

## Knowledge and attitudes of students of faculty of medicine, Yarsi University regarding Hepatitis B Vaccine viewed from the medical perspective and the overview of Islamic side

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### Abstract

**Background:** Indonesia is one of the countries that have a medium HBsAg prevalence, which is between 3.0% -18.5%. In Islam, the vaccination includes preventive treatment measures (wiquayah), therefore the vaccines are subject to legal treatment, with various opinions from halal (permissible) to forbidden.

**Method:** The design of this study uses cross sectional research design. The population of this study is students who are registered as active students of Faculty of Medicine, YARSI University year 2015 by using questionnaire.

**Result:** The students' knowledge about rejecting the vaccine can be penalized is 27%. Knowledge of students regarding the provision of vaccine does not require informed consent is 69%. The study on student's attitudes towards vaccine programs promoted by the government, 44 students answer doubtfully or 31.2%. The students' attitude agrees with the provision of vaccines is 33.1%. The students' attitude in giving informed consent before the vaccination is 70.8% or 109 students choose this attitude. Education before giving the vaccine is as many as 89 students choose doubtful attitude. While the students' attitude that the tahnik method can be an alternative as a substitute for vaccines is 89 students (57.8%) state disagree.

**Conclusion:** The lack of students' knowledge towards Aluminum content, Thimerosal and formaldehyde in vaccines, but the students know that long-term side effects of Hepatitis B Vaccine contains Aluminum, Thimerosal and Formaldehyde can cause damage to the central nervous system. Regarding the students' attitude towards Hepatitis B immunization, the students agree with the immunization program promoted by the government but they agree that if informed consent is taken and do not know the sanction if they block or reject the immunization program from the government.

**Keywords:** Knowledge; attitude, Hepatitis B Vaccine.

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### Introduction

Immunology develops very quickly, both at the cellular and molecular level, and has succeeded in revealing new things and phenomena through various studies. The progress of this discipline has now been widely applied in the medical field in aspects of prevention, diagnosis and treatment. Understanding the basic principles of immunology is needed to understand immunity related diseases and to apply the latest method that is rapidly

developing for the diagnosis and treatment process based on the immunological approach. Medical student at YARSI University learns about vaccines given to the Body Defense Mechanism and Tropical Disease blocks in semester 2 and 3 (1).

The Ministry of Health (Kemenkes) of the Republic of Indonesia changes the concept of complete basic immunization to complete routine immunization.

Provision of immunization is adjusted to the age of the child. For complete basic immunization, infants under 24 hours are given Hepatitis B immunization (HB-0), the age of 1 month is given (BCG and Polio 1), the age of 2 months is given (DPT-HB-Hib 1 and Polio 2), the age of 3 months is given (DPT-HB-Hib 2 and Polio 3), the age of 4 months is given (DPT-HB-Hib 3, Polio 4 and IPV or injectable Polio), and the age of 9 months is given (Measles or MR). For advanced immunization, infants under two years (Baduta), the age of 18 months is immunized (DPT-HB-Hib and Measles/MR), grade 1 of elementary/madrasah/equal given (DT and Measles/MR), grade 2 and 5 of elementary school/madrasah/equal given (2).

Regulation in Indonesia according to the MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA NUMBER 12 OF 2017 REGARDING MANAGEMENT OF IMMUNIZATION, Article 32 paragraph (3) Arrival of people in Immunization services both indoor and outdoor after being given an explanation as referred to in paragraph (1) and paragraph (2) is an approval for Immunization(3). Law Number 36 of 2014 Article 69 paragraph 2 Public health services as referred to in paragraph (1) which is Government program does not require approval of action (4).

Government regulation relating to mandatory immunization in Indonesia is found in Law No. 4 of 1984 regarding Plague, article 5 paragraph (1) letter, namely: "Plague prevention effort includes: prevention and immunization. "The only thing that can be done to achieve this goal is immunization. In Article 14 regarding the criminal provision states that,

(1):"Anyone who intentionally obstructs the implementation of plague as stipulated in this Law is threatened with imprisonment for a maximum of 1 (one) year and/or a fine of a maximum of IDR 1,000,000 (one million rupiah)."

