

CHILD-REARING BY IMPRISONED WOMEN: SADNESS, ANXIETY, AND FEELINGS OF GUILT

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Abstract

The number of imprisoned women continues to increase. Imprisonment of women affects them as perpetrators of crime and those who have relationships with and ties to them, such as children. This phenomenological study aims to explore the experience of imprisoned women in Jakarta in playing the role of mother. In-depth interviews were conducted to explore the experiences of seven imprisoned women. Through a thematic content analysis, we identified specific keywords, the results revealing the sadness, anxiety, and feelings of guilt experienced by imprisoned mothers in relation to their child-rearing. Imprisoned mothers also experience difficulties in meeting their children's needs, together with inadequate child-rearing facilities. The situation experienced by imprisoned women influences their family relationships, which can lead to family crises. The results of this study are expected to serve as a reference for professional collaboration between judicial institutions, community nurses, academics, and related parties, increasing the attention paid to imprisoned mothers and children affected by maternal incarceration.

Keywords: child-rearing, community nursing, imprisonment, imprisoned women

Abstrak

Pengasuhan Anak oleh Wanita di Penjara: Kesedihan, Kecemasan, dan Perasaan Bersalah. Jumlah wanita yang dipenjara terus mengalami peningkatan. Pemenjaraan bagi perempuan tidak hanya memengaruhi perempuan sebagai pelaku kejahatan, tetapi juga pada subyek yang memiliki hubungan dan ikatan dengan perempuan tersebut, salah satunya adalah anak. Penelitian ini bertujuan untuk mengeksplorasi pengalaman wanita yang dipenjara di Jakarta dalam mengasuh anak. Penelitian ini menggunakan desain kualitatif dengan pendekatan fenomenologis. Pengumpulan data dilakukan dengan wawancara mendalam terhadap tujuh wanita yang dipenjara. Melalui analisis konten tematis kata kunci yang ditemukan dalam transkrip wawancara disusun dalam kategori, sub tema, dan tema. Hasil penelitian menjelaskan kesedihan, kecemasan dan perasaan bersalah yang dialami oleh ibu yang dipenjara dalam pengasuhan anak. Para ibu yang dipenjara juga mengalami kesulitan dalam memenuhi kebutuhan anak dan fasilitas pengasuhan anak yang tidak memadai. Situasi yang dialami oleh ibu yang dipenjara memengaruhi hubungan dalam keluarga sehingga menghadapi krisis keluarga. Hasil penelitian ini diharapkan dapat menjadi referensi untuk kolaborasi profesional antara lembaga peradilan, perawat komunitas, akademisi, dan elemen terkait untuk meningkatkan perhatian bagi ibu dan anak yang dipenjara yang terkena dampak hukuman penjara ibu.

Kata Kunci: pemenjaraan, pengasuhan anak, perawat komunitas, perempuan narapidana

Introduction

The Sentencing Project conducted in the United States indicates that the number of imprisoned women increased by 646% from 1980–2010 in Washington, while between 2000 and 2011, there was an increase of 31%. In Indonesia, the num-

ber of female prisoners has also tended to increase since 2000. In 2016 there were 9,844 imprisoned women, or 5.5% of the total number of prisoners in Indonesia (World Prison Brief, 2016).

The top three provinces that have the highest number of imprisoned women in Indonesia are

North Sumatera (1,352 imprisoned women), East Java (1,211 imprisoned women), and DKI Jakarta (1,107 imprisoned women). Data on the number of imprisoned women in DKI Jakarta as of June 2017 shows overcapacity, with 564 detainees placed in the East Jakarta Class IIA Detention Center and 543 prisoners in the Jakarta Class IIA Women's Prison. This total number of detainees and prisoners exceeds the capacity of detention centers and prisons, with 827 imprisoned women (Correctional Data Base System, 2017). A detainee is someone awaiting adjudication, while a prisoner has been convicted based on a court decision and is serving a criminal sentence.

An increasing number of imprisoned women need attention due to their unique health needs and affected family members, including children, which also involves their role in child-rearing (Shlafer et al., 2019). Sixty-two percent of imprisoned women in the United States have young children. In Indonesia, there is no national data that states the number of female prisoners who have children. However, in 2009, more than 70% of women imprisoned in Semarang and Malang Women's Prisons have children (Mustofa et al., 2019).

When parents are serving time in prison, children face various problems relating to care. Statistics from the United States Department of Justice show that almost 5% of children in the USA are affected by their mother's imprisonment and experience trauma while separated from her (Dallaire et al., 2015; McGee et al., 2015). Lack of parental support leaves the child in a vulnerable situation in relation to growth and development, while imprisonment of parents harms their emotional, social, physical, behavioral, psychological, and cognitive development (Ormeno et al., 2016).

Emotional and behavioral problems experienced by children result in them being involved in criminal acts such as drugs abuse (Goshin et al., 2014; Wildeman & Turney, 2014). Children of imprisoned parents are also at increased risk for

school problems. This school problem affected children's cognitive development and experienced academic failure (Dallaire et al., 2015).

Problems experienced by children are inseparable from the stigma they receive as a result of having imprisoned mothers. These conditions result in vulnerability to symptoms of anxiety, trauma, and depression, which are more acute amongst children with imprisoned mothers compared to fathers (Goshin et al., 2014). This situation puts children in a difficult position, not only regarding socialization but also in seeking health services.

The negative impacts on the children of imprisoned mothers show that imprisonment causes harm to women in general and their role as mothers. This study explores the experience of imprisoned women in performing their role as mothers in childcare (Chui, 2016).

Methods

The study used a qualitative design with a phenomenological approach. Data collection was conducted through in-depth interviews with a voice recorder and field notes. The participants were selected based on the research objectives, with the principle of appropriateness and adequacy. The criteria for participants to be involved in the research were female prisoners in Jakarta who had children aged 0–19 years, either separated or living together in prison, and could communicate well. Participants also needed to have been in prison for at least one month so they would have sufficient experience of prison life and had participated in prison coaching programs, including ones on skills, women's health education, and correct breastfeeding.

The participants were vulnerable people as they were subject to judiciary monitoring. Therefore, the recruitment of prospective participants was conducted by involving the person in charge of the Maternal and Child Health Division of the prison based on the inclusion criteria. They were selected based on their willingness and re-

adiness to be involved in the research. Qualitative research of a vulnerable population risks might be causing psychological distress during the interviews. Therefore, the researchers needed to have high sensitivity during in-depth interviews to refrain from asking questions about participants' experiences that were personal and caused fear so that participants did not feel exploited. When the personal questions that the researcher wants to ask in the interview were considered essential to answer the phenomenon under study, the researcher provided an opportunity for participants to express their inconvenience if it is felt. They should also be allowed to take counseling after the interview if needed, particularly related to parenting skills.

The data saturation was achieved in the seventh participant, and therefore the data collection was ended. In addition, the availability of time and resources was also taken into consideration in ending the data collection. Thematic content analysis was conducted based on the Colaizzi approach. The keywords found in the interview transcripts were organized into categories, sub-themes, and themes. All the study was conducted in Bahasa, with the data then translated into English. The study was declared to have passed the ethical review by the Research Ethics Committee, Faculty of Nursing, Universitas Indonesia.

Results

The participants were women who had been imprisoned for two to seven years. Most were involved in drug abuse (five out of the seven). They were 29–35 years old and married, two participants of whom had been divorced and remarried. All the participants lived in the Jakarta area before their incarceration.

Almost all of the participants were elementary and high school educated, although one was educated to undergraduate level. Before imprisonment, they worked as laborers, private employees, and homemakers.

The participants had at least one child and up to six. Four of the seven lived in prison with their less than two-year-old children and did not give exclusive breastfeeding in the first six months of the child's life. One participant was also pregnant with her fourth child.

Analysis and Interpretation of the Theme

Anxiety and Feelings of Guilt Experienced by Imprisoned Mothers during Child-rearing. All the participants expressed their sadness and anxiety in dealing with their situation. The feelings of sadness experienced by them were inseparable from their poor self-image. The statement below is an example of the thoughts of the participants.

"Then what should I do when I feel saturated; it's too late, angry, sad that it can't be said in words." (P3)

They were also affected by the loss of time with their children. The inconvenience of the imprisonment situation also caused the psychological pressure of the participants:

"I'm already a bad role model for my children." (P2)

"I'm wasting time here... Losing time with our children cannot be exchanged for anything." (P3)

"The point was it's not good to be free..." (P1)

"I suffer my heart, separated from my beloved child, family, I was devastated." (P5)

Imprisoned Mothers' Experience of Difficulties in Meeting their Children's Needs. Child-rearing in a prison situation was not easy for the participants living with their children in prison. Six out of the seven participants expressed the difficulty of caring for their child's health. They faced problems when a child was sick because

they could not seek healthcare easily. The readiness of health workers in prisons is also limited by working hours.

“...the difficult is... when they were sick... they were sick in an off day, when there were no doctors.” (P1)

“It is difficult when my child feels inconvenient and keeps crying. What a fuss!” (P7)

Three out of the seven participants explained the obstacles to meeting their children's needs due to limited money and baby equipment and food unavailability in prison. The statement below is an example of eight similar ones:

“I work hard getting baby equipment ... the diapers here are not same as out there. Out there, my child may not need to use diapers. Over here, I suffer if I don't have diapers for my child.” (P6)

The participants also had difficulties in obtaining good food. The statement below is an example of two such explanations:

“It is hard to have something delicious to eat... the price is probably twice that of food out there.” (P1)

Three participants also talked about difficulties in meeting social needs. Those separated from their children had problems maintaining effective interactions due to the limited scheduled visits from the children and limited communication media. Besides the limitations of time and place, the participants also experienced a lack of adequate communication facilities. The statement below is an example of six similar ones:

“I met them during the scheduled visits... I used a public telephone, but it was not a good connection ... I have to contact them, because they cannot contact me first.” (P3)

Imprisoned Women's Experience of Inadequate Child Rearing Facilities. Childcare facilities include health facilities, children's accommodation, baby needs, communication facilities, and children's visiting times. The participants used a clinic and health services in prison for their children. The statements below are examples of those about the health facilities that the participants could access in prison.

“Alhamdulillah, I got help for the birth of my child some months ago.” (P6)

“Sometimes I got some boxes of milk for my children.” (P7)

In prison, the participants stayed in cells grouped by blocks. Those who had babies were gathered in a particular cell that was slightly different from the others.

“It was good enough, but when a new baby arrived, I was still in the same cell and it was beginning to fill... hehe” (P1)

The prison also provided telephone kiosks to allow the prisoners' communication with their families. However, not all the participants used this facility because of the poor quality or the substantial costs involved.

“I need money for calling my family and it's not cheap, it's expensive, right.” (P3)

“There is a telephone kiosk ... but the sound is a poor quality.” (P4)

The prison provided a family visit program for imprisoned women, a more effortless procedure for children—this program aimed to maintain communication with families.

“For visiting, the child only needs to bring a family card and deed. Unfortunately, sometimes we cannot find the time to meet each other.” (P3)

"The children do not need to prepare any permission from the prosecutor to visit their mother." (P4)

"Yeah... yeah. It was really helpful; moreover, the child visiting time was not too full." (P4)

However, two participants still complained about the complexity of the family visit procedure.

"Yesterday, it was my youngest child visiting, but they could not enter because they didn't bring the letter from the prosecutor's office." (P3)

"It doesn't mean he can't visit me, my child was just here, but he just couldn't enter. It's complicated here; there must be a visit letter from the prosecutor." (P6)

Discussion

Imprisoned Mothers' Parenting Constraints.

Imprisonment is a traumatic experience, especially for incarcerated women, who suffer a social impact, and in certain conditions, must be separated from their children and families (Chui, 2016; Martinez et al., 2015). Although following the Indonesian Government Regulation on the Requirements and Procedures for Correctional Guidance, incarcerated women may raise their children in prison until they are two years old, in practice, they face various obstacles in undertaking such care. Imprisonment as a traumatic experience expressed by participants 2 and 3 is expected to be the first and the last experience.

Imprisonment makes it challenging to carry out the role of motherhood. Prisoners who are separated from their children cannot perform their role as mothers. This function affects the children's growth and development, as parents' role in a child's life is very important, especially in the early years of development, physically, so-

cially, and emotionally (Baldwin, 2018; Kjellstrand & Eddy, 2011).

The situation of incarceration has an impact on the interaction between mother and child. Most incarcerated mothers suffer contact breakdowns and lose communication with relatives, including their husbands, which causes anxiety about the condition of the children left behind (Mustofa et al., 2019). The limitations of interaction and communication between imprisoned parents and their children, and the obstacles to visits during imprisonment, resulting in the separation of children's lives from their parents (Brown, 2016). This limitation affects how the prisoner lives in the correctional setting and how they prepare themselves to return to their role in the family. The limitation of interaction between mother and child is experienced by incarcerated women who cannot communicate with their children freely. Although imprisoned mothers can live with children aged 0–2 years, they may also have other children outside the prison who need their attention. This situation results in a disruption to the mother's parenting abilities (Chui, 2016).

Imprisoned women express concern that their incarceration has an impact on their abandoned children. Childcare must be passed on shortly after the mother's imprisonment, both to family and neighbors or friends. Interaction between mother and child is hampered by the difficulties in visiting, with distance being the main problem. Mothers depend on the willingness of the child's caregivers to arrange the transportation for visits. In addition, strict visit schedules are also a limitation; for example, visiting hours may coincide with children's school hours or babysitters' working hours (Cramer et al., 2017; Rees et al., 2020).

Detention centers or prisons do provide telephone facilities for incarcerated women to communicate with their families. However, the relatively expensive costs are an obstacle for the target people to take advantage of these. Life in

prison or a correctional setting is seen as one filled with rules to guide prisoners. Both prison and correctional centers will control every activity or program that the inmates follow. This was stated by participant 1, who felt uncomfortable because of the limited freedom; this pressure can also lead to mental disorders in the inmates (Puspasari et al., 2020).

The situation of imprisonment is seen as a coercive environment, which is one of the vulnerability factors of incarcerated women. Even though in Indonesia the implementation of punishment and guidance for offenders is carried out using the philosophy of correcting the prison inmates, imprisoned women who care for children in correctional centers or prisons still face various difficulties, such as meeting their own needs and those of their children.

Mother's Distress in Child-Rearing During Incarceration. Mothers' imprisonment results in low self-esteem in parenting. Imprisoned mothers feel that they are not good enough to be role models, particularly because of involving their children in such situations. The immediate impact is that babies are either reared in a correctional setting or separated from their mother (Cardaci, 2014; Shlafer et al., 2019).

The pressure experienced by imprisoned women begins with various negative impacts experienced by most of them. The mother's powerlessness during imprisonment results in psychological stress, poor relations with her family, and demanding situations (Maryatun et al., 2014; Travis et al., 2014). Imprisoned women express their sadness of being separated from their children and emphasize that sometimes criminal acts may have been committed because of maternal efforts to meet the needs of their children (Baldwin, 2018; Kjellstrand & Eddy, 2011).

The mother's distress has implications for the lack of an empathetic parenting style and may create the risk of violence to children. In situations of imprisonment, psychological stress results in mothers being unable to provide proper

care for their children during imprisonment, and means they are at risk of not being able to perform the mother's role properly after being released from prison (Magee, 2016; Respler-Herman et al., 2012). This was expressed by participants 1, 5, and 6, who felt anger, both because of their difficulties and the fatigue they experienced. This condition has a direct impact on the appearance of physical and psychological problems in children.

Dysfunctional Family Process. A good relationship between family and prisoners plays a role in the successful return of prisoners to society after release. The family process is the most significant factor for incarcerated women to return to everyday life in the community. Therefore, scientists and social practitioners recommend involving families in prison programs of imprisoned women to have a positive impact on prisoners, families, institutions, and society (Chui, 2016).

In the context of incarceration, the situation experienced by mothers creates psychological pressure and influences their family relationships. Concerning vulnerability, this condition is a factor causing the immediate impact of imprisonment on family life (Arditti & Savla, 2015). The results of this study indicate that incarceration results in imprisoned women facing family crises. Participant 3 and her family had a dispute with her husband because he was considered as the cause of her imprisonment. In addition, participants 1, 5, 6, and 7 did not communicate at all with their families, whereas participant 2 had conflicts with her husband and his family (Maryatun et al., 2014).

In general, incarcerated women come from less harmonious families or single parents, with other family members perhaps also experiencing imprisonment. Such women also support the family economy; in this study, participants 5 and 6 worked alone in meeting the needs of the children because their husbands had also been imprisoned. This is also in line with the results of other studies, that incarcerated women are

often single women, divorced or separated from their husbands, and become the backbone of their children. In addition, they have generally had victims of physical and sexual violence before the crime they committed (Mcgee et al., 2015; Mignon, 2016).

Children who live with their mothers in prison are also in a dilemma. Incarceration is an inadequate environment for children's growth and development. Researchers have examined vulnerability in children, including their residential and social environment, the availability of health services, and the condition of the imprisoned mothers. Children are living with their mothers in prison lack affection and attention from their fathers and other family members. In addition, children's play needs are also not met because the facilities at the detention centers are inadequate. In addition, children are also exposed to other criminals, who risk influencing the children's behavior (Cardaci, 2014; Shlafer et al., 2019).

