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PJBS

ISSN 1028-8880

**Pakistan
Journal of Biological Sciences**

ANSI*net*

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308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

Mental Disorder Assessed by General Health Questionnaire and Back Pain among Postmenopausal Iranian Women

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Abstract: The aim of this study was to investigate the association between mental disorder and back pain among postmenopausal Iranian women. Three thousand six hundred and fifty five postmenopausal women were interviewed in the second National Health Survey (2nd NHS) in the year 2000, in Iran. Of whom, 2953 women were included in this study. Back pain (BKP) was considered as dependent variable and mental disorder as independent variable. Factors like age, Body Mass Index (BMI), residential area, employment, literacy, smoking habit, marital status and spinal fractures were considered as confounders. Logistic regression models have been applied for data analysis. The BKP prevalence was 40.1% and the prevalence of mental disorder was 44.3%. After adjustment for confounders, mental disorder was positively associated with BKP, OR (CI): 1.615 (1.36, 1.91). This study confirmed that BKP and mental disorder are common problems and these two factors are associated amongst postmenopausal women. Further longitudinal studies are recommended to specify casual inferences.

Key words: Mental disorder, back pain, postmenopause, Iranian National Health Survey

INTRODUCTION

Low Back Pain (LBP) is a frustrating cause of chronic physical complaints (Folman *et al.*, 2004). Thirty to sixty percent of the general population encounter with BKP during their life. Of non traumatic spine-related impairments, 80% occur in the low back. The onset of spinal symptoms occurs mostly in middle-aged groups, but structural back problems increase with age as disc degeneration take place (Wing, 2001). Of mobility disabilities in the middle-aged and older groups in England, 38% were related to high levels of lower limb pain and 15% to high levels of BKP (Melzer *et al.*, 2005). Tavafian *et al.* (2005) and Mirzamani Bafghi *et al.* (2003) showed that chronic LBP has a negative impact on the quality of life among Iranians and severe LBP can cause disability. Some women complain of increased BKP during the menopausal transition and often attribute it to menopause (Brynhildsen *et al.*, 1998). It is shown that back pain is one of the most common physical symptoms in Australian women in different stages of the menopause transition and it is the most frequently occurring menopausal symptom in Taiwanese women (Chow *et al.*, 1997).

Not only is Menopause a biological event but also is a psychosocial one (Avis, 1996). Psychological distress is said to be based on the nature of the symptoms of distress rather than on menopausal status (Becker *et al.*, 2001). Higher prevalence of presenting chronic LBP in Psychosocially distressed patients is reported (Sikorski *et al.*, 1996). The exact mechanism of this association is not definitely known, Although stress itself is addressed to be a cause of lowered pain tolerance (Ursin *et al.*, 1993). It has been suggested that mental problems in chronic LBP patients precede their pain (Mirzamani Bafghi *et al.*, 2003).

A malfunction to acknowledge the psychosocial setting of BKP and its related complaints is considered to be a cause of confined efficacy of treatment for BKP (Bouras *et al.*, 1984). It is recommended that older people especially postmenopausal women who have a sudden onset of BKP, should be investigated not only with radiography, but also with regard to mental conditions (Wing, 2001).

Considering the increase in number of women reaching postmenopausal period annually and existence of mental and physical problems associated with menopause, it would be crucial to understand whether

mental problems are associated with physical problems. The present study is designed to shed further light on this issue by examining postmenopausal women with and without BKP complaints to determine the relationship between mental disorder and BKP in Iran.

MATERIALS AND METHODS

This study is based on the information obtained from the (2nd NHS) in the year 2000, in Iran. Three thousand six hundred and fifty five postmenopausal women were interviewed. Of whom, 2953 were included in this study (699 women for their skeletal deformation and three women for lack of sufficient information were excluded). The information was obtained by means of questionnaire which included demographic, personal habits and physical conditions. Postmenopausal status was defined as no menstruating for at least 12 past months. Factors like age (year), BMI (kg m⁻²), residential areas (urban, rural), employment (employed, not employed), literacy (literate, illiterate), smoking habits (smoker, nonsmoker), marital status (married, single consisting of unmarried/widowed/divorced) and spinal fractures (no fracture, fractures) were considered as confounders. Mental disorder assessed by the score in the General Health Questionnaire, including 28 questions as those designed by Goldberg *et al.* (1997) was considered as the independent variable. Those scoring 6 and over all the 28 questions (GHQ_≥6) were classified as suspected mental disorder (Goldberg *et al.*, 1997). A validated Persian version of Community Oriented Program for Control of Rheumatic Diseases (COPCORD) questionnaire was used to obtain information about BKP and spinal symptoms. BKP was defined as non traumatic pain in back and lumbar region with no stiffness or with stiffness relieved by rest. Stiffness in this study was a kind which lasted less than half an hour. Logistic regression models have been applied to compare Subjects with BKP to Subjects with no BKP due to their mental disorder at 95% level.

The 2nd NHS population included all Iranian households. Household was defined as any individual

living single or those living in the same residence, participating in the household expenses and usually eating together.

