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Clinical Competence and Work Motivation Improved the General Practitioners' Performance at National Cancer Centre Hospital: A cross-sectional study

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Abstract

Background: General practitioners are responsible for providing health services, such as disease prevention, diagnosis, initial treatment, and referring patients to specialists based on the severity of the disease. **Objective**: This study aims to determine the influence of clinical competence and work motivation on the performance of general practitioners, with training serving as an intervening variable. **Methods**: This study was conducted at National Cancer Centre Hospital in January-June 2022. A cross-sectional study was applied in this study. **Result**: This study reported an influence of simultaneous clinical competence and work motivation on general practitioners' working performance with training as an intervening variable (p=0.000). According to the partial test result, there was an effect of clinical competence and training on general practitioners' performance (p<.000). There was no effect of work motivation on general practitioners' performance (p=0.302) or training (p=0.555). **Conclusion**: There is a simultaneous influence of clinical competence and work motivation on the performance of general practitioners, with training as an intervening variable. **Recommendation**: The study results suggest creating specific standards of competence for general practitioners working at the National Cancer Centre. Furthermore, it is necessary to hold training for general practitioners in accordance with the particular competencies needed to improve and maintain.

Keywords: clinical competence, the performance of general practitioners, training, work motivation

INTRODUCTION

The hospital is an integral aspect of a social and health organization that serves the community by offering complete (comprehensive) disease healing (curative) and disease prevention (preventive) services. General practitioners are responsible for disease prevention, diagnosis, initial treatment, and referring patients to specialists based on the severity of the ailment. The general practitioners' performance evaluation is one of the essential elements in determining the quality of the services. Three factors that play a role in employee performance are: individual factors, work factors, and organizational environment are described as follows: personal factors, job demands, and organizational environmental factors (1).

Clinical or professional competence is the use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in everyday practice to benefit the individual and the community served. Competence depends on habits of thought, including attention, curiosity, self-awareness, and presence. Clinical or professional competence is developmental, not permanent, and dependent on context (2). Yun Wei (2021), China, developed a measuring tool to assess the clinical competence of general practitioners in China using a questionnaire (3). A study establishing the clinical competencies required by general practitioners found the need for 48 competencies in 8 domains (4). Another study showed the need for 50 competencies in 7 domains (3). A study by Rao developed a standard for assessing the clinical competence of general practitioners in China (5).

Motivation is defined as the desire or strength to act. Motivation is a process that generates, energizes, directs, and maintains behavior and performance (6). Malik (2018), Lahore Pakistan, based on the Two Factor Theory by Frederick Herzberg (1959), developed a questionnaire that was used to measure the degree of work motivation of doctors in Lahore, Pakistan, by assessing the following dimensions: intrinsic factors, organizational factors, and sociocultural factors (7).

Training is acquiring or transferring the knowledge, skills, and abilities needed to carry out a particular activity or task (8). The training aims for employees to master the knowledge, skills, and behaviors emphasized in training and applied them in daily performance (9).

Research by Mangkunegara (2016) reported that the variables of training, motivation, and work environment provided a significant positive correlation to the performance of doctors simultaneously (10). Research conducted by Liu in Shanghai (2019) reported that the competence of doctors affected the stability/performance of family doctors in Shanghai, China (11).

Research by Wenghofer, California, USA (2016) reported that a high Physician Mechanism of Disease (MoD) score was a predictor of good competence and performance (12). Another research conducted by Kofi (2016) at Korle Bu Teaching Hospital, Ghana, reported that intrinsic and extrinsic motivation factors affect doctors' performance (13).

Research conducted by Engda (2020) reported that a small group of respondents who received the training showed good knowledge, attitudes, and behavior (performance) regarding infection prevention (14). Research by Harkermanne (2021) reported the importance of regular training regarding diagnosing malignant melanoma (15). The doctor's competency was decreased if it was not followed by regular exercise, as reported by Spruit in the Netherlands (16).

