

ORIGINAL ARTICLE

The Knowledge of Men on Emergency Contraception in Kinta District, Perak: A Cross-sectional Study

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ABSTRACT

Introduction: Emergency contraception (EC) is an option to prevent pregnancy after unprotected sex. Most research focuses on women's knowledge and barriers to emergency contraception, overlooking men's influential role in contraceptive decisions. The study has important policy implications that can help Malaysian health authorities improve reproductive health services. This article illustrates the importance of determining men's knowledge of emergency contraception and its determinants. **Method:** A cross-sectional study was conducted in Kinta District, Perak among 534 males using a self-administered questionnaire. Information regarding the socio-demographic background of these men and their knowledge of emergency contraception were assessed and collected. Multinomial multivariate logistic regression analyses were conducted to identify determinants of knowledge regarding EC among these men.

Results: Most of the men in the Kinta district are mainly Malay ethnicity (n = 373, 69.9%), Muslim religion (n = 383, 71.7%), with tertiary education background (n = 287, 53.7%). The majority are married (n = 312, 58.4%), sexually active (n = 320, 59.9%), and they desire to have children (n = 341, 63.9%). It is found that older men (AOR 1.022, 95% CI 1.000–1.043, p = 0.047) have better knowledge of EC as compared to those in the younger age group. **Conclusions:** This study found that older men have better knowledge of EC. The findings of this study have significant policy implications that can assist Malaysian health authorities in meeting the challenge of enhancing the quality of reproductive health services.

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INTRODUCTION

Emergency contraception (EC) refers to a set of contraceptive methods intended to prevent pregnancy following unprotected sexual intercourse. When taken within five days of intercourse, EC is highly effective, with the potential to prevent up to 95% of unintended pregnancies (1). Prompt administration significantly enhances its efficacy. Despite its proven benefits, the overall awareness and understanding of EC remain limited, particularly in developing and Muslim-majority countries, where usage is significantly lower compared to Western nations (2,3).

Globally, gender plays a critical role in contraceptive use and decision-making. A study conducted in the United States reported that 78% of both male

and female respondents supported the idea of men having access to EC; however, half of the male participants were unaware of its availability or how to obtain it (4). This highlights a major barrier to male involvement in reproductive health and underscores the importance of promoting EC awareness among men. The 1994 International Conference on Population and Development emphasized the necessity of male engagement in achieving gender equity in reproductive health frameworks (1). Consequently, integrating men as active participants in contraceptive practices is essential. Historically, EC research has focused primarily on women, with minimal emphasis on men's knowledge, attitudes, and participation. There is a growing recognition of the need to explore men's perspectives and roles in the use of EC, especially given their influence as key decision-makers in many societal and family structures. In Malaysia, men play a pivotal role in family planning, yet their knowledge of EC has been found to be unsatisfactory (5). Young men, in particular, exhibit significant knowledge gaps, and a recent systematic review identified only four studies in the past

five years that specifically examined men's perceptions of EC (6). This lack of research is concerning, especially considering that unintended pregnancies continue to pose a public health challenge.

Between 2017 and 2020, Malaysia recorded substantial numbers of teen pregnancies, with Perak's Kinta District ranking among the higher incidence areas (7). The district's diverse and dense population makes it an appropriate setting for investigating male reproductive health knowledge. However, to date, no studies have assessed Malaysian men's awareness and understanding of EC.

Exploring men's knowledge of emergency contraception can provide valuable insights for developing structured healthcare programs that actively involve men. In Malaysia, there are currently no specific interventions or educational initiatives targeting men within the healthcare system on this topic. This study aims to evaluate the level of knowledge, attitudes, and factors associated with EC awareness among men in the Kinta District of Perak. The findings are expected to provide valuable insights that can inform targeted health education strategies and guide future policy development to strengthen male involvement in reproductive health services.

Material and Methods

A cross-sectional study was organized between September 2021 and May 2023 among men attending or accompanying a companion to a primary care health clinic in Kinta district. Those who participated were aged 18 years and above, fluent in both English and Malay language, and did not have any special needs or mental disabilities that would deter their response to the questionnaire.

