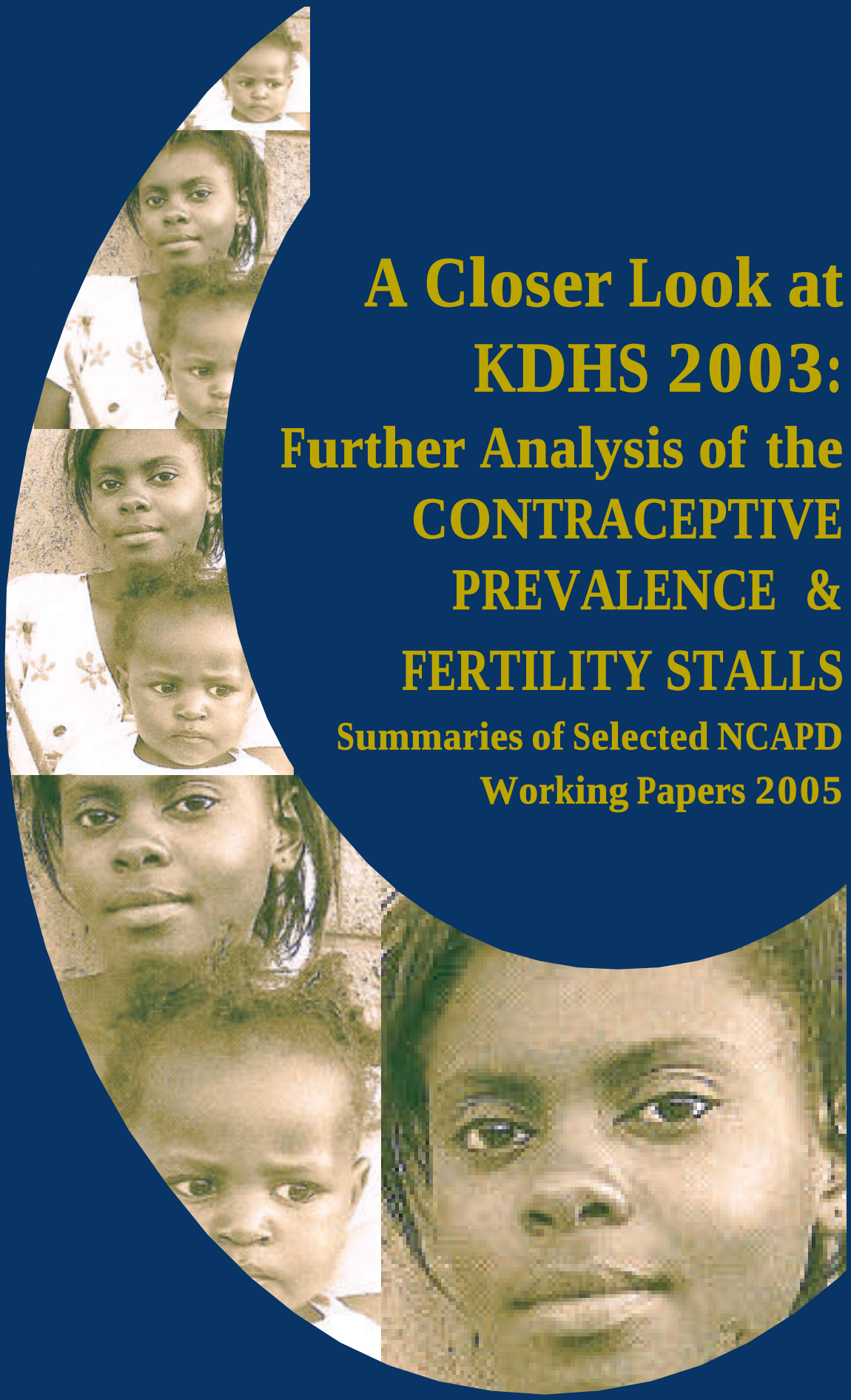

A Closer Look at KDHS 2003:

Further Analysis of the CONTRACEPTIVE PREVALENCE & FERTILITY STALLS

Summaries of Selected NCAPD Working Papers 2005

National Coordinating Agency for Population and Development and MEASURE Evaluation