Incarcerated mothers' role function impairment is related to incarceration, which places people in a vulnerable condition, resulting from various factors caused by a lack of resources (Arditti, 2015). These factors include limitations in physical, environmental, human, and biopsychosocial resources, which incarcerated women experience. Motherhood can be facilitated or hampered by situations such as living conditions, economic status, preparation, knowledge, and social and community support. Cardaci's (2014) study also considered variables that influence maternal roles, including age, social pressure, social support, role strain, and health status. Most incarcerated women are in the productive age range and experience role strain due to imprisonment (Cardaci, 2014; Chui, 2016).

Social Interaction Learning Theory forms the basis of the relationship between parental imprisonment, family functions, parenting strategies, and children's social behavior. According to the theory, children and families are in conti-

nuous interaction and influence one another. These interactions impact children's behavior, either prosocial and caring for the community, or antisocial and indifferent to the community. In the early stages of child development, risk factors in the family will influence the child's behavior, which impacts family functioning and parenting practices. This relates to the impact caused by the imprisonment situation, both for parents in prison and for their children (García et al., 2015; Kjellstrand & Eddy, 2011).

Conclusion

Imprisoned mothers face various difficulties playing their roles, both those who live with their children and those separated from them. Mothers who care for children in detention centers have problems meeting childcare needs, accessing information about care, and having limited health services. Mothers who are separated from their children face difficulties in maintaining interaction with them. They cannot perform their functions as mothers, which influences children's growth and development. This condition is one of the sources of stressors for incarcerated mothers and causes psychological pressure on their maternal role. The distress is also related to dysfunctional family processes due to imprisonment. The results of this study are expected to be a reference for professional collaboration between justice institutions, community nurses, academics, and related parties, increasing the attention paid to imprisoned mothers and the children affected by maternal imprisonment.

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SPIRITUAL BEHAVIOR AND STRESS IN ADOLESCENTS: AN INITIAL STUDY

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Abstract

Spirituality is often associated with mental health, including stress. Older people tend to have high rates of involvement in spirituality rather than young people. This study aimed to identify the relationship between spiritual behavior and the stress levels of 152 high school students, using a descriptive correlation research design. The data collection techniques involved a spiritual dimension scale questionnaire and the Depression Anxiety Stress Scale 42 (DASS 42). The data were analyzed using Spearman's rho correlation test. The results show that the spiritual behavior distribution was mostly in the moderate category (53.3%), and stress level distribution was primarily in the normal category (63.8%). The finding also revealed that there was no correlation between spiritual behavior and stress levels in high school students. These results may differ from the previous studies. Although stress in this group showed a normal category, their mental health needs to be considered given the amount of stressors adolescents may face.

Keywords: adolescents, spiritual behavior, stress

Abstrak

***Perilaku Spiritual dan Stres pada Remaja: Studi Awal.** Spirituaitas seringkali dikaitkan dengan kesehatan mental, termasuk stres. Kelompok usia tua cenderung banyak terlibat dalam kegiatan spiritual dibanding kelompok usia muda. Penelitian ini bertujuan untuk mengidentifikasi hubungan antara perilaku spiritual dengan tingkat stres pada 152 siswa sekolah menengah atas, dengan menggunakan desain penelitian deskriptif korelasi. Teknik pengumpulan data menggunakan kuesioner skala dimensi spiritual dan Depression Anxiety Stress Scale 42 (DASS 42). Analisis data menggunakan uji korelasi Spearman's rho. Hasil penelitian menunjukkan bahwa perilaku spiritual mereka sebagian besar dalam kategori sedang (53,3%), dan distribusi tingkat stres terutama dalam kategori normal (63,8%). Penelitian ini mengungkapkan tidak ada hubungan antara perilaku spiritual dengan tingkat stres pada remaja. Hasil ini mungkin berbeda dengan banyak penelitian sebelumnya. Meskipun stres pada kelompok ini menunjukkan kategori normal, tetapi kesehatan mental mereka perlu diperhatikan mengingat banyaknya stresor yang mungkin dihadapi remaja.*

Kata Kunci: perilaku spiritual, remaja, stres

Introduction

Adolescents experience a developmental phase characterized by the emergence of secondary sexual signs, psychological development, and socio-economic independence. Adolescence is considered to be a period of "storm and stress" with many changes experienced due to physical, psychological, and socio-cultural developments. These developments can result in frustration for adolescents due to changes in the con-

ditions they experience (Jörns-Presentati et al., 2021). The World Health Organization (WHO) (2018) classifies adolescence into three stages, namely early adolescence (age 11–14 years), middle adolescence (age 14–17 years), and late adolescence (age 17–20 years). Basic health research data from 2013 showed that the prevalence of mental-emotional disorders in those aged 15 years or adolescents in Yogyakarta was 8.1% (Ministry of Health Republic of Indonesia, 2013). This shows the magnitude of the

incidence of stress in adolescents around Indonesia, including in the Yogyakarta area.

Stress in adolescents is generally caused by problems at school and outside schools, such as bullying, academic barriers, problems with teachers, and conflicts with peers, siblings, and parents. The sources of stress faced by adolescent girls and boys are generally the same, but the consequences will generally be different (Masdar et al., 2017). In the low-middle countries, the adolescent may face more problems. A review study concluded that in Sub Sahara, risk adolescents with mental problems including adolescents affected by HIV and AIDS, exposure to violence and trauma, poverty, orphanhood, being 'out of school', socioeconomic disadvantages, and high levels of deprivation (Jörns-Presentati, et al., 2021).

Stress can be defined as a state of mental-emotional disorder that should not be taken lightly and treated immediately. If stress is not addressed immediately, the negative effects include disturbed sleep patterns, dizziness, irritability, high blood pressure, difficulty in concentrating, decreased appetite, and mood disorders. Further impacts of stress that are not always immediately addressed are an increased risk of smoking behavior in adolescents and low self-esteem (Asnita et al., 2015).

The previous study indicated that religious and spiritual involvement have benefits in health outcomes (Zimmer et al., 2016). Religion associates with specific foundational principles that are organized around distinct systems of beliefs, practices, and rituals that take place within communities of participants (Koenig et al., 2012). According to Amir and Indriyani (2013), spiritual behavior is the application of one's relationship with or belief in God in the hope of receiving honor and hope from something that is not limited. Spiritual behavior can be described by a person's activeness in participating in religion-related activities such as recitation, congregational prayers, fasting, zakat, dhikr, and the habit of reading the Qur'an for Muslims.

Faith or belief in spiritual behavior begins to grow at the adolescent stage. Palupi et al. (2013) reported that the spiritual level had a negative relationship with aggressive behavior in adolescents; the higher their religiosity, the lower their level of aggressiveness, and vice versa. Similarly, Leung and Pong (2021) reported that all domains of spiritual wellbeing were negatively associated with psychological distress. The personal and communal domain of spiritual wellbeing was the strongest predictor of psychological distress.

The practice of spiritual behavior among Indonesian Muslim adolescents remains a matter of concern, as can be seen from the type of people who congregate around mosques, which are mostly filled by young children, adults, and the elderly, rather than adolescents. They rarely congregate and worship, partly due to disobedience regarding worship, which harms the socialization of adolescents within the environment (Wiguna, 2017). Based on these problems, the study examined the relationship between spiritual behavior and the level of stress experienced by adolescents.

Methods

This cross-sectional study involved 152 high school students around Yogyakarta, who were selected using a stratified random sampling technique as the population consisted of various ages, classes, extracurricular activities, and genders.

Spiritual behavior was measured using a spiritual dimension scale questionnaire, that consisted of 14 closed questions. It was adopted from a study by Purwaningrum and Widaryati (2013). The result was classified into three categories, namely good spiritual behavior (if score 43–56), moderate spiritual behavior (34–42), and poor spiritual behavior (< 33). The answers to each question item were analyzed on a scale of 4 = always, 3 = often, 2 = sometimes, and 1 = never. The dependent variable in the study was the level of stress in adolescents measured by

the DASS 42 questionnaire devised by Lovinbon (1995), with a total of 14 questions. The measurement results were classified into five groups according to the scores obtained from all the questions, namely normal (0–14), mild stress (15–18), moderate stress (19–25), severe stress (26–33), and very severe stress (> 34). Measurement was made on a rating scale, with scores of 0 = never, 1 = sometimes, 2 = often, and 3 = always.

This study was approved by The Research Ethics Committee of FKIK UMY, number 522/

EP-FKIK-UMY/X/2018. We followed the research protocol for adolescent respondents by allowing the teacher during completing the questionnaires in the classroom.

Results

Respondent Characteristics. The characteristics of the participants were based on age, gender, study year number of extracurricular activities, and disease history. As shown in Table 1, 50 respondents were 17 years old (32.9%). The main gender was female, with a total of 83 res-

Table 1. The Respondent Characteristics

Variable	Frequency (n)	Percentage (%)
Age		
15	27	17.8
16	38	25
17	50	32.9
18	37	24.3
Gender		
Male	69	45.4
Female	83	54.6
Study year		
1 st year	59	38.8
2 nd year	42	27.6
3 rd year	51	33.6
Number of extracurricular activities		
0	77	50.7
1	45	29.6
2	21	13.8
3	8	5.3
6	1	0.6
Disease history		
Yes	33	21.7
No	119	78.3

Table 2. Stress Levels and Spiritual Behavior of the Adolescents

Variable	Frequency (n)	Percentage (%)
Stress		
Normal	97	63.8
Mild stress	30	19.7
Moderate stress	19	12.5
Severe stress	5	3.3
Very severe stress	1	0.7
Spiritual Behavior		
Poor	47	30.9
Moderate	81	53.3
Good	24	15.8

Table 3. Correlation between Spiritual Behavior and Stress Levels in Adolescents

Variable	Spiritual Behavior				r	p
	Poor	Moderate	Good	Total		
Stress Level						
Normal	29	53	15	97		
Mild stress	10	16	4	30		
Moderate stress	7	8	4	7	-0.070	0.392
Severe stress	1	3	1	5		
Very severe stress	0	1	0	1		

pondents (54.6%). Students of the 1st study year dominated, with 59 respondents (38.8%). A small majority of participants, 77 (50.7%), did not take part in extracurricular activities. Finally, a total of 119 respondents stated that they had no history of the diseases (78.3%).

Table 2 shows the distribution of respondent stress levels, dominated by the normal category (no experience of stress), with a total of 97 respondents (63.8%). The data in Table 3 shows that most of the respondents, 81 (53.3%) displayed moderate spiritual behavior.

There was a significance value of 0.392 or $p > 0.05$, which means that there is no significant correlation between spiritual behavior and the level of stress experienced by adolescents. In addition, the results of the analysis of the data on the correlation between spiritual behavior and stress levels in the moderate category show that 53 (34.9%) of the adolescents were in the normal category, or did not experience stress (Table 3).

Discussion

Stress Levels in Adolescents. The details shown in Table 3 regarding the distribution of the research results on stress levels in adolescents indicate that most of the respondents, 97 (63.8%) were in the normal category. The stress level is fluctuating depending on the situation when filling out the questionnaire. This is supported by the notion that the stress response is divided into three stages, namely the alarm reaction stage, the resistance stage, and the stage of exhaustion, which is influenced by the mental endu-

rance of each individual, so not everyone will experience it when facing stressors (Tombokan et al., 2017).

In this study, most of the adolescents were under normal stress conditions, but some experienced severe to very severe stress under the influence of the same school environment. This is following the claim that stress is a condition that is not balanced between one's ability and physical or psychological demands, failing to fulfill it (Shahsavarani et al., 2015). Stress experienced by individuals can be perceived differently; for example, stress that can increase the body's ability to overcome obstacles; sources of stress which are commonly referred to as eustress; and stress conditions that can burden the body, causing physical and psychological problems, commonly referred to as distress (Afryan et al., 2019).

Stress experienced in life can be manifested by the symptoms, both physical and psychological, felt by the individual (Sukadiyanto, 2010). If not treated, these can cause serious health problems, so stress in adolescents must be addressed as soon as possible (Asnita et al., 2015). In this study, the problems experienced by the respondents did not cause symptoms that led to stress. Those who experienced stress had strong defense mechanisms for overcoming any stressors they experienced.

One way to handle stress in adolescents is with problem-centered and emotion-centered coping strategies (Sitepu & Nasution, 2017). A good and directed coping strategy in solving the stressful conditions experienced by adolescents can de-

velop stress management skills. Stress management can be achieved in three stages, namely by recognizing stress and its sources; training oneself directly on how to solve stress or to cope with it, and applying stress management to the events encountered and then evaluating the effectiveness of how they were handled (Hakim et al., 2017). Stress management can be performed by adolescents to cope with stressors experienced both in the school environment and at home.

Spiritual Behavior. The results of the analysis of spiritual behavior showed that 81 respondents (53.3%) were categorized as having a moderate spiritual level. This level can be influenced by various factors; for example, parenting, the intensity of religious activities, and the development of adolescents (Hidayat, 2006). Parenting patterns can affect the spirituality of adolescents; if they receive democratic parenting, they tend to have a high level of spirituality compared to those who receive authoritarian parenting. Parenting factors are considered to be the most dominant influence on the spiritual level of adolescents because the family is seen as the basis for the formation of their personality (Khodijah, 2018).

Spiritual behavior in Muslim adolescents is a form of piety, which characterizes humility (*tawadhu*); belief in one's abilities (*yakin*); always being grateful for what has been obtained or been given (*qanaah*); and vigilance over behavior that is unlawful or doubtful (*warak*). Adolescents who display spiritual behavior consistently in actions that are under religious provisions, and stay away from behavior that is prohibited by religion, are considered to be sincere individuals who practice sharia *muamalah* and worship (Rahman & Makmur, 2015).

The spiritual behavior of adolescents is also believed to play an important role in dissuading them from deviant behavior, as spirituality is a form of activity that represents piety and strong faith as the basis for spiritual intelligence (As-tutik et al., 2017; Sabiq & Djalali, 2012).

Correlation of Spiritual Behavior with Stress Levels. The results of the analysis show that there is no correlation between spiritual behavior and the level of stress experienced by the respondents. Suciani and Nuraini (2017) explain that a person's spiritual condition must always be maintained and improved by remembering God and doing good to others. Someone's spiritual ability by getting closer to God will make that person always think positively and continue to improve their worship, both in the special sense related to their relationship with God and in the broad sense regarding their relationship with fellow human beings. In addition, it has also been explained that a person's spiritual ability is higher under normal stress levels compared to other levels (Ciptomulyono et al., 2017). Everyone's stress management is different because of environmental factors and psychological conditions, which affect the ability to manage and prevent stress. A person's ability to manage stress will make them more resistant to the sources of stress and the pressure they face (Ciptomulyono et al., 2017). In addition, mid-age adolescents (15-18 years old) experience an increase in cognitive and awareness to deal with stress and emotional fluctuations. If adolescents are unable to deal with their emotions effectively, this will make them vulnerable to depression, anger, and the inability to control their anger, which can cause problems (Wiryada et al., 2017).

Indicators of spiritual behavior are based on consistency in obeying Islamic law, maintaining personal morals, and understanding faith well. In individuals, it is influenced by age, with increasing age being directly proportional to the value of spiritual behavior (Rahman & Makmur, 2015). Hidayat (2006) suggests that everyone's spiritual needs will differ according to factors such as family, race or ethnicity, age development, religion, and religious activities. Spiritual characteristics consist of five types, namely the ability to believe in the existence of a higher power; individual involvement in conditions of material value to be idealistic conditions; the ability to judge oneself; and the desire to reach

truth or success; and belief in transcending self-limits (Ardian, 2016). Spirituality refers to a person's desire for meaning and purpose in life, such as a transcendent attachment or personal mission. It is a person who feels called by destiny or fate and switches from material to idealistic ideas.

The results of this study show that there is no correlation between spiritual behavior and stress. This could be caused by internal factors that were not investigated, such as family education. The family is the first place for a child to receive an education from their parents, and to follow the behavior exemplified by them (Li & Qiu, 2018). Education in the family is the basis for the formation of the character or personality of adolescents.

This study was limited only to Muslim adolescents, although that was not set as a criterion of sample recruitment. Other limitations are related to concerning control of the presence of confounding variables that affect the results. The first confounding variable is the family, especially parents, who play an important role in the spiritual behavior of adolescents. The study did not include the characteristics of the family's role in spiritual fulfillment, as data collection was only made for adolescents. Research conducted by Syaifudin and Sumarno (2018) demonstrates that parents play a very important role in the spiritual behavior of adolescents by making aspects of faith, Islam, knowledge, and good deeds (*ihsan*) benchmarks in the application of Islamic religious values in the family. From the perspective of adolescents, the family can be interpreted as the most comfortable place for sharing, telling stories, and growing up to be someone they dream of (Hasiolan & Sutejo, 2015). The second confounding variable is the perception held by adolescent students. Research conducted by Muharomi (2010) explains that a person's stress level is influenced by the perception they have of stressors in their environment. Adolescents with good perceptions will judge the problems they face easily, so the stress level they feel will tend to be below, and vice versa.

Another aspect that is a weakness of this research is the influence of the life experiences of adolescents. Past experiences allow adolescents to assess the problems they face as a matter of course, as they have deep impressions imprinted on their psychological emotions, which can ultimately form a positive attitude to life, thus affecting the stress levels experienced by adolescents (Perwitasari et al., 2016).

Based on the results, there was just one respondent who experienced a very severe level of stress, even though their spiritual behavior was in the moderate category. This could have occurred due to several influencing factors as described. Factors that are considered able to influence spiritual behavior are parenting patterns, religious activities, age development, race or ethnicity, and beliefs embedded in the individual. Stressors faced by adolescents are also considered to be factors that influence the differences in stress levels of each adolescent. Factors that are believed to cause stress include genetics, medical history, experience in dealing with stress, immunity to diseases that can reduce the risk of stress, body posture, current illness, adolescents' perception of the stressors they face, emotional intelligence, psychological situations, life experience, and environmental factors.

