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Faradillah Usman
Master of Dental and Oral
Therapist, Health Polytechnic
Ministry of Health Semarang,
Indonesia

Bedjo Santoso
Lecturer in Dental and Oral
Therapist, Health Polytechnic
Ministry of Health Semarang,
Indonesia

Tri Wiyatini
Lecturer in Dental and Oral
Therapist, Health Polytechnic
Ministry of Health Semarang,
Indonesia

Corresponding Author:
Faradillah Usman
Master of Dental and Oral
Therapist, Health Polytechnic
Ministry of Health Semarang,
Indonesia

The role of dental therapist in reducing anxiety and improving satisfaction in root canal treatment

Faradillah Usman, Bedjo Santoso and Tri Wiyatini

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Abstract

During root canal treatment in patients with pulp necrosis performed by endodontic specialist dentists and dental therapists, they will provide quality care if there is teamwork and patient compliance is required because root canal treatment is carried out with repeated visits, patients also feel anxiety related to the planned treatment because lack of knowledge about treatment, so it needs communication and education from doctors and dental therapists. However, the role of the dental therapist as a communicant is often forgotten, so this study aims to determine differences in decreased anxiety and satisfaction in patients who have root canal treatment by dental therapists who have received training in dental management and those who have not received training. This research is a quasi-experimental study with a pre-test and post-test two-group design conducted at the RSGM Muhammadiyah University Semarang, Central Java Province, Indonesia. In this study, testing was carried out on two groups, namely the intervention group of 12 people and the control group of 12 people. Statistical test using Wilcoxon test and Mann-Whitney test. The result of this study was that there was a significant difference in reducing patient anxiety levels between the intervention and control groups with a p-value of 0.001, while in the aspect of patient satisfaction, there was a higher increase in the intervention group with a p-value of 0.001. The conclusion of this study is that training in dental management for dental therapists is very important in improving the quality of root canal treatment as measured by reducing patient anxiety and increasing treatment satisfaction.

Keywords: Root canal treatment, anxiety, dental therapist role, dental management

1. Introduction

Dental and oral health problems that occur in some parts of the world's population are dental caries, one of which is the complaint of pulp necrosis¹ Pulp necrosis is the death of the pulp caused by saprophytic or pathogenic caries-causing microorganisms^[2]. Necrotic teeth require root canal treatment to clean the pulp chamber of infected pulp tissue^[3]. The aim of this treatment is to maintain pulp vitality, treat teeth with pulp necrosis, and teeth that have failed in previous treatments^[4].

During root canal treatment requires patient compliance due to repeated visits, which if ignored can lead to failure and result in treatment having to be repeated and will increase costs and time for both the patient and the dentist^[5, 6] this is due to the form of medical action in the form of patient reluctance to come many times and the patient's ignorance about the importance of the stages contained in root canal treatment, it is necessary to communicate and educate the doctor and dental therapist to the patient so that it has an impact on increasing patient compliance with the treatment carried out⁷, besides that patient compliance is also influenced by other factors namely attitudes, beliefs, anxiety, satisfaction, facilities and infrastructure supporting health services, health workers, needs and costs of care^[5] carried out by dentists who specialize in Endodontic to maintain teeth so that they function properly^[8] and collaborate with dental therapists who carry out implementation/chair side assistants. The standards for dental health care services in hospitals are implemented based on SOAPIE (Subjective, Objective, Assessment, Planning, Intervention, and Evaluation)^[9, 10].

Some dental and oral therapists only carry out simple assessment and implementation stages (Chair side assistant) in the dental Endodontic stage, while the stages of care diagnosis, planning and evaluation are not carried out, which dental and oral therapists have the

authority to carry out all stages of dental and oral health care [11]. Based on the background of the problem, the researchers aimed to find out the knowledge, attitudes and skills of dental therapists in dental trauma training as well as to measure a decrease in anxiety in patients who had root canal treatment with dental therapists who received training and those who did not receive training.

