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The effect of differences in the management of mild pain with and without hypnotherapy speakers in post-operative cancer patients

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ABSTRACT

Background: *Cancer, a prevalent non-communicable disease globally and in Indonesia, poses significant health challenges. Pain, a frequent and dreaded symptom in cancer patients, can severely impact their functional abilities, quality of life, and elevate stress levels within families. Non-pharmacological approaches to pain management, like hypnotherapy, offer safe, affordable, and readily applicable solutions.*
Objectives: *This research seeks to evaluate the impact of varying approaches to managing mild pain, specifically comparing the use of hypnotherapy speakers versus their absence, in post-operative cancer patients at RSPAD Gatot Soebroto during the period from December 2023 to January 2024.*
Methods: *This quantitative study employs a Quasi-Experimental design with a Two Group Pretest-Posttest format. The research took place in the Obstetrics Ward on the second floor of PIS RSPAD Gatot Soebroto from December 16, 2023, to January 17, 2024. A total of 44 participants were included, divided into a control group and an intervention group. Data collection was carried out using observation sheets and universal pain assessment tools. Descriptive statistics were analyzed using univariate analysis, and normality tests were performed before conducting bivariate analysis to assess data distribution.*
Results: *The research revealed a notable decrease in pain scores following the use of hypnotherapy speakers. Initially, the average pain score was 2.59 (SD=0.59) prior to the therapy, which dropped to 0.73 (SD=0.83) post-therapy. Both the administration of Paracetamol alone and in combination with hypnotherapy speakers significantly alleviated pain in patients with ovarian and cervical cancer ($p<0.001$). Moreover, a significant difference was observed between the intervention and control groups in the post-test results ($p=0.004$).*
Conclusions: *These results suggest that combining Paracetamol with hypnotherapy*

speakers is more effective at alleviating pain in patients with ovarian and cervical cancer than using Paracetamol alone. This study serves as a valuable reference for future research on the utilization of hypnotherapy speakers and offers practical guidance for midwives to adopt hypnotherapy speakers to expedite pain relief in cancer patients.

KEYWORD: *hypnotherapy speakers ; pain ; pain management*

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INTRODUCTION

Cancer is one of the non-communicable diseases that poses a significant health burden worldwide (1). In 2020, it is estimated that there were 18.1 million cancer cases globally. Of this number, 9.3 million cases occurred in men and 8.8 million in women (2-3). Indonesia, a middle-income country with a population of around 270 million people, has an increasing burden of cancer. The highest incidence rates of female-specific cancers in Indonesia are cervical cancer at 48.3% (250,087 cases), ovarian cancer at 17.8% (92,076 cases), and colorectal cancer at 15.3% (79,032 cases) (4).

Pain is the most common and feared complaint among cancer patients. Approximately 40% of cancer patients experience pain at diagnosis, while in terminal stages, this is felt by 70-90% of patients. Of these cancer patients, 60% experience moderate to severe pain requiring opioids. Cancer pain is categorized into mild, moderate, and severe (5,6). Pain experienced by cancer patients can cause significant anxiety, depression, and despair. Patients may experience pain directly from the underlying disease or from the treatment used to combat their malignancy. Cancer itself can cause pain due to metastasis, directly invading nearby tissues, spreading to other organs, compressing nerves, or causing infection or chronic inflammation changes. Chronic pain is a burden for individuals, and if it persists, individuals will seek care services. Treatment modalities for chronic pain in cancer patients according to standard care include surgery, chemotherapy, and radiotherapy, which can contribute to pain and patient morbidity (7,8).

The management of pain in cancer patients includes both pharmacological and non-pharmacological approaches (8). Pharmacological management can involve the use of Paracetamol in the first step. The initial administration of Paracetamol sometimes does not effectively reduce pain. Non-pharmacological management consists of therapies that are safe, inexpensive, and easy to perform, such as facilitating the presence of family and patients, simple massage therapy, cold and warm compress-

es, TENS, distraction techniques, relaxation techniques, guided imagery, and music therapy (8,11). Hypnotherapy specialists combine music therapy and hypnosis. One application of hypnosis in therapy to reduce pain is hypnotherapy. This method can help address psychological issues, fears, insomnia, and stress (12,13).