A Closer Look at KDHS 2003 Further Analysis of the Contraceptive Prevalence & Fertility Stalls

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and
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Contents

Abbreviations

AIDS	Acquired immune deficiency syndrome
ART	Anti-retroviral therapy
CBD	Community-based distribution/ distributor
CBDFP	Community-based distribution of family planning
CBS	Central Bureau of Statistics
CORP	Community-owned resource person
CPR	Contraceptive prevalence rate
FBO	Faith-based organization
FP	Family planning
FPAK	Family Planning Association of Kenya
FPPS	Family Programmes Promotion Services
GTZ	German Agency for Technical Assistance
HIV	Human immuno-deficiency virus
IEC	Information, education and communication
JICA	Japanese International Cooperation Agency
KDHS	Kenya Demographic and Health Survey
KMET	Kisumu Medical Education Trust
MSK	Marie Stopes Kenya
MYWO	Maendeleo ya Wanawake Organization
NCAPD	National Coordinating Agency for Population and Development
NCPD	National Council for Population and Development
PMTCT	Prevention of mother to child transmission (of HIV)
RH	Reproductive health
SES	Socio-economic status
STD/STI	Sexually transmitted disease / infection
TFR	Total fertility rate
USAID	United States Agency for International Development
VCT	Voluntary counselling and testing

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Background to the Further Analysis of the 2003 Kenya Demographic Health Survey

Paul Kizito, Alan Johnston and Ani Hyslop

While contraceptive use has risen impressively in many countries over the past two to three decades, there have been occasional periods of stalling, raising serious concerns about the effectiveness of national family planning programmes. The stalls have been caused by, among others, a narrow choice of family planning methods, lack of focus or other weaknesses in reproductive health programmes, and difficulty in coping with the rapid increases in the population of reproductive age.

Kenya has had an impressive record of success in providing family planning services in the past. This success yielded substantial declines in the total fertility rate from the late 1970s to the early 1990s. Recent trends in both contraceptive prevalence and total fertility rates are less impressive, however, as determined by the findings of the 2003 Kenya Demographic and Health Survey. These new trends have raised concerns among Government of Kenya policy makers as well as family planning programme managers.

Why Kenya Is Concerned

Total fertility rate seems to have stalled, with a likelihood of an increase after some years of consistent decline. This is clearly related to a similar plateau in contraceptive prevalence, after a long period of increasing use of family planning. Fertility is a major determinant of the population growth rate, and a continued relatively rapid rate of population growth presents major challenges to Kenya's overall development.

Many countries have had plateaus in their contraceptive prevalence rates (CPR) and total fertility rates (TFR). For example, between 1992 and 1995, the TFR for Egypt plateaued at 3.6 births per woman while the CPR during the same period was 47 per cent. In Indonesia, the TFR stalled at 3.0 with a CPR of 48 per cent between 1987 and 1991. The case of Kenya is worrisome in that TFR has stalled at the relatively high level of 4.9 and the CPR at the relatively low level of 39

The findings of the 2003 Kenya Demographic and Health Survey suggest worrying trends in Kenya's contraceptive prevalence and total fertility rates.

per cent. The following table provides some examples of stalling TFR and CPR.

Global examples of plateaus in fertility – International perspective

Country	CPR	TFR
Egypt, 1992–1995	47	3.6
Bangladesh, 1996–2000	49	3.3
Indonesia, 1987–1991	48	3.0
Pakistan, 1984–1990	12	4.9
Jordan, 1997–2002	53	4.4

Through comprehensive analyses of these trends, countries have identified some of the causes of the stalls and put in place corrective measures that have set the programmes back on course. To understand the observed trends in Kenya, a process was set in motion. First there was a workshop that brought together key stakeholders from government ministries, NGOs, the private sector, professional groups and donor organizations to share ideas on important issues and questions. The specific objectives of the workshop were to:

- Increase the use of KDHS findings for policy and programme purposes.
- Identify components that needed priority in the analysis.
- Guide the development of a conceptual framework to be used in the analysis.
- Involve stakeholders from the inception of the analysis through its utilization.

