Religiosity, Social Support and Anxiety in Mothers of Children with Acute Lymphoblastic Leukemia

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Abstract—The incidence of acute lymphoblastic leukemia cancer continues to increase every year. Child with cancer and undergoing therapy causes anxiety for parents such as sleep disorder, inability to make decisions, and panic. Severe anxiety contributes to decrease quality of life. Factors that are needed in reducing anxiety are religiosity and social support. The main objective was analyzed the relationship of religiosity and social support with the anxiety of mothers. This research employed cross sectional design. Sampling was done by purposive sampling technique. The sample was 30 mothers who have got children with acute lymphoblastic leukemia at Ulin General Hospital, Banjarmasin. The data were analyzed by using Spearman rank test with significant value p <0.05. The results of this study were mothers with high religiosity were 21 people (70%), mothers with high social support were 21 people (70%), and mothers who have moderate anxiety were 12 people (40%). The analysis test correlation between religiosity with mothers anxiety obtained p value= 0.001; r = -0.555. The analysis test correlation between social support with mothers anxiety resulted p value = 0.003; r = -0.480. This means that there was a significant correlation between religiosity with mothers anxiety. In terms of its correlation, there was a significant correlation between social support with mothers anxiety. The importance of health workers in improving religiosity and social support of mothers with a child diagnosed Acute Lymphoblastic Leukemia is warranted.

Keywords—Acute Lymphoblastic Leukemia, Anxiety; Children; Mother; Religiosity; Social Support

I. INTRODUCTION

According to the World Health Organization (WHO), cancer rates will increase 6.25 million per year worldwide [1]. Cancer is the number two cause of death in the world [2]. Cancer is responsible for 9.6 million deaths and approximately 1 in 6 deaths worldwide are caused by cancer.

Another important point is that 70% of cancer deaths occur in low-income countries. The official data reveal that the number of children with cancer is around 176,000 each year and they mostly come from countries with low and middle incomes [3]. According to the American Cancer, United States there were approximately 1.65837 million new diagnosed cancer cases and there were 589,430 deaths because of cancer in children aged 2 to 4 years [4]. In Indonesia, the number of cancer cases was 1.4% per million. The highest number of cancer cases was found in the province of Yogyakarta which was about 4.1% of the cases [5]. Additionally, cancers in children aged 0-17 consisted of 33.7% of Leukemia, Neuroblastoma 7%, Retinoblastoma 5.3%, Osteosarcoma 4.8%, and 4.8% Non Hodgkin Lymphoma cases.

Regarding the case of cancer suffered by children, Leukemia is said to be the most common cancer type and the incidence of children with Acute lymphoblastic leukemia (ALL) is more often than Acute Myeloid Leukemia [6]. The results of analytical studies conducted by Asim, et al showed that deaths in children with ALL in Pakistan were around 304 cases with 74 children died during ALL treatment [7]. The result of the study showcased that the incidence, mortality and morbidity of ALL in children were high. Also, it was found that they were able to survive up to five year, with free survival rates of up to 85 – 90% [8].

The perceived impact of family during ALL child diagnosed with cancer and undergoing chemotherapy is anxiety experienced by parents. The anxiety impact of parents can lead to inability to make decisions for their children. Anxiety causes disruption of sleep patterns, depression, fatigue, irritability, and decreased immune function. Long-term severe emotional distress contributes to decreasing parents’ quality of life and it also impacts negatively impact on parents and children [9-11].

The factors associated with anxiety in mothers of children with ALL are religiosity and social support. The study showed a slight positive correlation between levels of religiosity with parental depression levels [12]. Research showed social support is needed for mothers of children with cancer because it can affect the level of anxiety. As indicated by such studies, the higher social support, the lower the anxiety of the mothers [13].

