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Socioeconomic Factor Association to Knowledge and Attitude of Indonesian Young Adults Regarding Family Planning: A Cross-Sectional Multicenter Study

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ABSTRACT

Background: Young adults are prone to unwanted pregnancy due to their nature of self-discovery, identity construction, poor knowledge, and low birth self-efficacy. This study aims to identify which socioeconomic factors are associated with knowledge and attitude toward family planning in Indonesian young adults.

Subjects and Method: This cross-sectional, observational, multicenter research was conducted in 27 universities across Java and Sumatra using convenience sampling. Indonesian citizens aged 16–25 were recruited to complete an online questionnaire, with minimum sample size of 349 participants. The dependent variable were knowledge and attitude levels were measured using translated and validated questionnaire. The independent variable were socioeconomic factors were assessed using self-administered questionnaire. Chi-square and odds ratio were used to identify significant associations, followed by logistic regression for independent analysis.

Results: From total of 581 participants, knowledge of family planning was significantly higher in females (OR= 1.50; p= 0.036), married respondents (OR= 0.20; p <0.001), those with children (OR= 2.12; p= 0.040), contraceptive users (OR= 0.49; p = 0.043), respondents from health-related backgrounds (OR= 2.82; p <0.001), and those with higher media exposure (OR= 4.29; p <0.001).Among these, respondents using contraception (OR= 0.48; p= 0.033) and with higher media exposure (OR= 1.63; p=0.017) demonstrated more favorable attitudes toward family planning.

Conclusion: This study identified media exposure and access to education as key factors influencing knowledge and attitudes toward family planning. In the globalization era, media exposure has the potential to dismantle entrenched socioeconomic barriers, narrowing gaps between privileged and disadvantaged groups. These findings highlight the role of social media as an important educational tool that can bridge demographic and socioeconomic divides.

Keywords: family planning; socioeconomic factors; knowledge; attitude; young adult.

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BACKGROUND

Family planning is still one of the top priorities in Indonesia. Modern contraceptive use in 2021 was only 55.06% (Badan Pusat Statistik Indonesia, 2024), significantly below the national objective of about 62.16% (Presiden Republik Indonesia, 2022). Family planning or contraceptive methods significantly enhance the standard of living for families and communities. Access to contraceptives and family planning contributes to improved understanding and level of reproductive health (Idris et al., 2021). High parity rates and narrow pregnancy intervals increase the risk of anemia and underweight in women, as well as the risk of stunting, malnutrition, and mortality in their offspring (Keats et al., 2021; Rana et al., 2019). In addition, contraception is one of the most effective ways to lower maternal mortality by preventing unintended pregnancies and dangerous abortions (Ganatra and Faundes, 2016; Utomo et al., 2021). It is therefore extremely urgent to increase the practice of contraceptives through family planning programs.

Previous study indicated that socioeconomic characteristics, such as age, education level, economic status, the number of children, and place of residence, had an impact on the use of contraception among Indonesian women of reproductive age (age 15-29 years) in Indonesia (Idris, 2019; Seran et al., 2020). These findings are consistent with a review article on global trends in contraceptive choices that are impacted by place of residence, religion, age, sexual activity, family size, and educational attainment (Danti and Sinuraya, 2020). In addition to the aforementioned factors, a study in East Java discovered that the husbands' involvement in the decision to use a long-term contraceptive method (LTCM) also had a significant impact. Furthermore, a study in Ende, East Nusa Tenggara demonstrated that contraception practice is related to individual knowledge and attitude, implying that high level of knowledge and positive attitude are likely to influence young adult decisions regarding family planning (Hariastuti et al., 2021).

Despite the large number of studies, some socioeconomic factors, such as type of employment, family planning acceptors, and media exposure, have not been considered. There is also currently no study among young adults specifically, notwithstanding that generation requires special attention due to self-exploration and identity formation as well as low birth self-efficacy and knowledge level (Idris, 2019; Rahmawati et al., 2019). This highlights a critical gap in the understanding on how socioeconomic disparities shape awareness and perceptions of family planning in this age group. Therefore, this study aims to assess the association between socioeconomic factors and knowledge and the attitude toward family planning in the Indonesian young adult population.

