

Health Promotion to Increase Knowledge about Puberty in Boys

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Abstract: Puberty is a normal developmental process in which a child develops into a biologically and/or sexually mature adult. Even though puberty is a natural event, it is not uncommon for children to be confused or worried about puberty. Therefore, using the Participatory Action Research Method, this community service aims to increase knowledge about puberty in boys in the Sambikerep sub-district, Surabaya. The activities include health promotion, education, and free circumcision for the children by surgeons and medical students from the School of Medicine, Universitas Ciputra Surabaya. Statistical analysis of knowledge before and after health promotion used the Wilcoxon test in SPSS version 26 with a significance limit of $p < 0.05$. The overall community service activities ran quite smoothly; there were 24 children who took part, with the number of children getting a pre-test score < 75 points as high as 29.2%. However, no children got a post-test score of < 75 points after the health promotion. The median score of knowledge about puberty before and after health promotion was 75 (12.5–100) and 100 (87.5–100) points, respectively (p -value < 0.001). Through this community service, health promotion and education about puberty must be continuously provided to pre-pubertal boys so that they have a good understanding of puberty and make healthy decisions related to their sexual and emotional health.

Keywords: boys; circumcision; community service; prevention; puberty

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INTRODUCTION

Puberty is a normal developmental stage for a child to become a sexually and biologically mature adult. The testosterone hormone influences puberty in boys and usually occurs between the ages of 12-16 years. It is characterized

by significant physical growth, including the growth and development of genital organs (Ekawati et al., 2021; Hartini, 2017; Mutiara et al., 2023). In general, early puberty in boys will begin when they experience a wet dream. Although puberty is a natural

phenomenon, it is not uncommon for a child to have limited understanding or knowledge about puberty. As a result, they may feel confused or disgusted when they go through puberty. Literature indicates that almost half (44.4%) of early adolescents are under-informed about puberty, while more than half (55.6%) of early teenagers are unprepared for puberty (Trisetiyaningsih et al., 2020).

The major changes and uneven physical development during puberty of a teenager are different from one another, which may cause anxiety about their physical development, which in turn may affect their convictions. Factors influencing adolescent self-concept include age, knowledge, family support, peers, and values. Bad self-conceptions can lead to many bad things, like mistrust, fear of failure, fear of success, self-humiliation, feeling stupid, worthless, pessimistic, and unworthy of success (Ahmad, 2016; Alpian et al., 2020). One way to help teenagers avoid negative self-conceptions is to offer family support and inform them about the physical changes that will take place during puberty (Agustin et al., 2022; Darmawan, 2015; Fasak & Sulastri, 2023).

Teenagers typically require extensive information about the physical and emotional changes, development, and growth during puberty. However, many careless or shy parents do not even realize that their son has become a teenager, forcing him to find the information he needs by himself. Adolescents' ignorance about puberty greatly affects their attitudes and behavior during puberty. Families and surroundings that provide clear, secure, and accurate information about reproductive health can help adolescents better cope with puberty (Ardayani & Sitorus, 2022; Maharani, 2024; Muntyas, 2020).

In our community partner, the issues of low education levels and inadequate sexual health knowledge significantly impact community well-being. A substantial portion of the population lacks access to comprehensive education, which extends to critical areas such as sexual health. One particularly pressing concern is the lack of access to circumcision, which, in the context of limited sexual health education, raises questions about informed consent and proper medical procedures. Many residents rely on traditional knowledge and practices due to the scarcity of formal education and resources, potentially leading to adverse health outcomes.

This community service activity aims to increase pre-puberty boys' knowledge so that they understand the changes that occur during puberty and can better cope with those changes. Proper sexual education will help them understand the process, manage the changes they experience, and make healthy decisions related to their sexual and emotional health. In addition, we provide free circumcision services to the community around the School of Medicine, Universitas Ciputra Surabaya, by involving medical students to experience direct service to the community under the supervision of surgeons. This direct clinical experience for medical students provides significant benefits in honing practical skills, enhancing clinical understanding, and ensuring safe and effective patient care.

METHOD

The health promotion program to increase knowledge on puberty in boys was held on July 3rd, 2023, using Participatory Action Research. The participants of this program are boys aged 6-15 years old who live in the district of Sambikerep, Surabaya. This community service involves community members to identify issues in the

community. Also, it involves nine surgeons and several clinical students from the School of Medicine, Universitas Ciputra Surabaya, who are tasked with assisting with the various needs of the event as well as becoming assistant operators of circumcision procedures for the children under the supervision of the surgeon.

This problem-solving form of community service is an action-oriented effort to promote health education and provide free circumcision activities to the community and pre-puberty boys in the Sambikerep sub-district through the following measures:

- a) Networking of Sambikerep communities needing circumcision services by disseminating promotional registration links through digital media. At this stage, the community service team member from Universitas Ciputra Surabaya coordinates with the public civil servant several months before the implementation so that the community members who need free circumcision services can be adequately identified.
- b) Health promotion activities about puberty in boys through a presentation by a doctor in the presence of the parents.
- c) A simple and validated questionnaire measures public knowledge about puberty before and after health promotion.
- d) Health consultations and circumcisions by surgeons.
- e) Further, follow-up and monitoring of subjects for evaluation of circumcision seam results will be sent to the outpatient clinic at the School of Medicine, Universitas Ciputra Surabaya.

Activity Evaluation

This evaluation plan is necessary to determine the level of success of the community service activities carried out.

