Health status, ability, and motivation influenced district hospital nurse performance

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Abstrak

Tujuan *Untuk mengetahui pengaruh status kesehatan, kemampuan, dan motivasi terhadap kinerja perawat di suatu satu Rumah Sakit Umum Daerah (RSUD).*

Metode *Suatu survey dilakukan pada perawat di unit rawat jalan dan rawat inap suatu RSUD di Jawa Barat selama bulan Mei 2009. Sampel dipilih secara acak. Kuesioner dengan 18-23 pertanyaan digunakan untuk mengukur indikator status kesehatan, kemampuan, motivasi dan kinerja perawat. Analisis jalur dilakukan dengan menggunakan regresi berganda untuk mendapatkan koefisien ß sebagai nilai koefisien jalur, nilai p dan R2. Koefisien Q dan W dihitung dengan Goodness of fit test.*

Hasil *Sampel berjumlah 125 perawat yang diambil dari 493 perawat. Tes dilakukan antara variabel karakteristik responden dengan variabel eksogen (variabel independent) dan variabel endogen (variabel antara atau variabel dependen) pada model yang diusulkan. Diperoleh nilai p>0,05, yang berarti jawaban yang diberikan pada questioner setiap variabel endogen dan eksogen tidak dipengaruhi variasi karakteristik responden. Persamaan garis antar variabel memiliki hubungan linear dengan masing–masing nilai p <0,05. Nilai korelasi sederhana antar variabel 0,376 sampai 0,833. Kemampuan merupakan variabel terkuat yang mempengaruhi kinerja perawat yaitu 44,8%, diikuti motivasi 33,9% dan status kesehatan 21,8%, sedangkan pengaruh ke-3 variabel eksogen secara bersama-sama terhadap variabel kinerja perawat adalah 76,2% dan 23,8% yang dipengaruhi oleh variabel lain.*

Kesimpulan *Variabel kinerja perawat dipengaruhi oleh sejumlah variabel, antara lain status kesehatan, kemampuan dan motivasi perawat. Oleh karena itu semua variabel pada penelitian ini layak dipertimbangkan untuk diintervensi bila ingin meningkatkan kinerja perawat di suatu RSUD.* ***(Med J Indones 2009; 18: 283-9)***

Abstract

Aim To investigate the influence of health status, ability and motivation of nurses' performances in a district hospital.

Methods A survey was conducted during May 2009 in a district hospital in West Java, Indonesia. Nurses in the inpatient and outpatient unit and fulfilled inclusion and exclusion criteria were randomly chosen as the unit of analysis. A questionnaire of 18-23 questions was used to measure the indicator of the four variables. The path analysis was performed using multiple regressions for calculating ß as the value of path coefficient between variables, p value and R2. Goodness of fit test was used to calculated Q and W coefficient.

Results Test was performed on 125 of 493 nurses with exogenous (independent) and endogenous (intermediate or dependent) variables in the model proposed. The p-value was > 0.05, indicating that the characteristics variation of the subjects did not affect the answers on the endogenous and exogenous variables. The health status, ability, motivation and performance variables showed normal and homogenous distribution. Line equation between variables showed linear relation with p<0.05. Simple correlation score between variables was 0.376 to 0.833. Ability was the biggest variable that influences nurses' performance (44.8%), followed by motivation (33.9%) and health status (21.8%). The influences of the three exogenous variables to nurses' performance were 76.2% and 23.8% which was influenced by other variables.

Conclusion Nurses' health status, ability, and motivation influenced their performance. Therefore, these variables can be considered for an intervention to improve the nurses' performance. ***(Med J Indones 2009; 18: 283-9)***

Keywords: *health status, ability, motivation, performance, path analysis*

Nurses' work performance in the district general hospital is very important especially in shortening patients' recovery time.[1] If patients recover within a short time after the treatment in hospitals, the government will automatically get the benefit, it means that the government subsidiary will decrease considering that the amount of subsidiary is increasing every year.[2]

A high number of ill people in a population, will decrease the competition and productivity in that population, compared to an area where the number of ill people are low.[3] Therefore, maintaining good health conditions in one population are very important and cannot be separated from the role of nurses' excellent performance.[3]

