

Job stress, work characteristics and social support among nurses working at port moresby general hospital, Papua New Guinea

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ABSTRACT

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A cross-sectional descriptive study was conducted among Papua New Guinean nurses working at Port Moresby General Hospital in National Capital District, Papua New Guinea with the aim to describe the pattern of job stress (acute & chronic level) and its severity at mild, moderate and severe levels respectively as well as work characteristics and social support. A total of 161 self administered questionnaires were obtained from the nurses during the month of January 2009. Descriptive statistics was employed to describe the independent variables and the outcome under study.

Most of the nurses were married and had three to five children, earned between 69 to 274 US dollars and lived in places easily accessible by hospital transport services. Half of them experienced acute and chronic stress at moderate levels. Social support (rendered by three support persons namely the nursing supervisor, family and colleagues) revealed moderate support for the nurses provided by the family, spouse and friends. The family, relatives and friends made work life easier for the nurse and were the easiest support persons to talk to. The nursing supervisors were the ones they could rely upon when the job got tough meanwhile the family were always available to listen to the nurse's personal problems. When considering work characteristics, the majority (67.3%) were registered nursing officers. Mean number of years of working experience in the hospital was 17 years which ranged between 1 to 40 years. Most of them were permanent staff on government payroll and worked with the 8-hour shift of working schedule. Working hours per week for the nurses ranged from 40 to 59 hours. Job satisfaction and conflict at work revealed degree of moderate levels.

Policy makers and hospital managers, therefore, must consider the priority of stress reduction programs and facilitate its introduction into nursing colleges in order to prepare nurses to be ready and capable to work and cope with a complex and demanding work environment where job stress is imminent.

Keywords Job stress Work characteristics Social support
Occupational health Nurses

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ความเครียดในงาน ลักษณะงาน และการสนับสนุนทางสังคมของพยาบาล ประจำการโรงพยาบาลทั่วไป พอร์ต มอร์สบี ป้าปัวนิวกินี

บทคัดย่อ

พริสสิลा แណด, พันธุ์พิพิ รามสูด, จิราพร ชมพิกุล. ความเครียดในงาน ลักษณะงาน และการสนับสนุนทางสังคมของพยาบาลประจำการโรงพยาบาลทั่วไป พอร์ต มอร์สบี ป้าปัวนิวกินี. ว.สาธารณสุขและการพัฒนา, 2553; 8(1) : 21-32.

การศึกษาเชิงพรรณนาในกลุ่มพยาบาลโรงพยาบาลทั่วไป พอร์ต มอร์สบี ป้าปัวนิวกินี มีวัตถุประสงค์เพื่อพรรณนาแบบแผนความเครียดในงาน ตามระดับภาระงาน หรือเรื่อง และระดับความรุนแรง (น้อย ปานกลาง สูง) รวมทั้งศึกษาลักษณะงาน และการสนับสนุนทางสังคม โดยให้พยาบาล 161 คน ตอบแบบสอบถามด้วยตนเอง ในช่วงเดือนมกราคม 2552 การศึกษานี้ใช้สถิติพรรณนาเพื่อวิเคราะห์ข้อมูล

