EFFECT OF *MEDICAL PUZZLE GAME* ON REDUCING PARENT REPORTED HOSPITALIZATION ANXIETY IN PRESCHOOL

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ABSTRACT

Background: *Anxiety is a common problem among preschool children during hospitalization, often leading to crying, fear, and reluctance to undergo medical procedures. Puzzle games can serve as an alternative intervention to reduce hospitalization-induced anxiety.* ***Research Objective:*** *To examine the effect of puzzle games on reducing anxiety levels in hospitalized preschool children.* ***Research design:*** *This quasi-experimental study employed a pretest-posttest design with control and intervention groups. The study involved 72 respondents, with 36 children in the intervention group and 36 in the control group. Participants were preschool-aged children (3–6 years) who were hospitalized. The sampling technique used was purposive sampling. Anxiety levels were measured using the Spence Children's Anxiety Scale-Parent Report (SCAS-Parent Report), which had been modified for the study. Data were analyzed using the Wilcoxon Signed-Rank Test and the Mann-Whitney U Test.* ***Result:*** *The intervention group showed a significant reduction in anxiety levels compared to the control group ($p < 0.001$). The mean difference in anxiety scores between groups indicated that puzzle games effectively reduced anxiety in preschool children.* ***Conclusion****: Puzzle games are an effective intervention to reduce hospitalization-induced anxiety in preschool children.*

Keywords : *Preschool children; hospitalization; anxiety; Puzzle games*

ABSTRAK

Latar Belakang : Kecemasan adalah masalah umum yang dialami oleh anak usia prasekolah selama dirawat di rumah sakit, yang seringkali menyebabkan anak menangis, takut, dan enggan menjalani tindakan medis. Permainan puzzle dapat menjadi salah satu alternatif intervensi untuk mengurangi kecemasan akibat hospitalisasi. **Tujuan Penelitian :** Mengetahui pengaruh permainan puzzle dalam mengurangi tingkat kecemasan pada anak usia prasekolah yang dirawat di rumah sakit. **Metode:** Penelitian ini menggunakan desain quasi-experimental dengan rancangan pretest-posttest yang melibatkan kelompok kontrol dan intervensi. Sampel penelitian berjumlah 72 anak usia prasekolah (36 di kelompok intervensi dan 36 di kelompok kontrol) yang sedang dirawat di rumah sakit. Teknik pengambilan sampel yang digunakan adalah convenience sampling. Tingkat kecemasan diukur menggunakan kuesioner Spence Children's Anxiety Scale-Parent Report (SCAS-Parent Report) yang telah dimodifikasi. Analisis

data dilakukan menggunakan uji Wilcoxon Signed-Rank dan Mann-Whitney U. **Hasil Penelitian :**Terdapat penurunan tingkat kecemasan yang signifikan pada kelompok intervensi dibandingkan dengan kelompok kontrol ($p < 0,001$). Perbedaan rata-rata skor kecemasan menunjukkan bahwa permainan puzzle efektif dalam mengurangi kecemasan anak usia prasekolah selama hospitalisasi. **Kesimpulan:** Permainan puzzle merupakan intervensi yang efektif untuk mengurangi kecemasan akibat hospitalisasi pada anak usia prasekolah.

INTRODUCTION

Hospitalization is a stressful experience for children, particularly preschool-aged children (3-6 years). During hospitalization, children must adapt to an unfamiliar environment, medical equipment, and sometimes painful or frightening procedures. This situation often triggers anxiety, which manifests in behaviors such as crying, fear, anger, or reluctance to undergo treatment (Futri & Risdiana, 2022). If left unaddressed, hospitalization anxiety can negatively impact therapy effectiveness and delay recovery.

Globally, anxiety during hospitalization is a significant issue. According to the World Health Organization (2020), 4% to 12% of preschool-aged children in the United States experience stress during hospital treatment. Similarly, in Germany, the prevalence is 3% to 6%, and in Canada and New Zealand, it ranges from 4% to 10% (Lestari & Munir, 2022). In Indonesia, the Central Statistics Agency (BPS) reported that 3.21% of preschool children experienced health problems and required hospitalization in 2017. This figure increased by 13% in 2018, with approximately 1/3 of the 2.1 million preschool children in Indonesia reportedly experiencing anxiety during hospitalization (Riskesdas, 2019). Urban areas recorded higher percentages (4.07%) of hospitalized children experiencing anxiety compared to rural areas (2.84%) (BPS, 2019).