Materials and Methods

This research was quasi-experimental with a pretest and posttest two-group design. Sampling in this study used purposive sampling with criteria according to those determined by the researcher, namely pulp necrosis patients. The first group as the intervention group in this study were the pulp necrosis patients who underwent root canal treatment with a dental therapist who was given dental management

training for 12 pulp necrosis patients. The second group was the group of pulp necrosis patients who underwent root canal treatment with a dental therapist who was not given a dental management training in a total of 12 pulp necrosis patients. This research was conducted at a specialist dental and oral health hospital located in Semarang City, Central Java, Indonesia. This hospital is called RSGM UNIMUS. As for the measurement of patient anxiety and satisfaction using a questionnaire filled out before and after treatment. In the intervention group, the dental therapist was given training in dental management of root canal treatment with material on the role of the dental therapist at the treatment stage. Following are details of the materials designed by the researchers and given to the intervention group (Table 1). Statistical test using Wilcoxon test and Mann-Whitney test.

Table 1: Components of Dental Health Care by Dental Therapists in Root Canal Treatment of Pulpal Necrosis Patients

| Stage | Content |
|---|--|
| Stage I Initial Phase Treatment preparation | Dental health care services for pulp necrosis patients with root canal treatment: <ul style="list-style-type: none"> ▪ The dental and oral therapist reconfirms the patient's identity ▪ Subjective assessment ▪ Objective assessment ▪ Diagnostics of dental and oral therapists based on assessment ▪ Develop a treatment plan, in the form of independent and collaborative actions ▪ Dental and oral therapists prepare preparations related to the need for diagnosis (application form for the radiology department according to patient needs) ▪ Pretest to pulp necrosis patients with root canal treatment ▪ Counselling in the form of education about action plans for a root canal treatment |
| Stage II Treatment Phase | At this stage, the patient before entering the endodontic room and being examined, Dental and oral therapists perform: <ul style="list-style-type: none"> ▪ Reconfirm the patient's identity ▪ Carry out further assessments regarding the general condition, anxiety, and patient's vital signs. ▪ Provide counseling to patients regarding their anxiety prior to root canal treatment ▪ Counseling in the form of education about action plans for root canal treatment that requires repeated visits ▪ Preparation of tools and materials ▪ Collaborative implementation (Chairside assistant) based on SOP chairside assistant on-action root canal treatment |
| Stage III Phase after treatment | <ul style="list-style-type: none"> ▪ Evaluation before the patient goes home, self-implementation, providing education regarding care after fillings, education on diligent cleaning of the oral cavity (rinsing the mouth after eating) avoiding sticky and hard food, and brushing teeth in the morning after breakfast and at night before going to bed ▪ Evaluation to carry out control again based on the schedule determined by the dentist. ▪ Posttest to pulp necrosis patients with root canal treatment |
| Stage IV Evaluation of completion of treatment | <ul style="list-style-type: none"> ▪ Patient education related to maintaining healthy teeth and mouth so that other teeth do not have cavities ▪ Educate the patient so that when cavities are immediately examined before the teeth become necrotic |

Results

Respondents in this study were 24 pulp necrosis patients. The results of the characteristics in this study are used to determine the general description of the respondents. The test result on age data is 0.676 ($p > 0.05$), which means that the

data groups have the same (homogeneous) variance. Furthermore, the sex in the intervention group and the control group had an *ap*-value of 0.444 ($p > 0.05$) so it can be concluded that the sex in this study had a homogeneous proportion (Table 2).

