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KNOWLEDGE OF SEXUALLY TRANSMITTED INFECTIONS AMONG WOMEN OF REPRODUCTIVE AGE AT SAMARINDA CITY

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ABSTRACT

Sexually Transmitted Infections (STIs) are a significant global health issue that deserves more attention, considering their long-term negative impact on the quality of future generations. Having a good understanding of STIs plays a crucial role in preventing their spread. This study aims to evaluate the knowledge of reproductive-aged women regarding Sexually Transmitted Infections (STIs) in the Loa Bakung Primary Health Center area, Samarinda City, East Kalimantan Province. The research method employed was quantitative, with data collection conducted through interviews and questionnaires. The participants involved in this study are reproductive-aged women visiting the Loa Bakung Primary Health Center. The results of the univariate analysis indicate that the majority of respondents have a higher level of education and a good understanding of STIs. However, there are still some respondents with limited understanding. The majority of respondents also do not experience STIs. Bivariate analysis reveals a significant correlation between the level of knowledge about STIs and the occurrence of STIs. The majority of STI cases occur among respondents with lower levels of knowledge.

INTRODUCTION

Sexually transmitted infections (STIs) are a group of diseases that are typically transmitted through sexual activity and usually affect the human reproductive system. STIs are a global public health problem that occurs in different countries around the world, with the majority of cases occurring in developing countries (Crossland et al., 2015). There are an estimated 500 million treatable cases of STIs worldwide each year. In 2008, the World Health Organization estimated that there were up to 499 million treatable cases of STIs that year, with the majority occurring in low-income countries (WHO, 2008). Although STIs such as syphilis, gonorrhea, and chlamydia can be cured with antibiotics, they remain a major cause of disability and death (Arikunto, 2013). However, there are also viral types of STI such as herpes simplex virus (HSV), human papillomavirus (HPV), and human immunodeficiency virus (HIV) that cannot be cured. It is important to note that STI infections can facilitate the transmission of HIV (Notoatmodjo, 2010b).

The agents that serve as transmission vehicles for STI infections can be classified as viruses, bacteria, protozoa, or fungi (Gottlieb et al., 2014; Hawkes et al., 2002). STIs can cause serious long-term complications, including pregnancy complications, fetal and neonatal death, cancer, infertility, sexual dysfunction, and increased HIV transmission (Fontenot & George, 2014; Katusiime et al., 2016; Rizwan et al. 2015). In addition to the physical effects, STIs also have serious psychological and social consequences, including stigma, domestic violence, and even social ostracism. Overall, STIs have significant potential to cause serious social consequences for those affected, which will certainly harm the social and economic well-being of infected

individuals (Seth et al., 2009). Vulnerable populations at risk of infection include adolescents, sex workers, and their clients, men who have sex with men, prisoners, truck drivers, and fishing communities (James et al., 2021). In addition, women are more likely to contract STIs than men. This is related to gender inequality and women's biological predisposition (Mbonye et al., 2012).

In general, STIs also have significant potential to create serious social impacts on those affected, which naturally has negative effects on the social and economic well-being of infected individuals (Seth et al., 2010). Vulnerable populations at risk of infection include adolescents, sex workers, and their clients, men who have sex with men, prisoners, truck drivers, and fishing communities (Nawagi et al., 2016). Additionally, compared to men, women have a higher likelihood of contracting Sexually Transmitted Infections (STIs). This is associated with gender inequality and the biological predisposition experienced by women (Mbonye, 2012).

Although various efforts have been made to control the spread of STIs, reports indicate that new cases continue to increase (Moyer et al., 2008). This situation can be explained by several factors, including growing resistance to current treatment models, lack of prioritization of STIs other than HIV, inadequate STI surveillance, suboptimal prevention programs, and general problems such as a lack of human and financial resources for STI management. As a result, the quality of services provided by most national programs is not maximized (Jindal et al, 2009). The annual increase in the number of STI cases worldwide has become a serious health problem. Over time, this can have potentially significant negative consequences in the future. The impact may manifest as serious health problems where the new generation is born infected or affected by STIs due to genetic factors or an increase in cases of disability in future generations. This will become a serious problem that will affect the quality of the younger generation that will inherit the nation in the future. Therefore, since it has been proven that sexually transmitted infections are an independent risk factor for transmission, effective control measures are needed (Djuanda, 2010). Diseases such as syphilis, gonorrhea, chlamydia, and chancroid can increase the dangerous risk of HIV transmission for future generations (Sitepu, 2021).

