



ANALYSIS OF MUSCULOSKELETAL COMPLAINTS AND WORK FATIGUE IN DENTAL ASSISTANTS

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ABSTRACT

Dental assistants are one of the health workers who have the potential to experience musculoskeletal complaints and work fatigue due to repetitive and monotonous work in a sitting position. This study aims to determine musculoskeletal complaints and work fatigue experienced by dental assistants. This research is descriptive qualitative research, in which musculoskeletal complaints were evaluated from the results of the Nordic Body Map (NBM) questionnaire while work fatigue was evaluated from the results of the 30 item of rating scale questionnaire. This research was conducted at dental hospital XX, Denpasar, the number of respondents in this study were 20 dental assistant who were administratively recorded as serving at dental hospital XX, Denpasar. The research was conducted in April 2022. Respondents were asked to provide an assessment of the part of their body that felt sick during work activities. Based on the results of descriptive analysis showed that out of 20 respondents, 13 people (65%) had moderate musculoskeletal complaints, 5 people (25%) had high musculoskeletal complaints and 2 people (10%) had very high musculoskeletal complaints. The results of the study on the fatigue aspect showed that 16 people (80%) experienced moderate fatigue, 3 people (15%) experienced high fatigue and 1 person (5%) experienced very high fatigue. The conclusion in this study showed that musculoskeletal complaints and work fatigue due to repetitive and monotonous work in a sitting position to increase work stress factors.

Keywords: dental assistants; musculoskeletal complaints; work fatigue

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INTRODUCTION

A health worker is any person who dedicates themselves to the health sector and has knowledge and skills through education in the health sector, which for certain types requires authority to carry out health efforts (Undang-Undang Republik Indonesia No.36 Tahun 2014). Dentists and dental assistants are dental and oral health workers who provide complete services in the field of dental and oral health which aim to improve the status of dental and oral health (Gultom & Dyah, 2017). In carrying out their profession they are at risk of experiencing musculoskeletal complaints and fatigue. Musculoskeletal causes include excessive muscle stretching, repetitive activities, unnatural work attitudes, secondary causes (pressure, vibration, microclimate, combination causes) and several experts explain that individual factors such as age, gender, smoking habits, physical activity, Physical strength, and body size can also be a cause of musculoskeletal complaints (Tarwaka, 2015).

Musculoskeletal disorders often occur in health \practitioners, among the health practitioners who are most at risk of experiencing musculoskeletal disorders are dentists and dental assistants, because dentists and dental assistants prioritize the comfort of the patients, they are treating but pay less attention to their own comfort when treating their patients, this happens due to body position when working that is less ergonomic and occurs over a long period of time and repeatedly. Musculoskeletal complaints to dentists amounted to 72.7% where 81.8% of respondents performed repetitive movements in awkward postures more than 4 times per minute and 75% of respondents took more than 20 minutes to perform an action (Winihastuti, 2016).

Dental assistants work 8-10 hours/day, depending on the number of patients and procedures performed. The workload experienced by dental assistants is quite high, apart from the physical workload, the mental workload related to the smooth operation of patients also influences the fatigue experienced by dental assistants. Workload and work fatigue are closely related. Workload can cause fatigue at work because someone at work will bear the burden due to the physical work carried out. Exercising regularly can increase strength (Putri & Izzati, 2022). Lots of muscle and skeletal disorders have an impact on occupational diseases and have even become an epidemic that needs to be studied and resolved. Muscle and skeletal disorders begin with symptoms of local pain in one or two parts of the body with varying levels based on work history and individual sensitivity (Dinar et al., 2018). Based on the description above, the researcher felt it was important to conduct research regarding the analysis of musculoskeletal complaints and fatigue in dental assistants, a case study was carried out at dental hospital XX Denpasar

