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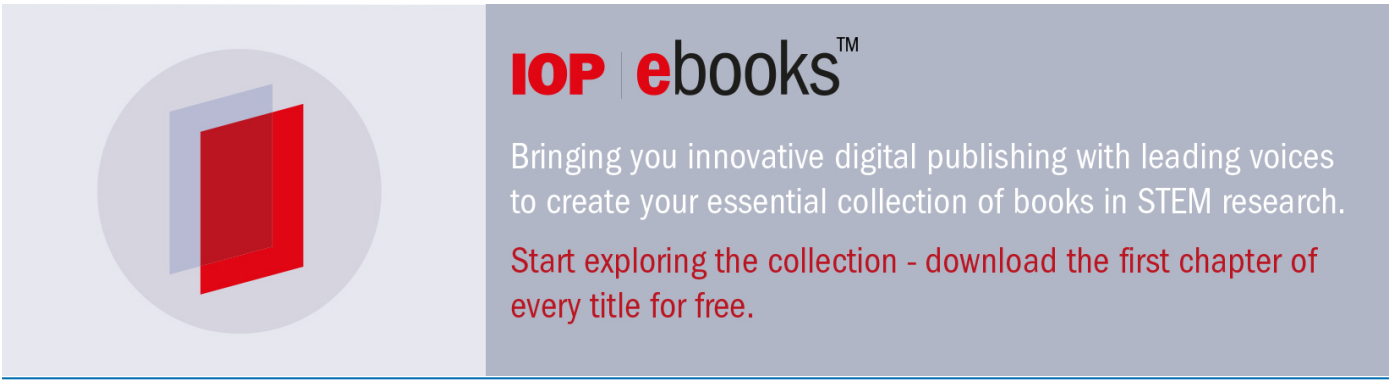

Counselling and Screening of Hepatitis B Virus Infection In Dukuh Kupang Community, Dukuh Pakis District, Surabaya

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Abstract. **Background.** Indonesia is a country with high endemicity of Hepatitis B Virus (HBV) infection. HBV infection is still a problem in society due to limited knowledge of the community and lack of available access to its diagnosis and treatment. Patients with hepatitis B each year is steadily increasing, especially in areas with high risk, including former prostitution area in Surabaya such as in Dukuh Pakis District. **Aims.** This activity was aimed to give understanding of HBV infection and perform early detection of HBV infection in Dukuh Kupang Community, Dukuh Pakis District, Surabaya. **Methods.** A community service in the form of counselling to increase knowledge and understanding of hepatitis B was done to community in Dukuh Kupang, Dukuh Pakis Regency, Surabaya. Pretest and post test were conducted to determine the initial understanding and post socialization knowledge for these people. Laboratory tests such as HBsAg and ALT were performed for screening of HBV infection. Private counselling for participants who positively detected infected with HBV was also done. **Results.** Based on the summary of pretest and post test from the participants, an increase in participants' knowledge of hepatitis B was found. The number of participants followed laboratory examination were 58 participants from 72 participants who attended counselling. From the laboratory results, as much as 3 positive participants (5.17%) were newly found infected with HBV, proved with positive HBsAg. One participant of them has increased ALT. Further counselling and assistance for participants with positive HBsAg were performed. **Conclusion.** Counselling was effective to increase knowledge of hepatitis B for Dukuh Kupang Community. Screening also found naive HBV infection in these people. Similar program can be performed in communities in other areas to increase prevention and early detection of HBV infection in Indonesia, especially Surabaya.

Keywords: Counselling, Screening, Hepatitis B Virus Infection, Surabaya

1. Introduction

Hepatitis is a public health problem in developing countries, including in Indonesia. The known hepatitis virus types are A, B, C, D, E, and G, in which Hepatitis B Virus (HBV) is among the most highlighted. The number of its occurrences is quite numerous until now. It also affects morbidity, mortality, and the economy of community (1). According to WHO in A Strategy for Global Action (2012), HBV has infected 2 billion people worldwide and more than 350 million of them are people with chronic HBV infection. Every year, 780,000 people die from the virus infection. Hepatitis B virus infection is dangerous because it can cause chronic complications such as liver cirrhosis and liver cancer (2).

