The Effects of Learning by Reproductive Health Module on Knowledge, Attitudes and Practices regarding Adolescent Reproductive Health in Bandung District

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Abstract. Characteristics of adolescents often lead to negative sexual behavior that makes adolescents vulnerable to health problems, especially sexually transmitted diseases or other reproductive health problems. Based on this, efforts are needed to improve adolescent skills in healthy behavior, especially reproductive health, one of which can be given through learning using special modules. This study aims to determine the effect of reproductive health learning modules on the knowledge, attitudes and behavior of adolescent reproductive health. Method: this study used the quasi experiment method pre-post test design. The research sample was 59 students (28 control groups and 31 treatment groups). Data analysis using Wilcoxon, Chi-Square test and Mann Whitney test with α = 0.05. Results: The analysis showed there were differences in knowledge before and after learning in modules 6 and 7 (p-value 0.000), the different in attitudes before and after learning in module 7 (p-value 0.030) and differences also found in practice before and after learning in module 2 and 7 (p-value 0.001 and 0.045). Conclusion: Most of the participants in the study were not knowledgeable about reproductive health, unfavourable attitude about reproductive health and also had poor practices about reproductive health, it should be considered in the future research and intervention programs attempting to improve reproductive health outcomes like improving learning method and media like using multimedia.

1. Introduction
Adolescence is one of human phases of life which is unique for it is a phase at which one explores themselves in pursuit of their true self. According to the criteria set by World Health Organization (WHO), adolescence starts at the age of 10 up to 19 years old while National Family Planning Coordinating Board, stated that adolescents are those who are at the age of 15-24 years old and unmarried. Biro Pusat Statistik (2016), Central Bureau of Statistics, claimed that the number of adolescents (aged 15-24 years old) has continued to increase every year. In 2016, it is accumulated that there are about 174,375,008 adolescents (67% of the total population). The number is predicted to accrue and at its peak, in 2020, a phenomenon called “Demography Bonus” is forecasted to take place. It is a phenomenon in which the number of adolescents turns up to 70% of the total population. The number attracts some benefits within adequate management. It is better to start preparing for the anticipation at a very early age.
The age gap of adolescents is not considered to be the main point. However, it is important to understand that adolescence is a transition stage at which adolescents experience alteration from childhood to adulthood. During adulthood stage, adolescents will experience some important stages of life apart from physical and social maturity. They will later arrive to social and economic independency, gain character building, real life skills and the ability to negotiate (abstract reasoning)(WHO, 2015).

Data collected from Indonesian Demography and Citizenship Survey (SDKI) (2015) shows that 33.3% of female adolescents and 34.5% of male adolescents start to date before they reach 15. It is alarming with regard to the fact that they are not mature enough and unexpected incidents, such as premarital sex, most likely occur. Data taken by SDKI (2012) shows that the reason of male adolescents to commit sexual intercourse before marriage is out of curiosity (58%).

The action mentioned above does not only effect on the social problem but also on their reproductive health. The infection of sexually transmitted diseases, unexpected pregnancy and abortion are most likely to happen through premarital sex. The result of the research shows that 3 out of 10 female adolescents know that one of their relatives or close friends is having an unexpected pregnancy. The number of cases is bigger in villages (2,71%) than that of in cities (1,28%) and in urban area (1,97%). Based on the above situation, it is imperative to find a way to educate adolescents on keeping the reproductive health to avoid unexpected incidents to happen. The government is currently operating a program called Usaha Kegiatan Sekolah (UKS) which is promoted and supported by the local clinics.

On the other hand, a set of regulation has been made to support the service of reproductive health for adolescents in PP No. 61 2014 about reproductive health mentioning the standard of types of reproductive health services necessarily given to adolescents. West Java is considered to be the most populous province in Indonesia. 26% (11,358,704) of the total population belongs to adolescents aged between 10-24 years old. An appropriate action need to be done since it is not a small number.

Muhammadiyah and Aisyiyah are the second biggest Islamic organization in Indonesia. One of the programs conducted in Muhammadiyah and Aisyiyah is prevalent education at all stages starting from early age education until higher education. With this huge potential in education, competent and mentally and physically healthy human resources are in high demand. Based on an interview with one of Junior High School headmasters, it is said that many adolescents are most likely to have alarming sexual behavior, lack information or knowledge on their reproductive health. The unavailability of media used both by students and teachers and the variety of materials in every school lead to poor management of the curriculum and learning on the reproductive health.

2. Methods

Research design used is a quasi-experiment with pre-test non randomized control group pre-test-post-test design conducted in September 2018. The intervention done in the research is by delivering materials using a module on reproductive health compiled by the researchers. The module includes materials on reproductive organs, puberty, Perilaku Hidup Bersih dan Sehat (PHBS), adolescent delinquencies, The maturity of marital ages, child abuse and deviant sexual behaviour. The module comes in two types. One module is made for the students and the other one made for the teacher or facilitator. The literacy of the modules is examined by the language experts. Validity examination of instruments uses correlation of product moment and Pearson. Reliability examination uses analysis of Cronbach’s Alpha > 0.60.

