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Quality and Utilization of Family Planning Services in Africa; a Systematic Review and Meta-Analysis

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ABSTRACT

Introduction: Improved usage of family planning services is essential for improving maternal health in Africa, and the provision of high-quality care in family planning services is essential for encouraging higher levels of contraceptive uptake in the region. The purpose of this systematic review was to compile all of the existing data on the factors that influence the quality of care in family planning services in Africa and synthesize it.

Methods: Between 2000 and 2021, quantitative research conducted in Africa and published in English, as well as in peer-reviewed journals was taken into consideration. The methodological quality of the studies that were included was evaluated using established techniques. The findings of the research were described in a narrative and a table. When evaluating the quality of treatment in family planning services, the quantitative component of the assessment looked at client satisfaction as a criterion. The method of the meta-analysis was employed to explain the associations.

Results: Seven quantitative studies passed the review's qualifying criteria and were included in the review. According to the findings of the review, the quality of service was impacted by factors such as customer, provider, and facility parameters, as well as other socio-demographic indicators. The most often recognized process variables included the client's age, place of residence, and use of contraceptives.

Conclusion: Overall, the few, moderate to high-quality quantitative research on factors influencing the quality of the utilization of family planning services in Africa identified several parameters connected to client usage and sociodemographic features. As a result, increasing the quality of care in African family planning programs necessitates several initiatives that address these various concerns. More study is needed to identify the major parameters linked with the quality of care in African nations' family planning programs.

BACKGROUND

Ensuring access to family planning services is critical to enhancing health, human rights, and economic development (Speidel, Thompson & Harper, 2014). However, in 2013, over 289,000 women died in underdeveloped nations, mainly in Africa (World Health Organization, 2014). Studies reveal that family planning programs might have prevented up to 40% of maternal fatalities (Ahmed, Li, Liu & Tsui, 2012). Globally, 64% of married or in-union women of reproductive age used contraception, while just 33% of these women used contraceptives in Africa (United Nations Department of Economic and Social Affairs Population Division, 2015). Globally, 225 million women seek to avoid pregnancy but do not use safe and effective techniques (Darroch & Singh, 2013), which resulted in unmet needs for contraception.

Studies have shown that the majority of women in low-and-middle-income countries have unmet needs for contraception (Darroch & Singh,2013). The unmet requirement is attributable to population growth and a lack of family planning services (UNFPA, 2014). As a result, boosting access to family planning services is a global public health priority. Several worldwide collaborations, including the International Conference of Population and Development in 1994 (Cohen & Richards, 1994), the Millennium Development Goal summit in 2000 (USAID, 2009), and the London Summit on Family Planning in 2012, approved Family Planning 2020 (FP2020).

By 2020, this alliance hopes to reach 120 million additional women and girls in 69 of the world's poorest countries (Brown, Druce, Bunting, Radloff, Koroma & Gupta, 2014). Improving the quality of care in family planning services is critical to increasing the utilization of family planning services in developing countries (Arends-Kuennin & Kessy, 2007). It is vital to provide decision-makers in developing countries, especially in Africa, with the best available information on the factors that impact the quality of treatment in family planning services from both the client and provider perspectives. Family planning services include infertility treatment, STD screening, and pregnancy testing, and counseling, treatment. assisting clients who want to conceive and providing preconception health services outside contraceptive provision (Gavin, Moskosk, Carter, Curtis, Glass, & Godfrey, 2014). The condition or prescription of contraceptive methods after women contraception counselling to help postpone or prevent pregnancy (Wang et al., 2014) focused on earlier research assessing the quality of treatment in family planning clinics. According to a study on the quality of care in family planning services, different people have different ideas about defining and measuring the quality of care and its factors Humphries, Morgan, McGowan, (Conry, Montgomery, 2012).

Concept of Family Planning

The World Health Organization (WHO, 2008) defined family planning as the ability of individuals and couples to anticipate and attain their desired number of children, spacing, and timing of their births through contraceptive methods and treatment of involuntary infertility.

Family planning can be considered as a program designed to regulate the number and spacing of children in a family through the appropriate use and practice of modern contraceptives or other methods of birth control.