Conclusion

Based on the findings, it can be concluded that the respondents were mostly 17 years old, female, 1st study year, did not participate in extra-curricular activities, and did not have a history of the disease. The spiritual behavior of the adolescents was moderate and most of the stress levels of adolescents were in the normal category. However, there was no correlation between spiritual behavior and stress levels.

This initial study is part of a larger study that investigates of mental health of the adolescent. Several factors that may influence the stress of adolescents, especially in Yogyakarta will be examined to identify the appropriate solutions.

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MATERNAL FACTORS IN STUNTING AMONG VULNERABLE CHILDREN

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Abstract

Children with stunting in Indonesia and other low-middle countries remains a serious problem. This study aimed to identify the association between maternal education, maternal age, maternal height, preceding birth interval, and ANC clinic visits, and stunting among vulnerable children in Kupang Regency, Indonesia. A cross-sectional study was conducted of two villages in Kupang Regency. The study sample comprised female ex-refugees from Timor Leste who had children aged 24–59 months. The subjects were chosen using consecutive sampling, with a total number of 154. Data were collected from both primary and secondary sources. There was a significant relationship between maternal education ($p = 0.014$), maternal height ($p = 0.003$), preceding birth interval ($p = 0.001$), ANC clinic visits ($p = 0.009$) and stunting. In contrast, maternal age showed no significant association ($p = 0.611$). Further studies are needed to help eradicate stunting by intervening in the reduction of risk factors.

Keywords: antenatal care, children, Indonesia, maternal age, mother, refugee, stunting

Abstrak

Faktor-faktor Ibu terkait Stunting pada Anak-Anak yang Rentan. Anak-anak yang mengalami stunting di Indonesia dan negara-negara berpenghasilan rendah masih menjadi masalah serius. Tujuan penelitian ini adalah mengidentifikasi hubungan antara pendidikan ibu, usia ibu, tinggi badan ibu, jarak melahirkan dan kunjungan antenatal care (ANC) dengan stunting pada anak rentan usia 24–59 bulan di Kabupaten Kupang, Indonesia. Metode penelitian yang digunakan adalah cross-sectional yang dilakukan di dua desa di Kabupaten Kupang. Sampel dalam penelitian ini adalah para ibu mantan pengungsi Timor Leste yang memiliki anak usia 24–59 bulan. Teknik sampling yang digunakan adalah consecutive sampling, sebanyak 154 responden. Data diperoleh dari sumber primer dan sekunder. Terdapat hubungan yang signifikan antara pendidikan ibu ($p = 0,014$), tinggi ibu ($p = 0,003$), jarak kelahiran ($p = 0,001$), kunjungan ANC ($p = 0,009$) dengan stunting. Namun tidak ada hubungan antara usia ibu dengan stunting ($p = 0,611$). Penelitian selanjutnya dibutuhkan untuk memberantas stunting melalui intervensi untuk menurunkan faktor risiko.

Kata Kunci: anak, antenatal care, ibu, Indonesia, pengungsi, stunting, usia ibu

Introduction

Stunting refers to children who are too short for their age (UNICEF & World Bank, 2020). It is defined as less than -2 standard deviations (-2 SD) from the median of height-for-age of the reference population (Beal et al., 2018; Svefors et al., 2020; World Health Organization, 2006). In 2019, stunting affected an estimated 21.3 percent, or 144.0 million, children under 5 globally. Around 94% of these children lived in Africa and Asia. Global progress against stunting

has been steady, but not fast enough to reach the targets set (UNICEF, WHO & World Bank, 2020). The Indonesian Basic National Health Survey stated that the prevalence of stunting in Indonesia was 35.6% in 2010, 37% in 2013, and 31% in 2018 (Ministry of Health Republic of Indonesia, 2018).

The short-term consequences of stunting are a higher risk of morbidity and mortality, increased health expenses, and reduced cognitive, motor, and language development (Stewart et al., 2013).

The long-term consequences include lower achievement at school; reduced cognitive development and economic productivity; effects on maternal reproductive outcomes (Dewey & Begum, 2011); and delayed pubertal development (Svefors et al., 2020).

Stunting can be a result of various factors, such as maternal factors, home environment, poor quality food, inadequate health care practices, unsafety food and water, inadequate breastfeeding practices, and clinical and subclinical infection (Batiro et al., 2017; Beal et al., 2018; Berhe et al., 2019; Chan et al., 2020; Geberselassie et al., 2018; Khairi et al., 2013; Stewart et al., 2013). The maternal factors associated with stunting include poor nutrition, adolescent pregnancy, mental health, short birth spacing (Stewart et al., 2013), short maternal height, low maternal education (Beal et al., 2018; Nshimiyiryo et al., 2019), low level of antenatal care (Khan et al., 2019), and advanced maternal age (Manggala et al., 2018). The refugee group, as a vulnerable group, meets these various factors, but no previous studies have identified the maternal factors in children's stunting among vulnerable populations especially ex-Timor Leste refugee mothers. This study therefore aims to assess the association between maternal education, maternal age, maternal height, preceding birth interval, and ANC clinic visits, and stunting among vulnerable children 24–59 months old in Kupang Regency.

Methods

A cross-sectional study was conducted in two villages in Kupang Regency, East Nusa Tenggara Province, Indonesia. The samples were ex-Timor Leste refugee mothers who had 24–59-month-old children and lived in the Naibonat Public Health Centre working area. The sample size was calculated using G*Power 3.1.9.4 software with 80% statistical power and an alpha value of 0.05 (Faul et al., 2007). Consecutive sampling was applied to recruit samples, of whom a total of 154 were enrolled.

The dependent variable was stunting that is defined as WHO HAZ scores below -2 SD, according to sex (Aryastami et al., 2017; Briaux et al., 2019; Manggala et al., 2018; World Health Organization, 2006). The Z-scores were calculated using WHO anthropometry software (Aryastami et al., 2017; Blössner et al., 2011). Stunting was classified as stunted or not stunted. The independent variables were maternal education, maternal age, maternal height, preceding birth interval, and ANC clinic visits. Maternal education was defined as the mother's highest education completed, classified as low (elementary school/junior high school) or high (senior high school or university) (Utami et al., 2019). The children were classified as 2–5 years old. Maternal age was categorized as under 30 or 30 or above (Rachmi et al., 2016), while maternal height was categorized as under 150 cm (low stature) or 150 cm or above (normal height) (Berhe et al., 2019). Antenatal care (ANC) is the care provided by healthcare professionals, including doctors, midwives, and nurses, to pregnant women to ensure the best welfare for mothers and babies (WHO, 2016). ANC clinic visits were categorized as fewer than four times or four times or more (Budhathoki et al., 2020). The participants' data were primary and secondary; primary data were obtained to determine socio-demographic items consisting of maternal age, education, height, and preceding birth interval. The secondary data were obtained from the Maternal and Child Health Handbook (MCH handbook) and the Healthy Card Record to ascertain maternal health and the development of infant from birth to 5 years of age (including ANC clinic visits and stunting) and the data were cross-checked with the Naibonat Public Health Centre.

Descriptive analysis was conducted to establish the participants' characteristics in terms of maternal education, age, and height, preceding birth interval, ANC clinic visits, and stunting. Data analysis was also conducted to assess the relationship between possible risk factors and stunting using the Chi-square test and odds ratio (OR). The results were considered statistically

significant if the p-value was < 0.05 .

Ethical Consideration: Written informed consent was obtained from each respondent. The study was approved by the STIKES Buleleng Research Ethics Committee (002/EC-KEPK-SB/I/2020).

Results

The data in Table 1 show that more than half of the respondents had a low education; that the majority were 30 years or over; their mean age was 29.6 ± 6.4 ; just over half were < 150 cm tall; the majority has a preceding birth interval of fewer than 24 months; most had visited an ANC clinic four times or more, and the majority were not stunting.

The analysis showed that there was a significant relationship between maternal education and stunting among children ($p = 0.014$). The OR value was 2.784 (95% CI : 1.284–6.037), meaning that mothers with lower education levels had

a 2.784 times higher risk of having stunting children aged 24–59 months in Kupang Regency, Indonesia. The results of the bivariate analysis also conclude that maternal height was significantly related to stunting in children ($p = 0.003$). According to the analysis, the OR value was 2.895 (95% CI : 1.465–5.721). These results reflect that mothers under 150 cm tall had 2.895 times higher risk of having stunted children aged 24–59 months. According to the results in Table 2, there was a significant relationship between the preceding birth interval and stunting among children ($p = 0.001$). The OR value was 3.250 (95% CI : 1.611–6.557); this means that mothers with a preceding birth interval of < 24 months had 3.250 times higher risk of having stunted children. The bivariate analysis also showed that there was a significant relationship between ANC clinic visits and stunting among children ($p = 0.009$), with an OR value of 2.947 (95% CI : 1.369–6.346), meaning that mothers who made fewer than four ANC clinic visits had a 2.947 times higher risk of having stunting children. In contrast, there was

Table 1. Characteristics of the respondents (n = 154)

Characteristics	Results
Mothers' age (years) - Mean (SD*)	29.6 (6.4)
Maternal education - n (%)	
Low	106 (68.8)
High	48 (31.2)
Maternal age - n (%)	
< 30 years old	73 (47.4)
≥ 30 years old	81 (52.6)
Maternal height - n (%)	
< 150 cm	80 (51.9)
≥ 150 cm	74 (48.1)
Preceding birth interval - n (%)	
< 24 months	86 (55.8)
≥ 24 months	68 (44.2)
ANC clinic visits - n (%)	
< 4 times	36 (23.4)
≥ 4 times	118 (76.6)
Stunting - n (%)	
Stunted	59 (38.3)
Not stunted	94 (61.7)

*SD = standard deviation

Table 2. Relationship Between Maternal Education, Maternal Age, Maternal Height, Preceding Birth Interval, ANC Visits, and Stunting (n = 154)

Variable	Stunting		OR	95% CI	p
	Stunted n (%)	Not stunted n (%)			
Maternal education					
Low	48 (31.2)	58 (37.7)	2.784	1.284–6.037	0.014
High	11 (07.1)	37 (24.0)			
Maternal age					
< 30 years	30 (19.5)	43 (27.9)	0.799	0.417–1.533	0.611
≥ 30 years	29 (18.8)	52 (33.8)			
Maternal height					
< 150cm	40 (26.0)	40 (26.0)	2.895	1.465–5.721	0.003
≥ 150 cm	19 (12.3)	55 (35.7)			
Preceding birth interval					
< 24 months	43 (27.9)	43 (27.9)	3.250	1.611–6.557	0.001
≥ 24 months	16 (10.4)	52 (33.8)			
ANC visits					
< 4 times	21 (13.6)	15 (09.7)	2.947	1.369–6.346	0.009
≥ 4 times	38 (24.7)	80 (51.9)			

no significant relationship between maternal age and stunting ($p = 0.611$); the OR value was 0.799 (95% CI : 0.417–1.533) (see Table 2).

Discussion

It is demonstrated that maternal educational level was significantly associated with stunting in their children. The majority of the respondents had low education. The mothers, as their children's caregivers, may influence their nutritional intake. Mothers with lower education levels have fewer opportunities to receive information about growth, development nutrition, and other children's health information. This issue remains a serious problem in Indonesia. The culture in many areas in East Nusa Tenggara still influences parents' limiting of girl's continued studies at university. Mothers with lower educational levels had a 2.8 times greater risk of having stunted children (aged 24–59 months) than more highly educated ones. These results are similar to a study of South Jakarta, which showed that the maternal educational level significantly affected stunting among children under-five (Utami et al., 2019). Three studies in

Ethiopia also found that mothers' educational level was associated with stunting in children aged 12 to 59 months (Takele et al., 2019), aged 6 to 59 months (Kahssay et al., 2020), and aged 5 to 59 months (Tariku et al., 2017). Maternal education is positively correlated with the healthy linear growth of children in several low-middle countries, such as Mozambique, Nigeria, Ghana, and Congo, but not Kenya (Amugsi et al., 2020). Increasing mothers' education level can improve their knowledge about breastfeeding, complementary feeding practices, and child growth.

In our study, mothers' age was not significantly associated with stunting in 24–59-month-old children. This is in line with other studies conducted in Indonesia (Rachmi et al., 2016; Torlesse et al., 2016). In contrast, a cross-sectional study conducted in Bali showed that maternal age could influence a child's nutritional status (Manggala et al., 2018). The study found that the risk of pregnancy, preterm birth, and intra-uterine growth restriction was higher in older mothers. Young mothers (15–19 years) had a negative association with the length-for-age Z-

score of infants at birth, but this was not associated with the infants' linear growth (Workicho et al., 2019).

In our study, maternal height was significantly associated with stunting in children. Studies in Indonesia, and of African and Latin American countries such as Malawi, Rwanda, and Colombia, have reported that maternal height was related to stunting (Aldana-Parra et al., 2020; Nshimyiryo et al., 2019; Rachmi et al., 2016; Walters et al., 2019). In addition, a study conducted in Vietnam showed that maternal height had a strong association with child stunting (Beal et al., 2019). The short stature of some mothers may lead to intrauterine growth restriction, which contributes to stunting in children (Manggala et al., 2018).

Our study shows that children with a preceding birth interval of fewer than 24 months were 3.25 times more likely to be stunted than those with an interval of more than, or equal to, 24 months. This is similar to a previous study carried out in Ethiopia (Takele et al., 2019). Preceding birth intervals of less than 24 months increase the risk of the depletion of maternal reserves in subsequent pregnancies and negatively impacts both child and mother (Stewart et al., 2013; Takele et al., 2019).

Stunting in children is also shown to be significantly associated with mothers' access to health-care, as indicated by a sufficient number of ANC clinic visits (≥ 4 times). This is in line with previous studies (Amugsi et al., 2020; Budhathoki et al., 2020; Torlesse et al., 2016). Antenatal care is an important factor in ensuring healthy outcomes in women during pregnancy. It influences mothers' and children's outcomes by increasing mothers' knowledge, attitude, and practice in nutrition education, together with counseling during antenatal care (Ghosh-Jerath et al., 2015). Enhanced access to antenatal care reduces the risk of stunting among children, including vulnerable ones (Budhathoki et al., 2020; Khan et al., 2019).

Our study highlights the emerging issue of stunting caused by maternal factors. Many interventions and strategies that are already in place to manage stunting cases in Indonesia, e.g. "*Gerakan 1000 hari pertama kehidupan*" or "the first 1000 days of life movement", need to be improved to respond to the problem.

Conclusion

Our cross-sectional analysis shows that maternal educational level, maternal height, preceding birth interval, and ANC clinic visits had significant associations with stunting among children aged 24–59 months in Kupang Regency, Indonesia. However, maternal age had no significant association with stunting. We suggest that various interventions are needed to increase mothers' knowledge of caring for children in critical periods. Future studies should investigate several maternal factors, such as nutrition during preconception, pregnancy, lactation, adolescent pregnancy, intrauterine growth restriction, preterm birth, infection, mental health, and hypertension.

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SPIRITUAL BEHAVIOR AND STRESS IN ADOLESCENTS: AN INITIAL STUDY

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Abstract

Spirituality is often associated with mental health, including stress. Older people tend to have high rates of involvement in spirituality rather than young people. This study aimed to identify the relationship between spiritual behavior and the stress levels of 152 high school students, using a descriptive correlation research design. The data collection techniques involved a spiritual dimension scale questionnaire and the Depression Anxiety Stress Scale 42 (DASS 42). The data were analyzed using Spearman's rho correlation test. The results show that the spiritual behavior distribution was mostly in the moderate category (53.3%), and stress level distribution was primarily in the normal category (63.8%). The finding also revealed that there was no correlation between spiritual behavior and stress levels in high school students. These results may differ from the previous studies. Although stress in this group showed a normal category, their mental health needs to be considered given the amount of stressors adolescents may face.

Keywords: adolescents, spiritual behavior, stress

Abstrak

***Perilaku Spiritual dan Stres pada Remaja: Studi Awal.** Spirituaitas seringkali dikaitkan dengan kesehatan mental, termasuk stres. Kelompok usia tua cenderung banyak terlibat dalam kegiatan spiritual dibanding kelompok usia muda. Penelitian ini bertujuan untuk mengidentifikasi hubungan antara perilaku spiritual dengan tingkat stres pada 152 siswa sekolah menengah atas, dengan menggunakan desain penelitian deskriptif korelasi. Teknik pengumpulan data menggunakan kuesioner skala dimensi spiritual dan Depression Anxiety Stress Scale 42 (DASS 42). Analisis data menggunakan uji korelasi Spearman's rho. Hasil penelitian menunjukkan bahwa perilaku spiritual mereka sebagian besar dalam kategori sedang (53,3%), dan distribusi tingkat stres terutama dalam kategori normal (63,8%). Penelitian ini mengungkapkan tidak ada hubungan antara perilaku spiritual dengan tingkat stres pada remaja. Hasil ini mungkin berbeda dengan banyak penelitian sebelumnya. Meskipun stres pada kelompok ini menunjukkan kategori normal, tetapi kesehatan mental mereka perlu diperhatikan mengingat banyaknya stresor yang mungkin dihadapi remaja.*

Kata Kunci: perilaku spiritual, remaja, stres

Introduction

Adolescents experience a developmental phase characterized by the emergence of secondary sexual signs, psychological development, and socio-economic independence. Adolescence is considered to be a period of "storm and stress" with many changes experienced due to physical, psychological, and socio-cultural developments. These developments can result in frustration for adolescents due to changes in the con-

ditions they experience (Jörns-Presentati et al., 2021). The World Health Organization (WHO) (2018) classifies adolescence into three stages, namely early adolescence (age 11–14 years), middle adolescence (age 14–17 years), and late adolescence (age 17–20 years). Basic health research data from 2013 showed that the prevalence of mental-emotional disorders in those aged 15 years or adolescents in Yogyakarta was 8.1% (Ministry of Health Republic of Indonesia, 2013). This shows the magnitude of the

incidence of stress in adolescents around Indonesia, including in the Yogyakarta area.