Regional General Hospital of Ulin Banjarmasin has become the first referral hospital in Borneo which has a pediatric cancer ward. In the last three years, the hospital; saw 794 cases. Based on the preliminary study on October
2017 at the Space-Oncology Hemato, the obtained data highlighted that the number of children with ALL in January to December 2015 was 132 people (0-14 Years). In the following year, which was January to December 2016, the children with ALL were about 419. January to September 2017 saw a decrease of the number of children who suffered from ALL which was 262 (0-14 Years). Based on the description, the researchers interest conducting research on "Religiosity, Social Support, and Anxiety in Mothers of Children with ALL". The aims of this study were measured religiosity and social support in mothers of children with ALL undergoing therapy and assessed their relationships with the mothers anxiety.

II. LITERATURE REVIEW

Cancer is one of the characteristics of cell bodies which grow into abnormal cells. Metastases are the main cause of death [1]. The most common cancer in children is Acute Lymphoblastic Leukemia (ALL). In most cases of children with ALL in the world, life expectancy in five years almost reaches 80% [14]. However, the causes ALL are not clear. Several studies discovered such predisposing and predictor factors as: heredity, genetic mutation, radiation exposure, chemicals and virus infection [15-16].

Families which have will show a different response and this is influenced by the family's experience [14]. The effects on parents of children with cancer cause a different psychological response. Therefore, it is essential that the actions are carried out by health professionals because their response can directly influence reactions of other family members, child's coping mechanism and emotional distress of both of them [18-20].

The parents whose children suffering cancer with treatment have higher level of anxiety than parents whose children suffering cancer do not undergo any treatment. Mothers often feel more anxious than fathers with p values <0.01 and maternal age did not affect their perceived anxiety [21-22]. If such high anxiety was not properly treated, the impact could lead to depression, irritability, disruption of sleep patterns, fatigue, and decreased immune function. In addition, this could lead to the family's inability to make decision for patients [9].

The mothers who have children with ALL can experience a crisis period as a result of long-term illness and treatment. Four components that influence family abilities in dealing with crises include family perceptions, family attributes, coping strategies and social support [23]. Social support is the availability and existence of people who care for, can be trusted, provide a sense of love and provide judgment [24]. Social support is widely used to show the mechanism of interpersonal relations in order to protect someone from the effects of adverse stress. This concept can be considered as one of the main mediators (buffer) and mediator between stressful conditions and psychological well-being. Social support is emotional support that comes from family members, friends, and health workers [24-26].

Four types of social support are information, instrumental, emotional and appreciation/appraisal support [27]. Recommendations for health workers to pay attention to support needs of parents who care for their children with cancer continuously [28]. The results stated that every mother talks about the importance of having social support during their struggle in treating children with cancer [29]. Religiosity aspect can be a power that encourages and helps pediatric patients and their families to cope with cancer, treatment, care and thus health workers should pay more attention to this aspect of religiosity. The results of the study indicated aspect of religiosity raises hope, increases comfort and contributes to better acceptance by children with cancer as well as their families from cancer [30].

III. METHODOLOGY

This study was descriptive with cross sectional design of quantitative analytic research. The population of this study was all mothers of children with acute lymphoblastic leukemia in Ulin Banjarmasin hospitals. The sample was 30 mothers of children with ALL. The researchers obtained the research permission from educational institutions and obtained the research ethic approval from the hospital's ethics committee. Appropriate criteria purposive sampling was employed as data collection technique. This was done by choosing biological mother of leukemia children undergoing chemotherapy, biological mother as the primary care giver, a mother in the bonds of marriage, and mothers of children diagnosed with leukemia with the last 5 years. To do so, adopted questionnaire of religiosity according to WHOQOL-SRPB [31], questionnaire Social Support from Sarason et al consist of SSQ Number (SSQN) and SSQ Satisfaction (SSQS) [24], and anxiety of mothers who have child with ALL using questionnaire Pediatric Inventory for Parents (PIP) from [22] were used.

