

KNOWLEDGE, ATTITUDE, AND PRACTICE LEVEL OF FAMILY PLANNING SERVICE RECIPIENTS IN THE HEALTH DISTRICT OF PETALING, SELANGOR

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ABSTRACT

Background: Family planning (FP) is important to ensure the wellbeing of mothers and children. There are various facilitators and barriers towards a successful FP program. In the health district of Petaling (PKD Petaling), the uptake of FP is not optimum. However, local data are scarce to pinpoint the reasons. This study aims to assess the knowledge, attitude, and practice (KAP) level among the potential FP recipients and its associated factors.

Materials and Methods: A cross-sectional study using self-administered questionnaires was conducted at six health clinics in PKD Petaling from May-July 2017. Descriptive analysis with chi-square and logistic regression analysis were conducted to identify associated factors.

Result: Majority of the 360 respondents were Malays (75.3%) and married (91.9%). The overall KAP was 80.3%, 71.9%, and 46.7%. OCP and condom were the two most recognised FP methods whereas OCP and Depo Provera were the most commonly used. Education level was associated with a good knowledge and positive attitude towards FP. The predictors of current FP usage included older age, having 4 or more children, good knowledge and attitude about FP.

Conclusion: An effective FP programme require the identification and understanding of the various factors associated with the KAP level of FP to formulate appropriate improvement strategies. Based on the results, fear of side effects and husband's opposition were the most prominent reasons for not using contraception. Dissemination of accurate information, inclusion of husband in FP decision-making, continuous staff training to improve the counselling effectiveness are needed to improve the uptake of FP in PKD Petaling.

Keywords: Family planning, contraception, KAP, Malaysia, service recipient

1.0 Introduction

Family planning (FP) is a cost-effective life-saving intervention which has been critical in the achievement of most of the Sustainable Development Goals (SDG). Globally, it has been shown that effective FP methods among reproductive age women can reduce unintended pregnancies by 70% and neonatal and infant mortality by 77%, besides leading to reduction in maternal mortality and morbidity (WHO, 2015). FP services also enable families, especially those from poor socioeconomic background, to optimise the number of children and subsequently ward off negative socioeconomic effects such as compromised educational and economic opportunities and scarcity of household incomes (Ashford, 2003).

The uptake of FP in Malaysia has not been satisfactory even though an official national FP program had been put in place since 1966. Since the 1980s, Contraceptive Prevalence Rate (CPR) was only about 50% for any methods (*Country Profile for Population and Reproductive Health: Policy Developments and Indicators*, 2004). A more recent report by World Bank in 2014 suggested that only half of all women (52.2%) between ages 15 and 49 in Malaysia practised any types of contraceptive methods. While the use of non-modern contraceptive methods had decreased from 24.6% in 1994 to 17.5% in 2004, the use modern FP method such as hormonal contraceptives only increased slightly from 30.2% percent in 1994 to 34.4% in 2004 (*Fourth Malaysian Population and Family Surveys*, 2004). Furthermore, Confidential Enquiries into Maternal Death in Malaysia 2001–2005 revealed that in up to 70% of all the maternal deaths, no forms of any FP were used by the deceased women (*Report on the Confidential Enquiries into Maternal Deaths in Malaysia 2001 -2005*, 2008).

In Petaling, the annual district performance review showed a low percentage of FP uptake among the local population at only 70.1% in 2016. Lack of knowledge about modern contraceptive methods is one of the main reasons for the low uptake (Khan et al., 2007; Wu, 2010). A retrospective analysis revealed that lack of contraceptive awareness, myths, and non-availability are the barriers towards contraceptive usage (Najimudeen & Sachchithanatham, 2017). In this study, we aim to assess the level of knowledge, attitude, and practice (KAP) towards FP among the potential recipients in PKD Petaling and the relevant contributing factors. Findings from the study would provide vital information needed to develop strategies to improve FP uptake in PKD Petaling.

2.0 Materials and Methods

This multi-centre cross-sectional study was conducted from May-July 2017 in the district of Petaling. With a population of 2.6 million, Petaling is the district with the highest density and population growth among all the districts in the state of Selangor, Malaysia. While Petaling is considered a relatively urban and affluent area in comparison with other districts, there are still pockets of low socioeconomic populations in certain areas. Petaling also borders with other

districts namely Gombak, Sepang, Klang, Kuala Lumpur, and Putrajaya. Therefore, it is an area with high patient workload and frequent patient mobility.

