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The Relationship between Patient Knowledge and Anxiety on MRI Examination at Dr. M Djamil Hospital

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ABSTRACT

A person's knowledge affects anxiety, if a person has too much information or conflicting knowledge it can confuse and make a person feel unsure, which can increase anxiety. This research method uses quantitative correlation analytic method with cross sectional design. This research was conducted at Dr. M Djamil Padang Hospital. The population of this study is the total population of patient visit data from May to July 2023 with a total of 843. The sample of this study used nonprobability sampling technique with accidenta sampling method which amounted to 89 respondents using the slovin formula. data collection was carried out by questionnaire, the data obtained was then processed using the SPSS application with the sperman rank correlation test. The results show that in this study there is one characteristic, namely the relationship between the level of knowledge and the level of anxiety which shows Ho is rejected and Ha is accepted, it can be concluded that there is a significant relationship between the patient's level of knowledge about MRI examination with the level of anxiety on MRI in the Radiology installation of Dr. M Djamil Padang Hospital.

Keywords: Knowledge; Anxiety; MRI

INTRODUCTION

Health is a basic human right and is one of the factors that determine the quality of human resources by proclaiming the vision of a healthy Indonesia 2010. Anxiety is a psychological problem that is indicated by an attitude of worry about something that is perceived as unfavorable by the individual (Sakarti, 2018). Anxiety is a kind of restlessness, worry and fear of something that is not clear (Yuliastini, 2020)

MRI examinations are often associated with anxiety and fear. Anxiety can be increased by the patient's perception of the MRI room as an unfamiliar environment, the length of the examination procedure, the loudness of the sound during scanning and the narrow space, and the patient's knowledge of MRI (Ahlander, B.-M., Årestedt, K., Engvall, J., Maret, E., & Ericsson, 2016). This leads

to problems in generating high quality images caused by movement, resulting in artifacts in the motion picture results (Ericsson, E., Ahlander, B.-M., & Engvall, 2020)

Based on research conducted by (Amaliya, M. I., Setiawati, R., Sari, A. K., Muqmiroh, L., 2019) that patients before performing MRI examinations have anxiety levels equivalent to patients who will undergo surgery. Meanwhile, according to (Pratama, 2023) that good therapeutic communication can reduce patient anxiety before surgery. An unfamiliar hospital environment and the use of medical language that is difficult to understand can increase patient anxiety. There is a positive or significant relationship between MRI-AQ scoring and MRI examination, because it can be seen that the higher the patient's heart rate value, the anxiety category interpreted in the MRI-Q scoring. According to research conducted by (Amaliya, M. I., Setiawati, R., Sari, A. K., Muqmiroh, L., 2019) It can be concluded that patients who have never had an MRI examination and feel anxious in the category of 22 patients or 73% of patients. While those who have had an MRI examination are 27% or 8%.

Research (Nabunya, P., 2023) found that the prevalence of anxiety disorders among adolescents in Kampala, Uganda, was 13.2%. The study also noted that there were differences in prevalence by gender, with females showing higher levels of anxiety than males. Females tend to be more emotionally expressive and seek social support more often as a coping mechanism. While men are more likely to use avoidant coping strategies, such as distraction or substance use, these differences are influenced by psychological and socio-cultural factors that shape gender roles (Reads., 2023). Research (Sari, D. A., & Lestari, 2022) found that 60.5% of adult patients experienced anxiety during treatment. Factors associated with this level of anxiety include age, education level, and family support.

Based on research conducted by (Amaliya, M. I., Setiawati, R., Sari, A. K., Muqmiroh, L., 2019) The results of the study indicate that there is a relationship between patient knowledge and anxiety in facing surgery with a pvalue of 0.007 ($p < 0.05$). there is a relationship between gender and anxiety in facing surgery with a pvalue of 0.035 ($p < 0.05$), and there is a relationship between education and anxiety in facing surgery with a pvalue of 0.017 ($p < 0.05$) Conclusion There is a relationship between knowledge, age, gender and education on anxiety in facing surgery at Bekasi City Hospital.

Based on the results of the author's observations when conducting PKL in the radiology installation of the MRI room, the number of patients who performed MRI examinations at Dr. M Djamil Padang Hospital in May to July amounted to 843 patients. M Djamil Padang in May to July amounted to 843 patients, and in 1 day about 5-8 patients, based on observations and interviews conducted by researchers to 8 patients who will carry out MRI examinations, obtained 5 patients stated that they felt afraid and anxious when going to do an MRI examination because the examination lasted a long time and was in a narrow space, at the time of the examination when the examination began the patient

jumped from the MRI bed and shouted because the patient's examination felt in the grave, so the examination had to be stopped.