In a recent study, hypnotherapy was found to have an effect on reducing pain scales in breast cancer patients, with the average pain scale before hypnotherapy being 8.9 and decreasing to 7.6 after hypnotherapy. Statistical analysis yielded a p-value of 0.0002, indicating a significant effect of hypnotherapy on reducing pain scales in breast cancer patients (14).

The concept of hypnosis is essential in shaping an individual's mental-emotional state. Therapy using hypnotic conditions or hypnotherapy is not an alternative form of treatment. This therapy represents a holistic healing concept that can facilitate various types of therapies and medical treatments. Hypnotherapy techniques are crucial in providing comfort, tranquility, positive thinking, and can certainly help patients reduce pain. Music therapy is a non-pharmacological treatment method aimed at achieving individual goals in managing and controlling emotions and behavior (15).

Hypnosis can induce physical and mental relaxation in patients, activating the subconscious mind and deactivating the conscious mind. During hypnosis, the therapist can provide suggestions to ignore the pain sensations occurring during acute pain episodes, thereby applying hypnosis to help patients disregard pain during treatment (14). Previous research has found that music therapy is an intervention using music in a therapeutic relationship to address physical issues, emotional needs, cognitive requirements, and social needs of individuals by listening to live music performed by the therapist, guided by music or music improvisation, resulting in patient relaxation (15).

Research by Komalawati has shown that music therapy, which has a natural sedative effect, can stimulate the production of endorphins on the first day with the expectation that a higher reduction in pain levels can occur on the following days, due to the continuous physiological response stimulated by endorphins. The research results on the second day for the intervention group receiving music therapy showed an average pain reduction from 8.00 before the music therapy to 4.83 after, a decrease of 3.17. The average pain reduction was higher compared to the first day. The average pain levels before and after receiving music therapy were also higher compared to the first day when music therapy was first administered (12).

Music therapy can help reduce the pain scale felt, thereby increasing comfort and quality of life for cancer patients, ultimately improving their quality of life. The music therapy provided has rhythm, tempo, melody, harmony, and musical dynamics that produce

frequencies. These frequencies, in the form of alpha and beta waves perceived through the sense of hearing, create a sense of calm and comfort. Waves with lower frequencies (alpha and delta waves) can induce feelings of tranquility and comfort. Music genres or types with low frequencies can be used in therapy. The types of music that can be used include romantic film scores, traditional music, music with soothing vocals, sounds from nature, classical music, spiritual music, or currently popular songs. There is a significant effect on the group receiving a combination of aromatherapy and music therapy compared to other groups with $p<0.001$. This research indicates that the provided music can alleviate pain and enhance comfort (12).

The grand and large Gatot Soebroto Army Central Hospital (RSPAD) is a top-tier referral hospital for the Indonesian National Armed Forces hospitals across the archipelago. Data obtained from the obstetrics inpatient ward on the 2nd floor of the PLS RSPAD Gatot Soebroto in 2023 indicated the number of gynecological cancer cases: 285 cases of ovarian cancer, 267 cases of cervical cancer, 75 cases of endometrial cancer, 14 cases of uterine sarcoma, 2 cases of corpus cancer, and 1 case of vulvar cancer. This data shows that ovarian cancer and cervical cancer occupy the first and second ranks in services provided. This underpins the development plan for providing effective obstetric care services in accordance with the capacity of 22 beds and 21 midwives on duty, despite the limitations of midwives working in shifts divided into three parts: 7 on the morning shift, 3 on the afternoon shift, and 3 on the night shift. Cancer patients being treated experience pain, whether mild, moderate, or severe.