The sample size was calculated using the G*Power 3.1 software to detect a medium effect size of 0.5 (two-sided), taking into consideration significant level of 0.05, power of 80% and binomial Chi distribution. It was calculated based on a study done by Nejafi et al using two-proportion formula. The power was set at 80% and significance level α at 0.05 with 95% confidence interval, the calculated minimum sample size needed was 143 men which accounted for non-responders.(3)

Participants were conveniently recruited during data collection in view of time period was limited. Those who fulfilled the inclusion criteria were approached at the registration counter and were given a self-administered questionnaire which allows them to answer either in written or online form. If participants chose the former, a written form was given for participants to complete. Completeness of the questionnaire was checked by the researcher upon submission of the written questionnaire. The researcher was always made available during

the data collection period to assist for any problem throughout the process.

The questionnaire used in Nejafi et al study was adapted from a World Health Organization guideline for EC and various published studies (8–11) and was used in Malaysia among married Malay woman staff at a public university. It was validated both in Malay and English. Permission was obtained to use the questionnaire for this study. It has good reliability with internal consistency for knowledge questions (Cronbach's $\alpha=0.86$) and attitude questions (Cronbach's $\alpha=0.72$) (3). It is available in both English and Malay language version.

The questionnaire was divided into 3 parts. Part 1 gathered information regarding socio-demographic, part 2 assessed the participants knowledge on emergency contraception, part 3 consists of the attitude towards emergency contraception. Demographics data included age, ethnicity, religion, the level of education, total household income, marital status, sexually active and desire for children. Respondents were requested to respond to individual statements using "Yes", "No" or "Do not know". Knowledge of EC investigated included awareness of EC, its side effects, availability of EC, its mechanism of action, the time frame for use and the indications for EC.

To assess knowledge, the respondents in the study were awarded one point for each correct answer and no points for incorrect answers or indicating they did not know. Based on their performance, the respondents were categorized as follows: those who answered less than 25% of the questions correctly were considered to have low knowledge about emergency contraception (EC), those who answered 25-50% of the questions correctly were categorized as having moderate knowledge of EC, and those who answered more than 50% of the questions correctly were classified as having good knowledge of EC (11).

All statistical analyses were analyzed using IBM Statistical Package for Social Science (SPSS) version 29.0 software. Data were entered, coded, and underwent consistency checks to assess quality. Descriptive statistics for categorical data are described as percentages. Non-normal distributed numerical data were described in median and interquartile range. Simple nominal test was used to test the significance of differences in percentages. A significant level was set at p value of <0.05 . Multinomial multivariate logistic regression analysis was performed to determine the determinants of knowledge towards emergency contraception among men.

Ethical clearance was obtained from the National Malaysia Research Register (NMRR) (NMRR ID-22-01466-TVN (IIR)) and University Putra Malaysia Ethical Committee (JKEUPM) with the approval from Jabatan

Kesihatan Negeri Perak Malaysia to carry out the study in Kinta District.

Results

Out of 552 men who were approached, 534 responded to the study and completed the questionnaire giving a response rate of 96%. The larger sample size were recruited intentionally taking into account the potential of non-responses and rarity of the study regarding EC in men.

The median age of the participants was 35 years old. Majority were from the Malay ethnicity (n = 373, 69.9%), Muslim religion (n = 383, 71.7%) with tertiary education background (n=287, 53.7%). A further description of the study population is described in Table 1. It was found that most of these men (n = 268, 50.2%) scored a "moderate knowledge" level of knowledge (25 to 50) on EC. Table 2 further describes their knowledge.

Table I: Demographic description of men attending information

Demographic Information		n (%)	Median (IQR)
Age			35 (14)
Ethnicity	Malay	373 (69.9)	
	Chinese	75 (14.0)	
	Indian	70 (13.1)	
	Others	16 (3.0)	
Religion	Muslim	383 (71.7)	
	Buddhist	60 (11.2)	
	Christian	18 (3.4)	
	Hindu	64 (12.0)	
Education	Others	9 (1.7)	
	No formal education	2 (0.4)	
	Primary	24 (4.5)	
	Secondary	221 (41.4)	
Income	Tertiary	287 (53.7)	
	RM 3660 and below	377(70.6)	
	RM 3660 to 7639	126(23.6)	
	RM 7640 and more	31(5.8)	
Marital Status	Single	193 (36.1)	
	Married	312 (58.4)	
	Divorced	13 (2.4)	
	Widowed	5 (0.9)	
Sexually Active	Separated	11 (2.1)	
	No	214 (40.1)	
	Yes	320 (59.9)	
Desire for having children	No	193 (36.1)	
	Yes	341 (63.9)	