Historically, Family planning is known to have been practiced for centuries long before the advent of modern methods of contraception. The earlier methods used by men and women to regulate their fertility included coitus interruptus (withdrawal of the penis from the vagina before ejaculation), abstinence (abstaining from sex altogether or around the time of ovulation), herbs, and amulets (Planned Parenthood Federation of America, 2006). The condom appeared in the 17th century. Modern methods of family planning have a more recent history since about 1960 when both the oral contraceptive pill and the intrauterine device became available.

Benefits of Family Planning

Historically, family planning has served the purse of preventing unwanted pregnancy and sometimes ensuring appropriate timing or spacing of births among couples. In recent times, family planning has served the purpose of preventing the transmission of sexually transmitted infections in addition to preventing the complications of unwanted pregnancy and even sexually transmitted infections that could result in secondary infertility. Cases of obstetric complications from abortion from unwanted pregnancies are also prevented (WHO, 1994; WHO, 2016). Other benefits of family planning, according to Habumuremyi and Zenawi (2012) include the promotion of maternal and child health, promoting human rights, and ensuring sustainable economically viable population and national development in addition to environmental sustainability. The aforementioned benefits discussed herein:

Maternal and Child Health

Improvement of maternal and child health is often cited as one of the reasons for family planning, especially in highly populated nations with a high burden of maternal, newborn, and child morbidity and mortality (Seltzer, 2002). Ross and Smith (2011) stated that improvements in maternal health have been the main reason for support and implementation of family planning programs since 1972. This trend is currently the focus of current obstetric practice that has associated grand multiparity with the poor maternal outcome. Family planning gives women a voice and the necessary autonomy in the decision-

making process for them to pursue their careers and live endeavors that could be constrained by unwanted pregnancies or pregnancies. For low and middleincome countries like Nigeria, contraceptives are an effective primary prevention strategy against maternal and child deaths (Ahmed et al., 2021). This is because the high fertility rates of some of these low and middle-income countries with existing weak health systems do not guarantee successful delivery of women with poorly spaced children or grand multiparity, which is associated with maternal death. Ross and Blanc (2012), noted that an estimated 1.7 million fewer maternal deaths have been averted as a result of an increase in contraceptive use from 1990 to 2008. They observed that improved family planning utilization resulted in a reduction in fertility rates of women of the reproductive age group which brought about a 53% decline in maternal mortality and a 47% lower maternal mortality rate per birth during the review period. Unwanted pregnancies are often the reasons for abortions among young women. Often, abortions are carried out in poor conditions by quacks which have consequences of maternal morbidity and mortality following complications such as sepsis and hemorrhage. This outcome can be prevented by the use of appropriate family planning methods such as condoms and emergency contraceptives pregnancy and sexually prevents transmitted infections if properly used.

Rutstein et al., (2008) noted that family planning has a significant effect on child health. Evidence from Demographic Health Surveys of 52 countries showed that children born within two years of a previous birth have a 60 percent increased risk of infant death, and those within two to three years have a 10 percent increased risk of infant death, compared with children born after an interval of three or more years from the last sibling. This implies that the more spaced children are, the less the likelihood of infant mortality. The burden of malnutrition is highest among children who are poorly spaced as seen in low and middle income where malnutrition continues to account for almost 50% of childhood mortality. Wellspaced children often benefit from exclusive breastfeeding, appropriate complementary feeding, and child care practices that ensure improved immunity of the child and bonding between mother and child for a healthy life. The absence of family planning or its practices can therefore adversely affect the health of maternal, newborns, and child health. There is therefore needs to promote family planning as a means of improved maternal and child health outcome which is beneficial to the family and prevents them from the cycle of poverty.

