

Maternal Health Literacy Affects COVID-19 Preventive Behavior in Surabaya, Indonesia

La alfabetización en salud materna afecta el comportamiento preventivo de COVID-19 en Surabaya, Indonesia

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SUMMARY

Introduction: *There is some evidence that people equipped with health literacy skills can help them navigate the health system and various disease prevention decisions and management decisions. It is paramount to implement infection (COVID-19) prevention. Mothers are considered the axes of family structure. They have a role in raising, educating children, caring for the house, and maintaining family members' health. This study analyses the correlation between maternal health literacy (MHL) and COVID-19 preventive behaviour (CPB) in Surabaya, Indonesia.*

Methods: *The study design was correlational with a cross-sectional approach. The independent variable was maternal health literacy, while the dependent variable was the COVID-19 preventive behaviour. The*

instrument for measuring MHL was the COVID-19 Literacy Questionnaire adopted from the COVID-19 material from World Health Organization (WHO) and evaluated COVID-19 preventive behaviour using a questionnaire developed by the Centers for Disease Control (CDC) and WHO. The population consisted of all mothers residing in the Surabaya area, and the number of samples was 125 by purposive sampling based on inclusion and exclusion criteria. The collected data was tested using the Spearman rho analysis test with a confidence interval of 95 % and alpha (α) = 0.05.

Results: *Findings indicate that 77% of respondents had good MHL, and 23 % had adequate MHL. On the CPB variable, 54.4 % of respondents had an adequate CPB, 44 % had good CPB, and 1.6 % had inadequate CPB. In addition, there was a significant correlation between maternal health literacy and COVID-19 preventive behaviour ($p= 0.01$; $r= 0.601$).*

Conclusion: *Maternal health literacy affects COVID-19 health behaviour. Further research should empower women in clean and healthy living behaviour to prevent COVID-19.*

Keywords: *COVID-19, health literacy, maternal, preventive behavior.*

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RESUMEN

Introducción: *Existe alguna evidencia de que las personas equipadas con habilidades de alfabetización en salud pueden ayudarlos a navegar el sistema de salud y varias decisiones de prevención y gestión de enfermedades. Es primordial implementar la prevención de infecciones (COVID-19). Las madres son consideradas los ejes de la estructura familiar.*

Tienen un papel en la crianza, la educación de los hijos, el cuidado de la casa y el mantenimiento de la salud de los miembros de la familia. Este estudio analiza la correlación entre la alfabetización en salud materna (MHC) y el comportamiento preventivo de COVID-19 (CPB) en Surabaya, Indonesia.

Métodos: *El diseño del estudio fue correlacional con un enfoque transversal. La variable independiente fue la alfabetización en salud materna, mientras que la variable dependiente fue el comportamiento preventivo de COVID-19. El instrumento para medir MHL fue el COVID-19 Literacy Questionnaire adoptado del material COVID-19 de la Organización Mundial de la Salud (OMS) y evaluó el comportamiento preventivo de COVID-19 utilizando un cuestionario desarrollado por los Centros para el Control de Enfermedades (CDC) y la OMS. La población estuvo conformada por todas las madres que residen en el área de Surabaya, y el número de muestras fue de 125 por muestreo intencional basado en criterios de inclusión y exclusión. Los datos recopilados se probaron mediante la prueba de análisis rho de Spearman con un intervalo de confianza del 95 % y alfa (α) = 0,05.*

Resultados: *Los resultados indican que el 77 % de los encuestados tenía una MHL buena y el 23 % una MHL adecuada. En la variable CEC, el 54,4 % de los encuestados tuvo una CEC adecuada, el 44 % una CEC buena y el 1,6 % una CEC inadecuada. Además, hubo una correlación significativa entre la alfabetización en salud materna y el comportamiento preventivo de COVID-19 ($p = 0,01$; $r = 0,601$).*

Conclusión: *La alfabetización en salud materna afecta el comportamiento de salud de COVID-19. La investigación adicional debería empoderar a las mujeres en un comportamiento de vida limpio y saludable para prevenir COVID-19.*

Palabras clave: *COVID-19, Alfabetización en salud, Materno, Comportamiento preventivo*

INTRODUCTION

In 2020, the world was shocked by COVID-19, which transformed into a terrible and frightening disease. World Health Organization (WHO) reported that 87 137 cases were confirmed globally, with 79 968 patients in China and 7 169 outside China, with 2 977 fatalities or 3.4 % (1). Starting with the discovery of 27 cases of pneumonia of unknown origin (2), COVID-19, which is considered a relative of SARS and MERS, caused by a beta coronavirus named SARS-CoV-2, can manifest as pneumonia because it affects the lower respiratory tract and

so that breathing difficulties occur which causes death (3-5). On March 1, 2020, Indonesia had the first two confirmed cases of COVID-19). The case fatality rate of COVID-19 reached 4.1 % worldwide (data on March 19, 2020) (6).