The impact of hospitalization anxiety on children is significant, affecting their cooperation during treatment, appetite, and overall emotional stability. Children often exhibit dependency on their parents and become uncooperative with healthcare workers, potentially hindering the healing process (Reza & Idris, 2018). Addressing this anxiety is crucial to improving treatment outcomes for preschool-aged children.

One effective method to manage anxiety in children is through play therapy. Play serves as a medium for children to express emotions, reduce fear, and adapt to new

environments. Puzzle games, in particular, have been found effective in reducing anxiety levels in preschoolers by engaging their attention and teaching problem-solving skills in a fun, structured manner (Handajani & Yunita, 2019). Puzzle games also offer additional benefits, such as improving fine motor skills and fostering creativity, without requiring excessive physical energy, making them suitable for hospitalized children (Syakura et al., 2022).

Previous research has demonstrated the efficacy of puzzle games in reducing hospitalization anxiety. A study by Dwi Novianti & Anhusadar (2024) reported significant reductions in anxiety levels among preschool-aged children using puzzle games as a therapeutic intervention (p-value = 0.000, $\alpha < 0.05$). However, while this study established the general effectiveness of puzzle games, it did not explore their specific application within the context of hospitals lacking Family-Centered Care (FCC) and Atraumatic Care principles.

The absence of effective FCC and Atraumatic Care implementation has been observed in several hospitals in Central Jakarta, such as Tarakan Hospital and Sawah Besar Hospital. In Tarakan Hospital, 99 preschool-aged children were hospitalized from November 2023 to February 2024, exhibiting behaviors like crying, screaming, and fear of medical staff. Similar behaviors were observed at Sawah Besar Hospital, where 361 preschool-aged children were hospitalized in 2023. Both hospitals lack sufficient child-friendly facilities and structured play therapy programs to address hospitalization anxiety.

Given these gaps, this study seeks to explore the effectiveness of puzzle games in reducing hospitalization anxiety among preschool-aged children in Central Jakarta hospitals. By focusing on this intervention, the study aims to contribute to the development of practical strategies for anxiety management in hospital settings, particularly in regions with limited implementation of FCC and Atraumatic Care principles.

RESEARCH METHODS

This study employed a quantitative approach with a quasi-experimental pretest-posttest design with a control group. The aim was to evaluate the effectiveness of puzzle games in reducing hospitalization anxiety among preschool-aged children. The study was conducted in two locations: Tarakan Regional Hospital, a type-A referral hospital in Jakarta, and Sawah Besar Regional Hospital, a type-D hospital. These hospitals were chosen because they represent

different levels of healthcare services, providing a comprehensive understanding of anxiety in hospitalized children. Tarakan Hospital serves a larger population as a central referral hospital, while Sawah Besar Hospital represents smaller, localized healthcare facilities. This selection enhances the generalizability of the study findings.

The population for this study consisted of all hospitalized preschool-aged children (3–6 years old) in the pediatric inpatient wards of these hospitals. A total of 72 children were selected as participants, divided into two groups: 36 in the intervention group and 36 in the control group. The sampling technique used was non-probability sampling. The sample size was determined using calculations based on the formula provided in the study by Munir (2023), which explored the effectiveness of play therapy on reducing hospitalization anxiety, and the computation was performed using the S. Lameshow application.

Participants were included in the study if they met specific criteria: they had to be preschool-aged children experiencing hospitalization anxiety, cooperative, and with clear compos mentis awareness. Additionally, their parents had to be in good physical health, literate, and able to communicate orally. Parents also had to provide written informed consent to participate in the study. Children with severe medical conditions that restricted play activities or parents who failed to complete the questionnaires were excluded.

The primary outcome was measured using the Spence Children's Anxiety Scale Parent Report (SCAS), modified by Saputro and Fazrin (2017). This instrument comprises 15 items scored on a 4-point Likert scale, ranging from 0 (Never) to 3 (Always). The SCAS demonstrated strong validity with a value of 0.361 and high reliability with a Cronbach's alpha of 0.875, exceeding the acceptable threshold of 0.6.

