

**THE INFLUENCE OF SERVICE OUTPUT FACTORS AND EDUCATION ATTAINMENT ON  
UTILIZATION OF REPRODUCTIVE HEALTH AMONG WOMEN IN NDHIWA SUB-COUNTY,  
HOMA BAY COUNTY, KENYA**

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**Abstract:** *Meeting women's reproductive health care services especially the contraceptive needs by 2030 is one of the indications of millennium development goals 5a and 5b that indicate the health of mothers and children and in mortality and fertility transitions. Contraceptive needs influences women empowerment and aims to achieve universal access to reproductive health and family planning. Higher level of contraceptive use might ameliorate women's reproductive behaviour risks and result in longer birth intervals and low fertility. Neighbouring counties of Homa Bay like Migori, Kisii and Nyamira have high contraceptive prevalence rates (CPR), which is not the case in Homa Bay County and Ndhiwa sub-County, where many women continue to have unmet need of contraception and high risks of unwanted pregnancies. Given the context of low CPR and unmet need of contraception, the study seeks to explore the relationship between contraceptive use and service output factors and education attainment among women in Ndhiwa sub-County. This was a cross-sectional descriptive study design conducted on 164 women aged 15 to 49 selected randomly from the two divisions of Ndhiwa and Nyarongi in Ndhiwa Sub-county. The data was collected using a questionnaire. Stepwise regression was used to access the relationship between the variables. According to the findings, accessibility to family planning showed a significant relationship with contraceptive use ( $p=0.0000$ ). The findings suggest that improving the livelihood of the population is important. There is need to increase the number of institutions involved in the provision of contraception especially the neglected rural communities to narrow the gap between the knowledge and ever use of contraceptives. It will also help to reduce the level of unmet need for family planning in Homa Bay and to have a better quality of life, higher social status and greater autonomy among women.*

**Keywords:** *Education, quality of family planning services, accessibility to family planning services, contraceptive use and step-wise regression analysis*

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## **1. Introduction**

Contraceptive use is acknowledged in most developing countries to be an effective way of improving maternal health, reducing child mortality and eradicating extreme poverty at the household and government levels (Cleland, 2006). Contraceptive use also lessen quick population growth rates and bring up a genuine population issue. This necessitates that women have access to harmless and effective methods of birth control. According to WHO (2012), an estimated 215 million women who would prefer to postpone or avoid pregnancy continue

to lack access to safe and effective contraception. Generally, there has been an impressive increase in contraceptive prevalence in the entire world (Carl and Toshiko, 2013). However, at the regional level, the progress in the efficiency of family planning programme and in the range of contraceptive method used has been different. A study conducted by (UNFPA, 2012) revealed that many countries in the developed world have strong family planning programs compared to the sub-Saharan Africa where despite a rise in contraceptive prevalence rate, many women continue to have unmet need for contraception. In fact, in 2013, investigations by Carl and Toshiko (2013) revealed that Africa and sub-Saharan Africa had the lowest contraceptive prevalence at 31 percent and 26 per cent, respectively, as compared to 75 percent in Latin America and the Caribbean, and 65 percent in Asia (Carl and Toshiko, 2013).

Knowledge of family planning methods remained universal at over 97 percent in Kenya (NCPD, 2012). The Contraceptive Prevalence Rate (CPR) more than doubled from 17 percent to 39 percent in Kenya from 1984 to 1998 (NCPD, 2012). The CPR then stagnated for some time before increasing to 46 percent in 2009, and then declined slightly to 45 per cent in 2013. Despite this achievement, there is an unmet need for family planning at 26 percent. Additional statistics disclose that Nyanza and Rift Valley regions had the highest unmet need of 32 percent and 31 percent, respectively (NCPD, 2012). According to the Republic of Kenya (2009), only 32.9 per cent of the married women in Nyanza region aged 15 to 49 years use modern contraceptives compared to Nairobi, 49.0 per cent, Central, 62.5 per cent, Eastern, 43.8 per cent, Rift Valley, 34.7 per cent and Western, 41.1 per cent. This is despite the larger percentage, 93 per cent, for example of availability of facilities offering modern methods of contraception in Nyanza in comparison to Nairobi, 68 per cent, Central, 89 per cent, Coasts, 79 per cent, Eastern, 79 per cent, Rift Valley, 92 per cent and North Eastern, 67 per cent. The demographic statistics shows that Homa Bay County still struggles with a low contraceptive prevalence rate of 32 per cent, which is lower than that of her other neighboring counties like Kisumu, Nyamira, Siaya and Migori. Understanding the dynamics affecting contraception use among married women who are at risk of undesirable pregnancies is key to expansion of effective family planning programs. Given the perspective of low contraceptive prevalence rate and high total fertility rate of 5.0 in Ndhiwa sub-County, it has put the region at danger of unemployment, underdevelopment, and social issues extending from impoverishment, shortage of land, hunger and malnutrition, environmental dilapidation and political unsteadiness. From the above background, the study lays out the importance of reproductive health especially contraceptive use in the wellbeing of women and the country at large.