PKD Petaling oversees a total of 10 health clinics (Klinik Kesihatan), 3 rural health clinics (Klinik Desa) and 12 community clinics (Klinik Komuniti). Klinik Komuniti provides only outpatient services whereas maternal and child health services (MCH) are provided at all the remaining 13 health clinics. FP services such as counselling and dispensing of contraception are one of the major components under MCH services.

Due to the staff constraint in certain health clinics, data collection was only conducted in the 6 health clinics with the highest uptake of FP in 2016. Based on the sample size calculation, a total of 360 patients or approximately 60 patients per clinic were required to achieve accurate and reliable statistical judgement.

$$\begin{aligned} n &= [z^2 \times p \times (1-p)] / d^2 \\ &= [1.96^2 \times 0.70 \times (0.30)] / 0.05^2 \\ &= 322.7 \end{aligned}$$

Final sample size (inflate another 10% to account for missing data)

$$n = 323 \times 110\% = 354.7 \sim 360$$

$z = 1.96$ (95% Confidence Interval), $d = \text{degree of accuracy} = 0.05$

$p = \text{Prevalence Rate of FP Uptake} = 70.1\%$ (PKD Petaling data in 2016)

Based on the available literature on KAP of FP recipients, a self-administered questionnaire was designed. The first part of the questionnaire consisted of baseline socio-demographic characteristics. The three variables that best represent the KAP level of the recipients were the dependent variables in the analysis, namely their knowledge about FP, their intention towards practising FP, and whether they are currently practising FP. Reasons against uptake of FP methods were also explored in which the options given were common barriers quoted in the literature. The questionnaire was distributed via direct solicitation of eligible women at the waiting area of the clinics. The researchers explained the nature and confidentiality of the study. If the patients consented, they will be asked to fill up the questionnaire on the spot.

All the data collected were cleaned and analyzed using SPSS version 21. Descriptive analysis was performed to explore the distribution pattern of each variable and of outliers. Cross-tabulation and Chi-square tests were used to determine the association between categorical variables. Multivariate logistic regression analysis was used to identify the predictors of KAP among the recipients. The level of statistical significance was set at $p < 0.05$ for all analyses.

3.0 Result

3.1 Sociodemographic Characteristics of Respondents

Table 1. Socio-demographic Characteristics of Respondents

Variables (n=360)	Number	Percentage
Age		
18-29	129	35.9
30-39	211	58.6
40-49	20	5.6
Ethnicity		
Malay	271	75.3
Chinese	46	12.8
Indian	24	6.7
Others	19	5.3
Marital Status		
Single	6	1.7
Married	331	91.9
Divorced	7	1.9
Number of Children		
0	43	11.9
1 to 3	274	76.1
4 to 5	34	9.4
6 and above	9	2.5
Education Level		
Primary School	16	4.4
Secondary School	117	32.5
Diploma/Degree/Master	218	60.6
Profession		
Private sector	161	44.7
Public sector	71	19.7
Housewife	112	31.1
Student	1	0.3
Others	10	2.8

A total of 360 female respondents were obtained from the 6 health clinics (Table 1). Majority of them are of Malay ethnicity. The mean age was 31.3 years, whereby more than half (58.6%) of the respondents were 30-39 years old. Every 9 in 10 respondents are married. A few of the respondents chose not to answer about their marital status. All except 43 of the respondents had children with majority of them having 1-3 children.

A high number of the respondents had tertiary education level (60.6%), followed by secondary school level (32.5%). This is not a surprising finding as Petaling is an urban area and thus the local population would have more access to average-high level of education. Similarly, the proportion of working females was also high among the respondents, with 60.5% of the females working in either private (40.8%) or public (19.7%) sectors. About one-third were housewives.

3.2 KAP level of FP among Study Respondents

Table 2. KAP level of FP among Study Respondents

Description	N	%
Ever heard about FP		
Yes	289	80.3
No	71	19.7
FP Methods Known		
Condom	281	78.1
OCP	290	80.6
Depo Provera	202	56.1
IUCD	177	49.2
Implanon	148	41.1
Know the benefit of FP		
Yes	254	70.6
No	106	29.4
Know the side effects of FP		
Yes	171	47.5
No	189	52.5
Intend to have FP		
Yes	259	71.9
No	101	28.1
Currently Practicing FP	168	46.7
Method of FP		
Currently Using Condom	35	9.7
Currently Using OCP	64	17.8
Currently Using Depo Provera	41	11.4
Currently Using IUCD	13	3.6
Currently Using Implanon	10	2.8
BTL done	5	1.4
Reasons Against Uptake of FP (can choose more than 1)		
Side effects	145	40.3
Long waiting time in clinic	32	8.9
Lack of husband's consent	58	16.1
Unsure of how to obtain	10	2.8
Others	15	4.2