Secondly, on the basis of the identified issues, a further analysis of the 2003 KDHS was undertaken to provide a foundation for the refinement of the design and implementation of effective population programmes in the country. The objectives of the further analysis were:

- To understand recent trends in contraceptive use.
- To explain why the fertility change has taken place.
- To make appropriate policy/programme recommendations to address identified issues.

Themes of the Analysis

The workshop developed four themes and outlined broad areas of focus within the themes for further analysis. These are described below.

Theme 1: Factors Affecting Sexual Behaviour, Fertility Preferences and Contraceptive Use

This theme includes changes in contraceptive use dynamics, family size preferences and other proximate determinants of fertility. The broad areas for further analysis under this theme include:

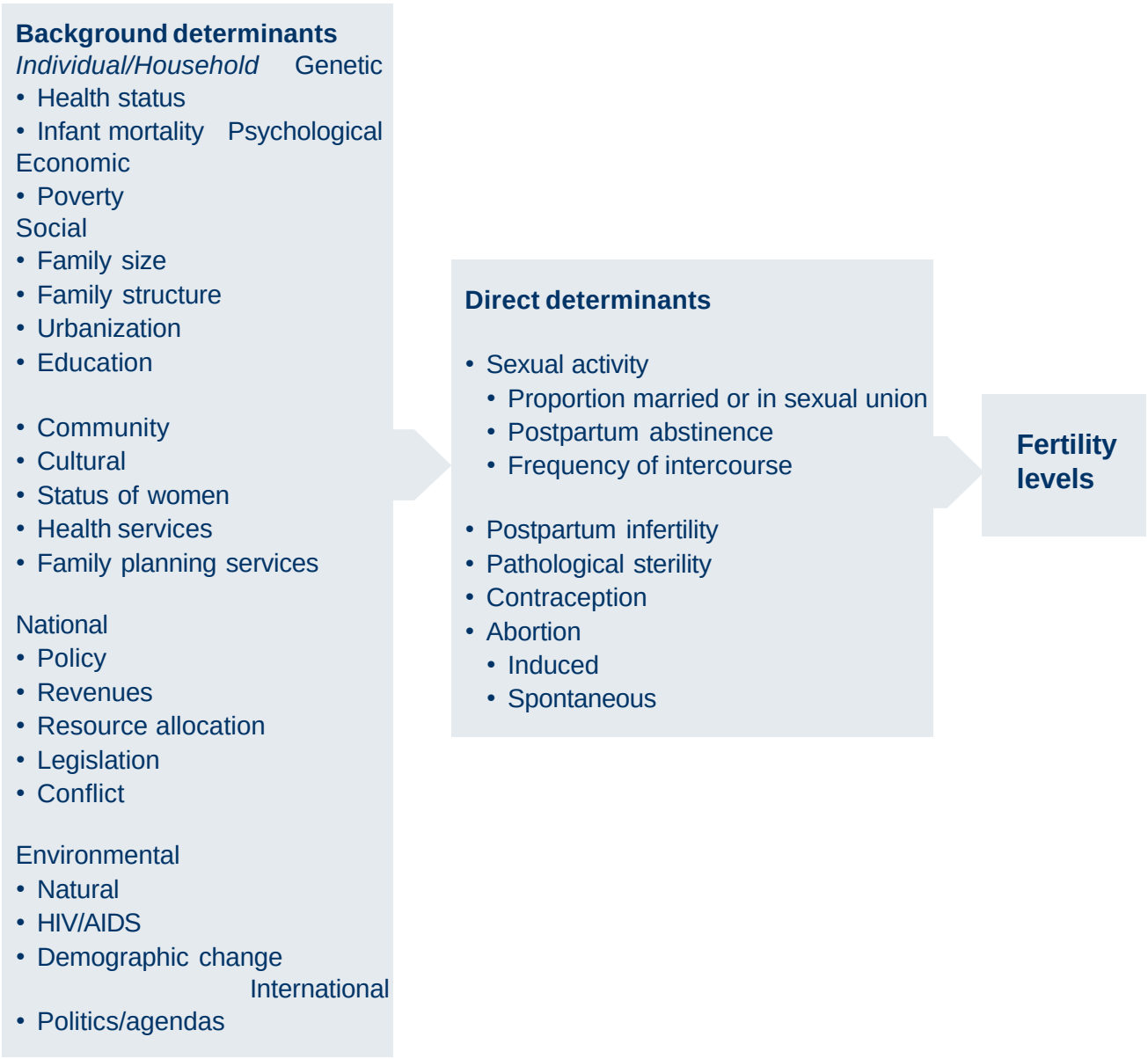
- Effects of socio-economic factors on change in desired family sizes or preferences on contraceptive use or non-use.
- Effects of availability and accessibility of family planning methods on utilization.
- The factors that led to the increase in CPR up to the late 1990s and whether the situation has changed.
- Quality of service delivery in terms of human resource, integration of services, and client perception and satisfaction.