Table 2: Characteristics of pulp necrosis patients as respondents

| Variable | Intervention Group | | Control Group | | <i>p-values</i> |
|------------------------------|--------------------|------|---------------|------|-----------------|
| | n | (%) | n | (%) | |
| Pulp necrosis patient | | | | | |
| Age (Mean±SD) | 2.25±0.754 | | 1.92±0.669 | | 0.676 |
| 0-19 Years | 1 | 8,3 | 3 | 25,0 | |
| 20-44 Years | 8 | 66,7 | 7 | 58,3 | |
| 45-60 Years | 2 | 16,7 | 2 | 16,7 | |
| >60 Years | 1 | 8,3 | - | - | |
| Gender | 1.33±0.492 | | 1.42±0.515 | | 0.444 |
| Man | 4 | 33,3 | 5 | 41,7 | |
| Woman | 8 | 66,7 | 7 | 53,8 | |

*Ievene Statistics

The results of the normality test of the data have a p -value <0.05 so that the data is not normally distributed, so the test to be carried out is a non-parametric test, namely by using the Wilcoxon test for the paired test and the Mann-Whitney test for the unpaired test (Table 3).

Table 3: Normality test

| Variable | p -value* | |
|------------------------|--------------|---------|
| | Intervention | Control |
| Anxiety Pre Test | 0.038 | 0.005 |
| Anxiety Post Test | 0.015 | 0.001 |
| Satisfaction Pre Test | 0.042 | 0.008 |
| Satisfaction Post Test | 0.012 | 0.002 |

*Shapiro-Wilk

The results of the effectiveness test of paired data, the p -value of the intervention group was 0.002 ($p < 0.05$) meaning that in the intervention group, the implementation of dental management by dental therapists who received training prior to treatment in pulp necrosis patients with root canal treatment was effective in reducing patient anxiety. Meanwhile, dental therapists who did not receive training before providing care to patients had a p -value of 0.017 ($p < 0.05$). The results of the effectiveness test of the unpaired data change value (Δ) pretest and post-test with a p -value of 0.001 ($p < 0.05$), which means that there is a significant change in reducing patient anxiety in the intervention and control groups with a difference value (Δ) in the intervention group of 7.82 and in the control group 3.26 (table 4).

Table 4: The comparison of the effectiveness of reducing patient anxiety in root canal treatment

| Statistics | | | | | |
|------------|--------------|-------------|-------------|------------------------|--------|
| Variable | Group | Mean± SD | Mean ±SD | Delta± SD (Δ) | P.S |
| | | Pre-test | Post test | | |
| Worry | Intervention | 33.50±1.000 | 25.42±2.193 | 7.82±2.36 | 0.002* |
| | Control | 34.83±1.337 | 32.50±2.876 | 2.33±3.26 | 0.017* |
| | | | | $p = 0.001^{**}$ | |

*Wilcoxon **Mann-Whitney delta

The results of the paired data effectiveness test showed that the p -value of the intervention group was 0.002 ($p < 0.05$), meaning that the dental health care model for pulp necrosis patients with root canal treatment was effective in increasing patient satisfaction. The p -value of the control group was 0.007 ($p < 0.05$). While the results of the data effectiveness test were not paired, the value of change (Δ) pre-posttest with a p -value of 0.001 ($p < 0.05$), which means that there was a significant change in increasing patient satisfaction in the intervention and control groups with a difference value (Δ) in the intervention group of 8.64 and in the control group 1.55 (Table 5).

Table 5: The comparison of the effectiveness of improving patient satisfaction in root canal treatment

| Statistics | | | | | |
|--------------|--------------|-------------|-------------|-----------------------|--------|
| Variable | Group | Mean± SD | Mean ±SD | Delta±SD (Δ) | p .s |
| | | Pre-test | Post test | | |
| Satisfaction | Intervention | 28.75±1.658 | 37.17±1.467 | 8.64±3.68 | 0.002* |
| | Control | 33.83±0.835 | 35.25±0.965 | 1.55±1.04 | 0.007* |
| | | | | $p = 0.001^{**}$ | |

*Wilcoxon **Mann-Whitney delta

Discussion

The results of the analysis of this study (Table 2) found that

the age of the intervention and control had the same (homogeneous) variance with a value of 0.676 ($p > 0.05$). The age of the respondents in the study was 1 person in the intervention group 0-19 years, 8 people in 20-44 years, 2 people in 45-60 years and one person >60 years, while in the control group 0-19 years there were 3 people, 20-44 years as many as 7 people, 45-60 as many as 2 people and > 60 none. As we get older, the longer the teeth are in the mouth, so the risk factors for caries will be greater. This is supported by Jumarti, which the severity of the disease increases with age. If it is caries, if it is not treated immediately, the caries will reach the pulp and if the pulp cells are damaged/dead, pulp necrosis will occur [3].

