Abstract—Scabies is a skin disease that is still a problem with 200 million cases in 2015 in the world. Reducing the incidence of scabies, the understanding of scabies is essential since knowledge is a factor that will determine behaviour. This study aims to analyse the relationship between scabies and the level of knowledge of students in a religious boarding school. This study was a cross-sectional study with analysis using the Fisher Exact test. The incidence of scabies gathered through physical examination, and the diagnosis of scabies based on the cardinal sign such as diffuse itching presents along with either lesion in two regular spots or itchiness is present in another household member. The student’s level of knowledge accessed using a questionnaire. Results showed that the incidence of scabies was quite high although most of the students have a good level of knowledge. The results show that not only knowledge but behaviour plays a vital role in one's hygiene. It concluded that there was no relationship between the level of knowledge and the incidence of scabies.

Keywords—incidence; knowledge; scabies

I. INTRODUCTION

Scabies is a skin disease with a high incidence in the world. In 2015, there were 200,000,000 people suffering from scabies [1]. This disease is widely found in tropical countries and occurs in dense environments [2]. This disease results in a decrease in quality of life. In children, itching affects the child during activities at school and while playing, and children feel embarrassed by lesions on their skin, whereas in adult’s scabies affects work activities [3].

One of the dense settlements is at a boarding school. The incidence of scabies in several boarding schools in Indonesia in 2013-2016 ranged from 24.6% to 54.7% [4-6]. Studies show that there was relationship between the level of knowledge and the number of scabies [6,7]. Other studies which shown an association between education levels and the incidence of scabies were by Ratnasari et al., and Nazari M et al. [5, 8]. However, one study showed that there was no relationship between knowledge and the number of scabies [9].

This disease closely related to personal hygiene and good living environment. Health-related actions result from many factors contribute to behavioral influences interfaced with external environmental forces. Behaviour is determined by cognition, affection and psychomotor trait [10]. Knowing whether knowledge is related or not to the incidence of scabies it is important to determine what strategies will be implemented. In the scenario of the religious boarding school, the knowledge on how to prevent scabies, reduce transmission and reduce the incidence, especially in densely populated locations is essential.
This study aims to determine the number of scabies cases, the level of knowledge of students about scabies and to analyze the relationship between the number of scabies and the knowledge of students about it.

II. METHODS

This study used a cross-sectional study on a religious boarding school’s student which resides in the compound totaling 52 respondents. The statistical analysis method used was Fisher Exact test. The incidence of scabies at the religious boarding school collected by physical examination. The diagnosis of scabies made based on two symptoms and positive signs of 4 cardinal signs, which are itching at night and scabies cases found in the community [11].

The student’s level of knowledge collected using a questionnaire consisting of 20 questions about the causes, symptoms, prevention, transmission, treatment, and risk of scabies. The level of knowledge divided into three categories, namely good if the value is >76%, satisfactory if the value is 60% -75% and unsatisfactory if the value is <60% [12].

III. RESULTS AND DISCUSSION

Table 1 shows that of the 52 respondents, the average age is 15.11 years, and 50% were on the junior high school level. The average questionnaire value was 75, with respondents with good knowledge was 46.2%. Based on the history and physical examination of all respondents, the incidence of scabies was 84.6%. This figure is far higher than the number of scabies cases in the community [11].

Table 1: Respondents Characteristics

| Variables                  | Girls (N=19) | Boys (N=33) | N = 52 |
|----------------------------|--------------|-------------|--------|
| Age                        |              |             |        |
| Mean                       | 13.26        | 16.18       | 15.11  |
| Median                     | 14           | 15          |        |
| Deviation standard         | 2.86         | 2.17        | 2.80   |
| Min – max                  | 6 – 17       | 12 – 21     | 6 – 21 |
| Education level            |              |             |        |
| Madrasah Ibtidaiyah        | 6 (32%)      | 7 (21%)     | 13 (25%)|
| Madrasah                   | 11 (58%)     | 15 (46%)    | 26 (50%)|
| Tsanawiyah                 |              |             |        |
| Madrasah Aaliyah           | 2 (11%)      | 11 (33%)    | 13 (25%)|
| Value                      | 79 (73)      | 72 (27)     | 75     |
| Mean                       | 85           | 70          | 72.5   |
| Median                     | 17.43        | 17.00       | 17.37  |
| Deviation standard         | 45 – 100     | 45 – 100    | 45 – 100|
| Min – max                  |              |             |        |
| Knowledge level            |              |             |        |
| Unsatisfactory             | 2 (11%)      | 10 (30%)    | 12 (23%)|
| Satisfactory               | 5 (26%)      | 11 (33%)    | 16 (31%)|
| Good                       | 12 (63%)     | 12 (36%)    | 24 (46%)|
| Scabies cases              |              |             |        |
| With Scabies               | 17 (90%)     | 29 (88%)    | 44 (85%)|
| None                       | 2 (11%)      | 4 (12%)     | 8 (15%)|

This study showed a high incidence of scabies even in students with a good level of knowledge. Lawrence Green in his preceed-proceed model stated that health problem could divide into behavior and non-behavior problem. There were three factors which can define a behavior change which are: predisposition, enabling and reinforcement factors. Knowledge was part of the predisposition factor, the factor that can facilitate the occurrence of behaviour [14]. Knowledge is the result of knowing someone’s object through the sense [15]. From 46.2% respondents with proper knowledge, it was clear that both of predisposition factor with the six stages of knowledge process already achieved by respondents. The six stages were comprehension, application, analysis, synthesis, and evaluation [14,15].

