



Are the Musculoskeletal Pains the Most Important Health Problem for Employees of Mellat Bank? A Cross Sectional Study in Yazd, Iran

Fateme Zare Harofteh^{1*}, Vali Bahrevar¹, Seyyed Masoud Madani²

Received: 22 November 2017, Accepted: 17 December 2017

Published online: 2 February 2018

1. Department of Health Education & Health Promotion, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

2. Responsible for Human Resources, Mellat Bank, Yazd, Iran.

Background: Identifying the health problems of governmental organizations staff, their health needs, and prioritizing these needs are the first step in intervention planning in order to improve their health. This study was conducted to identify health problems and health-related needs of Mellat Bank employees in Yazd, Iran.

Methods and Materials: For this cross sectional study, 179 eligible employees were selected from 34 branches of Mellat Bank in Yazd province. The data collection tool was a questionnaire containing an open question as "What problems affect your health in your workplace". The questionnaire was sent to all employees of the Mellat Bank through official automation system, to which 167 people ultimately responded. Then the problems were combined, listed, and sorted based on their frequency.

Results: In this study, from a total of 167 employees (92%) responded to the questionnaire, of which 152 (91%) cases were man and 15 (9%) cases were woman. Most of the studied subjects had a bachelor's degree of education. A total of 86 (51.4%) subjects suffered from musculoskeletal problems, among which low back pain (n = 61, 71%), neck pain (n = 39, 45%), and knee pain (n = 26, 30%) were the most frequent. In addition, about 47 (28.1%) and 32 (19.1%) cases suffered from stress and psychological disorders, respectively.

Conclusion: According to the results of this study, the most important identified health problem was musculoskeletal pains. Therefore, in addition to further research to be carried out in order to confirm these results, it is suggested that the causes of these problems be investigated in analytical research in order to be able to design and implement appropriate interventions to address these problems.

Keywords: Health Problems, Need Assessment, Musculoskeletal Pains

Introduction

To perform any successful intervention, the first step is to identify the target groups' needs. Implementing the health promotion programs at workplace (organizational self-management) is an opportunity to identify employees' needs, to design interventions appropriate for employees' needs, and to attract their participation in all stages of intervention

planning and implementation (Rafieefar, 2015). Paying attention to health-related problems and needs induces motivation and tension in persons and forces them to perform actions to reduce tension (Eysenck & Meili, 1972). Needs assessment also encourages persons to participate in the program. Participation in health promotion programs is a process in which the community members determine their health needs and that how they can meet these needs. The participation process requires attention to be paid on planning which is based on the target group's needs. This important issue is started by identifying health-related needs and completed by designing appropriate executive interventions on the causes of these behavioral and non-behavioral needs (Watson et al., 2015). Given the limited resources

Corresponding author: Department of Health Education & Health Promotion, Shahid Sadoughi University of Medical Sciences, Yazd, Iran. Email: fzare87@ssu.ac.ir.

Access this article online

Website: ijmpp.modares.ac.ir

DOI:



(human, financial, and equipment), in particular, resources related to the health and well-being of agencies and organizations, it is essential that individuals' needs be identified and prioritized. Need is defined as the demands and preferences of individuals; in other words, the demands of individuals in various fields are defined as their needs (Soriano, 1995).

Margaret Potter et al. (2000) in an essay titled "Needs Assessment and a Model for Public Health Workers" point out that although some people recommend training without measuring needs, these programs are quickly subjected to failure due to the lack of acceptance of the training program by the coaches, inadequacy of the available equipment and facilities, lack of accessibility to real needs, and lack of savings time and financial resources (Potter et al., 2000).

In today's world, only the organizations that are able to identify and meet the needs and desires of their recipients have the power to survival and growth. Obviously, this process requires a proper management (Watson, 2015).

In a study by Ahmadvand and Sadeghi (2006) in order to identify the needs of the staffs, using the needs assessment questionnaire (Alvani, 2001) and according to the Maslow theory, most of the employees' needs priorities were related to high-level needs (self-esteem and social respect), and a small number of employees' needs priorities were related to low-level needs (safety and physiology) (Ahmadvand & Sadeghi, 2006).

Over the past three decades, due to the spread of computer use in all industrial and social fields, musculoskeletal injuries in the upper extremity have been increased dramatically so that more than half of the work-related injuries are now due to working with computer. Working with the computer leads to muscle tiredness and discomfort, especially in the waist, shoulder, arm, and neck. Long-term working with computers in inappropriate and non-ergonomic situations can significantly increase the chance of musculoskeletal injuries in users in the long run (Motamedzadeh, 2011).

