior are among parameters which have been suggested to justify the higher frequency of comorbid mental disorders among narcotic substance abusers (9). Secondly, higher rates of substance abuse have been suggested among people with serious mental disorders (10, 11). Although anecdotal circumstances demonstrate the possible association between drug use and mental disorders, it should be considered that mental problems are not restricted to drug users, and might also influence their family mem-

bers as well (12-14). The existing socio-cultural situation has made drug dependence a highly stigmatized activity in Iran (15-17), and consequently has totally restricted access to drug users in this country, and has also made their family members a hidden population. In 2010, Jamilian et al. conducted a controlled study to evaluate mental status of mothers and wives of Iranian male drug users (14). Despite the local setting, and different samples and measures from our study, they found significantly higher hypochondriasis, psychopath deviation, paranoia, psych asthenia, schizoid, and F scales amongst spouses of drug dependents, compared with the control group. However, to the best of our knowledge this is the only study evaluating mental health status of females with drug dependent husbands in Iran. Overall, more vulnerability, lack of available data and inevitable maternal role in the society has persuaded us to design and conduct the present study to evaluate anxiety and depression among women with drug dependent husbands in Iran.

2. Objectives

This study aimed to evaluate the associated parameters of anxiety and depression among female spouses of male drug dependents.

3. Patients and Methods

3.1. Design and Setting

During the year 2010, this cross-sectional study was designed and conducted to evaluate the associated parameters of anxiety and depression among three groups of Iranian women including: 1) non-drug-dependent wives who had non-drug-dependent husbands, 2) non-drug-dependent wives who had drug-dependent husbands, and 3) drug-dependent wives who had drug-dependent husbands, in Tehran, Iran.

3.2. Participants and Sampling

One hundred and four non-drug dependent women who had non-drug dependent husbands were sampled from blood donor centers of Tehran, through the random sampling method (Group I). The included women had been married for at least two years, while those with shorter marital duration, serious chronic conditions or mental health problems before marriage, and/or a history of drug dependence were excluded from the study. Participants of the other groups included 121 non-drug dependent women who had drug dependent husbands (Group II), and 12 drug dependent women who had drug dependent husbands (Group III), who were also selected from addiction treatment centers through the random sampling method (RSM).

3.3. Ethical Procedure

An informed consent was obtained from all partici-

pants, after they were verbally assured about the confidentiality of their information. All the utilized checklists and questionnaires were anonymous. The ethical committee of the University of Social Welfare and Rehabilitation Science, Tehran, Iran approved the present study.

3.4. Research Instruments

In this study a checklist was used to measure socio-demographic characteristics of the participants including: age, marital duration, educational level, occupation, monthly family income, and having children. The Hospital Anxiety and Depression Scale (HADS) is a standard questionnaire with 14 questions, which was used to measure the level of anxiety and depression among the participants of this study. Higher scores demonstrated higher levels of anxiety and depression among the participants (18). The validity and reliability of the questionnaire were also checked by other researchers from Iran (19, 20).

3.5. Statistical Analyses

The obtained data were processed using the Statistical Package for Social Sciences (SPSS Inc, Chicago, IL, USA) version 13 for Windows. The chi-square test was used to compare the qualitative variables. Furthermore, analysis of variance (ANOVA), analysis of covariance (ANCOVA) and linear regression model were applied as the statistical models. The scores of anxiety or depression were considered as dependent variables, and age, marital duration, having children, education level, family income, physical abuse, self-drug use and spouse drug use were entered in to the analysis with the enter method. P values less than 0.05 was considered significant.

4. Results

The mean age of the participants was 35 ± 9 years, and mean duration of marriage was 14 ± 10 years. From all 237 women, 186 (79%) had at least one child, 62 (26%) had attained higher than diploma education, 68 (28.7%) were employed, 150 (63%) were housewives, 122 (52%) had 400 USD monthly family income or less, and 69 (29%) reported a history of physical abuse by their husbands. Mean scores of anxiety and depression among the participants were 10 ± 4.2 and 6.3 ± 3.9 , respectively. In terms of comparison based on qualitative variables, educational level ($P = 0.005$), monthly income ($P < 0.001$) and history of physical abuse ($P < 0.001$) were significantly different between the groups (Table 1).

After comparing the quantitative variables, it was found that duration of marriage ($P = 0.018$), mean scores of anxiety ($P < 0.001$) and depression ($P < 0.001$) were significantly different between the groups. Bonferroni Post hoc test showed that duration of marriage for Group I was significantly lower than Group II, while no significant difference was seen between Groups I and III, and Groups II

and III. Anxiety and depression scores were significantly lower in Group I than the other groups, while no significance difference was seen between the second and third group (Table 2). In addition, two separate ANCOVA analyses for anxiety and depression scores, in order to moderate the confounding effects of age and marital duration, confirmed these results.

From all variables only drug dependence of the husband (Beta = 0.185, P = 0.010), and lower monthly income

of the family (Beta = - 0.186, P = 0.007) predicted a higher level of anxiety among the participants (Table 3).