The study procedures were as follows: in the intervention group, parents completed a pretest to measure the child's anxiety level before any intervention. The children then engaged in a 20-minute medical cartoon puzzle game. Afterward, a posttest was administered to reassess the anxiety level. In the control group, parents completed the same pretest, and children resumed their usual activities for 20 minutes without the intervention. A posttest was subsequently conducted to measure anxiety levels. To ensure ethical fairness, the control group received the medical cartoon puzzle game after the research was completed.

Data collection was conducted between Febuari 2024 and Mei 2024. Data were analyzed using univariate methods to describe participant characteristics and bivariate analysis to assess intervention effectiveness. The Wilcoxon Signed Rank Test was used to evaluate within-group changes in anxiety levels, while the Mann-Whitney U Test compared anxiety reduction between the intervention and control groups.

The study adhered to strict ethical considerations and was approved by the Health Research Ethics Committee, as indicated by the approval letter (LB.02.02/F.XIX.21/4017/2024). Ethical protocols included obtaining written informed consent from parents, ensuring voluntary participation, maintaining data confidentiality, and balancing risks and benefits. The study design minimized any potential risks while offering therapeutic benefits through the puzzle game intervention.

RESEARCH, RESULTS, ANDDISCUSSION

The results of the normality test that have been carried out show that the Kolmogorov-Smirnov calculation value is 0.000 > 0.05, which means that the data is not normally distributed.

Table 1 Characteristics Of Research Partisipants (N = 72)

Characteristics	Frequency	Persentage (%)
Age		
<63 months	36	50.0
≥63 months	36	50.0
Gender		
Boys	41	56.9
Girls	31	43.1
Length of hospitalization		
< 4 days	35	48.6
≥ 4 days	37	51.4
Previous hospitalization experience		
Never	42	58.3
Ever	30	41.7

Based on table 1. Data were obtained from 72 respondents in the pediatric inpatient room and divided into 2 groups consisting of 36 respondents who were the intervention group and 36 respondents who were the control group. The group of intervention respondents selected in this study wasin accordance with the age criteriawith an age [1]range of 3 to 6 years who were being treated at the in patient service of the Alamanda

Median Difference : The difference between the pretest and posttest medians within the intervention and control groups.

room on the 6th floor of building B at the Tarakan Regional General Hospital, Central Jakarta, and experiencing anxiety. Meanwhile, the control respondent group selected in this study was in accordance with the age criteria with an age range of 3 to 6 years who were being treated at the pediatric in patient service in the 3rd floor of the Cemara room at the Sawah Besar regional general hospital in Central Jakarta who experienced anxiety. Table 1 shows the number of age equivalence between the intervention group and the control group, namely for the age of < 63 months as many as 36 respondents (50.0%) and the age ≥ 63 months as many as 36 respondents (50.0%). The gender of the respondents in this study was divided into two, namely respondents with boys and girls genders. Based on table 4.1, the results were obtained in both the intervention group and the control group, the majority of the gender in the boys respondents was 41 respondents. Based on table 4.1, the results were obtained in both the intervention group and the control group that the majority of respondents with a length of hospitalization of ≥ 4 days with a total of 37 children (51.4%) in the entire group with the number in the intervention group which was 19 respondents (13.58%) and in the control group which was 18 respondents (16.58%).

The characteristics of respondents based on the are divide into two classifications, namely previous hospitalization experience are divided into two classifications, namely never and ever. Based on table 4.1, the results were obtained in both the intervention group and the control group, that the majority of respondents with no previous treatment experience were a total of 42 children (58.3%), in the entire group with the number in the intervention group, namely 22 respondents (22.05%), and in the control group, which was 20 respondents (17.02%).

