

## CHAPTER 5

### DISCUSSION

The objective of this study was to evaluate the effects of educational intervention using electronic module on teachers's knowledge, beliefs, and practices in drug abuse prevention among junior high school students. The first group in this study received educational intervention using electronic module which has developed by researcher. The second group received usual printed module with the same containing materials with the electronic module. This chapter discusses the changes observed in knowledge, beliefs and practices caused by intervention given.

#### 5.1. Effects of Intervention on Teachers' Knowledge

Findings of this study showed that there was positive effect of educational intervention using modules on teachers' knowledge about drug abuse and drug abuse prevention. In the group 1 which was given electronic module, there was significant improvement on the teachers' knowledge from baseline to one month after intervention ( $P<0.001$ ). The mean of knowledge scores increased from  $17.10\pm 2.497$  to  $21.92\pm 1.560$ . The same improvement was also occurred from baseline to six month after intervention, the mean of knowledge scores increased from  $17.10\pm 2.497$  to  $21.60\pm 1.695$  ( $P<0.001$ ). However, the mean of knowledge scores was significantly decreased from one month to six month after intervention ( $P<0.001$ ).

Almost similar with condition of group 1, the positive changes of knowledge scores was also occurred in the group 2 which was given printed module. The mean of knowledge scores was increased at one month after delivering of printed module from  $16.98\pm 2.290$  to  $21.64\pm 2.481$  ( $P<0.001$ ). In contrast with group 1, the mean scores of knowledge in the group 2 still increased from  $21.64\pm 2.481$  at one month after delivering printed module to  $22.01\pm 2.073$  at six months after delivering printed module ( $P<0.001$ ). There was significant different between study groups in mean changes of knowledge scores from one month to six months after intervention ( $P<0.001$ ). The positive change of mean found in printed module group, while the negative change occurred in the electronic module group.

The interpretation of result of two-way repeated measures ANOVA was made based on simple effect tables which have been created with the syntax procedure in SPSS (Meyers et al., 2013). The first simple effect showed that there were no significant differences in the knowledge scores between study groups at each point of measurement. The second simple table showed that in the group 1, knowledge scores was increased significantly from the pretest to the one month after intervention, but there was a significant decreased from one month to six months after intervention. This finding will be explained with some possible causes. First, the electronic document storage factor in the gadget or computer is often a problem for some

people, especially for people who are old enough in ages. Documents lost or forgotten where saving becomes a common problem. Especially when accompanied by the so many of other documents. Secondly, the difficulty factor of marking electronic documents for some people may also be the reason for the lack of interest in rereading electronic documents. Unlike in print documents it is easy to manually be marked with a highlighter or another. Third, the gadget screen size factor that is not wide enough to be able to read comfortably may also make it less interested to read back electronic documents. While in the long run, knowledge is closely related to the ability to remember, so the rereading factor becomes very important.

This present study was consistent with the previous study which found that paper books was gave better effects than electronic books on the aspect of reading comprehension (Jeong, 2012). However, Macedo-Rouet et al. (2003) and Kang et al. (2009) found that there were no significant difference between electronic and paper books effects on reading comprehension (Kang, Wang, & Lin, 2009; Macedo-Rouet, Rouet, Epstein, & Fayard, 2003). Arifah (2010) in her study found that there was a significant improvement on the knowledge of women on health education using module. Similarly, Yustisa (2014) stated that both printed and electronic media equally increased students' knowledge about healthy behaviors. The finding of this present study was also similar to that of Abbasi et al (2013), which stated that both module and lecture methods have similar effects on improving the knowledge of nurses in Iran.

Overall, this present study revealed that educational intervention using module significantly increased teachers' knowledge about drugs and drug abuse prevention although there was decreased mean scores of knowledge in the electronic module group at six months compared with at one month after intervention. Educational intervention using printed module was more effective in improving teachers' knowledge rather than electronic module. The mean scores of teachers' knowledge in printed module group was consistently inscreased from baseline to one month and then to six months after intervention.