Sampling method and sample size: Sampling was conducted on the basis of cluster method, each cluster covering 8 households. Overall 13,496 households, with 61,800 members (one out of 1000 all Iranians) were selected for the study. Data were gathered by a group of two physicians, one interviewer and one laboratory technician.

The study proposal and informed consent obtained from the subjects has been approved by the Ethical Review Board of National Research Center of Medical Science in Iran.

RESULTS AND DISCUSSION

Of a total of 2953 postmenopausal women 45.8% reported no pain and 54.2% reported back and spinal symptoms including traumatic pain (5.2%), non traumatic pain with stiffness not relieved by rest (8.9%) and BKP (40.1%).

Characteristics of subjects are shown in Table 1. BKP prevalence for women with GHQ_≥6 was 44.3% and for women having GHQ<6 was 37.8%.

Univariate logistic analysis revealed that BKP was positively associated with mental disorder, OR (CI): 1.59 (1.34, 1.87). In order to adjust this result, all confounders were forced into the model and backward logistic analysis was applied. The result can be summarized in the following way: BKP was associated with mental disorder, OR (CI): 1.615 (1.36, 1.91); residential area, OR (CI): 1.37 (1.15, 1.62); smoking habit, OR (CI): 1.4 (1.06, 1.84) and BMI, OR (CI): 1.027 (1.01, 1.04).

The association of mental disorders with BKP was examined by using data for 2953 postmenopausal women. A significant higher prevalence of BKP could be found between individuals with GHQ_≥6. Logistic regression analysis showed that having GHQ_≥6 was positively associated with BKP. The issue of significant

Table 1: Characteristics of 2953 postmenopausal woman by their back pain

Characteristics	No pain (N = 1352)	Traumatic pain (N = 154)	Pain and stiffness not relieved by rest (N = 262)	BKP ¹ N = (1185)
(GHQ _≥ 6) ²	28.6%	46.1%	45.8%	44.3%
Urban	66.9%	63.0%	48.1%	60.3%
Married	67.6%	64.3%	66.4%	65.5%
Employed	5.3%	5.8%	5.7%	5.3%
Literate	26.1%	20.1%	16.0%	21.9%
Smoker	7.8%	12.3%	9.9%	10.9%
Fractures	11.1%	25.3%	15.3%	11.3%
Age (Mean±SD) (year)	(60.85±9.19)	(62.25±8.85)	(62.45±9.88)	(61.13±9.6)
BMI ³ (Mean±SD) (kg m ⁻²)	(25.88±4.8)	(26.19±4.4)	(26.01±5.35)	(26.29±5.01)

¹Back pain, ²Mental disorder, ³Body mass index

association has been observed broadly by other studies. Bongers *et al.* (1993), in their review study stated that emotional problems and stress symptoms are associated with back problems in a large number of studies. Failde *et al.* (2000) showed that Having GHQ-28 score of ≥ 6 , is an independent risk factor for suffering from LBP. Although our finding is confirmed by studies mentioned above, but some other studies are in contrast with it. A short-term follow-up study showed that the psychosocial factors are not related to LBP (Gonge *et al.*, 2002). Foppa *et al.* (1996) indicated that BKP is associated with emotional problems in women but not in men. Tavafian *et al.* (2005) detected no significant difference of emotional scores between two groups of women with mild and severe BKP.

The definition of BKP in this study was subjective rather than diagnostic and it was reported at the time of administration of the interview. Establishing data by this measure without validation from independent sources may be a disadvantage of this study. BKP was a part of general NHS, of which relatively few direct questions could be allocated to BKP. Therefore, it was impossible to include questions about other risk factors of BKP. Other possible disadvantages are the use of a self-report measure for mental disorder and the cross sectional nature of the NHS, (which does not allow us test casual inferences).

Despite the limitations the study has its own advantages. To our knowledge this is the first major study based on NHS in our country, which investigates the relationship between BKP and mental disorder among postmenopausal women. Given that the number of potential confounding factors we tested had a little impact on this relationship, we are confident that our findings are valid.

The BKP prevalence was 40.1%. Although due to differences in BKP definitions, it is difficult to compare this prevalence with those obtained by other studies, but as examples, the study of 645 postmenopausal Japanese-American women in Hawaii showed that, the BKP prevalence was 32.9% (Huang *et al.*, 1996). And almost half of white postmenopausal Caucasian women reported having had LBP during the previous month (Vogt *et al.*, 2002). Noticing that 35.1% of subjects had $\text{GHQ} \geq 6$, shows that BKP and Mental disorder are common among postmenopausal women in Iran.

A considerable amount of evidence now exists to support the importance of BKP as a public health problem. Mental disorder is associated with higher rate of BKP among postmenopausal Iranian women. Although further longitudinal studies are recommended in order to specify casual inferences, but these findings may persuade the

planners and Health provider to pay more attention to this issue, to prevent its unwilling consequences.

ACKNOWLEDGMENT

This study was supported by Tehran university of Medical sciences and National Research Center of Medical Sciences, in Iran.

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