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Original Paper

A Review of Occupational Stress among Certain Jobs in Vietnam

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Abstract

Background: *Stress in the modern workplace is globally considered a risk factor for workers' health and safety. However, a review of the prevalence and associated factors of occupational stress in developing countries like Vietnam was largely lacking. This review aimed to describe the situation of occupational stress among certain jobs from studies carried out in Vietnam.*

Methods: *The review was implemented by using key words to search on online and offline, international and national database. After going through 2 stages of selections, total 25 eligible articles were chosen and used for this review.*

Results: *The results showed the prevalence of occupational stress was varied and ranged from 6.4% to 90.4%. The study population focused on health workers, factory workers, students, academic staff and officers. The prevalence of each occupation ranged from 6.4% to 90.4% in health workers; 20.7% to 89.6% in factory workers; and 22.8% to 68.3% in students.*

Conclusions: *In conclusion, the prevalence of occupational stress was very varied between and within each occupation. Therefore, a new way to develop in enhancing the occupational stress data, particularly in developing countries, is urgently needed.*

Keywords

occupational stress, review, Vietnam

1. Introduction

Occupational stress is the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker, which lead to poor health

and even injury (Rehman, 2008).

Occupational stress can cause many consequences, from individual level to society level. At individual level, studies have indicated the relationship between work-related stress and both physical and mental health disorders (Schneiderman et al., 2005). Globally it is estimated to affect 350 million people with depression and is one of the leading causes of mental disability for both women and men (World Health Organization). Depression is a leading cause of premature mortality and of prolonged years affected by disability (Mathers et al., 2005). Depression makes a significant contribution to the global burden of disease and associated costs, in particular in rapidly aging populations (Cole et al., 1999). Work-related stress has also been associated with a number of other ill-health outcomes, such as cardiovascular diseases (Kivimäki et al., 2002), musculoskeletal disorders, particularly back problems (Hoogendoorn, 2000) and neck-shoulder-arm-wrist-hand problems (Ariëns, et al., 2001).

Besides the impact on workers' health and wellbeing, a poor psychosocial working environment contributing to work-related stress can have a negative impact in terms of human, social and financial costs. At society level, stress has been associated with an impact on the performance of people at work, which can then impact on the performance of the organization as a whole. For example, in Europe the estimated cost of work-related depression is €617 billion a year (Matrix Insight, 2012). In the United Kingdom, in 2011/2012, work-related stress caused workers to lose 10.4 million working days (Chartered Institute of Personnel and Development, 2008). According to Medibank (2008), workplace stress is costing the Australian economy $14.81 billion a year.

In spite of an array of research on the magnitude of causes and consequences of work-related stress in developed and industrialized countries, work-related stress is still a problem which is far from being resolved. In turn, very little data is available from developing countries.

Being a developing country, Vietnam has a population of 95 million and a workforce of about 55 million in 2016, according to data from the CIA (Central Intelligence Agency). Globalization needs for flexibility in terms of both function and skills, increasing use of temporary contracts, increased job insecurity, higher workload and more pressure, as well as poor work-life balance. All these factors contribute to work-related stress and become a burden to occupational health. However, a review of the prevalence and associated factors of occupational stress in developing countries like Vietnam was largely lacking. With this in mind, this paper seeks to explore the occupational stress among occupations on studies that carried out in Vietnam, in order to better understand about the prevalence and the associated factors.

2. Methods

By using key words to search on several online as well as offline database, from Vietnam to international, we found in total 506 studies. The key words used included "stress", "pressure", "occupational stress", "work-related stress" AND "labours", "workers", etc. We also searched for Vietnamese data which was published in English, with key word "occupational stress AND Vietnam".

After two-stage selection, total 25 studies were qualified and used in this review. Data of each study were extracted and arranged into a formation for analysing and evaluating. The characteristics extracted include 1) Basic information: name of authors, conducted year, published year and journal published (international and national), type of documents (paper, report, thesis) and 2) detailed information: study location, study participants, study designs, assessment tools, sampling techniques and sample size and the prevalence of occupational stress.

3. Results

Basic information extracted from studies indicated that most of studies in this review were published in 2014, and more than a half of them conducted in a sample size of 200-500 subjects. About half of studies used were conducted with health workers. The most common study subjects were health workers. Other occupations are factory workers, students, academic staffs and officers accordingly (Table 1).

Table 1. Characteristics of Review Materials

Characteristics		**n**	**%**
Year of publish	2001	1	4
	2003	1	4
	2005	1	4
	2008	1	4
	2010	1	4
	2011	1	4
	2012	2	8
	2013	2	8
	2014	6	24
	2015	3	12
	2016	5	20
	2017	1	4
	Total	**25**	**100**
Sample size	Less than 200	7	28
	200-500	14	56
	More than 500	4	16
	Total	**25**	**100**
Subject occupation	Health workers	13	52
	Factory workers	6	24
	Students	4	16
	Academic staffs	1	4
	Officers	1	4

	Total	**25**	**100**
Study location	Northern Vietnam	17	68
	Southern Vietnam	7	28
	Central Vietnam	1	4
	Total	**25**	**100**
Additional study design	Retrospective	3	12
	In-depth interview	2	8
	Case study	1	4
	Group discussion	3	12
Stress assessment tool	DASS-21	11	44
	Self-designed questionnaires	6	24
	JCQ	3	12
	DASS-42	2	8
	Other	3	12
	Total	**25**	**100**

Regarding study location, 17 studies in this review were conducted in the Northern of Vietnam. In which, 13 studies were conducted in Hanoi. All 25 studies used cross-sectional quantitative design, four of which used additional quantitative design such as case study and retrospective. There were four studies also combined qualitative methods, such as in-depth interview and group discussion.