Population of the research is all students of Aisyiyah Junior High School grade VIII whereas the sample of the research is some students from grade VIII that meet the inclusive and exclusive criteria. The technique used in drawing samples is purposive sampling, a class with the most students. Based on the data, it is decided that class A is the experimental group consisting of 31 students and class D is the controlled group consisting of 28 students.

Research of independent variable is the learning using the modules on reproductive health and the dependent variable is adolescents’ knowledge, attitude and behaviour on reproductive health. To
examine students’ knowledge, attitude and practice in the pre-test and post-test, the researchers use questionnaire. Post-tests are given a day after the delivery of all materials. For the data analysis technique and bivariate analysis, the researchers uses Chi-square and Mann-Whitney test and Wilcoxon test.

2.1 Ethical Clearance

Ethics approval for the study was obtained from the Health Research Ethics Committee-Ministry of Health, Bandung Health Polytechnic. Participation in the study was possible only after we obtained informed consent from potential participants.

3. Result

Description of Respondents Characteristics

Respondents characteristics studied in this research include age, gender, and information on reproductive health as demonstrated in table 1.

| Students Characteristics | Group | p-value |
|--------------------------|-------|---------|
|                          | Experimental | Controlled |
| n = 31                   | n = 28       |           |
| Age                      |             |           |
| Mean (SD)                | 13,35 (0,61) | 13,07 (0,47) | 0,055a |
| Median                   | 13          | 13       |
| Range                    | 12 - 15     | 12 - 14  |
| Gender                   |             |           |
| Male                     | 16 (51,6%)  | 15 (53,6%) | 0,880b |
| Female                   | 15 (48,4%)  | 13 (46,4%) |
| Information on           |             |           |
| reproductive health      |             |           |
| Informed                 | 20 (64,5%)  | 2 (7,1%)  | 0,000b |
| Not informed             | 11 (35,5%)  | 26 (92,9%) |

Table 1. Characteristics of The Research Subject in Experimental and Controlled Group.

This research provides intervention on the learning of reproductive health through module media. The table below provides information on the differences of knowledge on reproductive health in both groups after the teaching and learning process using the modules on reproductive health.

| Group | Knowledge | p-valuea |
|-------|-----------|----------|
|       | Before    | After    |
| Modul 1 | Controlled | 5.51 (1.12) | 5.68 (1.10) | 0.451 |
|       | Experimental | 5.14 (1.26) | 5.44 (1.25) | 0.239 |
| Modul 2 | Controlled | 9.51 (1.54) | 8.92 (1.20) | 0.821 |
|       | Experimental | 8.96 (1.29) | 9.10 (2.31) | 0.305 |

Table 2. Comparison of Respondents’ knowledge on reproductive health in experimental group and controlled group.

Table 1. The research was conducted towards students of Aisyiyah Junior High School grade VIII. Class A, with the most students, comprising 31 students was put in an experimental group and class D, comprising 28 students, was put in a controlled group. The data shows that the range of age is between 12-15 years old in experimental group and between 12-14 years old in controlled group. On the other hand, the mean age of the total participants is 13 years old. In term of gender, the number has a slight difference between the two groups. The characteristic on information on reproductive health shows a significant results between the two groups (p-value 0.000).

This research provides intervention on the learning of reproductive health through module media. The table below provides information on the differences of knowledge on reproductive health in both groups after the teaching and learning process using the modules on reproductive health.
Table 2 demonstrates the result of statistical calculation on the students’ knowledge in experimental and controlled groups before and after the teaching and learning process using the module. The results for each module vary. Experimental group shows an increase in modules 1 and 2 though it is not considered as a significant increase (p-value 0.144 and 0.305). The variety of increased number also appears for the controlled group in modules 3, 4 and 7 but it is also not significant.

| Groups | Attitude | p-value<sup>a</sup> |
|--------|----------|-------------------|
|        | Before   | After             |
| Modul 3 | Controlled | 7.55 (1.05) | 7.66 (1.10) | 0.669 |
|         | Experimental | 8.07 (1.30) | 6.75 (1.99) | 0.000 |
| Modul 4 | Controlled | 8.53 (1.37) | 8.42 (1.39) | 0.639 |
|         | Experimental | 8.46 (1.91) | 8.35 (2.11) | 0.644 |
| Modul 5 | Controlled | 4.32 (0.77) | 4.5 (0.74) | 0.248 |
|         | Experimental | 3.75 (0.88) | 4.17 (1.12) | 0.034 |
| Modul 6 | Controlled | 9.28 (1.58) | 9.21 (1.75) | 0.670 |
|         | Experimental | 9.71 (1.99) | 7.25 (2.06) | 0.000 |
| Modul 7 | Controlled | 9.82 (1.53) | 10.1 (1.60) | 0.192 |
|         | Experimental | 9.53 (1.73) | 8.32 (2.41) | 0.004 |