พยาบาลส่วนใหญ่มีสถานภาพสมรส จำนวน บุตรเฉลี่ย 3-5 คน มีรายได้ระหว่าง 69 - 274 เหรียญสหรัฐ และมีที่พักอาศัยใกล้บริการบนส่วนของโรงพยาบาล พยาบาลประมาณครึ่งหนึ่งมีประสบการณ์ความเครียดทั้งระดับภาระงาน และเรื่อง ในระดับความรุนแรงปานกลาง พยาบาลได้รับการสนับสนุนจากครอบครัว คู่ครองและเพื่อนอยู่ในระดับปานกลาง โดยกลุ่มนี้เป็นบุคคลที่ทำให้ชีวิตงานของพยาบาลง่ายขึ้น และเป็นบุคคลที่เข้าสามารถพูดจาด้วย ส่วนหัวหน้าพยาบาลเป็นบุคคลที่พยาบาลสามารถพูดได้เวลาที่มีปัญหารืองาน ในขณะที่ครอบครัวเป็นที่พึ่งด้านปัญหาส่วนตัวได้ตลอดเวลา ด้านลักษณะงาน พนวจส่วนใหญ่ (67.3%) เป็นพยาบาลวิชาชีพมากกว่าพยาบาลประเภทอื่นๆ อายุเฉลี่ยของการทำงาน 17 ปี โดยมีอายุงานต่ำสุด 1 ปีถึงสูงสุด 40 ปี ส่วนใหญ่เป็นข้าราชการประจำ และทำงานพัสดุละ 8 ชั่วโมง จำนวนชั่วโมงที่พยาบาลทำงานมีพิสัยระหว่าง 40 - 59 ชั่วโมงต่อสัปดาห์ มีความพึงพอใจในงานและความบัดดี้ในงานใน ระดับปานกลาง

ผู้กำหนดนโยบาย และผู้บริหารโรงพยาบาล ควรให้ความสำคัญต่อโครงการลดความเครียด โดยเริ่มตั้งแต่ในโรงเรียนพยาบาล เพื่อเตรียมตัวพยาบาลให้สามารถจัดการกับความเครียดและทำงานได้ในสิ่งแวดล้อมที่ยุ่งยาก และ ภาระงานที่หนัก ซึ่งเป็นบ่อเกิดของความเครียด

คำสำคัญ ความเครียดในงาน ลักษณะงาน การสนับสนุนทางสังคม อาชีวอนามัย พยาบาล

INTRODUCTION

Job related stress is arguably one of the most serious modern occupational health hazards in the 21st century in industrialized countries¹. For example, in USA alone, an excess of \$150 billion is lost annually to stressor and stress related problems². The nursing profession is known to be stressful throughout the world and has detrimental effects on physical and psychological well beings.^{3,4}. Nursing practises in Papua New Guinea differ vastly from Western and Asian cultures, and it remains unclear as to what role job stress and social support play in the occupational health among nurses with different demographic characteristics.

There are three groups of researchers with differing views on job stress; one school of thought focuses on the employee and his or her individual characteristics which include coping ability, skills, resiliency, genetic makeup and previous learning experiences, as well as specific job tasks at hand. Another school of thought focuses on the workplace environment and the organizational characteristics as the major sources of work related stress. The third group uses a transactional theory of stress that attributes stress to the environment but argues that the individual determines whether these might be the sources of stress according to his or her appraisal of the situation, including perception and this eventually determines the mental and physiological stress response patterns and long term health consequences⁵.

Existing research findings highlighted that human service work was characterized by decisions that involved direct responsibility for other people's lives⁶. This responsibility was found to be stress inducing. Stressors are also described as antecedents to job stress and are divided into factors intrinsic to the job itself, roles in the organization, and relationships among health workers⁷. There has been long standing interest to identify some sociodemographic factor that contributed to job stress that can pose as significant on an individual basis as a predictor of job stress, but so far no major factors have been found.

Social support was defined as emotional and instrumental assistance and protection provided to the nurse respondents in the course of their duties. The basis of social support, considered fundamental to this concept involved the exchange of resources between two individuals and advocacy for the affected individual.⁸ Moreover, lack of organizational support and feed back from supervisors led to an increase in organizational stress, although supportive interpersonal recognition and acceptance could reduce stress.

The aim of this research, therefore, is to identify the pattern of distribution of acute and chronic job stress, work characteristics and social support among nurses employed at the Port Moresby General Hospital.

METHODOLOGY

This is a cross-sectional descriptive study conducted among nurses working at Port Moresby General Hospital in national capital district, Papua New Guinea. Population based study of registered nurses at the Port Moresby General Hospital. Three hundred and fifteen nurses were employed at the hospital.