Musculoskeletal disorders are the main factor for time loss; increased costs; physical, psychological, social harm to the workforce; and the main cause of absenteeism (Choobineh, 2004). The increase in the prevalence rate of musculoskeletal disorders in working

environments has direct relation to the ergonomic causes of the workplace so that factors such as repetitive movements, inappropriate physical conditions, and repetitive delicate actions increase the disease more than other ergonomic factors (Duraisingam, Pidd, & Roche, 2009). Studies have shown that computer users are prone to the progression of musculoskeletal disorders with a prevalence rate of 50% (Gerr, Marcus, & Ortiz, 2001). Today, computer has become an integral part of all work environments, especially official work environments.

More than half of the world's population has once experienced back pain. Although the incidence of low back pain varies among different people, in Iran, back pain is one of the issues that exist in all community groups, which imposes high economic effects on society in therapeutic sectors and costs associated with the burden of the disease (Mohseni-Bandpei et al., 2001). In recent years, work-related low back pain has become an important concern. Low back pain is one of the most common muscular disorders associated with occupation so that in 2010, there were about 227,000 cases of multi-day off in workers due to low back pain, in this regard, the costs associated with absenteeism and patients' treatment are another parts of this problem. Occupational factors can cause low back pain. These factors include heavy physical work, static work situations, multiple bending and rotating, lifting, pushing, pulling, repetitive work, vibration, and work-related psycho-mental factors (Levy & Wegman, 2000).

In terms of the nature of pain, back pain can be divided into 3 categories: transient low back pain that consists of sudden pain in the lumbar region caused by stress in the lower part of the spinal cord, acute low back pain that occurs with incorrect positioning, long and repetitive bending, or strokes on the spinal cord and often lasts less than a month, and chronic low back pain that occurs as a result of not-treated acute low back pain and lasts for more than a month. In terms of etiology, low back pain can be divided into 2 categories: with mechanical and non-mechanical causes. About 90% of the back pains are due to mechanical factors such as stroke, inappropriate movements, muscle weakness, pressure on the spine, or sitting and standing in an inappropriate condition (Farrington, 1995). Some psychologists list anxiety as an emotional state which can cause

internal pain with often unknown and forgotten causes (Mokhtaripoor, Siadat, & Amiri, 2006).

In spite of major problems caused by occupational musculoskeletal pain, studies show that limited studies have been conducted on identifying the actual needs and problems associated with employees' health in this area (Abbaszadegan & Torkzadeh, 2001). Thus, there is limited evidence of educational planning in this regard and following these constraints, most of the interventions are subject-matter and top-down. Therefore, this study was conducted to identify the real health needs of Mellat Bank employees in Yazd province of Iran, so that o be able to design appropriate intervention based on its results subsequently.

Methods and Materials

This research is a cross-sectional study conducted on all employees of all Mellat Bank branches in Yazd, Iran. Regarding the prevalence rate (35%) of low back pain in similar studies (Berenji, 2006) and using the following formula with a 5% error rate and accuracy of 7%, the sample size was estimated to be 179 samples. Due to the fact that the questionnaire was sent through official automation system and the low response rate associated with this method and also the low number of the bank employees, the questionnaire was sent to all employees.

$$n = \frac{Z^2 P(1 - P)}{d^2}$$

Inclusion criteria for participants to be included in this study were as follows: at least 2 years of work experience, lack of musculoskeletal problems due to an accident, and willingness to participate in the study, and exclusion criteria was unwillingness to participate in the study. Data collection tool was a questionnaire containing an open question: "What problems do you encounter in your work environment affecting your health?" This questionnaire was sent through the automation system to all the staff of all Mellat Bank branches in all cities of Yazd province of Iran in May 2017.

Problems identification was done by providing a list of problems and taking into account their frequency in such a way that the problems were ranked according to their frequency. The problem with the highest frequency was ranked as first.

Results

In this study, 167 people (92%) of the target group (including 15 women and 152 men) participated (92% of the expected sample). Their age ranged from 25 to 40 years, and most of them had a bachelor's degree certification. About 18 problems were identified as health problems priorities, among which the first 10 problems were identified as employees' needs based on their highest frequency. The main health problem expressed by the participants was skeletal and muscular disorders (lower back, neck, and joint pain) (Table 1).

Table 1. Frequency of health problems in Mellat bank employees in Yazd, Iran.