SUBJECTS AND METHOD

1. Study Design

This cross-sectional, observational, multicenter research was conducted in 27 universities affiliated with CIMSA

Indonesia, mainly located in big cities of Java and Sumatra, from June – July 2023. The Center for Indonesian Medical Students' Activities (CIMSA) is a non-governmental organization led by medical students from across Indonesia, aiming to enhance the nation's health and well-being through activity-based programs.

2. Population and Sample

The authors were aware that CIMSA, an organization for Indonesian medical students, is more likely to collect primary data from health-related students than any other group, leading to recruitment bias. To acquire representative subjects of the young adult population, CIMSA members in all 27 universities as the local committee was asked to collect data with the restriction that health-related students should not exceed 30% of overall subjects. The convenience sampling method was applied in consideration of accessibility. The minimum sample size was calculated using the Lemeshow formula, yielding 349 participants.

3. Operational Definition of Variables

Knowledge was evaluated by a questionnaire adopted from Sharma et al. (2012), which had ten questions, each correct answer was given 1 point and there was no point reduction for a wrong answer.

Attitude was assessed using Santoso and Suryo (2017) Likert-scale questionnaire consisted of 7 questions. Both questionnaires have not previously been assessed for validity and reliability in the Indonesian language.

Other independent variables such as age, gender, residence place and status, employment, marital status, education background, income, family structure, media exposure, and smoking history were also documented with objective definitions mentioned in the questionnaire. These variables were categorized as dichotomous or multichotomous data.

4. Study Instruments

An online questionnaire was used to collect primary data. In addition to social media broadcasts, the questionnaire was also distributed to the population targeted by CIMSA members in each university. The eligibility criteria were Indonesian citizens aged 18-25 years who had agreed to fill out the questionnaire voluntarily, while the exclusion criteria were incomplete questionnaire filling.

5. Data Analysis

We used item-total correlation to test the validity of this questionnaire. The questionnaire is considered valid if the r value = 0.3; while r < 0.3 suggests that the questionnaire question is invalid(Sugiyono, 2017). We tested the attitude questionnaire validity using 581 respondents.

After conducting validity and reliability testing, it is considered valid and reliable to use Cronbach's Alpha analysis showed the internal consistency of the instrument (reliability) with an ideal value of $0.7 \leq \alpha < 0.9$, and Spearman's rho analysis showed the construct of the instrument (validity) with an optimal value of $p<0.05$.

The SPSS program was then used to analyze the data. The main outcomes, knowledge and attitude, were divided into below and above-average groups. All data was reported as frequency and percentage. Chi-square test and odds ratio calculation were used as well as logistic regression for independent association. The 5% level was used to determine statistical significance for all tests.

6. Research Ethics

This study has been given approval by the Faculty of Medicine Universitas Indonesia Ethical Committee under KET-942/UN2./-ETIK/PPM.00.02/2023.

RESULTS

1. Sample Characteristics

This study successfully recruited 631 subjects, but 50 of them had to be excluded due to incomplete questionnaire responses, leaving 581 subjects to be analyzed further. The majority of subjects are female (74,4%) and aged 18-20 years old (72,0%). As for the population group, there was a relatively equal proportion, with 37.9% health-related students, 31.7% non-health students, and 30.5% belonging to workers in the entre¬preneur, civil service, and private sector. Based on socioeconomic status, 44.1% have very high monthly income, 41.7% have upper middle monthly expenses, and only 6.5% of the respondents do not own their home. Only 5.2% had married and 5.7% of respondents already had a child (Table 1).