From this description, therefore the researcher wants to study further with the aim of knowing how the Relationship Level. Patient Knowledge About MRI With Patient Anxiety Level at Examination in Radiology Installation at Dr.M DJamil Padang Hospital, this is very important to study because it greatly impacts the process of the MRI examiner and the resulting radiographs.

METHODOLOGY

This study is a type of quantitative research with a cross sectional research design. The population in this study were MRI patients at the Radiology Installation of Dr. M Djamil Padang Hospital. The total study population was 843. Samples were taken using purposive sampling. Calculation of the number of samples using the Slovin formula so that a total of 89 samples were obtained in this study. Data collection used in this study is primary and secondary data obtained through direct interviews with samples using questionnaires that have been provided and patient data. Data obtained from interviews using questionnaires were processed using the SPSS computer program application. Data analysis carried out is by means of univariate, bivariate. Statistical test analysis in this study used the *sperman rank test*.

RESULTS AND DISCUSSION

Table 1. Knowledge Level

Knowledge	Frequency	%
Good	16	18.0
Simply	42	47.2
Kurang	31	34.8
Total	89	100.0

Based on Table 1 It is known that out of 89 respondents that the level of knowledge is less, namely 31 respondents (34.8%)

Table 2. Anxiety Level

Anxiety	Frequency	%
No anxiety	32	36.0
Mild anxiety	8	9.0
Moderate anxiety	11	12.4
Severe anxiety	13	14.6
Severe severe anxiety	25	28.1

Based on Table 2, it is known that of the 89 respondents of MRI patients at the radiology installation of Dr. M Djamil Padang Hospital with a very severe anxiety level category as many as 25 respondents (28.1%).

Table 3. Relationship between knowledge level and anxiety level

Knowledge	Anxiety					P-value
	No anxiety	mild anxiety	moderate anxiety	Severe anxiety	Very Severe Anxiety	
Good	5.8%	1.4%	2.0%	2.3%	4.5%	0.032
Simply	15.1%	3.8%	5.2%	6.1%	11.8%	
less	11.1%	2.8%	3.8%	4.5%	8.7%	
Total	32.0%	8.0%	11.0%	13.0%	25.0%	

Based on the table, it was found that of the 89 respondents studied, MRI patients at the radiology installation of Dr. M Djamil Padang Hospital with a lack of knowledge experienced continuous anxiety as many as 11 people (8.7%).

The results of statistical tests with the Spearman rank correlation test show a p-value = 0.032 (p value> 0.05) so that Ho is rejected and Ha is accepted, it can be concluded that there is a significant relationship between the level of knowledge and anxiety. The reason for choosing the rang sperman correlation decision making is because this variable test uses a 3X5 table so that the selection of the asymp sig value. (2-sided) there is 0.032.

Based on research conducted as many as 89 respondents, it was found that the level of knowledge was less experiencing continuous anxiety as many as 11 people (8.7%). This research is in line with research conducted (Aditiawan, A. D., Handoko, Y. T., & Nugroho, 2022) said that there was a relationship between the level of knowledge and the level of anxiety with a p-value of 0.006 with a r value of 0.297 with a positive correlation, which means that the higher the level of knowledge, the higher the level of anxiety, this can be seen from the results of his research on good knowledge with a moderate level of anxiety as much as 12.8% and less knowledge as much as 8.1%, which should be for good knowledge tends to experience mild anxiety or not experience anxiety because this is in accordance with the statement (Susiana, D., 2021) that increasing one's knowledge can reduce one's anxiety level.

The results of the study are in line with research (Suraningsih, N., & Lestari, 2024) Spearman test was conducted and the p value was obtained <0.05. This means that there is a significant relationship between the level of knowledge and anxiety of patients when performing radiology examinations. And this study is also in line with research (Widyastuti, C., Anggorowati, & Apriana, 2011) with a significance value (P value) of 0.001 <0.05 (significant level), it can be concluded that the alternative hypothesis is accepted and Ho is rejected, meaning that there is a significant relationship between the level of knowledge and the level of anxiety. This study is in line with research (Hatimah, S. H., Ningsih, R., & Syahleman, 2022) stated that the correlation coefficient between knowledge and anxiety of preoperative patients was 0.000. With the result of ρ = 0.000, it means ρ <0.05, this shows that there is a relationship between knowledge and anxiety of preoperative patients in the Meranti Room of Sultan Imanuddin Pangkalan Bun Hospital. Furthermore, this study is in line with the research of Ratih Mega Septiasari (2021), the p-value is 0.029 (sig <0.05)

which shows that there is a significant relationship between knowledge and anxiety.