<sup>a</sup>Wilcoxon test

Table 3. The Comparison of respondents’ Attitude Towards Reproductive Health in Experimental and Controlled Group.

| Groups | Attitude | p-value<sup>a</sup> |
|--------|----------|-------------------|
|        | Before   | After             |
| Modul 1 | Controlled | 24.8 (2.88) | 23.8 (2.76) | 0.105 |
|         | Experimental | 24.2 (2.74) | 25.1 (3.12) | 0.144 |
| Modul 2 | Controlled | 9 (1.54) | 8.92 (1.20) | 0.821 |
|         | Experimental | 8.96 (1.29) | 9.10 (2.31) | 0.305 |
| Modul 3 | Controlled | 28.7 (3.98) | 28.9 (3.48) | 0.691 |
|         | Experimental | 31.7 (3.38) | 29.9 (6.82) | 0.068 |
| Modul 4 | Controlled | 37.3 (5.78) | 37.4 (5.79) | 0.707 |
|         | Experimental | 39.3 (4.54) | 37.2 (9.74) | 0.159 |
| Modul 5 | Controlled | 41.2 (4.31) | 42.6 (3.78) | 0.082 |
|         | Experimental | 41.7 (3.68) | 39.0 (9.23) | 0.071 |
| Modul 6 | Controlled | 34.1 (5.48) | 34.0 (5.17) | 0.633 |
|         | Experimental | 33.9 (6.35) | 33.9 (8.56) | 0.709 |
| Modul 7 | Controlled | 39.3 (3.78) | 38.8 (2.91) | 0.528 |
|         | Experimental | 40.6 (3.57) | 39.5 (8.36) | 0.990 |

<sup>a</sup>Wilcoxon test

The results of the statistical calculation provide information on the respondents’ attitude in the experimental group and controlled group shown in table 3.

Table 3 shows that there is no significant increase from the modules given to both groups even though there is an increase of respondents’ attitude in experimental group for modules 1 and 2.

Table 4. The Comparison of Respondents’ Behavior on Reproductive Health in Both Experimental and Controlled Groups.

| Groups | Practices | p-value<sup>a</sup> |
|--------|-----------|-------------------|
|        | Before    | After             |
| Modul 1 | Controlled | 29.2 (3.52) | 30.1 (3.46) | 0.117 |
|         | Experimental | 29.8 (2.67) | 28.7 (4.36) | 0.204 |
| Modul 2 | Controlled | 28.7 (3.07) | 28.4 (2.18) | 0.551 |
|         | Experimental | 25.5 (2.55) | 24.6 (5.95) | 0.676 |
| Modul 3 | Controlled | 31.5 (4.29) | 32.0 (4.75) | 0.533 |
|         | Experimental | 30.2 (3.30) | 29.5 (7.55) | 0.939 |
Respondents’ attitude towards reproductive health was assessed based on gradual scoring starting from always, often, seldom, and never. Table 4 shows that the respondents’ behaviour is mostly not significant. The result of the teaching of modules 4 and 6 indicates that there is a significant decrease in respondents’ behaviour in experimental group after the learning process (p-value 0.028 and 0.000). On the other hand, controlled group experiences a significant increase on respondents’ behaviour for module 7, comprising 0.012 (p-value<0.005).

4. Discussion
4.1. Respondents’ Characteristics
The total number of participants is 57 students. They are divided into experimental group (29 students) and controlled group (27 students). The respondents’ characteristics include age, gender, and their exposure of information on reproductive health. According to the definition set by WHO, Adolescents are people aged between 10-19 and the average age of students is 13 years old. The number of gender (male and female) participants in both groups is even (p-value 0.880) and regarding the exposure of information on reproductive health, about 64.5% of students in the experimental group by some means have the exposure. The source of information gained by the students is mostly from their teachers comprising 29% followed by parents, peers, health officers and social media. A study conducted by Sugiyanto Z and Suharyo (2011) stated that in Jakarta and Banjarmasin, students gain information on reproductive health from social media, followed by teachers especially counselling and guidance teachers. Teachers play an important role since students spend most of their time at school. Another study by Ekasari F (2007) shows that adolescents at least gain information on reproductive health through parents or family. Thus, parents should be the first to introduce their children about reproductive health.