Stress in adolescents is generally caused by problems at school and outside schools, such as bullying, academic barriers, problems with teachers, and conflicts with peers, siblings, and parents. The sources of stress faced by adolescent girls and boys are generally the same, but the consequences will generally be different (Masdar et al., 2017). In the low-middle countries, the adolescent may face more problems. A review study concluded that in Sub Sahara, risk adolescents with mental problems including adolescents affected by HIV and AIDS, exposure to violence and trauma, poverty, orphanhood, being 'out of school', socioeconomic disadvantages, and high levels of deprivation (Jörns-Presentati, et al., 2021).

Stress can be defined as a state of mental-emotional disorder that should not be taken lightly and treated immediately. If stress is not addressed immediately, the negative effects include disturbed sleep patterns, dizziness, irritability, high blood pressure, difficulty in concentrating, decreased appetite, and mood disorders. Further impacts of stress that are not always immediately addressed are an increased risk of smoking behavior in adolescents and low self-esteem (Asnita et al., 2015).

The previous study indicated that religious and spiritual involvement have benefits in health outcomes (Zimmer et al., 2016). Religion associates with specific foundational principles that are organized around distinct systems of beliefs, practices, and rituals that take place within communities of participants (Koenig et al., 2012). According to Amir and Indriyani (2013), spiritual behavior is the application of one's relationship with or belief in God in the hope of receiving honor and hope from something that is not limited. Spiritual behavior can be described by a person's activeness in participating in religion-related activities such as recitation, congregational prayers, fasting, zakat, dhikr, and the habit of reading the Qur'an for Muslims.

Faith or belief in spiritual behavior begins to grow at the adolescent stage. Palupi et al. (2013) reported that the spiritual level had a negative relationship with aggressive behavior in adolescents; the higher their religiosity, the lower their level of aggressiveness, and vice versa. Similarly, Leung and Pong (2021) reported that all domains of spiritual wellbeing were negatively associated with psychological distress. The personal and communal domain of spiritual wellbeing was the strongest predictor of psychological distress.

The practice of spiritual behavior among Indonesian Muslim adolescents remains a matter of concern, as can be seen from the type of people who congregate around mosques, which are mostly filled by young children, adults, and the elderly, rather than adolescents. They rarely congregate and worship, partly due to disobedience regarding worship, which harms the socialization of adolescents within the environment (Wiguna, 2017). Based on these problems, the study examined the relationship between spiritual behavior and the level of stress experienced by adolescents.

Methods

This cross-sectional study involved 152 high school students around Yogyakarta, who were selected using a stratified random sampling technique as the population consisted of various ages, classes, extracurricular activities, and genders.

Spiritual behavior was measured using a spiritual dimension scale questionnaire, that consisted of 14 closed questions. It was adopted from a study by Purwaningrum and Widaryati (2013). The result was classified into three categories, namely good spiritual behavior (if score 43–56), moderate spiritual behavior (34–42), and poor spiritual behavior (< 33). The answers to each question item were analyzed on a scale of 4 = always, 3 = often, 2 = sometimes, and 1 = never. The dependent variable in the study was the level of stress in adolescents measured by

the DASS 42 questionnaire devised by Lovinbon (1995), with a total of 14 questions. The measurement results were classified into five groups according to the scores obtained from all the questions, namely normal (0–14), mild stress (15–18), moderate stress (19–25), severe stress (26–33), and very severe stress (> 34). Measurement was made on a rating scale, with scores of 0 = never, 1 = sometimes, 2 = often, and 3 = always.

This study was approved by The Research Ethics Committee of FKIK UMY, number 522/

EP-FKIK-UMY/X/2018. We followed the research protocol for adolescent respondents by allowing the teacher during completing the questionnaires in the classroom.

Results

Respondent Characteristics. The characteristics of the participants were based on age, gender, study year number of extracurricular activities, and disease history. As shown in Table 1, 50 respondents were 17 years old (32.9%). The main gender was female, with a total of 83 res-

Table 1. The Respondent Characteristics

Variable	Frequency (n)	Percentage (%)
Age		
15	27	17.8
16	38	25
17	50	32.9
18	37	24.3
Gender		
Male	69	45.4
Female	83	54.6
Study year		
1 st year	59	38.8
2 nd year	42	27.6
3 rd year	51	33.6
Number of extracurricular activities		
0	77	50.7
1	45	29.6
2	21	13.8
3	8	5.3
6	1	0.6
Disease history		
Yes	33	21.7
No	119	78.3

Table 2. Stress Levels and Spiritual Behavior of the Adolescents

Variable	Frequency (n)	Percentage (%)
Stress		
Normal	97	63.8
Mild stress	30	19.7
Moderate stress	19	12.5
Severe stress	5	3.3
Very severe stress	1	0.7
Spiritual Behavior		
Poor	47	30.9
Moderate	81	53.3
Good	24	15.8

Table 3. Correlation between Spiritual Behavior and Stress Levels in Adolescents

Variable	Spiritual Behavior				r	p
	Poor	Moderate	Good	Total		
Stress Level						
Normal	29	53	15	97		
Mild stress	10	16	4	30		
Moderate stress	7	8	4	7	-0.070	0.392
Severe stress	1	3	1	5		
Very severe stress	0	1	0	1		

pondents (54.6%). Students of the 1st study year dominated, with 59 respondents (38.8%). A small majority of participants, 77 (50.7%), did not take part in extracurricular activities. Finally, a total of 119 respondents stated that they had no history of the diseases (78.3%).

Table 2 shows the distribution of respondent stress levels, dominated by the normal category (no experience of stress), with a total of 97 respondents (63.8%). The data in Table 3 shows that most of the respondents, 81 (53.3%) displayed moderate spiritual behavior.

There was a significance value of 0.392 or $p > 0.05$, which means that there is no significant correlation between spiritual behavior and the level of stress experienced by adolescents. In addition, the results of the analysis of the data on the correlation between spiritual behavior and stress levels in the moderate category show that 53 (34.9%) of the adolescents were in the normal category, or did not experience stress (Table 3).

Discussion

Stress Levels in Adolescents. The details shown in Table 3 regarding the distribution of the research results on stress levels in adolescents indicate that most of the respondents, 97 (63.8%) were in the normal category. The stress level is fluctuating depending on the situation when filling out the questionnaire. This is supported by the notion that the stress response is divided into three stages, namely the alarm reaction stage, the resistance stage, and the stage of exhaustion, which is influenced by the mental endu-

rance of each individual, so not everyone will experience it when facing stressors (Tombokan et al., 2017).

In this study, most of the adolescents were under normal stress conditions, but some experienced severe to very severe stress under the influence of the same school environment. This is following the claim that stress is a condition that is not balanced between one's ability and physical or psychological demands, failing to fulfill it (Shahsavarani et al., 2015). Stress experienced by individuals can be perceived differently; for example, stress that can increase the body's ability to overcome obstacles; sources of stress which are commonly referred to as eustress; and stress conditions that can burden the body, causing physical and psychological problems, commonly referred to as distress (Afryan et al., 2019).

Stress experienced in life can be manifested by the symptoms, both physical and psychological, felt by the individual (Sukadiyanto, 2010). If not treated, these can cause serious health problems, so stress in adolescents must be addressed as soon as possible (Asnita et al., 2015). In this study, the problems experienced by the respondents did not cause symptoms that led to stress. Those who experienced stress had strong defense mechanisms for overcoming any stressors they experienced.

One way to handle stress in adolescents is with problem-centered and emotion-centered coping strategies (Sitepu & Nasution, 2017). A good and directed coping strategy in solving the stressful conditions experienced by adolescents can de-

velop stress management skills. Stress management can be achieved in three stages, namely by recognizing stress and its sources; training oneself directly on how to solve stress or to cope with it, and applying stress management to the events encountered and then evaluating the effectiveness of how they were handled (Hakim et al., 2017). Stress management can be performed by adolescents to cope with stressors experienced both in the school environment and at home.

Spiritual Behavior. The results of the analysis of spiritual behavior showed that 81 respondents (53.3%) were categorized as having a moderate spiritual level. This level can be influenced by various factors; for example, parenting, the intensity of religious activities, and the development of adolescents (Hidayat, 2006). Parenting patterns can affect the spirituality of adolescents; if they receive democratic parenting, they tend to have a high level of spirituality compared to those who receive authoritarian parenting. Parenting factors are considered to be the most dominant influence on the spiritual level of adolescents because the family is seen as the basis for the formation of their personality (Khodijah, 2018).

Spiritual behavior in Muslim adolescents is a form of piety, which characterizes humility (*tawadhu*); belief in one's abilities (*yakin*); always being grateful for what has been obtained or been given (*qanaah*); and vigilance over behavior that is unlawful or doubtful (*warak*). Adolescents who display spiritual behavior consistently in actions that are under religious provisions, and stay away from behavior that is prohibited by religion, are considered to be sincere individuals who practice sharia *muamalah* and worship (Rahman & Makmur, 2015).

The spiritual behavior of adolescents is also believed to play an important role in dissuading them from deviant behavior, as spirituality is a form of activity that represents piety and strong faith as the basis for spiritual intelligence (As-tutik et al., 2017; Sabiq & Djalali, 2012).

Correlation of Spiritual Behavior with Stress Levels. The results of the analysis show that there is no correlation between spiritual behavior and the level of stress experienced by the respondents. Suciani and Nuraini (2017) explain that a person's spiritual condition must always be maintained and improved by remembering God and doing good to others. Someone's spiritual ability by getting closer to God will make that person always think positively and continue to improve their worship, both in the special sense related to their relationship with God and in the broad sense regarding their relationship with fellow human beings. In addition, it has also been explained that a person's spiritual ability is higher under normal stress levels compared to other levels (Ciptomulyono et al., 2017). Everyone's stress management is different because of environmental factors and psychological conditions, which affect the ability to manage and prevent stress. A person's ability to manage stress will make them more resistant to the sources of stress and the pressure they face (Ciptomulyono et al., 2017). In addition, mid-age adolescents (15-18 years old) experience an increase in cognitive and awareness to deal with stress and emotional fluctuations. If adolescents are unable to deal with their emotions effectively, this will make them vulnerable to depression, anger, and the inability to control their anger, which can cause problems (Wiryada et al., 2017).

Indicators of spiritual behavior are based on consistency in obeying Islamic law, maintaining personal morals, and understanding faith well. In individuals, it is influenced by age, with increasing age being directly proportional to the value of spiritual behavior (Rahman & Makmur, 2015). Hidayat (2006) suggests that everyone's spiritual needs will differ according to factors such as family, race or ethnicity, age development, religion, and religious activities. Spiritual characteristics consist of five types, namely the ability to believe in the existence of a higher power; individual involvement in conditions of material value to be idealistic conditions; the ability to judge oneself; and the desire to reach

truth or success; and belief in transcending self-limits (Ardian, 2016). Spirituality refers to a person's desire for meaning and purpose in life, such as a transcendent attachment or personal mission. It is a person who feels called by destiny or fate and switches from material to idealistic ideas.

The results of this study show that there is no correlation between spiritual behavior and stress. This could be caused by internal factors that were not investigated, such as family education. The family is the first place for a child to receive an education from their parents, and to follow the behavior exemplified by them (Li & Qiu, 2018). Education in the family is the basis for the formation of the character or personality of adolescents.

This study was limited only to Muslim adolescents, although that was not set as a criterion of sample recruitment. Other limitations are related to concerning control of the presence of confounding variables that affect the results. The first confounding variable is the family, especially parents, who play an important role in the spiritual behavior of adolescents. The study did not include the characteristics of the family's role in spiritual fulfillment, as data collection was only made for adolescents. Research conducted by Syaifudin and Sumarno (2018) demonstrates that parents play a very important role in the spiritual behavior of adolescents by making aspects of faith, Islam, knowledge, and good deeds (*ihsan*) benchmarks in the application of Islamic religious values in the family. From the perspective of adolescents, the family can be interpreted as the most comfortable place for sharing, telling stories, and growing up to be someone they dream of (Hasiolan & Sutejo, 2015). The second confounding variable is the perception held by adolescent students. Research conducted by Muharomi (2010) explains that a person's stress level is influenced by the perception they have of stressors in their environment. Adolescents with good perceptions will judge the problems they face easily, so the stress level they feel will tend to be below, and vice versa.

Another aspect that is a weakness of this research is the influence of the life experiences of adolescents. Past experiences allow adolescents to assess the problems they face as a matter of course, as they have deep impressions imprinted on their psychological emotions, which can ultimately form a positive attitude to life, thus affecting the stress levels experienced by adolescents (Perwitasari et al., 2016).

Based on the results, there was just one respondent who experienced a very severe level of stress, even though their spiritual behavior was in the moderate category. This could have occurred due to several influencing factors as described. Factors that are considered able to influence spiritual behavior are parenting patterns, religious activities, age development, race or ethnicity, and beliefs embedded in the individual. Stressors faced by adolescents are also considered to be factors that influence the differences in stress levels of each adolescent. Factors that are believed to cause stress include genetics, medical history, experience in dealing with stress, immunity to diseases that can reduce the risk of stress, body posture, current illness, adolescents' perception of the stressors they face, emotional intelligence, psychological situations, life experience, and environmental factors.

Conclusion

Based on the findings, it can be concluded that the respondents were mostly 17 years old, female, 1st study year, did not participate in extra-curricular activities, and did not have a history of the disease. The spiritual behavior of the adolescents was moderate and most of the stress levels of adolescents were in the normal category. However, there was no correlation between spiritual behavior and stress levels.

This initial study is part of a larger study that investigates of mental health of the adolescent. Several factors that may influence the stress of adolescents, especially in Yogyakarta will be examined to identify the appropriate solutions.

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THE EFFECTIVENESS OF SPIRITUAL INTERVENTION IN OVERCOMING ANXIETY AND DEPRESSION PROBLEMS IN GYNECOLOGICAL CANCER PATIENTS

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Abstract

Anxiety and depression are psychological distress that often occurs in gynecological cancer patients. However, there are few studies related to interventions to overcome these problems. The purpose of this study was to determine the effect of a spiritual intervention on anxiety and depression in such cancer patients. The research design was quasi-experimental, employing pretest and posttest on the intervention and the control groups. The total number of respondents was 108 patients, consisting of 54 in each group. The instrument used in the study was the Hospital Anxiety and Depression Scale (HADS). The spiritual intervention consisted of four sessions, namely an introduction and relaxation session, a control session, an identity session, and a relationship and prayer therapy session, held over two weeks. The data analysis showed a change in the mean score of anxiety and depression in the intervention group after the spiritual intervention ($p = 0.001$). Also, there were differences in the mean scores of anxiety and depression between the intervention and control groups ($p = 0.001$). The result implies that spiritual intervention can be applied as part of holistic nursing care for cancer patients, especially gynecological ones.

Keywords: anxiety, cancer, depression, spiritual intervention

Abstrak

Efektifitas Intervensi Spiritual dalam Mengatasi Masalah Kecemasan dan Depresi pada Pasien Kanker Ginekologi. Kecemasan dan depresi merupakan gangguan psikologis yang sering terjadi pada pasien kanker ginekologi. Namun, penelitian terkait intervensi dalam mengatasi masalah tersebut belum banyak dilakukan. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh intervensi spiritual terhadap kecemasan dan depresi pada pasien kanker ginekologi. Desain penelitian ini adalah quasi eksperimen menggunakan kelompok intervensi dan kontrol dengan pre-test dan post-test. Jumlah responden sebanyak 108 pasien yang terdiri dari 54 orang di setiap kelompok. Instrumen yang digunakan dalam penelitian ini adalah Hospital Anxiety and Depression Scale (HADS). Intervensi spiritual terdiri dari empat sesi: sesi pengenalan dan relaksasi, sesi kontrol, sesi identitas, dan sesi terapi hubungan dan doa, yang diberikan selama dua minggu. Analisis data menunjukkan adanya perubahan rerata skor kecemasan dan depresi pada kelompok intervensi setelah diberikan intervensi spiritual ($p = 0,001$). Selain itu, terdapat perbedaan rerata skor kecemasan dan depresi antara kelompok intervensi dan kontrol ($p = 0,001$). Penelitian ini mengimplikasikan bahwa intervensi spiritual dapat diterapkan sebagai bagian dari asuhan keperawatan holistik pada pasien kanker, terutama yang ginekologi.

Kata Kunci: depresi, intervensi spiritual, kanker, kecemasan

Introduction

Gynecological cancer is one of the main causes of morbidity and mortality in women in developing or low-middle countries (Hailemariam et al., 2017). Gynecological cancer patients experience

various physical and psychological impacts during the disease process (Afiyanti & Milanti, 2013; Akalin & Pinar, 2016; Hansen et al., 2013; Heckel et al., 2015). Anxiety and depression are two of the most common psychological problems in gynecological cancer patients.

ents (Afiyanti et al., 2018; Watts et al., 2015). The prevalence of such events reaches a level of 14–56% in these patients (Kaban & Tekin, 2017). Patients experiencing anxiety and depression have a higher risk of increased hospitalization periods, sub-optimal treatment outcomes, and poor coping mechanism, even leading to death (Martin et al., 2017; Watts et al., 2015).