The exclusion criteria of the study were: 1) new nurses with less than twelve months on the job, 2) nurses who transferred in from other hospitals, 3) nurses who did not registered with the PNG Nursing Council, nursing supervisors and ward managers, and nursing administrators, 4) nurses having a psychiatric consult and receiving psychopharmacological treatment.

The self administered questionnaire including NIOSH Job Stress Questionnaire was used. The questionnaire was divided into 6 parts:

Part 1- Sociodemographic information of participants.

Part 2- Work characteristics covered information such as job title, length of occupation, time served in current hospital, work hours and shift work.

Part 3- Conflict at work related to attitudes in relation to co-workers, peers, supervisors and family.

Part 4- Job satisfaction.

Part 5- Job stress; General health information used as a proxy in this study. These were related to subjective physical and psychological health complaints.

Part 6- Social Support: respondent's perception of her social relations and support provided by her supervisors, co-workers and family members.

The classification and scoring system used in this study are presented. Job stress was classified into acute and chronic job stress. Acute stress manifested by psychological complaints was defined as those complaints experienced in the past 7 days. Chronic stress which referred to the nurses' subjective health complaints mostly of physical origins revealed that nurses experienced less chronic job stress when it came to sleeping problems followed by loss of appetite. Stomach ache problems, clammy damp hands, also bothered by heart beat indicating higher chronic job stress. Items in this category were scored as 4,3,2,1 for acute job stress and 5, 4, 3, 2, 1 for chronic job stress and levels of severity ranged from mild, moderate and severe. In this study, an increased score summoned a lower level of job stress in the acute and chronic categories. Respondents that scored under the 25th percentile were categorised as having severe job stress, between 25th and 75th percentile were assigned as having moderate job stress, and scores more than the 75th percentile were assigned to mild job stress.

Social support questions in this study were scored by the respondent's responses as: 4= very much; 3= somewhat; 2= a little; 1= not at all & don't have any such person. Therefore the higher the score meant higher social support.

For conflict at work in this study, positive questions were scored as 5,4,3,2,1 and negative questions as 1,2,3,4,5 so that the higher the score, the less conflict at work.

Job satisfaction in this study was scored as 1,2,3,4. Respondents that scored under the 25th percentile were categorised as having low job satisfaction, between 25th and 75th percentile were assigned as having moderate job satisfaction and scores more than the 75th percentile were assigned to high job satisfaction, therefore the higher the score meant high job satisfaction.

Participants responded after consenting to participate in the research. Data collection began on the 2nd January 2009 and lasted for five weeks. The principle researcher was assisted by two research assistants (fourth year medical students) who were trained over three consecutive days before administering the questionnaires. Completed questionnaires were collected and the data were analysed using Descriptive statistics as the population data obtained.

RESULTS

After applying the exclusion criteria, a total of 161 participants were recruited out of the 315 nursing staff at PMGH.

Some 83.9% of nurses denied experiencing any job accidents/incidents within the past six months. Nearly 40% of them never had any sick days within the immediate past month whilst 60% of them had one to nine days of sick leave. All participants had experienced job stress at the time of interview.

Job Stress

Respondents as shown in Table 1 who had acute job stress at varying degrees of severity also experienced chronic job stress as shown by the results where 56.3% of the nurses suffered from acute and chronic stress at moderate levels, whilst 7.3% of respondents had severe acute stress and mild chronic stress at the time of the survey. 7.5% of the nurses on the other hand had low acute stress and severe chronic stress. This may imply that acute stress may be the manifestation of the outcome of chronic stress.

Table 1 Percentage of nurses by Acute Job Stress and Chronic Job Stress

	Acute job stress	Chronic job stress		
		severe	moderate	mild
mild		3 (7.3)	21 (51.2)	17 (41.5)
moderate		15 (18.8)	45 (56.3)	20 (25.0)
severe		19 (47.5)	18 (45.6)	3 (7.5)

Work Characteristics of nurses

Two third of nurses were formally registered with their governing body, PNG Nursing Council. Most nurses had been serving for more than five years. The longest service years given to any hospital or health setting by the respondents was 40 years and the accumulated average number of years was 17 years.