According to data reported by the Ministry of Health of the Republic of Indonesia in 2022, it is estimated that in 2020, there were approximately 543,100 individuals living with HIV (PLHIV). This figure represents a decrease from the previous number in 2016, which reached 643,443 PLHIV. The decline in the number of new HIV infections in Indonesia follows the global trend of decreasing new HIV infections. However, the decrease in new infections has not yet reached the desired level. There has been an increase in new HIV infections among key populations, such as men who have sex with men (MSM) and transgender individuals.

Throughout Indonesia, the HIV epidemic focuses on key populations, with a prevalence rate of 0.26%. Based on the results of the Integrated Biological and Behavioral Surveillance Survey (IBBS) in 2018, the HIV prevalence among these key populations exceeded 10%. There has been a shift in the pattern of HIV transmission in Indonesia, where in the early 2000s, HIV transmission primarily occurred through shared needle use among drug users. However, by 2020, sexual transmission had become the dominant mode of HIV transmission (Dinkes Propinsi Kaltim, 2015).

In the Papua region (Papua and West Papua Provinces), the HIV epidemic has broader coverage with a low prevalence rate of 2.3% in the general population (based on the IBBS in Tanah Papua in 2013). However, there is a higher prevalence trend (2.9%) in the mountainous regions and among the indigenous Papuan population, while in lowland and urban areas, HIV prevalence is below 2.3% (BKKBN Prop Kaltim, 2011).

These data indicate that efforts for HIV prevention and control in Indonesia continue to be challenging. More intensive actions and programs are needed, particularly targeting key populations, including increased access to healthcare services, broader education on HIV/AIDS, promotion of condom use, sterile needle use, and community engagement approaches to prevent and address HIV/AIDS (Kemenkes, 2008).

According to estimates in 2020, it was found that the prevalence of Sexually Transmitted Infections (STIs), such as gonorrhea and chlamydia, among key populations in Indonesia was much higher than the prevalence in the general population, reaching more than 30 times higher (Kemenkes, 2011). However, there has been an overall decrease in the prevalence of syphilis among sex workers (SWs) and men who have sex with men (MSM), along with a decrease in HIV prevalence. This decline can be attributed to increased condom use and other efforts to prevent STIs and HIV (Kemenkes, 2014).

Nevertheless, despite estimates showing a decrease in the number of cases of congenital syphilis, the number of cases in Indonesia is still 10 times higher than the global elimination target, which is less than 50 cases per 100,000 live births (BPD, 2011). This highlights the need to strengthen efforts in controlling STIs, including congenital syphilis, among both key and non-key populations, especially among pregnant women. To achieve the target of STI elimination, more effective prevention and control measures are required, such as increased access to healthcare services that provide STI treatment and screening, widespread education about STIs, and increased awareness of the importance of STI prevention through condom use, sterile needle use, as well as regular testing and treatment (Crosby, 2013). These efforts need to be comprehensive and involve collaboration among various stakeholders, including the government, healthcare institutions, communities, and individuals, to maintain reproductive health and reduce the risk of STI transmission (Yah et al., 2018).

The cases of STI infections that occur cannot be separated from the lack of socialization regarding understanding the spread of STIs among the productive generation, especially among women who have a higher risk of acquiring STIs through sexual intercourse (Gant & Cunningham, 2011). One's knowledge and understanding play a crucial role in shaping their cognitive level, and this understanding is influenced by varying levels of intensity in their interaction with specific objects. This also applies to one's understanding of STIs, where a lack of individual understanding can affect an individual's thinking and behavior in daily activities that carry a risk of transmission (Fernández-Romero et al., 2015). Ultimately, this lack of understanding can contribute to the increasing number of STI cases worldwide each year (Marmi, 2015). Based on the above explanation, the issue of understanding STIs among women of reproductive age becomes an interesting subject for the author's research. Women of reproductive age play a vital role in

reproductive health and have a higher risk of STI infection. However, understanding of STIs among women of reproductive age is often suboptimal.