4.2. Respondents’ Knowledge Before and After The Learning Process
Knowledge on reproductive health in adolescence is an essential aspect for them taking into account that unhealthy sexual behaviour in adolescence is caused by the lack of information on reproductive health. As it is stated in a theory by Notoatmodjo (2007) students mostly gain information through their senses especially their sense of hearing and seeing. Santrock Theory in Hakim A and Kadarullah O (2016) reveals that the process of gaining information are administered through two ways, namely assimilation and accommodation. Assimilation is a process in which people collect new information they gain with the prior information while accommodation is a process in which people adapt new information to the prior information. The result of the research shows that there is an increase in the knowledge on materials on puberty but it is not significant. And there is also some decrease in other materials. This condition is backed up by Meliala HD (2016) stating that most female adolescents are not ready in facing puberty due to lack of information from parents. It goes in line with the respondents’ characteristics where most students in experimental group have gotten exposure on information on reproductive health. In consequence, there is an increase in the knowledge of experimental group.

4.3. Adolescents’ Attitude Before and After the Learning Process Using the Modules on Reproductive Health
The result of research on the respondents’ attitude shows that there is no significant difference in all of the materials given, even though it is recorded that there is an increase in respondents’ attitude towards
puberty and reproductive organs. According to Suryani in Taukhit (2014) knowledge and attitude are considered as the foundation of one’s behaviour. This stagnant condition is assumed to occur due to lack of information. Meanwhile, information is the strong foundation in the cultivation of behaviour. Materials on reproductive health are delivered by the researchers based on the modules made for teachers or facilitators and the method used in lectures, question and answer sessions and the display of relevant videos before the materials are delivered. Monotonous method of teaching does not support the students in attaining the knowledge comprehensively.

This condition goes in line with a study by Taukhit (2014) stating that the education of reproductive health based on the growth frame has a wide impact in many ways. Facilitators or teachers need to take into account the adolescents’ characteristics in pursuing their true self, high risks of deviant sexual behaviour and the influences of media. In that respect, The method used, namely lectures, is considered as an ineffective method because the ability to grasp information through hearing is also limited. On the other hand, the researchers believe that discussion method is more effective especially discussion among their peers (peer education). A study by Susanto, et al (2016) says that factors that influence negative attitude towards reproductive health in adolescents are communication with parents and the development of puberty, smoking factor for males and living in cities for females.

4.4. Adolescents Behaviour Before and After The Learning Process Using The Modules on Reproductive Health

According to the result of the research, most respondents do not experience a significant change in behaviour after the learning process. The experimental group acquire a significant decrease in materials on adolescents’ delinquencies and child abuse (p-value 0.028 and 0.000). the controlled group acquire a significant increase in materials on deviant sexual behaviour. Adoption of behaviour derives from the information gained by people. Correct information and knowledge allow students to avoid premarital sex and its consequence, namely unexpected pregnancy, HIV/AIDS and sexually transmitted diseases. Ardina (2017) explains that an adolescent takes positive decision if they have basic knowledge and a healthy mind on positive and negative effects of what they do. It is supported by Ardiyanti and Mutiah in Ardina (2017) that personal decision with full responsibility on sexuality derives from correct sexual knowledge and vice versa. The decrease on the controlled group’s behaviour in materials on deviant sexual behaviour proves that adolescents’ behaviour will go in accordance with their knowledge and attitude.

4.5. The Effectivity of Modules Towards The Changes in Knowledge, Attitude and Practice on Reproductive Health

Communication on health aims to build behaviour through the changes of knowledge. In communication on health, a media is needed as aids in health education and it can be in the form of printed, such booklet, leaflet, modules and so on, and electronic media. Information and communication technology has been growing rapidly and it offers some convenience.

This research uses modules as the main media of the research. It is compiled based on the problems encountered by schools and designed with interesting pictures and colours. The researchers compile two kinds of modules, namely module used by the students and the other one used by the teachers or facilitators. The result of the research shows that there is no significant changes in the respondents’ knowledge, attitude and behaviour on reproductive health. A study by Nilasari E, et al (2016) shows that there is an impact on the use of modules towards students’ work in Elementary School. This study uses leaflet and booklet as the media and it shows positive results in terms of knowledge, attitude and practice (Jumiyati, et al. 2014). Although the modules were compiled with interesting designs, they do not increase the knowledge, attitude and behaviour of the respondents. The researchers assumed that appropriate learning process cannot rely on only the muse of media but also the methods used in delivering information or materials. Lecturing method generates boredom and it is supported by a theory saying that health education using brainstorming method is more effective. The grasp of information by the students is bigger and about 50% of information is easily gained through listening
and watching with 30% contribution from listening and 20% from watching. Moreover, brainstorming method triggers students to participate more in solving problems.

5. Conclusions
Most of the participants in the study were not knowledgeable about reproductive health, unfavourable attitude about reproductive health and also had poor practices about reproductive health, it should be considered in the future research and intervention programs attempting to improve reproductive health outcomes like improving learning method and media like using multimedia.

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