

Factors Associated with Adolescents' Readiness in Facing Puberty

Faktor Yang Berhubungan Dengan Kesiapan Remaja Dalam Menghadapi Pubertas

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ABSTRACT

Adolescence is a transitional period from childhood to adulthood, marked by rapid growth and the development of reproductive abilities. This study aims to identify factors associated with adolescents' readiness for puberty at SMP Muhammadiyah 1 Pontianak. The research used a cross-sectional design with 81 seventh-grade students selected through systematic random sampling. Data were collected using a puberty readiness questionnaire and analyzed with the chi-square test ($\alpha = 0.05$). The results showed that knowledge ($p = 0.000$, $PR = 5.571$), sources of information ($p = 0.000$, $PR = 16.818$), permissive parental communication ($p = 0.003$, $PR = 2.144$), and peer support ($p = 0.000$, $PR = 2.828$) were significantly related to puberty readiness. Democratic communication patterns and authoritarian communication patterns were not significantly related. Based on these findings, it is recommended that puberty and reproductive health education be provided early through various accessible sources of information for adolescents, and that open communication between parents and children, especially through permissive communication, be strengthened. Additionally, fostering positive peer support is essential in helping adolescents prepare for puberty.

ABSTRAK

Masa remaja adalah periode transisi dari kanak-kanak menuju dewasa, ditandai dengan pertumbuhan pesat dan perkembangan kemampuan reproduksi. Penelitian ini bertujuan untuk mengetahui faktor yang berhubungan dengan kesiapan remaja menghadapi pubertas di SMP Muhammadiyah 1 Pontianak. Penelitian menggunakan desain cross sectional dengan 81 sampel siswa kelas VII yang dipilih secara systematic random sampling. Data dikumpulkan melalui kuesioner kesiapan pubertas dan dianalisis dengan uji chi-square ($\alpha = 0,05$). Hasil penelitian menunjukkan bahwa pengetahuan ($p = 0,000$, $PR = 5,571$), sumber informasi ($p = 0,000$, $PR = 16,818$), komunikasi orang tua dengan pola permisif ($p = 0,003$, $PR = 2,144$), dan dukungan teman sebaya ($p = 0,000$, $PR = 2,828$) berhubungan signifikan dengan kesiapan pubertas. Pola komunikasi demokratis, pola komunikasi otoriter tidak berhubungan signifikan. Berdasarkan temuan ini, disarankan agar pendidikan pubertas dan reproduksi diberikan sejak dini melalui berbagai sumber informasi yang dapat diakses remaja, serta memperkuat komunikasi terbuka antara orang tua dan anak, terutama dengan pola komunikasi permisif. Selain itu, penting juga untuk mendorong dukungan teman sebaya yang positif dalam membantu remaja mempersiapkan diri menghadapi pubertas.



1. INTRODUCTION

Adolescence is a transitional period between childhood and adulthood, during which there is a growth spurt and the ability to engage in sexual reproduction between the ages of 10-19, until maturity is reached before the age of 21. This period is accompanied by various physical changes due to the influence of sexual hormones such as estrogen and progesterone, which begin to function. Girls enter adolescence 2 years earlier, at the age of 12, while boys enter at the age of 14¹. According to the World Health Organization (WHO), adolescence refers to individuals aged 10-19, and this period is divided into early adolescence (ages 10-13), middle adolescence (ages 14-16), and late adolescence (ages 17-19)².

According to the 2017 Indonesia Demographic and Health Survey (SDKI), the physical changes in boys most commonly recognized by girls include voice changes (77%), followed by the prominence of the Adam's apple (68%), and the growth of hair on the face, around the genitals, armpits, chest, legs, or arms (49%). The physical changes in boys most commonly recognized by other boys include voice changes (53%), followed by facial hair growth, hair around the genitals, armpits, chest, legs, or arms (52%), and nocturnal emissions (51%). The physical changes in girls most commonly recognized by girls include the start of menstruation (89%), breast enlargement (78%), and hair growth around the genitals or armpits (39%). The physical changes in girls most commonly recognized by boys include breast enlargement (60%), the start of menstruation (58%), and hair growth around the genitals or armpits (23%)³.

