



The Influence of the Use of Used Syringe Needles, Permanent Tattoos, and Sharing Razors toward Hepatitis B Virus Infection in Dili City, Timor-Leste



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Abstract

The use of used syringe needles, permanent tattoos, and sharing razors has a risk of being exposed to infectious diseases, including hepatitis B disease. People in Dili city, Timor-Leste, are still practicing those habits. Therefore, research was conducted to find out the influence of the use of used syringe needles, permanent tattoos, and sharing razors toward the case of hepatitis B infection in Dili city, Timor-Leste. The research was conducted using a descriptive correlative method. The statistical analysis used the binary logistic regression on a significance level of 5%. The research sample was taken by using a multistage random sampling method which gave 116 persons as the total sample. The result showed that simultaneously, there was a significant influence ($p < 0.05$) between the use of used syringe needles, permanent tattoos, and sharing razors toward hepatitis B virus infection with a score of the influence of 22.0%. Partially, there was a 4.9% significant positive relation between the influence of the use of used syringe needles toward the case of hepatitis B virus. The use of permanent tattoos, partially, showed a positive relation of 12.8% toward hepatitis B virus infection. While the use of sharing razors, partially, showed a significant positive relation of 7.4% toward hepatitis B virus infection. Therefore, it could be concluded that there was an influence between the use of used syringe needles, permanent tattoos, and sharing razors toward the case of hepatitis B virus infection in Dili city, Timor-Leste.

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1. Introduction

Hepatitis B is the world's health problem, including in Timor-Leste. World Health Organization (WHO) estimates more than 680 thousand people die every year from hepatitis B complication, such as cirrhosis and liver cancer. Hepatitis B is an infectious disease that attacks the liver's cells which is caused by the hepatitis B virus (HBV). Only half of hepatitis B cases can be detected because the characteristic of this disease does not show any symptoms (WHO, 2013). Hepatitis B can be transmitted through the use of contaminated syringes, ears piercing, needles, blood transfusions, sharing razors and toothbrushes (only if the infected person has mouth diseases such as mouth ulcer, bleeding gum, etc.), saliva (kissing) or injuries that spill blood and sexual contact with an infected person.

There are many hepatitis B cases which are undetected because its asymptomatic characteristic where the infected person will realize after it becomes acute or chronic. Hepatitis B virus is a serious world's health problem for developing countries. Approximately two billion people in the world have been infected with the hepatitis virus, 360 million people live with chronic infection and 600 thousand deaths every year (WHO, 2012).

Approximately, there are 8.98 million cases of hepatitis B infection in Asia with approximately 585,800 death cases. In Southeast Asia, there are approximately 1,380,000 hepatitis B infection cases which are > 5.6% of the total population, with 300,000 deaths per year with a high category of HBV spread prevalence which is > 8% (Noname, 2011). The hepatitis B disease is widely spread with different endemicity level based on geography and ethnicity. The endemicity is categorized as a medium if the prevalence score of HBsAg < 2% and high if the prevalence score of HBsAg > 8% (Chin, 2000). The previous survey when Timor-Leste was still part of Indonesia showed that the prevalence of HBsAg varies from 2.5% - 36.17%, a very high prevalence of > 10% was reported in some areas outside Java island such as Ujung Pandang, Manado, Dili Timor-Leste, Kupang, and Mataram (Sulaiman & Julitasari, 1995). After Timor-Leste proclaimed its independence in 2002, the check of HBsAg on a group of blood donators in Timor-Leste showed that the prevalence changed to 7.64% - 9.47%. It was still in endemicity category of medium to high (SOP, 2005).

The spread of HBV becomes a center of attention in Timor-Leste, data of WHO (World Health Organization) in 2010 showed that Timor-Leste was ranked as the third-highest hepatitis infection country in Asia after Myanmar and Indonesia. According to WHO criteria, Timor-Leste is categorized in medium endemicity level with the prevalence of 6.7% (Infodatin, 2014). Epidemiologically, there are 700 people with acute hepatitis B in Timor-Leste, 169 people with liver cirrhosis and 460 people with liver cancer. The frequency of positive HBsAg on liver cancer who died was 2.7% (WHO, 2004). The survey to measure sex behavior on MSM (men sex men) and FSW (feminine sex worker) on infectious diseases in 6 municipalities in Timor-Leste showed that the endemicity prevalence of HBV on the male was 12.1% and on a female was 22.2% (ICF Macro, 2010). The spread of hepatitis B disease is a delicate matter in Dili city. The Dili's social habits of having permanent tattoos which use sharing tattoo needles, sharing shaving tools (blades, razors, etc.) will become habits which can be easily exposed to the infection of hepatitis B virus.

From a society health aspect, researchers related to risk factors are very important because they are related to human behaviors. The risk of being infected by HBV in the society is related to the habits which cover sexual activities, free lifestyle, the use of used syringe needles, permanent tattoos, shaving blades and razors, piercing, and sharing toothbrushes and tooth care tools (Chin, 2000). HBV can transmit through blood contact, saliva, semen, and tools which are contaminated by HBV. The research on risk factors is being considered an important matter because it is related to the habits of our society in general. Therefore, research on the influence of the use of permanent tattoos and sharing razors toward the case of hepatitis B virus infection in Dili city, Timor-Leste needs to be conducted.

