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THE EFFECT OF SQUISHY BALL THERAPY ON ANXIETY SCORES IN THIRD TRIMESTER PREGNANT MOTHERS IN THE WORK AREA OF TAMANSARI COMMUNITY HEALTH CENTER

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ABSTRACT

The third trimester of pregnancy is a period prone to increased anxiety due to physical and emotional changes, as well as concerns about the upcoming childbirth. If left unaddressed, anxiety may negatively affect both the mother and the fetus, leading to complications such as preterm labor or obstetric disorders. Based on this condition, this study aims to determine the effect of squishy ball therapy on anxiety scores among third-trimester pregnant women in the working area of Tamansari Public Health Center. The theoretical basis of this research includes the concepts of pregnancy, anxiety, maternal anxiety, squishy ball therapy, the benefits, use, and effects of squishy ball therapy. This study utilized a pre-experimental design with a one-group pretest-posttest approach, involving 19 respondents selected through purposive sampling. The instrument used was the Perinatal Anxiety Screening Scale (PASS) questionnaire. The paired t-test results showed a decrease in anxiety scores from a mean of 40.05 to 28.21 with a p-value of 0.000 ($p < 0.05$), indicating a significant effect. This decrease demonstrates that simple activities such as repeatedly squeezing a squishy ball can stimulate the parasympathetic nervous system, increase endorphin release, and produce a relaxing effect that helps reduce anxiety levels. This therapy is non- pharmacological, practical, easy to perform, and has no side effects, making it highly suitable for use as an independent nursing intervention. The conclusion of this study states that squishy ball therapy is effective in reducing anxiety in third- trimester pregnant women. It is recommended that this therapy be integrated into independent nursing practices in antenatal care services and be included as learning material in nursing education.

Keywords: *Anxiety, Pregnant woman, Squishy Ball therapy, Third trimester*

INTRODUCTION

Pregnancy is a natural process that every woman dreams of as a step towards becoming a mother (Burilkina et al., 2023). During pregnancy, various physiological changes occur due to increased hormones that affect the physical and emotional condition of the mother (Blebu et al., 2024). These changes can bring feelings of joy, but also anxiety, especially as the delivery approaches. If this anxiety is not managed, it can have negative impacts on both the mother and the fetus, such as premature birth, weak contractions, and even increase the risks of morbidity and mortality for both mother and baby. In the third trimester, pregnant women become more alert to the safety of their baby and themselves, and are prone to experience anxiety due to recurring physical discomfort and worries about the childbirth process (Rahma et al., 2025).

WHO data from 2020 indicates that 8-10% of pregnant women experience anxiety, increasing to 12% approaching delivery . In Indonesia, the anxiety rate among pregnant women reaches 57.5%, and in West Java, 27% of pregnant women show symptoms of psychological disorders (McCarthy et al., 2023). A preliminary study at the Tamansari Community Health Center showed that out of 354 pregnant women, 164 were in their third trimester, with the majority experiencing anxiety—20% severe, 20% moderate, and 10% mild. This anxiety can be mild (related to daily activities), moderate (restless with limited focus), or severe (deep fear with narrowed perception), all of which can interfere with the adaptation process of pregnancy (Putzy, 2024).

To deal with anxiety, a non-pharmacological approach is needed to avoid the side effects of medication (Clayton, 2020). One effective alternative method is squishy ball therapy, which involves squeezing a soft and elastic ball to provide a calming effect (Hassanpour et al., 2024). This activity stimulates the sensory and limbic nervous system in the brain that is involved in regulating emotions and enhances the release of endorphins (Tias et al., 2024). In addition to the squishy ball, lavender aromatherapy is also known to reduce anxiety, but its use is not always practical as it requires essential oils and can cause sensitivity in some people (Kris-Etherton et al., 2021).

