

Title Page

Nurses experience in musculoskeletal pain in Kitamura Clinic Pontianak, West Borneo, Indonesia : a qualitative study.

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ABSTRACT

Background : Pain in musculoskeletal often occurs to nurses who have heavy activities such as sitting, standing, hunching for a long time. One stretch of muscle that can reduce the incidence of musculoskeletal pain in the nurse is the stretching action.

Objective : To analyze the nurses' experiences who suffer the musculoskeletal pain after weighing back the original posture of the body and stretching.

Methods: Qualitative semi-structured in-depth interview that was conducted to 6 nurses who suffered musculoskeletal pain by doing chair exercises for body posture improvement and stretching for 4 weeks. Following after that, they have done interviews, observations and documentations such as photos. Participants' remarks were submitted with recordings. It was transcribed, decoded, interpreted, categorized, and constructed into main and sub-themes.

Results : Three main themes obtained: 1) location and characteristic of pain, 2) etiological factor which increases the ratio of pain 3) the benefit of stretching and improvement of body posture.

Conclusions : Stretching and repair work posture may reduce musculoskeletal pain in nurses at our kitamura clinic.

Keywords : Musculoskeletal, pain, nurse, body posture.

Introductions

Pain in the muscles, nerves, tendons, ligaments, joints, spinal or extremities is characteristic of the occurrence of musculoskeletal pain. Musculoskeletal pain is one of the common reasons a person needs treatment, examination and treatment. Nurse is one of the health workers who do a lot of mobilization. The high mobilization of nurses causes musculoskeletal pain most commonly occurs in nurses working in health services. The prevalence of nurses with musculoskeletal pain was 45.8% ⁸.

One of the nurses' jobs that can cause musculoskeletal pain is the work of treating wounds. At the Kitamura Pontianak Clinic the average wound nurse takes 1.5 hours to perform wound care in one patient. The length of time required also depends on the extent of the injury suffered by the patient. The wider the wound the more time it takes. The nurse's position when treating the wound is mostly bent, standing and squatting, so the nurse is working in a bad position. The results of the interim survey by using Quick Exposure Check (QEC) found 100% of nurses at risk of musculoskeletal complaints, if all nurses experience musculoskeletal pain, the service to patients will be disrupted, and the achievement of optimal health degree will not be achieved. Musculoskeletal pain will also result in decreased productivity of nursing service, loss of work time¹². One stretch of muscle that can reduce the incidence of musculoskeletal pain in the nurse is the stretching action⁵. Based on the above phenomenon, the researcher is interested to examine the experience of musculoskeletal pain in Kitamura Clinic Pontianak, West Borneo, Indonesia: a qualitative study.

Methods

This study used Qualitative semi-structured in-depth interview, with the intention to examine the musculoskeletal pain suffered by the Pontianak Kitamura Clinic nurses, after conducting body posture improvement with chair exercises and stretching after 4 weeks.

Population and sample

The populations of this research are 30 on-duty nurses in Kitamura Clinic, and the samples were taken from 6 respondents that consist of 3 nurses who practice body posture improvement with chair exercises, and the other 3 who conduct stretching. After engaging on the exercise for 4 weeks, an extensive interview was done to the respondents.

Data analysis

Colaizzi's method was used to analyze the data, whereas the data achieved is treated as follows 1) Interviews result is transcribed into a narrative, 2) Filtering/coding of words associated with phenomenon, 3) formulating or interpreting meaning from the significant, 4) classifying the interpretative results any statements that are significant for determining the appropriate sub themes, 5) the findings of study were integrated into an exhausted description of the phenomenon in this study, 6) the fundamental structure of the phenomenon was described, 7) validation of the findings to compare the research's descriptive results.

Triangulation method was performed by collecticting data using several methods data collection (interviews and observation). This research has been authorized with code of ethics certification no. 232/EP-FKIK-UMY/VI/2016 from Komisi Etika Penelitian FKIK Universitas Muhammadiyah Yogyakarta. This research had done inform consent to the respondents and attained license to conduct the research from Kitamura Clinic's manager with the letter number of 002/KTMR/III/17.

