

Helminthiasis prevalence in brick makers at Lambada Peukan Village, Aceh Besar Region, Indonesia

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Abstract. Helminthiasis are the common health problem in the develop country. WHO prediction 400 million people had infection of helminthiasis. Soil is the usual media to transmitted helminth to human (soil transmitted helminthiasis). One of the rule worker that has hard contact to helminth is the brick maker. This activity usual doing with convensional technique. The objective of this devotion are to knowing helminthiasis prevalence on brick maker in Lambada Peukan Village. The primer data is the count of helminthiasis that get from feces examination in laboratory. This result overgo to promotive, preventive and curative activity. The helminthiasis prevalence in Lambada Peukan is 37,5%. To resolve this problem we doing the preventive and curative activity with giving albendazole preparat and Ferrum. Beside that we also make education activity to the workers. The aim of this activity is to increase need and ability of the worker to maintance from helminthiasis. The workers who in participated in this programme had having positive response that they want to participated in all off this programme.

Keyword: Helminthiasis, brick makers, safety equipment

Introduction

One of any occupation having the significant contact with the soil is the job done by brick workers. This occupation is usually done conventionally by engaging the workers from various ages. Practically, the workers do not use the protective devices in order to run their job like gloves, boot shoes and appropriate attire. This situation would directly increase the risk of having the worm infection among those workers. (Sadjimin, 2000). Lambada Peukan Village is one of villages located in Darussalam Subdistrict in Aceh Besar District particularly in Kemukiman Lambaro Angan, Aceh Besar District, Aceh Province. The village consists of three dusuns (sub-villages) i.e. Kuta Peukan Sub-village, Tgk. Bak Hasan Sub-village, and Tgk. Di Jurong Sub-village. Lambada Peukan Village is 50 acres divided into 35 acres of farming area and the rest is the settlement area (Anonymous, 2010).

The total number of residents is 532 people comprising of 149 families. The people commonly have the medium and lower class of economy. This condition is seen from people who work mostly as plant and animal farmers. The economy of community is divided into 60% in farm, 10% in civil servant, and the other of 30% in some other jobs which is one of them is the industry of brick production (Anonymous, 2010). The brick production level of Lambada Peukan Village could be regarded adequate due to the numerous industry producing bricks. There are six industries which is actively operated. In each of industry, the brick workers are divided into two groups of whom workers forming the brick and workers burning the brick. Generally, females are engaged in forming the brick whereas males are engaged in burning the brick. The presence of some brick industries has less contributed in increasing the economy of community since people can work to make bricks and then sell them to the surrounding areas (Anonymous, 2010).

Those workers consist of mostly adults and the other is children. Like other conventional industries in which the self protection aspects within the occupational environment are still paid attention inadequately. Besides the understanding and application of community towards the hygiene aspect in daily practice which is less so that disease of worm infection transmitted via the soil, may occur. According to the work done by Kismono (2000) and Hasyimi (2001) stating that the brick workers, having daily contact with soil, are used to not wearing the shoes/sandals, not washing hands after working, not using spoon while consuming food and beverage, not cutting nails weekly, defecating at any place, and not having the anti-helminth drug routinely. (Kismono, 2000). Those conditions should be managed with any health action. One of them is by knowing the prevalence of helminthiasis among brick workers at Lambada Peukan Village, Darussalam Sub District, Aceh Besar District. This is very essential to become the early action in mapping the health problem around the village so that the solution could be carried out.

Materials and Methods

The community service and research was done at Lambada Peukan Village, Darussalam Sub District, Aceh Besar District. The preliminary study has been carried out since 28th September until 13th October 2010. However, the screening, prevention, treatment and promotion have been done since 30th September until 13th October 2010. Moreover, the targets of this community service were the brick workers of both material preparation and brick maker at the brick industry in Lambada Peukan Village, Darussalam Sub District, Aceh Besar District.

A. Screening

The early step was done the screening of faeces examination for determining whether the workers were infected by worm or not. These procedures were: (1) Ask the consent for sample collection (faeces), (2) Faeces was collected in each of the 3x4 marked pot, (3) The examined faeces was the fresh faeces taken in the morning, (4) Faeces was directly sent to the Province Health Laboratory for further examination. The procedures of faeces examination: (1) Macroscopically: seen the consistency, color, the presence of mucous or blood, (2) Microscopically: drops of Eosin was put on the object glass; The faeces sample was mixed together with Eosin homogenously; Then covered by cover glass; The examination was done by microscope with 10x40 magnification, carried out with zigzag position; Then the results were marked positive by finding the worm egg; All results were recorded and tabulated on the worksheet (Beaver, 1984).