## **2. Review of Empirical Literature**

Many researchers have identified several factors that affect women's use of modern contraceptives including or non-use of contraceptives. Numerous studies have been done in different countries in the past to find out the factors that affect contraceptive use. A cross sectional study performed by Koc, (2000) on contraceptive use reported that failure to use family planning was attributed to lack of quality of existing services. The study reported that improvement in family planning programmes calls for expansion of the choice of the method used, providing adequate information, increase in technical competence of providers, increasing interpersonal relations between providers and clients and incorporating adequate client support and follow up.

Another study conducted in Kenya by Magadi and Curtis (2003) on contraceptive use demonstrated that opening the choice of contraceptive methods increased overall contraceptive prevalence and the opportunity for individual couples to obtain a method that suits their needs. Ross et al. (2001) also note that contraceptive method choice in developing countries confirmed that prevalence is highest in countries where access to a wide range of methods is uniformly high. According to UNFPA (1996) recommendation, family planning

programmes should offer a variety of safe, effective, acceptable and affordable contraceptive methods to help women avoid unwanted pregnancies, sexually transmitted diseases and to help them achieve their childbearing goals. Sevil et al., (2006) suggest that health-care consultants should provide advice in accordance with international norms and ethics.

Another service output variable that could reportedly explain contraceptive use is accessibility to contraceptives. Accessibility may affect contraceptive use through transportation to clinics, (Centre for Disease Control (CDC)), (1999). A study conducted by (Dickinson *et al.*, 2010; Campbell *et al.*, 2006) showed a significant relationship between accessibility and contraceptive use among women. Irrespective of their age, women who live furthest from clinics use contraceptives less than those who easily access them due to cost factor (Campbell *et al.*, 2006; Nalwadda et al., 2011; Bankole and Malarcher, 2010). According to KNBS (2009), contraceptive use in Kenya is clinic based; suggesting the model of family planning delivery is expensive. This raises doubts as to whether it can be replicated in other regions that are still struggling to increase contraceptive use and reduce fertility, such as Ndhiwa sub-county which is the study case.

Westoff and Cross (2006) cite an initial increase in unmet need of family planning with education, which is due to a gap between increasing desire to control fertility and the ability to do so, leading to an eventual decline in unmet need with education, as more women use contraception. A cross-sectional study done in Kenya by Magadi et al., (2000) found a significant relationship between education level and contraceptive use. Educated women tend to marry later, have fewer children and use contraception more as well (Caldwell and Caldwell, 2003; Casterline 2001). The cultural lag in women's education still encourages preference for large families and prevents women from having the number of children they need.

Few studies have examined contraceptive use and its relationship with service output factors and education level in Ndhiwa sub-county. Socio-cultural backgrounds and national and regional policies that may affect contraceptive prevalence rate differ across regions. With this background in view, the study aimed to critically appraise the included research studies and determine the relationship of contraceptive use with education level and service output factors among married women in Ndhiwa sub-county.

### **3. Research Hypothesis**

The following null hypothesis was established and tested in this proposed study to find responses to the problem under investigation in Ndhiwa Sub-county;

*H<sub>0</sub>: There is no significant relationship between service output factors and contraceptive use among women in Ndhiwa Sub-county.*

In this study, the independent variables were education level, quality of family planning services and accessibility to contraceptives while the dependent variable was contraceptive use.