Results

This study analyzes the participation of nurses who suffered from musculoskeletal pain after conducting body posture improvement and stretching after 4 weeks. Hence, 3 main themes were obtained, namely: 1) location and characteristic of pain, 2) etiological factor which increases the ratio of pain 3) the benefit of stretching and improvement of body posture.

Location and Characteristic of Musculoskeletal Pain

The researcher's interpretation is related to the theme mentioned above, which is: location and characteristic of pain in muscle areas that is weighed down and the muscle which sustain the body weight would feel tenseness, stiffness and experience strain. The interview result shows that all participants suffer various physical musculoskeletal inconveniences in categories that were attained, such as tenseness in neck, stiffness in hips and strained calves. This is in accordance with the following quotes of respondents:

"... You know, its common when we treat wounds, we usually hunch, so it hurts, it feels tense, stiff on my neck, especially my waist..." (R1.S)

"...my nape, waist, calves... but the pain feels so sharp in my waist, it feels stiff. Usually it produces cracking sounds... hahahaha, when I got home, I treat the pain with hot patches. (R1.S)

"... Yeah, that's right. It's because we want to treat the patients as quickly as possible, we often forget. I feel tense in my waist after debridement. But I used sterilized handscun, I didn't know where my chair go, so I don't use it until I finish nursing" (R2 P)

Etiological factor which increases the ratio of pain

The researcher's interpretation is related to the theme mentioned above viz.: the causes of increasing pain ratio are that nurses use unergonomic work posture when they treat patients and the more patients or the more extensive the wound, it causes the nurse to maintain the position. Therefore, pain ratio increases. This is visible from the category obtained, which respondents claim that hunching, squatting, large amount of patients, extensive wounds lead to increasing of pain. This is in accordance with the following quotes of respondents:

"... I sometimes forgot, they provide the seat, but it doesn't feel comfortable when we treat patients, considering the wounds are sometimes on their heels, lower calves, fingertips ... the debridement feels so infuriating... not to mention when we sit, the seat spins. It's more comfortable if we squat or hunch." (R1S)

"... we already know what's the cause of this.. for example, treating wounds would consume a lot of time, especially large wounds, it would take an hour, because we want to work fast, we don't even remember our chairs or anything... so we hunch, then after that we feel pain on our waist..." (R2S)

The Benefit of Stretching and Improvement of Body Posture

The researcher's interpretation is related to the theme mentioned above, namely: ratio of pain correspondingly decreases in account of practicing stretching and body posture improvement for 30 days. This is perceivable from the category obtained from nurses who conduct stretching and body posture improvement by chair exercises. Respondents' statement that concludes categories and themes as mentioned is as follows:

"...I tried it every day, sometimes in the preconference, sometimes postconference. It feels like working out or exercise, it is an exercise, right ma'am.... It feels great and it boosts my will to work... it feels warming-up alike in preconference... my body feels great... it relieves the tenses... (R2.S)

Discussion

Based on the interview of three participants in this research resulting the location and characteristic of the pain theme, this happened on muscles that are burdened by body's weight resulting stiff and tense situation on the muscles. Resulting the participants experiencing many physical inconvenience on musculoskeletal. The acquired category for example stiff sensation on neck, waist, and calf. The result of this research is corresponding¹³, which stated that nurses have a big tendency to experience musculoskeletal pain. Furthermore Samara, 2007 stated that workers that work with static and extreme position in a long period of time will result to pain on their back and neck. According to Suratun, 2008. There are several factors that can cause musculoskeletal pain, which are biological factors (age, sex, etc.), excessive muscle stretching, constantly repeated activities, unnatural working position (not ergonomic), Secondary cause factor such as pressure, motion, microclimate (Temperature), Combination cause such as age, gender, smoking behavior, physical fitness, physical power, body size. The pain are experienced on two group which are *static stretching* and working posture improvement, this result shows that every respondents that are going to perform injury treatment will experience pain on their neck, back, and calf while performing it.