METHOD

This research uses a qualitative approach that is descriptive. Observational descriptive qualitative research methods are used to collect data by observing and describing the phenomena studied without manipulating variables or testing hypotheses (Creswell, 2014). This study aims to understand the phenomenon under study by describing it in detail and depth, to provide a clear and comprehensive picture of a phenomenon. This research was conducted at dental hospital XX, Denpasar, the number of respondents in this study were 20 dental assistant who were administratively recorded as worker at dental hospital XX, Denpasar. The research was conducted in April 2022. The inclusion criteria for this study were: (a) Respondents were in good health; (b) Administratively, the respondent work at the dental hospital XX, Denpasar; (c) Willing to become research subjects until completion. In this study musculoskeletal complaints were evaluated from the results of the Nordic Body Map (NBM) questionnaire while work fatigue was evaluated from the results of the 30 item of rating scale questionnaire.

The Nordic Body Map (NBM) is used to determine musculoskeletal complaints experienced by workers. Musculoskeletal complaints will be identified using a questionnaire in the form of several types of musculoskeletal complaints on a map of the human body. Through this questionnaire, you can find out which part of the muscle is experiencing complaints with levels of complaints ranging from No Pain, Slightly Painful, Painful and Very Painful. The results of the Nordic Body Map can estimate the type and level of complaints, fatigue and pain in the muscles felt by workers, by looking at and analyzing the body map taken from filling out the Nordic Body Map questionnaire, ranging from discomfort to very painful. The parts of the body that experience problems or pain while working, the Nordic Body Map method can be used (Santoso et al., 2014). Even though it is subjective, this questionnaire is standardized and valid for use . The 30 item rating scale questionnaire is a questionnaire that

aims to record subjective perceptions of general fatigue which consists of 30 question items (Susetyo et al., 2012). Question items 1-10 are about physical weakness, question items 11-20 are about weakening work motivation, and question items 21-30 are about physical fatigue. This questionnaire is standardized and valid for use. Data were analysed descriptively to determine musculoskeletal complaints and work fatigue before and after the respondents worked.

RESULTS

Respondent Characteristics

In this study there were 20 respondents. Respondent characteristics are described based on age and gender.

Age

The frequency distribution of respondents based on age is presented in table 1:

Table 1.
Age Frequency Distribution

| Age (Year) | f | % |
|------------|----|----|
| 22 | 4 | 20 |
| 23 | 13 | 65 |
| 24 | 3 | 15 |

Table 1, it is known that the research respondents at dental hospital XX were 4 people (20%) aged 22 years, 13 people (65%) aged 23 years and 3 people (15%) aged 24 years.

Gender

The frequency distribution of respondents based on gender is presented in table 2:

Table 2.
Gender Frequency Distribution

| Gender | f | % |
|--------|----|----|
| Man | 7 | 35 |
| Women | 13 | 65 |

Table 2, it is known that the research respondents at dental hospital XX were 7 people (35%) man and 13 people (65%) women.

Descriptive Analysis of Musculoskeletal Complaints and Fatigue

Descriptive analysis of musculoskeletal complaints and fatigue in this study is presented in table 3:

Table 3.
Descriptive Analysis of Musculoskeletal Complaints and Fatigue

| Variable | N | Max | Min | Mean | Std |
|--------------|----|-----|-----|-------|-------|
| MSDs_Pre | 20 | 26 | 40 | 33,55 | 3,56 |
| MSDs_Post | 20 | 50 | 100 | 67,70 | 13,58 |
| Fatigue_Pre | 20 | 23 | 44 | 30,20 | 4,89 |
| Fatigue_Post | 20 | 49 | 99 | 62,95 | 13,94 |

Table 3, it is known that the average musculoskeletal complaints before working as a dental assistant was 33.55 ± 3.56 , while the average musculoskeletal complaints after working as a dental assistant was 67.70 ± 13.58 . The average fatigue before working as a dental assistant was 30.20 ± 4.89 , while the average fatigue after working as a dental assistant was 62.95 ± 13.94 .