Table 2 Changes in Anxiety Levels in the Intervention and Control Groups (N=36)

Group	Stage	Median	Percentil (25-75)	Median Difference	p-value
Intervention Group (N=36)	Pretest	24.94	(22.00 – 27.00)	9.11	<0.001
	Posttest	15.83	(13.00 – 18.00)		
Control Group (N=36)	Pretest	22.94	(21.00 – 25.00)	0.77	0.095
	Posttest	22.17	(20.00 – 24.00)		

In the analysis of the *Wilcoxon SignedRank* Test of the Effect *of PuzzleGames* on the Reduction of Hospitalization Anxiety Levels in Preschool Children in 72 respondents consisting of 36 intervention groups and 36 control groups. In table 2, the results were obtained that the average numberof anxiety scores in the *pretest of* the intervention group was 24.94 and in the*posttest* of the intervention group was 15.83 with a with an median difference of 9.11 and *p-value* 0.00 < 0.05. This shows that there is a decrease in anxiety in hospitalized preschool children both before and after the *puzzle game*. Meanwhile, the average number of anxiety scores in the *control group pretest* was 22.94 with the *control group posttest* was 22.17 with an median difference of 0.77. *p-value* was 0.095 > 0.05. This shows that there is no decrease in anxiety inpreschool-age children of hospitalization both before and after without being given a *puzzle game.*

Table 3 Mann Whitney Posttest Intervention Group and Control Group

Group	Median (IQR)	Median Difference	Z-Value	p-values
Intervention Group (N=36)	26 (24-28)	19.52	-3.970	<0.001
Control Group (N=36)	46 (44-48)			

Based on table 4 shows the comparison of posttest anxiety scores between the intervention and control groups, measured using the Mann-Whitney U Test. The median posttest anxiety score for the intervention group was 26 with an interquartile range (IQR) of 24–28, indicating a lower level of anxiety following the implementation of the medical cartoon puzzle intervention. In contrast, the control group had a significantly higher median posttest anxiety score of 46 (IQR: 44–48), suggesting no substantial reduction in anxiety in the absence of the intervention.

The median difference between the two groups was 19.52, indicating a meaningful reduction in anxiety in the intervention group compared to the control group. The Mann-Whitney U Test produced a Z-value of -3.970, with a corresponding p-value < 0.001, which is statistically significant. This result demonstrates that the observed reduction in anxiety levels in the intervention group was not due to chance.

Table 5 Mann-Whitney Analysis of Characteristics and Anxiety Levels in the Intervention and Control Groups

Group	Characteristics	N	Median Rank	Z	P Value
Intervention	**Age (Months)**				
	<63 Months	16	22.75	-2.185	0.030
	≥63 Months	20	15.10		
	Gender				
	Boys	18	19.41	-.698	0.485
	Girls	18	16.88		
	Length of Hospitalization				
	<4 Days	17	24.00	-2.991	0.002
	≥4 Days	19	13.58		
	Previous Hospitalization Experience				
	Never	22	22.07	-2.575	0.010
	Ever	14	12.89		
Control	**Age (Month)**				
	<63 Bulan	20	24.95	-4.137	0.000
	≥63 bulan	16	10.44		
	Gender				
	Laki-laki	18	17.17	-.765	0.444
	Perempuan	18	19.83		
	Length of Hospitalization				
	<4 Hari	18	20.42	-1.100	0.279
	≥4 Hari	18	16.58		
	Previous Hospitalization Experience				
	Never	20	17.02	-.946	0.344
	Ever	16	20.34		

Based on the age characteristics in the intervention group, the average anxiety score at the age of <63 months was 22.75 for 16 respondents, and the anxiety score at the age of ≥63 monthswas 15.10 for 20 respondents. The p-value result was 0.030 which indicates significant data <0.05. The results showed that H0 was rejected and Ha was accepted, so it can be interpreted that there is a relationship between theage of the respondents in the intervention group and the level of hospitalization anxiety in preschool-age children. The age characteristics in the control group showed that the average anxietyscore at the age of <63 months was 24.95 for 20 respondents, and theaverage anxiety score at the age of ≥63months was 10.44 for 16 respondents.The p-value of 0.000 < 0.05 was obtained and it can be interpreted thatthe data is significant. The results showed that H0 was rejected and Hawas accepted, so it can be interpretedthat there is a relationship between theage of the respondents in the

control group and the level of hospitalizationanxiety in preschool-age children. The findings in this study are in linewith the opinion

Faidah et al. (2022) that preschool children need a pleasant environment for the growth anddevelopment process, if they are sick,they need communication and special attention to the approach in nursing care. In the opinion of preschool-age children, they consider that being sickis something scary, so treatment and treatment procedures cause mental problems in children. Righo et al. (2021)

Preschool children are moresusceptible to stress caused by hospitalization because at that age there is a cognitive limitation of the child to understand what he or she hasjust felt. The changes that occur in him both in terms of health status andthe unfamiliar environment make thechild in care easily experience anxiety. (Selli et al., 2021).