Ranks	Problems	Number	Percent%
1	Waist and neck disks and joint pain	86	51.4
2	Stress	47	28.1
3	Eye	32	19.1
4	Digestive diseases	26	15.5
5	Blood pressure	26	15.5
6	Cardiovascular disorders	21	12.5
7	Headache	20	11.9
8	Blood fat	20	11.9
9	Diabetes	15	8.9
10	Nervous discomfort	15	8.9
Total		355	

Discussion

Determining the target group's needs is the first step in educational planning. This study was conducted to investigate the health needs of the Mellat Bank staff. The results of this study showed that the first health problems priority of the employees was musculoskeletal problems, as reported by over 50% of them. In a study done on the employees of west Tehran branch of Mellat Bank in 2002, the prevalence rate of low back pain was 34.5% (Berenji, 2006). The results of the prevalence rate of musculoskeletal disorders in Mellat Bank employees in Yazd showed that 18.6% of the subjects had musculoskeletal disorders in the waist while only 0.9% had hand abnormalities (Jafari nodoushan et al., 2011). In Finsen's (1998) study, there was no relationship between the workers' dominant hand and the prevalence rate of hand and shoulder problems (Finsen, Christensen, & Bakke, 1998).

The results of a study in Punjab, India on 60 employees from 20 branches of one of the banks showed that during the last 12 months, 40.4% of

the participants suffered from lower back pain, 39.5% from upper back pain, 38.6% from neck pain, 36.8% from hand and wrist pain, and 15.2% from shoulder pain (Moom, Sing & Moom, 2015).

The results of this study are consistent with the results of other studies conducted on different target groups such as dentists. The previous study showed that 55.3% of the nurses suffered from various types of acute and chronic low back pain with different exacerbations due to various mechanical causes (Aghayari et al., 2014). In Ahmadvand's study (2006), 64.8% of the dentists had one type of musculoskeletal disorder. Furthermore, during the last 12 months, the most abnormalities were reported to be in neck (49.7%), wrist and hand (47.8%), shoulder (29.6%), upper back (23.9%), lower back (16.9%), one or both knees (14.1%), and elbows (1.4%) (Ahmadvand & Sadeghi, 2006). In a study by Nadri et al. (2015), the highest prevalence rates (%50) of musculoskeletal disorders among dentists were assigned to the neck, shoulder and arm (%45.3), and lower back pains (%34.5), respectively (Nadri et al., 2015). In a study by Daneshjoo and Dadgar (2011), it was found that most people with low back pain aged from 30 to 40 years (Daneshjoo & Dadgar, 2011).

Musculoskeletal disorders increase the amount of absenteeism, reduce productivity, and increase the amount of job remuneration (Rafieefar, 1972), so that 12.5% of all the absences from work in Sweden were due to low back pain (Hansson et al., 1985). Moreover, in England, 3.5 million working days have been lost due to musculoskeletal disorders (Coole, Watson & Drummond, 2010).

The result of needs assessment in this study was in line with the results of the studies that determined the incidence of musculoskeletal disorders among different groups and computer users. In a previous study, the most important risk factors associated with musculoskeletal disorders were reported to be inappropriate height of the table and low rest (Jafari nodoushan et al., 2011). Given that the employee profession is one of the low-mobility jobs which can lead to low-mobility associated complications such as obesity, overweight, and musculoskeletal disorders, especially lower back pain associated with sitting conditions, and by considering the fact that computer users are prone to musculoskeletal disorders, it is essential for planning interventions to conduct other research concerning the causes of ergonomic problems particularly.

Among the limitations of this study, it can be referred to the self-reporting of the questionnaire, low response rate, and lack of demographic information due to the bank non-cooperation. The consistency between the results of this study and the results of other similar studies in different target groups and also the rapid response to the officials and administrators of the banks administrative affairs were the strength points of this study. The results of this study could be used as the basis for interventional studies. Therefore, it is suggested that other studies with a larger sample size be designed and implemented in all banks by removing existing restrictions so that the response rate be higher.

Conflict of interest

There was no conflict of interest regarding this study.

Acknowledgement

At the end, it is necessary to thank the honorable chairman of Mellat bank and the employees for their participation.

Authors' contribution

FZ and VB conducted study design and implementation, data collection and analysis. SMM participated in study design. All authors provided the first draft of the manuscript and confirmed the final format.

Funding/Support

No declared.

References

- Porteous, T., Ryan, M., Bond, C., Watson, M. & Watson, V. (2016) Managing minor ailments; the public's preferences for attributes of community pharmacies. A discrete choice experiment. *PLoS One*. 11 (3): e0152257. doi: 10.1371/journal.pone.0152257.
- Boardman, H. F., Delaney, B. C. & Haag, S. (2015) Partnership in optimizing management of reflux symptoms: a treatment algorithm for over-the-counter proton-pump inhibitors. *Curr Med Res Opin*. 31 (7), 1309-1318. doi: 10.1185/03007995.2015.1047745.
- Watson, M. C., Ferguson, J., Barton, G. R., Maskrey, V., Blyth, A. & Paudyal, V. (2015) A cohort study of influences, health outcomes and costs of patients' health-seeking behaviour for minor ailments from primary and emergency care settings. *BMJ Open*. 5 (2): e006261. doi: 10.1136/bmjopen-2014-006261.
- Soriano, F. A. (1995) Conducting needs assessment: A multidisciplinary approach. Sage, Ontario.