Table 2 shows the KAP level of the respondents. Every 4 out of 5 respondents claimed that they had heard about FP before. Among the 5 common contraceptive methods listed, OCP and condom were the 2 most recognised FP methods. As for long acting contraception, slightly more than half (56.1%) knew about Depo Provera while less than half were aware of IUCD (49.2%) and Implanon (41.1%).

As for the recipients' knowledge about FP, as high as 70.6% claimed they know the benefits of FP. However, less than half (47.5%) of the respondents were aware of the side effects of FP. To gauge their attitude towards FP, respondents were asked about their intention to practise FP. While 71.9% (n=259) of the respondents answered that they intended to practice FP, only less than half (46.7%) of all the respondents were currently practising FP. Among them, the highest proportion of contraceptive method used was OCP (17.8%), followed by Depo Provera (11.4%).

The barriers towards the uptake of FP were also explored. Among the non-recipients of FP, the main reasons cited was the concern about the side effects of FP (40.3%), followed by lack of husband's consent (16.1%).

3.3 Association between sociodemographic characteristics and KAP level of FP

Table 3. Comparison of sociodemographic characteristics with KAP level of FP Among Respondents

Variable	Know about FP (n=289)	%	p value	Intend to have FP (n=259)	%	p value	Currently Using FP (n=154)	%	p value
Age group			0.001			0.008			0.000
18-29	91	31.5%		82	31.7%		38	24.7%	
≥30	198	68.5%		177	68.3%		116	75.3%	
Ethnicity			0.452			0.171			0.448
Malay	220	76.1%		200	77.2%		119	77.3%	
Others	69	23.9%		59	22.8%		35	22.7%	
Marital Status			0.924			0.495			0.638
Married	267	96.7%		240	96.4%		144	97.3%	
Single/Divorced	9	3.3%		9	3.6%		4	2.7%	
Number of Children			0.844			0.067			0.134
0-3	254	87.9%		223	86.1%		127	82.5%	
4 and above	35	12.1%		36	13.9%		27	17.5%	
Education Level			0.015			0.157			0.532
Primary School	9	3.2%		9	3.6%		8	5.4%	
Secondary/ Tertiary	272	96.8%		243	96.4%		141	94.6%	
Profession			0.038			0.023			0.732
Working	196	69.8		177	70.8		101	68.2	
Not working	85	30.2		73	29.2		47	31.8	

Table 3, Continued

Variable	Know about FP (n=289)	%	p value	Intend to have FP (n=259)	%	p value	Currently Using FP (n=154)	%	p value
Know About FP			-	236	91.1	<0.001	147	95.5	<0.001
Yes	-	-		23	8.9		7	4.5	
No	-	-							
Intend to have FP			-			-	142	92.2	<0.001
Yes	-	-		-	-		12	7.8	
No	-	-		-	-				

Table 3 shows the factors associated with KAP of FP among the respondents. The dependent variables used to represent the KAP were knowledge about FP, intention to practise FP, and current usage of FP. To summarise, 289 of the 360 respondents knew about FP, and 259 of them intended to practise FP. However only half of all the respondents (n=154) were currently practising FP.

Chi-square test showed that the knowledge of FP was significantly associated with older age group and higher education level. Older females were also more likely to have positive attitude towards the uptake of FP and to be currently using FP. On the contrary, ethnicity did not affect the KAP of FP. While the marital status of the respondents did not make a difference in the KAP of FP among the respondents, the number of children was found to be associated with the current usage of FP, though not with the knowledge and intention to practice FP.

In addition, a higher level of education was associated with having known about FP, but not with the positive attitude towards or current usage of FP. On the contrary, respondents who worked full time were found to be associated with having the knowledge and intention to practice FP. However, the working status had no impact on the current usage of FP. Last but not least, the current usage of FP was significantly associated with having the knowledge and positive intention to practice FP.

