WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 5.990
Volume 5, Issue 02, 1650-1660. Research Article ISSN 2277– 7105

THE EFFECT OF SOCIOECONOMIC STATUS ON MENTAL HEALTH AMONG GOVERNMENT AND PRIVATE EMPLOYEES IN RIYADH REGION, SAUDI ARABIA

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Article Received on
18 Dec 2015,

Revised on 08 Jan 2016,
Accepted on 01 Feb 2016

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ABSTRACT

Background: Mental health and socioeconomic status are important determinants of an individual's wellbeing. The objectives of this study were to determine the effect of socioeconomic status on mental health among Riyadh region population, Saudi Arabia. **Methods and materials:** It was an institutional-based descriptive study. Data were gathered from 208 participants aged 25 years and above, from both Majmaah and Riyadh cities. Data was collected by a pre-coded and pre-tested questionnaire which was consisting of two main domains that subdivided into three different questionnaires (Modified Kuppuswamy socioeconomic scale, PHQ-9 Questionnaire for Depression and GAD-7 Questionnaire for Anxiety) to assess the degree of interaction between socioeconomic status and mental health. Ethical approval and consent were obtained. Data was analyzed by SPSS. **Results:** Most of the participants were of upper middle class (57.7%), euthymic or non-depressed (72.6%) and non-anxious (83.7%). On the other hand (27.4%) and (16.3%) of the participants had depression and anxiety respectively. Females were more anxious than males ($p>0.003$, 9.1%) while males suffered from depression more than females ($p>0.046$, 15.4%). In our study, social class, age, educational level, employment status and monthly income were statically non-significant with depression and anxiety. **Conclusion**: The study concluded that the prevalence of anxiety and depression is high among the population of Riyadh and Majmaah of Saudi Arabia. Depression and anxiety are associated with gender; males are mostly affected than females by depression while females compared to males are mostly affected by anxiety.

KEYWORDS: Socio economic status, anxiety, depression.

INTRODUCTION

Mental health and socioeconomic status are important determinants of an individual's wellbeing. There are thought to be important interactions between these dimensions of wellbeing, with causal links running in both directions. In other words, poor socioeconomic status can affect mental health and vice versa. A number of inter-related factors including education, health beliefs and behavior, occupation, income, access to health services and the environment in which people live determine the socio-economic disadvantage and mental health quality.

Several literature reviews have established a correlation between socioeconomic status and mental health changes in different parts of the world, but very few studies have been conducted for that matter in Saudi Arabia and gulf countries.

Generally, men and women of higher socioeconomic status (SES) have better mental health, but still little is known about how socioeconomic factors are associated with changes in health.[1]

A study uses data from six survey waves (1996 to 2010) of the Australian Longitudinal Study on Women's Health (ALSWH) to examine associations between SES and changes in the general health and mental health of a cohort of women progressing in years from 45–50 to 59–64.The longitudinal analysis showed that, after adjusting for the effects of time and possible confounders, the general (Including mental) health of this cohort of mid-aged women declined over time. Higher SES women reported better health than lower SES women, and SES significantly modified the effects of time on both general and mental health in favor of higher SES women.[1]

Illiteracy or poor education is a consistent risk factor for common mental disorders. Some studies have also demonstrated a dose–response relationship between educational level and the risk of such disorders.[2]

The social consequences of poor education are obvious: lack of education represents a diminished opportunity for persons to access resources to improve their situation and low levels of education have been implicated as a risk factor for dementia.[3]

The studies reviewed do not permit an analysis of correlation of absolute levels of income and common mental disorders, because average indicators of income for countries do not indicate the true levels in the population being studied. Multivariate analyses from the Chile and at showed that absolute income levels were not associated with a raised risk when education was taken into account.[4] On the other hand, this study showed that poor living conditions such as poor housing, which is associated with low income, remained significantly associated after adjustment for education. The relationship between income inequality and common mental disorders is also unclear. While some studies in industrialized countries have shown an independent association of low income and living in unequal income states with depression in women[5], these findings have been contradicted by studies demonstrating a weak relationship, If any, between income inequality and common mental disorders.[6] One study showed a higher risk for disorders in persons in the upper income group if they lived in unequal areas.[7]

Epidemiological investigations in many developing countries have attributed the high rates of common mental disorders to factors such as discrimination, unemployment and living through a period of rapid and unpredictable social change.[8]

In a study regarding unemployment participated in the project. Expectedly, unemployed subjects showed more depressive symptoms than employed subjects but did not show higher levels of susceptible personality traits. There were no differences between employed and unemployed subjects in social and communicative competencies; these skills however correlated positively with the level of depression.[9]

