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THE RELATIONSHIP BETWEEN AGE, LENGTH OF SERVICE, AND WORK ATTITUDE IN RELATION TO CARPAL TUNNEL SYNDROME SYMPTOMS AMONG INPATIENT NURSES AT DR. DRAJAT PRAWIRANEGARA SERANG PUBLIC HOSPITAL

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ABSTRACT

Carpal Tunnel Syndrome or CTS for short has a prevalence of between 1% and 5%, with a higher ratio in women with a ratio of 3:1 compared to men. Most of the activities performed by nurses will use excessive and repetitive hand activities. Therefore, nurses have a risk of being disrupted in their daily activities, especially in their activities as nurses due to CTS complaints. The analytic observational method was used for this study to see the events that occurred in the subject without any intervention to the research subject. This study was conducted with a cross sectional research design to see the relationship between age, tenure, work attitude towards CTS complaints in nurses at Dr. Drajat Prawiranegara Serang Hospital. The final total sample size was 120 respondents consisting of nurses from the inpatient unit of RSUD Dr. Drajat Prawiranegara. There was a prevalence of 62.5% of nurses who experienced CTS complaints at Drajat Prawiranegara Serang Hospital. From the results of bivariate analysis, there was no relationship between CTS complaints and age (p = 0.195), tenure (p = 0.689), work attitude (p = 0.423). From the results of the analysis, there was no relationship between age, length of service, and work attitude with CTS complaints in inpatient nurses at Dr. Drajat Prawiranegara Serang Hospital.

Keywords : *CTS, nurse, relationship*

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INTRODUCTION

In the general population worldwide, Carpal Tunnel Syndrome (CTS) has a prevalence of between 1% and 5%, with a higher ratio in women at 3:1 compared to men. [1] In our own country, Indonesia, the prevalence of CTS cannot be accurately determined due to the infrequent reporting of CTS cases and complaints. Previous studies have shown varying proportions of CTS. Research conducted by Farhan and Kamrasyid showed a proportion of CTS among motorcycle taxi drivers at 70%.[2] A study by Putra et al. reported a proportion of 74.7% among computer workers. [3] Another study by Paramitra et al. found a proportion of 79.2% among garment workers. [4] However, a study conducted in 2012 by Ithnin et al. on nurses found a proportion of 7.5% of all subjects examined. A more recent study in 2022 by Kurniaputri et al.[5] found a proportion of 16.7%.

Most of the activities performed by nurses involve excessive and repetitive hand movements, such as computer typing for administrative tasks, pushing syringe plungers, performing procedures with instruments, and assisting doctors in their actions. Therefore, nurses are at risk of having their daily activities disrupted, especially their nursing duties, due to CTS complaints resulting from excessive use of the upper extremities. [5,6]

The study by Ithnin et al.[7] indicated that age and length of service among nurses correlate with CTS complaints.[7] Conversely, the study by Kurniaputri et al.[5] showed that there was no relationship between age and length of service and CTS complaints.[5]

Several existing studies have not analyzed the relationship between working posture and CTS complaints. Research linking age, length of service, and working posture with CTS complaints among nurses is still limited. Therefore, to determine these relationships, I will conduct a study titled "The Relationship Between Age, Length of Service, and Work Attitude with Carpal Tunnel Syndrome Symptoms Among Inpatient Nurses at RSUD dr. Drajat Prawiranegara Serang."

METHODS

The analytic observational method was used for this study to see the events that occurred in the subject without any intervention to the research subject. The cross sectional design was chosen in this study to see the relationship between age, length of service, work attitude towards CTS complaints in inpatient nurses at Dr. Drajat Prawiranegara Serang Hospital. Researchers collected primary data by conducting a CTS complaint measurement questionnaire, namely the Karpal Tunnel Syndrome-Boston

(KSTK-B) Questionnaire and an independent variable questionnaire, namely the Quick Exposure Check (QEC) questionnaire for work attitude and respondent identity for age and tenure. The minimum total sample in this study required 100 respondents as the lower limit.

This research began with finding and creating a research title that was directed towards the research objectives. Then, a research proposal was prepared by including an introduction, literature review, and research methods and using appropriate data or information sources for research. Then, the researcher submitted a research ethics review form to the Ethics Commission of the Sultan Ageng Tirtayasa University Medical Study Program with the aim of obtaining research permission. Research permission was also requested from Drajat Prawiranegara Serang Hospital by submitting a permit letter to the authorized person, namely the Director of Drajat Prawiranegara Serang Hospital.

The data collection process was carried out with care by including the identification of variables of interest and patient data such as name, age, working time, work attitude, and CTS complaints. The collected data was then recorded in a table and checked for data completeness.