(2):"Whosoever due to his negligence results in the obstruction of the implementation of outbreaks as stipulated in this Act, is threatened with a maximum imprisonment of 6 (six) months and/or a maximum fine of IDR 500,000 (five hundred thousand rupiah) (5).

Vaccines as we understand them in Islam include preventive medical treatment (wiyayah), therefore

vaccines are subject to legal treatment, but to date there are two opinions in the world, namely pro-vaccine and anti-vaccine opinions. These differences of opinion are seen from vaccine safety issues, halalness, and conspiracy theories (6). As a Muslim, studying is a worship as said by the Prophet Muhammad (H.R. Ibn Abdil Barr) thus, it is good to be a state leader, including scientists who are obliged to find out about the effects of good or bad actions for future generations of children (6).

## Material & Method

The design of this study uses a cross sectional research design. The population of this study is students who are registered as active students of Faculty of Medicine, YARSI University year 2015. Inclusion criteria in the form of active students of Faculty of Medicine, YARSI University year 2015, students who have attended IPT and MPT blocks, are willing and signed research informed consent. Exclusion criteria in the form of respondents who have not/have not passed the IPT and MPT blocks, are not willing as respondents, students of Faculty of Medicine, YARSI University outside the year 2015 and students of Faculty of Medicine, YARSI University who have not attended the lecture of IPT and MPT blocks.

## Result

### Data Characteristics of Respondents

The results of this analysis are presented in the form of a table taken from the respondents' characteristic data consisting of 154 respondents in the students of Faculty of Medicine, YARSI University year 2015.

Based on table 1 shows that the characteristics of respondents with male 77 are 50% respondents and women 77 are 50% respondents. The majority of respondents in the 2015 class are 154 respondents 100%, class of 2014, 0 respondents 0%, year 2016, 0 respondents 0%, and year 2017, 0 respondents 0%.

Based on respondents who have followed and passed the IPT block as many as 154 respondents 100%, respondents who have not participated in the IPT block are 0% 0%, and have not passed the IPT block as much as 0 respondents 0%.

**Table 1:** Characteristics of Respondents

Characteristics	Frequency	Percentage (%)
<b>Sex</b>		
Male	77	50%
Female	77	50%
<b>Subtotal</b>	154	100%
<b>Year</b>		
2014	0	0%
2015	154	100%
2016	0	0%
2017	0	0%
<b>Subtotal</b>	154	100%
<b>IPT and MPT Blocks</b>		
<b>Passed</b>		
Not Following Yet	0	0%
Passed	154	100%
Not Passed/Repeat	0	0%
<b>Subtotal</b>	154	100%

**Table 2:** Respondent Frequency Distribution based on Knowledge Question Item

Knowledge Respondents	Know of (n)	Frequency (%)	Not Know (n)	Frequency (%)
Hepatitis B vaccine contains Aluminum, Thimerosal & Formaldehyde	37	24%	117	76%
The long-term side effects of the vaccine contain Aluminum and Thimerosal causing CNS damage	111	72%	43	28%
Provision of vaccines does not require informed consent based	106	69%	48	31%

Knowledge Respondents	Know of (n)	Frequency (%)	Not Know (n)	Frequency (%)
on applicable regulations in Indonesia				
Doctors who reject vaccines can be punished, based on applicable regulations in Indonesia	42	27%	112	73%
Knowing that tahnik is a preventive action that stimulates immunity in baby	122	79%	32	21%

**Table 3:** Respondent frequency distribution based on attitude question item

Sikap Respondenn	S a n g a t  T i d a k  S e t u j u	F r e q u e n c y	T i d a k s e t u j u	F r e q u e n c y	R a g u  r a g u	F r e q u e n c y	S e t u j u	F r e q u e n c y	S a n g a t s e t u j u	F r e q u e n c y
	n	%	n	%	n	%	n	%	n	%
Program vaccine yang digalakan pemerintah	16	10.4	48	31.2	44	28.6	34	22.1	12	7.8
Setuju dengan pemberian vaccine	32	20.8	32	20.8	28	18.2	51	33.1	11	7.1
Perlunya pemberian Informed consent	6	3.9	8	5.2	4	2.6	27	17.5	10	6.5
Edukasi sebelum pemberian vaccine	5	3.2	3	1.9	89	57.5	50	32.4	7	4.5
Cara tehnik dapat Manjadi aktarnatif pemberian vaccine	5	3.2	89	57.8	37	23.8	17	10.9	5	3.2