3.4 Predictors of KAP level of FP among Study Respondents

Table 4. Logistic Regression Analysis for Variables Predicting KAP Level

Variables	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.	
Knowledge of FP							
Age>30	1.047	0.288	13.171	0.000	2.848	1.618	5.012
Secondary/Tertiary Edu.	0.961	0.620	2.401	0.121	2.614	0.775	8.813
Working	0.549	0.297	3.426	0.064	1.733	0.323	1.033
Constant	-1.614	0.272	35.222	0.000	0.199		
Attitude towards FP							
Age>30	-0.197	0.289	0.466	0.495	0.821	0.466	1.446
Malay ethnicity	0.272	0.318	0.733	0.392	1.313	0.704	2.450
≥4 children	1.040	0.535	3.782	0.050	2.832	0.124	1.008
Secondary/Tertiary Edu.	-0.583	0.728	0.642	0.423	0.558	0.134	2.324
Working	0.480	0.285	2.825	0.093	1.616	0.923	2.826
Know about FP	2.117	0.323	43.054	0.000	8.304	4.413	15.627
Constant	-1.961	1.893	1.073	0.300	0.141		
Practice of FP							
Age>30	-0.540	0.263	4.221	0.040	0.583	0.348	0.975
≥4children	-0.747	0.388	3.714	0.054	0.474	0.222	1.013
Know about FP	1.563	0.449	12.13	0.000	4.776	1.981	11.512
Intend to have FP	1.706	0.350	23.77	0.000	5.505	2.774	10.928
Constant	-1.836	0.815	5.076	0.024	0.159		

To determine the significant predictors of the KAP of FP, multivariate logistic regression was conducted (Table 4). All the independent variables that showed an association with $p < 0.25$ on Chi-square testing were included in the logistic regression.

The multivariate logistic regression showed that with regard to knowledge of FP, only age remained a significant predictor. Those of age 30 and above were about 3 times more likely to know about FP. As for the attitude towards FP, the number of children and knowledge of FP were found to be significant predictors. Respondents with more children were 3 times more likely to have the intention to practice FP while those who knew about FP were 8 times more inclined to practice FP.

Lastly, the practice of FP was significantly predicted by 4 variables; namely older age, having more children, knew about FP, and had positive intention to practice FP. Compared to those below age 30 and those having less children, respondents who were older or those with 4 children or more would be 2 times more likely to be on FP currently. Similarly, those who have knowledge and positive intention about FP are 4 to 5 times more likely to be on FP.

4.0 Discussion

FP is an effective way to improve maternal and child health via empowering the women and their partners on when to conceive and how many children to produce. Published studies showed that apart from sociodemographic factors such as age, cultural and religious beliefs, education and economic status, the uptake and selection of contraceptive method also depended greatly on the availability of information with proper counselling (McCauley, Robey, Blanc, & Geller, 1994). Sound and sufficient knowledge of FP methods, positive attitudes and acceptance, availability of contraceptives methods, better and open communication between wife and husband, and the favourable number of children were all essential factors for effective FP programs. A recent survey showed that the healthcare providers in PKD Petaling had a good knowledge of FP and high confidence level in FP counselling (Lee et al., 2019). Nevertheless, the FP uptake among the potential recipients continues to be low. Thus, it is imperative to examine the issue from the perspective of FP recipients. This study examines the KAP level and the associated factors among the FP recipients in the various government health clinics in Petaling, an urban and densely-populated district.

A closer scrutiny of the results revealed that only half of the respondents were currently practising FP, despite a higher percentage of them claiming to have a good knowledge and positive intention towards FP. A recent cross sectional study conducted in Serdang, part of the coverage area of PKD Petaling, showed that the prevalence of FP practice was low at 38.4%, even though knowledge was sufficient (Mansor et al., 2015). This is in contrast to findings in most literature which showed that lack of knowledge of modern contraceptive methods is the major reasons for the non-usage (Khan et al., 2007; Sajid & Malik, 2010; Wu, 2010). One of the possible reason might be the respondents in this study were patients who were attending MCH clinics and are thus of an older age and more likely to be married, as compared to the studies in the literature that sampled other populations such as general public or adolescents who might be single and younger by age with less knowledge about FP. In addition, a study carried out in Tanzania showed that the education level and number of children were the main factors associated with FP use (Marchant T et al., 2004). This is similar to our findings whereby the number of children was a significant predictor of current usage of FP.