The main problem at the National Cancer Centre Hospital is the gap in knowledge and the high turnover rate of general practitioners. In the services provided, there needs to be more knowledge and skills between the General Practitioner and the doctor in charge, who is the main specialist, especially in services outside of working hours like oncology emergency conditions.

Previous research has studied the effect of training separately and work motivation on general practitioner performance and the impact of competence on General Practitioner performance. No previous research assessed the influence of clinical competence simultaneously and worked motivation on the performance of general practitioners, with training serving as an intervening variable.

OBJECTIVE

This study examines the effect of clinical competence and works motivation on general practitioners' performance with training as an intervening variable.

METHODS

Design

This is a cross-sectional study. A cross-sectional study is a type of research design in which you simultaneously collect data from many individuals. A cross-sectional study allowed us to collect data from a large pool of subjects and compare differences between groups. A cross-sectional study captures a specific moment in time. This study was conducted at Dharmais Cancer Hospital, Jakarta, from January to June 2022.

Sample, sample size, and total sample

A purposive sampling technique was used to determine the sample, with the following inclusion criteria: (1) general practitioners, (2) working to provide services to patients, and (3) willing to become research respondents. The respondents were all general practitioners who provide services to patients, with a total respondent of 51 participants. The study used total sample techniques. The General practitioners who had resigned due to some reasons were excluded, for example: continuing the specialistic education program or moving to another hospital.

The research variables assessed were clinical competence and work motivation as independent variables, general practitioner performance as the dependent variable, and training as an intervening variable.

Instrument for data collection

The clinical competency assessment of general practitioners was conducted using a questionnaire adopted based on a study by Yun Wei, China (2021) (3). This questionnaire contains 50 questions, covering 7 components of a doctor's clinical competence, namely: knowledge and skills, patient care, essential public health services, communication, teamwork, professionalism, as well as education, learning, and research. The scale used is a Likert scale with the following criteria: 1 = very poor, 2 = less, 3 = sufficient, 4 = very good, and 5 = strongly very good. Three sources of clinical competency assessment data for general practitioners were determined: the Hospital Medical Committee, the Head of the General Practitioners' Group, and self-assessment.

General practitioners' performance appraisal was measured using a questionnaire adapted from the Accreditation Council for Graduate Medical Education (ACGME) and the Joint Commission International (JCI) in 2014 and previous research by Imanulah (2017). This questionnaire contains six core competencies in medical practice: patient care, medical/clinical knowledge, practice-based learning and improvement, interpersonal and communication skills, systems-based training, and professionalism. The scale used was a Likert scale with the following answer criteria: 1 = very poor, 2 = not very good, 3 = quite good, 4 = very good, and 5 = strongly very good. 2 sources of performance appraisal data for general practitioners were determined, namely: The Hospital Medical Committee and the Head of the General Practitioner Group.

The assessment of clinical training variables was carried out using secondary data and the results of interviews with general practitioners and the Hospital HR Department. Based on the number of training they have participated in, then grouping was carried out using a Likert scale with the following answer criteria: :1 = 1-4

training, 2 = 5-8 training, 3 = 9-12 training, 4 = 13-16 training, 5 = 17- 20 training.

Data analysis

At this stage, data were analyzed using the Path Analysis method. A causal relationship was measured using correlation in this analysis.

This technique is known as causal modeling, and it is based on the fact that path analysis allows users to test theoretical proportions of causal relationships by treating certain variables in their measurements. The study protocol was reviewed and ethically approved by the research ethics committee of Universitas Esa Unggul, Jakarta-Indonesia. A written informed consent form was obtained from each respondent.

RESULTS

Characteristics of respondents

This study involved 51 respondents from general practitioners who met the inclusion criteria. Most participants (74.5%) were female, and the average age was 32.88 years, with the youngest being 26 years old and the oldest 60 years old. Based on employment status, the majority (82.4%) were non-civil servant general practitioners with an average duration of service of 1 to 5 years (54.9%).

