CANCER PATIENTS' ANXIETY ARE NEGATIVELY CORRELATED TO SOCIAL INTERACTION CAPABILITY

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ABSTRACT

Background: Cancer is the leading cause of death in the world. Data shows the number of cancer deaths in the world reaches 10 million cases. Therefore, cancer patients often experience anxiety. However, anxiety can also stem from chemotherapy procedures and side effects. The literature said social interaction can overcome anxiety.

Objective: This study aims to analyze the relationship between social interaction and anxiety levels of cancer patients undergoing chemotherapy at Prof. Dr. Margono Soekarjo Hospital.

Method: This study used a cross-sectional study design. Sampling using an accidental sampling technique. A total of 107 respondents participated in this study. Anxiety was measured using the STAI-Trait questionnaire and social interaction using The RAND Health Social Battery questionnaire. Hypothesis was examined by r Pearson's test.

Results: The results showed that there was a negative significant relationship between social interaction and anxiety levels of cancer patients undergoing chemotherapy (r: -0.233; p: 0.1).

Conclusion: There is a relationship between social interaction and anxiety among cancer patients. The more intens patients in social interactions the lower anxiety level become.
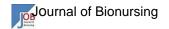
INTRODUCTION

Cancer is the leading cause of death in the world. IARC recorded 10 million deaths from cancer in the world in 2020, while the incidence rate reached 19.3 million cases. The incidence of cancer in Indonesia according to Riskesdas in 2018 increased by 1.79% per 1000 population. Yogyakarta is the province with the most incidences, reaching 4.46%. The high incidence of cancer requires massive efforts from various parties as a form of cancer control (Hidayati et al. 2022).

Cancer patients usually undergo treatment in the form of chemotherapy which is channeled in the form of drugs into the body (Sitepu et al. 2021). This chemotherapy often causes side effects such as nausea, vomiting, hair loss, and others (Pratiwi in Muklis, Feriana & Risna 2022). These side effects can have a psychological impact in the form of anxiety, fear, and decreased self-esteem which can worsen physical conditions, treatment processes, and quality of life (Pratiwi, Widianti & Solehati 2017).

Anxiety arises due to a feeling of imminent threat to a person (Hafsah 2022). Anxiety can be affected by predisposition factors and precipitation factors. Previous research stated that moderate anxiety (77.5%) was most experienced by cancer patients undergoing chemotherapy (Sigalingging & Lindawati, 2020). Therefore, anxiety needs

more concern because it can cause emotional distress that can affect the quality of life (Nomiko 2020).

Social interaction can be an alternative to overcome anxiety. This is because there are still studies that show that social support is not associated with anxiety (Soelastri, Rahmalia & Elita 2017). Supported by Stuart's adaptive stress theory, social interaction is part of the source of coping that can affect a person's response to stressors such as anxiety, which leads to adaptive responses (Stuart 2016).

The preliminary study was conducted at Prof. Dr. Margono Soekarjo Hospital. The results showed that as many as 2 out of 10 patients experienced severe anxiety, 5 moderate anxiety, and 3 mild anxieties. This phenomenon needs to be a concern. Given the importance of overcoming anxiety in cancer patients undergoing chemotherapy, researchers are interested in conducting research related to the relationship between social interaction and anxiety levels of cancer patients undergoing chemotherapy.

This study aims to determine the relationship between social interaction and anxiety levels of cancer patients undergoing chemotherapy. The benefits of this research can be used as a basis for the science of medical, surgical and palliative care, the basis of nursing care in the clinic in the RSTD *Home care program,* adding community insight, and a reference for further research. The authenticity of this study refers to previous research related to social support and social interaction with

anxiety levels and/or quality of life (Derang, Ginting & Sitohang 2022; Hu et al. 2018; Situmorang 2019).

METHODS

Sample and Setting

This study uses a *cross-sectional study* design. The population in this study is cancer patients undergoing chemotherapy at Prof. Dr. Margono Soekarjo. A total of 107 respondents were sampled in this research. The research took place from August to December 2023.

Data Collection and Analysis

The data collection process was carried out using a questionnaire, namely STAI-Trait to measure anxiety and *The RAND Health Social Battery* questionnaire to measure social interaction. The questionnaire for each respondent was carried out by the interview method. Data analysis was carried out using univariate and bivariate analysis. Univariate analysis includes frequency and percentage. Correlation analysis was tested using Ir Spearman's, the Mann-Whitney and Kruskal-Wallis tested different proportion based on individual characteristics.