Population and Development

In the 1960s, following concerns on rapid population growth and a possible population explosion which could adversely affect the economic growth and development of societies mostly in low- and middle-income countries with poor governance and leadership, poor economy, poverty and lack of means of livelihood for improved wellbeing of citizens was a

concern Birdsall, et al 2001; Bongaarts et al., 2012). It was observed that this rationale for family planning while it was supported by some governments, was out of favor with other governments in developing nations. though this rationale is resisted misinterpreted in some corners, recent evidence clearly shows the positive relationship between slower population and sustained population growth and economic development of a nation with those rapid growing and unplanned nations faltering in economic development. This trend is noted at least at the initial phase of the demographic transition when countries enjoy a demographic dividend if other economic and human capital policies are constant. The demographic dividend allows countries to take advantage of a beneficial dependency ratio between the working-age population and those who need support, such as children and the elderly (Bloom, Canning, and Sevilla 2003). Rapidly growing economics is characterized by supportive economic policies and labor laws that a nation enjoys from the potential benefits of a carefully planned and well-controlled demography that encourages judicious and sustainable use of the available natural resources. Sub-Saharan African countries and those in Asia that are struggling with their economies and maternal and child health burdens need to coordinate the development of their economies through effective reproductive health policies which will fully benefit from the dividend of family planning that empowers women and couples to lead a productive life and contribute to the growth and development of the nation. Also, through proper planning and youth empowerment programs, the high population growth could be harnessed for improved productivity of the available workforce in the nation. However, insecurity in most low and middle-income countries and lack of job opportunities, and an uncontrolled population will spell doom for these countries where humanitarian crises are caused by a poorly planned economy that often disallows women and couples to benefit from the dividends of family planning utilization.

Human Rights and Equity

Reproductive health including family planning is a fundamental human right that is often abused in many low and middle-income countries. According to the United Nations (1968), couples and individuals have the right to decide freely and responsibly on the number and spacing of their children. Subsequent international population conferences in 1974, 1984, and 1994 reaffirmed this right upon which most policies are based (Singh 2009). The human rights rationale has focused on sexual reproductive health and rights, with family planning implicitly included. Hardee et al (2014) opined that efforts are underway to more explicitly define a rights-based approach to implementing voluntary family planning programs. Gillespie et al (2007), In their study of 41 countries, noted that although variations were observed among countries, the number of unwanted births in the poorest quintile was more than twice that in the wealthiest quintile, at 1.2 and 0.5, respectively. This explicitly explains the gap within and across countries and the need for equity in promoting family planning services.

Environmental Sustainability and Development

One of the major challenges in recent times that has adversely affected several countries is climate change. Climate change has greatly affected soil fertility and the atmosphere such that once previously very fertile soils now require the addition of fertilizers to ensure high yield from crops. This practice in addition to deforestation is known to further degrade the environment which affects the sustainable growth and development of a population. The devastating effect of climate change has resulted in food insecurity in many countries across the globe (Martine and Schensul 2013; Moreland and Smith 2012). Whether the future demographic trends work for or against sustainable development, will depend on policies that are put in place today (UNFPA 2013, 5). The need to ensure sustainable growth in a period characterized by climate change and pandemics like Covid-19 becomes eminent. This can be achieved through appropriate family planning practices.

Family Planning Utilization Factors

All seven studies discovered distinct factors influencing the quality of treatment in seven African nations' family planning programs. Client frequency of use and other socioeconomic characteristics are connected with the quality of family planning utilization. These criteria were connected to client demographics, the provider participating in family planning client provision, and the general features of the health facilities in terms of location and ownership.

Three research (Agha, 2009, Wogu et al, 2020, and Fantahun, 2005) found that the client's age was related to client satisfaction. However, the influence of age was inconsistent, as (Assaf, 2015) discovered that young customers were less likely to be happy with family planning services, but Agha et al. discovered that young clients were more likely to be satisfied than their older counterparts. Another study (Lukymazi et al, 2021) discovered no statistically significant relationship between client age and client satisfaction. Three studies discovered a substantial relationship between a client's educational status and the quality of in-person family planning services usage (Agha, 2009, Wogu et al, 2020 Fantahun, 2005). In the trials, clients with higher educational levels were found as being more likely to be happy with the quality. According to one study, repeat family planning clients were happier with the service than first-time consumers (Tafase et al. 2013). In terms of provider factors, the provider's years of education and number of years of experience were both strongly related to client satisfaction with family planning services (Hong et al, 2006).

METHODS

This study was conducted by best practice recommendations for conducting a systematic review of quantitative and qualitative data. The review was conducted by a published methodology and by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA reporting standards) developed by the Institute of Medicine.