Efforts made so far to manage pain include the administration of NSAIDs or Paracetamol, but these have not been able to optimally reduce pain levels. Therefore, other measures are needed by providing holistic care services in the form of specialized hypnotherapy, which is a combination of music therapy and hypnosis therapy to address pain issues in cancer patients without increasing medication doses or the use of opioids, in accordance with pain management protocols, and without adding to the workload of the midwives on duty. Specialized hypnotherapy has already been tested on patients. This therapy is still limited due to the relatively short time I had to develop it. I tried it on 5 patients, with 3 repetitions of hypnotherapy audio in one day. The patients reported feeling more comfortable, calm, and motivated to continue fighting their illness and complaints after listening to the therapy.

The novelty of this research lies in the application of speaker hypnotherapy as a non-pharmacological management method that combines music therapy and hypnosis therapy. This innovation offers a new approach to reducing pain in cancer patients without increasing the dosage of pain medication or the use of opioids. This approach is not only safe and effective, but

also practical and easy to apply in various conditions, making it a relevant alternative solution compared to other conventional methods.

Based on this phenomenon and the data, I am interested in conducting research titled "The Effect of Differences in Pain Management with and without Specialized Hypnotherapy on Post-Operative Cancer Patients at RSPAD Gatot Soebroto."

MATERIALS AND METHODS

The research method used is a Quasi-Experimental approach with a Two Group Pre-test-Post-test design. This research design involves two groups. In this design, the research sample consists of 44 participants, divided into two groups: the control group and the intervention group. The sampling technique is conducted consecutively in this model until the target is met and according to the inclusion criteria and minimal respondent criteria. This study had several participation criteria to ensure the validity and reliability of the data. Inclusion criteria include respondents who are post-operative patients with ovarian cancer or cervical cancer with mild levels of pain (score 1-3). Respondents must also receive pain management in the form of intravenous administration of Paracetamol 3x1 gram. Exclusion criteria were set to eliminate factors that could influence the research results. Respondents were excluded if they were unable to respond to pain (in a coma), had hearing impairment (deaf), or were under the influence of opioids. Drop out criteria were applied to respondents who were previously willing to participate but then decided to stop their participation in the middle of the research process. In addition, respondents who experience a decrease in consciousness during the research will also be excluded from this study.

The study includes two tests: before the experiment (pre-test) and after the experiment (post-test). The groups are assessed for their pain levels before being given paracetamol with and without specialized hypnotherapy, and then their pain levels are reassessed at predetermined times. The experimental group is given an intervention of paracetamol 3x1g with specialized hypnotherapy, while the control group is only given pain therapy with paracetamol 3x1g without specialized hypnotherapy.

The type of instrument used in collecting this data is an observation sheet. The instrument used in research to measure pain scales uses universal pain assessment tool. The method of assessment is to answer the respondent or point directly according to the pain scale they feel after being given an explanation by the researcher about the meaning of each scale. Researchers record the results of data collection, then transfer them into a master sheet. Data collection was also conducted by enumerators who were first trained on the procedures for using the intervention, pain assessment, and pre-post observation. Data collection in the morning was carried out by the researcher, while in the

evening it was conducted by other midwives serving as enumerators. Data collection occurred four times: at 07:00 in the morning and at 21:00 in the evening, for two consecutive days. The method for assessing pain scale involved marking the scale value corresponding to the intensity of pain felt by the patient.

The determination of pain scores was done by circling or marking the number on the observation sheet that indicated the patient's pain level. The second stage of pain assessment was conducted after the respondent listened to the hypnotherapy audio. After the intervention, the final pain intensity (post-test) was observed again. The research data analysis included univariate and bivariate analyses. Univariate analysis was used to describe the characteristics of the variables using frequency and percentage. Analysis bivariate is used to find out if there is whether or not it affects pain management with and without speakers hypnotherapy. This test was carried out to determine the effect of treatment on control group and intervention group.