Majority of nurses (91.3%) were permanent employees, thus were paid a regular two weekly salary by the Government through the Department of Health. At the time of study, only 30% of nurses were working on permanent shifts whilst the remainder worked rotating shifts. However all the subjects had rotated in shifts at one time or another before becoming permanent shift staff. The longest period of doing shift duty work was 40 years and the shortest was 1 year.

In terms of the rotation pattern followed, most of the nurses (93.8%) did the eight hour shift at the hospital whilst 6.2% did the non permanent twelve hour shift.

In a week, nurses changed shift more often (61.5%), the number of working hours per week for a nurse ranged from 40 hours to 59 hours as the most worked number of hours at 86.3% where the minimum was 8 hours and the maximum was 60 hours per week. Most of the nurses (83.2%) did overtime work every week of not more than 10 hours or less with the median score of 2 hours. More than 90% of the nurses who participated in the survey did not do other work hours outside of the hospital especially in the private medical setting as depicted in Table 2 below.

Social Support rendered to nurses

When compared to their colleagues and nursing supervisors it was found that the nurses increased preferences to draw upon their family for social support. The nursing supervisors were the least persons at work that the nurses turned to for social support and networking whilst the highest mean score was where the nurses relied on most (nursing supervisor) when the job got tough (Table 2).

Table 2 Level of support provided by nursing supervisor, co-workers and family to the nurses working at Port Moresby General Hospital

Social Support		Support Persons		
		Supervisor	Co-workers	Family
Making work life easier for nurse				
very much		41 (25.5)	45 (28.0)	86 (53.4)
somewhat		49 (30.4)	43 (26.7)	27 (16.8)
a little		45 (28.0)	50 (31.1)	28 (17.4)
not at all		26 (16.2)	23 (14.3)	20 (12.4)
Mean (SD)		1.65 (0.79)	1.68 (0.84)	2.11 (1.10)
Easiest person to talk to				
very much		4 (33.5)	53 (32.9)	91 (56.5)
somewhat		39 (24.2)	48 (29.8)	33 (20.0)
a little		47 (29.2)	45 (28.0)	30 (18.6)
not at all		21 (13.0)	15 (9.3)	7 (4.4)
Mean (SD)		1.78 (0.85)	1.86 (0.98)	2.29 (1.17)
People relied on most when job gets tough				
very much		61 (37.9)	52 (32.3)	77 (47.8)
somewhat		44 (27.3)	44 (27.3)	32 (19.9)
a little		41 (25.5)	54 (33.6)	38 (23.6)
not at all		15 (9.3)	11 (6.8)	14 (8.7)
Mean (SD)		1.98 (1.00)	1.85 (0.90)	2.00 (1.03)
How much they listen to personal problems				
very much		45 (28.0)	33 (20.5)	91 (56.5)
somewhat		36 (22.4)	45 (28.0)	26 (16.2)
a little		55 (34.2)	62 (38.5)	32 (19.9)
not at all		25 (15.5)	21 (13.1)	12 (7.5)
Mean (SD)		1.62 (0.85)	1.56 (0.78)	2.22 (1.13)

Conflict at work

Generally there was less conflict at work as perceived by the nurses such that within the group there was good team work, group members were friendly and agreeable, they supported each other's ideas, there was cooperation and harmony and rather low clashes within the subgroups at the mean scores of 3.76, 3.60, 3.48, 3.40 and 3.31 respectively.

Only disagreements on job tasks in group and differed differed opinions within group members had lower mean scores but they were still higher than the average mean scores at 2.98 and 2.53 respectively.

