

Male nurses' work performance

A cross sectional study

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Abstract

Background: Nursing performance is closely related to the success of hospital and patient outcome. Recently, the proportion of male nurses has gradually increased. However, we do not know how these male nurses perform in clinical work. The purpose of this study was to understand the job performance of male nurses in China and to identify their risk factors.

Methods: This is a cross-sectional study. We contacted all the 30 public tertiary hospitals in Hunan Province and 26 of them cooperated. All the 647 male nurses in these hospitals were given questionnaires face-to-face between April 7 and August 8, 2020. The questionnaire included demographic information and the Schwirian's Six Dimension Scale. We also collected the family attitude and the main reason for choosing nursing. We then performed descriptive analyses and liner regressions on the collected data.

Results: We obtained valid questionnaires from 599 individuals. The median age of these male nurses was 26 years old and the nursing age was 4 years. They were mainly distributed in intensive care unit (ICU) (36.12%), operating room (27.42%), and emergency department (23.08%). And the means of the total scores for work performance was 176.42 (standard deviation (SD) = 20.62). The result of the regression shows that length of service, relationship status, educational level, department, main reason for choosing nursing, and family attitude are all risk factors of male nurses' work performance.

Conclusion: Chinese male nurses are younger and have shorter working years. They mainly work in departments with higher work intensity and greater pressure. In addition, we found that years of service, education, marital status, department and main reasons for choosing nursing as factors influencing the job performance of male nurses.

Abbreviations: ICU = intensive care unit, SD = standard deviation, Six-D Scale = Schwirian's Six Dimension Scale.

Keywords: influence factor, male nurses, work performance.

1. Introduction

Individual job performance is closely related to the success of the organization and prognosis of patients.^[1,2] Outstanding medical professionals with a good work performance can provide patients with better medical services and enhance the professionalization and competitiveness of hospitals.^[3,4]

1.1. Risk factors of nursing performance

Antecedent variables of nursing performance include organizational factors and individual factors. Nursing environment and leadership has a great responsibility for the success of nursing performance.^[5] Family support also has a negligible impact on individual performance.^[6] Skills, traits, motives and attitudes all contribute to effective nursing performance. And nurses make more errors at work when they were undertaken the family role

of caring for both children and elders.^[7] In addition, there was a significant positive correlation between professional communication competences,^[8] information and communication technology using,^[9] self-efficacy, organizational commitment, patient satisfaction^[10] and nursing performance.

1.2. Male nurse's dilemma

The role of women as the main family caregivers and the health care providers in medical institutions has gradually formed with social division of labor and the development of medical specialization. After the Nightingale reform, men are usually excluded from general hospital care and battlefield care.

However, male nurses still account for a minority although it has been increasing gradually. It accounted for 5.8% to 23% of the total number of registered nurses in European and American countries.^[11,12] However, this proportion is only 2% in China.

JS and YG contributed equally to this work.

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The data was used and analyzed during the current study are available from the corresponding author on reasonable request. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

All data generated or analyzed during this study are included in this published article [and its supplementary information files]

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The American Nursing Association has also been promoting the increase of male nurses. It launched the “20 X 20: Choose-Nursing” program whose goal is to increase the share of male nurses by 20 percent nationally by the year 2020.

The male nurse will face double impact of the nurse role and the male identity. The role of men in social psychology includes muscle strength, aggression, self-confidence, self-control and leadership.^[13,14] These traits may conflict with tradition views of nurses’ emotional roles, such as caring, gentleness, enthusiasm and compassion. Common misperceptions of men in nursing included: most male nurses are gay; men are not suited to nursing and men are less caring and compassionate than women.^[12,15]

It was confirmed that men do not enter the nursing profession mainly for 3 reasons. The first focus on gender-related traditional cultural psychology. The second lies in the public’s misunderstanding of nursing work and misconceptions about the importance of nursing work; and the third is lacking of distinctive personality and promising male nurse career model.^[16]

1.3. Impact on nursing performance

Male nurses are faced with more social psychology pressure. And these are all risk factors of nursing performance. Neiterman’s^[17] survey showed that 44% of the investigated male nurses were discriminated against in the practice of nursing. And 31% of the male nurses considered the role of their nurses were isolated from the society.