Indonesia is a country with high endemic of hepatitis B, the second largest in the South East Asian Region (SEAR) after Myanmar. Basic Health Research (Riskesdas) in 2013 reported that a study and test of blood donors from the Indonesian Red Cross (PMI) donors was estimated among 100 Indonesians, 10 of them had been infected with HBV. Based on these data, it can predict of 28 million Indonesians infected with HBV, about 14 million have the potential to become chronic, and from chronic infection 1.4 million people have the potential to suffer from liver cancer (3,4). The magnitude of the problem will

certainly have a huge impact on public health problems, productivity, life expectancy, and other social economic impacts.

HBV infection is still a problem in the community, due to limited public knowledge about this disease, lack of access to examinations for the lower middle class, or lack of access to hepatitis B treatment (5,6). Treatment of chronic hepatitis B is also a problem because the present anti-viral drugs have not been able to completely eliminate the virus. The goal of treatment for chronic hepatitis B is to extend life expectancy and prevent complications (7).

The Hepatitis B virus is transmitted through blood or body fluids, both vertically and horizontally. Vertical transmission occurs in the womb from positive HBsAg mothers. Horizontal transmission occurs through blood transfusions, the use of alternating needles, tattoos, razors, or unsafe sex (2). Hepatitis B is an iceberg phenomenon, where patients who are registered or who come to health services are less than the actual number of sufferers. This is because hepatitis B is a chronic disease which generally does not cause symptoms for years until complications arise or the patient is in terminal condition. Although the patient looks like a healthy person in general, the transmission of the virus to other people can occur (8).

Considering the lack of knowledge of the public about the dangers of HBV infection and the low awareness of the community to get hepatitis B detection before reaching the terminal condition, it is necessary to conduct early awareness and detection of hepatitis B to increase knowledge and reduce the incidence of hepatitis in Indonesia, especially in high-risk areas. Tropical medicine is one of the focus of Medical Faculty of Universitas Airlangga. So, we should provide knowledge and facilities to the community as a form of university's Tridarma in the form of community service.

The area of Dukuh Kupang, Dukuh Pakis Subdistrict, Surabaya is an area close to the largest ex-commercial sex worker localization in Surabaya. This area consists of 8 RWs, a population of family. Although the localization has been disbanded, covert commercial sex practices still occur and it becomes difficult to monitor the health impacts. As described above, unsafe sex is one of the risk factors for hepatitis B. Not only the men who are directly related to commercial sex workers, people around them, especially families, are also at risk of hepatitis B transmission. The incidence of hepatitis B in the area is not known yet, so the transmission risk is also unknown. Therefore, it is necessary to have awareness and early detection of hepatitis B in PKK women and RT/RW heads as they have the potential to participate in the prevention, early detection and treatment of hepatitis B.

2. Experimental Methods

This community service program used counselling methods adapted to the conditions of the community in the target area. The target of this community-based science and technology program was the Dukuh Kupang Community, Dukuh Pakis Subdistrict, Surabaya, especially the heads of RT and PKK Women in Dukuh Kupang as many as 55 participants. Socialization and screening were performed on the first day, while counselling and mentoring were performed on the second day. Socialization was filled by qualified speakers in the field of hepatitis B infection and counselling and mentoring were carried out by the staffs of the Department of Medical Biochemistry Faculty of Universitas Airlangga who also work as doctors.

The counselling themes were: Understanding hepatitis B infection, early detection, prevention, complications, treatment and therapy. Counselling and mentoring were done especially for participants with positive hepatitis B infection in the previous day’s screening.

This screening was carried out by taking participants' blood as much as 3 ml. This medical procedure was carried out by skilled personnel from e-Telkom Medika clinical laboratory, Surabaya.

The results of the examination were given individually to the participants and summarized. The confidentiality of the participants was guaranteed. Evaluation of this program was carried out by performing pretest and post test questionnaire for the participants’ knowledge of hepatitis B.

3. Results and Discussion

Participants registered in the attendance list to attend the counselling event on the first day, were 72 participants. Before and after the socialization, participants were given questionnaire to find out the effectiveness of this program. The pretest was conducted to find out the knowledge and initial

understanding of the participants and the post test was given with the same questions. The questionnaire included general knowledge about hepatitis B infection, and knowledge about detection, complication, prevention, and treatment of hepatitis B infection.