Intervention to support psychosocial problems is still one of the unmet needs of such patients (Afiyanti et al., 2018; Heckel et al., 2015). Spiritual intervention is one intervention that has been developed to overcome anxiety (Moeini et al., 2014; Oh & Kim, 2014). It is based on strengthening individual coping through interventions related to aspects of spirituality. Previous studies have shown that such intervention can reduce anxiety and sadness, and even feelings of trauma (Kamali et al., 2018). It has also been demonstrated that spiritual intervention positively affects cancer patients (Memaryan et al., 2017; Musarezaie et al., 2015).

Spiritual intervention assists the patients use strategies based on their spirituality; build good relationships with themselves, family, and friends; improve self-care practices; perform religious practices; increase positive thoughts and attitudes; listen actively; and build patient self-confidence (Kamali et al., 2018; Moeini et al., 2014). These are all beneficial for cancer patients, who are often unwilling to face their current condition, are victims of negative stigma from society, or face other negative conditions related to their feelings in dealing with the disease (Memaryan et al., 2017). The effectiveness of the spiritual intervention on reducing anxiety in cancer patients has been reported by previous studies (Carvalho et al., 2014; Ghahari et al., 2017; Moeini et al., 2014; Weaver, 2018). Indonesia has Pancasila (Five Principles) as a state of philosophy, which the number one is Belief in the Almighty God. Therefore, providing spiritual support for gynecological cancer patients in Indonesia has become a common practice. This practice, however, needs to prove its effectiveness in overcoming problems. Such

support may play a major role in overcoming anxiety and depression in these patients. Therefore, this study aims to determine the effect of the spiritual intervention on anxiety and depression in gynecological cancer patients.

Methods

This quasi-experimental study employed pre-test and post-test on intervention and control groups. There were 54 respondents in each group, selected using the consecutive sampling technique. The inclusion criteria of the respondents including more than 18 years old, inpatients at a gynecological cancer care unit at a public hospital in a city of West Java with cancer stages I, II, III, or IV with experiencing a recurrence. The exclusion criteria were patients with speech disorders, having a mental disorder, and those with unstable clinical conditions. The nurse who provided the intervention was a nurse with certification training in spiritual guidance and effective communication. Each nurse had a manual book to do the intervention.

We applied the Indonesian version of the Hospital Anxiety and Depression Scale (HADS) that was valid and reliable from the previous study ($r = 0.361$, and Cronbach's $\alpha = 0.843$) (Pasaribu, 2012). This tool was used to collect the data in pre and post-test. This study had been approved by the Research Ethics Committee of the Faculty of Nursing, Universitas Indonesia (No. 299/UN2.F12.D/HKP.02.04/2018).

The respondent individually in the intervention group was provided a spiritual intervention for two weeks. The first session consisted of an introduction and relaxation techniques. The introduction included a discussion about the concept of spiritual intervention and was asked about any conflicts she felt within herself, her current feelings related to the illness, and opinions related to spirituality. This session facilitated positive feelings and thoughts of the cancer experience. The respondent has also explained relaxation techniques to increase comfort, especially deep and abdominal breathing. She was

taught how, when, and how often to do it. The respondent was trained to lie down in or supine position with both eyes closed and with her hands on the abdomen or chest. She was then guided to inhale air through the nose without moving their chest or abdomen up, then exhaling it with minimal chest movements. The duration of one breath was 15 seconds or six times breath per minute.

The second session was named a control session. In this time, the respondent has explained the existence of two focus controls, namely factors that are within individual self-control, and ones that are outside it; that is, cannot be controlled by humans, such as God's decree. This session also focused on the role of God Almighty in conflict resolution in the respondents' lives.

The third and fourth sessions were conducted in the second week. The third session concerning identity, in which the respondent was asked to express her feelings of loss due to cancer. Some aspects were explored, such as the respondent's positive and negative feelings, affirmation of self-strength, and her enthusiasm and optimism in attending treatment. In the fourth session, namely relationship and prayer therapy. The respondent was invited to discuss three types of relationship, namely a relationship with herself, with others in various environments, and with God. Furthermore, she was invited to tell the efforts to increase her closeness to God through religious practices. Two weeks after the intervention, the respondent was asked to do the post-test. The intervention was provided during the respondent's stay at the hospital.

The respondent in the control group was provided treatment as appropriate as a standard of care of the hospital. After completing the post-test, the respondent provided a spiritual intervention leaflet. All processes of data collecting and intervention were finished in two months.

Results

The characteristics of the respondents are shown

in Table 1, which indicates that the mean age of those in the control group was lower than that in the intervention group. Furthermore, the average length of time diagnosed with cancer in the control group was three months longer than the mean length of diagnosis in the intervention group. The average number of children in both groups was the same, at three.

Furthermore, concerning education levels, the control group was dominated by respondents with a high school education (74%), while most of those in the intervention group had a lower secondary education level (44.4%). About job characteristics, most respondents in the control group worked in the private sector (42.6%), while in the intervention group, most worked as laborers (72.2%). Furthermore, regarding the cancer stage, in the control group, this stood at the highest stage I for 37.0% of the respondents, while in the intervention group the highest stage was stage III (44.4%). The homogeneity test results show that the control and intervention groups were homogeneous ($p > 0.05$).

The study found a change in the mean scores of anxiety and depression in the intervention and control groups before and after receiving the spiritual intervention. These are shown in Table 2. In the control group, the results of the statistical analysis of the anxiety and depression scores show that from the anxiety aspect, there was an increase in average anxiety by 0.03 points during the post-test. In this regard, there was also no significant difference between the pre-test and posttest scores ($p > 0.05$). The depression aspect showed a decrease in its mean score of 0.03 points during the posttest. There was no significant difference between the mean depression scores pre-test and post-test ($p > 0.05$).

The results of the analysis of the intervention group show that there was a decrease in the mean score of anxiety by 1.76 points after the post-test and that there was also a significant difference between pre-test and post-test ($p < 0.05$). A decrease was also shown in the depression aspect of 0.91 points and there was a statistical-

ly significant difference ($p < 0.05$).

Subsequent statistical analysis showed that there were differences in the anxiety and depression scores in the intervention and control groups as shown in Table 3. Before giving spiritual intervention, the difference in the anxiety scores between the control and intervention groups

was 0.37, with the 95% confidence interval in the two groups ranging from 0.65 to 1.02. The difference in anxiety scores in the two groups was not significant ($p > 0.05$). Furthermore, regarding the depression aspect between the two groups, there was a score difference of 1.81, with the 95% confidence interval for the difference in depression scores in the two groups ranging

Table 1. The Characteristics of The Respondent (n = 108)

Variable	Control Group		Intervention Group		Homogeneity Test (p)
	Mean (SD)	Min–max	Mean (SD)	Min–max	
Age	44.35 (12.05)	21–69	47.17 (13.29)	21–73	0.314
Duration of cancer diagnosis (months)	17.02 (11.52)	2–48	13.94 (13.67)	1–96	0.106
Number of children	2.48 (1.37)	0–5	2.13 (1.40)	0–5	0.081
	F	%	F	%	
Education					0.416
Elementary school-Junior highschool	9	16.7	24	44.4	
Highschool	40	74.1	21	38.9	
Higher education	5	9.3	9	16.7	
Occupation					1.89
Unemployed	0	0	1	1.9	
Laborer	17	31.5	39	72.2	
Private Sector	23	42.6	2	3.7	
Entrepreneur	1	1.9	6	11.1	
Government employee	7	13.0	5	9.3	
Other	6	11.1	1	1.9	
Cancer stage					1.03
Stage I	20	37	12	22.2	
Stage II	12	22.2	16	29.6	
Stage III	18	33.3	24	44.4	
Stage IV	4	7.4	2	3.7	

Table 2. The Difference in Anxiety and Depression Scores in the Intervention and Control Groups (n = 108)

Variable	Mean (SD) Pre-test	Mean (SD) Post-test	P
Control Group			
Anxiety	10.54 (1.33)	10.57 (1.41)	0.221
Depression	9.56 (1.67)	9.52 (1.78)	0.113
Intervention Group			
Anxiety	10.35 (2.77)	8.59 (2.69)	0.001*
Depression	7.17 (2.90)	6.26 (2.32)	0.001*

Table 3. The Difference in the Anxiety and Depression Scores in the Intervention Group and Control Group Before Spiritual Intervention (n = 108)

Variable	Mean (SD)	p	95% CI
Anxiety			
Control	10.54 (1.33)	0.66	0.65;1.02
Intervention	10.35 (2.77)		
Depression			
Control	9.52 (1.78)	0.001*	1.48;3.29
Intervention	6.26 (2.32)		

Table 4. The Difference in the Anxiety and Depression Scores in the Intervention Group and Control Group After Spiritual Intervention (n = 108)

Variable	Mean (SD)	p	95% CI
Anxiety			
Control	10.57 (1.41)	0.001*	1.16;2.80
Intervention	8.59 (2.69)		
Depression			
Control	9.52 (1.78)	0.001*	2.47;4.05
Intervention	6.26 (2.32)		

from 1.48 to 3.29. The difference in depression scores in the two groups was significant ($p < 0.05$).

After giving spiritual intervention, the difference in the anxiety scores of the control and intervention groups was 1.64, with the 95% confidence interval of the difference in anxiety scores in the two groups ranging from 1.16 to 2.80. The difference in anxiety scores in the two groups was significant ($p < 0.05$). The difference in depression scores in the control and intervention groups was 1.58, with the 95% confidence interval of the difference in depression scores in the two groups ranging from 2.47 to 4.05. The difference in depression scores in the two groups was significant ($p < 0.05$). Several confounding factors were multivariate tested to determine the effect of the spiritual intervention on anxiety and depression, including age, education, occupation, stage of cancer, length of diagnosis, and the number of children. The multivariate test was conducted to determine whether the effect of the spiritual intervention on anxiety and depression was due to the inter-

vention alone and not influenced by the confounding factors. The results of the test show that there were differences in the anxiety scores before and after the intervention after being controlled by the variables of age, education, occupation, stage, length of diagnosis, and the number of children ($p < 0.05$). This means that statistically, the difference in the mean scores of anxiety and depression was only a result of the intervention made.

Discussion

It was found that the average levels of anxiety in the control and intervention group of gynecological cancer patients indicated a need for increased awareness regarding this problem and related complications that might arise. Prioritization of the allocation of resources that could help patients, and of decision making related to efforts that could be made to prevent the effects of anxiety are also vital (Lin & Pakpour, 2017; Silverberg et al., 2019). These findings are following the previous study by Cassedy et al. (2018) and Yemen (2016), which reported that

anxiety was a frequent occurrence in cancer patients, with varying levels of severity (Yaman & Ayaz, 2016; Cassedy et al., 2018).

The study also obtained a mean depression score in the control and intervention groups at a level that indicates that depression in gynecological cancer patients requires relatively special attention so that conditions do not worsen. Depression in such patients is mainly associated with frustration and constant thoughts of death, altered self-image, the effects of the illness, the prognosis of treatment, and feelings of loss (Yaman & Ayaz, 2016). Their depression is biologically related to levels of the hormone interleukin-6 and the effects of radiation therapy (Macmillan et al., 2018). This condition can occur as a reaction to the diagnosis, treatment, and recurrence of the illness up to the end of patients' lives (Macmillan et al., 2018; Watts et al., 2015).

It was shown that after the intervention, the average anxiety score in the intervention group decreased. This finding is following the study of Jafari et al. (2013), who showed that the mean score of their intervention group fell after they provided spiritual intervention. Rafsanjani et al. (2017) also showed that mental and psychological health in the intervention group was higher than in the control group. Zamaniyan et al., (2016) also found that the anxiety score in the intervention group was lower than in the control group.

Furthermore, these results indicate that there was a significant difference between the pre-test and post-test anxiety scores in the intervention group. This is following Rafsanjani et al.'s (2017), which also showed a significant difference between pre-test and post-test anxiety scores in the intervention group. However, in the control group, there was no significant difference between the scores. In addition, Zamaniyan et al., (2016) reported that the psychological aspect of the post-test scores in the intervention group was significantly different from the pretest scores.

The findings of this study are consistent with the research of Jafari et al. (2013), who found that there were significant differences in the anxiety scores and emotional function between intervention and control groups. Likewise, Zamaniyan et al. (2016) found that there were significant differences between the two groups. This shows the positive effect of the spiritual intervention on emotional functioning, including anxiety in cancer patients (Jafari et al., 2013; Jafari et al., 2012; Rafsanjani et al., 2017; Zamaniyan et al., 2016).

The intervention of this study consisted of four series of sessions interventions that were provided in two weeks. Previously, this intervention was developed by Jafari et al. (2013), which it was also reported that the respondent in the intervention group experienced a decrease in anxiety after receiving the spiritual intervention.

The breathing techniques have an effect on calming emotional states and reducing anxiety (Jafari et al., 2013). Another relaxation technique in this study was abdominal breathing. Abdominal breathing reduces anxiety in cancer patients and even can be implemented during chemotherapy, the patient should perform it as often as possible (Abbasi et al., 2018; Kashani et al., 2012; Song et al., 2013).

The reduction in anxiety in this study was strengthened by the intervention of control, identity, and especially prayer therapy, in which the respondent was encouraged to improve her relationship with God through religious practices, such as praying and remembering God (*dzikr*) for Muslims and reading the holy book for Christian. The previous studies found that ritual worship (prayer) could reduce anxiety, as indicated by decreasing cortisol levels in the saliva and vital signs of cancer patients (Carvalho et al., 2014; Oh & Kim, 2014; Xing et al., 2018). Cancer patients who undertake prayer therapy experience a decrease in anxiety after performing religious rituals (Carvalho et al., 2014). Prayer therapy can reduce anxiety because it can be a means of communication with God and of

expressing gratitude, asking for help or asking for directions, and expressing hopes and fears (Carvalho et al., 2014; Levine et al., 2012).

Other similar studies that have obtained similar results related to the reduction of anxiety applied several interventions, varying from four to 12 (Jafari et al., 2013; Rafsanjani et al., 2017; Zamaniyan et al., 2016). These variations were developed based on the patients' condition and the resources involved (Oh & Kim, 2014). By running four intervention sessions, this study achieved a decrease in the anxiety of up to 1.76 points, while the research of Zamaniyan et al. (2016), who employed 12 intervention sessions, showed a decrease in the anxiety of 0.248 points. Spiritual intervention in the research of Zamaniyan et al. (2016) included an introduction to the intervention, and sessions on self-consciousness, self-concept, the word of God, altruism, the relationship with holy sites, resentment, forgiveness, death, and fear of death, faith and trust in God, gratitude and a closing session. The characteristics of the respondents in this study and that of Zamaniyan et al. (2016) were relatively similar. The difference in the results of the two studies may have been influenced by other factors, such as differences in the measuring instruments used, resulting in different interpretations of the scores.

This research showed that after the intervention, the mean depression score in the intervention group decreased. Findings by Hosseini et al. (2016) also showed a reduction in depression after the spiritual intervention. Depression alters the immune system through an increase in catecholamines and cortisol and a decrease in T cell activity, which causes depression to worsen. Spiritual intervention can reduce depression, as evidenced by the hormonal balance (Hosseini et al., 2016; Musarezaie et al., 2014).

This study also showed that in the control group there was no change in the depression scores from pretest to posttest, while in the intervention group there was a significant change. This is following Jafari et al. (2013), who found

changes between pre-test and post-test scores in the intervention group. Such intervention improves emotional health and reduces depression in the intervention group (Jafari et al., 2012; Rafsanjani et al., 2017; Zamaniyan et al., 2016). Furthermore, the intervention group experienced a decrease in depression also following the study of Musarezaie et al. (2018), which showed that there was a decrease in depression, as evidenced by a decrease in the depression score after the posttest in the intervention group after they were given spiritual intervention.

This research indicates that before and after spiritual intervention there were significant differences between the intervention and control groups. This is following the research of Sankhe et al. (2017), who showed that after intervention there were significant differences between the intervention and control group and that spiritual intervention could reduce depression and improve emotional well-being, even after monitoring 1, 2, and 6 months (Sankhe et al., 2017). Different results were found by Ghahari et al. (2017), namely that there was no decrease in depressive symptoms or an increase in emotional well-being, a component of the quality of life, after receiving the spiritual intervention. Ghahari et al.'s (2017) research focused on spiritual intervention in the form of increasing the frequency of religious rituals, whereas in this study, apart from facilitating religious practices, the spiritual intervention also included strengthening spiritual coping, facilitating self-acceptance, and increasing positive thinking.

This study shows that there was a reduction in anxiety and depression in the intervention group after receiving the spiritual intervention. This is following a meta-analysis study by Oh and Kim (2014), which showed a significant reduction in anxiety and depression after the spiritual intervention. This was conducted on 14 previous studies representing 889 cancer patients. Another meta-analysis study also showed that spiritual intervention could reduce anxiety and depression in 1239 cancer patients, based on 10

previous randomized controlled trial studies (Xing et al., 2018).

Spiritual intervention can inhibit the production of the hormones norepinephrine and cortisol, which can consequently reduce depression, especially during relaxation and when performing religious rituals (Cornah, 2018; Hosseini et al., 2016). Relaxation in this study resulted in the reaction of focusing on the mind and good cooperation, meaning that concentration and self-control to calmness and reduced the emergence of negative thoughts. This is reinforced by findings from previous studies which suggest that relaxation can help overcome the sleep disorders that can exacerbate depression (Kashani et al., 2012).