Table 1. Characteristics of respondents

CHARACTERISTICS	N	%
GENDER (N=51)		
Male	13	25.5
Female	38	74.5
AGE (N=51)		
> 25 – 35-year-old	40	78.2
36– 45-year-old	7	13.7
46 – 55-year-old	2	3.9
> 56-year-old	2	3.9
EMPLOYMENT STATUS (N=51)		
Civil servants/candidates for civil servants	9	17.6
Permanent non-civil servants (*BLU/CBLU*)	14	27.5
Non-permanent, non-civil servant (*PKWT*)	28	54.9
LENGTH OF WORK (N=51)		
< 1 year	8	15.7
1 – 5 years	28	54.9
6 – 10 years	6	11.8
> 10 years	9	17.6

The average clinical competency index was 21.57 (medium category) in the assessment of clinical competency, with the lowest clinical competency index value in the education, learning, research, and communication categories. Meanwhile, the average index value for general practitioners' work motivation was 36.17 (medium category). The lowest index value was on organizational factors, namely statements of satisfaction with salary and salary increase (increment).

In the general practitioners' performance assessment, the average index was 24.97 (medium category), with communication skills and attendance at medical team meetings being the lowest index value. General practitioners had high clinical competence and work motivation, resulting in good performance.

Correlation between clinical competence and work motivation on general practitioners' performance simultaneously with training as an intervening variable.

Based on the simultaneous test, the findings showed a significance of 0.000 (p-value< 0.05), implying this model is simultaneously fit, so it can be concluded that clinical competence and work motivation affected general practitioners' performance and training as an intervening variable.

Table 2. The simultaneous test of research variables

Variable	Sum of Square	df	Mean Square	F	Sig
Regression	1,555	3	0,518	17,370	0,000
Residual	1,373	47	0,029		
Total	2,928	50			

The statistical analysis in table 3 assessed the effect of clinical competence on general practitioner performance. It showed that the path coefficient of the clinical competence variable on general practitioner performance was 0.704 with a significance of

0.000, implying that clinical competence affected general practitioner performance.

As shown in table 3, the effect of work motivation on general practitioners' performance showed that the path coefficient of work motivation on general practitioners' performance was -0.115 with a significance of 0.302, implying that work motivation did not affect general practitioners' performance.

The statistical analysis shown in table 4 assessed the effect of clinical competence on training. It was found that the path coefficient of clinical competence on training is 0.244 with a significance of 0.101, implying that clinical competence did not affect training

Table 3. The effect of clinical competence and work motivation on general practitioners' performance

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	1.189	.419	2.840	.007
clinical competence	.663	.104	6.405	.000
work motivation	-.085	.081	-1.043	.302

Table 4. The effect of clinical competence and work motivation on training

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.538	1.911		-.281	.780
clinical competence	.790	.473	.244	1.671	.101
work motivation	-.220	.371	-.087	-.594	.555

Meanwhile, analysis of the effect of work motivation on training showed that the path coefficient of the work motivation variable on training was -0.87 with a significance of 0.555, implying that work motivation did not affect training.

The analysis of the effect of training on general practitioners' performance, as shown in table 5, showed that the path coefficient of the training variable on general practitioners' performance was 0.408 with a significance of 0.003, implying that training affected general practitioners' performance.

Table 5. The effect of training on general practitioners' performance

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.221	.072		44.817	.000
training	.119	.038	.408	3.132	.003

According to descriptive data, most general practitioners had non-permanent civil servant status, limiting their ability to participate in external training programs and their opportunities to improve clinical competence. Because of this condition, most general practitioners relied solely on internal hospital training to enhance their clinical competence.

In the table above, a mathematical equation (regression) was calculated to test whether there was an influence between one variable and another, as follows:

1. The influence of clinical competence and work motivation on training. Training = -0.538 + 0.790 Clinical Competence – 0.220 Work Motivation
2. The effect of training on the performance of general practitioners. Performance = 3.221 + 0.119 Training
3. The influence of clinical competence and work motivation on the performance of general practitioners. General practitioner performance = 1.189 + 0.663 Clinical Competence – 0.085 Work Motivation.