Unmet needs of FP happen when women do not use contraceptives because they cannot access or afford any modern contraceptives. However, by just making contraceptives accessible and affordable will not resolve the issue of unmet needs. Many research have shown a multitude of factors which resulted in the poor uptake of FP, including lack of knowledge, religious or cultural barriers, health concerns and spousal opposition (Mills, Bos, & Suzuki, 2010; Najafi-Sharjabad, Zainiyah Syed Yahya, Abdul Rahman, Hanafiah Juni, & Abdul Manaf, 2013). In this study, several options were given to the respondents for the reasons against uptake of FP. The main reasons cited were 'fear of side effects' followed by 'lack of husband approval'. This finding is in concordance with the 2004 national survey in Malaysia, whereby 26.8% respondents were concerned about side effects of contraception followed by 12.6% whose husbands objected towards FP (*Fourth Malaysian Population and Family Surveys*, 2004). Our finding also echoed with other studies which found the fear of side effect as the major barrier against FP (Campbell, Sahin-Hodoglugil, & Potts, 2006; Donati, Hamam, & Medda, 2000; Williamson, Parkes, Wight, Petticrew, & Hart, 2009). Fear of side effects might be related to misinformation, especially when the source of information

originated from non-certified or poorly informed healthcare provider (Dhaher, 2017; Diamond-Smith, Campbell, & Madan, 2012). Despite the recent survey which showed that majority of the healthcare staffs in PKD Petaling had good knowledge and high self-perceived confidence on FP counselling (Lee et al., 2019), continuous training still need to be conducted to improve the quality of the FP counselling to ensure efficient delivery of accurate message to the potential clients.

In several countries including Turkey and Pakistan, husbands' or family members' opposition was the main factor for married women not using any contraceptive methods (Kadir, Fikree, Khan, & Sajan, 2003; Sahin & Sahin, 2003). Many other studies also noted the role of husband in the decision making regarding FP (Amirul Islam, Padmadas, & W.F. Smith, 2006; Donati et al., 2000; Sahin & Sahin, 2003). A local study revealed that men exerted major influence on the discussion and decision making regarding FP. Men who were older, with high level of education and income, in shorter duration of marriage participated more in FP decision making with their partners (Ling JES et.al, 2017). In view of this, male participation in the counselling session should be promoted to enable a collective informed decision.

The important factors identified in this study have been used for the formulation of targeted intervention strategies towards improving FP uptake in PKD Petaling as part of the District Specific Approach (DSA) Quality Assurance Programme (QAP). In contrast to National Indicator Approach (NIA) whereby performance indicators are formulated for ground level staff at higher level using a top-down approach, DSA applies a bottom-up approach in which health districts or hospitals staff identify and solve specific local problems (Haniza, Mohamed, & Abu Bakar, 2015). Vital strategies have been implemented based on findings from this study to improve the uptake of FP in PKD Petaling. They revolved around husbands' involvement, longer period of counselling, adequately-trained providers, effective delivery FP information via toolkit and booklet. The evaluation of the outcome of DSA implementation is due at the end of 2019.

To the best of our knowledge, this is the first multi-centre studies in Malaysia which encompasses an entire health district to examine issues pertaining to low uptake of FP. The high response rate was able to provide a comprehensive outlook on the factors affecting the uptake of FP. However, the limitations of the study included the possible social desirability bias whereby the KAP assessed might not be an accurate portrayal of the actual level. Furthermore, the results would have been more representative and comparable with other studies if a validated questionnaire was applied. Future studies should focus on more in-depth exploration of sociocultural and behavioural factors that influence women's uptake of FP.

5.0 Conclusion and recommendation

This study provides vital insights on the factors associated with KAP level of FP among women in a major district in Selangor which have been used in the development of strategies to improve FP uptake. Dissemination of accurate information, inclusion of husband in FP decision-making, continuous staff training to improve the counselling effectiveness are important issues to consider when implementing a community level FP programme. By

promoting the use of FP and empowering women with the reliable information, they will be able to make an informed decision and choose the most suitable method of contraception.

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Declaration

Authors declare no competing interest in this study.

Authors contribution

All authors conceived the overall study. Authors 1-4 designed the study and coordinated the study implementation and data collection. Lee K.Y. drafted the manuscript. All authors read and approved the final manuscript.