Regarding stress assessment tools, most of studies in this review used DASS-21 assessment tool, with 11 studies, followed by 6 studies used self-designed questionnaire. Other assessment tools used were SAS, PSS-10 and David Fontana questionnaires.

The prevalence of occupational stress was very varied between and within each occupation (Table 2). Health care workers group had the highest as well as the lowest prevalence of occupational stress, with 90.4 and 6.4 respectively. In the factory workers group, the prevalence of occupational stress ranged from 20.7 to 89.6, while in student group ranged from 22.8 to 68.3. The prevalence of academic staffs and officers were 27.6 and 67.2 respectively.

Table 2. The Prevalence of Occupational Stress by Study Participants

ID	Year	Study participants	Sample size	Assessment tool	%
1	2012	Health care workers	136	Self-designed questionnaire	90.4
2	2012	Factory workers	500	Self-designed questionnaire	89.6
3	2010	Factory workers	1009	Self-designed questionnaire	71.5
4	2003	Factory workers	192	Self-designed questionnaire	69.3
5	2016	Students	410	DASS-21	68.3
6	2014	Officers	198	DASS-42	67.2

7	2013	Students	431	Self-designed questionnaire	63.6
8	2014	Health care workers	246	DASS-21	56.9
9	2016	Students	678	DASS-21	48.5
10	2001	Factory workers	404	Self-designed questionnaire	46.8
11	2008	Health care workers	378	David Fontana questionnaires	45.2
12	2005	Health care workers	527	SAS	41.4
13	2014	Health care workers	147	DASS-21	40.8
14	2011	Health care workers	111	DASS-21	36.9
15	2017	Health care workers	191	DASS-21	35.1
16	2016	Factory workers	420	JCQ	27.9
17	2014	Academic staffs	123	DASS-42	27.6
18	2015	Health care workers	250	DASS-21	25.2
19	2016	Students	303	PSS-10	22.8
20	2014	Factory workers	420	JCQ	20.7
21	2013	Health care workers	221	DASS-21	20.4
22	2016	Health care workers	600	DASS-21	18.5
23	2015	Health care workers	370	DASS-21	18.1
24	2015	Health care workers	483	DASS-21	18
25	2014	Health care workers	344	JCQ	6.4

In total 13 studies on health care workers, about half of them were conducted especially on nurses, and the other half were on all the medical staffs in hospital such as doctors, midwives, pharmacist, medical technicians. The sample size was varied, ranged from 100-600. 9 studies, which is two-third of all, used DASS-21 as assessment tool. The others assessment tools are JCQ, David Fontana questionnaire and SAS. There was also one study used self-designed questionnaire. The prevalence of occupational stress among health care workers varied from 6.4 to 90.4.

In 6 studies on factory workers, there were four studies with approximately the same sample size, about 400-500 participants. There were two studies used JCQ Vietnamese version questionnaires, the other four studies used self-designed questionnaire. The highest prevalence was found in the study with the largest sample size, with 89.6% had occupational stress in 500 workers. There were two studies with the same sample size (420), and also had the nearly same prevalence (20.7 and 27.9).

In the students group, the sample size of 4 studies ranged from 300 to 700. There were two studies used DASS-21 as assessment tool, the other assessment tool is PSS-10, used by study in 2016. The remaining study used a self-designed questionnaire. The prevalence of occupational stress among students ranged from 22.8 to 68.3. There were three studies had approximately prevalence, which was around 50-60. However, the study that used PSS-10 had prevalence that was significantly lower than in the other three studies, at 22.8.

This article reviewed two other occupations which were academic staffs and officers. Both studies had a sample size less than 200 and used DASS-42 as assessment tool. However, the prevalence of occupational stress in officers were higher than in academic staffs, with 67.2 and 27.6 respectively.

4. Discussion

4.1 Characteristics of Review Materials

The literature review method is not a new method of scientific research in the world. PubMed search results showed nearly 41,000 results for the review articles, of which 78 were updated within the last month (August 2017). This shows that systematic literature review has not been a new approach in the world and has been widely applied in scientific research. For the topic of occupational stress, PubMed offers a total of 279 search results that the review methodology applied to this topic. In the meantime, in Vietnam, within the scope of this review, we have found no review study related to this topic.

There are many studies and reports on occupational stress in the world. On PubMed alone, search results show nearly 18,000 results for occupational stress, and the number of articles and research tends to increase in recent years. This shows that this topic is increasingly receiving the attention of the community, as well as the researchers. In Vietnam, in line with global trends, occupational stress is being studied more and more in recent years. However, in fact, in Vietnam, this has been a fairly new topic with public health research in general and occupational health in particular, so the writer has encountered some difficulties to be able to look for a significant number of articles or studies to make this review possible. Also, because this reason, the writer cannot limit the reported year of the study.