### **4. Research Methodology**

A descriptive cross sectional study was employed in this study. The geographical coverage of the study was within Homa Bay County. The study was conducted in Ndhiwa Sub-county, Homa Bay County, Kenya. Ndhiwa Sub-county lies between latitude 0° 31' south and 0° 50' south, and between longitudes 34° 11' east and 34° 33' east. It has a total surface area of 711 km<sup>2</sup>. It has five divisions, 26 locations and 49 sub locations and a total of Households 37,113.

The researcher used Rea and Richard (1997) comprehension table guide while determining a sample size in a survey research. Since the households' size was 16,888 for the two divisions, namely Nyarongi and Ndhiwa

where the research was based on, a desired confidence level of 99 per cent and a margin of error of  $\pm 10$  percent were preferred. Therefore, the resulting sample size of respondents was 164. The study chose two divisions out of the five divisions. Simple random sampling procedure was adopted. (Kothari, 2004) noted that the practical utility of such a method is very much limited in complex problems sampling. These divisions had the respondents of all socio-cultural backgrounds and therefore they were a reflective of the whole target population.

Researcher-administered questionnaire was used with the selected respondents.

The analysis was confined to 164 ever married women. Multiple linear regression was used to measure the net effect of each predictor variable on the dependent variable after controlling for the effect of other predictors. The multiple linear regression was used because it lists the independent variables in descending order of their predictive power on contraceptive use. The Statistical package for social Science (SPSS) software was used to analyze the data. P-value less than 0.05 was considered statistically significant.

## 5. Results and Discussions

### 5.1 Results of stepwise multiple regression model

The study sought to investigate the influence of economic constraints in Ndhiwa sub-County that had significant impact on contraceptive use. A step-wise multiple regression analysis was performed and three variables: quality of family planning services, respondents' level of education and accessibility to contraceptives were considered while the dependent variable was utilization of contraceptives. The findings are as shown in Table 5.1.

**Table 5.1: Model summary of the stepwise multiple regression**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517 <sup>a</sup>	.268	.259	.427

a. Predictors: (Constant), Accessibility to contraceptives

**Source: Compiled from research data (2013)**

The multivariate analysis found that only accessibility to contraceptives was significant predictor of contraceptive use. The stepwise multiple regression output clearly reveal that the value of the  $R^2$  (multiple coefficient of determination) is 26.8 per cent. This indicated that over 26.8 per cent of the total variance in the dependent variable is accounted for by the one variable (Table 5.1). Women's level of education was thought to be an important predictor of contraceptive use but study results indicated that it was not associated with contraceptive use. The logistic model found quality of family planning services not to be significant with contraceptive use (Table 5.3). Nonetheless, the study found that women in high income households were more likely to use contraception than were to women in low income households. The reason could be that women in low income certainly find it difficult to access family planning services found in the far-off health institutions offering contraceptives. The distance would require use of vehicles or motorbikes that are supposed to be boarded by use of money. Unfortunately, these families lack money as they are just peasants who depend on purely subsistence farming for living.

**Table 5.2: Evaluation of each predictor variables to the prediction of the dependent variable**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.757	.111		6.838	.000
Accessibility to Contraceptives	-.297	.077	-.272	-3.850	.000

**Source: Compiled from research data (2013)**

The coefficients shown in Table 5.2 represent the effect of each independent variable on the dependent variable. The study results show that inaccessibility to contraceptives significantly and negatively affected the use of contraceptives at 0.000 significant level. This indicates that wider accessibility to contraceptives would increase contraceptive use, while other variables in the model were controlled (its beta weight,  $\beta$  is = -0.272) and is statistically significant ( $t = -3.850$ ).

The research hypothesized that women with wider accessibility to contraceptives were likely to have higher contraceptive use than their counterparts. Wider accessibility to contraceptives has adverse effect on low utilization of contraceptives. The findings are consistent with studies conducted in other countries and confirm the importance of wider accessibility to contraceptives that increased contraceptive use (Dickinson et al., 2010 and Campbell et al., 2006). The reason could be that most of the health facilities are still situated out of the reach of many families that reside at least 10 kilometers from these local pharmacies and family planning clinics.