References

- Amirul Islam, M., Padmadas, S., & W.F. Smith, P. (2006). Men's approval of family planning in Bangladesh. *Journal of biosocial science*, 38, 247-259. doi:10.1017/S0021932004007072
- Ashford, L. (2003). *Unmet Need for Family Planning: 8. Recent Trends and Their Implications for Programs*. Retrieved from Washington, DC:
- Campbell, M., Sahin-Hodoglugil, N. N., & Potts, M. (2006). Barriers to fertility regulation: a review of the literature. *Stud Fam Plann*, 37(2), 87-98.
- Country Profile for Population and Reproductive Health: Policy Developments and Indicators*. (2004). Retrieved from
- Dhaher, E. A. (2017). Family planning KAP survey in the Southern Region of Saudi Arabia. *2017*, 6(11), 10. doi:10.18203/2320-1770.ijrcog20174990
- Diamond-Smith, N., Campbell, M., & Madan, S. (2012). Misinformation and fear of side-effects of family planning. *Culture, Health & Sexuality*, 14(4), 421-433. doi:10.1080/13691058.2012.664659
- Donati, S., Hamam, R., & Medda, E. (2000). Family planning KAP survey in Gaza. *Soc Sci Med*, 50(6), 841-849. doi:10.1016/s0277-9536(99)00339-1
- Fourth Malaysian Population and Family Surveys*. (2004). Retrieved from

- Haniza, S., Mohamed, N. E., & Abu Bakar, A. (2015). Implementing Quality Assurance in Public Health Facilities: The Malaysian Experience. *Journal of US-China Public Administration*, 12, 752-758. doi:10.17265/1548-6591/2015.10.002
- Kadir, M. M., Fikree, F. F., Khan, A., & Sajan, F. (2003). Do mothers-in-law matter? Family dynamics and fertility decision-making in urban squatter settlements of Karachi, Pakistan. *J Biosoc Sci*, 35(4), 545-558.
- Khan, M. H., Humayun Shah, S., Saba, N., et al. (2007). Study of contraceptive user women in Di Khan, Pakistan. *Biomedica*, 23, 24-26.
- Lee, K. Y., Amin, H., Hassan, H., et al. (2019). Self-Perceived Confidence in Family Planning Counselling and its Associated Factors among Healthcare Professionals in Petaling, Selangor. In C. o. t. I. 2019 (Ed.), *5th International Conference on Public Health 2019* (pp. 180): The International Institute of Knowledge Management.
- Mansor, M., Khatijah, L. A., Oo, S., et al. (2015). The prevalence of family planning practice and associated factors among women in Serdang, Selangor. *Malaysian Journal of Public Health Medicine*, 15, 147-156.
- McCauley, A. P., Robey, B., Blanc, A. K., & Geller, J. S. (1994). *Opportunities for women through reproductive choice. Population reports*. Retrieved from Washington, DC:
- Mills, S., Bos, E., & Suzuki, E. (2010). *Unmet need for contraception (English). Public Health at a Glance; HNP notes*. Retrieved from Washington, DC: <http://documents.worldbank.org/curated/en/167431468181482018/Unmet-need-for-contraception>
- Najafi-Sharjabad, F., Zainiyah Syed Yahya, S., Abdul Rahman, H., Hanafiah Juni, M., & Abdul Manaf, R. (2013). Barriers of modern contraceptive practices among Asian women: a mini literature review. *Global journal of health science*, 5(5), 181-192. doi:10.5539/gjhs.v5n5p181
- Najimudeen, M., & Sachchithanantham, K. (2017). An insight into low contraceptive prevalence in Malaysia and its probable consequences. *2017*, 3(3), 4. Retrieved from <https://www.ijrcog.org/index.php/ijrcog/article/view/979>
- Report on the Confidential Enquiries into Maternal Deaths in Malaysia 2001 -2005*. (2008). Retrieved from Kuala Lumpur, Malaysia:
- Sahin, H. A., & Sahin, H. G. (2003). Reasons for not using family planning methods in Eastern Turkey. *Eur J Contracept Reprod Health Care*, 8(1), 11-16.
- WHO. (2015). Family Planning: Fact Sheet Retrieved from <http://www.who.int/mediacentre/factsheets/fs351/en/index.html>.
- Williamson, L. M., Parkes, A., Wight, D., Petticrew, M., & Hart, G. J. (2009). Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. *Reprod Health*, 6, 3. doi:10.1186/1742-4755-6-3
- Wu, L. (2010). A survey on the knowledge, attitude, and behavior regarding contraception use among pregnant teenagers in Beijing, China. *Clin Nurs Res*, 19(4), 403-415. doi:10.1177/1054773810375982