Level and Trends of Modern Contraceptive Use According to Wealth Index and Education Levels in Indonesia: Analysis of Indonesia Demographic Health Survey (IDHS) 2007 and 2012

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Modern contraceptive has increased in nearly all populations world-wide. However, in Indonesia, the pace of this increase seems to be slowing down recently. This study aims to examine the levels and trends in modern contraceptive use over a ten year period, and to explore the variation of the use by sociodemographic characteristics. This study uses the data from two IDHS, conducted in 2007 and 2012, and employed descriptive analysis to examine the levels and trends of modern contraceptive use. Modern contraceptive method use includes female sterilization, male, IUD, injectables, pill, condom, lactational amenorrhea method (LAM). Modern contraceptive use increase from 67.5% in 2007 to 69.3% in 2012, only 2.7 percentages increase. Most of the increase were attributed to Long Acting Contraceptive System (LACs), escpecially in implant use, 3.9% in 2007 to 5.9 in 2012 (41 percentages increase). The rates of injectables and pils use (non LACs) decreased in 2012 compared to 2007: whereas other non LACs i.e, condom use and LAM, showed an increase. Modern contraceptive use consistently increased across wealth quintile subgroup as well as across educational level both in 2007 and in 2012 data. Moreover, among the poorest, as well as, among those with no education, the data showed an increased rate in 2012, compared to 2007. However, unexpectedly, modern contraceptive use was constantly lower in 2012 among women from the richest sub-population, living in urban area, as well as from the highest educational attainment level. Increasing use of modern contraceptive in Indonesia is encouraging, however, an appealing question appeared based on the results, that is the consistent lower use of modern contraceptive use in 2012 compared to 2007 data among women from the richest, highest education, and living in urban group.

Keywords: *Modern contraceptive; wealth index, education level, IDHS 2007 and 2012*

INTRODUCTION

The world's population growth has rapidly increased over several decades, especially in developing countries. According to reports from United Nation (2012) population growth increased from 648 million in 2005 to 7.2 billion in 2013, or an average of 81 million people per year and even predicted to increase in 2050 which amounted to 9.6 billion. In Southeast Asia, population growth in 2008 reached 160 million people for women aged 15-49 years. Indonesia has one of the highest number of

women aged 15-49 in Southeast Asia which amounted to 65 million in 2008 (Population Reference Bureau 2008). Population growth also depends on the level of fertility. In Indonesia, total fertility rate (TFR) has been stagnant during three surveys, about 2.6 in 2002, 2007 and 2012. However, in 2015 the number of TFR in Indonesia experienced a significant decrease of 2.3 children per women (Performance Monitoring and Accountability 2015). Modern contraceptive use has increased in most populations. However, in Indonesia, the pace of this increase seems to be slowing down recently. Modern contraceptive use in Indonesia is still quite low compared to other developing countries that could reach 70 percentage (Population Reference Bureau 2008; Population Reference Bureau 2013). Modern contraceptive use in includes female sterilization, male sterilization, IUD, implants, injectable, PIL, condom and lactational amenorrhea method (LAM) (WHO 2011). The most widely used mode of modern contraception in the region of Southeast Asia is hormonal contraceptives that are non long acting contraceptive systems (nLACs), especially pills and injections. In Indonesia, injections are frequently used. This study aims to examine the levels and trends in modern contraceptive use over a ten year period, and to explore the variation of the use by sociodemographic characteristics (Population Reference Bureau 2008; Population Reference Bureau 2013; WHO 2011).

METHODS

This study uses data from two Indonesia Demographic Health Surveys (IDHS), conducted in 2007 and 2012 and employed descriptive analysis to examine the levels and trends of modern contraceptive use. IDHS collects data using interview-based questionaire which is nationally representative of women reproductive age (15-49 years). Sample size in this study were 15.334 women 2007 IDHS (14.043 weighted) and 15.262 women from 2012 IDHS (14.782 weighted). Information collected included background characteristics such as mother’s age, education level, wealth index, marital status, residence, province of underdeveloped distribution, parity and use of modern contraceptive methods; modern contraceptive method use which includes female sterilization, male, IUD, injectables, pill, condom, lactational amenorrhea method (LAM). All analyses were performed using SPSS 18, taking into account the complex design of surveys.