2. Materials and Methods

This research was ex-post facto research to find out how big the influence of the use of used syringe needles, the use of permanent tattoos, and the use of sharing razors toward the case of hepatitis B virus infection in Dili city, Timor-Leste. A descriptive associative method was used in the research. The research sample was measured using a multistage random sampling method which resulted in 116 persons were chosen based on the inclusion criteria. The statistical analysis used the Binary Logistic Regression on a significance level of 5% ($\alpha = 0.05$). The research was conducted in Dili city, Timor-Leste, in October 2016.

3. Results and Discussions

The research subjects' characteristics were based on gender, age, education, and the number of case of Hepatitis B infection which is shown in Table 1. The data analysis using Binary Logistic Regression showed a result as shown in Table 2 and Table 3.

Table 1
Research subjects' characteristics based on gender, education, and age

		HB Negative		HB Positive		Total	
		N	%	N	%	N	%
Gender	Male	25	33.8	21	50.0	46	39.7
	Female	49	66.2	21	50.0	70	60.3
Education	Low	24	32.4	17	40.5	41	35.3
	High	50	67.6	25	59.5	75	64.7
Age	<30	50	67.6	25	59.5	75	64.7
	>30	24	32.4	17	40.5	41	35.3

Table 2
Model summary on binary logistic regression analysis

Variables	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Used syringe needles – Permanent Tattoos – Sharing razors	123.089	0.220	0.301
Used syringe needles	146.012	0.049	0.067
Permanent tattoos	135.996	0.128	0.175
Sharing razors	142.999	0.074	0.101

Table 3
Variables in the equation

	Constanta	Standard error	Wald	df	p
Used syringe needles	1.439	0.524	7.550	1	0.006
Permanent Tattoos	1.606	0.463	12.036	1	0.001
Sharing razors	1.077	0.497	4.690	1	0.030
Constant	0.198	0.326	0.368	1	0.044

Based on the descriptive analysis of the research subjects' characteristics on gender, it showed that the percentage of male and female who were infected by hepatitis B was the same. It meant that male and female had the same chance and tendency of being infected by hepatitis B through the use of used syringe needles, permanent tattoos, and sharing razors. This finding was different from the finding of Muhamad et al. in Pakistan that 70% male had risk factors of being infected by HBV (Junaid et al., 2015). The research was done by Rakesh et al, in India, also showed that male (73. 3%) had risk factors of being infected by HBV (Rakesh et al., 2013). While Rachna et al. research in Southern India also stated that 2.28% male was infected by hepatitis B virus compared to female which was 1.30% (Rachna et al., 2008).

On the level of education characteristic, it showed that the case of Hepatitis B infection was higher on a higher level of education (senior high school and higher education) which was 59.5% compared to the lower education level (elementary school and junior high school) which was 40.5%. On the characteristic based on age, the younger age (below 30 years old) had a higher percentage of being infected by Hepatitis B which was 59.5%

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compared to older age (above 30 years old) which was 40.5%. It showed that the younger age had a higher risk of being infected by Hepatitis B through the use of used syringe needles, permanent tattoos, and sharing razors.

The analysis result of binary logistic regression showed the result as shown in Table 2 and Table 3. Table 2 showed that the influence of the use of used syringe needles, permanent tattoos, and sharing razors, simultaneously, gave an influence toward Hepatitis B infection in Dili city of 22.0% (*Cox & Snell R Square* = 0.220). While partially, the influence of the use of used syringe needles toward the case of Hepatitis B infection was 4.9%. The influence of the use of permanent tattoos toward the case of Hepatitis B infection was 12.8%. While the influence of the use of sharing razors toward the case of Hepatitis B infection was 7.4%. Those three variables, which are the used syringe needles, the permanent tattoos, and the sharing razors, gave a significant positive correlation ($p < 0.05$) toward the case of Hepatitis B infection in Dili city, Timor-Leste. Research on the case of Hepatitis B infection was also done in Mexico, where HBV infection was caused by many factors, in which, one of them was the use of tattoos (Nahun *et al.*, 2010). Research on the case of Hepatitis B infection which was caused by sharing razors was done in Pakistan. Therefore, the use of permanent tattoos by using unsafe needles (especially a needle which is used many times on different persons) and the use of sharing razors have to be avoided (Wheed *et al.*, 2010).

4. Conclusion

Based on the research analysis and the result, it could be concluded that there was an influence between the use of used syringe needles, permanent tattoos, and the use of sharing razors toward the case of Hepatitis B virus infection in Dili city, Timor-Leste. The use of used syringe needles, permanent tattoos, and sharing razors had a significant positive correlation toward the case of Hepatitis B infection in Dili city, Timor-Leste.

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Statement of authorship

The author(s) have a responsibility for the conception and design of the study. The author(s) have approved the final article.





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