

RESEARCH ARTICLE

The effect of motivation and work environment on the performance of dental and oral therapists in dental hospitals in Yogyakarta

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Submitted: 19th March 2023; Revised: 22nd June 2023; Accepted: 22nd November 2023

ABSTRACT

Dental and oral therapists are medical workers who work in dental hospitals and play an important role in improving dental and oral health with members of work teams, such as dentists and other medical workers. Factors which influence their performance include motivation and work environment. The present study aims to determine the relation between motivation and work environment of dental and oral therapists working in dental hospitals. The present study was mix method research with explanatory sequential design and used total sampling method. The research subjects were 30 dental and oral therapist respondents who worked in 2 dental hospitals. A total of 19 participants worked at Prof. Soedomo Dental Hospital of Universitas Gadjah Mada, while eleven participants worked at Muhammadiyah Yogyakarta University Dental Hospital. The independent variables were motivation and physical and non-physical work environments. The dependent variable was performance of dental and oral therapist. The measurement was a questionnaire about motivation, and physical and non-physical work environments. Data analysis was conducted using a quantitative parametric measure of Pearson's correlation test because the data was normally distributed, while qualitative analysis used interview. We found that there was no relation between motivation and performance ($p > 0.05$), no relation between non-physical work environment and performance ($p > 0.05$), and no relation between physical work environment and performance ($p > 0.05$). Qualitative results based on interviews with the dental and oral therapists showed that they had high motivation because they were proud, and they had good perception of the non-physical work environment due to solid work team. They also had good perception of the physical work environment because it was comfortable and had good facilities. Overall, motivation and work environment do not affect the performance of dental and oral therapists working in dental hospitals.

Keywords: dental and oral therapists; motivation; performance; work environment

INTRODUCTION

Indonesia is a large country with a population of 267 million people and with 21,643 dental and oral therapists. The increasing population in developed and developing countries can cause people not to get optimal dental and oral health services. A dental and oral therapist for the dental and oral health care team can improve the quality of care, evidenced by the association of dental and oral therapists in many countries, such as New Zealand, Canada, the United Kingdom, and others.¹ Dental therapists are part of a dental team. They can work in dental hospitals or in dental health clinics. The workforce model mentions concern for patient safety, and proponents argue that dental therapists could

provide treatment that is as technically competent as that provided by dentists. Dental therapists could be the most effective intervention for improving access to oral health care.²

Dental and oral therapists work to improve dental and oral health through promotive and preventive services, so dental and oral health programs can run optimally at the Ethiopian West Amhara general hospital. Motivational factors are strong predictors that affect health workers at work. Motivation has a positive and significant effect on the performance of health workers with a positive regression direction.³

The work environment is the whole environment where workers work. The work

environment is divided into three parts, namely the technical environment, the human environment, and the organizational environment. The physical work environment is all physical conditions that exist around the workplace that can affect employees directly or indirectly. The non-physical (psychosocial) work environment is all conditions that occur related to work relations, both relations with superiors and fellow co-workers, and relations with subordinates.⁴

Analysis of the effect of placement, motivation, and work environment on the performance of dental and oral therapists affect the performance of dental and oral therapists. The health industry, such as the dental hospital, relies heavily on the performance of health workers in the services provided to patients. Good work relationships between dental and oral therapists, dentists, medical and other non-medical workers in the work environment increase the work productivity at dental hospital.⁵ Different research shows that the work environment does not significantly effect employee performance.⁶

Considering several previous studies that showed differences in results on the effect of motivation and work environment on the performance of health workers, this research is important to ensure that motivation and work environment are factors that affect the performance of a worker, especially dental and oral therapists who work at a special hospital for dental health services.

MATERIALS AND METHODS

The research was conducted from August to November 2021. Ethics approval was obtained from the Research Ethics Committee of the Faculty of Dentistry, Universitas Gadjah Mada (project no. 00694/KKEP/FKG-UGM/EC/2021). This research is ex-post-facto research that examines a cause-and-effect relationship that the researcher does not manipulate or treat. The research used mixed methods sequential explanatory design. The respondents of this study were all population in dental and oral therapists at Prof. Soedomo

Dental Hospital of Universitas Gadjah Mada and Muhammadiyah Yogyakarta University Dental Hospital. The respondents were 30 dental and oral therapists, consisting of 27 female and 3 male therapists.