Data validity was carried out by matching the recorded data again. The data that has been obtained is then entered and analyzed using statistical applications, namely the Statistical Package for the Social Sciences (SPSS). The results of the analysis were used as a reference as a basis for making discussions and conclusions from the research. The study ended by compiling a comprehensive research report and being able to better understand the relationship between age, tenure, work attitude towards CTS complaints in inpatient nurses at Drajat Prawiranegara Serang Hospital.

RESULTS

The sample who became respondents in the author's research were inpatient nurses who were currently registered to work at Dr. Drajat Prawiranegara Serang Hospital. Respondents who are willing to come from the inpatient unit of RSUD Dr. Drajat Prawiranegara Serang. In this study, the willing respondents totaled 135 people. Of these respondents, 15 people could not be included in the sample, 2 people because they were included in the exclusion criteria, and 13 other people did not fill out the questionnaire completely. Thus, the final total sample size was 120 respondents consisting of nurses from the inpatient unit of Dr. Drajat Prawiranegara Hospital. The tool used was the administration of a questionnaire which was divided into three parts, the first part regarding the demographic characteristics of the subject, the second part contained a questionnaire to assess CTS symptoms, and the third part contained a questionnaire to assess work attitudes.

1. Demographic Distribution of the Study

Before bivariate analysis, it is necessary to review the characteristics of the research subjects. The demographic distribution of respondents is as follows:

Tabel 4.1. Demographic Distribution of the Study

Variabel	Frekuensi	
	n	%
Gender		
Men	21	17,5
Women	99	82,5
Age		
20-40	85	70,8
41-60	35	29,2
CTS Symptoms		
Yes	75	62,5
No	45	37,5
Length of Service		
<4 Years	40	33,3
≥4 Years	80	66,7
Working Attitude		
Low-Mild	59	49,2
High-Very High	61	50,8
Smoking History		
Smoking	6	5
Not Smoking	114	95
Medical History		
Yes	18	15
No	102	85

From the analysis in table 4.1, there is a distribution of demographics which shows that in number, there are more female respondents when compared to men with the number of female respondents more than 4 times more than men. Respondents aged 20-40 years also have more respondents than respondents aged 41-60 years by almost 3 times.

In the working period, it can be seen that there are more respondents with a working period of >4 years when compared to those whose working period is <4 years in a ratio of 1:2. Meanwhile, in work attitude, the distribution of respondents in both work attitudes is relatively even with a ratio of almost 1:1.

In smoking history, the number of respondents who do not smoke is far more than those who smoke with a ratio of almost 1:20. Similarly, respondents with no history of disease were far greater than those with a history of disease with a ratio of almost 5 times.

2. Relationship Between Age and CTS Symptoms

The following are the results of statistical testing to assess the relationship between age and CTS complaints in inpatient nurses at Dr. Drajat Prawiranegara Serang Hospital, the results are shown in the table below:

Tabel 4.2. Relationship between Age and CTS Symptoms in Inpatient Nurses at Dr. Drajat Prawiranegara Serang Hospital

Variable	CTS Symptoms				Total		*P-value*	OR (95%)
	Yes		No					
	n	%	n	%	n	%		
Age								
20-40	50	58,8	35	41,2	85	100	0,195[c]	0,571 (0,244-1,338)
41-60	25	71,4	10	28,6	35	100		

*c: Chi-Square

From what can be seen in table 4.2, the results that emerged from the Chi-Square test as an analytical method stated that there was no visible relationship between age and CTS symptomps (p = 0.195).

3. Relationship between Length of Service and CTS Symptoms

The following are the results of statistical testing to assess the relationship of tenure with CTS

complaints in inpatient nurses at RSUD Dr. Drajat Prawiranegara Serang, the results are shown in the table below:

Tabel 4.3. Relationship between Length of Service and CTS Symptoms in Inpatient Nurses at Dr. Drajat Prawiranegara Serang Hospital

Variabla	CTS Symptoms				Total		*P-value*	OR (95%)
	Yes		No					
	n	%	n	%	n	%		
Length of Service								
<4 Years	24	60	16	40	40	100	0,689 [c]	0,853 (0,391-1,860)
≥4 Years	51	63,7	29	36,3	80	100		

*c: Chi-Square

From what can be seen in table 4.3, the results that emerged from the Chi-Square test as an analysis method stated that there was no visible relationship between the Working Period and CTS Complaints (0.689).