What’s worse, they have a high proportion of turnover intention and low job satisfaction. The turnover rate among male nurses is twice that of female nurses.^[18] According to Sochalski and Melendez-Torres,^[19] although there are a lot of job opportunities for male nurses, however 7.5% of male fresh graduates are unemployed, which is significantly higher than that of female nursing graduates (4.1%). They showed a lower satisfaction with nursing work than that of the female group. Another study investigated the turnover intention of 284 male nurses in 3 hospitals in the United States. The results showed that 46% of male nurses had recently considered leaving nursing positions.^[20] In China, the willingness of male nurses to leave their jobs ranges from 11.1% to 85.7%, while a large number of multicenter retrospective studies have confirmed that [male nurses are more likely than female nurses to experience negativity, coping, reduced self-efficacy, burnout, and even to leave their jobs].^[18,21]

1.4. Chinese male nurses’ perception

All along, Male nurses are not understood and supported by the public. According to a survey report in China, 66.2% of respondents believed that men are not suitable for nursing work; 17.85% of patients said they would not accept male nurses’ care for them,^[22] which was higher in the Gynecology and obstetrics department.^[23]

What’s more, there are quite a few male nurses who are not voluntarily entering the nursing field. Many Chinese students were transferred to the nursing profession after the college entrance examination because the score was not enough for their first choice and there are always not enough students in the nursing profession. And currently, little research had explored the work performance of these students after graduate.

1.5. Aims of the study

Investigating the current status of overall nursing performance of male nurses in tertiary general hospitals in Hunan Province and analyzing the influencing factors affecting the job performance scores of male nurses.

2. Method

2.1. Study design, setting, and participants

This study adopted a cross-sectional study design. Cluster sampling method was used to investigate the performance of all male nurses in tertiary general hospitals in Hunan, which is a populous province in central China. The survey was conducted between April 7 and August 8, 2020. Firstly, the list of all tertiary hospitals in the Province was retrieved on the website of National Health Commission of Chinese government (<http://www.nhc.gov.cn/>). And a total of 30 hospitals were obtained. Then, we contacted the nursing department of these hospitals to obtain permission and assistance to investigate the male nurses in these hospitals. Finally, 26 hospitals are willing to cooperate with our research.

The inclusion criteria for the study sample were: (1) male, (2) registered nurse, (2) officially employed by the hospital, and (4) providing informed consent to participate in this survey. The exclusion criteria were being on vacation or not in clinical work (such as in management positions).

All male nurses were called together to attend a meeting and fill out the questionnaires. At the meeting, explanations were necessary to ensure that the nurses understood the purpose and methods of the study. Informed consent was also obtained. Then, the completed questionnaires were retrieved. After the questionnaires are collected, the questionnaires are audited to eliminate invalid questionnaires such as incomplete questionnaires, and the questionnaires are numbered uniformly, and then double-checked and double-entered into the questionnaire information to establish a database.

2.2. Ethical considerations

This study was approved by the First People’s Hospital of Changde City medical Ethics Committee (No. 2021-129-01). We have repeatedly assured the participants that the questionnaire is anonymous; and the survey results will not affect any aspect of the participants’ work and life. And all of them were informed that they can withdraw at any time during the questionnaire filling process, without explanation or consequences for their career.

2.3. Measures

The study was conducted in the form of a questionnaire survey. First, the researcher contacted the nursing department of the selected hospital and obtained the consent and cooperation of the nursing department; with the assistance of the relevant contact person of the nursing department management, the researcher chose a suitable time to call male nurses to conduct training on the completion of the questionnaire, aiming to make the respondents clear about the purpose, method and precautions of this study, so that they are clear that the questionnaire survey will not reveal their privacy, nor will it have any impact on their work and life, so that they can fill in the questionnaire as objectively and honestly as possible.

In this study, the questionnaire comprised instructions, a demographic questionnaire and the Schwirian’s Six Dimension Scale (Supplementary Digital Content, <http://links.lww.com/MD/G961>).

2.3.1. The demographic questionnaire. This part collected socio-demographic information, educational experience and family attitude, including age, academic level, marital status, title, and main reason for choosing nursing. In addition, we also collected the family attitude perceived by the nurses towards the male nursing profession.