However, to display an excellent working performance, a nurse should have good health status[1], sufficient ability [4] and high work motivation.[5] Besides these three main variables mentioned before, there are still some variables that might influence nurses' performance; one of them is the work environment that is not measured here.[6]

Nurses' health status is very important for work, study, gaining knowledge and developing ability.[4] Health status will support and motivate someone to work. Health status is defined as the statement of someone's healthy or unhealthy condition, how he/she feels on his/her health, not only physically but also psychologically.[7]

Other factors that can be used to reflects someone's health status is self esteem.[6] However, measurements on self esteem will be more accurate if it is supported with measurable health conditions; such as blood pressure, body mass index (BMI) and is free from diseases such as asthma or diabetic.[7] Other indicators that can be used to measure someone's health status is by measuring knowledge, attitudes and behaviors towards bad habits in life such as, smoking, lack of exercises, or exhibiting bad eating habits.[8]

Nurses' ability can be investigated through their ability to understand treatment stages, duty and instructions given, their interpersonal relationship especially when dealing with patient, good stamina, and their ability to control emotion.[7] In addition, nurses' ability can also be investigated through their effective and polite services and also excellent physical conditions to perform an excellent work performance.[1]

To perform positive work performance, someone needs motivation to support action.[5] this motivation will also stimulate someone's creativity and effectiveness that are needed by nurses.[5]

In the conceptual framework, the health status of nurses classified as exogenous variables or independent variables where all variables are no explicit cause that affect the ability of nurses, motivation and performance of nurses that are endogenous variables. [1,3,4,5] Endogenous variables is an intermediate or dependent variable.

To investigate problems and influences of particular variables to nurses' performance in the district general hospital, scientific approach is needed based on concept or theory and apply existing framework model. The scientific approach is applied in order to investigate variables so that problems with nurses' performances in district general hospitals can be solved. These results will be beneficial for the hospital management team especially in designing the best work strategy.

At this moment, performance of nurses did not achieve optimal results as expected by the community; consequently the performance of hospitals was also low. The low of performance of nurses could be caused by low health status, ability and motivation of nurses. The reason was supported based on the hospital yearly report in 2008 showed that the number of letters illness, absenteeism, the number of nurses arrived late to hospitals, complaint of patients of a slow reactions, bad attitudes from the nurses respectively increased by 22%, 14.3%, 42.7% 13.2% and 17.1% compared to figures last year. It was also showed that length of stay as one of measurement of hospital performance was also increased by an average number of 2 days than the previous year.

This study is aimed to investigate the influences of nurses' health status, ability, and motivation to perform an excellent work performance, through approaches and concept application done in one of the district general hospital in West Java, Indonesia.

METHODS

Survey method was used as the design for this study. The survey was conducted during the month of May 2009 in a district hospital in West Java which is a referral hospital which has 242 beds, with the number of outpatients per day average 750 patients, and 15.300 inpatients per year with 72% bed occupancy rate (BOR). It serviced by 493 nurses working in inpatient and outpatient units which were the subject of this study. The inclusion criteria was nursing staffs in inpatient and outpatient unit who have worked in this

particular hospital for a minimum of 6 months. While the exclusion criteria's were those who were on leave and refused to participate in this study.

This study used a questionnaire instrument consisting of questions that measure the indicator of four variables investigated. The variables were nurses' health status, ability, motivation, and working performance.

Ability and performance variables were measured by 3 raters who were the nurses' supervisor and two of her fellow nurses, while variables of health status and motivation of nurses were measured directly by the subjects. Questionnaire scoring system was based on subjects' answer in Likert scale of 5 choices with the following interpretation: 1-2 for bad value/negative, 3 for neutral response, and 4-5 to that has good value/ positive. The numbers of questions for each variable varied from 18-23 questions.[9]

All 4 variables measured have 5 indicators. The health status indicators consist of feelings of degrees of physical and psychological health, self esteem, knowledge about the healthy-illness, attitudes toward a healthy situation, and healthy behaviors.[6,9] Indicators of ability consist of the potential to solve problems, speed of perception in action, dynamic strength, the ability to accept oral and written instructions, stamina and resilience in work.[10] Indicators of motivation consist of daring to take risks, desire to earn high salary, the drive to succeed in work, desire to complete each action with success and desired recognition for his/her work.[11] The work performance indicators consist of assessment by employers on the objectives set, on following procedures, initiatives on work, completing basic tasks, working together and providing feedback.[12]

Before the study was commenced, the validity test for the questionnaire was done for each questions and followed with the reliability test.