Table 6 shows how this study assessed the effect of the independent variable on the dependent variable. The assessment of the clinical competence variable's influence on general practitioners' performance showed that the direct impact was more significant than the indirect effect, implying that the training variable was not a mediating/intervening variable between clinical competence and general practitioners' performance variables.

Table 6. The influence of research variables

Model	Unstandardized Coefficients	Standardized	t	Sig.

	B	Std. Error	Beta		
(Constant)	1.231	.396		3.106	.003
clinical competence	.602	.101	.639	5.979	.000
work motivation	-.068	.077	-.091	-.877	.385
training	.077	.030	.266	2.589	.013

Meanwhile, the assessment of the effect of work motivation on general practitioner performance showed that the direct impact was more significant than the indirect effect, implying that the training variable was not a mediating variable between work motivation and general practitioner performance.

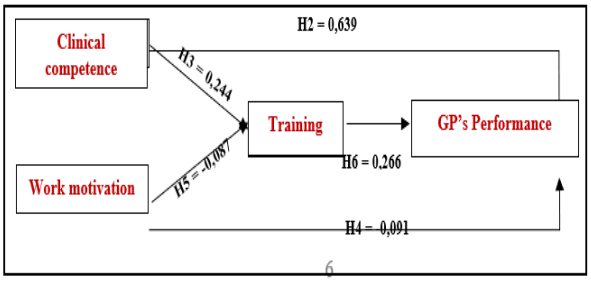

Figure 1. The magnitude of the influence of the research variables

DISCUSSION

The influence of simultaneous clinical competence and work motivation on the General Practitioners' performance with training as an intervening variable

Based on the results of the simultaneous test, it could be implied that there was an influence of clinical competence and work motivation on the performance of general practitioners simultaneously and training as an intervening variable.

These findings were in line with Boyatriz's (2008) theory that three factors influence performance: individual factors, work factors, and organizational environment (1). Clinical competence is an individual factor that affects employee performance and work motivation or interest. Saudi (2021) research reported a moderately significant correlation between motivation, job suitability training, and employee performance (17). Research by Mangkunegara (2016) said that the variables of training, motivation, and work environment provided a significant positive correlation to the performance of doctors simultaneously (10). Mangkunegara's research was a quantitative study using multiple linear regression analysis (10).

Based on the preceding description, the research findings were consistent with the theory and previous research reports.

The influence of clinical competence on the General Practitioners' performance at Dharmais Cancer Hospital

Based on the findings of the partial test calculation, it was determined that clinical competence influenced the performance of general practitioners.

The findings of this study were consistent with those reported by Liu (2019) that the competence of doctors was highly affected by their clinical competence (11). In Wenghofer's (2016) research, competency assessment related to general practitioner knowledge was assessed using the Physician Mechanism of Disease (MoD) score, and it was discovered that doctors with higher scores had better competence (12). This score predicted the doctor's overall performance as well. The findings of this study were consistent with previous Wenghofer research (12).

Furthermore, Mitsuyama Japan (2018) stated the need for differences in targeted performance in clinical competence between doctors working in urban and rural areas (18). Considering this study's findings, it was necessary to consider the establishment of "special competence" for general practitioners working at the National Cancer Center Hospital.

Based on the above description, the research findings were consistent with the theory and previous research reports.

The influence of general practitioner clinical competence on the training

Based on the partial test calculation result, it can be concluded that there was no effect of the clinical competence of general

practitioners on the training program. Currently, the training for general practitioners has yet to be based on their initial and expected clinical competence, resulting in the insignificant influence of clinical competence in training.

Based on the description above, the researcher proposes the need for further research to assess the influence of clinical competence on training.

The effect of work motivation on general practitioners' performance

Based on the results of the partial test calculation, it was concluded that there was no influence of work motivation on the performance of general practitioners.