Prayer therapy was one of the interventions made in this study, including the effort to ask God for help and guidance and increase the belief that God is the highest healer. These interventions also improved the patients' ability to accept illness, chronic conditions, as well as any lack of social support and family problems (Carvalho et al., 2014; Levine et al., 2009; Tuck, 2012). These conditions can certainly prevent psychological problems, including depression (Levine et al., 2009; Tuck, 2012).

Nursing implications. The complexity of caring for cancer patients is one of the particular concerns for nurses in improving patient welfare. This study shows that spiritual intervention can reduce anxiety and depression and improve the coping and well-being of gynecological cancer patients. The results indicate that spiritual intervention can be relied on as an intervention in holistic nursing services. Understanding related interventions; developing intervention sessions according to patient needs and the availability of resources, and solid health team collaboration in implementing them need to be considered to increase the effectiveness of interventions in achieving optimal results in the reduction of anxiety and depression and improvement in the quality of life of gynecological cancer patients.

Conclusion

Anxiety and depression are forms of psychological distress that often occur in gynecological cancer patients. Spiritual intervention can reduce these. The intervention consisted of four sessions: an introduction and relaxation session, a control intervention session, an identity intervention session, and a relationship and prayer therapy session. The study demonstrated that the series of intervention sessions were effective in reducing anxiety and depression in gynecological cancer patients, as indicated by the decrease in scores after the intervention.

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THE HEALTHCARE NEEDS OF FAMILIES CARING FOR PATIENTS WITH PULMONARY TUBERCULOSIS

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Abstract

Tuberculosis (TB) is a global public health problem. Families need to meet healthcare needs during the treatment of TB sufferers. This study aims to identify healthcare needs of families caring for patients with the disease. The cross-sectional study involved 83 families caring for TB patients. The research was conducted at a Primary Healthcare Center in an urban area in West Java. The results revealed that 60.2% of caregivers were 18–40 years old, 60.2% were female, 51.8% were senior high school educated, 43.4% were housewives, 86.7% had an income under the regional minimum wage, and 55.4% had cared for the TB patients for 3–6 months. The families had healthcare needs for emotional support (mean 33.72, SD 4.16); information support (mean 33.28, SD 4.09); instrumental support (mean 32.4, SD 3.73); and appraisal support (mean 28.01, SD 5.93). The greatest support need was how to encourage clients to take treatment completely (Score: 140); TB treatment information (Score: 138); financial support for chest x-ray costs (Score: 114); and how to assess patient behavior in maintaining health (score: 133). Based on the study result, the families need to improve their ability to give appraisal support during the patient's treatment. The identification of families' healthcare needs in caring for patients with pulmonary TB can provide primary data for developing innovative programs integrated with DOTS programs in healthcare services to improve family support.

Keywords: family nursing, pulmonary Tuberculosis, support system

Abstrak

Kebutuhan Perawatan Kesehatan Keluarga yang Merawat Pasien Tuberkulosis. Tuberkulosis (TB) merupakan masalah kesehatan masyarakat global. Keluarga harus memenuhi kebutuhan perawatan kesehatan selama pengobatan pada pasien TB. Penelitian ini bertujuan untuk mengidentifikasi kebutuhan perawatan kesehatan pada keluarga yang merawat pasien TB. Penelitian cross-sectional ini melibatkan responden sebanyak 83 keluarga yang merawat pasien TB. Penelitian ini dilaksanakan di sebuah Puskesmas di Kota Depok, Jawa Barat. Penelitian ini melaporkan sebanyak 60,2% berusia 18–40 tahun, 60,2% perempuan, 51,8% lulus sekolah menengah atas, 43,4% ibu rumah tangga, 86,7% pendapatan di bawah upah minimum regional, 55,4% merawat pasien TB selama 3–6 bulan. Keluarga memiliki kebutuhan perawatan kesehatan untuk dukungan emosional (rerata 33,72, SD 4,16), dukungan informasi (rerata 33,28, SD 4,09), dukungan instrumental (rerata 32,4, SD 3,73), dukungan penghargaan (rerata 28,01, SD 5,93). Kebutuhan tertinggi yaitu bagaimana mendorong pasien melakukan pengobatan secara tuntas (140), informasi pengobatan TB (138), dukungan keuangan untuk biaya pemeriksaan rontgen (114), dan bagaimana mengkaji perilaku pasien dalam mempertahankan kesehatan (133). Keluarga membutuhkan peningkatan kapasitas dalam memberikan dukungan penghargaan selama pengobatan pasien. Kebutuhan akan perawatan kesehatan pada keluarga yang merawat pasien TB dapat dijadikan data dasar dalam mengembangkan program inovatif terintegrasi dengan program DOTS di fasilitas layanan kesehatan dalam meningkatkan dukungan pada pasien TB.

Kata kunci: keperawatan keluarga, sistem dukungan, Tuberkulosis paru

Introduction

Tuberculosis (TB) remains a community health problem around the world, especially in develop-

ing countries. TB diseases regulated in the 2015–2030 Sustainable Development Goals (SDGs) focus on controlling TB. Indonesia is one of the countries with the highest prevalence of pulmo-

nary TB in ASEAN and ranked second after India. Sixty percent of new TB cases reported in India, Indonesia, China, Nigeria, Pakistan, and South Africa. The disease is the tenth highest cause of death globally and can cause dangerous complications if not treated thoroughly. More than 95% of total cases (1.4 million cases), pulmonary TB deaths occur in developing countries (WHO, 2016). The prevalence of pulmonary TB in Indonesia was 330,910 cases in 2016. West Java is the province with the highest number of new cases, with 23,774 in 2016 (Ministry of Health Republic of Indonesia, 2017). Depok City had 2,823 cases of TB in 2016 (Depok Health Office, 2018). This number increased compared to 2015 when the figure stood at 2,563. Cimanggis District is the area with the highest number of pulmonary TB cases in Depok City, 32 cases in 2017. Various efforts can control and prevent the increasing number of TB cases in Indonesia.

The provision of the BCG vaccine is one of the efforts to prevent the transmission of TB. However, the results show it has not reduced morbidity and mortality (Ministry of Health Republic of Indonesia, 2017). Therefore, various kind of programs have been implemented, such as the capacity building of human resources. However, the number of incomplete treatment cases is still high. The limited knowledge of clients and families regarding TB and the demand for care during treatment cause poor treatment (Putera et al., 2015). Efforts to prevent TB transmission need to be made, not only by patients but also by families, as the closest party in healthcare and decision making. The lack of public attention to these efforts also increases the number of TB cases. Therefore, family, community, and health service participation can control transmit TB in the community.

Previous studies explain that family functions in the care of TB patients play two central roles: as a source of support or information and in assistance in overcoming the disease until treatment is complete. The goal is to reduce morbidity and mortality (Rezal et al., 2019). Factors

that influence the efforts to prevent TB transmission include the role of each family member and knowledge about the needs in providing care to TB patients. Families play an essential role in emotional, instrumental, and appraisal supports (Biswas, 2010). Besides, family awareness and knowledge need to be improved to minimize the risk of TB transmission.

In a preliminary study of six Drug Swallowing Supervisors (DSS) in Cimanggis Primary Healthcare Center, more than two stated that they faced constraints in meeting emotional, information, and instrumental needs. In contrast, they all faced conditions in meeting the needs for rewards while caring for pulmonary TB patients. Families need to seek information so they can treat TB clients and make treatment successful. TB patients need: 1) information support, which includes information on knowledge related to TB, and the advice that needs to be conveyed to TB clients when they are experiencing stress due to the side effects of drugs or other issues; 2) appraisal support, including involving TB clients in decision making, accepting feedback and giving positive rewards; 3) emotional support, including a sense of empathy, attention, and a caring attitude towards TB clients; 4) instrumental support, in the form of direct help, either financially for medical or transportation costs, or help in providing healthy nutrition (Biswas, 2010).

Emotional needs had the highest percentage (96.49% of families) (Rachmawati et al., 2015). The treatment of pulmonary TB takes 6–12 months and makes TB clients unwilling to take medicine or continue the treatment because of long-term treatment duration. Therefore, the risk of preventing the treatment non-adherence relatively high and becomes one of the problems faced by the family in motivating clients. The actual problem happens if it will lead to family despair in caring for TB clients. This study is in line with a study conducted by Hannan and Hidayat (2013), who state that a good family takes the lead in making treatment successful and has a high awareness of the care for TB clients.

Rezal et al. (2019) state that families who understand emotional support will fulfill patients' needs, so there is the potential for successful treatment of TB clients and recovery. Furthermore, Hayati et al. (2012) argue that with complete information about the treatment of pulmonary TB, families can undertake the healthcare functions for pulmonary TB clients who are undergoing treatment. Pulmonary TB clients need medical therapy and positive attention and feedback from the family (Sukumani et al., 2012).

The support and motivation from the family have influenced the success of TB treatment. The family always reminds the patient to take their medicine regularly and, in general, take care of them. Support needs are provided to patients when they comply with the treatment and have confidence in their recovery (Kartikasari & Handayati, 2012). This study describes the healthcare needs of families in caring for patients with pulmonary Tuberculosis.

Methods

The study is a cross-sectional study with convenience sampling. The samples were 83 families or DSS who collected medicine from the primary healthcare center in Depok City. The researcher's assistant conducted the data collection following the anti-TB drug collection schedule in each primary healthcare center. The respondents were given research information and asked for informed consent before completing a questionnaire. The inclusion criteria included families who care for TB patients who have positive sputum smear results and have clinical symptoms; as a drug swallowing supervisor undergoing six-month treatment; DSS aged 18–59; was conscious and compos mentis; and were cooperative.

On the other hand, the exclusion criteria were families with cognitive or mental disorders or illiterate. The research modified the family support for pulmonary TB questionnaire developed by Solikhah and Fitriyani (2018). The questionnaire consisted of family characteristics and fa-

mily needs, had an acceptable validity value of 0.364–0.738, with a reliability value of 0.826. The instruments have tested on 30 families that had the same criteria in other areas. Data analysis was the 95% significance level ($\alpha = 0.05$), and the data analyzed with univariate analysis using computer software (SPSS version 25).

Results

Table 1 shows the characteristics of the families caring for pulmonary TB patients, including age, gender, educational background, type of work, monthly income, and length of care for the patients. The table shows that most of the DSS were 18–40 years old (adults) (60.2%); female (60.2%); had completed education equal to high school (51.8%); housewives (43.4%); as many as 86.7% had income below the regional minimum wage (IDR3,297,489 equal to USD 226.95), and just over half had treated the patients for 3–6 months (advanced stage) (55.4%). Table 2 describes the needs of the family as caregivers of TB patients. Based on research result in Table 2, it explains that the families who are caring TB patients had healthcare needs for emotional support (mean 33.72, SD 4.16); information support (mean 33.28, SD 4.09); instrumental support (mean 32.4, SD 3.73) and appraisal support (mean 28.01, SD 5.93).

As seen in Table 3 about healthcare needs of families based on emotional, informational, instrumental, and appraisal support, caregivers in the highest aspect of emotional support are how to complete TB treatment with a score of 140, with the lowest figure relating to how to relieve stress, with 125. In the information support aspect, the highest need for care is how to treat TB patients, with a score of 138, and the lowest is how to fulfill health needs, with a score of 122. About instrumental support, the highest care need is financial assistance for transportation, with a score of 112, and the lowest is help in providing food, with a score of 89. The requirements in assessment support are to assess client behavior (score of 133), and the lowest is how to give authority, with a score of 118.

Discussion

Most of the DSS were adults. The findings regarding age characteristics in this study are similar to those of Firdaus and Widodo (2012), whose participants were 15–50 years old. Early adult age is a productive age group with a higher level of mobility and social interaction. Families who become DSS must have high mobility because they have to accompany TB clients every week or month to take TB drugs or undergo supporting investigations. The DSS must also interact with health workers, the community, and other DSSs while accompanying TB

clients in the treatment process. Early adults are responsible for completing their family tasks and caring for TB clients (Herawati et al., 2015). The families who participated in this study were primarily female. This study is similar to the study of Lailatul et al. (2015) about family efforts to prevent TB transmission among family members, in which most participants were female. This study also describes that women pay more attention to health and are willing to use healthcare facilities. Therefore, they will be more concerned about the health problems experienced by TB clients and convince them to visit healthcare centers (Panjaitan, 2012).

Table 1. Family characteristics (n = 83)

Variable	Category	n	%
Age	18–40 years old (early adult)	50	60.2
	41–60 years old (middle adult)	33	39.8
Gender	Male	33	39.8
	Female	50	60.2
Education	Not graduated from elementary school	2	2.4
	Elementary school	11	13.3
	Junior high school	21	25.3
	Senior high school	43	51.8
	University	6	7.2
Occupation	Private employee	13	15.7
	Housewife	36	43.4
	Laborer	13	15.7
	Student	2	2.4
	Entrepreneur	6	7.2
	Other	13	4.8
Income	< IDR3,297,489	72	86.7
	≥ IDR3,297,489 (Minimum Wages Regional Depok City)	11	13.3
Time caring for pulmonary TB patients	0–2 months	37	44.6
	3–6 months	46	55.4

Table 2. Healthcare needs of families caring for pulmonary TB patients (n = 83)

Variable	Mean	SD	Min–Max
Emotional support	33.72	4.16	19–40
Informational support	33.28	4.09	16–40
Instrumental support	32.40	3.73	24–40
Appraisal support	28.01	5.93	10–40

Table 3. Healthcare Needs of Families Based on Emotional, Informational, Instrumental, and Appraisal Support

Type of Healthcare Need	Subvariables	Score	n	%
Emotional support	How to encourage taking treatment until complete	140	44	44.6
	How to encourage patients feeling bored with their treatment	134	39	47.0
	How to give motivation	136	45	54.2
	How to reduce anxiety	130	48	57.8
	How to relieve stress	125	47	56.6
	How to communicate well	134	47	56.6
	How to care with affection	138	44	53.0
	How to give a sense of security	136	45	54.2
	How to give a sense of comfort	134	48	57.8
	How to give attention	133	46	55.4
Informational support	How to prevent TB transmission	123	51	61.4
	How to treat TB	138	45	54.2
	Video related to taking medicine	133	46	55.4
	Information about treatment benefits	131	44	53
	Information about side-effects of treatment	123	51	61.4
	How to monitor treatment	129	44	53
	How to meet health needs	122	53	63.9
	Information about healthy diets	134	41	49.4
	Information about the need for adequate rest	131	39	47
	How to prevent bad habits	133	42	50.6
Instrumental support	Financial assistance for transportation	112	51	61.4
	Financial assistance to pay for drugs	111	50	60.2
	Financial assistance for daily living costs	104	53	63.9
	Financial assistance for sputum checking	110	57	68.7
	Financial assistance for x-ray examinations	114	49	59
	Financial assistance for other needs	104	41	49.4
	Help in taking medicine	96	49	59
	Help in providing food	89	42	50.6
	Help in supervising the taking of medicine	93	50	60.2
	Help caring for patients	91	50	60.2
Appraisal support	How to reduce negative self-assessment of patients	126	49	59
	How to reduce negative public stigma	124	44	53
	How to set time for discussion	126	44	53
	How to arrange a time to travel	125	42	50.6
	How to involve patients in making decisions	126	43	51
	How to assess patient behavior	133	47	56
	How to give a reward when a patient is compliant with taking medicine	125	40	48
	How to give praise when the patient maintains their health	131	34	41
	How to involve patients in family events	120	34	41
	How to give authority	118	36	43.4

Most of DSS had graduated from senior high school. Data from Statistics Indonesia (2016) show that most of the population of Depok City had at least a high school education or equivalent. The level of education affects the suc-

cess of treatment for TB clients. Families who understand TB will be more concerned about the patients' health problems, so they will be willing to act as DSS (Panjaitan, 2012). Half of the DSS were housewives; the 2013 Basic Health

Research report shows that homemakers dominated families who cared for TB clients. In this study, DSS felt more flexible as housewives, had more time to care for the pulmonary TB clients (Ministry of Health Republic of Indonesia, 2013).

Moreover, they can adjust their daily activities according to their needs, which is different from workers who have to follow a predetermined working time. The income of almost all the families (86.7%) was below Depok City's regional minimum wage (IDR 3,297,489). Arikunto and Jabar (2009) state that economic factors influence the causes of infectious diseases. Pulmonary TB is a contagious infectious disease related to poverty factors. Based on WHO (2016) report data, nearly 90% of pulmonary TB sufferers globally have low socio-economic conditions. Poverty affects people's purchasing power for basic needs, so they unmeet the nutritional intake necessary (Panjaitan, 2012).

Most families had been treating the patients at the advanced stage for 3–6 months. The study results show that some families who were given treatment at the initial stage (0–2 months) refused to participate as they were busy and embarrassed. Those who had been treating patients for 3–6 months said they were compliant with treatment and would soon be completed. However, they felt that they needed to obtain further information to prevent relapse. Half of the families in the research had little interest in meeting the emotional needs of the patients.