The normality and homogeneity of each variable from the data collected were tested using Lilliefors test for normality of data and Bartlett test for homogeneity of data. Linearity between endogenous and exogenous variables including its significance was calculated using regression test to fulfill the requirement to conduct path analysis

Data analysis using causal relationship was chosen to test direct and indirect influences for all study variables. Once the data requirements had a normal distribution, homogeneous, linear, and significant as well as had a correlation between variables fulfilled, analysis then were continued to theoretical models using multivariate analysis.

The theoretical model was tested with path analysis that is a technique for analyzing causal relationships that occur in multiple regression, if the independent variables (exogenous) influence the dependent variable, either directly or indirectly.[13] Test was performed using the SPSS software version 11.5. Calculated value of β, p-values, and R^2 for each variable was tested. β coefficients were the values of direct influences of exogenous variables on endogenous variables, provided that p-value < 0.05 (statistically significant). R^2 was the squared value of β and expressed as a percentage. Goodness of fit test was used as an additional test to see whether this theoretical model fit with the research data by calculating Q and W coefficient. [14]

RESULTS

This study population amounted to 493 nurses. Based on the study criteria, only 125 respondents were recruited. The majority of respondents were female nurses (78.4%), aged between 26-30 years (49.6%), with an education level up to diploma III (63.2%), married (79.2%), majority of working periods between 1-5 years (44.8%), worked in inpatient units (74.4%) and 66.4% of nurses had duration of traveling time to hospitals of more than 30 minutes. (Table 1)

Chi square test and Spearman correlation test revealed that the characteristic of subjects at each of exogenous and endogenous variables had p>0.05. This means that the answers given to each question on endogenous variables and exogenous variables by the subjects were not influenced by the variations of the characteristics of the subjects.

Data of all endogenous variable and exogenous variables had normal and homogenous distribution. All variables have linear relationships and significance with p<0.05. Line equation for each variable relationship can be seen in Table 2. This means that it fulfilled the requirements for path analysis.

In analysis using simple correlations, it was showed that scores between variables were from 0.376 to 0.833 (moderate and strong correlations). However, result did not indicate causal relationships between variables from the theoretical model applied. The matrix of simple correlations coefficient between variables can be seen in Table 3.

Table 1. Several characteristic of subjects

Variables	n	%
Gender		
Male	27	21.6
Female	98	78.4
Age group		
21 – 25 years	18	14.4
26 – 30 years	62	49.6
31 – 35 years	33	26.4
36 – 40 years	8	6.4
41 – 45 years	4	3.2
Education level		
Post graduate	1	0.8
Bachelor (S1)	16	12.8
Diploma III	79	63.2
Nurse high school	29	23.2
Marital status		
Married	99	79.2
Unmarried	26	20.8
Working periods		
1 – 5 years	56	44.8
6 – 10 years	54	43.2
11 – 15 years	7	5.6
16 – 20 years	8	6.4
Nurse station		
Out patient	32	25.6
In patient	93	74,4
Travel time to work place		
≤30 minutes	42	36.6
>30 minutes	83	66.4

Table 2. Summary of line equations between variables and its significance level

Variables	Regression equation	p value
$X_4 - X_1$	$X_4 = 44.42 + 0.51\ X_1$	0.001
$X_4 - X_2$	$X_4 = 28.40 + 0.70\ X_2$	0.002
$X_4 - X_3$	$X_4 = 32.42 + 0.80\ X_3$	0.000
$X_3 - X_1$	$X_3 = 32.32 + 0.40\ X_1$	0.002
$X_3 - X_2$	$X_3 = 4.90 + 0.74\ X_2$	0.000
$X_2 - X_1$	$X_2 = 49.74 + 0.37\ X_1$	0.000

X_1=nurse's health status; X_2=nurse's ability; X_3=nurse's motivation; X_4=nurse's performance.