The respondents filled out the informed consent form before completing the questionnaire. The quantitative measurements were self-assessed using a motivation questionnaire. In contrast, the work environment questionnaire was assessed by colleagues using non-physical questionnaire and physical work environment questionnaire.

The respondent filled out a questionnaire. The instruments used to assist the data collection in this study were the researchers themselves and a questionnaire. The data processing and analysis in this study consisted of data collection and data processing and analysis.

Qualitative questionnaires were assessed based on interviews about the quantitative questionnaires. The researchers interviewed the respondents using interview guideline modification of the quantitative questionnaires. The researchers assessed the answers of the quantitative questionnaires and the interview.

RESULTS

This study used a total sampling technique. The total number of respondents in this study was 30, consisting of dental and oral therapists who worked at Prof. Soedomo Dental Hospital of Universitas Gadjah Mada (19 people) and Muhammadiyah Yogyakarta University Dental Hospital (11 people). There were more female respondents than males with an average age of 23-35 years old. They had a minimum educational background of level 3 diploma and were permanent, full-time employees with a working period of 1-10 years. The sociodemographic distribution of respondents are summarized in Table 1.

Table 2 shows that all respondents worked at two dental hospitals in Yogyakarta. The respondents who had "high" motivation (87%)

Table 1. Sociodemographic distribution of respondents. n = total responden; % = persentase

No	Sociodemographic of respondent	Information	Dental and oral therapist					
			Prof. Soedomo Universitas Gadjah Mada Dental Hospital		Muhammadiyah University of Yogyakarta Dental Hospital		Total	
			n	%	n	%	n	%
1.	Gender	Male	3	10	0	0	3	10
		Female	16	5.3	11	3.7	27	90
2.	Age	23-35 Year	8	26.7	10	33.3	18	60
		36-48 Year	11	36.7	1	3.3	12	40
2.	Education	SPRG	0	0	0	0	0	0
		Diploma III	19	63.3	9	30	28	93.3
		Bachelor	0	0	2	6.6	2	6.7
		Magister	0	0	0	0	0	0
3.	Employee status	Permanent employee	10	33.3	11	36.7	21	70
		Contract employee	9	30	0	0	9	30
4.	Period of work	1-10 Year	7	23.3	8	26.7	15	50
		11-20 Year	9	30	3	10	12	40
		21-30 Year	3	10	0	0	3	10

Table 2. Distribution of respondents based on motivation, work environment and performance dental and oral therapist at RSGM. n = total respondent; % = persentase

No	Description variable	Category						Total	
		Good/High		Middle		Bad/Low		n	%
		n	%	n	%	n	%		
1	Motivation	26	87	4	13	0	0	30	100
2	Non-physical work environment	22	73	8	27	0	0	30	100
3	physical work environment	22	73	8	27	0	0	30	100
4	Performance	26	87	4	13	0	0	30	100

Table 3. Pearson correlation test results. p-value = significance value; r = correlation coefficient

No.	Independent variable	Dependent variable	p-value	r	Information
1.	Motivation	Performance	0.090	0.315	Not significant
2.	Non-physical work environment	Performance	0.126	0.286	Not significant
3.	Physical work environment	Performance	0.751	0.060	Not significant

were included in the “moderate” category, and none were included in the “low” category. A large proportion of dental and oral therapists work in a non-physical work environment (73%) and a physical work environment (73%). Most dental

and oral therapists had a good performance at work (87%), while the rest were included in the “moderate” category. No respondent was in the “bad” category both in the physical and non-physical work environment and performance.

This data was supported by the results of open interviews with the dental and oral therapist respondents. The results of the interviews showed that these respondents had high motivation at work because they loved their jobs. They found the non-physical work environment good because they were in a good work team, and they found the physical work environment equally good because of complete facilities. As Respondent 29 put it: "I feel proud to work at the dental hospital because it is one of the leading hospitals in Yogyakarta. My colleagues who work at here showed solidarity. The facilities are also complete because it is a referral hospital, and it's constantly being developed because it is a teaching hospital." Respondent 24 said: "My friend always completes his work on time and never mixes personal matters while working."