Based on the results of the normality test, it is stated that the value data normality is less than 0.05. This shows that the data not normally distributed. These results indicate that testing hypothesis using the Wilcoxon test. This research was conducted from December 2023 to January 2024, and had passed the ethical review of STIKes Dharma Husada with ethical clearance number 201/KEPK/SDHB/B/XII/2023.

RESULTS AND DISCUSSION

RESULTS

Characteristics of Research Subjects

The subjects in this research consisted of ovarian cancer or cancer patients cervical with mild pain scale after cancer surgery at RSPAD Gatot Soebroto. All research subjects underwent an initial pain assessment with using universal pain assessment tools.

Table 1. Respondent characteristics

Variable	Control	Intervention
	f (%)	f (%)
Age		
Mean (SD)	52.32 (13.89)	50.50 (11.87)
Median (Min: Max)	57.50 (21: 70)	50 (21: 73)

Based on the results of **Table 1**, the subjects of this research have The minimum age is 21 years for both control and intervention groups. Age The maximum is 70 years in the control group and the intervention group is 73 years. Where the average age was 52.32 (13.89) in the control group and 50.50 (11.87) in the intervention group.

Based on the results of **Table 2,** the control group in this study is a group of respondentsovarian cancer or cervical cancer patients with a minimum pain level of 1 and maximum pain level 3 before being given paracetamol 3x1gram IV therapy without hypnotherapy speakers. After being given paracetamol 3x1gram IV without speaker hypnotherapy, the degree of pain felt is a minimum of 0 and a maximum level of pain pain degree 2. The results of this study also show that the average score pain before

Table 2. Pain scale in cancer patients before and after administration of paracetamol without specialized hypnotherapy with specialized hypnotherapy in ovarian and cervical cancer patients

Variable	Mean (SD)	Min: Max
Without Specialized Hypnotherapy		
Pain Before	2.55 (0.67)	1:03
Pain After	1.27 (0.70)	0:02
With Specialized Hypnotherapy		
Pain Before	2.59 (0.59)	1:03
Pain After	0.73 (0.83)	0:02

therapy was given 2.55 (0.67) and the average pain score after given therapy 1.27 (0.70). The intervention group in this study was the respondent group who were given paracetamol with a hypnotherapy speaker at Gatot Army Hospital Soebroto. The results of this study show that the average pain score before therapy was given 2.59 (0.59) and the average pain score after therapy was given therapy 0.73 (0.83). The pain felt before the intervention was given, namely minimum pain degree 1 and maximum 3, after intervention is given, namely degree pain 0 and maximum pain degree 2.

Based on the results of the **Table 3,** homogeneity test, it is known that both groups controls have homogeneous data (pValue= 0.030) whereas the intervention group had non-homogeneous data (pValue=0.714).

Based on the results of the **Table 4,** the normality test uses the Kolmogorov-Smirnov test Pain scores in the control group and intervention group were obtained pValue results> 0.001 so the data is normal.

Table 3. Homogeneity test results

Variable	p-value	
	Control Group	Intervention Group
Pain Score	0.03	0.714

Table 4. Results of the Normality Assumption Test

Variable	pValue	
	Control Group	Intervention Group
Pain Score	0.337	0.576

Based on the results of the **Table 5** shows the pain scores during the pre-test and post-test in the control group. The data results show that there is The effect of managing mild pain using Paracetamol without speaker hypnotherapy in post-operative cancer patients with pValue < 0.001.

Table 5. The Effect of pain management using paracetamol without a hypnotherapy speaker in patients with ovarian and cervical cancer

Variable	*Pre-test*		*Post-test*		95% - CI	t	p*Value*
	Mean	SD	*Mean*	SD			*Score*
Pain Score for the Control Group	2.55	0.67	1.27	0.70	1.07 – 1.48	13.09	<0.001

Table 6. The Effect of pain management using paracetamol with a hypnotherapy speaker in patients with ovarian and cervical cancer

Variable	*Pre-test*		*Post-test*		95% - CI	t	p*Value*
	Mean	SD	*Mean*	SD			*Score*
Pain Score for the Intervention Group	2.59	0.59	0.73	0.83	1.17 – 1.46	11.09	<0.001