2.3.2. Schwirian’s Six Dimension Scale (Six-D Scale). This scale consists of a series of 52 nurse behaviors grouped into

six performance subscales: leadership, critical care, teaching/collaboration, planning/evaluation, interpersonal relations/communications, and professional development. The scale has been widely used to measure nurse job performance. And we utilized the Chinese version of this scale.^[24] The internal consistency Cronbach's alpha coefficient for the scales was 0.959, the subscale reliability coefficients all ranged from 0.780 to 0.899, the split-half coefficient was 0.816, and the intra-group correlation coefficient for the retest reliability ICC was 0.857. Measured on a Likert scale of 4 (4 being very good and 1 being bad), with higher scores indicating a higher level of competence for the entry.

The operational definition of the variables: Our study considered invalid questionnaires that is missing responses $\geq 20\%$ or clearly unreliable responses – e.g., all entries have the same answer, or one item has multiple answers.

2.4. Data analysis

EpiData 3.1 software was used for data entry, the questionnaire database was created, the data was converted to SPSS compatible format and the data was statistically analyzed using the SPSS 18.0 statistical package. Specific statistics included: ①Statistical description. Frequencies, percentages, means and standard deviations were used to describe the general information profile of the nurses. ②The total score of the questionnaire was calculated. Data that met the normality test were analyzed using one-way ANOVA to compare the differences between different demographic and sociological characteristics and the job performance scores of male nurses, and the Kruskal–Wallis test was used for data that did not meet the normal distribution. In this study, the male nurses' performance scores all conformed to an approximately normal distribution, so one-way ANOVA was used in univariate analysis. Factors affecting male nurses' job performance scores were analyzed using multiple linear regression with relationship status, education, position, family attitude, department, main reason for choosing nursing and years of experience as independent variables. $P < .05$ was considered a statistically significant difference.

3. Results

In this study, we distributed 647 questionnaires and recovered 599 questionnaires. Male nurses usually took about 20 minutes to complete the questionnaire. The 599 male nurses were mainly distributed in intensive care unit (ICU) (36.12%), operating room (27.42%), and emergency department (23.08%). The average age of male nurses is 26 years and the average length of service is 4 years. Table 1 shows the scores of male nurses on the six dimensions, with a total score of 176.42 ± 20.62 , 16.72 ± 2.26 for leadership, 24.09 ± 2.84 for critical care (Table 1).

The others demographic details and the single factor analysis of male nurses' work performance are shown in Table 2. In addition, the results of the univariate analysis of male nurses' job performance showed that marital status, education level, work sector, job title and family attitudes affect the job performance of male nurses (Table 2).

According to the results of univariate analysis, we put length of service, relationship status, educational level, department, positions, main reason for choosing nursing, and family attitude into backward stepwise regression analysis. Department and the reasons for choosing nursing work were set as dumb variables because they are multi class disorder variables. Table 3 shows the assignment table for the independent variables. The result of the regression shows that length of service, relationship status, educational level, department, main reason for choosing nursing, and family attitude accounted for 29.8%

of the variance in nursing performance. The results are shown in Table 4.

4. Discussion

4.1. The situation of male nurses

The 599 male nurses were mainly distributed in ICU (36.12%), operating room (27.42%), and emergency department (23.08%). Which were consistent with the results of Roth and Coleman.^[25] That is, male nurses are generally distributed in departments where the patient is critically ill, the condition changes rapidly, and the work intensity is high. So male nurses are very popular in these clinical departments have relatively high requirements for strength, skills, and stress tolerance. In addition, this study found that male nurses are younger in age. This reflects a gradual increase in the proportion of male nurses in China in recent years.

Table 1

Descriptive statistics for the male nurses' work performance.

	Mean \pm SD
Total	176.42 \pm 20.62
Leadership	16.72 \pm 2.26
Critical care	24.09 \pm 2.84
Teaching/collaboration	38.50 \pm 4.34
Planning/evaluation	23.94 \pm 3.00
Interpersonal relations/communications	41.14 \pm 6.53
Professional	32.04 \pm 4.83

SD = standard deviation.