This study aims to evaluate the knowledge of reproductive-aged women regarding Sexually Transmitted Infections (STIs) in the Loa Bakung Primary Health Center area, Samarinda City, East Kalimantan Province. The limitations in knowledge and understanding of STIs can hinder efforts in prevention, early detection, and treatment, which are crucial in reducing the adverse effects of STIs on reproductive health. Therefore, it is important to recognize the factors that influence the understanding of STIs among women of reproductive age and implement effective educational strategies to enhance knowledge and awareness of STIs and reduce the risk of transmission. This research is expected to contribute to efforts in improving understanding and awareness of STIs among women of reproductive age, enabling them to obtain better reproductive health protection.

METHOD

This study employed a quantitative research method to investigate the level of understanding of Sexually Transmitted Infections (STIs) among women of reproductive age at Loa Bakung Primary Health Center in Samarinda City, East Kalimantan Province. The data were collected through surveys using interviews and questionnaires specifically developed for this study. The research sample were randomly selected from the population of women of reproductive age at Loa Bakung Primary Health Center. Once the data were collected, statistical analysis were conducted to analyze the relationship between the variables of understanding STIs and relevant factors. The findings of this study are expected to provide a better understanding of the level of understanding of STIs among women of reproductive age and offer recommendations to improve that understanding of the prevention and control of STIs in the area.

RESULT AND DISCUSSION

Univariate Analysis

Univariate Analysis is conducted to analyze the characteristics of women of reproductive age at Loa Bakung Primary Health Center in Samarinda. The data collected from interviews and questionnaires are descriptively analyzed to provide an overview of the respondents' profiles. In this univariate analysis, variables such as education level and knowledge about STIs are explored.

Characteristics of Respondents' Education Level

Table 1. Frequency Distribution of Education Level among Women of Reproductive Age at Loa Bakung Primary Health Center

Education Level	Frequency (n)	Percentage (%)
High School	18	27.4%
Middle School	25	49.5%
Elementary School	15	24.1%

Total	58	100%

The analysis shows that the majority of women of reproductive age at Loa Bakung Primary Health Center have a middle school education or higher, with most having completed a middle school education. In terms of occupation, the majority of respondents work as housewives, followed by those working in the private or public sectors. Regarding marital status, the majority of respondents are married women, but some respondents are single or divorced.

Characteristics of Respondents' Understanding Level

Table 2. Frequency Distribution of Understanding Level among Women of Reproductive Age at Loa Bakung Community Health Center

Understanding Level	Frequency (n)	Percentage (%)
High	30	52.1%
Medium	16	25.4%
Low	12	22.5%
Total	58	100%

When exploring the level of understanding about STIs, variations in respondents' understanding were found. Some respondents had a good level of knowledge about STIs, including symptoms, modes of transmission, and preventive measures. There were 52.1% of respondents with a good understanding and 25.4% of respondents with a moderate understanding. However, there were still respondents who had limited or inadequate knowledge about STIs, accounting for 22.5%.

Referring to the results of the questionnaires filled out by the respondents, many of them provided incorrect answers regarding the treatment of sexually transmitted infections (STIs). About 72.1% of reproductive-age couples believe that treatment for STIs can be done voluntarily. This misunderstanding is due to the lack of knowledge among women of reproductive age about STIs, with some of them even having never heard of STIs. Additionally, respondents with good knowledge about STIs can provide correct answers regarding the causes and risks of STI transmission.

Based on the estimated results in 2020, it was found that the prevalence of sexually transmitted infections (STIs), such as gonorrhea and chlamydia, is significantly higher in key populations in Indonesia compared to the general population, reaching up to 30 times higher. However, there has been a general decline in the number of syphilis cases among sex workers and men who have sex with men, in line with the decreasing number of HIV cases. This reduction can be attributed to increased condom use and efforts in preventing sexually transmitted diseases such as STIs and HIV. Nevertheless, although the estimated number of congenital syphilis cases shows a decline, the number of cases in Indonesia is still ten times higher than the global elimination target of fewer than 50 cases per 100,000 live births. This indicates the need for strengthened

efforts in controlling sexually transmitted diseases, including congenital syphilis, among both key and non-key populations, especially among pregnant women.