Etiological factor which increases the ratio of pain

The second theme is pain scale that decreased by performing stretching and working posture improvement for thirty days, it can be seen from the categories that are founded such as nurse performing stretching, performing working posture improvement with a chair that eventually decrease the pain. The result shows that working posture improvement is effective for reducing musculoskeletal pain. According to Hinds (2001) almost every nurses have tendency of suffering a musculoskeletal pain, a significant increase that caused by stress, can be seen from how the nurse performing their treatments. According to Susihono & Prasetyo (2012) bending position, working with a single leg, bending back, excessive work burden are activities that needs to be graduated evaluated. This idea is correspond with Su ma'mur's (2009) statement that says wrong or excessive body position and ways of working are one of the cause of the back pain. According to the fact above, nurse have to maintain their health, security and comfort while at job, furthermore on *Vanderbilt University's school of Nursing* make *body mechanics* and *body alignment* included in the curriculum for 20 hours, and even have their own training program in *body mechanics*⁴.

Nurse's position while performing treatment are mostly in bending position, as it make the treatment easier to be performed, but due to this position the pain will exist on the area of neck, backbone, and calf because of the muscles that are being burdened by bodyweight. It is a different case if the nurse use chair as the bodyweight will be burdened to the chair instead of the muscle.

The Benefit of Stretching and Improvement of Body Posture

The third theme are benefits and working posture improvement's pain scale which decreased by performing stretching and posture improvement for thirty days, it can be seen from categories that are founded such as nurses performing stretching and posture improvement with a chair resulting to pain decrease and comfortable situation. This is corresponding with munir's (2012) statement, that says muscle stretching training can fix body posture and reduce the pain on the neck, back, and waist. The goal of stretching itself is to improve oxygen exchange with carbon dioxide as well as stimulating blood stream. Furthermore, there's also a research that says that abdominal stretching can reduce pain on female

teenagers that suffers from dimenorhoe in SMK al Furqon, Brebes, meanwhile working method which is the ergonomic working posture for workers in order to achieve a better position while working⁷.

According to the statement above, it is clear that stretching is effective for stretching stiff muscle fibers as the effect of oxygen lack, resulting to flexible blood stream and expeditious blood distribution to muscles, it is recommended for nurses to perform stretching while working in an extreme or not ergonomic position for a long time. Meanwhile it is better for the posture improvement to be evaluated by nursing manger, because with a better working environment, the nurses can perform better at the treatments as well as improving the service.

CONCLUSION

At the end of this research, we can conclude that :

1. The location of the pain which located on neck, back, and waist. The characteristic of the pain such as stiff and rigid feeling. On Pontianak Kitamura clinic
2. Several things that can worsen the pain on nurses in Kitamura clinic are not ergonomic position while working due to wide area of wound treatment.
3. Stretching and working using chair can help reducing the pain on nurses in Kitamura clinic Pontianak.

Abbreviations

FKIK : Fakultas Kesehatan Ilmu Kedokteran (Indonesian language).

QEC : Quick Exposure Check.

Declarations

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Availability of data and materials

The raw data cannot be shared, due to ethical reasons.

Authors' contributions

W : Study design, data collection, data analysis, and preparing the manuscript. LL : Study design, data collection, data analysis, and preparing the manuscript. LM : Study design, and data analysis. LH : Study design, and data analysis. U :

Study design, and data analysis. TG : Study design, and data analysis. All authors took part in rewriting and approval of the final manuscript.

Competing interests

The authors declare that they have no competing of interest.

Consent for publication

Not applicable.

Ethics approval and consent to participate

This research has been authorized with code of ethics certification no. 232/EP-FKIK-UMY/VI/2016 from Komisi Etika Penelitian FKIK Universitas Muhammadiyah Yogyakarta. This research had done inform consent to the respondents and attained license to conduct the research from Kitamura Clinic's manager with the letter number of 002/KTMR/III/17.

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