Theme 2: Changes in Programme Resources for Reproductive Health Services

This theme covers both financial and human resources and includes health facility capacities. The theme also involves issues of reproductive health policy and other social policies that could affect reproductive health, including equitable access to and utilization of reproductive health services. The broad areas for further analysis include:

- ***Policy:*** Establish what policies exist and their effect on contraceptive availability and use.
- ***Financing:*** Address issues of budgetary allocation for reproductive health (RH) services including family planning.
- ***Supply and demand issues:*** Focus on both supply and demand sides.
- ***Human resources:*** Identify issues in the training (pre- and in-service) and supervision of health workers and staff motivation.
- ***Supplies:*** Address procurement and distribution with particular focus on rural health facilities.
- ***IEC:*** Identify target audiences and design specific messages for each audience.
- ***IHIV/AIDS vs. reproductive health:*** Analyse the effect at the local level of the shift in funding from family planning to HIV/AIDS and explore the possibility of integrating FP programmes with HIV/AIDS programmes.

A modified analytical framework for the study of fertility



Theme 3: HIV/AIDS Effects on Fertility and Family Planning

This theme covers the effect of HIV status on both individuals and communities, including fertility and utilization of family planning services. Issues to for further analysis include:

- Community perceptions of the impact of HIV/AIDS, and how these affect individual and community fertility behaviour and preferences.
- How the knowledge of sero-status affects sexual behaviour, fertility and contraceptive use, including among discordant couples.
- The impact of anti-retroviral therapy (ART), voluntary counselling and testing (VCT), and prevention of mother to child transmission programmes on fertility and family planning.

Theme 4: Demographic Change

This theme addresses the impact of a rapid increase in the size of the reproductive age population in Kenya and other demographic parameters, including a change in the tempo of fertility plus the impact of mortality trends on fertility. Issues addressed include:

- High rate of increase in the reproductive age groups.
- TFR and CPR by cohort.
- Changes in levels of education by cohort.

Conceptual Framework

Broadly, fertility is affected by the interaction of social, cultural, economic and environmental

factors, on the one hand, with biological and behavioural factors, on the other hand. The direct or proximate determinants of fertility comprise the proportion of women who are married or in sexual union; contraceptive use; induced abortion; postpartum abstinence; postpartum (lactational) infertility; pathological sterility; frequency of intercourse; spontaneous intrauterine mortality; and the duration of the fertile period.

For purposes of the analysis, the conceptual framework was modified to capture the individual: personal attributes, characteristics of the community in which the individual lives, national politics that affect the community, and the individual, environmental factors that are not necessarily changeable. The proximate determinants in this analytical framework are consistent with Bongaarts (1978)/Stover (1997) proximate determinants of fertility.

The results of each set of analyses were compiled into working papers. The summaries presented here were then prepared by the authors of the working papers for the use of a wider audience. For more information the detailed working papers, which are available on the NCAPD website, should be read alongside the summaries.