RESULTS

Characteristics of respondents in IDHS 2007 and 2012 were similiar based on their age, education, marital status, and province status. As can be seen in Table 1, most respondents (74.86%) were women between 20-35 years, 21.91% were more than 35 years, whereas only 3.23% who were below 20 years. Based on educational background, respondents with primary and secondary education were the highest proportion of women in this study. However, data showed that there were increased proportions of women with secondary and higher education, from 2007 and 2012. Proportion of

respondents from urban areas also increased in 2012, from 41.99% in 2007 to 49.72%. Most respondents included in the data also lived in more developed provinces.

Table 1. Distribution of frequency by sociodemographic factors in Indonesia: IDHS 2007 and 2012

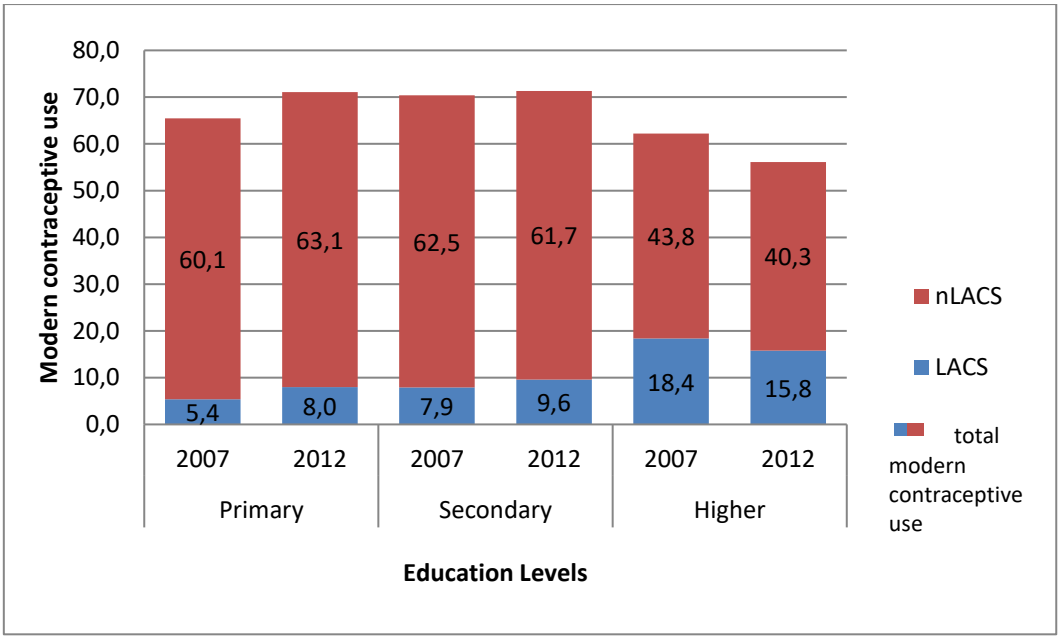
	IDHS 2007		IDHS 2012	
	N	%	N	%
	14043	100	14782	100
Mother's age				
< 20 th	418	2.98	478	3.23
20-35 th	10812	76.99	11065	74.86
> 35 th	2813	20.03	3239	21.91
Education Level				
Primary	6240	44.44	5030	34.03
Secondary	6696	47.68	7987	54.03
Higher	1107	7.88	1765	11.94
Wealth Index				
Poorest	3010	21.43	3035	20.53
Poorer	2791	19.88	2881	19.49
Middle	2812	20.02	2939	19.88
Richer	2742	19.53	3105	21
Richest	2688	19.14	2822	19.1
Marital status				
Never				
Married/divored/separated/widowed	351	2.51	469	3.17
Married or living together	13691	97.49	14313	96.83
Residence				
Rural	8146	58.01	7432	50.28
Urban	5897	41.99	7350	49.72
Province of underdevoleped distribution				
< National average	11417	81.3	12013	81.27
> National average	2626	18.7	2769	18.73

Table 2. Distribution of modern contraceptive use in Indonesia: IDHS 2007 and 2012

		IDHS 2007		IDHS 2012	
		n	%	n	%
Modern contrasetive use					
Yes		9490	67.58	10257	69.39
	LACS	1071	7.63	1446	9.78
	nLACS	8419	59.95	8811	59.61
No		4553	32.42	4525	30.61
Total		**14043**	**100**	**14782**	**100**
LACS		**1071**	**7.63**	**1446**	**9.78**