Table 3. Matrix of simple correlation coefficient between variables

Variables	X_1	X_2	X_3	X_4
X_1	1.00	0.376	0.412	0.546
X_2	0.376	1.00	0.751	0.732
X_3	0.412	0.751	1.00	0.833
X_4	0.546	0.732	0.833	1.00

X_1=nurse's health status; X_2=nurse's ability; X_3=nurse's motivation; X_4=nurse's performance.

The results of path analysis calculations on the theoretical model of the effects of health status, ability and motivation on nurses work performances can be seen in figure 1.

This model showed that all direct variables from X_1 to X_2; from X_1 to X_3; from X_1 to X_4; from X_2 to X_3; from X_2 to X_4; and from X_3 to X_4 has p value <0.05, which mean that all scores above have direct influence. Goodness of fit test showed that the theoretical model fit with the research data.[14]

Figure 1 depiets the coefficient values of endogenous variables to exogenous variables, as well as the coefficient values of the other variables which were symbolized by epsilon (e) on each endogenous variables and exogenous variables on the theoretical model. This means that this theoretical model and calculation results can be applied to the hospitals for decision making.

Table 4 showed that the highest direct influence was nurses' motivation (48.2%) on working performances. This means that treatment on nurse's ability would have a direct effect of 48.2%, and nurses' performances would have a direct effect of 44.8%.

Table 5 showed the influence of other variables on endogenous variables including nurse's ability (85.8%), motivation (41.7%) and nurse's performance (23.8%). There were other variables beyond the three endogenous variables that also had influences to the endogenous variables.

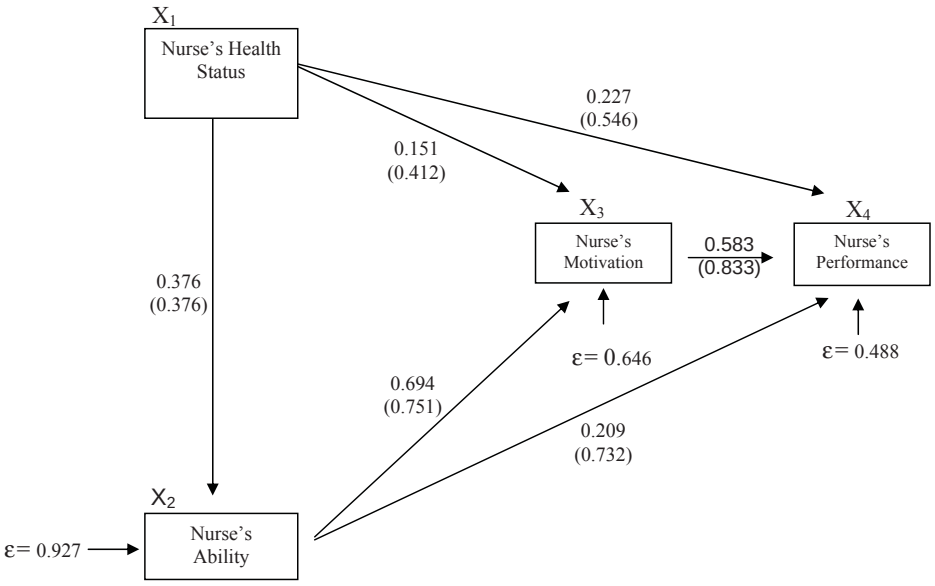

Figure 1. The results of path analysis calculations on a theoretical model of the effects of health status, ability and motivation to the performance of nurses in one District General Hospital in West Java, Indonesia.

Table 4. Percentage of exogenous variable influenced the endogenous variable

Relationship of one factor on another	% Direct	% Indirect			% Total
		X_1	X_2	X_3	
$X_1 - X_2$	14.14	None	None	None	14.14
$X_1 - X_3$	2.28	None	26.09	None	28.37
$X_2 - X_3$	48.16	None	None	None	48.16
$X_1 - X_4$	5.15	None	7.86	8.80	21.81
$X_2 - X_4$	4.37	None	None	40.46	44.83
$X_3 - X_4$	33.99	None	None	None	33.99

X_1=nurse's health status; X_2=nurse's ability; X_3=nurse's motivation; X_4=nurse's performance.