A prospective longitudinal study to examine the relationship between the co-occurrence of mental health and substance use problems and socio-economic status revealed that earning a high school diploma lessens the risk of co-occurring mental health and substance use problems which contribute to economic instability in young adulthood. Findings underscore the importance of public health programs to reduce the incidence of mental health and substance use problems and their associated high costs to individuals and to society.[10]

The lack of clear support for any one explanation suggests that the literature on SES disparities in health and health behaviors can do more to design studies that better test for the importance of the varied mechanisms.[11,12,13]

Therefore, This project is *dedicated to study the effect of socioeconomic status on mental health (Depression and anxiety in particular) in Majmaah and Riyadh population* of Saudi Arabia to improve the quality of life among different social classes present in the kingdom and to provide appropriate approaches to overcome this issue.

METHODS AND MATERIALS

This study was an institutional-based descriptive cross-sectional study. The study was conducted in Riyadh & Majmaah cities. The study population was residents of Riyadh & Majmaah working in different institutions (Universities, schools, companies, private sector) aged 25 years and above of both genders. The participants from Majmaah were 134 (64.4%), while those from Riyadh accounted to be around 74 (35.6%). The project took about 3 months (June / 2015 – August / 2015).

The sample Size was calculated through the following formula.

$$N = \frac{Z^2 P(1-P)}{e^2}$$

Participants enrolled: A total of 208 participants, of which (140) were males and (68) were females.

Data was collected based on complete enumeration method. Self-reported, pre-tested and pre-coded questionnaire was used for data collection. The questionnaire has been structured from the Modified Kuppuswamy socioeconomic scale applicable to Saudi community, the Modified PHQ-9 Questionnaire for Depression and the Modified GAD-7 Questionnaire for Anxiety.

Kuppuswamy assesses three important aspects of socioeconomic status which are educational level, employment status and monthly income to give final scores that conclude the level of the social class. PHQ-9 and GAD-7 are tools used to anticipate the possibility of developing depression and anxiety respectively. Both of which have specific scores that can classify the severity of depression and anxiety ranging from mild to extremely severe condition.

Prior to filling out the questionnaire, the participants were informed about the study and were given instructions about how to fill out the questionnaire completely and truthfully. The data was entered and analyzed using SPSS 22.0. Mean $\pm$S.D was given for quantitative variables like age etc. Frequencies and percentages were given for qualitative variables. Pearson Chi

Square and Fisher Exact test were applied to observe associations between qualitative variables. A p-value of <0.05 was considered as statistically significant.

Ethical considerations

Confidentiality was maintained by data coding. Approval to conduct the study was obtained from the Basic Medical and Health Research Center in Majmaah University. A written consent was obtained from each participant.

RESULTS

Overall, a total of 208 participants, aged 25 years and above, from both Majmaah and Riyadh cities were involved in the study. Table (1)shows the socioeconomic characteristics of the sample. Participants age groups: (25-35 years old), (36-45 years old) and (Above 45 years old) were 123 (59.1%), 60 (28.8%) and 25 (12%) respectively. Males enrolled in the study were 140 (67.3%), while females were 68 (32.7%). Regarding the educational level, most of the participants were of higher studies (Bachelor, Master, PHD) degree 116 (55.8 %'), diploma 66 (31.7%) and school (Primary, Intermediate, Secondary) degree 26(12.5%).

Table (2) shows descriptive data of the social class, depression and anxiety. Most of the participants were of upper middle class (57.7%), euthymic or non-depressed (72.6%) and non-anxious (83.7%).

Table (3) shows the depression in relation to social class. In upper, upper middle and lower social class depression constituted 6.7%, 16.8%, 3.8% respectively. The results didn't show significant association between social class and depression (p=0.519).

Depression in the age groups 25-35, 36-45 and above 45 years old constituted 18.8%, 7.25 and 1.4% respectively. The results didn't show significant association between age and depression (p=0.114). Regarding gender, it was shown that 32 (15.4%) of males and 25 (12%) of females had depression respectively. Depression is statistically associated with gender (p= 0.046). In regard to educational level and depression, results showed that 33(15.9%) of the highly educated were depressed. Sixteen (7.7%) of the participant with diploma were depressed while 11 (5.3%) of the school educated were depressed. Educational level is not associated with depression (p= 0.736). Results showed that 46 (22.1%) and 11(5.3%) of the Government employee and Privet sector employees were depressed. The relation between depression and employment status is not significant (p= 0.708). Depression