Research shows that squishy balls are more effective in alleviating situational anxiety because they provide a quick response to stress. This therapy stimulates the hand nerves that are directly connected to the brain, resembling the effects of acupressure, allowing the body to become more focused and relaxed. The repetitive squeezing and releasing of the ball generates a sense of comfort, reduces pain, stabilizes emotions, and overall lowers anxiety levels in pregnant women, especially as they approach labor.

RESEARCH METHOD

This research uses a quantitative research design with a quasi-experiment using a one group pretest posttest design. This design does not use a control (comparison) group. In this design, two measurements are conducted. The first measurement is before the treatment (pretest) and the second measurement is after the treatment (posttest).

In this study, the data were analyzed using descriptive statistical methods. The characteristics of the respondents such as age, education, occupation, and gestational age are presented in the form of frequency tables. For the anxiety scores, since the data are normally distributed, the subsequent analysis used a parametric test, namely the paired t-test, to see the difference in average anxiety scores before and after the intervention.

RESULT AND DISCUSSION

1. Result

Table 1. Age Frequency Distribution

Age	Frequency	Percentage
26 – 35 years old	16	84.2
36- 45 years old	3	15.8
Total	19	100.0

Table 1 shows that the majority of participants are in the age group of 26–35 years, totaling 16 people (84.2%), while the remaining are in the age range of 36–45 years with a total of 3 people (15.8%).

Table 2. Frequency Distribution of Education

Education	Frequency	Percentage
Elementary	4	21.1
Junior High School	7	36.8
Senior High School	6	31.6
Collage	2	10.5
Total	19	100.0

Table 2 shows that the majority of participants have their last level of education at the junior high school level (36.8%). Only a small portion of respondents pursued higher education (10.5%). This low level of education may affect their ability to understand health-related information, including information about anxiety during pregnancy.

Table 3. Frequency Distribution of Jobs

Jobs	Frequency	Percentage
Bekerja	1	5.3
Tidak Bekerja	18	94.7
Total	19	100.0

Table 3 shows that almost all participants do not have permanent jobs (94.7%). This situation can impact the level of anxiety, both positively because they can focus more on going through pregnancy, and negatively due to economic dependence on others.

Table 4. Frequency Distribution of Pregnancy Age

Pregnancy Age	F	%
29 - 32 weeks	6	31.6
33 - 36 weeks	6	31.6
37 - 40 weeks	7	36.8
Total	19	100

Table 4 shows that the majority of participants are in the gestational age of 37–40 weeks, consisting of 7 people (36.8%), followed by the gestational ages of 29–32 weeks and 33–36 weeks, each with 6 people (31.6%). This indicates that most pregnant mothers are in the late third trimester, which

is the phase approaching delivery that often triggers anxiety about the childbirth process.

Table 5. Normality Test of Data Before and After Squishy Ball Therapy Intervention

Variable	Shapiro Wilk			
	Statistik	df	Sig.	Info
Pretest	0.122	19	0.200	Normal
Posttest	0.139	19	0.200	Normal

Table 5 shows that the Shapiro-Wilk normality test results indicate a significance value for the pretest and posttest data of 0.200 (> 0.05), which means the data is moderate to severe category.

Table 6. Average Anxiety Scores Before Squishy Ball Therapy Intervention

Variable	Mean	Sdv	Min	Max
Before	40.05	10.260	22	61

Table 6 shows that before the intervention, the average anxiety score was quite high at 40.05, with the highest score reaching 61. This finding indicates that most pregnant women experience anxiety in the considered to be normally distributed.

Table 7. Average Anxiety Scores After Squishy Therapy Intervention

Var	Mean	Sd	Min	Max
After	28.21	9.727	16	49

Table 7 shows that after the intervention was provided, there was a decrease in anxiety scores with an average of 28.21. This indicates a positive impact of the intervention on reducing the level of anxiety.

Table 8. Differences Before and After Conducting Squishy Ball Therapy Intervention

Variable	Mean	Sdv	Avg Diff	P-Value
Before	40.05	10.26	11.8	0.000

Table 8 shows that there is a significant

		0	42	
After	28.21	9.727		

difference between anxiety scores before and after the intervention (p = 0.000). The intervention carried out has proven to be effective in reducing anxiety levels in pregnant women.