Adolescents at this stage are still unstable and do not have a definite life guide. They tend to act based on their own thoughts and instincts. This is a way for adolescents to search for their identity. Their high curiosity and desire to try new things often lead them into problems. Common issues include antisocial behavior and free associations. Antisocial behavior makes adolescents less open to their surroundings, which can result in the misinterpretation of the information they receive⁴.

Puberty is a very important and critical period in children's lives, during which they begin to experience biological, psychological, social, and cognitive maturation. The adolescent's understanding of puberty can lead to physical, psychological, and emotional problems⁵. Puberty occurs as a result of the secretion of hormones from the pituitary gland and matured gonads. These hormones stimulate the body to mature primary and secondary sex characteristics. In addition to affecting physical changes, the puberty stage also influences attitudes and behaviors. Adolescents who lack communication and guidance from their parents, limited school lessons, or insufficient access to information, or even feel embarrassed to ask due to an environment that considers puberty a taboo subject, often receive inadequate education about puberty. As a result, adolescents entering puberty tend to isolate themselves, often defy authority, challenge others, experience unstable emotions, and even lose their self-confidence.

How seriously puberty changes affect behavior largely depends on the adolescent's willingness to express concerns and anxieties to others, as this allows them to gain new and better perspectives. Children who find it difficult or are unable to communicate with others tend to exhibit more negative behaviors compared to those who can communicate. Psychological consequences also arise due to confusion stemming from social expectations from parents, teachers, and others to behave in ways that are considered appropriate for their age. This is perceived to be relatively easy when their behavior is aligned with the appropriate developmental stage. However, children

whose maturation is not yet ready to meet these expectations are more likely to face problems.

The biggest physical changes occur with the onset of the reproductive organs' function, marked by the appearance of menstruation in females and nocturnal emissions in males, along with signs of sexual maturity that develop in adolescents. These physical changes during puberty can make adolescents feel awkward due to the adjustment they must make to the natural changes occurring in their bodies. One of the changes, such as the enlargement of breasts, may cause adolescents to feel embarrassed and alienated from their peers⁶. This study aims to determine the "Factors Associated with Adolescents' Readiness to Face Puberty at SMP Muhammadiyah 1 Pontianak"

2. METHODS

This research uses a quantitative approach with an analytical observational method and a cross-sectional approach, conducted at SMP Muhammadiyah 1 Pontianak, South Pontianak District, Pontianak City. The research activities took place on June 16, 2022. The subjects of this study were adolescents, students aged 12-14 years. The population in this study consisted of all students in the seventh grade of SMP Muhammadiyah 1 Pontianak for the 2021/2022 academic year, totaling 102 students. A sample of 81 participants was selected using probability sampling with the systematic random sampling method. The statistical test used was the chi-square test with a 95% confidence level. The questionnaire was made in the form of a paper sheet. Data were collected by distributing the questionnaire sheets to the respondents. The collected data were analyzed using univariate analysis in the form of frequency tables and bivariate analysis using the chi-square test.

3. RESULTS

The following is a table of respondent characteristics, which are divided into five categories: age, gender, father's education, mother's education, and economic status, as follows:

Table 1.
Respondent Characteristics

Characteristics	n = (81)	%
Age (Years)		
12	25	30.9
13	51	63.0
14	5	6.2
Gender		
Man	39	48.1
Woman	42	51.9
Father's Education		
Junior High School	21	25.9
Senior High School	36	44.4
Colleges	24	29.6
Mother's Education		
Junior High School	32	39.5
Senior High School	28	34.6
Colleges	21	25.9

Characteristics	n = (81)	%
Economy		
Minimum Wage	62	76.5
Below the minimum wage	19	23.5

Source: Primary Data, 2022

The characteristics of the respondents are as follows: 25 respondents (30.9%) were 12 years old, 51 respondents (63.0%) were 13 years old, and 5 respondents (6.2%) were 14 years old. The majority of the respondents were female, with 42 respondents (51.9%), while 39 respondents (48.1%) were male. Regarding the father's education, 21 respondents (25.9%) had fathers with a junior high school education, 36 respondents (44.4%) had fathers with a high school education, and 24 respondents (29.6%) had fathers with a higher education. As for the mother's education, 32 respondents (39.5%) had mothers with a junior high school education, 28 respondents (34.6%) had mothers with a high school education, and 21 respondents (25.9%) had mothers with a higher education. The majority of the respondents' parents had an income above the regional minimum wage (UMR), with 62 respondents (76.5%), while 19 respondents (23.5%) had parents with an income below the UMR.