among participant with very high monthly income(more than 15000 SR) was 3.4%. Depression among those with high income (10001-15000 SR), moderate income (4001-10000 SR) and low income (2001-4000 SR) was 7.2%, 12.5% and 4.3% respectively. No depression was observed among the participants with very low income (Less than 2001 SR). the analysis did not show statistical association between depression and monthly income (p=0.870). Table (4) shows the relation between socioeconomic factors and anxiety. Five (2.4%) of the upper class participants had anxiety. Twenty four (11.5%) of the upper middle class had anxiety while 5 (2.4%) of the lower middle class had the disease. The analysis did not show significant association between socioeconomic factors and anxiety (p=0.082). Anxiety was prevalent among 22 (10.6%) of the participants aged (25-35 years), 8 (3.8%) of the participants aged (36-45 years) and 4 (1.9%) of the participants age more than 45 years of age. Results showed no association between anxiety and age (p=0.735). Anxiety among males and females constituted 7.2% and 9.1% respectively. The analysis showed significant association between gender and anxiety (p>0.003). Regarding education level, it was shown that 20 (9.6%), 7 (3.4%) and 7 (3.4%) of the highly, diploma and school educated had anxiety respectively. The association between anxiety and education level (p=0.153). Anxiety among government and privet sector employees was 11.5% and 4.8% respectively. The analysis did not show statistical association between anxiety and employment status (p=0.256). Anxiety among participants with very high monthly income (more than 15000 SR) was 1.0%. Anxiety among those with high income (10001-15000 SR), moderate income (4001-10000 SR) and low income (2001-4000 SR) was 3.4%, 7.7% and 4.3% respectively. No anxiety was observed among the participants with very low income (Less than 2001 SR). The analysis did not show statistical association between anxiety and monthly income (p=0.123).

Table (1): Socioeconomic factors of participants

Social factor	Frequency	Percent
Age group		
25 – 35 years old	123	59.1%
36 – 45 years old	60	28.8%
Above 45 years old	25	12%
Total	208	100%
Gender		
Male	140	67.3%
female	68	32.7%
total	208	100%
Educational level		
Higher studies	116	55.8%
Diploma	66	31.7%

School degree (Primary, Intermediate, Secondary)	26	12.5%
Total	208	100%
Employment status		
Government employee	163	78.3%
Privet sector employee	45	21.6%
Total	208	100%
Monthly income (SR)		
More than 15000	27	13%
10001-15000	57	27.4%
4001-10000	92	44.2%
2001-4000	28	13.5%
2000 and less	4	1.9%
Total	208	100%

Table (2): Descriptive data of the social class, depression and anxiety.

Social Class	***Frequency***	***Percent***
Upper	*63*	*30.3%*
Upper Middle	120	57.7%
Lower Middle	25	12.0%
Total	208	100.0%
Depression	**Frequency**	**Percent**
Normal	151	72.6%
Depression	57	27.4%
Total	208	100.0%
Anxiety	**Frequency**	**Percent**
Normal	174	83.7%
Anxiety	34	16.3%
Total	208	100.0%

Table (3): Social factors and associated depression.

Social factor	**Detailes of the social factor**	**Associated depression**			**P**
		Normal (No. %)	**Depression**	**Total**	
Social class	Upper	49 (23.6%)	14 (6.7%)	63 (30.3%)	0.519
	Upper middle	85 (40.9%)	35 (16.8%)	120 (57.7%)	
	Lower middle	17 (8.2%)	8 (3.8%)	25 (12%)	
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	
Age group	25 - 35 yrs	84 (40.4%)	39 (18.8%)	123 (59.1%)	
	36 - 45 yrs	45 (21.6%)	15 (7.2%)	60 (28.8%)	
	Above 45 yrs	22 (10.6%)	3 (1.4%)	25 (12%)	
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	0.114
Gender	Male	108 (51.9%)	32 (15.4%)	140 (67.3%)	
	Female	43 (20.7%)	25 (12%)	68 (32.7%)	
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	0.046
Educational	Higher studies	83 (39.3%)	33 (15.9%)	116 (55.8%)	
	Diploma	50 (24%)	16 (7.7%)	66 (31.7%)	

level	School degree (Primary, Intermediate, Secondary)	18 (8.7%)	8 (3.8%)	26 (12.5%)	0.736
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	
Employment status	Government employee	117 (56.3%)	46 (22.1%)	163 (78.4%)	
	Privet sector employee	34 (16.3%)	11 (5.3%)	45 (21.6%)	
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	0.708
Monthly income	SR> 15000	20 (9.6%)	7 (3.4%)	27 (13%)	
	10001-15000 SR	42 (20.7%)	15 (7.2%)	57 (27.4%)	
	4001-10000 SR	66 (31.7%)	26 (12.5%)	92 (44.2%)	
	2001-4000SR	19 (9.1%)	9 (4.3%)	28 (13.5%)	
	SR < or equal to 2000	4 (1.9%)	0 (.0%)	4 (1.9%)	
	Total	151 (72.6%)	57 (27.4%)	208 (100%)	0.870

Table (4): Social factors and associated anxiety.