In terms of higher level of depression, the following variables were the predictors; drug dependence of the husband (Beta = 0.163, P = 0.023), older age (Beta = 0.321, P = 0.031), shorter marital duration (Beta = - 0.382, P = 0.016), lower educational level (Beta = -0.144, P = 0.045), and less monthly income of the family (Beta = - 0.166, P = 0.014) (Table 4).

Table 1. Comparison of Groups in Terms of Qualitative Variables ^{a,b}

	Group I (n = 104)	Group II (n = 121)	Group III (n = 12)	P Value ^c
Having child	77 (74)	99 (82)	10 (83)	0.336
Educational level, diploma or higher	38 (37)	21 (17)	3 (25)	0.005
Job, housekeeper	60 (58)	83 (69)	7 (58)	0.224
Family income, ≤ 400 USD	33 (32)	81 (67)	8 (67)	< 0.001
Physical abuse	9 (9)	51 (42)	9 (75)	< 0.001

^a Data are presented as No. (%).

^b Group I: non-drug dependent women with non-drug dependent husbands, Group II: non-drug dependent women with drug dependent husbands, Group III: drug dependent women with drug dependent husbands.

^c Chi-square test.

Table 2. Comparison of Groups in Terms of Quantitative Variables ^{a,b}

	Group I (n = 104)	Group II (n = 121)	Group III (n = 12)	P Value ^c
Age, y	34 ± 9	36 ± 8	35 ± 9	0.121
Marital duration, y	12.0 ± 9.6	15.6 ± 9.7	12.7 ± 8.0	0.018 ^d
Anxiety score	8.5 ± 3.4	11.1 ± 4.4	12.0 ± 4.2	< 0.001 ^e
Depression score	5.1 ± 3.4	7.1 ± 3.7	9.4 ± 5.4	< 0.001 ^e

^a Data are presented as mean ± SD.

^b Group I: non-drug dependent women with non-drug dependent husbands, Group II: non-drug dependent women with drug dependent husbands, Group III: drug dependent women with drug dependent husbands.

^c ANOVA test.

^d Group I was significantly lower than the group II (Bonferroni Post hoc test).

^e Group I was significantly lower than the groups II and III (Bonferroni Post hoc test).

Table 3. Predictors of Hospital Anxiety and Depression Scale Scores (Linear Regression) ^a

	Unstandardized Coefficients		Standardized Coefficients, Beta	t	Sig	95% Confidence Interval for B	
	B	Standard Error				Lower Bound	Upper Bound
Age	0.059	0.073	0.122	0.819	0.414	- 0.084	0.203
Marriage duration	- 0.066	0.068	- 0.153	- 0.965	0.336	- 0.199	0.068
Having children	- 0.236	0.749	- 0.023	- 0.316	0.753	- 1.711	1.239
Educational level	- 1.092	0.677	- 0.116	- 1.613	0.108	- 2.425	0.242
Family income	- 1.539	0.561	- 0.186	- 2.742	0.007	- 2.645	- 0.433
Physical abuse	1.036	0.615	0.114	1.686	0.093	- 0.175	2.247
Self-drug use	0.532	1.201	0.028	0.443	0.658	- 1.834	2.899
Spouse drug use	1.546	0.597	0.185	2.59	0.01	0.37	2.722

^a Dependent variable: HADS anxiety score.

Table 4. Predictors of Depression Score (Linear Regression)^a

	Unstandardized Coefficients		Standardized Coefficients, Beta	t	Sig	95% Confidence Interval For B	
	B	Standard Error				Lower Bound	Upper Bound
Age	0.145	0.067	0.321	2.166	0.031	0.013	0.277
Marriage duration	-0.152	0.063	-0.382	-2.427	0.016	-0.276	-0.029
Having children	0.996	0.691	0.106	1.441	0.151	-0.366	2.359
Educational level	-1.259	0.625	-0.144	-2.014	0.045	-2.490	-0.027
Family income	-1.282	0.518	-0.166	-2.474	0.014	-2.303	-0.261
Physical abuse	0.772	0.568	0.091	1.361	0.175	-0.346	1.891
Self-drug use	1.738	1.109	0.099	1.567	0.119	-0.448	3.923
Spouse drug use	1.262	0.551	0.163	2.289	0.023	0.176	2.349

^a Dependent Variable: HADS Depression Score.