Table 5. Influence percentage in endogenous variable together with the influence of other variables to the endogenous variable

Endogenous variables	R^2	DC %	Other variables (ε)	DC %
X_2	0.141	14.10	0.927	85.80
X_3	0.583	58.30	0.646	41.70
X_4	0.762	76.20	0.488	23.80

X2= nurse's ability; X3= nurse's motivation; X4= nurse's performance.
DC=Determinant coefficient is R2 * 100%

DISCUSSION

For this district general hospital, the biggest influence on nurses' performance occurs if all variables intervened simultaneously. Ability contributes the most to nurses' performance, followed by motivation and nurses' health status. It means that nurses' ability was the biggest component that must be developed by the hospital management team for an excellent nurses' performance. Specifically, this can be encouraged by nurses' knowledge and skills that can be improved by trainings and long-term education. Considering that nowadays, hospitals are expected to have trained nurses in specific areas, specific training such as, emergency treatment training for nurses and junior nurses in charge in Intensive Care Unit and Emergency Room, as well as customer care training for nurses in outpatient and inpatient unit is needed. The training can be in the form of certified seminars or workshop periodically and continuously. This continuing education can be given in order to improve nurses' professionalism to reach the main objective: gaining the ability to perform an excellent nursing service.

In order to maintain the high ability of nurses, continuous competence test is needed.[15] Nice, skillful, caring, have good interpersonal relationships, understand superior instructions, and possess good communication skills are the basic ability that must be required and maintained

from time to time.[16] The effort to improve nurses' ability needs support and should be facilitated by the hospital management. Simple ways proposed in this case are revolutions in institution culture, such as greetings and smiling culture, monthly choosing the best nurse as an example of excellent work performance.

Instead of ability which was the reflection of psychological conditions, physical stamina needs to be maintained due to the fact that excellent stamina was the basic of excellent work performance.[16]

The efforts to maintain nurses' stamina can be applied through weekly exercises or respiratory exercises that can help the nurses to maintain their stamina. Yearly general check-up and its follow-up should become the yearly work program in the hospital nursing department. Nurses should become a role model in maintaining and increasing personal health, so that nurses become the role model of applying healthy behavior and nurses' physical health can be measured. It is expected that this condition will improve nurses' health status and performance.[4, 16]

Nurses' ability in hospitals automatically influences nurses' motivation to perform and influence their work performance. Motivation, alone or simultaneously with other two variables will improve nurses' performance. Superiors and the nurses themselves should become the triggers of motivation.[17, 18]

The superiors support to improve, providing chances and responsibilities to the nurses should be applied, so that independency and cohesiveness with other nurses will become the strengths to perform an excellent work performance.[2, 19]

Nurses' health status is the basic for nurses to exhibit ability, motivation, and excellent working performance. Even though influences to work performance is only 22%, it gives understanding that nurses' knowledge to the feeling of healthy, self esteem, attitudes, and healthy behaviors applications will become important indicators to be fulfilled by a nurses to perform excellent work performances. [2, 15]

However, those three factors mentioned above are not enough for hospital management team. This is caused by high percentages of influencing variables, simultaneously reaching 76.2%. That means that there are other variables contributions, reaching 23.8% that contributes to excellent nurses' performances. Other relevant research showed that the work environment contributes to nurses' work performance is also high. [6]

In district general hospital, the number of nurses' absences and turnovers were high and it decreases nurses' performance.[20] Measuring constellations and ranges of investigated influencing factors will become the resource to improve nurses' performance so that it will be more focused and well-planned.[21] The efforts to implement trainings related to ability, skills, and self-esteem can be the choice for the management team in order to improve nurses' work performance. Furthermore, this study showed that all variables proposed in this model can be applied to improve nurses' work performance. Improvement of nurses' work performance will indirectly contribute to decrease in number of ill people in the district level.

In conclusion, nurses work performances are influenced by many variables. Namely nurses' health status, ability, and motivation. Therefore, all variables proposed in this study can be considered for intervention to improve the nurses' work performance.

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