Contrary to a study by Rachmawati et al. (2015) related to the psychosocial needs of families with pulmonary TB sufferers, emotional needs had the highest percentage, 96.49%. Emotional support is given in the form of love, empathy, respect, listening, attention, caring, and positive feelings. This support can increase self-confidence and reduce the stress levels of patients during the treatment period. Adaptive coping will be formed with emotional support, thus helping the patients deal with their health problems (Kaakinen et al., 2010). Based on the stu-

dy results, families need interventions to fulfill the emotional needs of the patients, such as by giving the motivation to complete the treatment, feeling empathy, being good listeners, giving positive feelings, improving coping, and motivating abilities.

The families needed to fulfill information needs. In line with Hayati et al.'s (2012) research, the provision of complete information about the treatment of pulmonary TB can affect the healthcare function and optimize the treatment of family members suffering from pulmonary TB. Hendesa et al. (2018) state that family knowledge about pulmonary TB becomes a fundamental skill to give informational support for TB patients. Informational support could be advice, suggestions, direction, and constructive instructions to improve the health status of the patients (Biswas, 2010). Moreover, this support suppresses 'patients' stressors because the information provided can generate positive suggestions. Based on the results of this study, families have sufficient knowledge about pulmonary TB because health professionals provide health education at the time of anti-TB drug retrieval schedules and examination of TB patients. Nevertheless, families still need information about treating pulmonary TB, especially how to manage drugs' side effects.

Instrumental support is provided in financial help, food and drink provision, energy, time, and the provision of a comfortable environment (Biswas, 2010). Although almost all the families have incomes below the Depok City minimum regional wage (IDR 3,297,489), they had everyday needs for increasing instrumental support. The TB patients need these aspects during treatment because most of them stop working during this period, so they do not receive a fixed income every month. Based on the study results, families have standard financial terms because of the costs of TB treatment borne by national health insurance. Families only need to pay for transportation to healthcare facilities. Other prices include those of chest x-rays, which must pay independently. The families do not need

instrumental support because their residence is quite close to the healthcare facilities. The family residence area is also close to the village midwife's house and health cadres, making access easier.

Half of the families had a high need to fulfill the requirements for giving the award to TB patients to improve treatment adherence. Appraisal support gives positive feedback and rewards (Biswas, 2010) and this support motivates TB patients during treatment. Therefore, TB patients can fulfill their self-actualization needs in the community. The high family needs related to increasing appraisal support are due to the inability of families to provide feedback and appreciation for sufferers by demonstrating an attitude of encouragement or approval of ideas and giving praise when a patient takes their medication regularly. Pulmonary TB patients need medical therapy to recover and require positive attention and feedback from their families (Sukumani et al., 2012). Based on the study results, families need interventions to improve their ability to assess daily patient behavior in maintaining health.

Conclusion

Some families have a high interest in increasing appraisal support. The order of family needs to offer support is emotional, informational, appraisal, and instrumental support. The family needs to fulfill emotional support to motivate patients to follow their treatment; information support needs refer to treatment methods. Besides, instrumental support relates to providing financial help for chest x-ray examinations and appraisal support regarding assessing healthy behavior. Suggestions for further research include increasing research sites so that the research scope is broader than the recent study, identifying factors that influence family support provision for TB patients, and developing interventions that improve families ability to provide patient support.

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THE SMOKING BEHAVIOR OF HEALTH WORKERS IN ASIA: A LITERATURE REVIEW

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Abstract

Health workers are role models in preventing smoking behavior, yet many are smokers themselves. This study reviews and analyzes the smoking behavior of health workers in Asian countries, based on databases such as PubMed, EBSCO, and Google Scholar in 2013–2018. It is shown that the prevalence of smoking amongst health workers was 4.6–44%, with the nursing profession showing a higher level than other health professions and with a higher ratio of male to female smokers. Health workers are aware of the dangers of smoking, including the effects of cardiovascular disease, respiratory disease, oral cancer, atherosclerosis, hypertension, fetal disorders, and infertility. However, the factors that lead to smoking include stress, the influence of friends or family who smoke, and addiction. Health workers are responsible for providing smoking prevention education. However, there are still obstacles to its implementation due to their smoking habits and lack of expertise in educating others. Smoking prohibition policies in the workplace, the training of health workers, and smoking prevention service facilities need to be considered by Asian countries to prevent smoking.

Keywords: health worker, role model, smoking behavior

Abstrak

Analisis Perilaku Merokok pada Petugas Kesehatan di Asia: Literatur Review. Petugas kesehatan merupakan role model dalam pencegahan perilaku merokok, akan tetapi masih banyak petugas kesehatan yang merokok. Studi ini meninjau dan menganalisis perilaku merokok petugas kesehatan di negara-negara Asia, bersumber pada basis data seperti PubMed, EBSCO, dan Google Scholar, tahun 2013–2018. Hasil studi menunjukkan perilaku merokok petugas kesehatan memiliki prevalensi sebesar 4,6–44% dengan profesi keperawatan menunjukkan tingkat yang lebih tinggi daripada profesi kesehatan lainnya, dan dengan rasio perokok laki-laki lebih tinggi dari perokok perempuan. Petugas kesehatan menyadari bahaya merokok dan dampak penyakitnya seperti penyakit kardiovaskuler, penyakit pernapasan, kanker mulut, aterosklerosis, hipertensi, gangguan janin, dan kemandulan. Faktor yang memengaruhi merokok adalah stres, pengaruh teman atau keluarga yang merokok, dan kecanduan. Petugas kesehatan bertanggung jawab untuk memberikan pendidikan pencegahan merokok. Namun, masih terdapat kendala dalam pelaksanaannya karena kebiasaan pribadi merokok mereka dan kurangnya keahlian dalam mendidik orang lain. Kebijakan larangan merokok di tempat kerja, pelatihan tenaga kesehatan, dan fasilitas layanan pencegahan merokok perlu diperhatikan oleh negara-negara Asia untuk pencegahan perilaku merokok.

Kata kunci: perilaku merokok, petugas kesehatan, role model

Introduction

Smoking is a major health problem, causing increased cardiovascular disease, lung disease, and cancer. Cigarettes have contributed to killing 7 million people in the world. WHO estimates that 20.2% of the world's population aged ≥ 15 (34.1% of men and 6.4% of women) were ac-

tive smokers in 2015 (WHO, 2018). The prevalence of smoking in the Southeast Asian region in 2015 reached 17.2% of the total population, including 32.1% of men and 2.3% of women (WHO, 2018).

Efforts to prevent and reduce smoking are a primary concern of health workers in reducing

smoking-related problems (La Torre et al., 2013). In addition to playing an important role (being a role model) in the promotion of healthy behavior and prevention of smoking, health workers must also personally value their health, shape health values in the community, and influence people to stop smoking (Hurley et al., 2015; La Torre et al., 2014).

The prevalence of health workers' smoking behavior in Bernadini Italia Hospital in 2012 showed a relatively high number, reaching 47% of the general population of 90.000 (Giorgi et al., 2015). Low smoking prevention education and training in the health education curriculum leading to the high incidence of smoking among health workers (Sreeramareddy et al., 2018). The smoking behavior of health workers is influenced by social status, politics, the economy, culture, and stress due to workload (Lillard & Christopoulou, 2015). Other factors influencing smoking behavior are education, the influence of friends who smoke, previous smoking experience, addiction, and feelings of calm (Juranić et al., 2017; Hamadeh et al., 2018; Sheals et al., 2016).

The attitudes and behaviors of health workers have been proven to be determinants of the effectiveness of smoking policies in the workplace; the implementation of 100% smoking prohibition regulations would reduce the prevalence of employees' smoking behavior (Centers for Disease Control and Prevention US et al., 2010). Health workers must be an excellent example by quitting smoking to benefit themselves and their patients (La Torre et al., 2013). By smoking, health workers have weakened their role as providers of promotive and preventive health services for the community and are less likely to advise patients to quit smoking (Duaso et al., 2017).

Health workers need to be trained to acquire competencies and skills to assist patients in preventing smoking through smoking prevention training programs. Several studies have shown that health professionals who undergo smoking

prevention training will improve the competency and consistency in advising patients to quit smoking more significantly than those who do not (Sarna et al., 2018). Based on these problems, the researchers in this study are interested in further examining published articles on the smoking behavior of health workers in Asia.

Methods

Data Sources. Articles were obtained through various online journal databases, such as PubMed, EBSCO, and Google Scholar. The literature search was conducted by identifying relevant articles using specific keywords such as smoking behavior, cigarettes, and health workers. The literature identification was also limited by the inclusion criteria, namely articles with a statement of research authenticity published in 2013–2018, whose research location was in Asian countries. Moreover, the article had to meet the following methodology criteria: (1) explanation of the research objectives; (2) explanation of the research population or sample; (3) use of a suitable data collection method; (4) use of valid measurement tools; (5) presentation of clear and measurable analysis results; and (6) presentation of clear and precise findings.

Data Selection and Analysis. In the data extraction process, irrelevant articles such as those on smoking behavior in the general population and those using research locations outside of the Asian region were omitted, resulting in 302 relevant articles based on the titles and abstracts. These were then reselected, and 20 were omitted due to duplication, leaving 282 relevant articles based on the titles and abstracts. Of these 282, 193 were eliminated because they did not meet the inclusion criteria, leaving 89 articles identified based on their eligibility. Subsequently, 71 of these 89 were omitted because they did not meet the methodological criteria, leaving 18 complete articles that met the inclusion and methodological criteria. The data selection strategy and data analysis adopted the Prisma-P 2015 flowchart (Moher et al., 2015).

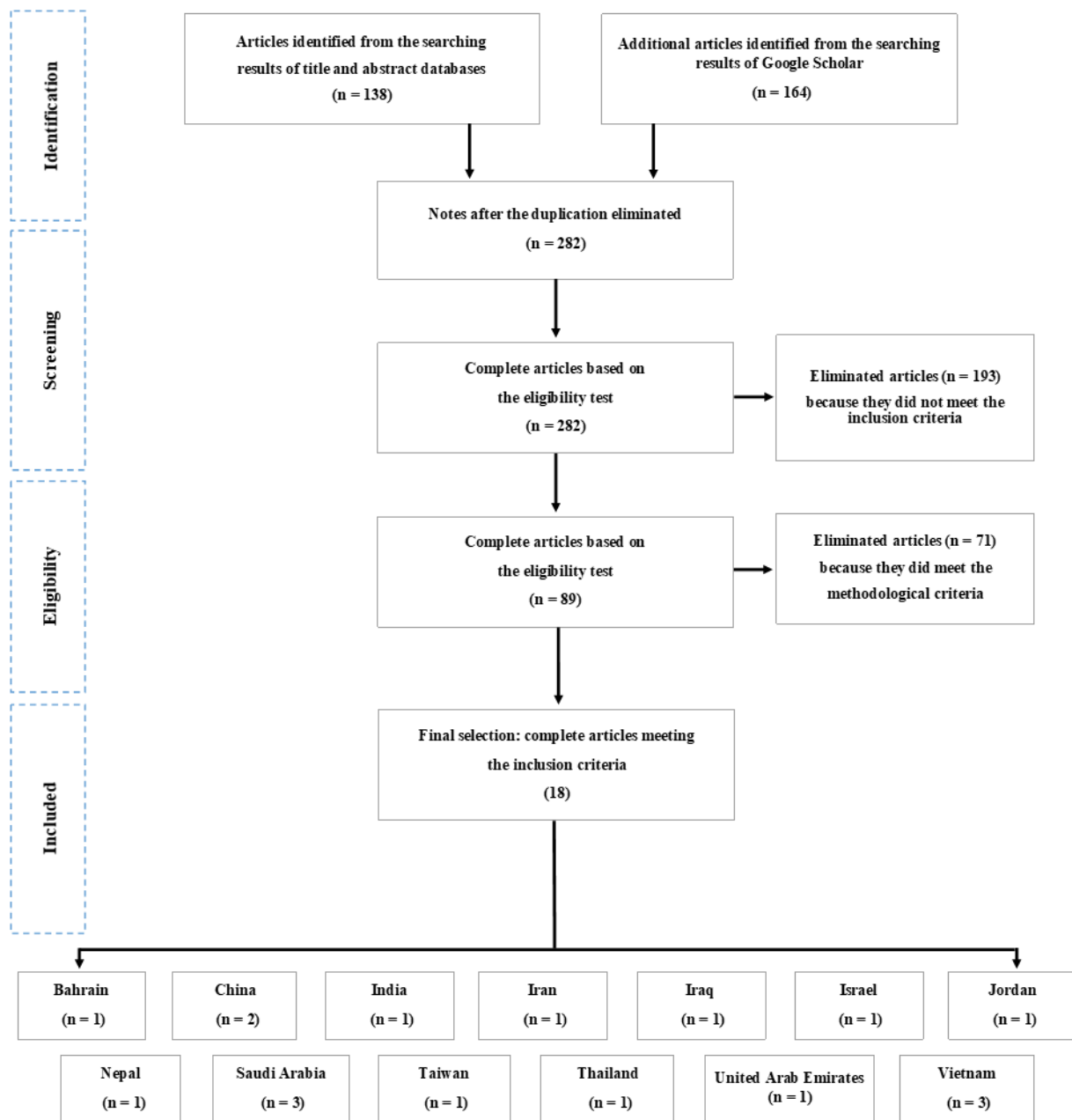


Figure 1. Prisma Diagram of the Systematic Data Searching and Extraction

Results

The analysis and selection based on the research inclusion and methodological criteria resulted in 18 research articles as data for the literature review. The identified research articles were then grouped based on the research locations, namely Bahrain (n = 1), China (n = 2), India (n = 1), Iran (n = 1), Iraq (n = 1), Israel (n = 1), Jordan (n = 1), Nepal (n = 1), Saudi Arabia (n =

3), Taiwan (n = 1), Thailand (n = 1), United Arab Emirates (n = 1), and Vietnam (n = 3).

All the articles used were published during 2013–2018; more precisely, four were published in 2013, four in 2014, two in 2015, five in 2016, two in 2017, and one in 2018. They were mostly published in international journals indexed on reputable databases such as Scopus, Medline, PubMed, and EBSCO, with three from Google

Scholar. Seventeen of the articles employed quantitative methods with a cross-sectional design ($n = 12$), survey ($n = 2$), population study ($n = 1$), descriptive study ($n = 1$), or randomized controlled trial (RCT) ($n = 1$), while one article used a focus group-qualitative method with interview guidelines.

Demographic Characteristics of Healthcare Workers in Relation to Smoking Behavior.

The demographic characteristics of the respondents in each study included data on gender, age, marital status, education level, and citizenship. These scientific research articles involved respondents who worked as doctors, nurses, dentists, medical assistants, public health workers, pharmacists, midwives, and other health workers (see Table 1).

This research categorized respondents based on gender (male or female). Two articles did not include this, while one only included female respondents. Based on the respondents' age, 14 articles were based on respondents aged 22 to 53, while the other four did not include age. Concerning marital status, seven articles were dominated by married respondents, followed by single, divorced (widow/widower), and undisclosed status. Meanwhile, in relation to educational level, two articles involved respondents with a high school education, seven articles involved ones with undergraduate or postgraduate degrees, while the remainder did not include educational information.

The research location of the articles is shown in Table 1. The research sites consisted of public hospitals, teaching hospitals at universities, community health service centers, and smoking cessation service clinics. Mahfouz et al. (2013) focused on respondents from Saudi Arabia, with a minority from India and Egypt. On the other hand, Al Hosani et al. (2015) employed two nationality groups, the United Arab Emirates and the non-United Arab Emirates. Moreover, Hamadeh et al. (2018) refer to two nationalities, Bahrain and a minority of Arab and South Asian communities.

Smoking Behavior in Health Professionals.

Out of the total of 18 articles, five specifically discuss the smoking behavior of doctors and dentists, two discuss the smoking behavior of nurses, and two discuss the smoking behavior of doctors and nurses. The other nine articles discuss health professionals in general (doctors, nurses, dentists, medical assistants, public health workers, pharmacists, midwives, and other health workers).

The smoking behavior of health professionals showed a prevalence of 4.6% to 44% (Chang et al., 2016; Shelley et al., 2014). Moreover, another article was based on a large sample of 112 smokers (26.5%), with a higher prevalence of smoking among nurses (40.2%) than other health professions (Alkhatatbeh et al., 2016).

Regarding gender-based smoking behavior, nine articles showed that the number of male smokers was 106 (44.49%), higher than that of female smokers, at only five (2.7%). Health workers' smoking intensity of fewer than five cigarettes per day was 25.5% for males and 22.6% for females. In comparison, a smoking intensity of more than ten cigarettes per day was shown by 32.1% of the males and 6.5% of the females (Mahfouz et al., 2013).

Knowledge of Health Workers of Smoking Behavior.

As explained in 15 research articles, the health workers agreed that both active and passive smoking harmed health because it increased the risk of cardiovascular disease, respiratory disease, oral cancer, atherosclerosis, and hypertension, amongst other diseases (Abdulateef et al., 2016; Hamadeh et al., 2018). The respondents believed that smoking was harmful to the fetus in pregnant women and increased the risk of neonatal death (Alkhatatbeh et al., 2016). They also believed that the nicotine content in cigarettes could lead to a risk of male infertility (Chang et al., 2016).

Respondents who were doctors were aware of the benefits of quitting smoking, one of which is a reduction in the risk of coronary heart disease

(Tang et al., 2013). Hoseinrezaee et al. (2013) report that the emergence of smoking-related diseases in the children of health workers was due to smoking habits in their family environment. Three other articles reported that health workers' motives to quit smoking were related to health factors (Shkedy et al., 2013; AlTurkstani et al., 2016; Hamadeh et al., 2018).