The researchers used the WHOQOL Spirituality, Religiousness and Personal Beliefs (SRPB) questionnaire in the WHO Field-Test Instrument conducted in 2012. The instrument was in English which was revised edition of 2002. It was translated into Bahasa Indonesia by foreign language experts of health sciences. Moreover, the validity of the translated content was checked with experts in terms of religiosity in cancer patients. The study [32] found a questionnaire to measure religiosity using WHOQOL-SRPB BREF can be completed in less than 10 minutes, so it is acceptable and feasible to use. The questionnaire also has reliability of good internal consistency found overall (α = 0.85) and SRPB domain (α = 0.83).

The researchers used the SSQ and PIP questionnaires which have been tested for validity and reliability on groups that have characteristics similar to the subjects of this study. The SSQ questionnaire for measuring social support in mothers had a Cronbach Alpha score of 0.753 and PIP to measure anxiety had Cronbach Alpha at 0.745 [33]. Data were analyzed using univariate and bivariate. Bivariate test conducted using Pearson indicated the data normality test did not qualify Spearman Rank test. The hypothesis of study is that there is a relationship between religiosity and social support with the anxiety of mothers who have children with acute lymphoblastic leukemia.
IV. RESULTS AND ANALYSIS

A. Demographic Data of Respondent

Table 1. Frequency Distribution of Demographic Data of Respondents

| Demographic Data | Frequency (n) | Percentage (%) |
|------------------|---------------|----------------|
| Respondents age: |               |                |
| a. ≤ 30          | 8             | 26.7           |
| b. 31-40         | 21            | 70             |
| c. ≥ 41          | 1             | 3.3            |
| Total            | 30            | 100            |
| Level of education: |         |                |
| a. undergraduate | 5             | 16.7           |
| b. senior high   | 17            | 56.7           |
| c. junior high   | 8             | 26.6           |
| Total            | 30            | 100            |
| Work status:     |               |                |
| a. house wife    | 17            | 56.7           |
| b. government    | 6             | 26.6           |
| c. worker        | 6             | 20             |
| c. private worker| 1             | 3.3            |
| Total            | 30            | 100            |

Table 1 shows that the majority of respondents aged between 31-40 years were 21 (70%). In terms of education, most respondents went high school by 17 people (56.7%). Regarding the occupation, most respondents worked as house wife indicated by 17 people (56.7%).

B. Univariate analysis

1. Level of Religiosity

Table 2. Frequency Distribution Level Religiosity of Respondents

| Level religiosity of respondents | Frequency (n) | Percentage (%) |
|----------------------------------|---------------|----------------|
| Low                              | 3             | 10             |
| Moderate                         | 6             | 20             |
| High                             | 21            | 70             |
| Total                            | 30            | 100            |

Table 2 shows that respondents having low religiosity level were 3 people (10%) and most respondents had high level of religiosity represented by 21 people (70%).

2. Level of Social Support

Table 3. Frequency Distribution Level Social Support of Respondents

| Level social support of respondents | Frequency (n) | Percentage (%) |
|-------------------------------------|---------------|----------------|
| Low                                 | 2             | 6.7            |
| Moderate                            | 7             | 23.3           |
| High                                | 21            | 70             |
| Total                               | 30            | 100            |

Table 3 shows that respondents having low social support were 2 people (6.7%) and most respondents had high level of social support represented by 21 people (70%).

3. Level of Anxiety

Table 4. Frequency Distribution Level of Respondents’ Anxiety

| Level of Anxiety | Frequency (n) | Percentage (%) |
|------------------|---------------|----------------|
| Low              | 12            | 40             |
| Moderate         | 3             | 10             |
| High             | 30            | 100            |
| Total            | 12            | 40             |

Table 4 shows that respondents having mild anxiety were 15 people (50%) and those suffered from severe anxiety were 3 people (10%).