Social factor	Detailes of the social factor	Associated anxiety			p
		Normal (N0. %)	Anxiety (No. %)	Total	
Social class	Upper	58 (27.9%)	5 (2.4%)	63 (30.3%)	
	Upper middle	96 (46.2%)	24 (11.5%)	120 (57.7%)	
	Lower middle	20 (9.6%)	5 (2.4%)	25 (12%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.082
Age groups	25 - 35 yrs	101 (48.6%)	22 (10.6%)	123 (59.1%)	
	36 - 45 yrs	52 (25%)	8 (3.8%)	60 (28.8%)	
	Above 45 yrs	21 (10.1%)	4 (1.9%)	25 (12%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.735
Gender	Male	125 (60.1%)	15 (7.2%)	140 (67.3%)	
	Female	49 (23.6%)	19 (9.1%)	68 (32.7%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.003
Educational level	Higher studies	96 (46.2%)	20 (9.6%)	116 (55.8%)	
	Diploma	59 (28.4%)	7 (3.4%)	66 (31.7%)	
	School degree	19 (1.9%)	7 (3.4%)	26 (12.5%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.153
Employment status	Government employee	139 (66.8%)	24 (11.5%)	163 (78.4%)	
	Privet sector employee	35 (16.8%)	10 (4.8%)	45 (21.6%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.256
Monthly income	SR> 15000	25 (12%)	2 (1%)	27 (13%)	
	10001-15000 SR	50 (24%)	7 (3.4%)	57 (27.4%)	
	4001-10000 SR	76 (36.5%)	16 (7.7%)	92 (44.2%)	
	2001-4000SR	19 (9.1%)	9 (4.3%)	28 (13.5%)	
	SR < or equal to 2000	4 (1.9%)	0 (.0%)	4 (1.9%)	
	Total	174 (83.7%)	34 (16.3%)	208 (100%)	0.123

DISCUSSION

A number of inter-related factors including education, health beliefs and behavior, occupation, income, access to health services and the environment in which people live determine the socio-economic disadvantage and health.[14] This study revealed the impact of socioeconomic status on mental health and quality of life in Riyadh region, KSA.

The relation between socioeconomic status and health has been at the center of a substantial amount of research, this is why the living conditions are strongly associated with each other and play a role in individual's mental health.[5]

The three most notable findings were the non-linear association between income and mental health inequality, and the significant interaction between gender and social class with mental health.

Generally, men and women of higher socioeconomic status (SES) have better health. According to our study, depression and anxiety are more prevalent among Lower middle class individuals compared to upper middle class.

While epidemiological investigations in many developing countries have attributed the high rates of common mental disorders to factors such as discrimination, unemployment and living through a period of rapid and unpredictable social change[8] which are consistent with our results. According to our study, depression is more prevalent among younger compared to older age group (18.8% vs. 7.2%). This finding is inconsistent with other studies.[10] This change may be due to the fact that younger age groups nowadays are unstable and unsatisfied with their status.

This study found a correlation between gender and depression/ anxiety. The prevalence of anxiety among females was 9.1% compared to 7.2% among males (p=0.003). Depression was more in males (15.4%) than in females (12.0%) (p=0.046). This contradicts a study conducted among primary health care attendants.[14] It is also not in line with studies of depression among medical students in Saudi Arabia which showed that females had higher prevalence of depression than males.[15,16]

Educational level and employment status were statically non-significant, while different studies show that higher educational level reduces the risk of mental health disorders.[17]

In comparison to a wide study conducted in eleven different communities entitled[18], this study showed a statistically significant relationship between prevalence and indicators of poverty, the most consistent relationship being with low educational levels. A number of other indicators were used to assess poverty, including low income, lack of material possessions, lack of employment, and housing difficulties.[19]

CONCLUSION

The study concluded that the prevalence of anxiety and depression is high among the government and private employees in Riyadh Region of Saudi Arabia. Depression and anxiety are associated with gender; males are mostly affected than females by depression while females compared to males are mostly affected by anxiety. The study recommends availing social services to address the problem of depression and anxiety in the community. Further research is also recommended.

ACKNOWLEDGMENT

The authors would like to acknowledge governmental and private sectors' administrators and employees for their contribution to the success of this research.

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