The study was also in accordance with the theory where knowledge is the result of "know" and this happens after people do the sensing of a particular object. Sensation occurs through the five senses of human beings namely sight, hearing, smell, sense and touch. Much of human knowledge is obtained through the eyes and ears (Notoatmodjo, 2010). One of health promotion media is module. Module is one form of teaching materials which are packed in a systematic and easy to learn independently (Nasution, 2011).

The form of module used in the group 1 of this study was the electronic module. Electronic module as learning media is the advanced development of printed module. Electronic module is a form of presentation of self-learning materials arranged systematically into the smallest learning unit to achieve certain objectives, presented in electronic format, such as memory CD or memory card, USB and others

with it a material can be learned anywhere, by using a computer, laptop or smartphone. Without having to be printed so cheaper in production costs and environmentally friendly (Saputro, 2009).

## **5.2. Effects of Intervention on Teachers' Beliefs**

Findings of this study showed that there was significant positive effect of intervention on teachers's beliefs about drugs and drug abuse prevention, both in group 1 which was given electronic module and group 2 which was given printed module. All categories of beliefs at one month after intervention were significantly higher than those ones at baseline condition ( $P < 0.001$ ), both in group 1 and group 2. The almost same condition was found at six month after intervention. Each category of beliefs was significantly higher than baseline ( $P < 0.05$ ), both in group 1 and group 2. Based on the between groups comparison analysis of mean changes from baseline to one month after intervention, there was found that mean changes of perceived susceptibility in the group 1 was significantly higher than group 2 ( $P < 0.001$ ). The mean changes of perceived severity, benefits, barriers, efficacy and total beliefs were not significantly different study groups ( $P > 0.05$ ).

Moreover, findings from between groups comparison analysis of mean changes of beliefs scores showed that the mean changes from baseline to six months after intervention for perceived susceptibility and total beliefs were significantly higher in group 1, with P value of  $< 0.001$ . In contrast, the change of perceived severity was significantly higher in group 2 rather than in group 1 ( $P < 0.001$ ). There were no significant differences in mean changes of perceived benefits, barrier and efficacy between study groups.

Furthermore, the output of two-way repeated measures ANOVA for the beliefs variable showed that in the first simple effect table the intervention and control groups were not different at the point of pretest. At one month and six months after intervention, the two groups were significantly different each other with the P value of 0.001 and  $< 0.001$ . In connection with this result, second simple effect showed that in the group 1, belief scores was continuous increased significantly at every measurement period, while the different condition showed in the group 2, belief was not significantly different between one month and six months after intervention, with the extreme P value of 1.000, belief scores slightly decreased 0.212. Educational intervention using electronic module was more effective in improving teachers' beliefs rather than printed module.

These findings was relevant with Hansen et al. (2009) who studied about the impact of technological enhancements toward teachers' attitude in delivering drug abuse prevention program in U.S. This study revealed that teachers who used the technological enhancements found it easier to implement the program compared to others who delivered the program as usual. Furthermore, teachers' attitude about the

program improved after experienced the enhancements and the majority of teachers wishing to continue using them in the future (Hansen et al., 2009).

The problem of decreasing the average belief score on the third measurement when compared to the second measurement in the group which given printed module possibly related to several things. First, some people may have taken for granted something that has been known for a quite long time. This causes less concern for the problem. Secondly, the source of information which coming from a printed book for some people is considered as something that is commonplace, there is no innovation and does not provide an overview of the actual phenomenon. They know that for the process of printing the book takes a long time, so that the phenomenon delivered generally has lost its actuality. This can affect perceptions and beliefs, though in terms of better knowledge.

Similarly with these findings, Dusenbury et al. (2003) carried out a study to examine the influence of training on teacher beliefs and perceptions about norm setting and student drug use. They found that there was significant pretest-to-posttest improvement on teacher beliefs and perceptions for several items. There was a significant improvement in teachers expectations that students not go on to use substances ( $t=3.391$ ,  $p=0.001$ ), all teachers better understood how to develop lesson plans for drug education ( $t=5.886$ ,  $p<0.001$ ), and finally all teachers had marked improvement in their confidence to use norm setting in teaching ( $t=9.018$ ,  $t<0.001$ ).