C. Bivariate analysis

Table 5. The Relationship Analysis of Respondents’ Religiosity and Anxiety

| Religiosity | Anxiety | N | % | N | % | N | % | p value |
|-------------|---------|---|---|---|---|---|---|---------|
| Low         | Mild    | 1 | 3.3 | 1 | 3.3 | 3 | 10 |
| Moderate    | 0 | 0 | 4 | 13.3 | 2 | 6.7 | 6 | 20 |
| High        | 14 | 46.7 | 7 | 23.3 | 0 | 0 | 21 | 70 |
| Total       | 15 | 50 | 12 | 40 | 3 | 1 | 0 | 30 | 100 |

Spearman’s rank test p = 0.003 <α 0.05
The correlation coefficient (r) = -0.480

Table 5 indicates that respondent who had low religiosity with low anxiety was one person (3.3%), respondents with moderate anxiety and religiosity were 4 people (13.3%), respondents with high religiosity and mild anxiety were 14 people (46.7%). The statistical test of Rank Spearman test resulted in the value of p = 0.001 with p <0.05, r = -0.555 showing moderate negative correlation (0.40 to 0.599). This means there was a correlation relationship between religiosity and anxiety.

Table 6. Relationship Analysis of Respondents’ Social Support and Anxiety

| Social Support | Anxiety | N | % | N | % | N | % | p value |
|---------------|---------|---|---|---|---|---|---|---------|
| Low           | 0 | 0 | 0 | 1 | 3.3 | 1 | 3.3 |
| Moderate      | 2 | 6.7 | 3 | 10 | 2 | 6.7 | 7 | 23.3 |
| High          | 13 | 43.3 | 9 | 30 | 0 | 0 | 22 | 73.3 |
| Total         | 15 | 50 | 12 | 40 | 3 | 10 | 30 | 100 |

Spearman’s rank test p = 0.003 <α 0.05
The correlation coefficient (r) = -0.480

Table 6 shows that the respondent who had low social support with severe anxiety was only 1 (3.3%), respondents who had moderate social support with moderate anxiety were 3 people (10%), respondents who had high...
social support with mild anxiety were represented by 13 people (43.3%). The results of the analysis conducted by statistical test using the Spearman rank test obtained a value of $p = 0.003$ and $p < 0.05$, $r = -0.480$ showing moderate negative correlation (0.40 to 0.599). This means there was a correlation relationship between social support and anxiety.

D. Discussion

1. Religiosity in mothers of children with acute lymphoblastic leukemia

The dimensions of religiosity were divided into four namely belief, worship, experience and application [27]. The results showed that the highest dimension is worship. Worship is an individual compliance in carrying out religious duties that will create a feeling of close to God so that it will finally bring resignation and message on its power in order to make people feel more calm and confident with their life. Religiosity is a depiction of someone’s values who encourage him to behave and act in accordance with the teachings of his religion.

The result of this study indicated that most respondents had high level of religiosity. The analysis revealed that this is mostly because the majority of the population at the hospital were residents of South Kalimantan who were religious and adhered to the teachings of religion so that the level of religiosity of the respondents was high. The reference [35] found the religious needs/religion were a major requirement and were most needed by the respondent. Religious activity is the key to a person's behavior in conducting worship, prayer, reading the holy Qur'an or the Bible. Belief in God is a source of strength for someone, religiosity is important support source for the mothers [36, 29]. The mothers who have children with cancer believe that religiosity is a source of support, peace, and a sense of acceptance of the situation and condition of their children, the sources of these strengths are believed to come from God who gave them and gave meaning to their lives [38].

Religiosity in mothers who have children with chronic disease and cancer can be seen from positive religious coping characterized by feeling a spiritual connection with their God, for example by conducting religious activities (such us : praying) to control the stressful situation they experience in caring for their child. On the contrary, if mothers have negative religious coping aspect, they will feel far from God and are pessimistic [39, 25]. The results of research showed the importance of spirituality or religious coping resources to deal with the conditions being experienced. This implies that good knowledge of patients' needs of religiosity should be taken into account by nurses [40]. Nurses can assess religiosity of the family by depth interviews in order to find out the nursing problem and make intervention immediately for family members.