As shown in Table 3, the results of the Pearson's correlation test showed that there was no positive relationship between motivation and performance. However, it was not significant ($p > 0.05$). There was no relationship between physical and non-physical work environment on dental and oral therapists' performance at the dental hospital.

This data was supported by the results of open interviews with the dental and oral therapist respondents. The results of the interview showed that there was no relationship between motivation and performance, and most respondents had high motivation. The physical work environment provided emotional wellbeing because they had harmonious relations with the work team and worked professionally. The physical work environment was good because it was in a new building, which was renovated with the addition of the latest facilities. The performance of the dental and oral therapists was in a good category because they had the same level of education and always communicated when there were difficulties at work, as Respondent 7 commented: "No limit to my creativity during my work here as long as it follows the standard operating procedures of the dental hospital. No demand from anyone as well. My work environment is comfortable and clean." Respondent 6 said: "My co-workers are always professional when working. They can complete the work properly and correctly."

DISCUSSION

The findings of this research found that the effect of motivation on the performance of dental and oral therapists was not significant. The results showed no influence of motivation on performance because all dental and oral therapists' motivation levels were high, and they had good performance. None of the dental therapists had low motivation and poor work performance. This is in line with the research on motivation and job performance among nurses in a private hospital in Malaysia. In hospital, nurses need intrinsic and extrinsic motivation. Relevant motivational programs can be designed to motivate and lead them towards achieving their desired job performance. Extrinsic motivation includes travelling benefits, good work environment, various supervisions at the workplace, attractive salary and additional facilities. Intrinsic motivation can subsequently improve their team work, and promote satisfaction, responsibility, participation, achievement and ownership that bonds with them.⁷

Based on the results of the interviews, all dental and oral therapist respondents met their social motivational needs without any burden at work. The respondents felt comfortable, and their workplace was like a family. One respondent said: "My section head provides support and always helps when I have difficulty completing my work, and when working, I am never lazy."

The respondent's comment above may illustrate the high motivation that comes from within a person to do a job. The feeling of enthusiasm in carrying out an activity and the support of the people around them is a high motivational impact.⁸ Factors that affect performance are not only motivation but also other present factors such as age, level of education, ability to work, and years of service. Motivational factor and ability to work can impact performance by 50%. Thus, many other factors can affect performance, not only motivational factors.⁹

The majority of dental and oral therapists had a level of motivation with a good category, indicating no relationship between motivation of the dental

therapists and performance. The open questions also asked the respondents about Maslow's theory of motivation which includes social well-being, self-esteem and self-actualization. The dental and oral therapists reported that they could develop their career by continuing education according to their competence and could apply the knowledge they got to improve their performance. One respondent stated that, "The dental hospital appreciates all my work, and I have been working here for more than 10 years. Working at this hospital, I can develop my career. I always give my best performance when I work."

Herzberg's two-factor theory reveals the theory of motivation to improve employee performance, namely motivators and hygiene factors. Motivators include achievement, recognition, and responsibility, while hygiene factors include salary, working conditions, status, administration, and company policies.¹⁰

Based on the results of the interview, the respondents had high motivation when working at the dental hospital because they worked according to their competence. The salary they earned was higher than that of a private clinic or private dental practice. The performance of the dental and oral therapists was also good because they were used to doing their current work according to their profession. The results of this study are supported by a statement about the influence of motivation on the performance given to dental and oral therapists at dental hospitals.

Based on Herzberg's theory of intrinsic motivation, motivation among the dental and oral therapists did not affect performance because they were not forced to work. They could be creative and had a section head who gave directions properly, as Respondent 4 put it: "I have never felt compelled to work at the dental hospital because I am happy working there. I'm so glad that I have my current job."

Based on the results of the interviews about the performance of the dental and oral therapists at the dental hospitals, they had good performance, and all respondents always came on time, finished the job systematically, and offered newest ideas

and innovations to improve performance. For example, one respondent said: "My friend always improves his performance all the time because there are developments in science and technology regarding medical devices, and my friend is trying to understand and learn about the task assigned by the manager."