**Table 5.3: Standardized coefficients of the stepwise multiple regression for excluded variables**

Model	Beta In	T	Sig.
Respondents level of education	.140 <sup>c</sup>	1.720	.087
Quality of family planning services	.077 <sup>c</sup>	1.095	.275

**Source: Compiled from research data (2013)**

Table 5.3 shows multiple stepwise regression analysis demonstrating the excluded variables. The beta values for respondents level of education and quality of family planning services was .140 and .077 respectively. These beta values were very low indicating that they made very less of a unique contribution to explaining the dependent variable hence excluded in the model. The excluded variables had significant values greater than .05 (Table 5.3), therefore, the variables did not make a unique and statistically significant contribution to the prediction of barriers to utilization of contraceptives and hence left out of the multiple stepwise regression model.

**Table 5.4: Table Demographic and socio-economic characteristics of women respondents**

<b>Characteristics</b>	<b>Count(%)</b>
<b>Number of women respondents</b>	Yes 94(57.3)
<b>Using contraception</b>	No 70(42.7)
<b>Knowledge of family planning</b>	Yes 156(95.1)
	No 8(4.9)
<b>Adequacy of information on side effects and importance of contraceptives</b>	None 65(39.6)
	Little 48(29.3)
	Adequate 51(31.1)
<b>Level of education and number of women using contraception</b>	No formal education 3(17.6)
	Primary education 48(59.3)
	Secondary 27(64.3)
	Tertiary 16(66.7)
<b>Health centre within reasonable distance</b>	Yes 37(22.6)
	No 119(72.6)
	Not Aware 8(4.9)
<b>Economic level and number of women using contraceptives</b>	Low-income 13(27.7)
	Middle-income 81(69.2)
<b>Means used to reach health centre having contraceptives</b>	Walking 62(37.8)
	Bicycle 5(3.0)
	Motorbike 25(15.2)
	Vehicle 2(1.2)
	Not Applicable 70(42.6)

An overwhelmingly large majority of the women, 95.1 per cent of the women respondents were aware of family planning methods. Only 4.9 per cent were not aware of family planning methods. It is clear that slightly half of the women, 57.3 per cent with a higher knowledge of family planning have used contraceptives. Regarding level of education, majority of women with tertiary level of education have higher contraceptive use than their comparison group.

## 6. Conclusions and recommendations

Basing on the preceding discussion of the findings, the study adopts the recommendation of Timothy et al., (2011) on the need to support Community Based Distribution of Family Planning services by the Government, NGOs and the Community Based Organizations (CBOs) so that contraceptives could reach the undeserved who are the majority in rural areas. Policies for improved education and sensitization for women should be a basic fundamental requirement in terms of both quality and quantity of education facilities. This should be done in the form of trainings, advocacy and lobbying in order to improve access and utilization.

Family planning designers and implementers should ensure that reproductive health services and required equipment are made available, affordable, appropriate and acceptable by women. They should ensure that contraceptives are easily accessible in terms of the distance to the nearest hospital, clinic or health center. If possible, more mobile health clinics and public hospitals should be built in rural areas to address the inaccessibility of these services so that women with unmet need of family planning can receive the services at their doorstep. Moreover, the Government should find more alternative employment opportunities that include an increase in women's jobs especially to the rural community to improve their livelihood and have some income set aside for health issues.

## References

1. Bankole, A. and Malarcher, S. (2010). 'Removing barriers to adolescents' access to contraceptive information and services', *Studies in Family Planning*, 41(2): 261–74.
2. Caldwell, J. C. and Caldwell, P. (2003). *The fertility transition in sub-Saharan Africa*. Human Sciences research council.
3. Campbell, M., Sahim-Hodoglugil, N. and Potts, M. (2006). 'Barriers to fertility regulation: a review of the literature'. *Studies in Family Planning*, 37(2): 87–98.
4. Carl, H. and Toshiko K. (2013). *World Population Data Sheet*. Washington, DC: Population Reference Bureau, 2013.
5. Casterline, J. (2001). *Diffusion process and fertility transition*. In *Diffusion processes and fertility transition: selected perspectives* (ed. J. Casterline): 1 – 38. Washington: National Academic Press.
6. Casterline, J. B., Perez, A. E. and Biddlecom, A. E. (1997). *Factors underlying unmet need for family planning in the Philippines*. *Studies in Family Planning*, 28 (3): 173-191.
7. Central Bureau of Statistics, Ministry of Health (MOH) and ORC Macro (2008 – 2009) *Kenya Demographic and Health Survey 2008 – 2009*. Calverton, Maryland: CBS, MOH and ORC Macro
8. *Centres for Disease Control (1999): Family planning methods and practice: Africa*. 2nd edition. Atlanta: US Department of Health and Human Services
9. Cleland J, et al., (2006). *Family planning: the unfinished agenda*. *The Lancet Sexual and Reproductive Health Series*, October 2006.
10. Dickinson, M., Daniels, J., Horney, J., Pena, Garcia, R. and Morgan, D. (2010). 'Barriers to contraceptive use in TASBA-PRI, Nicaragua', *Contraception*, 82(2):198.