5. Discussion

In this study drug dependence of the husband and lower monthly income of the family predicted a higher level of anxiety among the participants, while older age, shorter marital duration, and lower educational level in addition to the predictors of anxiety (spouse drug dependence and lower monthly income) were significantly associated with higher levels of depression among the participants. As mentioned previously, spousal drug dependence was found to be significantly associated with higher levels of anxiety and depression among women. Several studies have pointed to the higher levels of mental disorders among the spouses of drug dependents (21-23). Less optimism, a negative attitude towards life, and less social support are among factors, which have been suggested to justify frequent mental disorders among substance dependents (24). However, accepting drug dependence as a type of chronic condition, and considering the following claim: "reported new or increased symptoms among the spouse during the illness of the partner might be interpreted as a reflection of the psychophysiological impact of the partner's illness" (25), might partly justify our findings. Moreover, prevalence of violence among substance dependents (26, 27) might also lead to higher symptoms of mental disorders among their intimate partners such as spouses (28). Lower monthly income of the family was the other variable, which showed a significant association with higher depressive and anxious symptoms among Iranian women. Several studies have found a close relationship between economic problems and poor mental wellbeing (29-31), although a few others found no or weak association (32). In this regard Pearlin (33) suggested that increased risk of adverse mental health outcomes might occur due to stress exposure (whether caused by discrete life events, or enduring life stressors such as financial problems). Considering the fact that more than one fourth of the participants reported being employed, effort-reward imbalance (34) is the other param-

eter, which might be associated with the higher prevalence of anxiety and depression among these subjects. Older age showed a significant association with higher levels of depression among the participants. Erikson is one of the most famous theorists, whose identity theory suggests an association between the role of nature and identity development during the eight stages of human life including: infancy, early childhood, childhood, puberty, adolescence, early adulthood, middle adulthood, and late adulthood (35). Drawing on this theory, during the middle adulthood stage (aged between 35 and 55 years), family relations play the most important role in people's mental health, along with their career and job. Considering the mean age of the participants (35 ± 9 years), an abnormal relationship with their husband, due to his addiction might be associated with their higher prevalence of depressive symptoms. Lower education level also showed a significant association with higher depressive symptoms among the participants. Several previous studies have found lower education level as a risk factor for mental health problems (36-38). Lorant et al. have pointed to poorer coping styles, ongoing life events, exposure to express and weaker social support as possible risk factors for greater prevalence of psychiatric disorders among people with lower socio-economic status (SES) (39). In this regard they also suggested a more controversial association between depression and SES, compared to other psychiatric disorders. Considering the mentioned justifications, our findings seem not to be surprising. Based on the results of this study, shorter marital duration was found to be significantly associated with higher level of depression among the participants. Proulx et al. introduced the length of marriage as a possible moderator of the association between marital quality and personal wellbeing (e.g. mental health) (40). They suggested that quality of marriage declines during the first few years of couple's marriage, especially after the honeymoon. Amato et al.

also reported that half of divorces occur during the first seven years of marriage (41). This hypothesis might justify higher depressive symptoms among Iranian women. This possible health impact of marriage has been explained by two related and complementary theories; the "selection theory" suggests that healthier people are more likely to get married, and the "protection theory" talks about providing a shield against health risk behaviors among couples (42). Although we have not assessed health behavior among the participants of this study, the results of this study highlight the need for greater attention towards the negative aspects of marriage, especially while one side or both sides are facing a health problem such as substance dependence. The present study had a number of limitations. Because of its cross-sectional design causative relations were not conclusive in this study. Moreover, since data have been obtained based on the self-report method, over report and/or under report might have taken place by the participants. The existing sociocultural situation in Iran and extreme addiction stigma in this country strengthens this hypothesis. Since female drug users and those with drug dependent husbands were sampled only from drug treatment centers, a selection bias might have occurred. However, the existing difficulties to reach these two vulnerable (and mostly hidden) groups might justify our sampling strategy. Despite the mentioned limitations it should be considered that the present study is one of the first studies, which has been conducted to evaluate the predictors of mental health among spouses of drug dependents in Iran. In conclusion, in this study "spousal drug dependence", and "lower family income" were found as the predictors of anxiety, while "older age", "shorter marital duration", and "lower education level" as well as "spousal drug dependence" and "lower family income" predicted higher symptoms of depression among women with drug dependent husbands in Iran. These findings highlight the importance of financial problems and spousal drug dependents as shared predictors of anxiety and depression among Iranian women. More research is needed for multi-dimensional evaluation of mental health among family members of drug dependents in Iran, preferably to find the casual associations.

Acknowledgements

The authors would like to thank all the participants for their kind contribution in the present research project.

Authors' Contributions

Roya Noori: design, execution and final approval of the manuscript; Firoozeh Jafari: design, execution and final approval of the manuscript; Babak Moazen: analysis and preparation of the manuscript; Hamid Reza Khoddami Vishteh: analysis and preparation of the manuscript; Ali Farhoudian: design, execution and final approval of the

manuscript; Hooman Narenjiha: design, execution and final approval of the manuscript; Hassan Rafiey: design, execution and final approval of the manuscript.

Financial Disclosure

Roya Noori, Firoozeh Jafari, Babak Moazen, Hooman Narenjiha and Hassan Rafiey received research grants for this study. Other authors had no financial interests related to the material of this manuscript. The funding organization was a university and had no role in the design and conduct of the study, including collection, management, and analysis of the data, or preparation, review, and approval of the manuscript.

Funding/Support

This study was supported by the Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran.

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