2. Social support of mothers with acute lymphoblastic leukemia children

Mothers who have children with acute lymphoblastic leukemia undergoing treatment and medication experienced a variety of pressures in her life. When mothers experienced it, there were factors that contributed so that the respondent could survive in that condition. One of which was social support. The results of the study showed the mother's needs for social support from the surrounding environment. This is due to the importance of the role of people around them to help improve welfare of parents, especially mothers who cared for their children with cancer who faced severe conditions experienced by their children. The mother must accept assistance or at least she does not feel alone when facing and managing such critical events [25].

The results of all item questions of social support consisted four elements including information, emotional, instrumental and assessment. The highest aspect of social support was emotional support of her husband, children, and parents with a score of satisfaction (very satisfied), while the lowest aspect of social support was information support as represented statements of support information in the questionnaire. There were only three problems causing relatively low point on the aspect of information support.

This is in line with previous research that emotional support can reduce anxiety mothers of children with leukemia because mothers feel family is always there for mother to devote all her laments. Every mother returns to their place of origin in which the family always involve them in the family event so that they feel included and accepted by their families and communities [41]. The results of this study support previous research which discovered that the more support mother received from siblings, friends, and health professionals. If she is confident that she will be able to guide, care for a child. Even social support directed at the mother is also an external protection factor for the process of adjusting the child to his health condition [42].

This finding is in line with a study conducted by Fetriyah, Mulatsih, and Pangastuti which showed that the form of social support is in the form of information and emotional support from her husband, family, friends, neighbors, fellow having a child with cancer, and health professionals. The nurse's role is to provide information about acute lymphoblastic leukemia, so it can be beneficial to mother as input in maintaining and caring for children who suffer from cancer [33].

3. Anxiety in mothers of children with acute lymphoblastic leukemia

The results showed almost all respondents experienced anxiety in the case of mothers of children with ALL. The results of this study also support previous research discovering that mothers accompanying their children with ALL from the beginning of the diagnosis until after finishing treatment are more likely to experience depression and stress continuously [28, 43, 39].

The results of previous studies mostly showed that the largest portion are on anxiety. The domain of emotion causes sleeping difficulties because of The respondents thought about their child's education, future, healing, and They also considered the cost they needed to pay at the hospital. This is in line with research conducted by that in addition to adapt to the child's condition, financial pressure, the mother also
struggled to cope well under pressure in the treatment and anxiety because of the uncertainty of the future for their children [44].

The results are also reinforced by another study showing that parents, especially mothers of children with cancer experience high levels of psychological distress. The results of this study are also consistent with another study indicating that mothers of children with acute lymphoblastic leukemia have severe anxiety. She also becomes the primary caregiver for child while undergoing treatment, causing anxiety in the mother [45].

Previous studies highlighted several factors that affect respondents’ anxiety such as education, occupation and age. Respondents who were a high school graduate mostly had moderate anxiety. The higher a person’s education level, the lower the anxiety. It is because highly educated people usually have higher knowledge. Respondents whose job was as house wife mostly had moderate anxiety. The results are consistent with previous research indirectly house wife have no income and anxiety [44]. Most house wives are exposed to anxiety because the number of problems experienced in the lives of families, especially related to the needs of children suffering from cancer who need more funding. In addition, there are other things that should be taken into account by a mother such as her husband’s needs, house keeping, and finances which become their responsibility. Respondents aged 31-40 years had moderate anxiety. Anxiety can occur in women aged 20-44 years [46]. One role of a nurse one is providing nursing care in which family advocate function should be done in order to provide motivation, information to families which are in need of getting any sympathy from the medical team.

4. Relationship religiosity and anxiety in mothers of children with acute lymphoblastic leukemia

The result of Spearman Rank test obtained p = 0.001 to p <(α = 0.05), r value = -0.555. It can be concluded that the hypothesis was accepted. It means there was a negative relationship between religiosity and anxiety. Such findings imply that mothers who had higher level of religiosity had much lower anxiety level. Conversely, if she had lower level of religiosity, she would have higher level of anxiety.