11. *Government of Kenya (GOK), (2009): Kenya Population Census. Government Printer: Nairobi*
12. *Koc, I. (2000). Determinants of Contraceptive Use and methods choice in Turkey. Journal of Biosocial Science, 32: 329 – 342*
13. *Kothari, C. (2004). Research Methodology: Methods and Techniques. New Age International Publishers, New Delhi.*
14. *Magadi, M. A., Madise, N. J. and Rodrigues, R. N. (2000). Frequency and timing of antenatal care in Kenya: explaining the variations between women of different communities. Social sciences and medicine 51(4): 551 – 561.*
15. *Magadi, M. and Curtis, S. (2003). Trends and determinants of Contraceptive Choice in Kenya, Studies in Family Planning, 34(3): 149 – 159.*
16. *Ministry of Health (MOH) (2010). National Reproductive Health Strategy 1997-2010. Ministry of Health, Kenya. Government Printer: Nairobi*
17. *Nalwadda, G., Mirembe, F., Tumwesigye, N., Byamugisha, J. and Faxelid, E. (2011). ‘Constraints and prospects for contraceptive service provision to young people in Uganda: providers' perspectives’, BMC Health Services Research, 11: 220.*
18. *National Council for Population and Development (NCPD) (2008 - 2009). National Population policy for sustainable development, Sessional Paper No. 3. Nairobi: NCPD*
19. *Rea, L. and Richard, A. P. (1997). Designing and Conducting Survey Research: A Comprehensive Guide. 2nd ed. San Francisco.*
20. *Republic of Kenya (2009). KDHS 2008 – 2009. Kenya Demographic and Health Survey. Carlverton, Maryland: Kenya National Bureau of Standards and ICF Macro International.*
21. *Republic of Kenya (2012). Ministry of State for Planning, National Development and vision 2030. “National Council for population and Development”, Sessional Paper No. 3 of 2012 on Population Policy for National Development, Nairobi: Government Printers.*
22. *Republic of Kenya (2007b), Kenya Vision 2030, The Popular Version, Nairobi: Government Printer*
23. *Republic of Kenya (2009), Demographic Health Survey of 2008, Nairobi: Government Printer*
24. *Ross, J., Hardee, K., Mumford, E. and Eid, S. (2001). Contraceptive method choice in developing countries. International family planning perspectives 28(1): 32 – 40.*
25. *Sevil, U., Yanikkerem, E. and Hatipoglu, S. (2006). A survey of knowledge, attitudes and practices relating to emergency contraception among health workers in Manisa, Turkey. Midwifery, 22 (1): 6677.*
26. *The Ministry of Planning and National Development and The United Nations Children’s Fund (UNICEF), (1990). Socio-Economic Profiles, South Nyanza. Government Printer: Nairobi.*
27. *United Nations Population Fund (UNFPA), (1996). Programme of action adopted at the international Conference on Population and development, Cairo, New York: p 53.*



28. *Westoff, C. F. and Cross, A. R. (2006). The stall in the fertility transition in Kenya, DHS Analytic Studies, no. 9, Calverton, NY: ORC Macro.*
29. *World Health Organization, (2012). Achieving Millennium Development Goal 5: Target 5A and 5B on Reducing Maternal Mortality and Achieving Universal Access to Reproductive Health, WHO/RHR/09.06. Geneva: World Health Organization, accessed 10 May 2019*