Table 2

Socio-demographic data of participants and the single factor analysis of male nurses' work performance (mean \pm SD).

	n (%)	Total score of work performance	F	P
Relationship status				
Single	271(45.2)	170.42 \pm 21.68	-6.592	<.001
Married	328(54.8)	181.37 \pm 18.31		
Educational level			37.824	<.001
Junior college	156(26.0)	165.45 \pm 21.79		
Bachelor	410(68.5)	179.51 \pm 18.85		
Postgraduate	33(5.5)	189.85 \pm 14.47		
Working a rotating roster			-0.280	.779
Yes	537(89.6)	176.34 \pm 20.79		
No	62(10.4)	177.11 \pm 19.20		
Department			19.395	<.001
Operation room	169(28.2)	172.25 \pm 18.44		
Emergency	190(31.7)	177.06 \pm 22.18		
Intensive care	170(28.4)	183.01 \pm 15.35		
Surgery	21(3.5)	190.95 \pm 17.84		
Internal medicine	49(8.2)	159.18 \pm 24.44		
Positions			-5.152	.001
Nurse	590(98.5)	176.18 \pm 20.67		
Head nurse	9(1.5)	191.67 \pm 8.65		
Main Reason for choosing nursing			2.186	.089
Enthusiasm	148(24.7)	180.16 \pm 24.67		
Make a living	314(52.4)	175.34 \pm 17.75		
Parental wishes	71(11.9)	174.75 \pm 22.14		
Others	66(11.0)	174.94 \pm 21.18		
Family attitude			5.227	.006
Support	405(67.6)	178.06 \pm 21.03		
Neutral	192(32.1)	173.23 \pm 19.03		
Opposition	2(0.3)	150.50 \pm 45.96		

SD = standard deviation.

Table 3
Assignment table of possible factors influencing the job performance of male nurses.

Factors	Variable name	Assignments
Relationship status	X1	1 = Single, 2 = Married
Educational level	X2	1 = Junior college, 2 = Bachelor, 3 = Postgraduate
Positions	X3	1 = Nurse, 2 = head nurse
Family attitude	X4	1 = Opposition, 2 = Neutral, 3 = Support
Department	D	Dummy variables refer to Internal medicine. D1 = Operation room, D2 = Emergency, D3 = Intensive care, D4 = Surgery.
Main reason for choosing nursing	R	Dummy variables refer to Parental wishes. R1 = Enthusiasm, R2 = Make a living, R3 = Others.
Length of service	X5	Original value
The male nurses' work performance	Y	Original value

Table 4
Multiple linear regression using male nurses' work performance.

Model	B	Standard error	Beta	t value	P
The constant	124.594	5.635		22.111	<.001
Length of service	1.072	0.231	0.202	4.641	<.001
Relationship status	5.398	1.773	0.130	3.045	.002
Educational level	8.431	1.453	0.214	5.803	<.001
Family attitude	2.586	1.536	0.060	1.684	.093
Department					
Operation room	6.142	2.924	0.134	2.100	.036
Emergency	13.247	2.843	0.299	4.659	<.001
Intensive care	20.635	2.868	0.452	7.194	<.001
Surgery	24.579	4.716	0.219	5.212	<.001
Internal medicine	Reference				
Main reason of choosing nursing					
Enthusiasm	6.767	2.544	0.142	2.660	.008
Make a living	1.868	2.319	0.045	0.805	.421
Parental wishes	Reference				
Others	1.751	3.013	0.027	0.581	.561

R square = 0.298, adjusted R square = 0.285, $F = 22.696$, $P < .001$.

In terms of marital status, the number of married male nurses in the survey accounted for 42.47%. Compared with the results of the sixth national census in 2010, the first marriage rate of urban men aged 20 to 24 in China is 42%. Therefore, we can speculate that the obstacles to the marriage of male nurses are not significant. It also shows that male nurses have been recognized by the society, and people are beginning to accept men as a nurse. As for the position, 1.5% of the male nurse are head nurses. Although the proportion is small, it shows that the male nurse's ability is being recognized by hospital administrators and patients.

4.2. Factors influencing the performance of male nurses

In this study, we identified years of service, education, marital status, department and main reasons for choosing nursing as factors influencing the job performance of male nurses. These five variables accounted for 25.8% of the total variation in job performance.

The performance of male nurses is related to the nurses' departments, with the highest level of surgery, followed by ICU, emergency department, operating room, and the lowest performance of internal medicine. Nurses working in the emergency department and the intensive care unit often work in shifts and are exposed to high-risk and stressful work. However, the high workload is a major threat to nurses' healthcare quality and work performance.^[26] Second, stress, tension, and uncertainty in work settings will lead to a lower occupational identity,^[27] resulting in high turnover intention and low job performance.^[28] In addition, the physical and mental health and quality of life of nurses in emergency and intensive care units are worse than those of other departments, which is a risk factor for job performance.