		IDHS 2007		IDHS 2012	
		n	%	n	%
	Female sterilization				
	Yes	237	2.5	361	3.5
	No	9253	97.5	9896	96.5
	Male sterilization				
	Yes	9	0.1	8	0.1
	No	9481	99.9	10249	99.9
	IUD				
	Yes	452	4.8	509	5
	No	9038	95.2	9748	95
	Implants				
	Yes	373	3.9	568	5.5
	No	9117	96.1	9689	94.5
nLACS		**8419**	**59.95**	**8811**	**59.61**
	Injectables				
	Yes	6215	65.5	6504	63.4
	No	3274	34.5	3753	36.6
	Pill				
	Yes	1972	20.8	1935	18.9
	No	7517	79.2	8322	81.1
	Condom				
	Yes	224	2.4	357	3.5
	No	9266	97.6	9900	96.5
	Lactational Amenorrhea Method (LAM)				
	Yes	8	0.1	15	0.2
	No	9482	99.9	10242	99.8

Modern contraception use progress was shown by a 1.8% increase of user proportion from 2007 to 2012 (Table 2). This increase was contributed by 2.15% increase of LACs users which compensate the slight decrease of non-LACs users. Implants and female sterilization showed the most increased methods among LACs users. Among non-LACs methods, injectables, and pill users decreased, while condom and LAM use showed slight increases.

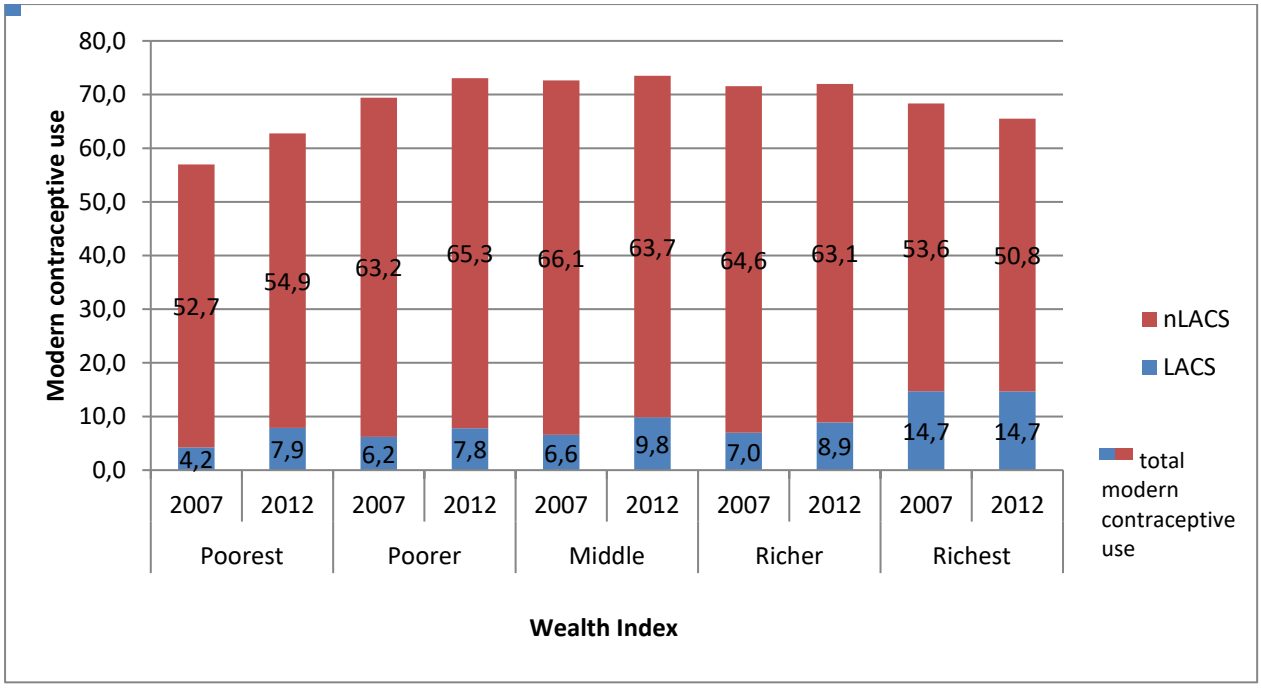


Note: LACS (Long Acting Contraceptive System)

Figure 1. Distribution of modern contraceptive use according to education level in Indonesia: IDHS 2007 and 2012

Based on educational level, the highest user of modern contraceptive was from the secondary education group, followed by primary education and the least was among the higher education group (Figure 1). The trend increased from 2007 to 2012, except for those with the highest education level which decreased during this period. Specifically on LACs, the highest users, both in 2007 and 2012 data, were women with higher education.