RESULTS AND DISCUSSION

1. Respondent Characteristics

The characteristics of respondents based on the demographic questionnaire assessment are presented in Table 1. The table showed that most respondents were pre-elderly (45-59 years old) as much as 49.5% (n=53). The gender of most respondents was female as
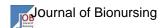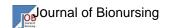
Table 1. Characteristics of respondents (n=107)

Characteristics	f	%	p
Age [b]			
Adult (19-44 years)	27	25.2	0.346
Pre-elderly (45-59 years old)	53	49.5	
Elderly (>60 years old)	27	25.2	
Gender			
Male	20	18.7	0.869
Female	87	81.3	
Occupation [a]			
Working Active	23	21.5	0.175
Unworking	84	78.5	
Education [b]			
Uneducated	9	8.4	
Elementary School	53	48.6	
Junior High School	13	12.1	0.606
High School	22	20.6	
University	11	10.3	
Duration of Cancer [b]			
1-2 years	90	84.1	
3-4 years	9	8.4	
> 5 years	8	7.5	0.775
Cancer Type [b]			
Breast	32	29	0.518
Cervix	24	22.4	
Colorectal	7	6.5	
Ovarium	10	9.3	
Limfe	8	7.5	
Vesica Urinaria	6	5.6	
Others	20	18.7	
Cancer Treatment History [b]			
Chemotherapy Only	26	24.3	0.013*
Chemotherapy and surgical	70	65.4	
Chemotherapy and radioterapi	3	2.8	
Chemotherapy, surgical, radiotherapy	8	7.5	
Chemotherapy Cycle [b]			
Cycle 1-2	31	29	0.038*
Cycle 3-4	31	29	
Cycle 5-6	24	22.4	
Cycle >6	21	19.6	
Physical Side Effect			
none	16	15	0.2
1 Symptoms	3	2.8	
2 Symptoms	13	12.1	

many as 81.3% (n=87). The education level of the respondents was relatively low, namely 48.6% (n=52) only took education up to elementary school (SD). Most respondents have had cancer for 1-2 years, which is 84.1% (n=90). Breast cancer is the most common type of cancer in the respondents of this study, the number reaches 29.9% (n=20).

The history of cancer treatment undergone by most respondents was surgical treatment and chemotherapy, which was 24.3% (n=26). Most respondents are undergoing cycles 1-4 as much as 58% (n=62). The physical side effects experienced by each respondent were mostly more than 3 side effects with various types of side effects such as pain, nausea and vomiting, hair loss, diarrhea, decreased appetite, tingling, allergies, weakness and soreness and other symptoms with a percentage of 49.5% (n=53).

Bivariate analyses were carried out using the Mann Whitney and Kruskal-Wallis comparative tests. Only the correlation of history of cancer treatment (p=0.013) and chemotherapy cycles (p=0.038) was significant. This means that there is a relationship between treatment history and chemotherapy cycles and anxiety levels of cancer patients undergoing chemotherapy. Meanwhile, age, gender, employment status, education, length of time with cancer, type of cancer, and chemotherapy side effects did not have a significant relationship because they had a p-value of more than 0.05.

2. Social Interaction and Anxiety Level

The social interaction was measured using *The RAND Health Social Battery questionnaire*. The was divided into of good and bad social interaction.

Table 2 Respondent's Level of Social Interaction and Anxiety (n=107)

Variables	f	(%)
1. Social interaction		
Good	57	53,3
Lack	50	46,7
2 Anxiety		
High	19	17.8
Medium	40	37.4
Light	39	36.4
Normal	9	8.4

Cancer patients undergoing chemotherapy at Prof. Dr. Margono Soekarjo tends to adapt easily to anxiety. This is because most of the respondents had good social interaction as much as 53.3%. This means that many respondents are able to search for social support. However, the results of this study contradict previous studies where the majority of patients had less social interaction (Elvia, Yulia & Hellena 2023; Manafe & Berhimpon 2022). Although the results of this study are mostly good, those that have less interaction are also quite large (46%). In fact, to get social support requires a good relationship to overcome psychological problems.

The category of social interaction is well defined as a mutual relationship that can form a relationship or social network. These social networks can help patients get social support. Good health conditions, social skills, and social engagement can be supporting factors for good social interaction (Stuart 2016).
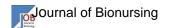
Social interaction is poorly defined as the lack of patients establishing social contact with their environment (Adi et al., 2023). The social support he gets is also less. Lack of social interaction can be caused by the side effects of chemotherapy and age factors. The side effects of chemotherapy have an impact on changes in the patient's physical condition. Meanwhile, in terms of age factors, the theory *states* that the elderly experience physical and psychosocial changes. Therefore, their social interaction becomes less (Fahlevi et al. 2023; Wijayanti 2020).

The patient's anxiety level was measured using the STAI *Trait questionnaire.* The results of the anxiety measurement are divided into normal, mild, moderate, and severe anxiety categories as seen in table 2.

The level of anxiety of cancer patients undergoing chemotherapy at Prof. Dr. Margono Soekarjo Hospital needs more attention. The results of the study showed that more than 90% of respondents experienced anxiety.