Table II: Knowledge category of men on emergency contraception

Knowledge Category	Frequency (%)
Low knowledge (0 to 24)	156 (29.2)
Moderate knowledge (25 to 50)	268 (50.2)
Good knowledge (51 to 100)	110 (20.6)

	N	Median	IQR
Knowledge Score	534	35	30

Simple multinomial logistic regression (Table 3) demonstrates that older age aged men (crude OR=1.024, 95% CI: 1.005-1.038, p 0.013) and sexual desire (crude OR=0.625, 95% CI: 0.398-0.981, p=0.041) to be associated with the knowledge on EC. Only variables

with p values <0.25 were included in the multinomial logistic regression as other variables could be potential confounders. This is also ensure a robust model.

Table III: Simple multinomial logistic regression for sociodemographic factors associated with knowledge of men on emergency contraception

		n	%	Univariate model				
				Knowledge category	Low knowledge		Moderate knowledge	
					Unadjusted OR (95% CI)	p value	Unadjusted OR (95% CI)	p value
Age		35 (14)			1.017(0.997-1.038)	0.096	1.024(1.005-1.038)	0.013
Ethnicity	Non Malay	161	30.1		0.973(0.579-1.635)	0.918	1.300(0.804-2.101)	0.285
	Malay	373	69.9	ref.	1	.	1	.
Religion	Non-Muslim	151	28.3		1.101(0.649-1.867)	0.722	0.793(0.485-1.297)	0.356
	Muslim	383	71.7	ref.	1	.	1	.
Education	No formal/ Primary	26	4.86		1.815(0.554-5.944)	0.325	1.242(0.392-3.939)	0.713
	Secondary/ Tertiary	508	93.56	ref.	1	.	1	.
Income	>7640	31	5.8		0.493(0.180-1.355)	0.171	0.523(0.223-1.229)	0.137
	3660-7639	126	23.6		1.193(0.675-2.106)	0.544	0.805(0.471-1.376)	0.428
	<3660	377	70.6	ref.	1	.	1	.
Marital Status	Single/ Divorced/ Widowed/ Separated	222	41.6		1.029(0.630-1.679)	0.91	0.714(0.456-1.120)	0.142
	Married	312	58.4	ref.	1	.	1	.
Sexual desire	No	214	40.1		0.918(0.562-1.498)	0.731	0.625(0.398-0.981)	0.041
	Yes	320	59.9	ref.	1	.	1	.
Desire of children	No	193	36.1		1.474(0.880-2.470)	0.14	1.268(0.789-2.039)	0.327
	yes	341	63.9	ref.	1	.	1	.

Multinomial logistic regression (Table 4) found that older-aged men have 1.022 times the odds of having moderate knowledge (adjusted OR 1.022, 95% CI 1.000-1.043, $p=0.047$) compared to younger men. The model

goodness of fit was tested by Hosmer and Lemeshow test and classification table where the P value above 0.05 is consider a good fit.

Table IV: Multinomial logistic regression for sociodemographic factors associated with knowledge of men on emergency contraception

		Multivariate model			
		Good knowledge	Low knowledge		Moderate knowledge
		OR (95% CI)	OR (95% CI)	p value	OR (95% CI) p value
Age	35 (14)		1.016 (0.993-1.040)	0.162	1.022 (1.000-1.043) 0.047
Income	>7640		0.477 (0.170-1.339)	0.160	0.434 (0.180-1.048) 0.064
	3660-7639		1.096 (0.615-1.956)	0.756	0.707 (0.409-1.224) 0.216
	<3660	ref.	1	.	1 .
marital status	single/ divorced/ widowed/ separated		1.290 (0.649-2.565)	0.468	1.091 (0.578-2.058) 0.788
	married	ref.	1	.	1 .
sexual desire	No		0.790 (0.411-1.519)	0.480	0.605 (0.331-1.105) 0.102
	Yes	ref.	1	.	1 .
desire of children	no		1.298 (0.751-2.242)	0.350	1.170 (0.704-1.943) 0.545
	yes	ref.	1	.	1 .