Table 1. Subjects' characteristics and factors affecting family planning knowledge (n = 581)

Variables	n (%)	Knowledge		p value	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
Age					
18-20 years old †	418 (72.0)	190 (45.5)	228 (54.4)	0.513	1.13 (0.79-1.62)
21-25 years old	163 (28.0)	79 (48.5)	84 (51.5)		
Sex					
Male †	149 (25.6)	58 (38.9)	91 (61.1)	0.036	1.50* (1.03-2.19)
Female	432 (74.4)	211 (48.8)	221 (51.2)		
Marital Status					
Married †	30 (5.2)	24 (80.0)	6 (20.0)	<0.001	0.20**(0.08-0.50)
Single	551 (94.8)	245 (44.5)	306 (55.5)		
Background group					
Health-related students	220 (37.9)	134 (60.9)	86 (39.1)	<0.001	2.12** (1.42-3.17)
Non-health students	184 (31.7)	60 (32.6)	124 (67.4)		0.66 (0.43-1.01)
Workers †	177 (30.5)	75 (42.4)	102 (57.6)		REF
Number of children					
No child †	548 (94.3)	248 (45.3)	300 (54.7)	0.040	2.12 *(1.02-4.39)
≥1	33 (5.7)	21 (63.6)	12 (36.4)		
Contraceptive use					
Yes †	35 (6.0)	22 (62.9)	13 (37.1)	0.043	0.49* (0.24 – 0.99)
No	546 (94.0)	247 (45.2)	299 (54.8)		
Subject's education level					
High school †	428 (73.7)	194 (45.3)	234 (54.7)	0.432	11.16 (0.80-1.68)
Bachelor and above	153 (26.3)	75 (49.0)	78 (51.0)		
Mother's education level					
Secondary school	55 (9.5)	29 (52.7)	26 (47.3)	0.489	1.28 (0.72- 2.26)
High school	172 (29.6)	75 (43.6)	97 (56.4)		0.89 (0.61-1.28)
Bachelor and above †	354 (60.9)	165 (46.6)	189 (53.4)		REF

Variables	n (%)	Knowledge		p value	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
Father's education level					
Secondary school	46 (7.9)	25 (54.3)	21 (45.7)	0.409	1.37 (0.74-2.53)
High school/equivalent	146 (25.1)	63 (43.2)	83 (56.8)		0.87 (0.59-1.28)
Bachelor and above †	389 (67)	181 (46.5)	208 (53.5)		REF
Family type					
Nuclear family	466 (80.2)	219 (47.0)	247 (53.0)	0.413	0.97 (0.58-1.61)
Single parent	46 (7.9)	17 (37.0)	29 (63.0)		0.64 (0.30-1.37)
Extended family †	69 (11.9)	33 (47.8)	36 (52.2)		REF
Residence					
Rural †	231 (39.8)	113 (48.9)	118 (51.1)	0.304	1.19 (0.85-1.66)
Urban	350 (60.2)	156 (44.6)	194 (55.4)		
House ownership					
Owned	269 (46.3)	130 (48.3)	139 (51.7)	0.622	1.60 (0.79-3.23)
Family house	274 (47.2)	125 (45.6)	149 (54.4)		1.43 (0.71-2.90)
Rent. contract. company owned †	38 (6.5)	14 (36.8)	24 (63.2)		REF
Number of siblings					
1	252 (43.4)	120 (47.6)	132 (52.4)	0.376	1.32 (0.86-2.04)
2	204 (35.1)	98 (48.0)	106 (52.0)		1.34 (0.86-2.10)
≥3 †	125 (21.5)	51 (40.8)	74 (59.2)		REF
Monthly income					
Very high	256 (44.1)	116 (45.3)	140 (54.7)	0.956	0.92 (0.616-1.373)
High	83 (14.3)	40 (48.2)	43 (51.8)		1.03 (0.61 -1.76)
Middle	88 (15.1)	40 (45.5)	48 (54.5)		0.92 (0.55-1.56)
Low †	154 (26.5)	73 (47.4)	81 (52.6)		REF
Monthly expenses					
Lower	53 (9.1)	20 (37.7)	33 (62.3)	0.200	1.06 (0.49-2.32)
Lower Middle	231 (39.8)	113 (48.9)	118 (51.1)		1.68 (0.91-3.08)
Upper middle	242 (41.7)	116 (47.9)	126 (52.1)		1.61 (0.88-2.95)
Upper †	55 (9.5)	20 (36.4)	35 (63.6)		REF
Media exposure					
Everyday	17 (2.9)	12 (70.6)	5 (29.4)	<0.001	4.29** (1.47-12.52)
Once a week	26 (4.5)	11 (42.3)	15 (57.7)		1.31 (0.59-2.96)
2–3 times a week	32 (5.5)	16 (50.0)	16 (50.0)		1.79 (0.86-3.73)
Monthly	62 (10.7)	39 (62.9)	23 (37.1)		3.03** (1.71-5.34)
Once every few months	171 (29.4)	93 (54.4)	78 (45.6)		2.10** (1.43-3.10)
Very rarely/never †	273 (47)	98 (35.9)	175 (64.1)		REF
Tobacco use					