The results of the pretest and post test recapitulation were obtained from 51 participants. This was because there were participants who resigned before the post test was held. Based on the summary of pretest and post test, we found an increase in participants' knowledge and understanding of hepatitis B infection (table 1).

Table 1. The comparison of participants' knowledge from pretest and post test

Questions	Number of participants who answered correctly at Pretest (n = 51)	Number of participants who answered correctly at Post Test (n = 51)
What is Hepatitis B?	45 (88,23%)	45 (88,23%)
Who are people with high risk of hepatitis B?	33 (64,7%)	46 (90,2%)
What condition can cause hepatitis B transmission?	4 (7,84%)	12 (23,52%)
How can Hepatitis B be transmitted?	21 (41,18%)	41 (80,39%)
At which age does the person have the highest risk of infected by hepatitis B?	14 (27,45%)	27 (52,94%)
How is the treatment of hepatitis B?	36 (70,59%)	41 (80,39%)
How is the prevention of hepatitis B?	43 (84,31%)	43 (84,31%)
At which age is the first dose of hepatitis B immunization given in Indonesia?	15 (29,41%)	25 (49%)
What are the complications of chronic hepatitis B?	44 (86,27%)	48 (94,12%)
Average	57,45%	73,92%

Through pretest, it was found that most participants received low scores on the transmission, risk factors, and hepatitis B immunization sections. Only 4 people (7.84%) of the participants who knew about the conditions that play a role in hepatitis B transmission, 14 people (27.45 %) participants who knew about the age at risk of infected by hepatitis B, and 15 people (29.41%) participants who knew about hepatitis B immunization. Knowledge of hepatitis B transmission and immunization is important to prevent the transmission and infection of HBV infection. After socialization, there was an increase in knowledge in which 12 people (23.32%) were able to answer correctly about knowing about the conditions that play a role in hepatitis B transmission, 27 people (52.94%) participants who knew about the age at risk of hepatitis B, and 25 people (49%) who were aware of hepatitis B immunization. From the overall results of the pretest and post test, it was found that there was an increase in the number of participants who answered correctly in the post test so that it could be concluded that there was an increase in participants' knowledge before and after counselling (from 57.45% to 73.92%).

Table 2. Participants' profile based on age

	Age (y.o)	Number of people	%
1	< 30	0	0
2	31-40	1	1,72
3	41-50	13	22,41
4	51-60	14	24,14
5	61-70	20	34,48
6	>70	10	17,24
	Total	58	100

Most of the participants were between 61-70 years old, in which these age range are vulnerable to the occurrence of Chronic Liver Disease due to HBV infection. So when being viewed from the participants' profile based on age, this program was in line with the target. 27.59% of participants had male gender and 72.41% of participants had female gender so that the distribution of participants based on gender was fulfilled. The dominance of female participants was due to the purpose of this program which was currently prioritized for improving the capacity and health awareness of urban villages based on PKK women.

Table 3. Participants' profile based on gender

	Sex	Number of people	%
1	Male	16	27,59
2	Female	42	72,41
	Total	58	100

Through programs held by the PKK, it was hoped that the socialization of hepatitis B in the community can be encouraged. Women also play an important role in managing households. In addition, women who are mostly housewives are more aware of the changes / early signs of hepatitis B symptoms in their neighbourhood.

Table 4. Questionnaire from participants undergoing screening

Questions	**Yes (n = 58)**	**No (n = 58)**
Previous HBsAg test	5	53
History of acute hepatitis	4	54
Relatives with hepatitis infection	7	51
History of blood transfusion	5	53
History of hepatitis B immunization	6	52

Of the 58 participants who were examined for HBsAg and ALT, 5 participants had conducted previous HBsAg test (2-20 years ago) and the results were negative. A total of 4 participants had a history of acute hepatitis within > 20 years ago but the type of virus was unknown. Of the 50 participants, 7 participants had close family members (husband / wife / parents / children / siblings) who had hepatitis, where 5 participants had close relatives who had hepatitis B and the remaining 2 did not know their type of hepatitis virus infection. A total of 5 participants had a history of blood transfusion as one of the risk factors for hepatitis B. The 58 participants, only 6 participants had ever received hepatitis B immunization, of which only 1 person had received a hepatitis booster during adulthood and there was 1 new participant got the first hepatitis B immunization at adulthood (39 years). From these data we obtained several things as risk factors for hepatitis B in these participants.