Table 7. Comparison of the effect of pain management with and without the use of a hypnotherapy speaker in patients with ovarian and cervical cancer selrvilks

Variable	Control		Intervention		95% - CI	t	P-Value
	Mean	SD	*Mean*	SD			
Post-Pain Score	1.27	0.70	0.73	0.83	-0.93	-2.35	0.004

Based on the results of the **Table 6** shows the pain scores during the pre-test and post-test in the intervention group. The data results show that there is the effect of pain management using Paracetamol with Hypnotherapy speakers in post-operative cancer patients with pValue <0.001.

Based on the results of the **Table 7** shows the results of the analysis showing that there is differences between the intervention group and the control group post test on pain mild (p=0.004). This shows that there are differences in influence management of mild pain with and without using hypnotherapy speakers in post-cancer surgery patients.

DISCUSSION

This study aims to analyze the effect of managing mild pain with and without the use of hypnotherapy speakers on post-operative cancer patients at the Gatot Soebroto Army Hospital. Respondent characteristics show a minimum age range of 21 years to a maximum of 73 years. The average age of respondents in the control group was 52.32 years with a standard deviation of 13.89, while the intervention group had an average age of 50.50 years with a standard deviation of 11.87 **(Table 1).** The age differences between groups show a relatively homogeneous distribution, so there is no significant bias related to the age of respondents in this study. This ensures that the effect of hypnotherapy intervention can be more objectively evaluated without the significant influence of the age factor (9).

This research shows that the use of speaker hypnotherapy as an adjunct in the management of mild pain provides more significant results than paracetamol therapy alone in post-operative cancer patients. In the control group, 3x1 gr IV paracetamol therapy was able to reduce pain levels from an average of 2.55 (0.67) to 1.27 (0.70). Meanwhile, in the intervention group that received additional hypnotherapy speakers, pain levels decreased from an average of 2.59 (0.59) to 0.73 (0.83) (**Table 2)**. Pharmacological therapy and hypnotherapy resulted in more optimal pain management.

The more significant reduction in pain in the intervention group in this study indicates that hypnotherapy plays a role in increasing relaxation, reducing stress, and modulating pain perception. Therefore, hypnotherapy can be recommended as an additional non-pharmacological intervention to improve the quality of care in postoperative cancer patients (9,10).

Pain scores in the control group decreased significantly between pre-test and post-test, with a p value <0.001 **(Table 5).** This indicates that intravenous administration of paracetamol is effective in reducing mild pain in post-operative cancer patients. However, it is important to note that although paracetamol therapy demonstrated effectiveness, this study also evaluated the additional benefits of speaker hypnotherapy in the intervention group. The more significant reduction in pain in the intervention group compared to the control (as described elsewhere in the study) indicates the potential benefit of non-pharmacological interventions, such as hypnotherapy, in increasing the effectiveness of mild pain management. A combination of pharmacological and non-pharmacological approaches can be a more comprehensive therapeutic option (21).

The results showed that there was a significant change in pain scores between the pre-test and post-test in the control group who only received mild pain management using Paracetamol, with a p-value <0.001 **(Table 6).** This indicates that Paracetamol as a single analgesic has quite good effectiveness in reducing mild pain in post-cancer surgery patients.

As a first-line drug in pain management, Paracetamol works by inhibiting the cyclooxygenase (COX) enzyme in the central nervous system, thereby reducing the production of prostaglandins which are responsible for the perception of pain. Its effectiveness in this study confirms the important role of Paracetamol in standard pharmacological therapy for mild to moderate pain.

Nevertheless, the reduction in pain scores achieved in this group suggests the limitations of single pharmacological therapy, especially for more complex pain. These results provide a basis for comparing effectiveness with approaches involving additional interventions, such as speaker hypnotherapy, to optimize holistic pain management.