Variables	n (%)	Knowledge		p value	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
Smoker or ex-smoker †	74 (12.7)	32 (43.2)	42 (56.8)	0.572	1.15 (0.70 – 1.88)
Non-smoker	507 (87.3)	237 (46.7)	270 (53.3)		

† reference variable; *p <0.05; **p<0.01

2. Bivariate Analysis

Bivariate analysis using Chi-square and odds ratio was done to determine signifi¬cance and its effect size. Knowledge of family planning was found to be signifi¬cantly higher in several groups, which include female (OR= 1.50; p= 0.036), married (OR= 0.20; p <0.001), respon-dents that have children (OR = 2.12; p = 0.040), contraceptive users (OR = 0.49; p = 0.043), and higher media exposures (OR = 4.29; p <0.001) (Table 1). In addition, it was shown that several groups including contraceptive users (OR 0.48; p 0.033) and high media exposures (OR 1.63; p 0.017) had much better attitudes towards family planning (Table 2). Among them, contra¬ceptive user and media exposure were found to be significantly related in both knowledge and attitude levels

Table 2. Subjects' characteristics and associated factor affecting family planning attitude (n = 581)

Variables	n (%)	Attitude		p	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
Age					
18-20 years old †	418 (72.0)	158 (37.8)	260 (62.2)	0.720	1.50 (1.03-2.19)
21-25 years old	163 (28.0)	59 (36.2)	104 (63.8)		
Sex					
Male †	149 (25.6)	54 (36.3)	95 (63.8)	0.746	1.07 (0.72-1.57)
Female	432 (74.4)	163 (37.7)	269 (62.3)		
Marital Status					
Married †	30 (5.2)	16 (53.3)	14 (46.7)	0.063	0.50 (0.24-1.05)
Single	551 (94.8)	201 (36.5)	350 (63.5)		
Occupation					
Health-related students	220 (37.9)	93 (42.3)	127 (57.7)	0.142	1.33) (0.88-1.99)
Non-health students	184 (31.7)	61 (33.2)	123 (66.8)		0.90 (0.58-1.39)
Workers†	177 (30.5)	63 (35.6)	114 (64.4)		REF
Number of children					
No child †	548 (94.3)	202 (36.9)	346 (63.1)	0.322	1.43 (0.70-2.89)
≥1	33 (5.7)	15 (45.5)	18 (54.5)		
Contraceptive use					
Yes †	35 (6.0)	19 (54.3)	16 (45.7)	0.033	0.48* (0.24-0.95)
No	546 (94.0)	198 (36.3)	348 (63.7)		
Subject's education level					