Analysis of Musculoskeletal Complaints After Work

Musculoskeletal complaints in this study were evaluated using the Nordic Body Map (NBM) questionnaire. The analysis results are presented in table 4.

Table 4.
Results of Analysis of Musculoskeletal Complaints

| MSDs level | f | % |
|------------|----|----|
| Moderate | 13 | 65 |
| High | 5 | 25 |
| Very high | 2 | 10 |

Table 4, it is known that 13 people (65%) experienced moderate musculoskeletal complaints, 5 people (25%) had high musculoskeletal complaints and 2 people (10%) had very high musculoskeletal complaints.

Analysis of Fatigue After Work

Musculoskeletal complaints in this study were evaluated using the 30 Item of Rating Scale questionnaire. The analysis results are presented in Table 5

Table 5.
Results of Analysis of Fatigue

| Fatigue level | f | % |
|---------------|----|----|
| Moderate | 16 | 80 |
| High | 3 | 15 |
| Very high | 1 | 5 |

Table 5, it is known that 16 people (80%) experienced moderate fatigue, 3 people (15%) experienced high fatigue and 1 person (5%) experienced very high fatigue.

DISCUSSION

Respondent Characteristics

The age factor influences muscle strength, where muscle strength reaches its maximum between the ages of 20-30 years and will decrease at the age of 65 years and muscle strength will remain at 75% at that age (Reenan et al., 2009). The age range in this study is the productive age range, where subjects carry out activities with optimal physical strength. Age also has a significant influence on fatigue, both subjective fatigue or work fatigue. Fatigue and physical complaints have a strong relationship, both felt by male workers and women workers (Eni Karyati Sm et al., 2021).

Descriptive Analysis of Musculoskeletal Complaints and Fatigue

The difference in musculoskeletal complaints and fatigue before and after work is caused by the work carried out by dental assistants in providing care to patients. In the work process, dental assistants sometimes use work postures that are not ergonomic, such as bending and twisting, overstretching muscles. Unnatural working attitudes can trigger fatigue and the emergence of musculoskeletal complaints because there is a certain amount of energy that must be expended by workers because of this additional load, on the other hand, this forced attitude results in workers not being able to exert their abilities optimally (Negara et al., 2019).

Results of Analysis of Musculoskeletal Complaints

Complaints are generally felt in the right shoulder, back, right upper arm, waist, upper and lower neck, left shoulder, buttocks, right lower arm and right wrist. Factors causing musculoskeletal complaints are not only influenced by a person's age but also occupational

and environmental factors (Nurhafizhoh, 2019). Factors that can cause musculoskeletal complaints include excessive muscle stretching, repetitive activities, unnatural work attitudes and secondary causative factors including microclimate/exposure to temperature, vibration, pressure, and illumination/lighting (Tarwaka, 2010). The results of the study stated that the musculoskeletal disorders most often experienced by dentists were the back area at 56.4%. Other research results state that 75% of dentists experience moderate back pain (Refresitaningrum & Paskarini, 2018) .

Results of Analysis of Fatigue

The impact of work fatigue includes the individual feeling tense, irritability, the body becoming weak, the individual having difficulty concentrating and having difficulty thinking clearly (Etikariena, 2014). The impact of work fatigue can also be seen from the emergence of disease in the body to absence from the workplace. The impact of work fatigue is that many employees have trouble in achieving success, making them doubt their competence and policies for maintaining this type of work (Maslach et al., 1997). The impact of job burnout can be observed in a decrease in employee performance because of high levels of stress, which places them at risk of committing workplace misconduct (Atmaja & Suana, 2019).

CONCLUSION

The results showed that out of 20 respondents, 13 people (65%) had moderate musculoskeletal complaints, 5 people (25%) had high musculoskeletal complaints and 2 people (10%) had very high musculoskeletal complaints. The results of the study on the fatigue aspect showed that 16 people (80%) experienced moderate fatigue, 3 people (15%) experienced high fatigue and 1 person (5%) experienced very high fatigue.

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