The results of this study indicate that there is an effect of pain management without specialized hypnotherapy in ovarian and cervical cancer patients. In pharmacological therapy, the most frequently administered treatment for pain cases involves the use of analgesic drugs. The success of pain management can be observed with the provision of adequate analgesics without causing significant side effects. Generally, WHO policies recommend initial pain management using Non-Opioids, such as Paracetamol (8).

Paracetamol inhibits COX cells, including in the central nervous system, and is

relatively inactive as an anti-inflammatory agent, but it is an effective analgesic and antipyretic. Paracetamol does not cause gastric ulcers or inhibit platelet aggregation and does not act as a competitive COX inhibitor. Instead, it interferes with the oxidative state of COX, leading to a relatively lower anti-inflammatory effect. Although conventionally safe, the maximum daily dose of Paracetamol for chronic use is 4000 mg/day. If pain persists, it is recommended to manage it with a low dose of opioids such as codeine or tramadol. If the pain continues, high-dose opioids like morphine can be used until the patient no longer feels pain (8).

The results of the research conducted at RSPAD Gatot Soebroto from December 2023 to January 2024 indicate that there is an influence of the administration of paracetamol combined with hypnotherapy on patients with ovarian cancer and cervical cancer with a p-value 0.004 **(Table 7).** A speaker is a transducer that converts electrical signals into audio frequencies or sound by vibrating a membrane to propagate air around it, thus creating sound waves. Speakers are components that are almost impossible to replicate with computers or other electronic devices. Therefore, ITEL (Information Telecommunication Equipment) products and multimedia systems include speaker components, with the type of speaker used being a passive speaker. *Active speakers* are widely used by the public in various settings such as residences, places of worship, offices, and retail stores. Hypnotherapy is a non-pharmacological therapy that operates at the subconscious level of clients. Auditory sensory stimuli that induce conscious perception can lead to a trance state, as this condition allows for the opening of critical factors and weakens the conscious control, thereby directly accessing pre-existing subconscious perceptions. This can result in behavioral changes that may reduce pain activity and even eliminate discomfort, as the brain adjusts according to the suggestions given during hypnosis (19,21).

Case study results indicate that patients experienced a reduction in pain scale by an average of 1 point after undergoing hypno-therapy for five sessions. Hypnotherapy can lower the pain scale in patients with cervical cancer, as it influences the limbic system and autonomic nervous system, creating a relaxed, safe, and calming environment. This stimulation affects the reward centers and releases neurotransmitters such as gamma-aminobutyric acid (GABA), endorphins, and β-endorphins, which play a role in pain perception (15). This finding is consistent with research showing that hypnotherapy affects pain reduction in breast cancer patients, with the average pain scale decreasing from 8.9 before therapy to 7.6 after therapy, and statistical analysis yielding a p-value of 0.0002, indicating a significant effect of hypnotherapy on pain reduction in breast cancer patients.

Hypnotherapy is a treatment designed to enhance attention and concentration fully, allowing subjects/clients to more easily

receive positive suggestions. It is also a therapy conducted on subjects/clients in a hypnotic state to address emotional issues that may lead to the development of physical symptoms (18). Hypnotherapy can be summarized as a therapeutic technique that utilizes the ability to process perceptions through a method that has been modified to maintain perceptions and achieve the desired outcomes (18).

During hypnosis, subjects/clients find it easier to express various negative emotions, such as pain and psychological stress, bad feelings, or repressed traumatic experiences. Hypnotherapy practitioners must be able to help clients change behaviors or negative perceptions related to their complaints or issues (19). Generally, human behavior is influenced by personal perceptions (20). These perceptions are not merely simple or singular, as they involve interacting components that affect one another. This aligns with Freud's theory that perceptions are responsible for conscious and unconscious decisions based on impulses and drives. Research findings indicate that there is a difference in the effect of pain management with and without the use of hypnosis on patients with ovarian and cervical cancer.