This evaluation is carried out through a meeting at the end of the implementation of the activities, attended by the entire committee and the parties involved, to discuss the obstacles found in implementing the activities. The discussion aims to solve any problems encountered so that the activity process can go smoothly. The overall success of the activity is assessed by evaluating the entire implementation of this community service. The results of this evaluation will serve as feedback for improving future community service projects.

Data Analysis

All subjects who have registered for this program are included in the data analysis. Subjects who are absent during the program are excluded from the analysis. An effort was made to improve knowledge of the research subject by disseminating and distributing brochures containing reproductive health topics, especially puberty topics in boys. Knowledge improvement is measured using pre-tests and post-tests. Descriptive statistical analysis is used to outline the characteristics of the research subjects. Data that is normally distributed is presented as the mean \pm SD, while non-normally distributed data is shown as the median (range). To determine whether there is a significant improvement in the subjects' knowledge about puberty following the health promotion, a paired T-test is used for normally distributed data, and a Wilcoxon test is used for non-normally distributed data. The analysis results are statistically significant if the p-value is < 0.05 . The entire statistical analysis of this study uses SPSS version 26 (IBM[®]).

RESULT AND DISCUSSION

The number of male subjects included in the analysis was 24 children. Table 1 displays the distribution of the age, pre-test, and post-test scores of the subjects

of this study. Age data, pre-test and post-test values are not normally distributed, so they are displayed in median and maximum-minimum values. The results showed that the youngest boys in this community service were 6, and the oldest was 14. This age category corresponds to the age range of pre-puberty boys who will experience physiological puberty in the future (Table 1).

Table 1 Characteristics of age and the knowledge score

| | Median (range) |
|-----------------|------------------|
| Age (years) | 10 (6 – 14) |
| Pre-test score | 75 (12.5 – 100) |
| Post-test score | 100 (87.5 – 100) |

The children's level of knowledge before the health promotion had a median score of 75 points; however, the lowest score was 12.5 points. After the health promotion, the knowledge level changed to a median of 100 points, and the lowest score was 87.5 points.

A bivariate statistical analysis was conducted to determine if there was a significant change in children's knowledge about puberty. The Wilcoxon signed-rank test was used to evaluate the significance of the differences between pre-test and post-test values. The results are illustrated in Figure 1.

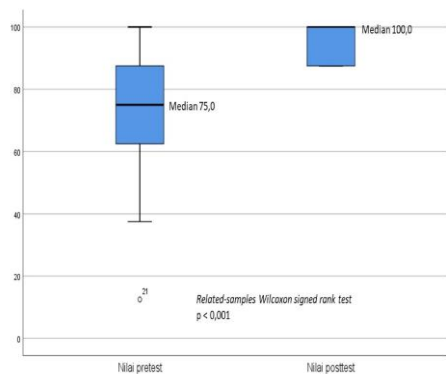


Figure 1 Boxplot of pre and post-test scores

29.2% of participants obtained a pre-test score below 75 points. After

receiving health promotion about puberty, all of the subjects had post-test scores above 75 points. The distribution of pre- and post-test scores can be seen in Table 2.

Table 2 Proportion of pre- and post-test score

| Score | Post-test ≥ 75 |
|--------------------|---------------------|
| Pre-test < 75 | 7 (29.2) |
| Pre-test ≥ 75 | 17 (70.8) |
| Total | 24 (100) |

Documentation of health promotion and free circumcision is shown in Figure 2.



Figure 2 Health promotion and free circumcision

The success of puberty in boys health promotion by Denys Putra, M.D., one of the authors and medical lecturers at School of Medicine Universitas Ciputra, on the level of knowledge of boys in this community service activity is no different from the results obtained in other community service activities by Suryati et al., where the number of children assigned as much as 50 students and the result of pre-assessment knowledge of 70 points and post-assessment score reaches an average of 90 points. Health promotion is the first and foremost step in disease prevention. It requires the same perception that health promotion is a process of providing health information to the public so that they want and can maintain and improve their health. Health education is one example of a health promotion campaign dedicated to this community (Suryati et al., 2024).

During the presentation, we also engaged in discussions. We gathered feedback from adolescents and parents to ensure the quality assurance of a puberty health promotion program by identifying gaps, improving educational content, and tailoring interventions to address the target audience's specific needs effectively.

According to Kurniawati et al. (2021), in a survey of 43 primary school students in the fifth grade, the level of knowledge about puberty for good, average, and poor scores were 41.9%, 32.6%, and 25.6%, respectively. While most students understood puberty well, there were no doubt some students who did not understand it, and their number was quite large. There is a correlation between children's knowledge of puberty and their attitude toward physical changes in early adolescence, with 60.5% showing positive attitudes and 39.5% showing negative attitudes. This shows that a good level of knowledge about puberty impacts their attitudes towards physical changes in early adolescence.

Boys who live in rural or urban areas differ somewhat in their understanding of pubertal changes. According to another qualitative study by Bunoti S. et al., those from metropolitan areas were more conscious of physical changes than those from rural areas. In general, many boys from metropolitan areas knew about the growth of pubic/axillary hair, wet dreams, indecent clothing, and deep voice development, among other things. Boys who understood the physical changes associated with puberty had the opportunity to manage pubertal-related difficulties.

CONCLUSION

The entire community service program on puberty and free circumcision has run quite smoothly. The health promotion regarding puberty in prepubertal boys showed significant improvement in the

level of knowledge about puberty in boys in the Sambikerep region, where all of the subjects scored above the passing grade.

Health education about puberty should be given continuously to raise awareness of the importance of understanding puberty in children, especially boys, so that they have a good understanding of the changes that occur during puberty; therefore, hopefully, they will have good sexual health.

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