The growing number of confirmed cases and the ever-expanding geographical spread of the infection has attracted much concern. The COVID-19 pandemic occurred with more than 118 326 confirmed cases on March 12, 2020 (7,8). Consequently, different countries have reacted differently to the COVID-19 outbreak, but a uniform global response is necessary for tackling the pandemic (9-12). Some countries close themselves to others' arrival and try to be very selective about their citizens' arrival from foreign visits through "quarantine" efforts. First, the World Health Organization declares a pandemic throughout the world. Then several countries set a lockdown that indicates concerns and tremendous fear of COVID-19 (13-17).

Surabaya is the region with the most significant number of corona cases in East Java after DKI Jakarta, West Java, and Central Java (data in April 2020). There is some evidence that people with 'health literacy skills can help them in various disease prevention and management decisions. Health literacy is paramount in implementing infection control practices by infection source control, transmission route blocking, and susceptible population protection (18,19). Various bodies, including the WHO and US Centers for Disease Control and Prevention (CDC), have advised preventing the further spread of COVID-19. They recommend avoiding travel to high-risk areas, contact with symptomatic individuals, and meat consumption from regions with known COVID-19 outbreaks. Basic hand hygiene measures are also recommended, including frequent hand washing and personal protective equipment (PPE) such as face masks (3).

In most societies, mothers are mainly responsible for the child and family care and support (20,21). As the core of families, they control children's education and are responsible for housework and family members' health care. In other words, the caring role is expected of mothers to play (22,23). Mothers are considered the axes of family structure. They have a role in

raising, educating children, caring for the house, and maintaining family members' health (24,25), which requires good literacy skills for her role.

There is evidence that people equipped with 'health literacy skills can help them navigate the health system and the various disease prevention and management (26). Individuals with higher levels of general literacy (high-level skills in reading, writing, and understanding text) can apply their skills in situations requiring specific content knowledge or in new and unfamiliar contexts (27). Maternal health literacy in preventing COVID-19 transmission is critical because it is the basis for suppressing COVID-19 incidence.

METHODS

The study design was correlational with a cross-sectional approach. The population consisted of all mothers residing in the Surabaya area, and the number of samples involved in this paper was 125. Selecting the respondents was done through the purposive sampling method based on inclusion and exclusion criteria. The inclusion criteria were mothers who live with other family members (children, husbands, parents), never graduated from school in health science, and do not work in a health service. The exclusion criteria were a mother who lives alone. The independent variable was maternal health literacy (MHL), while the dependent variable was the COVID-19 preventive behaviour (CPB). The instrument for measuring MHL was the COVID-19 Literacy Questionnaire containing ten questions with a choice of answers using a Likert scale adopted from the COVID-19 material from WHO developed with a Cronbach's alpha value of 0.489.

Meanwhile, to evaluate COVID-19 preventive behaviour using a questionnaire developed by CDC and WHO with reliability with Cronbach's alpha of 0.880. Research procedures and analysis: The process for retrieving the data was by filling out questionnaires after giving their informed consent. The study period was four weeks in five areas, including Central Surabaya, West Surabaya, North Surabaya, East Surabaya, and South Surabaya. The collected data were

analyzed using the Spearman rho test with a confidence interval of 95% and alpha (α) = 0.05. This study obtained ethical approval from the Health Research Ethics Committee, Universitas Muhammadiyah Surabaya, Indonesia (No: 056/KET/II.3/AU/F/2020).

RESULTS

In this study, each respondent (N=125) was given a questionnaire after receiving their informed consent. The questionnaires were collected and checked for their contents. SPSS entry utilized a complete and valid questionnaire. Most respondents were in the age range between 34 to 41 years old (N=38) and Senior high school (N=47), work (N=89), Marriage (N=112), and revenue less than regional minimum wage (N=64) (Table 1).