Job satisfaction

The nurses in the job satisfaction domain had a mean score of 2.09 which was the highest in the overall job satisfaction category implying that the job satisfaction of nurses was average, bordering between somewhat satisfied to not too satisfied. The other categories also bordered on average scores implying the uncertainty surrounding job satisfaction.

In the number of nursing years spent at PMGH category approximately half of the nurses suffered from moderate acute and chronic job stress at 57.8% and 53.3% respectively in the six to ten year category compared to other years (Tables 3 and 4).

Table 3 Percentage of nurses by acute job stress and study factors

Study factors	Acute Job stress		
	Mild	Moderate	severe
Nurse years (PMGH)			
1 - 5	10 (25.0)	9 (47.5)	11 (27.5)
6 - 10	10 (22.2)	26 (57.8)	9 (20.0)
11 - 20	11 (23.4)	26 (55.3)	10 (21.3)
21 - 30	7 (28.0)	12 (48.0)	6 (24.0)
31 - 40	2 (50.0)	1 (25.0)	1 (25.0)
Work shift Description			
Permanent	10 (20.8)	31 (64.6)	7 (14.6)
Rotating	30 (26.6)	53 (46.9)	30 (26.6)
Hours of work per week			
8 - 30	7 (41.2)	6 (35.3)	4 (23.5)
31 - 60	33 (22.9)	78 (54.2)	33 (22.9)

Table 3 Percentage of nurses by acute job stress and study factors (Cont.)

Study factors	Acute Job stress		
	Mild	Moderate	severer
Social Support			
Good	14 (30.4)	24 (52.2)	8 (17.4)
Moderate	20 (25.6)	44 (56.4)	14 (18.0)
Poor	6 (16.2)	16 (43.2)	15 (40.5)
Conflict at work			
High	4 (9.8)	26 (63.4)	11 (26.8)
Moderate	24 (27.9)	41 (47.7)	21 (24.4)
Low	12 (35.3)	17 (50.0)	5 (14.7)
Job satisfaction			
High	22 (53.4)	18 (42.9)	2 (4.8)
Moderate	15 (17.1)	54 (61.4)	19 (21.6)
Low	3 (9.7)	12 (38.7)	16 (51.6)

Table 4 Percentage of nurses by chronic job stress and study factors

Study factors	Chronic Job stress		
	Mild	Moderate	severe
Nurse years (PMGH)			
1 - 5	10 (25.0)	21 (52.5)	9 (22.5)
6 - 10	8 (17.8)	24 (53.3)	13 (28.9)
11 - 20	12 (25.5)	22 (46.81)	13 (27.7)
21 - 30	9 (36.0)	12 (48.0)	4 (16.0)
31 - 40	2 (50.0)	1 (25.0)	1 (25.0)
Work shift Description			
Permanent	13 (27.1)	27 (56.3)	8 (16.7)
Rotating	28 (24.8)	53 (46.9)	32 (28.3)
Hours of work per week			
8 - 30	4 (23.5)	10 (58.8)	3 (17.7)
31 - 60	37 (25.7)	70 (48.6)	33 (25.7)

Table 4 Percentage of nurses by chronic job stress and study factors (Cont.)

Study factors	Chronic Job stress		
	Mild	Moderate	severe
Social Support			
Good	14 (30.4)	24 (52.2)	8 (17.4)
Moderate	20 (25.6)	44 (56.4)	14 (18.0)
Poor	6 (16.2)	16 (43.2)	15 (40.5)
Conflict at work			
High	4 (9.8)	26 (63.4)	11 (26.8)
Moderate	24 (27.9)	41 (47.7)	21 (24.4)
Low	12 (35.3)	17 (50.0)	5 (14.7)
Job satisfaction			
High	16 (38.1)	22 (52.4)	4 (9.5)
Moderate	20 (22.7)	44 (50.0)	24 (27.3)
Low	5 (16.1)	14 (45.2)	12 (38.7)

As for the job description category, half of the permanent and non permanent nurses suffered from moderate acute and chronic job stress; for the work shift description, permanent and rotating shift nurses also experienced moderate acute and chronic job stress. In the years doing shift work category, nurses who did six to ten years of shift work experienced moderate acute job stress whilst the eleven to twenty years of shift work done by nurses experienced moderate chronic job stress.