Pattern of modern contraceptive use based on socio-economic status can be seen in Figure 2. It showed that the highest users were among the poorer, middle, and richer groups. Trend by wealth index from 2007 to 2012 was similiar with the trend according to education level, which increased for poorer to richer group, except for the richest group (showed a decrease). However, the highest user of LACs were richest population group.



Note: LACS (Long Acting Contraceptive System)

Figure 2. Distribution of modern contraceptive use according to wealth index in Indonesia: IDHS 2007 and 2012

DISCUSSION

LACs users were highest among those who have higher education and richest. A study in Ethiopia also reported highest wealth index were likely to use LACs 10 times higher than those from the lowest wealth index (Teferra and Wondifraw 2015). The reasons why education is associated with LACs use is that ore educated women may have better understanding about the importance of FP for themselves and for their family. Similarly more educated women may be more knowledgeable about the available options. Moreover, they may have power to make decisions regarding their own health care (Teferra and Wondifraw 2015). On the other hand, household wealth index has significant association with LACs utilization. Women who had second and above household wealth index were more likely to use LACs. It may be due to the fact that these women are able to afford the transportation and procedural cost of LACs method. In addition this might be due to a strong association between wealth and education in Ethiopia. Almost all women with secondary and higher education live in the wealthiest households (Teferra and Wondifraw 2015).

The improvement in modern contraceptive prevalence among poorest and primary education was showing good progress. This probably might indicate that family planning programs are increasingly reaching the lower part of population (Fotso et al. 2015). Women in the wealthiest quintile are more likely than women in the poorest group to use long-term contraception that is more expensive

compared to shortterm contraception (Gilbert and Benard 2015). Inequality in peoples' wealth can influence their socioeconomic status including access to modern health care and education. Our study revealed that modern contraceptive use among the richest were not higher compared to the other less rich groups, even when compared with the poorest group. Modern contraceptive use may involve some financial obligations on the part of the users, particularly when such services are not free or the service providers are at far locations from the residence of women who intend to utilize them. The situation in Indonesia may demonstrate that free access to modern contraceptive services especially for the poor is effective. Tuoane et al. (2003), in his study in Lesotho, also showed that free access to family planning services predisposed people to use modern contraceptive. The prevalence of ever and current use of modern contraceptive increased with increasing level of education is shown in our study. The influence of education on modern contraceptive use cannot be over-emphasized. This is because, as the level of education increases, wealth and prestige tend to increase and the intention to limit children by using modern contraceptive will increase. Apparently, education leads to a greater ability to acquire wealth and prestige (Adebowale et al. 2014).

Compared to the levels and trends at global level assessed in 2002 (United Nations Department of Economic and Social Affairs/Population Division 2006), Indonesia had a higher level of modern contraceptive use, i.e.: 69.4%; the world level was 54% of women of reproductive age who are married or in union rely on modern contraceptive methods. The pattern of use, however, was remarkably different if we compare that of Indonesia versus the global pattern. At the global level, the three most used methods were female sterilization, the intra-uerine device (IUD) and the pill, which are used by 21%, 14% and 7%, respectively, of women of reproductive age who are married or in union. The figure in Indonesia for the three most used methods were injectables (63.4%), pill (18.9%), and followed implants (5.5%); the percentage of IUD users was slightly lower than Implants users (5%).

CONCLUSION

Modern contraceptive use increases over time, where most of the increase were attributed to Long Acting Contraceptive System (LACs), escpecially in implant use. On the other hand, injectables, and pills use (non LACs) were decreasing from 2007 to 2012. Modern contraceptive use consistently increased across wealth quintile subgroups as well as across educational levels. Increasing use of modern contraceptive in Indonesia is encouraging, however, the consistent lower use of modern contraceptive use in 2012 compared to 2007 data among women from the richest, highest education, and living in urban group warrant further investigation.

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