Inclusion and Exclusion Criteria

Exclusion Criteria

All studies published in another language and articles that do not have a full text or abstract were be excluded.

Inclusion Criteria

In this study, we looked at 7 quantitative African studies of all design types that were published in peer-reviewed journals and grey literature between the years 2000 and 2022.

The participants in the research were individuals who had used or were in the process of using family planning services. It was decided to examine consumers and providers of various ages and socio-economic backgrounds, as well as clients and providers from all ethnic and linguistic groups throughout Africa. All levels (lower levels such as health posts, or higher levels such as tertiary hospitals) and types (public or private) of health service facility types in Africa were taken into consideration. Family planning services were defined as the provision or prescription of contraceptive methods after women have received contraception counseling to assist them in delaying or preventing pregnancies, according to the definition. A particular area of concern for the quantitative component of the review was exposure to characteristics that were associated with the quality of care provided in family planning services. When a study found a statistically significant link between the exposure (independent variable) and the outcome (dependent variable), the exposure factor was determined. Studies that looked into aspects such as facility, client, and provider characteristics that were connected with the quality of care in family planning services in Africa were taken into consideration for inclusion.

Data Extraction

Data was gathered from qualifying articles using a data extraction form that had been piloted previously. From the pooled studies, data on place/location, sample size, the purpose of study, research design, study constraints, and use of family planning were extracted at the study level, as well as data on overall family planning use. The researchers followed the recommendations for methodological scope for systematic reviews or meta-analyses of observational studies. Double entries were removed from the database, and the entire text of all papers that met the

initial inclusion criteria was acquired. Both the researcher and the supervisor separately collected data using a pre-piloted electronic data extraction form that had been standardized and pre-tested. A consensus was reached between the assessors to reconcile differences in data abstraction. Researchers looked at the validity and reliability of research measures, the methodological quality of the study, the population and recruitment strategy, and the quality of the research design.

Search strategy and data sources

Using Google Scholar and Science Direct, a systematic search was conducted for relevant literature for our investigation. Researchers searched the internet for research studies on the quality and utilization of family planning services to identify promising findings. The studies were thoroughly reviewed to ensure that they met the inclusion requirements for this study, which allowed for the collection of high-quality data for analysis.

Quality Assessment

The potential for bias within each study was assessed using the Cochrane Methodological Quality Assessment of Studies. Discrepancies in the estimated level of bias by consensus were resolved and a final assessment of the probability of bias for each study was reported. A detailed description of bias analysis was included in the Systematic Review (This quality assessment is as proposed by the Cochrane Methodological Quality Assessment of Observational Studies).

Data Synthesis

The analysis of Quality and Utilization of Family Planning Services that was employed for this meta-analysis and systematic review was proportion, correlation, odds ratio, and standard error or 95% confidence interval from each study. The results from an individual study showing the association between Family Planning Utilization and women's perception of usage quality were pooled. The meta-analysis was performed by reporting the proportion, odds ratio, and standard error for each of the papers reviewed. Forest plots were also used to summarize pooled estimates. All analyses were done using Stata 16 (64 bit) statistical software.

RESULTS

Table 1: Overview of included studies and quality ratings

First author and year of publication	Country and participants	Year o study	Data used	Odds ratio and Confidence Interval	Methods	Quality rating*
Agha, 2009	Kenya	2009	2004 Kenya Service Provision Assessment Survey	1.8 (1.36 - 2.24)	Quantitative	6
Assaf, 2015	Senegal	2015	2012–2013 Senegal Service Provision Assessment survey	3.7 (3.66 - 3.74)	Quantitative	6
Tafese et al, 2013	Ethiopia	2013	Primary data	0.2 (0.15-0.29)	Quantitative	6
Hong et al, 2006	Egypt	2006	Demographic and Health Survey	1.36 (1.34 -1.38)	Quantitative	6
Lukyamzi et al, 2021	Uganda	2021	Primary Data	2.21 (1.72 -4.52)	Quantitative	6
Wogu et al, 2020	Ethiopia	2020	Primary Data	3.14 (1.02 -9.79)	Quantitative	6
Fantahun, 2005	Ethiopia	2005	Primary Data	10.7 (2.4 - 66.4)	Quantitative	6

^{*}The quality rating score was calculated by awarding 1 point for each of the criteria.