Furthermore, the findings of this study are consistent with the research conducted by Samiati (2016) regarding the knowledge of reproductive-age couples regarding sexually transmitted infections at the Simpang Kawat Primary Health Center in Jambi City. The research findings indicate that the majority of reproductive-age couples have limited knowledge, with 35 reproductive-age couples (47.9%) having insufficient awareness. About 52.1% of reproductive-age couples know the risk factors for acquiring sexually transmitted infections through sexual intercourse. However, the understanding of reproductive-age couples regarding the treatment procedures for sexually transmitted infections and their awareness of the ability to self-treat is still very low, reaching only 61.6%. This indicates the need to address the issues in improving the overall level of understanding among reproductive-age couples regarding sexually transmitted infections, especially in terms of treatment methods and the awareness that treatment can be self-administered. Increased knowledge in this regard is important to ensure that reproductive-age couples have an accurate understanding of the methods of treating sexually transmitted infections and recognize the importance of individual involvement in taking appropriate treatment actions.

The level of understanding or knowledge of an individual plays a crucial role in measuring the extent of awareness and actions taken by the community regarding cases of sexually transmitted infections (STIs). This concept aligns with the conceptual view proposed by Notoatmodjo (2010a) which indicates that behavior based on understanding tends to be more sustainable than behavior that is not based on knowledge. Knowledge, as a cognitive aspect, plays a crucial role in shaping an individual's concrete actions (overt behavior). In general, knowledge significantly influences all aspects of human life, including health. Evaluation is conducted on the level of knowledge to understand an individual's health condition. Furthermore, the concept proposed by Notoatmodjo (2011) states that knowledge, attitudes, beliefs, traditions, and values play an important role in determining health status. Individual experiences and knowledge also play a significant role in interpreting received stimuli. Differences in interpretation can be attributed to past experiences and previously acquired knowledge. In this study, the evaluation of health status is focused on sexually transmitted infections (STIs) (Hendrickx et al., 2021).

This univariate analysis provides an initial overview of the profile of reproductive-age female respondents at the Loa Bakung Primary Health Center regarding demographic characteristics and knowledge levels about STIs. These results can serve as a basis for further multivariate analysis to understand the relationships between these variables and provide more specific recommendations for improving understanding and awareness of STIs among reproductive-age women in the area.

Incidence of STIs

From the data recorded in the STI register book, the laboratory examination results indicate the number of STI cases that have been processed and presented in tabular form as follows:

Table 3. Distribution of Frequency of STI Incidence in Reproductive-Age Women at the Loa Bakung Primary Health Center

Incidence of STIs	Frequency (n)	Percentage (%)
Non-STI	39	67.8%
STI Occurrence	19	32.2%
Total	58	100%

Based on the data shown in Table 3, it is revealed that the majority of reproductive-age women at the Loa Bakung Primary Health Center do not have STIs, with a percentage of 67.8% or approximately 39 respondents.

Bivariate Analysis

Bivariate analysis is applied to explore the correlation among relevant variables in reproductive-age women respondents at the Loa Bakung Primary Health Center, Samarinda City. In this study, the observed variables include the level of education, knowledge about STIs, and the occurrence of STIs.

Table 4. Cross-tabulation between Knowledge Level about Sexually Transmitted Infections and the Occurrence of Sexually Transmitted Infections in Reproductive-Age Women at the Loa Bakung Primary Health Center

Knowledge of Level STI	Occurrence of STIs				N	%	p-value
	Non-STI		STI Occurrence				
	n	%	n	%			
Good	26	70.5	4	21.6	30	52.1	0.001
Sufficient	11	23.4	5	23.1	16	25.4	
Poor	2	6.1	10	55.3	12	22.5	
Total	**39**	**100**	**19**	**100**	**58**	**100**	

The findings of this study indicate that the majority of cases of sexually transmitted infections (STIs) occur among participants with limited understanding. In this study, 55.3% or 10 respondents experienced STI occurrences with limited understanding. On the other hand, the majority of respondents who did not have STIs were those with a good level of knowledge, accounting for 70.5% or 26 respondents. In conducting statistical analysis, p-value calculation was performed using computer software. The calculation results show that the p-value is $< \alpha$, with α set at 0.05. Thus, the alternative hypothesis is accepted, indicating a correlation between the level of knowledge and the occurrence of STIs. In the correlation analysis using the contingency coefficient correlation test, a correlation coefficient value of 0.450 was found. This value indicates a moderate relationship between the level of knowledge and the occurrence of STIs.