The results suggest that we should consider the impact of the department on nursing performance when performing nursing performance assessments for male nurses. Nursing managers should adopt a personalized nursing performance appraisal program according to the busyness and the difficulty of nursing in different departments, instead of "one size fits all" and adopt the same criteria for performance appraisal.^[29] A series of measures can also be taken to compensate for the imbalance between departments, such as awards based on department grade and the increase remuneration of night shifts, which can produce a certain degree of positive effects. More importantly, leaders should pay more attention to the staff of these departments. Adequate organizational supports, material support and psychological support should be given.

Education has the greatest impact on job performance in these variables. Male nurses' nursing performance increases with academic qualifications. Perhaps because the higher the level of nursing education received, the longer the professional theoretical knowledge and professional skills training, the knowledge and skills acquired by male nurses are more systematic and professional. Therefore, nurses with higher academic qualifications are more likely to be qualified for clinical nursing work. This also reminds us that training and continuing education can improve the performance of nurses. As the length of service increases, the performance of care increases. It is because the nurse's experience, theoretical knowledge, and professional skills have improved in practice year after year.

The results of this study show that the marital status of male nurses is closely related to the performance of male nurses. The nursing performance of married male nurses is higher than that of unmarried male nurses. This may be related to the important role of family support in the performance and career development.^[30] Second, the average age of married nurses is older and their work proficiency increases with age. In addition, the life experience of married nurses is more abundant. The experience of coexistence with parents, spouses and children enhances the communication ability of nurses and promotes the improvement of empathy ability.^[31] Thus promote the cooperation between nurses and colleagues, and communication with patients.

The performance of male nurses is positively related to family support. Support from close family members can enable nurses to enhance self-efficacy and confidence, reduce family-work conflict and turnover intention.^[32] Fortunately, in this study, the attitude of family members was "positive" accounting for 67.6%, while the negative attitude was only 2 people, accounting for 0.3%. It reflects that the attitude of the Chinese people towards male nurses has improved greatly, and people began to understand and support their work.

In our current research, only 24.7% male nurses engaged in nursing because of interest and passion. While 52.4% of respondents took nursing for their livelihoods. As for work performance, results showed that nurses who choose nursing professions because of their Enthusiasm perform best, followed by "earn a living", while caregivers who choose nursing because of their parents' wishes or

other reasons have the worst performance. This result reveals that perhaps many male nurses do not really like this profession. We can assume that those nurses had low professional values, organizational commitment and job involvement if there is no strong interest in nursing work, which affects their job performance.^[33] It is suggested that the education administrator should try to respect the candidate's first choice when enrolling in the college entrance examination. In addition, school administrators should strengthen professional education for male nursing students and stimulate their love of nursing profession. Besides, hospital administrators should pay more attention to the psychological state of these nurses, be alert to the occurrence of burnout and turnover.^[4] In addition, our study found that being passionate about one's work can greatly improve the performance of male nurses, and therefore, in the process of departmental management, it is possible to increase male nurses' love for their work and thus improve their performance.

The most relevant result of this study was that years of service, education, marital status, department and main reasons for choosing nursing as factors influencing the job performance of male nurses. These findings suggest that we should consider differences in years of experience, department, and education when assessing the job performance of male nurses, to effectively reduce family members' bias in a timely manner, and to provide male nurses with more family support. Last but not least, advocacy and interventions are needed to increase male nurses' love for their work.

5. Limitation

There are several limitations to this study. First, this study only included hospitals within Hunan Province, which may have some bias. Second, this study only included factors influencing the performance of male nurses and failed to compare it with the performance of female nurses, an aspect that will be added to future studies. Third, a degree of recall bias is an inherent limitation of studies using survey-based data. This may be subject to recall bias in terms of family attitudes, primary reasons for choosing nursing and perceptions of personal experiences. In addition, other nonmeasurable factors such as shift work/shift duty, job seniority, the mental health (mood disorder) status of individuals, economical concerns, self-management bias and level of hospital accreditation may also affect the performance of male Chinese nurses. These aspects will be refined more in future studies.

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