Work shift description revealed that both permanent and rotating staff nurses suffered from moderate acute and chronic job stress.

In the rotation pattern category where the nurses did the eight hour shift more than half of them suffered from moderate acute and chronic job stress.

With regards to change of shift per week, nurses who changed shift suffered from moderate acute and chronic job stress and having worked at least 31 to 60 hours per week exposed them as well to moderate acute and chronic job stress.

There were moderate levels of social support, conflict at work and job satisfaction in the acute and chronic job stress categories as depicted in Table 3 and 4 respectively.

DISCUSSION

The study showed that majority of nurses exhibited moderate levels of job stress and that acute job stress was a manifestation of the outcome of chronic job stress in the population studied.

The nurses experienced physiological and psychological ill health of job stress and this is

consistent with prior international studies linking job stress to people oriented professions such as health. From the results, it can be seen that social support though uniform among the nurses at moderate to good support levels, nurses still experienced job stress. Since majority of the nurses received most support from the family in the home environment, this may explain why that support did not extend over to the work setting. In view of job accidents within the past month, there were fewer nurses prone to job accidents within the past six months at the time of interview.

The presence of acute and chronic job stress is consistent with other research conducted on nurses that reveal increased physical and psychological manifestations^{9,10}. It is interesting to note that some nurses had experienced acute stress despite being chronically stressed previously. Work characteristics reveal that some nurses in the age group of 30 to 39 years experienced stress from shift changes, nurses who were permanent experienced more stress than their non permanent counterparts and this could be attributed to taking on more responsibilities for their respective sections. Bullying management style by superiors is also detrimental to worker's health¹¹. Other studies found that poor relationships between the superior and subordinates contributed to the level of stress.

In the subjective health complaints used interchangeably with general health information in this study, behavioural issues such as smoking was not found in the majority of nurses. Another area to note was that nurses struggled with self

esteem as part of acute stress whilst sleeping problems was higher among chronic job stress respondents. Disturbed sleep patterns are becoming an area of fervent research where studies have found significant associations between shift work, sleep patterns and mental health.

Olaleye in 2002 found in her study among nurses working in Government hospitals had increased job stress affecting their health and coping ability¹². This study is also consistent with her findings, where the nurses at PMGH which is a government-run institution-had moderately high job stress levels. This study also showed that most nurses at PMGH were uncertain of receiving job satisfaction despite moderate job stress levels as compared to Olaleye who found job stress to be negatively related to job satisfaction in nursing.

Wong et al discovered that a third of Chinese nurses experienced high levels of job stress due to work characteristics like shift work, over time, inadequate staffing, job dissatisfaction and frustration of all kinds, this adversely affected their physical and mental health. This study was also consistent with Wong's findings with results revealing more than half of nurses experienced moderate levels of acute and chronic job stress. Nurses who experience job stress cannot give optimal care to patients leading to slow recovery when working under duress¹³.

RECOMMENDATIONS

1. The PNG National Department of Health has to co-ordinate with Provincial Hospital Boards to help reduce the sources of job stress in the nurses.

2. Introduction of stress intervention programmes in nursing colleges should be conducted before commencement of clinical nursing.

3. In-service trainings and workshops on work stress and stress management targeted at middle management should be employed in order to help nursing managers to deal and manage stress more effectively with their subordinates.

4. This study emphasizes the need to accept Mental Health as an important discipline that should be integrated into each organization's Health and Safety Policy.

5. A larger longitudinal study should be conducted in the future in order to quantify job stress and its impact on provision of quality health services to Papua New Guineans.

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