Table 1
Respondents' characteristics (N = 125)

Characteristics	N (%)
Age	
18-25	9 (7.2)
26-33	22 (17.6)
34-41	38 (30.4)
42-49	30 (24)
50-57	23 (18.4)
58-65	3 (2.4)
Education	
Elementary school	12 (9.6)
Junior high school	15 (12)
Senior high school	47 (37.6)
Collage	41 (32.8)
Occupation	
Work	89 (71.2)
Jobless	36 (28.8)
Marital status	
Marriage	112 (89.6)
Widow	13 (10.4)
Revenue	
Less than regional minimum wage	64 (51.2)
Regional minimum wage	38 (30.4)
More than the regional minimum wage	23 (18.4)

The descriptive analysis showed that 96 respondents (77 %) had good maternal health literacy and 29 respondents (23 %) had adequate MHL. Meanwhile, 68 respondents (54.4 %) had good COVID-19 preventive behavior, 55 respondents (44 %) had inadequate CPB, 2 respondents (1.6 %) had low CPB. There was a correlation between maternal health literacy and COVID-19 preventive behaviour with $p = 0.01$ dan $r = 0.601$ (Table 2).

Table 2
The correlation between maternal health literacy and COVID-19 prevention behaviour (N=125)

Variables	N (%)	p-value
Maternal health literacy		
Good	96 (77)	$p = 0.01$ $r = 0.601$
Adequate	29 (23)	
Inadequate	-	
Preventive behaviour of COVID-19		
Good	55 (44)	
Adequate	68 (54.4)	
Inadequate	2 (1.6)	

DISCUSSION

Most of the respondents had good maternal health literacy (96 %). Educational levels are an early measure of the association between education and health (28,29) and significantly contribute to health literacy (30,31). The results showed that 70.4 % of respondents with higher education (high school and college) had better health literacy than those with less education (primary school: 9.6 %, junior high school: 12 %). Education affects a person's knowledge and can improve their ability to deal with health issues (25). Health literacy is the ability to meet knowledge-based literacy needs (obtaining, understanding, and using health knowledge) based on literacy skills (reading and writing), which are necessary to make decisions about health (33).

Other predisposing factors associated with low health literacy include low income, physical

or mental conditions impair cognition or communication abilities, and race/ethnicity (7,8). The authors conducted this research in urban areas (Surabaya). A prior study reported that health literacy in urban areas was higher than in rural areas (10,13).

In this context, health literacy may be considered one of many literacy domains. Health literacy is literacy skills and the ability to perform knowledge-based tasks to make health-related decisions in various environments (home, community, health clinic). The definition of literacy skills above is reading and writing, while the ability to perform knowledge-based literacy tasks includes acquiring, understanding, and using health information. Health literacy is also generally understood as an equivalent skill to numeracy. It has been defined and conceptualized in multiple ways (18,19).

These skills can be developed and improved significantly through effective communication and education. Functional health literacy describes basic level skills that are sufficient for individuals to obtain relevant health information (for example, on health risks and how to use the health system) and to be able to apply that knowledge to a range of prescribed activities. Individuals with these basic health literacy skills can generally respond well to education and communication based on factual information on health risks and how to use the health system (34).

Health literacy is part of health promotion to patients, groups, and the community (35). Health literacy is a strong determinant of health-promoting behaviour, and it is necessary for managing lifestyle behaviour change (36). Women's health behaviour affects the health conditions of family members significantly (37). Women with high health literacy promote health by behaviour such as checking food expiration dates and following up on physical changes more frequently (38,39).

This paper showed that 54,4 % of respondents had good COVID-19 Preventive behaviour. Respondents' gender was another factor influencing COVID-19 prevention behaviour, where all respondents are mothers or women because women are more active in taking preventive measures against the disease (20,21). Previous studies on MERS and SARS found

women more likely to detect risk (22,23). Besides, an earlier study reported the correlation between perceived SARS risk and preventive behaviour (30,31). Additionally, we found that younger individuals reported less preventive behaviour than older people, had lower intentions and were less likely to attitude toward behavioural change positively. This condition might relate to the rumour that older people are the only ones at risk for COVID-19 (32,33).

The COVID-19 pandemic has brought significant challenges to healthcare systems and public health policies globally, as it requires novel treatment and prevention strategies to adapt to the pandemic's impact (40). Therefore, health professionals recommend staying at home, social distancing, wearing facemasks, and frequent hand washing as effective containment measures. Promoting this preventive behaviour is essential to slow down the virus's spread during the outbreak. Preventive health behaviour refers to any activity undertaken by an individual who believes themselves to be healthy to prevent disease (41). Women's health behaviour affects the health conditions of family members significantly (37). The COVID-19 pandemic has brought significant challenges to public health policies globally, as it requires novel treatment and prevention strategies to adapt to the impact of the pandemic (42).

CONCLUSION

This study concludes that maternal health literacy affects COVID-19 health behaviour. Therefore, further research should empower women in clean and healthy living to prevent COVID-19.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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MATERNAL HEALTH LITERACY

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