Motivational factor can be in the form of an annual salary increase in a public sector organization. Performance of employees due to poor motivation could be an issue. For the long-term survival of any organization, motivational factor needs to be prioritized, which not only can lead to the achievement of targeted goals of the organization, but also provide satisfaction to its employees. Such feedback and information from the influence of motivation on performance may help evaluate the needs and wants of the employees to motivate and encourage them to work hard, and to have dedication and commitment for the long-term benefit of the organization and achievement of organizational goals and objectives.¹¹

Motivation produces mental effort that improves skills and knowledge. Based on the results of the interviews regarding performance appraisal conducted by their colleagues, motivation had no effect on performance because the dental and oral therapists were passionate about their work, and they did their job well. Commenting on this, Respondent 5 said: "My friend works energetically and actively because he really loves his job, and if there is no work, he feels sleepy, so when a task is given, he is very happy."

The results of the interviews about self-motivated assessments and peer-reviewed assessments showed that there was no influence of motivation on performance. Dental and oral therapists were influenced by other factors, such as career development through further education and skills-based training to improve their performance. This was proven by the results of the interviews with the dental and oral therapists who participated in tool sterilization training.

Performance is not only influenced by motivational factors. Analysis of factor the influence of performance such as process of

recruitment and job description.¹² Respondent 27 commented: "I am never lazy to work at the dental hospital because I have responsibility for my job description. I'm never tired because I have a work schedule." There are many factors that affect performance, such as work climate, supervision, workload, and many others.

The non-physical (psychosocial) work environment had no effect and was insignificant, with the result of $0.126 > 0.05$. Factors that affected the performance were the physical work environment and many other factors, such as work design that was too heavy, causing a high workload, work-related stress, and fatigue. Job stress can cause negative reactions both physically and physiologically. We found that dental and oral therapist collegial relations affected all dimensions of burnout. For the dimension of promotion of care quality, the effect of the ecological exposure on burnout was observed in both the dental and oral therapists. Work environment dynamics are related to dental therapist burnout at dental hospitals.

Assessment of non-physical work environment was based on the respondent's answers during the interview. Based on the results of the interviews, the dental and oral therapists could participate in all activities at the dental hospital, and thus non-physical work environment did not affect their performance. The dental and oral therapists were aware of the responsibility given to them to complete all work efficiently. Commenting on this, Respondent 17 said: "I have an obligation to participate in every activity in the dental hospital because I am part of this hospital." The other respondent said: "I can plan tasks well and all my work can be completed on time with my colleagues."

A friendly environment can have an immediate impact on performance. Respect between colleagues and leaders will help create a comfortable work environment when workers are in the work environment.¹³ The results of this study were supported by open questions about the influence of non-physical work environment on the performance of the dental and oral therapists at the dental hospitals.

Based on the results of the interviews, work environment had an influence on performance because the dental and oral therapists did not feel stress, had no difficulty at work, and their work did not drain their mental energy. It was because they were used to the job at the dental hospital, as reported by Respondent 16: "I never have difficulty when working because my job is currently in accordance with my competence as a dental and oral therapist. This does not make me feel tired because I am used to working with the work I do at the dental hospital. I feel the work environment at this hospital is very good because my current work environment doesn't drain my mental energy. There may be other factors that affect performance. I never feel stress at work because my colleagues can work well together when we work." The results of the interview above were based on an assessment of the physical work environment by considering work fatigue, work stress and mental energy when working.

Level of burnout is significantly higher among the nursing staff and has an inverse relation with affective commitment in India. Affective commitment is the result the best performance of nursing staff. Work environment was found to be socially and physically challenging, thereby leading to some negative behavior on the part of the workers such as absenteeism, low commitment, and apathy. Job performance factors are burnout, procedural justice, and perceived organizational support.¹⁴

The affect work environment of performance because it was based on the statement of the respondents. Fatigue from work only occurred if the patient was busy and there were technical problems, for example a power outage or a sudden failure of service support tools, but this was not a major problem because the team could work together well. Based on the results of the interview, the performance appraisal showed that the dental and oral therapists always worked well, were able to work together properly, and when working, they did not wait for directions from the leaders because they already knew their sets of responsibilities. The results of the interview are in accordance with

Respondent 15's statement: "I think my colleagues can work together well because in a work team, we should help each other."