Based on the theory and results of theabove research, researchers argue thatage affects the level of hospitalizationanxiety. Because children aged <63 months or <5 years and 3 months do not have an adaptive coping mechanism to anxiety responses compared to children aged ≥63 months or ≥5 years and 3 months. It can be concluded that the younger thechild's age, the more difficult it is to adapt to the hospital environment and atmosphere and is prone to experiencing hospitalization anxiety.

In the analysis of the relationship between sex and the level of anxiety due to hospitalization in preschool- age children in the intervention group,the results were obtained that there were 18 respondents with an average anxiety score of 19.41. Meanwhile, girls amounted to 18 with an averageanxiety score of 16.88. The results ofp-value 0.485 > 0.005 can be interpreted as H0 accepted Ha rejected, so it can be concluded that there is no relationship between gender and the level of hospitalization anxiety in preschool-aged children inthe intervention group.

In the analysis of the relationship between sex and the level of anxiety due to hospitalization in preschool- age children in the control group, the results were obtained that boys totaled 18 respondents with an average anxiety score of 17.17. Meanwhile, girls children amounted to 18 with an average anxiety score of 19.83. The results of p-value 0.444 > 0.05 can be interpreted as H0 accepted Ha rejected, so it can also beconcluded that there is no relationshipbetween gender and the level of hospitalization anxiety in preschool- aged children in the control group.

In line with the opinion expressed bythe opinion that children's cognitive development at preschool age iscertainly still immature, therefore theresponse to anxiety can occur in all genders, both girls and boys. Preschool-age children are also notable to build

coping mechanisms independently and adaptively to the anxiety they feel. Kidi Atawatun et al., (2021)

Based on the theory and results of theabove research, the researcher arguesthat there is no influence between genders on the level of hospitalizationanxiety because preschool-age children both experience separation, changes in activities, pain felt, and adaptation to a new environment.

In the analysis of the relationship between the length of hospitalization and the level of hospitalization anxiety in preschoolchildren in the intervention group, the results of <4 days were obtained for 17 respondents with an average anxiety score of 24.00. Meanwhile, respondents with a length of hospitalization of ≥4 days amounted to 19 with an average anxiety score of 13.58. The results of p-value in the sex with the level of anxiety in the intervention group were 0.002 < 0.05(significant), and it can be concludedthat children with a length of hospitalization of <4 daysexperienced higher levels of anxiety. There is a relationship between the length of hospitalization and the levelof hospitalization anxiety inpreschool-age children.

In the analysis of the relationship between the length of hospitalization and the level of hospitalization anxiety in preschool children in the control group, the results of <4 days were obtained as many as 18 with an average anxiety score of 20.42 and ≥4days as many as 18 respondents with an average anxiety score of 16.58.The results of the p-value showed 0.279 > 0.05, it can be concluded thatthere is no relationship between thelength of treatment in the controlgroup and the level of hospitalizationanxiety in preschool-age children. The results of this study are in linewith the opinion of Potter, Perry.,(2017) where children's anxiety will be very visible on the first to third days, and usually when entering the fourth or fifth day the anxiety felt by the child will begin to decrease. Anxiety in children who are beingtreated can be reduced due to several supporting factors including thesupport of parents who always accompany the child while being hospitalized, good relationships between children and health workers (nurses, doctors) so that it can reducethe level of hospitalization anxiety.

Based on the results of the above research and theory, the researcherargues that the longer the hospitalization day in the child, the less anxiety the child will be becauseit is influenced by adaptation to the scope of the inpatient room in thehospital, nursing actions involving nurses or other actions involving other medical personnel. However, there are other supporting factors for reducing the level of anxiety inchildren based on the length oftreatment, including room comfort,fostering a relationship of mutual trust

and fostering a good relationshipbetween nurses and children, as well as parental support for children with hospitalization anxiety.