Variables	n (%)	Attitude		p	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
High school †	428 (73.7)	165 (38.6)	263 (61.4)	0.316	0.82 (0.56-1.21)
Bachelor and above	153 (26.3)	52 (34.0)	101 (66.0)		
Mother's education level					
Secondary school	55 (9.5)	24 (43.6)	31 (56.4)	0.560	1.37 (0.77-2.43)
High school	172 (29.6)	65 (37.8)	107 (62.2)		1.07 (0.74-1.56)
Bachelor and above †	354 (60.9)	128 (36.2)	226 (63.8)		REF
Father's education level					
Secondary school	46 (7.9)	19 (41.3)	27 (58.7)	0.617	1.25 (0.67-2.33)
High school	146 (25.1)	58 (39.7)	88 (60.3)		1.17 (0.79-1.73)
Bachelor and above †	389 (67)	140 (36.0)	249 (64.0)		REF
Family type					
Nuclear family	466 (80.2)	176 (37.8)	290 (62.2)	0.586	0.94 (0.56-1.59)
Single parent	46 (7.9)	14 (30.4)	32 (69.6)		0.68 (0.31-1.50)
Extended family †	69 (11.9)	27 (39.1)	42 (60.9)		REF
Residence					
Rural †	231 (39.8)	88 (38.1)	143 (61.9)	0.763	1.05 (0.75-1.49)
Urban	350 (60.2)	129 (36.9)	221 (63.1)		
House ownership					
Owned	269 (46.3)	104 (38.7)	165 (61.3)	0.516	0.87 (0.44-1.73)
Family house	274 (47.2)	97 (35.4)	177 (64.6)		0.75 (0.38-1.50)
Rent. contract. company owned †	38 (6.5)	16 (42.1)	22 (57.9)		REF
Number of siblings					
1	252 (43.4)	95 (37.7)	157 (62.3)	0.849	1.11 (0.71-1.74)
2	204 (35.1)	78 (38.2)	126 (61.8)		1.14 (0.72-1.81)
≥3 †	125 (21.5)	44 (35.2)	81 (64.8)		REF
Monthly income					
Very high	256 (44.1)	102 (39.8)	154 (60.2)	0.594	1.16 (0.77-1.75)
High	83 (14.3)	31 (37.3)	52 (62.7)		1.04 (0.60-1.81)
Middle	88 (15.1)	28 (31.8)	60 (68.2)		0.82 (0.47-1.42)
Low †	154 (26.5)	56 (36.4)	98 (63.6)		REF
Monthly expenses					
Lower	53 (9.1)	12 (22.6)	41 (77.4)	0.064	0.33 (0.14-0.75)
Lower Middle	231 (39.8)	88 (38.1)	143 (61.9)		0.69 (0.38-1.24)
Upper middle	242 (41.7)	91 (37.6)	151 (62.4)		0.67 (0.373-1.21)
Upper †	55 (9.5)	26 (47.3)	29 (52.7)		REF
Media exposure					
Everyday	17 (2.9)	7 (41.2)	10 (58.8)	0.017	1.63 (0.6-4.432)

Variables	n (%)	Attitude		p	OR (95% CI)
		Above avg n (%)	Below avg n (%)		
Once a week	26 (4.5)	9 (34.6)	17 (65.4)		1.23 (0.53-2.88)
2–3 times a week	32 (5.5)	16 (50.0)	16 (50.0)		2.33* (1.11-4.88)
Monthly	62 (10.7)	25 (40.3)	37 (59.7)		1.57 (0.89-2.78)
Once every few months	171 (29.4)	78 (45.6)	93 (54.4)		1.95* (1.31-2.91)
Very rarely/never †	273 (47)	82 (30.0)	191 (70.0)		REF
Tobacco use					
Smoker or ex-smoker †	74 (12.7)	31 (41.9)	43 (58.1)	0.387	0.80 (0.49 –1.32)
Non-smoker	507 (87.3)	186 (36.7)	321 (63.3)		

† reference variable; *p <0.05; **p<0.01

3. Multivariate Analysis

Multivariate analysis was carried out to evaluate the association independently without the influence of other variables. Knowledge level was found significantly higher in married individuals (OR 7.07; p 0.002), health-related students (OR 2.82; p <0.001), and media exposure – which are daily exposure (OR 3.65; p 0.033), monthly exposure (OR 2.39; p 0.007), and few months exposure (OR 1.79; p 0.010). On the other hand, only two groups including the upper level of monthly expenses (OR 2.92; p 0.025) and media exposure (OR 1.75; p 0.011) were likely to have better attitudes toward family planning (Table 3).

Table 3. Multiple logistic regression of knowledge and attitude toward family planning (n = 581)

Variables	Knowledge			Attitude		
	p value	B	AOR (95% CI)	p value	B	AOR (95% C))
Age						
18-20 years	0.966	0.010	0.99 (0.62-1.58)	0.481	0.168	1.18 (0.74-1.88)
21-25 years			REF			
Gender						
Male	0.116	0.346	0.71 (0.46-1.09)	0.774	0.062	1.06 (0.70-1.62)
Female			REF			
Marital status						
Married*	0.002*	1.956	7.07* (2.09-23.94)	0.294	0.565	1.76 (0.61-5.06)
Unmarried			REF			
Occupation						
Health-related students*	0.000*	1.037	2.82* (1.64-4.85)	0.375	0.244	1.28 (0.75-2.19)
Non-health students	0.526	0.168	0.85 (0.50-1.42)	0.991	0.003	1.00 (0.60-1.67)