		95% Confider	nce Interval	
Study	Effect size	Lower Boundary		
Agha (2009)	1.800	1.360	2.240	0.15
Assaf (2015)	3.700	3.660	3.740	18.74
Tafese et al (2013)	0.200	0.150	0.290	6.12
Hong et al (2006)	1.360	1.340	1.380	74.97
Lukyamzi et al (2021)	2.210	1.720	4.520	0.02
Wogu et al (2020)	3.140	1.020	9.790	0.00
Fantahun (2005)	10.700	2.400	22.400	0.00
I-V pooled Effect Size	0.148	0.147	0.148	100.00
Heterogeneity chi-squared	12471.7 (d.f. =	6) $p = 0.000$		•
I-squared	100.0%			

z= 195.631 p = 0.000

Table 2: Effect size and Confidence intervals of studies

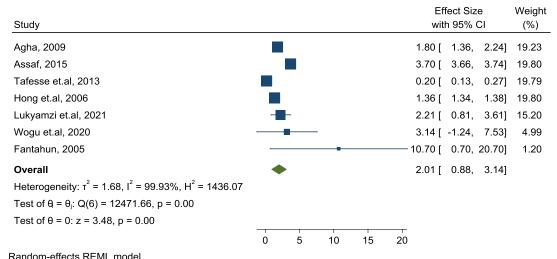


Figure 1: Forest Plot

DISCUSSION

Test of ES=0

Using a systematic evaluation of mixed data, this study intended to provide evidence-based knowledge of the factors that influence the quality of treatment in African family planning services. A total of seven moderate to high-quality studies conducted in numerous African nations were discovered and included to help researchers better understand the factors that influence the quality of care in family planning services in Africa. Only the quantitative component of the study was utilized to assess the quality of care in African family planning services. Client, provider, facility, structural, and process variables were among them. The most often cited process elements in quantitative research were the client's waiting time before obtaining services, provider competency, supply of injectable techniques, and protection of privacy and confidentiality. The most often cited structural component identified by quantitative data was the quality of stock inventories. Furthermore, quantitative research identified facility ownership type as an essential factor impacting the

quality of treatment in family planning services. Privately held facilities, in particular, were associated with greater levels of client satisfaction than publicly operated facilities. The synthesis findings reflected several criteria identified by the quantitative research as critical determinants impacting the quality of treatment in family planning services.

CONCLUSION

The small size and variable character of the evidence base uncovered by this analysis made it impossible to determine the factors most relevant in a wide variety of African contexts for the provision of high-quality treatment in family planning services in Africa. This limits health planners from developing clear evidence-based recommendations for implementing interventions to improve the quality of care in family planning services across all health settings in Africa. Our results regarding the determinants determining the quality of treatment in family planning services, on the other hand, provide some guidance for health

planners about which initiatives should be prioritized. First, the positive relationship discovered between the quality of care and structural factors related to the facility, such as proximity to clients' residence, service costs, and the number of days in a week that the service is open, indicates the need for planners to implement strategies that reduce these access barriers. Subsidized or free treatment, outreach services, clinic/hospital operating flexible hours, and transportation arrangements are all possibilities. Second, the discovery that provider competency is a key factor influencing the quality of care in family planning services shows that investing in provider skills and enabling providers to offer care by best practice is critical. Third, the discovery that providing information about planning methods is an important factor in determining the quality of care suggests that strategies to ensure that clients are provided with necessary information about the various methods and their potential side effects are important to support a high quality of care in family planning services. Fourth, our review's findings indicate the necessity for planners to employ measures to reduce client wait times while still ensuring client privacy and confidentiality in family planning services.

Overall, the few, moderate to high-quality quantitative research on factors influencing the quality of the utilization of family planning services in Africa identified several parameters connected to client usage and sociodemographic features. As a result, increasing the quality of care in African family planning programs necessitates several initiatives that address these various concerns. More study is needed to identify the major parameters linked with the quality of care in African nations' family planning programs.

Conflict of Interest:

Author have declared that there was no conflict of interest

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