In the analysis of the relationship between the previous hospitalization of children and the level of hospitalization anxiety in preschool children in the interventiongroup, the results were obtained that children who had no experience or had never been hospitalizedamounted to 22 respondents with an average anxiety score of 22.07 and inchildren who had previously been treated there were 14 respondents with an average anxiety score of 12.89. The results of the p-value showed 0.010 < 0.05, it can be concluded that the level of anxiety is higher in respondents who have not had previous experience in hospital treatment than children who have already had experience in hospital,this shows that there is a relationship between the experience of beingtreated and the level of hospitalizationanxiety in preschool-age children.

In the analysis of the relationship between the experience ofhospitalization of children in theprevious hospital and the level of hospitalization anxiety in preschool children in the control group, the results were obtained that children who had no experience or had never been hospitalized amounted to 20 respondents with an average anxiety score of 17.02 and in children who had previously been treated there were 16 respondents with an averageanxiety score of 20.34. The p-value results showed 0.344 > 0.05, and it can be concluded that there is no relationship between hospitalizationexperience and the level of hospitalization anxiety in preschoolchildren in the control group.

One of the main factors in theoccurrence of hospitalization anxietyin preschool-age children is the experience of the pain suffered and previous treatment at the hospital. If the child has never been hospitalized at all, then the child will be morelikely to experience anxiety. This can happen because the child has not adapted to the environment and hospital conditions. However, this anxiety can arise because the experience in the previous treatment

CONCLUSIONS

1. The description of age characteristics showed similarities (50.0%). The description of gendercharacteristics shows that themajority of respondents are boys, namely 41 respondents (56.9%), and 31 (43.1%) girls respondents. The description of thecharacteristics of the length ofhospitalization showed that the majority of respondents ≥4 days were 37 respondents (51.4%), and 35 respondents (48.6%) were <4 days of hospitalization. The description of the

characteristics ofthe previous treatment experience showed that the majority of respondents had received previous treatment experience as many as 42respondents (58.3%), and in the respondents who did not havetreatment experience, as many as 30 respondents (41.7%).

2. In the intervention group, there was a significant relationship between the influence of age category, length of care, and previous treatment experience.And there is no significantrelationship between the influenceof gender categories. Meanwhile, in the control group, there was a significant relationship between the influence of age categories. And there was no significant association between the influence of gender category, length of care,and previous treatment experience.
3. The average picture of the level of hospitalization anxiety in preschoolchildren in the intervention group showed the results of the average score *of the pretest* which was 24.94 and in the *posttest* which was 15.83 with an average difference of9.11, while in the control group theaverage anxiety score in the *pretest*was 22.94 and in the *posttest* by 22.17 with an average difference of 0.77. The mean difference showed that the results in the intervention group that was given the *medical cartoon puzzle game* treatment had a significant reduction in anxiety levels compared to the controlgroup.
4. There was a difference in anxietylevels between *the postest* in the intervention group (given a*puzzle game*) and the control group. There was a decrease in the average anxiety score of 19.52 with a p-value of 0.000 < 0.05, and there was an effect of puzzle game intervention on reducing the level of hospitalization anxiety in preschool-age children.

LIMITATIONS

This study has several limitations. The use of non-parametric analysis (Mann-Whitney U test) does not allow for the control of confounding variables, such as age and previous hospitalization experience, which were found to be statistically significant. Unlike parametric methods, non-parametric tests cannot account for these factors, potentially influencing the results. Additionally, the relatively small sample size (n=36) limits the generalizability and statistical power of the findings. Future studies should consider using larger sample sizes and parametric analyses to control for confounding variables and further validate the intervention's effects.

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REFERENCES

Badan Pusat Statistik. 2017. Statistik Indonesia 2017. https://www .bps.go.id/publication/2015/08/12/statistik-indonesia- 2018.html

Badan Pusat Statistik. (2018). Profil Kesehatan Ibu dan Anak 2018. Jakarta : Badan

Pusat Statistik. https://www. bps.go.id/id/publication/2018 /11/15/23aade2096f222222b 1d7b7a/profil-kesehatan-ibu- dan-anak-2018.html

Badan Pusat Statistik. (2019). Profil Statistik Kesehatan 2019. Jakarta : Badan Pusat Statisti k. https://www.bps.go.id/id/publication/2019/12/30/9d583 b7e2bd81fada82375e0/profil -statistik-kesehatan- 2019.html