Although used studies have been conducted since 2001, most studies have been done in recent years, especially in the last five years. In particular, in 2014, we found 6 studies that were used in this review. This shows that the topic of occupational stress has recently received more attention over time. In particular, in terms of occupation of the subject, we found that in recent years, studies on stress in labours were conducted primarily among health care workers. While in previous years (prior to 2010), the problem of occupational stress has been paid more attention to factory workers. Students have been also a recent focus in the field of occupational stress.

Most of the studies were done in the northern provinces of Vietnam, especially in Hanoi city. This result was due to limited access to studies conducted in the southern provinces, because online resources on occupational health generally and on occupational stress in Vietnam have not been developed. The materials collected by the writer mainly from dissertations in university libraries such as Hanoi Medical University (HMU), Hanoi School of Public Health (HSPH), which are all in Hanoi, so used studies were also done mainly in Hanoi and neighboring provinces. Meanwhile, the online source of information in Vietnam was quite limited, hindering us to get further research. This was a limitation of the online occupational health source in Vietnam, suggesting a new way to develop in enhancing the occupational stress in Vietnam.

4.2 The Prevalence of Occupational Stress among Certain Occupations from Studies Carried out in Vietnam

Search results show that there was a great diversity and variation in the prevalence of occupational stress in the studies found. In particular, the prevalence of occupational stress varied from 6.4% to 90.4%. This can be explained by the sample size of each study. Although most of the studies in this review have the sample size in the range of 200-500, the difference in sample size in the studies also affected the prevalence of occupational stress. In addition, the writer has discovered an explanation related to assessment tools. In particular, the extrinsic values of occupational stress are derived from studies using self-designed questionnaires, or less common assessment tools such as JCQ. At the same time, most of the studies conducted among health care workers used the DASS-21 tool, and these studies showed the prevalence of occupational stress with not so large varying amplitudes, with the results of 5 studies ranged from 18.0% to 25.2% This proves that assessment tool for occupational stress plays a very important role in the prevalence of occupational stress. This finding offers a need for consistency in the assessment tool to deliver more comprehensive results on occupational stress.

The above finding on assessment tool is more clearly demonstrated in studies on factory workers. In a total of 6 studies conducted on factory workers, there were two studies using Karasek's JCQ measurement tool in Vietnamese version. These two studies both have the same sample size of 420, which results in relatively same prevalence of occupational stress (27.9 and 20.7). This result was similar to a study of occupational stress among the 192 textile workers in Congo in 2015, also used the Karasek's JCQ, with the result of 28% occupational stress (Kitronza & Mairiaux, 2015). Another 2008 study in India conducted at a foundry company, also using the JCQ tool, showed the prevalence of occupational stress of 25% (Mohan et al., 2008). Similarly, a 2010 study in Thailand also showed a 28% occupational stress prevalence, which was measured by the same assessment tool (Sein et al., 2010). There is a certain similarity in the prevalence of occupational stress when measuring by the same assessment tool, in particular Karasek's JCQ tool. Meanwhile, the four remaining studies on factory workers used in this review using self-designed questionnaire, gave very different results on the prevalence of occupational stress, ranged from 46.8 to 89.6, which was quite different from the prevalence found in other studies in the world as shown. The reason for this difference could due to the heterogeneity of the criteria as well as the scores to assess occupational stress in self-designed questionnaires, which led to different conclusions about the occupational stress of the research participants.

In terms of the prevalence of occupational stress among students, it was unequal among studies. Specifically, two studies had significantly higher prevalence of occupational stress than the others (68.3% and 63.6% respectively), while one study using the PSS-10 assessment tool was significantly lower (22.8%). Of the four studies used, two studies used the DASS-21 assessment tool to calculate the prevalence of occupational stress and reported results of 68.3% and 48.5% respectively. In particular, the research in 2016 resulted the prevalence was 48.5%, which was quite close to the result of a study

among first-year university students in Australia (52.9%) (Papier et al., 2015) and a result of a study among medical students in Casablanca (52.7%) (Ben Loubir et al., 2014). In addition, a study among dental students in Saudi Arabia (Basudan et al., 2017) using the DASS-21 assessment tool and a study among medical undergraduate students in India (Iqbal et al., 2015) using the DASS-42 assessment tool showed similar results of 54.7% and 53.0% respectively. This shows a consistency in the prevalence of occupational stress among students when using the same assessment tool.

5. Conclusions

The prevalence of occupational stress was very varied between and within each occupation. Overall, the prevalence of occupational stress was from 6.4% to 90.4% and focus on health workers, factory workers, students, academic staff and officers. The prevalence of occupational stress among health care workers ranged from 6.4% to 90.4%. The prevalence of occupational stress among factory workers ranged from 20.7% to 89.6%. The prevalence of occupational stress among students ranged from 22.8% to 68.3%. The prevalence of occupational stress among other workers ranged from 27.6% to 67.2%.

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