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Patient's Companions's Level Of Knowledge Towards the Signs Of Raditions In The Installtion Radiology Sundari Hospital

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Abstract

There is a lack of socialization regarding the dangerous impacts caused by the radiation emitted by CT scan equipment, so that the level of patient knowledge is still lacking. The aim of this research is to determine factors related to the patient's level of knowledge regarding the dangers of X-ray radiation during a CT scan. The type of research used is analytical with a cross-sectional design. This research was carried out by collecting data on factors related to the patient's level of knowledge regarding the dangers of X-ray radiation during a CT scan. Data was collected through a questionnaire to determine the level of knowledge of patient companions regarding the danger signs of radiation in the Radiology Installation at Sundari Hospital, Medan. Sampling was carried out using the accidental sampling method. The research results showed that as many as 64% of respondents had knowledge of the dangers of x-ray radiation. There is a relationship between level of knowledge and gender (p=0.015). Based on the results of the research carried out, it can be concluded that the level of patient knowledge regarding the dangers of X-ray radiation. there is a relationship between level of knowledge and gender (p=0.015). Based on the results of the research that has been carried out, it can be concluded that the patient's level of knowledge regarding the dangers of x-ray radiation when a CT scan is carried out, the results obtained are in the good category. It is hoped that further research will be carried out regarding before and after providing education about the dangers of x-ray radiation to patients.

Keywords: *Knowledge, Radiation Dangers, X-rays*

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A. Introduction

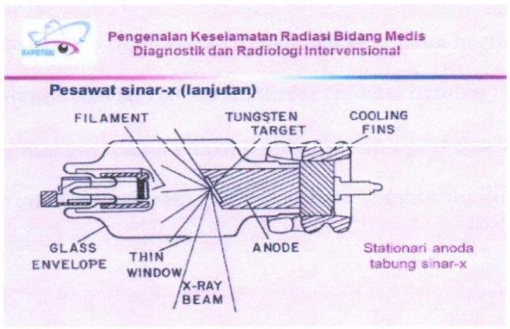
One of the radiation safety protections in radiology is the presence of radiation danger signs and indicator lights in front of the entrance to the radiology room. Radiology permit holders must carry out radiation safety protection measures required for the Control Area according to BAPETEN Regulations[1]. This study aims to determine the level of knowledge of patient companions regarding the danger signs of radiation in the radiology installation at Sundari Hospital. This research was conducted in June 2023. This research method used a descriptive method, with a population of 83 patient companions who carried out radiological examinations. With the variable level of knowledge of the patient's companion regarding the signs of radiation, namely: Indicator lights, danger stickers for pregnant women, and warning sign stickers about the dangers of radiation. The sample includes all patient companions in categories of education level and type of work. Data was obtained from survey results using

[1] BAPETEN Regulation No.4 .2013. Concerning Radiation Safety in the Use of Nuclear Energy: Jakarta

questionnaires from 83 patient companion respondents. Then the data is processed using the Index % formula to determine the level of knowledge of the patient's companion. The research results showed that the level of knowledge of respondents regarding the signs of radiation in the good category was 33 respondents (39.75%), in the sufficient category 15 respondents (18.10%), and in the poor category 35 respondents (42.15%). It can be concluded that the majority of respondents have little knowledge about the signs of radiation.

B. Method

This research is a quantitative research using a survey method using a questionnaire to determine the level of knowledge of patient companions regarding the danger signs of radiation in the Radiology Installation at Sundari Hospital, Medan. X-rays are the emission of electromagnetic waves which are similar to radio, heat, light and ultraviolet waves. Sinae-X has a short wavelength. The nature of X-rays has the ability to penetrate objects in their path. The structure it passes through. The structure of the X-ray tube in the picture:



According to Rasad (2015), X rays have properties such as:

a. Penetrating power
b. Scattered radiation
c. X-Ray Absorption
d. Photographic effect
e. Fluorine glow (Fluorescence)
f. Ionization
g. Biological effects

Radiation protection is an action taken to reduce the damaging effects of radiation due to radiation exposure. Radiation safety is an action taken to protect workers, community members and the environment from the dangers of radiation[2]According to factors that influence knowledge include[3]:

a. Educational factors
   The higher a person's level of knowledge, the easier it will be to receive information about objects or related to knowledge.
b. Job factors
   A person's job greatly influences the process of accessing the information needed for an object.
c. Experience factor

[2] BAPETEN. 2011. Radiation Safety in the Use of Diagnostic and Interventional Radiology X-ray Aircraft.
[3] Notoatmodjo, Soekidjo, 2010. Health Research Methodology. Rineka Cipta : Jakarta.

A person's experience greatly influences knowledge, the more experience a person has about something, the more a person's knowledge about that thing will increase.

d. Confidence
   Beliefs acquired by a person can usually be inherited from generation to generation and cannot be proven in advance, positive beliefs and negative beliefs can influence a person's knowledge.
e. Socio-cultural
f. Culture and habits in the family can influence a person's knowledge, perception and attitude towards something.

C. RESULTS AND DISCUSSION

Table Frequency Distribution of Respondents Based on Gender

Gender	N	Percentage (%)
Man	41	49.40
Woman	42	50.60
Amount	83	100.0

Based on table regarding frequency distribution based on gender, it was found that the female gender had the most respondents, namely 42 respondents (50.60%) and the male gender had the lowest respondents, namely 41 respondents (49.40%).