In more detail, 17.8% experienced severe anxiety, 37.4% moderate anxiety, and 36.4% mild anxiety. The results of this study are similar to previous studies which showed that the majority of cancer patients undergoing chemotherapy had moderate anxiety (Hafsah 2022; Simanullang & Estauli 2020). However, contrary to the results of the study (Setyani, P & Milliani 2020), most respondents had a mild level of anxiety (43.3%). Because of other studies, many have mild anxiety. So there

needs to be more attention so that this anxiety can be reduced.

Most respondents turned out to be quite burdened with anxious problems. This can be seen from the high rate of moderate anxiety and as many as 17.8% fall on severe anxiety so it needs to be paid more attention. The cause of severe anxiety is not only due to the side effects of chemotherapy but can be due to other factors such as role changes, financial difficulties during treatment, or others. Low levels of education and a long history of cancer also contribute to high levels of anxiety (Kaplan, Benjamin & Jack 1997; Khoiroh 2023; Mulyono, Chen, 2023).

3. The Relationship between Social Interaction and Anxiety

The purpose of this study is to determine the relationship between social interaction and anxiety levels of cancer patients undergoing chemotherapy at Prof. Dr. Margono Soekarjo Hospital.

Table 3 Correlation test

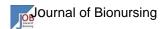| Variables	Mean (SD)	r	p
Social Interaction	41.04 (± 8.29)	-0.23	0.01
Anxiety	27.33 (± 6.68)		

The results of the study (Table 4.5) showed a negative correlation between social interaction and anxiety with the results of the statistical test $d=-0.70$ ($p=0.429$). This means that there is a strong inverse relationship between social interaction and the level of anxiety of cancer patients undergoing chemotherapy. In line with Derang's research,

Ginting & Sitohang (2022) stated that social interaction can improve social relationships so that attention is established between others which can affect the quality of life. But this correlation is not statistically significant.

In accordance with Roy's theory of adaptive systems, humans are an adaptive system. Adaptation is maintained by him through four ways, namely physiological function, self-concept, role function, and interdependence. Social interaction is part of the self-concept and role function that explains how humans establish patterns of social interaction in relation to others (Roy 2011). Through these four ways, patients can achieve psychological balance through social support that they get through social interaction.

The correlation of this study was not statistically significant. This means that the correlation occurs by chance. Supported by research by Soelastri, Rahmalia & Elita (2017) who explained that social support has no relationship with the level of anxiety of cancer patients undergoing chemotherapy due to patient adaptation factors. Perverting variables and small sample sizes can be insignificant causes (Adil et al. 2023).

These disruptive variables are such as the existence of stigma that comes from oneself as a form of distrust in oneself due to the disease they have and from the community who have a negative perception of the patient (Khamidah, Indra & Lita 2019). In addition, those who have good coping mechanisms and high levels of spirituality tend to be able to adapt

to their anxiety (Roffikoh & Riyanti 2022).

Meanwhile, increased anxiety can be caused by poor financial conditions, threats to the self-system in the form of role changes, and an unsupportive environment because anxiety is contagious (Hartati in Pratiwi, Widianti & Solehati 2017). These factors are other stressors that have an impact on the patient's response which leads to a maladaptive response in the form of anxiety.

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A small number of samples can also be the cause of insignificant research results. The sampling in this study was relatively small because the researcher used a *margin of error* value of 10%. The smaller the number of samples taken, the smaller the statistical strength so that it can affect the results of this study (Adil et al. 2023).

Based on the above description, it can be concluded that there is a relationship between social interaction and the level of anxiety of cancer patients undergoing chemotherapy, but it is not statistically significant. These results can be implicated in nursing care practices to overcome anxiety psychological disorders in patients through *home care* programs or during

the provision of other therapies. However, the results of this study cannot be generalized.

Research Limitations

The limitation of this study is the calculation of the number of samples using *a margin of error* of 10%. In addition, data analysis was only carried out until correlation, not until multivariate so that the causal factors were not identified because the research results were not significant. Disturbing variables were not controlled in this study and the characteristics of the respondents were not limited so as to affect the results of the study.

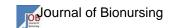## CONCLUSIONS AND RECOMMENDATION

Conclusion

Social interaction is related to the improvent of anxiety level among of cancer patients undergoing chemotherapy. The higher quality of patients social interaction the lower anxiety level will be.

Recommendations

This research is expected to add to the study of learning science in the field of medical, surgical and palliative nursing.

The hospital services, especially nurses, are expected to make the results of this study as a consideration for providing nursing care, especially within the scope of RSTD *Home care.* For the community, the findings are expected to add information that social interaction can reduce anxiety through social support. In addition, with the information in this study, it is hoped that it can change the false
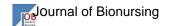
stigma in society towards cancer patients. Further studies can be carried out in the next research by adding other independent variables such as self-concept, stigma, and others. In addition, similar research can also be conducted by limiting the characteristics of respondents so that the perversing variables are more controlled and provide more attractive results. (Kemenkes RI 2018; IARC, 2020)

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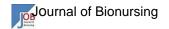
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