The findings were also consistent with those reported by Arifah (2010), that there was a significant improving on the closed response that includes the attitude and belief of women on health education using module. Similarly, Yustisa (2014) stated that both printed and electronic media equally increased students' attitude and beliefs about healthy behaviors.

Azwar (2011) stated that media is one of the factors influencing the formation of a closed response. Media has a fundamental task in the delivery of information. Media carry information and messages that contain suggestions which will direct one's opinion. When strong enough, the messages brought by the information will provide an effective basis for judging things so that certain beliefs are formed. In this study, module which was used in the intervention and control groups is a learning media.

Machfoedz & Suryani (2009) stated that one's belief in disease prevention is a cognitive model which means that in particular the cognitive processes are influenced by information from the environment. The increased teacher's beliefs in drug abuse and drug abuse prevention was also due to the increasing influence of knowledge as well. Submission of information to change the belief of teachers in the prevention of drug abuse in students in this study was conducted by using module.

This finding was also similar with was found by Mahmoodabad et al. (2017) which concluded that there was significant improvement on health belief model components average scores among male students two months after given an educational intervention about the preventive drug dependency in Iran.

### **5.3. Effects of Intervention on Teachers's Practices of Drugs Abuse Prevention**

Findings of this study showed that there was a positive effect of intervention on teachers' practices in drug abuse prevention. The mean scores of practices at one month after intervention was significantly higher than the mean scores at baseline ( $P<0.001$ ), both in group 1 and group 2. Consistently, the same improvement in practices was found at six months after intervention. The mean scores of practices was significantly higher than at one month after intervention ( $P<0.001$ ). Both electronic and printed modules significantly increased teachers' practices in drug abuse prevention.

The between groups comparison of mean changes from baseline to one month after intervention showed that the group 2 significantly higher than group 1 ( $P<0.001$ ). However, at six months after intervention, there were no different in mean changes from baseline between study groups ( $P=0.517$ ). Result of the two-way repeated measure ANOVA test described that both of electronic and printed module consistently increased participants' practice scores in drug abuse prevention at every period of measurement. Electronic and printed module of drug abuse prevention being the options to be used to improve teachers' behavior in preventing drug abuse among students. Educational intervention using electronic and printed module have the same positive effect on teachers' practices in drug abuse prevention.

These findings are consistent with those reported by Abbasi et al. (2013), which stated that module has the positive effects on improving practice of nurses in oncology wards in Iran. Similarly, Kwant et al. (2015) reported that electronic modules has the significant improvement on the performance of skill station among medical students in Netherland. This finding was also similar with that found by Mahmoodabad et al. (2017) which concluded that there was significant improvement on the average scores of synthetic drug dependence preventive action among male students two months after given an educational intervention about the preventive drug dependency in Iran.

Researcher developed and used electronic module in this present study. Electronic module is the development of printed module. Electronic module was developed with the expectation of the bigger impact, easier to carry, durable, and cheaper in the cost production. Increased knowledge, beliefs and practices of the teachers in drug abuse prevention was the expected outcome so that the drug abuse cases among students will be minimized.

Overall, the result of this study indicated that the administration of electronic module and printed module after being evaluated for six months was giving positive effect on teachers' knowledge, beliefs and practices in preventing drug abuse. Both forms of delivery method of learning materials can be the alternative method for teacher empowerment efforts in the prevention of drug abuse. The problem of no better effect generated by the electronic module than the printed module on the teachers' knowledge and practices as assumed before is likely to be related to several things such as the average of respondents' age (more than 40 years old), the gadget or computer screen size is not wide enough to read the module, or because it is still interesting printed module that is easier to be tagged with folded or marked with manually highlighter.

In addition, basically before the researcher doing this study, teachers in study location were very rarely got the material and provision of information about drugs and how to prevent drug abuse. Most of information presented only for students. Teachers are the spearhead in the process of teaching and learning, because teachers interact directly with students. Teachers who have been assigned to serve as teachers in a school will continue to be teachers of the school, while students will graduate and leave school. So that interventions to improve teachers' knowledge about the prevention of drug abuse on students will be more effective and efficient and can be applied in the future.