Respondents in the study in the intervention group were 4 men and 8 women, while in the control group there were 5 men and 7 women. Gender can influence behavior patterns in maintaining healthy teeth and mouth as well as desired aesthetic needs. This is supported by Juniarti, showing that the growth of teeth in girls occurs earlier than in boys, so the shelf life in the mouth is longer and the risk of pulp necrosis will be higher in women than men [3].

Wilcoxon test showed that p -value in the intervention group and the control group ($p < 0.05$) means that the implementation of good dental management is effective in reducing the anxiety of pulp necrosis patients. The successful implementation of dental management as the role of the dental therapist can also be seen from the results of an unpaired test using the Mann-Whitney test with a value ($p < 0.05$), which means that the application is equally effective between treatments with dental therapists who choose training and those without training. In reducing patient anxiety, from the results of the difference between the two intervention groups ($\Delta 7.82$) and the control ($\Delta 2.33$) it was found that dental therapists who had been given training were more effective in providing care by reducing patient anxiety compared to dental therapists in the control group that was not given training.

Anxiety is something that is experienced by patients when they get treatment from the dentist, usually occurs due to the patient's lack of information or receiving wrong information, giving rise to negative thoughts. Dental-related procedures including anaesthetic infiltration, and drilling can cause anxiety to the patient. The decrease in patient anxiety is due to the implementation of the dental health care model for pulp necrosis patients which is implemented by dental and oral therapists where there is independent planning and intervention in the form of education and counselling related to providing information on the stages/procedures of root canal treatment, the explanation given is in the form of an overview to the patient, for example, the sound of the tool that will work, the vibrations generated when drilling is carried out so that it effectively reduces patient anxiety. This is evidenced by a 2018 study, that patient anxiety can be overcome by good communication between the patient and the dental therapist [12].

In line with research in 2022, managing dental and oral health care, can help patients relieve their anxiety, and by determining the diagnosis of dental health care, the patient's basic needs will be fulfilled [13].

Wilcoxon test showed that p -value in the intervention group and the control group ($p < 0.05$), which means the group of patients who were given treatment by a dental therapist with training and the group of patients who were given treatment by a dental therapist without training, has the effectiveness of increasing pulp necrosis patient satisfaction. The results of the

unpaired test used the *Mann-Whitney test* with a value ($p < 0.05$) which means that its application was equally effective in increasing patient satisfaction, from the results of the difference between the two intervention groups ($\Delta 8.64$) and the control ($\Delta 1.55$). So it was found that the implementation of root canal treatment by dental therapists who received dental management training was more effective than the control group quality of patient care which includes the dimensions of reliability, responsiveness, assurance, empathy and tangibles. Increased patient satisfaction due to positive changes in the behavior of dental and oral therapists. Dental and oral health care provided to patients according to the dimensions of service quality can increase patient satisfaction. In previous studies, it was stated that the quality of health services has a direct influence on patient satisfaction. Therefore, increasing patient satisfaction, can be started by improving the quality of health services, one of which is by implementing proper dental management ^[14].

Conclusion

Dental health services performed by dentists and dental therapists with good teamwork and carrying out their roles well will result in optimal care. Like the treatment of root canal patients with pulpal necrosis. Many dental therapists have not fully carried out their roles in accordance with dental management treatment. So that there is an increase in patient anxiety and decreased patient satisfaction in carrying out treatment. This greatly impacts the quality of care and the ongoing maintenance process. In this study, it has been proven that the role given by the dental therapist to patients in performing root canal treatment is very influential in reducing patient anxiety and increasing treatment satisfaction.