For the occurrence of changes in one’s behaviour, the process needed by someone’s are: awareness, that is knowing the stimulus, feel interested to that stimulus, considering that stimulus to be good or bad then try to start doing something according to that stimulus and finally adopt it. The adoption stages are where someone’s behaves new according to knowledge, awareness and attitude to the stimulus [14]. Someone’s attitude to the stimulus began to be formed when there is interest toward it.

Based on behaviour change process, the important thing to be done for decreasing scabies incidence in this boarding school were to analyse attitude and respondents psychomotor. In the attitude processed, there are two components which have an effect to attitude formation that were someone’s needs, and the information about those objects or subjects. In the context of the need for not suffering or contracted scabies it is quite difficult since the need is not concrete or feel real especially when the environment is not supported [16]. In this scenario, effort to change respondent behaviour through attitude can be performed with information about scabies. This actually already included in clean and healthy living behaviour material in the academic curriculum at the religious boarding school. The stimulus can be strengthened the formation of health cadres and little doctor appointed from the boarding school students. Scabies can be eliminated if the person and community understand and perform what is necessary such as maintain healthy living and good personal hygiene. What is needed is the continuing information and education about healthy living and personal hygiene from a competent person.

In this study, 46.2% of respondents had good knowledge about scabies. Of all respondents with good knowledge, 78.28% were affected by scabies. The results were similar to the research by Ridwan et al. [9].
IV. CONCLUSION

The number of Scabies cases in MH boarding school is very high while the majority of students have good level of knowledge. There is no correlation between level of knowledge and cases of Scabies in the religious boarding School. Continuing education about healthy living and personal hygiene are needed to ensure a better environment and elimination of the disease.

ACKNOWLEDGMENT

Our gratitude to Head of Manarul Huda boarding school and its students.

CONFLICT OF INTEREST

All authors made substantial contributions right from inception to the end of the study. There is no conflict of interest in whatever form.

REFERENCES

[1] Karimkhani C, Colombra D.V, Drucker A.M, Norton S.A, Hay R, and Engelman D, et al. “The global burden of scabies: a cross sectional analysis from the Global Burden of Disease Study 2015”. Lancet Infect Dis., pp. 1247-54, 2017.

[2] Hay R.J, Steer A.C, Engelmen D, and Walton S. “Scabies in the developing world:its prevalence, complications, and management”. Clin Microbiol Infect, vol. 18(4), pp. 313-23, 2012.

[3] Nair P.A, Vora R.V, Jivani N.B, Gandhi S.S. “A study of clinical profile and quality of life in patients with scabies at a rural tertiary care centre”. J Clin Diagn Res, vol. 10(10), pp. 1-5, 2016.

[4] Akmal S.C, Semiarty R, and Gayatri. “Hubungan personal hygiene dengan kejadian skabies di pondok pendidikan Islam Darul Ulum, Palarik Air Pacah, kecamatan Koto Tangah Padang tahun 2013”. Jurnal Kesehatan Andalas, 2(3):164-7, 2013.

[5] Ratnasari A.F, and Sungkar S. “Prevalensi skabies dan faktor-faktor yang berhubungan di pesantren X”, Jakarta Timur: eJKI, vol. 2(1), pp. 7-12, 2014.

[6] Hilma U.D and Ghazali L. “Faktor-faktor yang mempengaruhi kejadian skabies di pondok pesantren Mlangi Nogotirtro Gamping Sleman Yogyakarta”. JKKI, 6(3), pp. 148-57, 2014.

[7] Ibadurrahmi H, Veronica S, and Nugrohowati N. “Faktor-faktor yang berpengaruh terhadap kejadian penyakit skabies pada santri di pondok pesantren Qotrun Nada Cipayung Depok Februari tahun 2016”. Jurnal Profesi Medika, vol. 10(1), pp. 33-45, 2016.

[8] Nazari M, and Azzi A. “Epidemiological pattern of scabies and its social determinant factors in west of Iran”. Health, vol. 6, pp. 1972-7, 2014.

[9] Ridwan A.D, Sahrudin, and Ibrahim K. “Hubungan pengetahuan, personal hygiene, dan kepadatan hunian dengan gejala penyakit skabies pada santri di pondok pesantren Darul Mukisin kota Kendari 2017”. JIMKESMAS, vol. 2(6), pp. 1-8, 2017.

[10] Pandey S, and Pathak S. “Seasonal variation of scabies in tribal population of Sannapur, Madhya Pradesh, India”. Int J Sci Res, vol. 7(1), pp. 90-1, 2018.

[11] Srikanth S. “Scabies skin infection in a twenty nine years old male”. Sch. J. Med. Case Rep, vol. 6(1), pp. 56-7, 2018.

[12] Arikunto S. Prosedur penelitian: Suatu pendekatan praktik. 15th ed. Yogyakarta: Rineka Cipta, 2014.

[13] Goldsmith L.A, Katz S.I, Gilchrist B.A, Paller A.S, Leffell D.J, and Wolff K. Fitzpatrick’s dermatology in general medicine. 8th ed. New York: McGraw Hill, pp. 2569-72, 2012.

[14] Priyoto. Perubahan dalam perilaku kesehatan: konsep dan aplikasi. 1st ed. Yogyakarta: Graha Ilmu, pp. 227-35, 2015.

[15] Notoatmodjo S. Ilmu perilaku kesehatan. 2nd ed. Jakarta: Rineka Cipta, pp. 26-33, 2014.

[16] Mar’at S, and Kartono L.I. Perilaku manusia: Pengantar singkat tentang psikologi. 2nd ed. Bandung: Refika Aditama, pp. 101-10, 2010.