Discussion

This study finds a significant association between men's age and their knowledge of emergency contraception (EC). As age increases, knowledge remains at a moderate level. This contrasts with findings by Karim et al., who reported that older men had lower EC knowledge compared to younger men (12). In their study, the lower levels of EC knowledge observed among older men may stem from generational disparities in access to sexual health education, societal norms, and exposure to public health messaging. Unlike younger cohorts who have benefited from evolving educational curricula and digital information channels. On the other hand, older men in Malaysia likely came of age in an era where discussions about contraception were limited or stigmatized. Additionally, public health campaigns tend to prioritize women and younger individuals, leaving older men less informed and less engaged in reproductive health conversations (2,13). Additionally, this study used three knowledge categories, differing from Karim's classification. However, other studies have reported no significant correlation between age and men's EC knowledge (14).

This study did not find any statistically significant association between variables such as race religion,

education level, monthly household income, marital status, sexual activity, or desire for children. However, this differs from two other studies that found significant association with various demographic and socio-economic factors, including age, marital status, religion, previous and current residence, parent's educational status, as well as knowledge and attitude towards emergency contraception (EC), (2,15). Karim et al. reported that less knowledge of EC was cultural [0.46, 95% CI 0.22, 0.96] and religious unacceptability [OR 0.51, 95% CI 0.29, 0.89], which was not found in our study (12). The main difference between the two studies and the current study is that the latter cannot be generalized to the Malaysian population, as it was conducted at a single center using convenience sampling. Additionally, the diverse racial, religious, and cultural backgrounds of the study population may have influenced the study's outcomes.

Previous research has shown that marital status can influence the use of emergency contraception (EC), with married individuals being more likely to use it than those who are unmarried (16). Specifically, unmarried students were found less likely to use EC as compared to their married peers. However, in our study, marital status among men did not show a significant association with their knowledge of emergency contraception.

In 2016, the use of emergency contraception (EC) varied among sexually active individuals (17). Studies have shown that those who are sexually active tend to have greater awareness of EC. In Ethiopia, a large number of sexually active individuals reported using EC at least once following unprotected intercourse(15). However, usage remains low among unmarried, sexually active individuals—only about 4 %(18). Unlike these findings, our study did not find a significant association between EC knowledge and participants' sexual activity status. Barriers to EC use among sexually active individuals include lack of availability at service points, inconvenient operating hours, limited knowledge of where to access EC, distance to providers, fear of social judgment, and concerns about privacy.

Strength

This is the first study done among men's from Simee Health Clinic, Kinta, Perak and Malaysia.

Limitation

This study has gathered empirical evidence singly from Simee Health Clinic, Kinta, located in the state of Perak. The use of convenience sampling in the study introduces the risk of selection bias, as participants are not randomly chosen and may not reflect the diversity of the broader population. Future studies ought to encompass a more extensive population sample to accurately represent the overall population.

Conclusion

It was found that older men tend to have better knowledge of emergency contraception compared to younger men. Although this topic has not been previously studied in the Kinta district, identifying and targeting the appropriate age group is essential for designing effective interventions to improve men's knowledge of emergency contraception.

Enhancing emergency contraception (EC) awareness among men through educational programs and incorporating male-focused approaches into reproductive health services is crucial to encourage informed and collaborative decision-making in contraception.

Improving male knowledge of emergency contraception in Malaysia requires a multi-sectoral approach. Health education programs should actively target men through community outreach and tailored messaging. School curricula need to be expanded to include comprehensive, gender-inclusive sexuality education from an early age. Workplace campaigns can reach older men in practical and accessible ways, while religious and community leaders can play a pivotal role in normalizing conversations around EC within culturally sensitive frameworks. Engaging all of these

platforms not only broadens EC awareness but also helps shift social norms toward shared responsibility in reproductive health.

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