Variables	Knowledge			Attitude		
	p value	B	AOR (95% CI)	p value	B	AOR (95% C))
Workers			REF			
Number of children						
No child	0.651	0.236	1.27 (0.46-3.52)	0.872	0.078	1.08 (0.42-2.79)
≥1			REF			
Contraceptive use						
Yes	0.305	0.469	1.64 (0.64 – 4.23)	0.225	0.525	1.69 (0.72 – 3.95)
No			REF			
Subject's education status						
High school/equivalent	0.145	0.321	0.73 (0.47-1.12)	0.609	0.112	1.12 (0.73-1.72)
Bachelor and above			REF			
Mother's education status						
Secondary school and below	0.252	0.499	1.65 (0.70-3.87)	0.397	0.359	1.43 (0.62-3.28)
High school/equivalent	0.494	0.170	1.19 (0.73-1.93)	0.614	0.124	1.13 (0.70-1.83)
Bachelor and above			REF			
Father's education status						
Secondary school and below	0.509	-0.324	0.72 (0.28 – 1.89)	0.980	0.012	1.01 (0.41 – 2.53)
High school/equivalent	0.251	-0.301	0.74 (0.42 – 1.24)	0.628	0.124	1.13 (0.69 – 1.87)
Bachelor and above			REF			
Monthly income						
Very high	0.454	-0.194	0.45 (0.49 – 1.37)	0.719	-0.090	0.91 (0.56 – 1.50)
High	0.501	-0.214	0.81 (0.43 – 1.51)	0.592	-0.166	0.85 (0.46 – 1.55)
Middle	0.474	-0.219	0.80 (0.44 – 1.46)	0.209	-0.383	0.68 (0.38 – 1.24)
Low			REF			
Monthly expenses						
Upper*	0.184	-0.632	0.53 (0.21 – 1.35)	0.025*	1.071	2.92* (1.14 – 7.46)
Upper middle	0.827	-0.082	0.92 (0.44 – 1.92)	0.103	0.651	1.92 (0.88 – 4.19)
Lower middle	0.980	-0.009	0.99 (0.50 – 1.96)	0.102	0.615	1.85 (0.89 - 3.86)
Lower			REF			
House ownership						

Variables	Knowledge			Attitude		
	p value	B	AOR (95% CI)	p value	B	AOR (95% C))
Owned	0.278	0.435	1.55 (0.70 – 3.39)	0.509	-0.246	0.78 (0.38 – 1.63)
Family's house	0.147	0.582	1.79 (0.82 – 3.92)	0.522	-0.237	0.79 (0.38– 1.63)
Rent, contract, company owned			REF			
Family type						
Nuclear family	0.892	-0.042	0.96 (0.53 – 1.75)	0.859	0.052	1.05 (0.59 – 1.87)
Single parent	0.471	-3.21	0.73 (0.30 - 1.74)	0.576	-0.244	0.78 (0.33 – 1.84)
Big family			REF			
Siblings						
1	0.068	0.466	1.59 (0.97 – 2.63)	0.635	0.116	1.12 (0.69 – 1.82)
2	0.115	0.410	1.52 (0.91 – 2.51)	0.453	0.190	1.21 (0.74 – 1.98)
>3			REF			
Media exposure						
Every day*	0.033*	1.294	3.65* (1.11 – 12.01)	0.613	0.276	1.32 (0.45 – 3.84)
Once in a week	0.499	-0.322	0.73 (0.29 – 1.84)	0.953	-0.027	0.97 (0.39 – 2.40)
2-3 times/week	0.644	0.191	1.21 (0.54 – 2.72)	0.088	0.683	1.98 (0.90 – 4.34)
Monthly*	0.007*	0.870	2.39* (1.27 – 4.49)	0.306	0.314	1.37 (0.75 – 2.50)
Every few months*	0.010*	0.582	1.79 * (1.15 – 2.79)	0.011*	0.559	1.75* (1.14 – 2.69)
Rarely			REF			
Smoking status						
Smoking/smoked	0.468	0.229	1.26 (0.68 – 2.33)	0.499	0.204	1.23 (0.68 – 2.21)
Never			REF			