- Potter, M. A., Pistella, C. L., Fertman, C. I. & Dato, V. M. (2000) Needs assessment and a model agenda for training the public health workforce. *American Journal of Public Health*. 90 (8), 1294.
- Alvani, S. M. (2001) *Public management*. Ney, Tehran.
- Ahmadvand, A. M. & Sadeghi, M. (2006) IRIPF employees need priority assessment. *Daneshvar Raftar*. 13 (17), 15-30.
- BERGQVIST, E., WOLGAST, B. & VOSS, M. (2007) Musculoskeletal disorders among visual display terminal workers: individual, ergonomic, and work organizational factors. 38 (4), 336-776. <https://doi.org/10.1080/00140139508925148>.
- Chooibneh, A. R. (2004) *Posture assessment methods in occupational ergonomic*. Fanavaran, Hamedan.
- Duraisingam, V., Pidd, K. & Roche, A. M. (2009) The impact of work stress and job satisfaction on turnover intentions: A study of Australian specialist alcohol and other drug workers. *Drugs: Education, Prevention and Policy*. 16 (3), 217-31. <https://doi.org/10.1080/09687630902876171>.
- Gerr, F., Marcus, M. & Ortiz, D. (2001) Musculoskeletal disorders among VDT operators. *NIOSH, Bethesda (GA)*, 82.
- Mohseni-Bandpei, M. A., Ahmad-Shirvani, M., Golbabaee, N., Behtash, H., Shahinfar, Z. & Fernández-de-las-Peñas, C. (2011) Prevalence and risk factors associated with low back pain in Iranian surgeons. *Journal of Manipulative and Physiological Therapeutics*. 34 (6), 362-70. doi: 10.1016/j.jmpt.2011.05.010.
- Levy, B. S. & Wegman, D. H. (2000) Occupational health: Recognizing and preventing work-related disease and injury. *Lippincott Williams & Wilkins, Philadelphia*.
- Farrington, A. (1995) Stress and nursing. *British Journal of Nursing*. 4, 574-78.
- Mokhtaripoor, M., Siadat, S. A. & Amiri, Sh. (2006) Emotional quotient and the pathogenesis of mental disorders. *The Quarterly Journal of Updates in Psychotherapy*. 41, 54-63.
- Abbaszadegan, H. & Torkzadeh, G. (2001) *Need assessment in organization*. Sherkat sahai enteshar, Tehran.
- Berenji, M. (2006) Estimation of the prevalence of low back pain and related disability in bank office workers in western Tehran. *EBNESINA*. 9 (2), 10-5.
- Jafari nodoushan, R., Halvani, G., Vatani shooa, J. & Salmani Nodousgan, Z. (2011) Survey of musculoskeletal disorders among bank staff in Yazd. *Occupational Medicine Quarterly Journal*. 3 (1), 1-7.
- Finsen, L., Christensen, H. & Bakke, M. (1998) Musculoskeletal disorders among dentists and variation in dental work. *Applied Ergonomics*. 29 (2), 119-125.
- Moom, R, K., Sing, L. P. & Moom, N. (2015) Prevalence of musculoskeletal disorder among computer bank office employees in Punjab (India): A case study. *Procedia Manufacturing*, 3, pp. 6624-31. <https://doi.org/10.1016/j.promfg.11.00>.
- Aghayari, A., Ghasemi, G.A., Eshaghian, M., Ghoghghi, M., Haghverdian, S. (2015). Prevalence of low back pain and its association with anxiety and depression in male and female nurses. *Research in Sport Medicine & Technology*, 12(8), pp. 39-47.
- Nadri, H., Nadri, A., Rohani, B., Fasih Ramandi, F., Amin Sobhani, M., Naseh, I. (2015) Assessment of musculoskeletal disorders prevalence and body discomfort among dentists by visual analog discomfort scale. *Journal of Mashhad Dental School*, 39 (4), pp.363-72.
- Daneshjoo, A. & Dadgar, H. (2011) The prevalence of low back pain and its relationship with physical activity, age, and BMI in Fars Payam-e Noor University staff. *Research in Rehabilitation Sciences*, 7 (3), pp.302-310.
- Hansson, T., Bigos, S., Beecher, P. & Wortley, M. (1985) The lumbar lordosis in acute and chronic low-back pain. *Spine*. 10 (2), pp.154-155.
- Coole, C., Watson, P. J. & Drummond, A. (2010) Staying at work with back pain: patients' experiences of work-related help received from GPs and other clinicians. A qualitative study. *BMC Musculoskeletal Disorders*. 11 (1), p.190. doi: 10.1186/1471-2474-11-190.