Six articles mentioned the factors influencing the smoking behavior of health workers, namely stress, the influence of friends and family who smoked, and addiction. Hamadeh et al. (2018) report that the main reason their respondents started smoking was the influence of friends. Similarly, AlTurkstani et al. (2016) found that in addition to the factors of stress, nicotine addiction, and personal desires, living or working with friends or colleagues who smoked could also influence health professionals' decision to smoke.

The Attitude of Health Workers towards Smoking Behavior. As health service providers, health workers are responsible for providing education on the dangers of smoking and giving advice on quitting. Alkhatatbeh et al. (2016) found that 92% of health workers were responsible for advising patients on giving up smoking. In another study, it was found that 89.9% of doctors advised smokers not to smoke around children (AlTurkstani et al., 2016).

The smoking behavior of health workers can be an inhibiting factor in educating people on its dangers. Seven articles explain that one of the factors inhibiting health workers from educating people on the dangers of smoking and providing smoking cessation services was their smoking behavior. Other inhibiting factors were that health workers were not comfortable providing education, considered it useless, or felt irrelevant to their professional expertise (Shkedy et al., 2013).

In addition, according to public health workers in Vietnam, the inhibiting factors in providing health education on the dangers of smoking in-

cluded the lack of special programs provided by the Ministry of Health, the lack of policies and support, low involvement of health workers, the lack of government-issued smoking cessation program regulations, and the absence of specialized smoking prevention training by health workers (Shelley et al., 2014).

Public health workers in Vietnam supported good communication training for smoking cessation counseling. In this literature review, a lack of smoking prevention training for health workers was found in several articles. Around 72% of health workers in the United Arab Emirates and 78.4% of public health workers in Vietnam had not received specialized smoking prevention training (Al Hosani et al., 2015; Nguyen et al., 2017). This literature review also found a low acceptance rate for smoking prevention training in several articles, such as in Iraq (6.5%), Jordan (25.5%), Thailand (24%), Saudi Arabia (23.6%), and Vietnam (29%). In addition, only 63.6% of health workers in the United Arab Emirates were interested in joining smoking cessation and prevention training (Shelley et al., 2014; AlTurkstani et al. 2016; Chatdokmaiprai et al., 2017; Al-khatatbeh et al., 2016; Abdulateef et al., 2016).

Khaeradmand et al. (2013) found that health workers supported smoking prohibition policies in public places and workplaces, while a study in Iran also showed that most health workers (80.9%) agreed with smoking bans in the workplace Hoseinrezaee et al. (2013). The same support was given by 101 health workers (82.5%) in the United Arab Emirates, who stated that smoking in public places should be prohibited, while 88.3% of health workers supported smoke-free health care centers and hospitals (Al Hosani et al., 2015). In Jordan, a total of 381 (95.2%) health workers supported the prohibition of smoking in public places, especially in hospitals and health care centers (Alkhatatbeh et al., 2016). In line with this, a qualitative study in Vietnam showed that health workers agreed with smoking prohibition regulations in public areas, including public transport (Shelley et al., 2014).

Table 1. Demographic Characteristics and Smoking Behavior of Respondents

Author	Research Design	No. of Respondents and Gender	Response/Retention Level	Age Range/ Marital Status	Research Site	Respondents' Education	Smoking Behavior
Tang et al. (2013) China	Randomized cluster cross-sectional survey	354 doctors (59.4% men; 40.6% women)	92%	-	Cardio-vascular Hospital	Undergraduate (S1); Postgraduate (S2)	Total male doctor smokers: 13.47%; Former smokers: 12.20% primary hospital doctors, 16.60% secondary hospital doctors, 2.94% tertiary hospital doctors.
Hoseinrezaee et al. (2013) Iran	Descriptive study	524 doctors & nurses (56.3% men; 43.7% women)	Nurses: 51.3%; Doctors: 48.7%	50.4% married, 49.6% single	Hospital at Kerman University of Medical Sciences	Undergraduate (S1); Postgraduate (S2)	Total smokers: 21.2%; Current smokers: 8% of nurses, and 7.7% of doctors; Former smokers: 8% of nurses and 2.6% of doctors; Smoking types: Tobacco cigarettes or <i>hookahs</i> .
Shkedy et al. (2013) Israel	Cross-sectional anonymous survey	90 doctors (58.9% men; 41.1% women)	-	Average age of 44.9 years with a married status	Hospitals in Israel	-	Current smokers: 15 doctors (16.7%); 18.9% of men and 13.5% of women; Former smokers: 21 doctors (23.3%); Age when first smoked ranging from 6–25 years with an average age of 18.2 ± 5.7 y.o. without gender difference.
Mahfouz et al. (2013) Saudi Arabia India Egypt Sudan	Survey with questionnaire	736 health workers (55% men; 45% women)	87.3%	Age group of ≥ 35 years; age group of ≤ 35 years	Public Hospitals and Primary Community Health Centers in Abha City	-	Total smokers: 26.3%; Current smokers: 14.8%; Former smokers: 11.5%; Prevalence of male smokers (36.3%): current smokers (19.3%), former smokers (17.0%). Prevalence of female smokers (14.2%): 9.4% current smokers and 4.8% former smokers; Smoking intensity of ≤ 5 cigarettes per day: 25.5% of men and 22.6% of women; Smoking intensity of ≥ 10 cigarettes per day: 32.1% of men and 6.5% of women; Smoking type: cigars and <i>shisha</i> .

*resp't: respondents; y.o.: years old

Table 1. Demographic Characteristics and Smoking Behavior of Respondents (continuance)

Author	Research Design	No. of Respondents and Gender	Response/ Retention Level	Age Range/ Marital Status	Research Site	Respondents' Education	Smoking Behavior
Shelley et al. (2014) Vietnam	Focus group	29 health workers (35% men; 65% women)	-	Age range of 33–67 with an average age of 53	Community health centers	-	Current smokers: 44% of men and none of the women.
An et al. (2014) China	Cross-sectional survey	801 nurses (11.8% men; 88.2% women)	99.3%	Average age of 31.2 ± 7.1 years; 387 married resp't (48.4%)	Hospitals	Health Vocational High School (SMK); Associate Degree Diploma; Undergraduate	Total smokers: 7.6% (48.9% of men and 2.1% of women).
Shelley et al. (2014) Vietnam	Cross-sectional survey	134 health workers (20.1% men; 79.9% women)	95%		Community Health Centers		13 current smokers (9.7%); 12 former smokers (8.9%).
Ghimire et al. (2014) Banke Village, Nepal.	Cross-sectional study	108 health workers (42.60% men; 57.40% women)	81.40%	≤ 30 y.o.: 88 resp't (81.40%); $30-50$ y.o.: 12 resp't (11%); ≥ 50 y.o.: 8 resp't (7.60%) Average age: 27.35	Community Health Centers		Total smokers: 42 (38.9%) [30 men (16.66%), 12 women (1.22%)].
Aggarwal et al. (2015) India	Cross-sectional study	422 health practitioners (70.1% men 29.9% women)	85.7%	$20-29$ y.o. (health practitioners) and $40-49$ y.o. (dentists)	Health Professional Practices	Undergraduate (S1); Postgraduate (S2 and S3)	Total smokers: 98 (23.2%) [36 dentists (18.8%) 62, medical practitioners (26.8%)].
Al Hosani et al. (2015) UAE and non-UAE	Survey	122 doctors & nurses (20.5% men; 79.5% women)	89 %	≤ 30 y.o.: 22 resp't (18%); $30-50$ y.o.: 75 resp't (61.4%); ≥ 50 y.o.: 25 resp't (20%); Average age: 31–40; Married: 77%; Single: 18%; Divorced: 4.9%	Community Health Centers	-	Current smokers: 8.3%; Former smokers: 3.3%; 1–10 cigarettes per day: 42.9%; 10–20 cigarettes per day: 66.7%; Smoking types: Tobacco cigarettes and <i>shisha</i> .

*resp't: respondents; y.o.: years old

Table 1. Demographic Characteristics and Smoking Behavior of Respondents (continuance)

Author	Research Design	No. Of Respondents and Gender	Response/ Retention Level	Age Range/ Marital Status	Research Site	Respondents' Education	Smoking Behavior
AlTurkstani et al. (2016)	Cross-sectional study	262 doctors (68.70% men; 31.30% women)	-	25–35 y.o.: Single: 22.5% Married: 77.5%	Community Health Centers/ Clinics	-	Occasional smokers: 7.3%; Daily smokers: 18.7%; Former smokers: 7.6%; 48 male smokers (26.7 %) and 1 female smoker (1.2%); 79.5% tobacco cigarette smokers, 17 moasel smokers (19.3%) and 3 <i>shisha</i> smokers (3.4%).
Abdulateef et al. (2016)	Web-based Cross-sectional survey,	430 doctors and dentists (55.9% men; 44.1% women)	42.2%	≤ 35 y.o.: 68 resp't (23.1%); 35–45 y.o.: 32 resp't (33.3%); ≥ 45 y.o.: 11 resp't (23.1%); Average age: 22.3± 4.8 y.o.	Hospitals	-	Total smokers: 112 (26.5%): 106 men (44.49%), 5 women (2.7%); 97 doctors (27.6%); 15 dentists (21.1%).
Alkhatatbeh et al., (2016)	Questionnaire-based cross-sectional Study	400 health workers (126 men (31.5%); 274 women (68.5%))	96%	Single: 12.8%; Married: 84.6%; Divorced: 2.7%; Average age: 39.4 y.o. (9.5%)	Primary Health Centers		Total smokers: 102 (25.5%) (60 men and 42 women); 30 former smokers (10.1%), 12 doctors (11.8%), 14 dentists (13.7%), 11 pharmacists (10.8%), 41 nurses (40.2%), other 24 health workers (23.5%).
Hamadeh et al. (2018)	Population study	399	-	Average age: 33.4 + 12.9 y.o.	Cigarette Cessation Clinics	Senior High School; Under-graduate; and Postgraduate	Smoking Types Cigarettes: 64.3%; <i>Shisha</i> : 0.3%; Cigarettes and <i>shisha</i> : 24.4%; Cigarettes and other types: 3.3%; <i>Shisha</i> and other types: 0.3%; Cigarette, <i>shisha</i> , and other types: 6.2%.
Dar-Odeh et al. (2016)	Questionnaire-based Cross-sectional Study	400 dentists (55% men; 45% women)	93.5%	Married: 77%; Single: 21%; Divorced: 2%	Dental Health Teaching Hospital	-	Total smokers: 14 (11 men and 3 women); Total <i>shisha</i> smokers: 26 (20 men and 6 women).

*resp't: respondents; y.o.: years old

Table 1. Demographic Characteristics and Smoking Behavior of Respondents (continuance)

Author	Research Design	No. Of Respondents and Gender	Response/ Retention Level	Age Range/ Marital Status	Research Site	Respondents' Education	Smoking Behavior
Nguyen et al. (2017)	RCT	449 health workers (14% men; 86% women)	-	Average age: 43 y.o.	Village Health Workers		Total smokers: 17 (3.8%); Former smokers: 25 (5.6%).
Vietnam							
Chang et al. (2016)	Cross-sectional study	848 doctors, nurses, and general staff	56.5%	-	Hospital	-	39 current smokers (4.6%); 19 former smokers (2.2%).
Taiwan							
Chatdokmaiprai et al. (2017)	Cross-sectional study	262 women nurses	62.38 %	Average age: 23–26 y.o.	Occupational Health Service	Under-graduate (S1); Postgraduate	1 current smoker; 6 former smokers (≥ 6 months ago).
Thailand							

*resp't: respondents; y.o.: years old

Discussion

This literature review analyzed the research findings of the 18 articles on the smoking behavior of health workers in the Asian region, which had met the inclusion criteria with various populations. Despite not representing the entire population of health workers, the results of this review can provide an overview of such behavior. We analyzed research articles on health workers' smoking behavior, knowledge, and attitudes toward smoking.

Health Workers' Smoking Behavior. Previous studies have found that the prevalence of health workers' smoking behavior was 4.6 to 44% (Chang et al., 2016; Shelley et al., 2014), with the most significant sample being that of 112 smokers (26.5%) (Alkhatatbeh et al., 2016), and the profession with the highest rate of smoking being nursing. According to a study in Jordan, the smoking rates of health workers in primary health care were 40.2% for nurses, 11.8% for doctors, 13.7% for dentists, 10.8% for pharmacists, and 23.5% for other health workers (Alkhatatbeh et al., 2016). The smoking behavior of doctors is consistently lower than that of nurses,

but this trend could change and is influenced by national cultural factors (Chambers, 2016).

This study also discovered that the smoking behavior of male health workers was higher than that of female health workers. Fifteen articles explained the high prevalence of smoking in men, supported by an almost balanced gender representation. A research article in Thailand even found only one out of 231 female respondents who smoked (Chatdokmaiprai et al., 2017). In China, smoking behavior was 48.9% for men and 2.1% for women (An et al., 2014). This result is consistent with a cohort study of ten countries that reported higher cigarette consumption in men than women (Lillard & Christopoulou, 2015).

Fourteen articles revealed that the average age of health workers who smoked was 22–55, categorized as the productive age range. Based on a study in India, 50% of health workers who smoked were aged 20–29 (Aggarwal et al., 2015). In addition, a study in Israel reported that the age at which people started smoking was between 6 and 25, with an average age of 18, and without gender differences (Shkedy et al., 2013).

The smoking intensity of health workers was 1–10 cigarettes per day (42.9%) or 10–20 cigarettes per day (66.7%). Six articles mentioned that the types of cigarettes commonly consumed were tobacco, *shisha*, cigars, *midwakh*, pipes, and *mousel*. A study in Bahrain reported that the smoking duration of *shisha* smokers was more than ten years (Hamadeh et al., 2018).

Knowledge of Health Workers on Smoking Behavior. Smoking behavior and exposure to smoke are hazardous to health and can increase the risk of cancer, cardiovascular disease, lung disease, reproductive disorders, including embryonic and fetal disorders (Centers for Disease Control and Prevention US et al., 2010).

Health workers agree that active and passive smoking behavior can increase the risk of these diseases (Abdulateef et al., 2016; Hamadeh et al., 2018). Similarly, Alkhatatbeh et al. (2016) suggest that smoking is harmful to health and that health workers are aware of this. Exposure to cigarette smoke is very dangerous to health. As stated by health workers in the literature review, the nicotine content in cigarette smoke can harm the fetus, increase the risk of neonatal death, and result in the risk of infertility in females (Alkhatatbeh et al., 2016). Health workers even believe that the nicotine content in cigarettes can pose a risk of male infertility (Chang et al., 2016). Studies in Israel, Saudi Arabia, and Bahrain suggest that health workers' factor in quitting smoking is their health.

Factors stimulating health workers to smoke include stress, the influence of smoking friends or family, addiction, and previous smoking experiences. According to Rezk-Hanna et al. (2018), factors inhibiting health workers from quitting smoking were the environment, stress, and nicotine addiction. AlTurkstani et al. (2016) found that the population of health workers in Bahrain and Mecca started smoking for the first time due to the influence of both playmates and co-workers.

The attitude of Health Workers towards Smoking Behavior. Health workers are role models responsible for preventing smoking behavior by educating people (patients) about the dangers of smoking for health. Alkhatatbeh et al. (2016) reveal that 92% of health workers were responsible for advising patients to quit smoking. In addition, 98% of doctors in Saudi Arabia recommend that smokers should not smoke around children (AlTurkstani et al., 2016). Providing education about the dangers of smoking and advising on smoking cessation is a form of responsible attitude shown by health workers. However, several factors hamper its implementation. Seven research articles in several countries indicate that the personal factors of health workers impeded the delivery of education and socialization of smoking prevention to patients. Based on a study in Israel, health workers were not comfortable providing education, considering it useless, and feeling irrelevant to their professional expertise. These were inhibiting factors in the prevention of smoking behavior. Other obstacles faced by public health workers in Vietnam are a lack of smoking cessation programs, a lack of government support for smoking cessation programs, and the absence of training for health workers.

Health workers in Vietnam supported training on smoking cessation counseling. Other studies found that only a small proportion of health workers received smoking prevention training, such as in Iraq (6.5%), Jordan (25.5%), Thailand (24%), Saudi Arabia (23.6%), and Vietnam (29%). These percentages indicate the lack of training in smoking prevention counseling. A total of 72% of health workers in the United Arab Emirates and 78.4% of public health workers in Vietnam had not received specialized smoking prevention training.

Health workers also supported policies related to smoking bans in workplaces to reduce and prevent smoking behavior. Smoking prevention policies have been a WHO priority since 2008.

This policy is outlined in the MPOWER program: Monitoring (monitoring tobacco use and prevention policies); Protecting (protecting people from exposure to cigarette smoke); Offering (offering assistance to quit smoking); Warning (warning about the dangers of tobacco); Enforcing (prohibiting tobacco advertising, sponsorship, and promotion), and Raising (increasing tobacco-related taxes). Such measures have been proven to be effective in reducing smoking behavior globally (WHO, 2017). Smoking prohibition policies in workplaces have been widely implemented in countries worldwide. They have been proven to lower the prevalence of smoking in workplaces by 6–22% and reduce smoking consumption by 14% every day (Centers for Disease Control and Prevention US et al., 2010). Even health workers in Iran, the United Arab Emirates, Jordan, and Vietnam widely support smoking prohibition policies in workplaces.

Conclusion

Health workers play an essential role in preventing smoking behavior, both as education providers and role models. Smoking prohibition policies in workplaces, specialized training for health workers in smoking behavior control, and smoking prevention service facilities are considered to prevent smoking behavior in Asian countries with a high population of smokers.

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