B. Regiment provision of prevention and treatment

C. Based on the screening results, the prevalence of worm infection among the brick maker in Lambada Peukan Village was found 37.5%. According the worm type, *Ascaris lumbricoides* was found dominant as the cause of infection (91.7%). Consequently, the preventive regiment like treatment of 400 mg albendazole has been chosen every six month for uninfected workers. However, the infected workers has been treated with 400 mg albendazole every six month as well as the iron, thiamin, piridoxin, and cyanocobalamin. The selection of albendazole as the anti-helminth was based on the effective agent for the group of soil transmitted helminthiasis.

D. Health Promotion

The activity was emphasized on the improvement of both worker's knowledge (cognitive aspect) and change of custom (affective aspect). This health promotion was performed individually and together (small groups) comprising of three workers. By applying this method, the workers may discuss intensively with the tutors without any uncomfortable feeling. The feeling arises since the worm infection has been regarded as the embarrassing disease for people. Thus, if the health promotion was performed massively could not achieve the goal on changing the knowledge and habit among workers. The content of the health promotion was on how important to apply the hygiene during working as well as on the uses of self protection devices like gloves, working uniform, and boot shoes. Furthermore, the workers were taught on how to prevent and to treat by using albendazole regiment.

Results and Discussion

According to the examination results among brick workers at Lambada Peukan Darussalam Sub district Aceh Besar District showing that the positive worm infection was found among 12 people (37.5%), whereas the negative one was 20 people (62.5%). However, the worm incidence based on the worm type i.e. *Ascaris lumbricoides* found among 11 people (34.4%), none with *Trichiuris trichiura*, *Enterobius vermicularis* and Hookworm. But, a person (3.2%) was found with mixed type. From interview, all brick workers were 32 people (100%) who don't use the completely protective devices. 24 people (75%) found not wearing the sandals/shoes while working, 21 people (65.6%) not using spoon while eating, 26 people (81.3%) having the habit of food consuming during the rest. Moreover, all workers haven't taken any anti-helminth drug. With regard to good habit, it was found that 19 people (59.4%) washing hands with soap after working, 23 people (71.9%) cutting nails routinely, and 27 people (84.4%) using toilet.

According to this study, it was found that the prevalence showed larger as it has happened more than one third among brick workers. This happened since they have the frequent contact with soil. As far as we know that the worm is the soil transmitted

helminthes disease in which the transmission is mediated by soil. The infection transmitted via soil depending on the spread of eggs in the appropriate environment for maturation. The transmission among human occurs from hands to mouth; contaminated fingers with soil contact. In Indonesia, the prevalence of worm infection has remained higher in around 60-90% according to the location and environment sanitary (Kismono, 2000). According to WHO, the infection of *Ascaris lumbricoides* among human is the most frequent and occurs around one billion cases throughout the world. Ascariasis is found massively and with the most numerous cases in countries having the hot climate. The infective stadium of *Ascaris* is the egg containing mature larvae. The egg passes through the faeces of infected individual within 5-10 days in the appropriate environment to become infective. The Ascariasis transmission may happen seasonally or throughout year, also in the endemic area with higher incidence of *Ascaris* and *Trichuris* occurring continually. The transmission is also affected by any parasitic helping agent like suitable climate and soil. Both species need the clay to grow (WHO, 2006).

The brick is made from basic material of soil or clay added with supporting material i.e. water and sekam. The soil type normally used is the sediment soil (alluvial hidromorfik) which remains on the low topography due to flood or is found in the flood area. Both the group of Nematodes living in the sediment and teresferial species living in the thin layer of water around the soil adapt with surroundings by forming the more cylindrical body in order to move easily. Most of Nematodes are the important parasite species like *Ancylostoma*, *Ascaris*, *Trichinella*, and *Trichuris*. All infected workers have not used the protecting devices while working. According to the study done by Kismono (2000) and Hasyimi (2001), they found the similar results. Furthermore, this study showed that the uses of protecting devices have been informed about the purposes since most workers might not apply those devices while working. Additionally, many workers had the good habit. But, they still had the worm infection because they have not used the protecting devices while working (Kismono, 2000).

The community service and research has been carried out among brick workers in Lambada Peukan Village, Darussalam Sub district, Aceh Besar District. This study hopefully may minimize the morbidity level of worm infection among workers. On the other hand, the most important goal is to change the mindset of community for healthy life so that they have no worm infection.

Conclusions

The worm infection is still a problem for the brick workers at Lambada Peukan Village. The workers have known and understood the aspects in regard to prevention and treatment of worm infection. The treatment of albendazole regiment has been done in order to minimize the morbidity level of worm infection among workers.

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