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Conflict of Interest

Not available

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Not available

References

1. Gilli M, Maringer D, Schumann E. Oral Health Surveys Basic Methods. In: World Health Organization Elsevier; c2013. p. 287–336.
2. Kantohe ZR, Wowor VNS, Gunawan PN. Perbandingan Efektivitas Pendidikan Kesehatan Gigi Menggunakan Media Video Dan Flip Chart Terhadap Peningkatan Pengetahuan Kesehatan Gigi Dan Mulut Anak. *e-Gigi*. 2016;4(2):7–12.
3. Syakirah T, Deynilisa S. Gambaran Kunjungan Pasien Nekrosis Pulpa Di Puskesmas Padang Selasa Tahun 2019. *Jurnal Kesehatan Gigi dan Mulut (JKGM)*. 2020 Oct 3;2(1):26-29.
4. Santoso L, Kristanti Y. Perawatan Saluran Akar Satu Kunjungan Gigi Molar Kedua Kiri Mandibula Nekrosis Pulpa dan Lesi Periapikal. *MKGK*. 2016;2:65–71.
5. Maulidah I, Roelianto M, Sampoerna G. Hubungan Pengetahuan Kesehatan Gigi dan Mulut Pasien Terhadap Kepatuhan Menjalani Perawatan Berulang. *Conserv Dent*

- J. 2019;8(1):5.
6. Bakhitah F, Hidayati S, Isnanto I. Hubungan Pengetahuan Perawatan Saluran Akar Dengan Kepatuhan Pasien Menjalani Perawatan Berulang Di Klinik Wiguna Dental Care Surabaya. *Jurnal Ilmiah Keperawatan Gigi*. 2021 Sep 20;2(3):395-405.
7. Mujahidin A, Sampoerna G. Hubungan Tindakan Kesehatan Gigi Dan Mulut Pasien Terhadap Kepatuhan Dalam Menjalani Perawatan Berulang. *Conserv Dent J*. 2019;8(2):112.
8. Kuning UL. Dokter Gigi Spesialis Pada Rumah Sakit Di Pekanbaru. 2022;4307(June):352–9.
9. Chumairo SM. Pembuatan Rancangan Optimalisasi Penulisan Rekam Medis Menggunakan Form SOAP (Subjective, Objective, Assessment, Planning) di Poli Gigi RSD Kertosono. *Abdi Massa J Pengabdian Nas*. 2022;02(05):28–37.
10. RI KK. Peraturan Menteri Kesehatan tentang Izin Dan Penyelenggaraan Praktik Terapis Gigi Dan Mulut. Jakarta Pusat; c2016.
11. Widodo AP, Kristanti D. Wewenang Perawat Gigi Terhadap Pelayanan Kesehatan Gigi Berdasarkan Kompetensinya. *Humantech: Jurnal Ilmiah Multidisiplin Indonesia*. 2021 Dec 25;1(2):232-9.
12. Amir H. Penanganan Ansietas Pada Praktek Kedokteran Gigi Management of Anxiety in the Dental Clinic. *B-Dent, J Kedokt Gigi Univ Baiturrahmah*. 2018;3(1):39–45.
13. Marzaweny D. Analisis Kepuasan Pasien sebagai Mediasi Pengaruh Kualitas Pelayanan Kesehatan terhadap Citra Rumah Sakit Umum Daerah (RSUD) Arifin Achmad Pekanbaru. In; c2012. p. 564.
14. Raharja YD, Kusumadewi S, Astiti DP. Gambaran Tingkat Kepuasan Pasien Terhadap Kualitas Pelayanan Kesehatan Di Poliklinik Gigi Dan Mulut Rumah Sakit Umum Puri Raharja. *Odonto Dent J*. 2018;5(1):34.

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