Analysis

The data used for this study are from the series of Kenya Demographic and Health Surveys conducted in 2003, 1998 and 1993. To address each of the questions relevant methods of analysis are used and are clearly spelt out in each of the chapters. The chapter on fertility, for example, addresses the question of whether there has been a fertility plateau in Kenya by estimating fertility through the use of the parity as well as the conventional methods. Looking at the relationship between child mortality and fertility, the study applied bivariate analysis to determine the physiological effect, while multivariate analysis was applied to estimate the replacement factors.

In analysing the changes in contraceptive use, frequencies, cross-tabulations and logistic regression were used. Logistic regression analysis was used to assess the effects of the factors that contribute to non-use of family planning and to the unmet need for family planning. The assessment of the community-based family planning distribution (CBD) programme used explanatory variables to analyse trends in pill and condom use from all three KDHS surveys. The analysis of contraceptive use focused on episodes of use as the unit of analysis. For examination of trends in the profile of users, simple bivariate analysis was employed, while simple multinomial models were used to assess correlates of method choice. Linking HIV status to utilization of services, the analysis is largely descriptive but conclusions are based on bivariate analyses.

The main analytic method for addressing concerns about information, education and communication (IEC) programmes was logistic regression. For each measure of contraceptive behaviour (knowledge of modern methods and their source, positive attitudes towards contraceptive use, and intention to use family planning in future), a logistic regression model was fitted using the same covariates to allow comparisons across the three surveys.

Summary One

Fertility Change in Kenya, 1998–2003: The Role of Socio-Economic Change and Proximate Factors

Murungaru Kimani

Fertility has been declining in Kenya since the country entered the fertility transition in the early 1980s, but the 2003 KDHS results suggest a stalling in this decline. This survey found that fertility increased from 4.7 to 4.9 births per woman, while the level of contraception use remained unchanged at 39 per cent. This has necessitated a closer look at estimated fertility levels. Specifically, demographers have been keen to answer the question whether this reflects a reversal of the trend and if so, what factors are responsible for this?

Study Framework

The study was guided by the Bongaarts (1978) proximate determinants framework. According to this framework fertility is directly influenced by a set of factors such as contraceptive use, which are referred to as the proximate determinants. These factors are in turn influenced by socio-economic and cultural factors, which are referred to as the background factors. Since studies in Kenya and elsewhere have shown that fertility preference is one of the key variables that influence contraceptive use, the framework has been modified to include fertility preference, which is also influenced by the prevailing socio-economic and cultural environment. As societies develop, the cost of bringing up children increases whereas their benefit declines. As a consequence, the number of children desired declines.

In order to put this framework into operation, the dependent variable for the study was whether a woman had progressed to the next parity during the past year. The socio-economic factors included were: education, residence and region. The following proximate determinants were included: contraception, breastfeeding and marriage. In addition we included fertility preference as an additional intervening variable. Age and number of living children were used as demographic controls.

Data Sources and Limitations

Data used were obtained from the 1998 and 2003 KDHS surveys. These were nationally representative samples and the 2003 sample included North Eastern province. To ensure comparability the North Eastern province cases were excluded from the analysis. Births in the past year were used to derive parity progression ratios,

which give fertility estimates taking into account distortions in fertility that may arise because of the changes in the timing of fertility.

Methodology

A three-stage analysis was involved. First fertility was estimated by using births in the past one year and then comparing these estimates with estimated fertility based on conventional approach. Cross tabulations were used to analyse changes in key demographic, socio-economic and proximate factors. Finally, the logistic regression model was used to analyse the effect of the changes in these factors on the fertility levels.

Results

Fertility estimates using the parity progression approach suggest the continuation of fertility decline albeit at a reduced pace. Fertility declined from 5.04 births per woman in 1998 to 4.67 births in 2003. On the other hand estimates from the conventional approach suggest no change in fertility. Analysis of this slight reduction in fertility suggests that this was a result of the reduction of fertility among women with 6 or more births and an increase in the proportions who were childless. The contribution of women of parities 6 and above to fertility was reduced from 1.41 births per woman to 1.14.

On the other hand, we observe a rise in fertility for parities between 2 and 4. The parity progression ratios among women in these parities are observed to have increased. This increase is confirmed by the birth interval analysis, which revealed that women who had attained parities 4 or 5 were more likely to have another birth. Our analysis confirmed that changes in age at first birth could not explain the observed trends in fertility since age at first birth changed only slightly.