According to (Septiasari, R. M., & Viandika, 2021) stated that the higher a person's level of education, the more knowledge he has and the easier the process of receiving information. But that does not mean that someone with a low education must have low knowledge as well. Because increasing one's knowledge is not obtained from formal education but can also be obtained from other sources of information. The knowledge gained will be different if the information is from formal education with non-formal education. Information based on knowledge will not cause errors, but if the information is not based on knowledge, errors will occur. For example, getting information from social media can have an impact on fears and concerns or anxiety levels.

Statistical results with the Sperman rank correlation test found a p value of 0.032 so that Ho is rejected and Ha is accepted, it can be concluded that there is a significant relationship between the level of knowledge and the level of anxiety.

The assumption of the study, a patient's knowledge also affects a patient's anxiety, what when people who have in-depth knowledge about a topic sometimes tend to analyze every detail and possibility. Knowledge is often considered a key tool for reducing uncertainty and providing a sense of control over the situation at hand, including in a medical context. In theory, the more knowledge a person has, the easier it is for him or her to cope with situations that require decision-making, reduce fear, and feel more confident. However, in reality, the more information one has, especially information related to risks and possible complications, can actually lead to greater anxiety. This is in line with findings from various studies that suggest in-depth knowledge can lead to overthinking, which exacerbates anxiety rather than reducing it. How individuals process information and form emotional responses. This theory emphasizes that new learning and interaction with the environment play an important role in forming cognitive schemas that can influence anxiety and overthinking (Yuan, Y., 2020). This theory explains that anxiety arises when individuals perceive a situation as a threat that exceeds their ability to deal with it. More knowledgeable individuals often assess the risk of a condition in greater depth, which can increase threat perception. This process, known as *overthinking*, involves overanalyzing the various possibilities that could happen, including the worst. Ultimately, this repetitive thinking creates greater tension and anxiety.

In the context of medical patients, in-depth knowledge about a medical procedure or health condition may make them more anxious, as they are clearly aware of potential risks that others who lack such information may not be. For example, patients who are aware of the potential complications of a medical procedure, such as an MRI examination, may be more anxious due to their awareness of the possible side effects or failure of the procedure. This is supported by research from (Lee, S. J., & Kim, 2021) which suggests that

individuals who have high health literacy tend to be more anxious due to their awareness of the various risks involved in medical procedures.

In addition, exposure to too much information, especially contradictory or incomplete information, can lead to cognitive confusion that exacerbates anxiety. This concept is known as Information Overload which was developed by (Bawden, D., & Robinson, 2009) which explains that when a person is faced with too much information, the brain struggles to process it effectively, leading to confusion and uncertainty. In a healthcare context, too much medical information-both relevant and irrelevant-can add to patients' anxiety, as they feel unable to process and filter the information received.

Research by (Sekmen, B., & Karaca, 2023) found that patients who have more knowledge about medical procedures actually tend to be more anxious, as they have more things to consider and worry about. The confusion that comes with conflicting information often exacerbates this, as patients feel like they can't rely on their knowledge to make an informed decision.

(Xu, C., & Yan, 2022) This study shows that information overload significantly predicts an individual's anxiety level. Risk perception and positive coping style acted as partial mediators in the relationship between information overload and anxiety, affirming that perceptions of one's susceptibility to risk and how serious the impact of the risk is play an important role in influencing individuals' anxiety and health behaviors. In other words, the more knowledge a person has about a medical procedure or disease, the more likely they are to feel anxious, especially if they are aware of the risks involved.

One of the most interesting examples of the influence of knowledge on anxiety is in medical professionals themselves. Doctors or medical personnel who have extensive knowledge about a particular medical procedure are often more anxious about the risks of complications that could occur, even though they are the most competent in dealing with the problem. For example, a doctor who has a fear of tight spaces (claustrophobia) may experience greater anxiety when performing an MRI scan, even though they know that the procedure is relatively safe and is often performed without problems. This suggests that knowledge, while it can provide a sense of control, can also increase excessive fear due to awareness of the potential risks involved.

Research by (González, M., Pérez, L., & Ramírez, 2021) in the journal Psychological Health in Healthcare Workers revealed that medical personnel who have more knowledge about risks and complications in medical procedures tend to be more anxious, especially if they have a personal fear of certain procedures. They are more exposed to various information about possible complications or risks, which makes them more aware of the dangers that may arise, even if they are very rare.

CONCLUSIONS

1. Of the 89 respondents studied, it was found that 31 respondents (34.8%) had a low level of knowledge about MRI examination at the Radiology Installation of Dr. M Djamil Hospital Padang.

2. Of the same 89 respondents, 25 respondents (28.1%) experienced a very severe level of anxiety related to the MRI examination.
3. The results of statistical tests with Spearman rank correlation showed a p value of 0.032 ($p < 0.05$), which means that there is a significant relationship between the level of knowledge of patients about MRI examinations with their anxiety level when undergoing MRI procedures at the Radiology Installation of Dr. M Djamil Hospital Padang.

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