Pain management for cancer patients includes both pharmacological and non-pharmacological approaches (8). Pharmacological management can involve the use of paracetamol in the initial stages. At times, the initial administration of paracetamol may not effectively reduce pain. Non-pharmacological management is a safe, inexpensive, and easily administered approach and can be implemented through methods such as family and patient counseling, simple massage, cold and warm compresses, TENS (Transcutaneous Electrical Nerve Stimulation), extraction techniques, relaxation techniques, visualization for patient comfort, and music therapy (8,11).

Hypnotherapy speakers are assistive devices for sound production that function to stimulate neurotransmitters, specifically brain chemicals used to relay, modulate, and strengthen signals between neurons and other cells, such as serotonin, dopamine, norepinephrine, and noradrenaline. These brain chemicals produce hormones that are transmitted to the hippocampus and distributed to all brain cells, thereby impacting patients in various ways.

The advantage of this hypnotherapy speaker is its integration of the philosophy or meaning of the design it represents. This hypnotherapy speaker is modeled after a traditional Beltawi house, equipped with Bluetooth technology (15,17).. The design incorporates traditional materials such as ceramic, wood, and Styrofoam, alongside other auxiliary tools, to deliver hypnotherapy audio for cancer patients. The Bluetooth speaker I use is a wireless model featuring A2DP. Its specifications include audio ports: TF/USB/AUX, a 3.7V 18000mAh lithium battery, playback time of up to 6 hours, charging time of 2.5 to 3.5 hours, and dimensions of 220x70x45mm (15,17).

The hypnotherapy speaker represents an approach that combines music therapy with hypnotherapy. One application of hypnosis in therapy for pain reduction is through hypnotherapy itself. This method can assist in addressing issues such as anxiety, fear, insomnia, and stress(12,13).

Hypnotherapy is a psychological intervention that conditions individuals to relax, making it easier for them to receive suggestions from the therapist. Hypnotherapy deliberately utilizes a state of imagination to achieve positive changes in both the conscious and subconscious minds of patients. By utilizing the psychological state of patients, hypnotherapy aims to alter their perception of pain, making it a more comfortable experience. Hypnotherapy can redirect the client's attention with suggested stimuli, causing them to forget the pain they are experiencing. Hypnotherapy affects the anterior cingulate cortex (ACC), which influences the emotional processing of pain experiences. The modulation of emotions affects brain perception of pain, potentially leading to a more positive coping response (15,17).

Hypnotherapy helped to reduce anxiety, including freedom from adverse side effects and drug interactions, a lack of addictive risk, and an increase of the patient's sense of mastery knowing that they have self-management skills, other studies on the use of hypnotherapy or self-hypnosis, in general (18).Resulted in physiological improvements such as a more stable heart rate and have the potential to improve immune function due to reduced stress (19). Hypnotherapy is based on the mechanisms of human perception, specifically conscious and subconscious perception. In a hypnotherapy speaker, there is an audio recording from the therapy that includes directions, suggestions, and prompts aimed at influencing the subconscious mind. The combined use of hypnotherapy audio and music therapy in the speaker is more effective in reducing pain, which aligns with Song's research indicating that music therapy is an effective solution for pain reduction and relaxation by stimulating neuroendocrine responses. Based on these findings, it has been demonstrated that pain management using paracetamol along with a hypnotherapy speaker can more effectively reduce pain compared to using paracetamol alone (16).

CONCLUSION AND RECOMMENDATION

Administration of paracetamol without a hypnotherapy speaker can reduce pain in patients with ovarian or cervical cancer at RSPAD Gatot Soebroto. Administration of paracetamol with a hypnotherapy speaker can more effectively reduce pain in these patients. The use of a hypnotherapy speaker in conjunction with paracetamol results in better pain reduction compared to using paracetamol alone for patients with ovarian and cervical cancer at RSPAD Gatot Soebroto. It is recommended that the hypnotherapy speaker be used continuously to assess its long-term effects. Given that pain

is subjective, future research should consider collecting qualitative data.

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