Table 2.
Univariate Analysis

Univariate Analysis	n= (81)	%
Knowledge		
Not good	42	51.9
Good	39	48.1
Mass media information sources		
Never receive Information	44	54.3
Print media	11	13.6
Electronic media	11	13.6
Social media	15	18.5
Parental communication patterns		
Democratic	20	24.7
Authoritarian	26	32.1
Permissive	35	43.2
Peer support		
There is support	34	42.0
Nothere is support	47	58.0
Puberty readiness		
Ready	39	43.6
Not ready	42	56.4

Source: Primary Data, 2022

Based on Table 2 above, it can be seen that the proportion of respondents with poor knowledge is 51.9%, while those with good knowledge account for 48.1%. The majority of respondents have never received information, making up 54.3%, followed by 13.6% who received information from print media, 13.6% from electronic media, and 18.5% from social media. The communication patterns of the respondents' parents are as follows: 24.7% democratic, 32.1% authoritarian, and 43.2% permissive. Regarding

peer support, the majority of respondents had no support, accounting for 58.0%, while 42.0% had peer support. As for puberty readiness, the majority of respondents were not ready, with 56.4%, while 43.6% were ready.

Table 3.
Bivariate Analysis

Variables	Puberty Readiness				p-value	PR value (95%CI)
	Not ready		Ready			
	N	%	N	%		
Knowledge						
Poor	36	85.7	6	14.3	0.000	5.571 (2.641-11.751)
Good	6	15.4	33	84.6		
Source of Information						
Never	40	90.9	4	9.1	0.000	16.818 (4,355-64,950)
Ever	2	5.4	35	94.6		
Parental communication Patterns						
Non-democratic	35	43.2	26	32.1	0.082	1.410 (0.970-2.050)
Democratic	7	8.6	13	16.0		
Not authoritarian	31	38.3	24	29.6	0.345	1,332 (0.804-2.209)
Authoritarian	11	13.6	15	18.5		
Not Permissive	31	38.3	46	56.8	0.003	2.144 (1.263-3.639)
Permissive	11	16.9	35	43.2		
Peer support						
No support	32	74.4	11	25.6	0.000	2.828 (1.615-4.951)
There is support	10	6.3	30	93.8		

Source: Primary Data, 2021

Table 3 shows that 85.7% of respondents with poor knowledge were not ready for puberty, while 15.4% with good knowledge were not ready. The p-value of 0.000 indicates a significant relationship, with poor knowledge being a risk factor 5.571 times greater for readiness. For information sources, 90.9% of those who never received information were not ready, while 5.4% with information were not ready. The p-value of 0.000 shows a strong relationship, with a risk factor 16.818 times greater for those without information. Parental communication had no significant relationship for democratic and authoritarian styles ($p > 0.05$), but permissive communication showed a significant link ($p = 0.003$), with a 2.144 times higher risk. For peer support, 74.4% without support were not ready, while 6.3% with support were not ready. The p-value of 0.000 shows peer support is a significant risk factor, 2.828 times greater for those with support.

4. DISCUSSION

The Relationship Between Knowledge and Puberty Readiness in Adolescents at SMP Muhammadiyah 1 Pontianak

Based on the bivariate analysis using the chi-square test, the p-value obtained was 0.000 (< 0.05). This indicates that H_0 is rejected and H_a is accepted, meaning there is a significant relationship between knowledge and puberty readiness, with a PR value of 5.571 (95% CI = 2.641-11.751). This means that respondents with poor knowledge are

5.571 times more likely to be unprepared for puberty compared to those with good knowledge.

One essential area of knowledge for adolescents is understanding puberty. The importance of puberty knowledge lies in the fact that adolescence is a stressful period due to physical and biological changes, as well as changes in environmental demands, making adaptation crucial. Adolescents' ignorance about the changes happening to them and why they occur can lead to anxiety. They may wonder whether these changes are normal, whether everyone experiences them, and what they should do about these changes.

With good knowledge about the physical changes of puberty, adolescents can better navigate their developmental tasks during this period. On the other hand, adolescents with low knowledge will struggle to fulfill these tasks effectively. At puberty, knowledge of reproductive health is a critical foundation for navigating this phase of life and fulfilling developmental tasks, helping prevent mistakes due to a lack of reproductive health knowledge⁷. Once adolescents are informed about puberty, they find it easier to face the changes. This highlights how crucial knowledge is during adolescence, as this period is full of pressures from physical and biological changes, as well as environmental shifts that require adaptation⁸.