## Discussion

### Analysis of Univariate Data Knowledge

This study aims to determine the level of knowledge and attitudes of students of Faculty of Medicine, YARSI University, year 2015 about the Hepatitis B vaccine seen from the point of view of medicine and Islam. Knowledge of the Hepatitis B vaccine is very important to be known by students of Faculty of Medicine, YARSI University year 2015

Based on table 2, show item questions related to knowledge about the Hepatitis B vaccine. It can be seen that from the five questions posed by researchers the highest assessment of the tofu category is in item number five, namely the question about tahnik is a preventive action that stimulates immunity in infants. In the question Hepatitis B Vaccine contains Aluminum,

Thimerosal and Formaldehyde, knowledge of students who answered did not know as many as 117 students (76%), and those who knew only 37 students (24%). On the question of the long-term side effects of vaccines containing Aluminum and Thimerosal causing CNS damage, it was found that students who answered knowing Aluminum and Thimerosal side effects caused only 43 student CNS damage (28%), while 111 students did not know the long-term side effects of Aluminum content and Thimerosal in vaccines or around 72%. In the question about Vaccination, there is no need for informed consent based on applicable regulations in Indonesia, 106 students who answered this or 69%, while 48 students or around 31% did not know about the need for informed consent on vaccination as a government program. On the question about Physicians who reject vaccines can be convicted, based on applicable regulations in Indonesia, the results of

42 students or 27% who know this while most of the remaining 112 students or 73% do not know the regulation. On the question about the knowledge that tahnik is a preventive action that stimulates immunity in infants, it is found that 122 students or 79% of students know that in Islam there are ways to improve immunization in infants, while 32 students or 21% of the rest do not know the case.

### Attitude

Attitude variables describe the tendency of respondents to make decisions or approve things based on the results of fruit thought. When filling out the questionnaire, it is expected that the respondents can for a moment think about the impact of the Hepatitis B vaccine caused by vaccinating. In this case the researcher wants to know the attitude of the respondents to the use of Hepatitis B vaccine more likely to agree or vice versa. Presented as follows:

From table 3, it can be seen that student attitudes toward the vaccine program promoted by the government, 44 students answered doubtfully or 31.2%. The attitude of students agree with the provision of vaccines is 33.1%. The attitude of students in giving informed consent before the vaccination was 70.8% or 109 students chose this attitude. Education before giving the vaccine as many as 89 students chose an attitude of doubt. While the attitude of students that the tahnik method could be an alternative as a substitute for vaccines, 89 students (57.8%) stated they do not agree.

### Research Limitation

1. In this study using analytical cross sectional design, so that the shortcomings cannot know the cause and effect of the variables studied and the topics studied.
2. The research questionnaire using the SPSS method, does not describe well and broadly how the knowledge and attitudes of the respondents studied.
3. The design of the research used by univariate type researchers has deficiencies only describing extensive and not detailed data results such as in the bivariate or multivariate method.

### Conclusion

The lack of students' knowledge of Aluminum content, Thimerosal and formaldehyde in vaccines, but students know that long-term side effects of Hepatitis B Vaccine contain Aluminum, Thimerosal and Formaldehyde can cause damage to the

central nervous system. While the attitude of students towards government policies regarding the Hepatitis B vaccine, the attitude of students towards the vaccine program promoted by the government is hesitant, but agrees with vaccinations which require informed consent. Because of the lack of knowledge given at the time of taking the Block of the Science of Tropical Disease (IPT) and the Body Defense Mechanism (MPT), students chose to be hesitant in giving education before giving vaccinations. Students know Vaccine does not require informed consent based on applicable regulations in Indonesia, but students do not know that Doctors who reject vaccines can be punished, based on applicable regulations in Indonesia. Students' knowledge of tahnik is a preventive action that stimulates immunity in infants is good but the attitude of students that the technique can be an alternative as a substitute for vaccines is disagree.

### Conflict of Interest

None declared

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