DISCUSSION

The research findings show that the majority of respondents are aged 26 to 35 years (84.2%), which is considered the ideal reproductive age according to WHO. This age falls into the early adult category, which is vulnerable to anxiety due to juggling many roles, including that of a prospective mother. Wahyuni and Putra (2021) state that pregnant women of this age often experience moderate to severe anxiety due to uncertainties leading up to childbirth. Kusumawati et al. (2023) also found that young age is often accompanied by emotional instability due to hormonal changes and environmental pressures.

Most respondents had their last education at the junior high school level (36.8%), indicating a potential limitation in understanding health information in depth. Low education is correlated with high anxiety due to a lack of understanding regarding pregnancy. Agustiningsih et al. (2020) mentioned that the higher a mother's education, the better her understanding of pregnancy. Rahmawati & Sari (2022) also found that at least high school education has a significant effect on reducing

anxiety before childbirth.

Most respondents are not working (94.7%), which could affect the level of anxiety. Mothers who do not work tend to have more free time for overthinking, especially if they lack support. Farida & Lestari (2023) state that housewives without regular activities have higher anxiety. Prameswari & Widyastuti (2021) also state that working pregnant women have social networks that help reduce anxiety.

Most respondents were in the gestational age of 37–40 weeks (36.8%), which is the phase approaching delivery and is very vulnerable to anxiety (Melliasany & Perceka, 2021). This period is known as a critical phase both psychologically and physically. Kurniawan et al. (2023) noted that 62.5% of late trimester pregnant women experienced moderate to severe anxiety. (Hassanpour et al., 2024) also emphasized that the third trimester is the most vulnerable period for anxiety disorders.

The Shapiro-Wilk test showed a significance value of 0.200 (> 0.05), which means that the pretest and posttest data are normally distributed. This ensures that parametric statistical tests like the paired t-test can be legitimately used. (Perceka, 2018) states that the validity of statistical analysis highly depends on normal distribution. Ghozali (2016) also explains that a normal distribution makes t-test results more accurate and generalizable.

The average anxiety score before therapy is 40.05, indicating a moderate to severe level of anxiety. This shows that the majority of respondents experience high psychological stress approaching childbirth. García-González et al. (2018) state that the third trimester is accompanied by increased anxiety due to uncertainty. Sa'adah et al. (2024) add that anxiety in the third trimester is higher due to drastic physical changes and fear approaching childbirth.

After being given squishy ball therapy, the average anxiety score decreased to 28.21. This decrease shows that the intervention had a positive effect on the emotional condition of pregnant women. Simanjuntak (2022) found that squeezing a squishy ball can provide muscle and mental relaxation. Putri & Harun (2021) also stated that simple physical activities can lower the stress hormone cortisol and enhance tranquility.

There was a significant decrease in anxiety scores with a difference of 11.84 and a p-value of 0.000, indicating that squishy ball therapy is effective in reducing anxiety. Indrayani & Kurniati (2024) stated that non-pharmacological interventions such as aromatherapy can also quickly reduce anxiety. Sari & Ambarwati (2023) found that stress ball hand therapy significantly reduced anxiety in a short period of time.

CONCLUSIONS AND RECOMMENDATIONS

The characteristics of the respondents were mostly aged 26–35 years, with a junior high school education, unemployed, and in the range of 37-40 weeks of pregnancy. Before the intervention, the average anxiety score of the respondents was 40.05, which falls into the moderate to severe category. After the squishy ball therapy intervention, the average anxiety score decreased

to 28.21, which falls into the mild to moderate anxiety category. There was a significant difference between the anxiety scores before and after the intervention, with a mean difference of 11.84 and a significance value of p = 0.000. These results indicate that squishy ball therapy is effective in reducing anxiety in pregnant women in their third trimester.

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