This study's findings are consistent with the work of Juwita et al. (2018), which identified a moderate relationship between knowledge and the readiness of children to face puberty⁹. Their results support the idea that a certain level of knowledge contributes significantly to children's preparedness for this developmental stage. Similarly, the research by Merlis Simon et al. (2021) also highlights the significant role of knowledge in readiness for menarche, reinforcing the importance of providing accurate and timely information to young individuals¹⁰. Furthermore, the study by Anindya Amru Damayanti et al. (2022) corroborates these findings, demonstrating a significant connection between knowledge and the physical changes experienced during puberty. Together, these studies underscore the critical role that knowledge plays in preparing children for the physical and emotional changes associated with puberty¹¹.

The results of this study show that respondents with poor knowledge are more likely to be unprepared, with 85.7% of them unready compared to 15.4% of those with good knowledge. One effort that can be made is to establish a Youth Reproductive Health (KRR - Kesehatan Reproduksi Remaja) program in schools, which should enhance the material about puberty for both male and female adolescents. It could be included in religious studies to discuss the proper way of performing mandatory bathing, things to avoid during puberty, and other related topics. This way, students will gain more knowledge about puberty, making them more prepared to face puberty.

The Relationship Between Information Sources and Puberty Readiness in Adolescents at SMP Muhammadiyah 1 Pontianak

Based on the statistical test results, this study shows a significant relationship between the source of information and puberty readiness. The chi-square analysis produced a p-value of 0.000 (<0.05), indicating that H₀ is rejected and H_a is accepted. This suggests that there is a relationship between the source of information and puberty readiness, with a PR value of 5.571 (95% CI = 2.641-11.751). This means that respondents who did not receive information are 5.571 times more likely to be unprepared for puberty compared to those who received information.

Therefore, individuals with broader sources of information tend to have better knowledge. One important source of information is the mass media. Many adolescents have limited awareness of seeking information through the internet or using electronic media, such as cell phones, to gather additional information about puberty. Adolescents often only receive information from their parents and their immediate environment, which impacts their knowledge about puberty. When adolescents are adequately equipped with information about puberty, they are more prepared to face it. This readiness will likely influence their attitudes toward themselves and others. Adolescents who are well-informed and prepared for puberty are likely to have a more positive attitude compared to those with limited information.

The findings of this study are consistent with the research by Fazira et al. (2023), which explored the relationship between reproductive health knowledge and menarche readiness among adolescent girls. The study found that while most respondents had good information about reproductive health, the level of knowledge did not show a significant relationship with readiness for menarche. This suggests that while knowledge is important, other factors may also contribute to an adolescent girl's preparedness for menarche¹². Additionally, this study aligns with the work of Arip Ambulan Panjaitan et al. (2018), which highlighted a significant relationship between information sources and adolescent girls' attitudes toward physical changes during puberty. Together, these studies emphasize the importance of reproductive health information but suggest that attitudes and other factors may also play a critical role in shaping adolescents' responses to puberty and menarche¹³.

This study found that respondents who did not receive information were more likely to be unprepared, with 90.9% of them being unready compared to 5.4% of those who received information. To address this issue, efforts could include creating engaging informational content through social media platforms such as Instagram, Facebook, WhatsApp, etc. Additionally, comic strips containing information about puberty could be created to attract adolescents to read. Schools could also provide sanitary pads for girls who forget to bring them and ensure that proper disposal bins for used pads are available in every school restroom.

The Relationship Between Parental Communication and Puberty Readiness in Adolescents at SMP Muhammadiyah 1 Pontianak

The bivariate analysis of the relationship between democratic parental communication and puberty readiness showed a p-value of 0.139 (>0.05), indicating no significant relationship between democratic communication and readiness. According to the survey results, 35 respondents (43.2%) experienced non-democratic communication, while 7 respondents (8.6%) experienced democratic communication. The bivariate analysis of the relationship between authoritarian parental communication and puberty readiness showed a p-value of 0.345 (>0.05), meaning there is no significant relationship between authoritarian communication and readiness. Survey results indicated that 31 respondents (38.3%) experienced non-authoritarian communication, while 11 respondents (13.6%) experienced authoritarian communication. The bivariate analysis of the relationship between permissive parental communication and puberty readiness showed a p-value of 0.003 (<0.05), indicating a significant relationship between permissive communication and readiness. Survey results revealed that 31 respondents (38.3%) did not have support, while 11 respondents (13.6%) had permissive

communication. Thus, it can be concluded that permissive parental communication is significantly related to puberty readiness.