Table Frequency Distribution of Respondents Based on Education

Education	N	Percentage (%)
elementary school	7	8.43
JUNIOR HIGH SCHOOL	6	7.22
SENIOR HIGH SCHOOL	32	38.55
College	38	45.80
Amount	83	100.0

Based on table regarding the frequency distribution of respondents based on education, it shows that the frequency of tertiary education is higher, namely 38 respondents (45.80%) and junior high school education has the lowest number, namely 6 respondents (7.22%).

Table 3. Frequency Distribution of Respondents Based on Occupation

Work	N	Percentage (%)
Private employees	16	19.30
Civil servants	6	7.22
Profession	51	61.44
Businessman	10	12.04
Amount	83	100.0

Based on Table , the frequency distribution based on occupation shows that there are more respondents with professional jobs, namely 51 respondents (61.44) than respondents with jobs as civil servants, namely 6 respondents (7.22).

Table 4. Level of Knowledge Based on Indicator Lights
Question: Do you know what the indicator light above the radiology room door is for?

No.	Statement	Good	Enough	Not enough

1.	 The purpose of the Indicator Light is to prevent people other than officers from entering the room during an inspection.	34	11	38
2.	The purpose of the Indicator Light is to notify that radiation is taking place			
3.	When the indicator light is on, the aim is to notify people around the radiology environment that an examination is being carried out in the room			
Amount		**34**	**11**	**38**

Based on Table 4 regarding the results of respondents' answers based on indicator lights, it can be seen that the Knowledge Level of Patient Companions in the sufficient category has the lowest number, namely 11 people, while the Knowledge Level in the Good category has the highest number, namely 34 people.

Table 5 Respondents' Knowledge Level Based on Pregnant Women's Stickers

Question: Do you know why pregnant women are not allowed to enter the radiology room?

No.	Statement	Good	Enough	Not enough
1.	 The Pregnant Women Sticker aims to inform unauthorized pregnant women that they are prohibited from entering the radiology room.	43	4	36
2.	Pregnant women who are exposed to radiation will cause abnormalities in the fetus they are carrying.			

3.	The Pregnant Mother Sticker aims to ensure that pregnant women who will be examined can inform the radiology officer in advance that they are pregnant.			
Amount		43	4	36

Based on Table 5 regarding the results of respondents' answers based on pregnant women's stickers, it can be seen that the Knowledge Level of Patient Companions in the sufficient category has the lowest number, namely 4 people, while the Knowledge Level in the Good category has the highest number, namely 43 people.

Table 6 Respondents' level of knowledge based on radiation hazard stickers

No.	Statement	Good	Enough	Not enough
1.	 The Danger of Radiation Symbol sticker aims to inform the general public not to get too close to the door of the radiology room.	34	5	44
2.	The Radiation Danger Symbol Sticker aims to inform the general public that there is radiation in the room.			
3.	The Radiation Danger Symbol Sticker aims to inform the public that the radiology room uses radiation			
Amount		34	5	44

Based on Table 6 regarding the results of respondents' answers based on the Radiation Danger Symbol Sticker, it can be seen that the Knowledge Level of Patient Companions in the sufficient category has the lowest number, namely 5 people, while the Knowledge Level in the insufficient category has the highest number, namely 44 people.

D. Conclusion

The discussion which includes the characteristics of respondents based on Occupational Education, Gender and also the level of knowledge of the patient's companion regarding the signs of radiation is as follows At the level of knowledge, it is not explained based on indicator lights, pregnant women's stickers, and radiation hazard symbols. My research only discusses the danger signs of radiation, because I understand that the danger signs of radiation are included in the danger signs of radiation. The definition of student in the Indonesian Dictionary is a person/child who is studying (studying, going to school). According to Prof. Dr. Shafique Ali Khan (2005) defines students as people who come to an institution to obtain or learn some type of education. What students can say is if someone is in elementary school, middle school, high school, and the equivalent, In this study, there were 7 students (8.43%) who were in elementary school. According to Daldiyono (2009) a student is someone who has graduated from a Senior High School (SLTA) and is currently pursuing higher education. In this study, there were 38 respondents who were still students (45.80%). Science and Technology (IPTEK) about the dangers of radiation can be learned more when someone is already sitting on a lecture bench (student), There were 34 respondents (40.96%) who had good knowledge regarding indicator lights, 11 respondents (13.25%) with sufficient knowledge, and 38 respondents with less knowledge (45.78%). Statements regarding danger stickers for pregnant women had good knowledge: 43 respondents (51.80%), 4 respondents (4.81%) had good knowledge, 36 respondents (43.37%) had little knowledge. 34 respondents (40.96%) had good knowledge of the statement regarding radiation hazard symbols, 5 respondents (6.0%) had sufficient knowledge, 44 respondents (53.0%) had little knowledge. From the survey that I have conducted in this research, the average person regarding indicator lights and radiation hazard stickers does not understand the meaning of the image of the radiation hazard sticker and also the indicator light that is on (red), whereas on the sticker, pregnant women accompanying the patient know more about the meaning of the image. sticker of the pregnant woman.

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BAPETEN Regulation No.4 .2013. Concerning Radiation Safety in the Use of Nuclear Energy: Jakarta