DISCUSSION

This is the first study in Indonesia that assessed young adult's knowledge and attitudes toward family planning. We also explored some factors that may be associated with better knowledge and attitudes in family planning. Knowledge of family planning was found to be significantly higher in several groups, which include female, married respondents, respondents that already have children, contraceptive users, health-related workers, and higher media exposures. Additionally, it was shown that contraceptive users and media exposures also had much better attitudes towards family planning.

1. Association between demographic factors and family planning

Demographic factors have a strong association with knowledge and attitude toward family planning. Health-related students were more likely to have better knowledge than non-health students and workers group. Long-term exposure to reproductive health issues in an academic setting can promote knowledge enrichment and a positive attitude toward family planning. Reproductive health education is a crucial first step in fostering a more positive attitude towards family planning and can enhance one's knowledge on the topic (Mahamed et al., 2012).

Females were also found significantly to have better knowledge of family planning as supported by Bekele et al.(Bekele et al., 2020) in their study. That may be due to females playing a central role in family planning decisions and discussions, given that they bear the physical and emotional burdens and childbirth the most. As a result, women may have more opportunities for exposure to information and resources related to family planning. But this also indicates that family planning is still too unequal to women, even though the role of men is also very large in this case, so it is very important to increase knowledge related to family planning, this is supported by Bunyamin (2015) which says, that almost all targets of using contraceptive methods in Indonesia are women. Based on Bhatt et al. (2021) young men feel that current family planning programs leave little room for men to participate even if they want to. So, in this case, it could be that women are required to know more about it and men don't know because they are less exposed too. Of course, equalization is needed, especially in sexual and reproductive health rights for both men and women.

This study observed no significant association between age and knowledge as well as attitude toward family planning, despite previous research suggesting that people gain experience and knowledge as they age (Craig et al., 2014). Teenagers were also reported as being less aware of contraceptive methods(Bekele et al., 2020). Our findings may be the reflections of youth's easier access to sex education programs, information on the internet and social media, and younger people's preference to put off having children for a variety of reasons, including professional aspirations.

2. Association between marriage, parenthood, contraceptive use, and family planning

Our study demonstrated that married, parenthood, and contraceptive user respondents had superior knowledge than the remaining respondents. This may be accounted for by the fact that married people had more opportunities to learn about family planning, including the use of contraceptives in sexual activity. It has become typical for people to be somewhat knowledgeable about contraceptives before deciding to use them. This finding was supported by Mas'udah et al. (2021) who discovered that married adolescents were 35 times more likely to utilize contraception. Mustafa et al. (2015) support our findings and explain that having children exposes people to family planning both directly and indirectly from the environment.

3. Association between media exposure and family planning

Knowledge and attitude toward family planning are independently associated with the frequency of media exposure. We measure media exposure as the degree to which a person encounters content related to family planning and contraception. Respondents who are exposed to media daily have better knowledge than exposure

among other groups. It's interesting that people who are exposed to the media just occasionally— once every month and a few months—still know more than those who answered 'rarely'. Exposure to the media was substantially linked to a greater understanding of family planning and a lower likelihood of having unfavorable attitudes toward family planning (Mutumba, 2022). In contrast, those who just received once in a few months media exposure had a better attitude to more frequent groups 'daily' and '2-3 times each week'. This finding could be explained by the fact that the majority of subjects answered in 'every few months and 'rarely' options, which made the associations between other groups less obvious.

This finding also highlights the role of media exposure particularly in the globalization era that could dismantle entrenched socioeconomic structure. Globalization permits the diffusion of new health knowledge to less privileged communities, enabling individuals from diverse backgrounds to access vital reproductive health resources (Labonté, 2015). Despite that, some critics argue globalization widens the knowledge gap due to several factors such as differences in motivation levels, varying literacy, and disparities in access to technology (Mishra, 2015). These factors create hurdles for the equitable distribution of information, making it imperative for policymakers and organizations to address these disparities comprehensively. Efforts aimed at bridging these gaps, be it through tailored educational initiatives, improving literacy rates, or ensuring widespread access to technology, are crucial in maximizing the potential of globalization to uplift disadvantaged communities and promote overall societal well-being.