In this case, the communication between parents and children in the family is crucial. Effective communication between parents and children allows them to express their feelings, frustrations, and desires. Adolescents, in particular, need the guidance and support of their parents during their growth and development. Parents are responsible for nurturing their children's abilities, including their physical and psychological needs, so that they can grow and develop into well-rounded individuals capable of facing puberty.

This is in line with research by Sujarwati et al. (2014), which highlighted the impact of parental influence on adolescent sexual behavior during puberty¹⁴. This finding also aligns with the study by Diyah Risnanda Nur Hanifah (2020), which demonstrated a significant relationship between mother-child communication and the adolescent's readiness to face menarche¹⁵. Both studies emphasize the crucial role that family dynamics, particularly parental guidance and communication, play in shaping adolescents' preparedness for the physical and emotional changes during puberty. Therefore, parents should make efforts to choose and apply appropriate communication patterns with their children to help them grow into individuals with good character and better support their adolescent development.

The Relationship Between Peer Support and Puberty Readiness in Adolescents at SMP Muhammadiyah 1 Pontianak

The bivariate analysis of the relationship between peer support and puberty readiness revealed a p-value of 0.000 (<0.05), indicating a significant relationship between peer support and readiness. According to the survey results, 43 respondents (53.1%) received no support, while 35 respondents (43.2%) received support.

Students at SMP Muhammadiyah 1 Pontianak receive various forms of support from their peers, including informative support (e.g., information and advice about physical changes during puberty), cognitive support, emotional support, and instrumental support. The presence of peers is crucial in the lives of adolescents, and it is important for adolescents to receive acceptance and support from their peers. Such positive peer support can help adolescents form a healthy self-identity. During adolescence, peer opinions significantly influence self-identity development. Furthermore, having peer support helps adolescents feel socially supported and appreciated, and they feel loved by those around them.

This finding aligns with the research of Anita Veronika (2015), which identified a relationship between peer influence and the behavior of adolescent girls in facing menarche¹⁶. The result is also consistent with the study by Priharyanti Wulandari et al. (2018), which demonstrated a strong relationship between peer support and adolescent girls' anxiety in facing physical changes during puberty at SLTPN 31 Semarang¹⁷. Similarly, the study by Nurul Fauziah (2020) also suggested a significant relationship between peer support and adolescents' anxiety in facing menarche, indicating that peer support plays an important role in alleviating anxiety during this critical developmental stage¹⁸.

Peer support plays an important role in helping adolescents achieve self-identity. Adolescents feel loved and cared for, allowing them to explore themselves more freely. They spend time with their peers, engaging in activities where they can feel freer, more open, motivated, and enthusiastic. Peers are seen as easier to understand, and they

offer a space for confiding in and supporting personal issues. Peer support can influence the formation of self-identity during adolescence. Peers hold significant psychological meaning for adolescents, as they are not only places for interaction but also important sources of support¹⁹. One effort that can be made is to form peer groups, which allow adolescents to learn social skills, develop shared interests, help each other overcome difficulties, and create a space for exchanging stories.

5. CONCLUSION

The results of this study indicate a significant relationship between knowledge, sources of information, parental communication, and peer support with puberty readiness at SMP Muhammadiyah 1 Pontianak. Based on these findings, it is recommended that the school establish a comprehensive Youth Reproductive Health Program (PKRR), focusing on enhancing puberty education for both male and female adolescents. This program could be integrated into the existing religious studies curriculum to provide adolescents with essential knowledge, including the proper way to perform mandatory bathing (ghusl) after reaching puberty and guidelines on what should be avoided during this developmental phase. Additionally, strengthening communication between parents and children, especially through permissive parenting styles, could further support adolescents' readiness for puberty. It is also important to encourage positive peer support, as it plays a crucial role in helping adolescents feel more prepared and confident in facing the changes associated with puberty.

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