Non-physical work environment (psychosocial) is all conditions that occur related to working relationships with superiors, fellow co-workers, and subordinates. Non-physical work environment has a positive and significant effect on job satisfaction. Job satisfaction has a positive and significant effect on employee performance.¹⁵

The results of this study found that non-physical work environment did not have influence on the performance of the dental therapists. Based on the results of the interviews, dental and oral therapists are a profession that has been determined by law. There are other factors that affect performance such as work climate, supervision, workload and many others.

We found that physical work environment had no effect and was not significant with the result of $0.751 > 0.05$. The performance could be caused by factors other than the work environment, such as the competence of human resources, including job training and career development, for example by regularly attending seminars and training.

Work environment is one of the most important components which influence employee performance within an organizational setting. Factors of work environment are lighting, noise free and clean office, and comfortable seating. Studies revealed that all these factors could affect employee health. Organizations must maintain a better physical environment in order to enhance employee performance. There is a direct relationship between workplace environment, physical and behavioral features of work environment, and employee health. Improving the physical environment will improve employee health, and healthy employees can be more productive and perform more effectively and efficiently.¹⁶

Besides work environment, human resource competence and infrastructure affect performance. A comfortable and conducive work environment and layout, cleanliness, and safety can improve performance. Performance can be caused by

factors other than the work environment, for example the competence of human resources, such as by having job-related training and career development by attending seminars and training.

Physical work environment includes noise, temperature, air, employers' satisfaction, office furniture, ventilation and light. Work environment has impact on job performance and should be given more attention. If employers have a good physical work environment, they will increase and achieve the desired outcomes and goals of the job.¹⁷ Medical personnel, especially dental and oral personnel, do not carry out services as usual except for emergency medical indications. Based on the results of the interview, the noise in the dental hospital was caused by aerosol suction and compressors, but only a few rooms produced noise. Some rooms in the dental hospital were not affected by the noise from the compressor because the compressor was located far from these rooms. Some rooms were also not affected by aerosol suction.

Respondent 21, when asked about the noise, said: "In my opinion, I am not disturbed by the noise in my current work environment because the sound of compressor is noise." Respondent 25 said: "In my opinion, I am not bothered by the noise caused by the aerosol suction that must be used during the pandemic." Noise at workplace can reduce performance. Work environment of health workers is influenced by the supply of equipment and supportive supervision. A comfortable work environment and complete equipment can help health workers, especially dental and oral therapists, so they have no difficulty working and can improve their performance.

The results of this study are supported by open questions about the effect of the physical work environment on the performance of dental and oral therapists at the dental hospital. Results of the interview showed that the cleanliness of the workspace at the dental hospital was good, so it did not interfere the staff when working. The cleaners who worked at the dental hospital were very helpful and worked well. The facilities at the dental hospital were well cared for and maintained.

Cleanliness was always maintained which made the work environment comfortable. Respondent 17 commented: "I think my workspace is clean and not dusty. For instance, if any liquid spills, the cleaners immediately clean it without disturbing my work."

Based on the results of the interviews with all respondents and the results of the research, there was no influence of the physical work environment on the performance of dental and oral therapists because the facilities in the dental hospital were complete for dental and oral health services in Yogyakarta. In addition, the building was new and under renovation. A new room and adequate facilities were not an excuse for dental and oral therapists not to perform their best. The other factors which could affect performance were the risk of work fatigue because of too many patients, and hospital janitors performing their duties slowly.

CONCLUSION

Based on the results and discussion of this research, motivation does not affect the performance of dental and oral therapists. Similarly, the non-physical (psychosocial) work environment does not affect the performance of the dental and oral therapists, and the physical work environment does not affect the performance of the dental and oral therapists.

ACKNOWLEDGMENT

We would like to thank Prof. Soedomo Dental Hospital and Muhammadiyah University Dental Hospital for giving permission to the researchers to conduct the research there.

CONFLICT OF INTEREST

The authors declare no conflict of interest with the data contained in the manuscript.

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