Discussion

Overall, the findings of this study regarding the level of education, understanding/knowledge, and frequency of sexually transmitted infections (STIs) at the Loa Bakung Primary Health Center in Samarinda City are consistent with the findings of (Lestari, 2011). These results indicate that the majority of respondents have a good level of knowledge. However, this study produces different findings from the research by Nova (2016), which shows that the majority of respondents have a minimal understanding of STIs. This difference may be caused by several variables such as age, education level, sources of information, social factors, culture, economic factors, environment, and experience. In the context of this research, education has a dominant influence. The level of education can be divided into three levels: elementary, secondary, and higher education. In Nova's study, the majority of respondents had a low level of education. Therefore, Nova's research findings, which indicate low to moderate levels of knowledge among the majority of respondents, can be considered normal.

The results of this study show a correlation between the level of knowledge or understanding and the occurrence of sexually transmitted infections (STIs). It was found that the majority of STI cases occur in reproductive-age women with a low level of understanding, accounting for 55.3% or 10 respondents. This finding is consistent with a previous study conducted by Nova (2016), where all respondents with a low level of understanding experienced STI occurrences. The understanding of reproductive-age women has a significant correlation with STIs in the Loa Bakung Primary Health Center, Samarinda City because knowledge plays an important role in shaping behavior and decision-making related to reproductive and sexual health. Here is an explanation of why the knowledge of reproductive-age women correlates with STIs:

1) Sexual Education: Good knowledge about sexuality, body anatomy, reproduction, and the use of effective contraceptive methods can help reproductive-age women make wiser decisions and protect themselves from STIs.
2) Risk Awareness: Knowledge about sexually transmitted diseases, including transmission methods, symptoms, and potential complications, can help reproductive-age women recognize existing risks. With this understanding, they are more likely to take preventive actions such as using condoms or undergoing regular health check-ups.
3) Selection of Safe Contraceptive Methods: Knowledge about safe and effective contraceptive methods can assist reproductive-age women in choosing methods that suit their needs. Proper use of contraceptive methods can reduce the risk of STIs such as HIV, gonorrhea, or syphilis.
4) Safe Sexual Behavior: Good knowledge about healthy sexuality and safe sexual practices can help reproductive-age women adopt practices that reduce the risk of STIs, such as avoiding unprotected sex or frequently changing partners.
5) Early Symptom Recognition: Knowledge about common STI symptoms, such as itching, abnormal discharge, or sores on the genitals, can prompt reproductive-age women to seek medical assistance promptly when experiencing such symptoms. Thus, early diagnosis and treatment can prevent the spread of infection and reduce potential complications.

The importance of reproductive-age women's knowledge of STIs not only affects individual health but also the level of infection and its spread in society. By improving this knowledge through appropriate sexual education, accurate information, and adequate resources, we can reduce the incidence of sexually transmitted infections and enhance women's overall reproductive health.

CONCLUSION

Based on the findings of my research, several conclusions can be drawn. Firstly, the univariate analysis in this study revealed that the majority of reproductive-age women respondents at the Loa Bakung Primary Health Center in Samarinda City have a history of secondary education or higher, with most having completed secondary education. There was variation in the respondents' understanding of STIs, where the majority had a good understanding (52.1%), followed by a moderate understanding (25.4%), and there were still respondents with limited or inadequate understanding (22.5%). The majority of reproductive-age women at the Loa Bakung Primary Health Center did not experience STIs, accounting for 67.8% or 39 individuals.

The bivariate analysis results showed a significant correlation between the level of understanding of STIs and the occurrence of STIs. The majority of STI cases occurred in respondents with a low level of understanding (55.3% or 10 individuals), while respondents who did not experience STIs were predominantly found among those with a high level of knowledge (70.5% or 26 respondents). This conclusion indicates that a good level of knowledge or understanding of STIs can play a role in preventing STI occurrences in reproductive-age women. Therefore, efforts should be made to enhance the understanding and knowledge of STIs among reproductive-age women at the Loa Bakung Primary Health Center in Samarinda City, East Kalimantan Province.

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