Badan Pusat Statistik. (2023). Profil Statistik Kesehatan 2023. Jakarta : Badan Pusat Statistik. https://www. bps.go.id/id/publication/2023 /12/20/feffe5519c812d560bb 131ca/profil-statistik- kesehatan-2023.html

Edtik Novita Eka Lestari, Zainal Munir, H. F. R. (2022). Pengaruh Penerapan Family Centered Care Terhadap Kejadian Trauma Pemasangan Infuse Pada Anak. *Jurnal Penelitian Perawat Profesional*, *4*.

Dwi Novianti, A., & Anhusadar, L. (2024). Pengaruh Terapi Bermain Puzzel untuk Penurunan Kecemasan Hospitalisasi pada Anak Usia Prasekolah. *Murhum : Jurnal Pendidikan Anak Usia Dini*, *5*(1), 87–98. https://doi.org/10.37985/murhum.v5i1.409

Faidah, N., Marchelina, T., & Studi Keperawatan Institut Teknologi Kesehatan Cendekia Utama Kudus, P . (2022). Tingkat Kecemasan Anak Usia Prasekolah Yang Dirawat Di Rumah Sakit Mardi Rahayu Kudus.

Handajani, D.O. dan Y unita, N. (2019) "Apakah Ada Pengaruh Terapi Bermain Puzzle Terhadap Tingkat Kecemasan Anak Usia Prasekolah Yang Mengalami Hospitalisasi Di Rs Bhakti Rahayu Surabaya," *Jurnal Manaje men Kesehatan Indonesia*, 7(3). https://doi.org/10.14710/jmki.7.3.2019.19 8-204.

Kidi Atawatun, L., Tinggi Ilmu Kesehatan Papua, S., Pademme, D., & Banna, T. (t.t.). *Faktor Yang Berhubungan Dengan Kecemasan Pada Anak Usia Prasekolah Akibat Hospitalisasi Di Rsud Sele Be Solu Kota Sorong*.

Reza, M. dan Idris, M. (2018) "Efektifitas Terapi Bermain (Mewarnai) Terhadap Penurunan Kecemasan Akibat Hospitalisasi Pada Anak Usia Prasekolah (36 Tahun) Di Ruang Melati Rsud Kota Bekasi," *Afiat*, 4(02), hal. 583–592. . https://doi.org/10.34005/afiat .v4i02.708.

Saputro, H. *et al.* (2017) “Penurunan Tingkat Kecemasan Anak Akibat Hospitalisasi dengan Penerapan Terapi Bermain,” *JKI (Jurnal Konseling Indonesia)*, 3(1), hal. 9–12. http://ejournal.unikama.ac.id/index.php/JKI.

Saputro, H. dan Fazrin, I. (2017) *Anak Sakit Wajib Bermain di Rumah Sakit:Penerapan Terapi Bermain Anak Sakit*.

Selli, O. :, Sitopu, D., Nasution, Z., Tamba, D., & Manurung, M. (2021). *Pengaruh Terapi Bermain Dengan Kecemasan Pada Anak Hospitalisasi Di Rumah Sakit Ibu Dan Anak Stella Maris Medan* (Nomor 3).https://doi.org/http://dx.doi .org/10.46930/ojsuda.v29i1.2 416

Tim Pokja SDKI PPNI. (2016) "*Standar Diagnosis Keperawatan Indonesia Definisi dan Indikator Diagnostik.* Jakarta: Dewan Pengurus PPNI, hal. 180.

Ulyah, Q., Murwati dan Rossita, T. (2023) “Hubungan Lama Hospitalisasi Anak Dengan Tingkat Kecemasan Orang Tua Di Rs Tiara Sella Kota Bengkulu Tahun 2023,” *Student Scientific Journal*, 2(1), hal. 41–48.

Yulianto, A., Idayati, I. dan Sari, S.A. (2021) “Bermain (Puzzle) Terhadap Kecemasan Anak Usia Prasekolah Y ang Mengalami Hospitalisasi,” *Jurnal Wacana Kesehatan*, 6(1), hal. 39. https://doi.org/10.52822/jwk. v6i1.172.