The results differed from previous studies by Kofi (2016) that showed a correlation between work motivation and doctor performance (13). According to the findings of this study, the majority of general practitioners (54.9%) had Non-Permanent Non-Civil Servant status, with the most significant working period composition being in the 1-5-year group. It implies that most general practitioners had a high probability of resigning from the hospital after five years of work for various reasons. This phenomenon revealed that the majority of general practitioners did not consider working in hospitals as a career to be pursued. According to the researcher, this condition is a factor that causes differences in the study's results with research by Kofi conducted on permanent staff at a Teaching Hospital in Ghana, which makes the hospital a place to pursue their careers (13). According to Weldegebriel's (2016) research, total compensation was not significantly correlated with the overall motivation of health workers. In this study, the lowest index value for motivation was associated with the wage/compensation system and salary increases (19-20).

Based on the above description, it is clear that there is a distinct phenomenon in the condition of general practitioners at the National Cancer Center Hospital, implying that additional research is required to assess doctors' work motivation and performance regularly over a set time.

The effect of general practitioners' work motivation on training

Based on the partial test calculation results, it was concluded that general practitioner work motivation did not influence the training program.

No research has investigated the direct effect of work motivation on training. Still, theoretically and assumingly, a doctor's high work motivation can affect his desire to participate in a training program to maintain or improve his performance.

Based on the description above, it was apparent that there was a separate phenomenon for the condition of general practitioners at the National Cancer Centre Hospital. General practitioners who worked in hospitals were non-permanent non-Civil Servants with limited participation in training programs due to hospital regulations.

The effect of training on general practitioners' performance

Based on the partial test calculation results, it was concluded that the training program affected the performance of general practitioners at Dharmais Cancer Hospital.

According to Engda's (2020) research, a small group of respondents who received the training demonstrated good knowledge, attitudes, and behavior (performance) related to infection prevention (14). The findings were consistent with this study, which found that the training program followed affected the performance of general practitioners.

Research by Hakermanne (2021) reported that training positively impacted the diagnosis of Melanoma Malignum (15), but refresher training was required to maintain skills and long-term performance. According to the findings of this study, periodic refresher training, both internal and external, was needed to maintain clinical competence and general practitioners' performance in providing services.

A study by Daliri assessing the benefits of the Orthodox application for medical interns in the Orthopedic department reported a positive trend between the number of applications used by students and their final exam scores through correlational analysis (21). The M-learning method can potentially improve medical knowledge and skills/performance. The M-learning program could be used in hospitals to improve clinical competence but was time-limited in improving general practitioners' performance.

In addition, A study also reported that the type of training based on a good training/simulation scenario would improve the knowledge, attitudes, and behavior (performance) of health workers regarding infection control in hospitals (22). Concurrently, Ansquer (2019) research reported a decrease in physician performance six months after training in pediatric emergency management (23). The provision of re-simulation training was needed to improve long-term skill retention.

Based on the description above, the results obtained were in line with the theory and previous research reports that training influenced the performance of general practitioners.

STRENGTH & LIMITATION

This study provided valuable information to improve the performance among general practitioner. However, some limitation found in this study such as the researcher did not follow the process of filling the questionnaire since respondents have different schedule on shifting.

CONCLUSION

According to the findings of this study, the performance of general practitioners was influenced by clinical competence and training attended by general practitioners but not by general practitioners' work motivation. The training was not an intervening/mediating variable that affects the relationship between clinical competence and work motivation variables on general practitioners' performance.

Based on the study's findings, it is necessary to establish specific competency standards for general practitioners working at the National Cancer Center Hospital to improve their performance. Training as a means of maintaining clinical competence must be managed optimally regarding training needs, training materials, training methods, training implementation time, and training success evaluation.

It was also reported that work motivation did not affect the performance of general practitioners. Making job descriptions clear, improving the supervision and supervision system, improving hospital facilities and facilities, and improving the compensation system for general practitioners who work at the National Cancer Center Hospital are a few things that need to be improved regarding the work motivation of doctors.

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