4. Relationship between Working Attitude and CTS Symptoms

The following are the results of statistical testing to assess the relationship of CTS complaints with age, length of service, and work attitude in inpatient nurses at Drajat Prawiranegara Serang Hospital, the results are shown in the table below:

Tabel 4.4. Relationship between Work Attitude and CTS Symptoms in Inpatient Nurses at Dr. Drajat Prawiranegara Serang Hospital

Variable	CTS Symptoms				Total		*P-value*	OR (95%)
	Yes		No					
	n	%	n	%	n	%		
Working Attitude								
Low-Mild	39	66,1	20	33,9	59	100	0,423 [c]	1,354 (0,645-2,845)
High-Very High	36	59	25	41	61	100		

*c: Chi-Square

From the data in table 4.4, the results that emerged from the Chi-Square test as an analysis method stated that there was no visible relationship between Work Attitude and CTS Complaints (0.423).

DISCUSSION

The prevalence of CTS complaints found in inpatient nurses is quite high, this is likely due to the work carried out by these nurses, where they help a lot with patient activities and provide the drugs needed by patients.

In addition, repetitive wrist movements, use of vibration tools, use of hand strength, and excessive repetitive wrist flexion or extension may be activities that are likely to make the prevalence of CTS complaints in this study high.[8]

By looking at the results obtained from the analysis, as a percentage of the total frequency, in respondents aged 20-40 years, respondents who experienced CTS complaints were lower than respondents aged 41-60 years. Based on the results, no statistical relationship was found between age and CTS complaints (p = 0.195).

The results of this study indicate that it is in line with research conducted by Kurniaputri et al.[5] which statistically did not show an important relationship between age and CTS complaints in nurses (p = 0.438). In the study, it was found that respondents aged >42 years, there were 12 respondents who had CTS and in respondents aged <42 years, there were 3 respondents who experienced CTS. [5]

However, when compared with those conducted by Ithnin et al.[7] the results in this study are not in line, in the study it was seen that there was an important relationship between age and CTS complaints (p = 0.01). The inconsistency between this study and the study may be due to differences in the samples taken, where in this study only took from the inpatient unit only, while the study was from various units. [7]

The percentage of nurses who experience complaints at the age of 41-60 years is greater when compared to the age of 20-40 years, this is because the higher the age of a person, the muscle strength will weaken and have an effect on increasing the risk of developing musculoskeletal disorders.15 However, the reason for the insignificance in this study may be due to the uneven distribution of data between 20-40 years and 41-60 years of age. In addition, other risk factors such as nurses' daily activities outside the workplace may also be the reason for the results of this study.

In this study, respondents who had a working period exceeding or fitting 4 years showed a higher percentage of CTS complaints compared to respondents who had a working period of less than 4 years. However, the results of the analysis showed that there was no significant relationship between tenure and CTS complaints (p = 0.689).

The results of this study are in line with research by Kurniaputri et al.[5] which states statistically, there is no important relationship between tenure and CTS complaints in nurses (p = 0.183). In the study, respondents with a working period of <10 years, there was 1 person with CTS and in respondents >10 years, there were 14 people with CTS.[5]

However, the results are not in the same direction as research conducted by Ithnin et al.[7] in the study found an important relationship between tenure and work complaints (p = 0.01). When viewed from this study with the study, it can be found that the biggest possibility why it does not run in the same direction as the study is because there are differences in the samples taken, where in this study only took from the inpatient unit only, while the study was from various units.[7]

After seeing that the percentage of nurses who experienced CTS complaints at a work period of >4 years was more than those with a work period of <4 years, this is because the higher the work period, the more frequent repeated exposures that can cause CTS complaints.[25] Meanwhile, the reason for the meaningless relationship in this study may be due to the uneven distribution of respondents in both work periods. In addition, other risk factors such as nurses' daily activities outside the workplace may also be the reason for the results of this study.

In this study, as a percentage, nurses with a very high-high work attitude had a lower percentage of CTS complaints when compared to nurses with a low-moderate work attitude.

The results of this study have a non-meaningful relationship for the relationship of work attitude with CTS complaints, which is not in line with research conducted by Khomairoh and Widajati (2020) which has the results of the relationship of work attitude with CTS complaints. However, the possibility of differences or inconsistencies in these two studies can be based on one of them due to differences in the subjects of each researcher.[28] In addition, other risk factors such as nurses' daily activities outside the workplace can also be the reason for the results of this study.

CONCLUSION

There was a prevalence of 62.5% of inpatient nurses who experienced CTS complaints at Drajat Prawiranegara Serang Hospital. In the analysis of the results of the study, there was no visible

relationship between age, length of service, and work attitude with CTS complaints in inpatient nurses at Drajat Prawiranegara Serang Hospital.

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