The results are consistent with previous research showing that spirituality in this study can be said to be in a high a level [38]. This shows religiosity can provide peace in a patient who is suffering from cancer. Based on the results of the study, there is preliminary evidence showing that WHOQOL-SRPB BREF can be used at and outside health care. Quality of life domains are also moderately correlated with SRPB domains, Quality of life domains are also moderately correlated with SRPB domains indicating that sleep is also associated with religiosity beliefs, sleep is also associated with religiosity beliefs [32]. The factors that can reduce anxiety and depression in mothers with cancer are by activating spiritual coping strategies such as patience, sincerity and feeling close to God so that they accept the conditions they experience or surrender because of their beliefs and beliefs in God’s destiny [39].

The results of the study by William et al showed that the role of nurses is not only providing nursing care but also facilitating religious or spiritual well-being in order to improve the quality of life in cancer patients and reduce the impact on the patient and family anxiety [47]. Findings of Borjalilu et al investigation showcased that health workers who carry out spiritual care training programs for mothers who have children with ALL by promoting spirituality, religiosity and spiritual care succeed to significantly reduce anxiety in mothers. Therefore, spiritual care training can be used effectively in reducing tense spiritual challenges experienced by mothers of children with cancer [38-39].

5. Relationship social support and anxiety in mothers of children with acute lymphoblastic leukemia

The results of Spearman Rank test obtained p = 0.003 to p <(α = 0.05), r value = -0.480. It can be concluded that the hypothesis was accepted. It implies that there was a negative relationship of social support and anxiety. The mother having higher level of social support generally had much lower anxiety level. In contrast, the lower of social support level she received, the higher anxiety level she had.

The results support previous study discovering that the form of social support can affect anxiety levels of mothers because the higher the social support received by mothers of children with acute lymphoblastic leukemia, the lower their anxiety level [33]. The value of the correlation between the number of donor support with maternal anxiety (r = 0.166, p = 0.253) achieved support satisfaction scores with maternal anxiety (r = -0.330, p = 0.021).

The results of the study showed that helping mothers of children with cancer is essential in order to develop strategies to address the experiences of complex maternal stress experienced by their children at the time of ALL diagnosis such as anxiety and depression [28, 21, 48]. Therefore, This important action when a mother cares for her child’s is the application of multidisciplinary supportive care. Multidisciplinary supportive care is done by applying inter-professional communication by doctors, nurses, psychologists, psychiatrists, pharmacists, nutritionists, and social workers aiming at improving the quality of services centered on the needs of patients and their families, reducing medical errors, and improving patient satisfaction and patient safety. Multidisciplinary supportive care can be implemented by communicating effectively and therapeutically so they can help them be able to understand, face critical events throughout their lives while having children with ALL and offer social support to meet their needs consisting of instrumental, informational, emotional, and appreciation support as ways of appreciating their efforts for caring and for not blaming them [18, 29].

One strategy is the importance of collaboration between academic institution and clinical staff to provide social support, especially in the form of information support to mothers. This has potential implications for reducing anticipatory stress and stress including anxiety experienced by mothers who have children with cancer through providing information support provided by them [48]. Parents choose the most important form of emotional support given by
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msaculonyation treatment, resulting in health workers and families overcoming the crisis, thus leading to positive outcomes for their health [49].

V. CONCLUSION AND RECOMMENDATION

Mothers having a child with ALL experienced higher religiosity so they had lower the anxiety and vice versa. Mothers who received higher social support had relatively lower anxiety and vice versa. The recommendation, drawn for this study, is expected to be useful for health workers in arranging intervention plan by identifying levels of anxiety, exploring religiosity, increasing the provision of religious aspects of interventions and providing social support for the mothers since a child has been diagnosed ALL. Importantly, this should be provided when their child is undergoing chemotherapy so that they can get appropriate care by applying multidisciplinary care.

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