The 58 participants who underwent blood screening, 3 participants (5.17%) had positive / reactive

HBsAg with 522.5-8104 IU / L titers. This data was less than the prevalence of positive HBsAg in Indonesia based on Riskesdas 2007 data, which was 9.4% (9). Data from WHO (2015) also shows that Indonesia is a country with a high prevalence of chronic hepatitis B (> 8%) (2). This could be caused by the uneven distribution of hepatitis B in every region in Indonesia. Of the three positive HBsAg participants, 1 participant had a child with positive HBsAg and 1 other participant had a husband with positive HBsAg. This could indicate the possibility of HBV transmission in these participants. Of the three participants, 1 participant had an increase in ALT above normal (> 41 IU / L) so there was a need to watch out for inflammation in the liver of the patient. In participants who were infected with hepatitis B, an approach was taken with confidential private consultations and reporting to the community health center as a form of follow-up. These participants were then referred to the internist in hospital for further care.

Tabel 5. The Results of HbsAg dan ALT Test of Participants

HbsAg		ALT	
Positive (reactive)	**Negative (non reactive)**	**Normal (<41 IU/L)**	**Increase (>41 IU/L)**
3 (5,17%)	55 (94,82%)	57	1

4. Conclusion

Counselling and screening can increase public awareness about HBV infection. Participants with positive HBsAg in this program were 5.17% (3/58). In general, there was an increase in the knowledge of the community service participants about HBV infection.

Counselling and early detection of health can improve environmental awareness towards hepatitis B infection with support in the community, such as young community, PKK women (a community of housewife) and other existing community associations to participate in this problem. Similar programs need to be carried out in other regions, especially in areas with a high risk of being infected with HBV to increase public awareness and reduce the incidence of hepatitis B in Indonesia.

References

1. Indonesia DKR. Wamenkes: Perlu Upaya Kolaborasi Untuk Masalah Hepatitis dan HIV/AIDS [Internet]. 2014. Available from: http://www.depkes.go.id/article/print/201406300001/wamenkes-perlu-upaya-kolaborasi-untuk-masalah-hepatitis-dan-hiv-aids.html
2. WHO. Hepatitis B Fact Sheet [Internet]. 2016 [cited 2016 Dec 27]. Available from: http://www.who.int/mediacentre/factsheets/fs204/en/
3. Badan Penelitian dan Pengembangan Kesehatan. Riset Kesehatan Dasar (RISKESDAS) 2013. Lap Nas 2013. 2013;1–384.
4. Departemen Kesehatan Republik Indonesia. Sebagian Besar Kematian Akibat Hepatitis Virus Berhubungan dengan Hepatitis B dan C Kronis [Internet]. 2016. Available from: http://www.depkes.go.id/article/view/16042700001/sebagian-besar-kematian-akibat-hepatitis-virus-berhubungan-dengan-hepatitis-b-dan-c-kronis.html
5. Lemoine M, Nayagam S, Thursz M. Viral hepatitis in resource-limited countries and access to antiviral therapies: Current and future challenges. Future Virol. 2013;8(4):371–80.
6. Nelson NP, Easterbrook PJ, Brian J, Team I, Hepatitis V, Programme GH. Epidemiology of Hepatitis B Virus Infection and Impact of Vaccination on Disease. Clin Liver dis. 2016;20(4):607–28.
7. Fung S, Lok A. Treatment of chronic hepatitis B: Who to treat, what to use, and for how long? Clin Gastroenterol Hepatol [Internet]. 2004;2(10):839–48. Available from: http://www.sciencedirect.com/science/article/pii/S1542356504003866
8. Ansari AH, Zulkifle M, Akmal M. A Study of Prevalence of Hepatitis-B Virus Carriers in the Patients Attending NIUM Hospital , Bangalore. Hamdard Med. 2013;56(1):60–9.

9. Kemenkes RI. Riskesdas 2007 [Internet]. 2007. Available from: www.litbang.depkes.go.id

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