In addition, this discovery emphasizes the potential of social media as an educational tool that crosses beyond demographic and socioeconomic divides. Social media platforms have the power to disseminate information widely, reaching diverse audiences regardless of their age, gender, education, or income level. By leveraging social media, educational initiatives can effectively bridge gaps in understanding family planning, ensuring that accurate information is accessible to everyone, regardless of their social or economic status.

4. Association between education level and family planning

The education level of mothers, fathers, and even the respondents themselves do not associate with knowledge or attitude of family planning in this study. The previous study found that people who completed primary and secondary education were more likely to practice family planning compared to uneducated people because they are more likely to pursue careers as they become more educated and more knowledgeable about family planning, as reported by Kasa et al. (2018), Beekle et al. (2006), and Lee et al. (2022). The lack of association may be explained by the fact that, in this age of globalization, family planning information has proliferated widely without regard to educational attainment.

5. Association between economic status factors and family planning

Those who fall into the highest monthly expenses group had better knowledge than lower expenses group (Reed et al., 2016) explained that access to spending money is a significant and independent factor because it affects purchasing power to contraceptive services, without compromising necessities. Sharma et al.(Sharma et al., 2012) also demonstrated that family planning practice was found to be greater in higher economic groups, given that stable economic conditions raise awareness of

family planning to focus on careers and avoid pregnancy.

6. Association between family structure and family planning

This study found no significant associations between family planning and family structure that were represented by family type and number of sibling variables. Recent study by Makinano et al. (Makinano et al., 2022) and Royer et al.(Royer et al., 2020) found that nuclear and extended family types tend to have a good level of knowledge of responsible parenthood and family planning. Extended families have lots of relatives and in-laws, so they know more about family planning. Because nuclear families usually have older, educated family members who are independent and have access to trustworthy information, nuclear families also tend to have well-informed members (Al Ameen, 2016). The lack of association in this study might suggest that family planning knowledge is shared outside of the immediate family members, which was previously thought to be the closest environmental level. In addition, policymakers can also create a curriculum on comprehensive sexual education in educational institutions that is age-appropriate and includes family planning. This also supports our notion that the era of globalization allows information, especially family planning, to transcend structural barriers so that they can filter the information in the media.

Our study has several strengths. To provide a comprehensive understanding of family planning knowledge and attitudes, we have already included several variables in our analyses, ranging from the demographic profile, socioeconomic status, contraception use, marital status, and education level to familial structure and media exposure. Our multicenter approach also represents a variety of people from different backgrounds. In addition, Indonesian young adult representation has offered a distinct viewpoint, particularly since this is a crucial age when decisions about family planning are being made.

Still, some limitations need to be taken into account. Our findings may be limited by the cross-sectional study design, which is unable to evaluate the dynamics and direction of the causal relationship. On top of that, we came to an understanding that knowledge and attitude are relatively abstract concepts that frequently do not transfer well to practice due to a variety of factors, such as an opportunity for access to education and information, motivation, self-efficacy, and others. Finally, we realize that our respondents most likely come from urban areas, given the proximity of our study centers in large cities.

In summary, this study discovered that media exposure and the individual opportunity for access to education—which is represented by gender, marriage, occupation, and parenthood in this study—are the two main factors linked to knowledge and attitude toward family planning. In this globalization era, media exposure could dismantle entrenched socioeconomic structures which are traditionally thought to create the gap between those with privilege and those without. This finding highlights the potential of social media as a crucial educational tool that can cut across demographic and socioeconomic divides.

AUTHORS CONTRIBUTION

Conceptualization and study design: Setiawan F, Megantari GS; Methodology: Setiawan F, Megantari GS; Formal analysis: Santoso LF, Nurdiansyah F, Salsabiil R, Mallapasi HA Latifi SR; Data interpretation: All authors; Writing – original draft:

All authors; Writing – review & editing: Setiawan F, Santoso LF.

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CONFLICT OF INTEREST

The authors declare that the study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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