Analysis of the changes in the key variables showed that these were consistent with the minimal change in fertility observed. It was observed that education and residence only changed slightly in 2003. The regional distribution of the sample on the other hand was in favour of increased contraceptive use in 2003. The proportions of the sample for Central, Eastern and Nairobi provinces, where contraceptive use is usually higher, was increased in 2003, while it was lower in Nyanza and Western provinces, where contraceptive use is usually lower. This implies that if the regional composition of the 2003 KDHS was the same as in 1998, the CPR in 2003 would have been even lower compared with 1998. Finally, there was a slight reduction in contraceptive use, although the proportion of women who were married was slightly lower in 2003. These are consistent with the finding of little or no change in fertility, which is confirmed by the logistic regression results. These results show that parity progression ratios over the two periods are not statistically different. Controlling for the socio-economic variables widened the differences, but these disappeared with the introduction of further controls of the proximate factors. Further analysis revealed that this was because of the opposing effects of the regional composition, which widened the differences, while decline in the proportions of married women had the opposite effect.

Conclusions

The findings of this study suggest that although fertility may have continued to decline, the pace has slowed. This is attributed to the slow change in Kenya's socio-economic environment. For example, the analysis revealed that education improved only slightly during this period. The low level of change in fertility is also consistent with the level of contraceptive use, which did not change during the period. The decline in the proportion of married women and the increase in the proportion of women without children are consistent with continuation of fertility transition and could have been responsible for maintaining fertility at the 1998 level or the slight decline.

Recommendations

Several key policy and programme implications arise from the findings presented in this paper. First, the results suggest that socio-economic development continues to play a key role in the fertility transition in Kenya and there is therefore need to strengthen programmes aimed at poverty alleviation and pro-poor economic growth. The other key outcome is the role of marriage in reducing fertility, which suggests the need to examine policy options for enhancing its impact. Finally, the plateau of fertility in Kenya seems to have arisen from the increase in fertility among women in parities 3 to 5. There is therefore need undertake further research to understand the factors responsible.

Summary Two

The Effect of Infant and Child Mortality on Fertility in Kenya

Ben Obonyo, Fredrick Otieno and Richard O. Muga

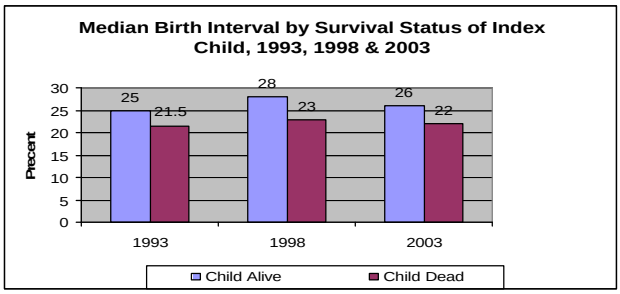
Social scientists have shown considerable interest in the relationship between childhood mortality and fertility. These two demographic factors influence one another interchangeably so that in societies where child mortality is higher, fertility is also correspondingly higher and vice-versa. The association between childhood mortality and fertility has been established and it is hypothesized that couples who experience child loss are less likely to use contraception, tend to have shorter birth intervals and have more children.

This association is neither proof of causation nor does it say anything about the direction of the cause, although it is closely linked to three main issues: One, both child mortality and fertility share a common set of determinants such as mother's education and breastfeeding practices, but others may be unobserved, e.g., preference for high quality children. Two, lower fertility may reduce child mortality through reduction of maternal "depletion" associated with pregnancies and lactation, diminishing sibling competition for scarce family resources and maternal care, and decreasing rates of transmission of infectious diseases in child-crowded environments. Three, there is a possibility of a causal direction running from child survival to fertility due to either replacement effects or setting high goals for target family sizes in anticipation of child deaths.

The stagnation of fertility rate indicated by KDHS 2003 has led to a series of analyses to identify the main factors responsible. As part of this effort, this particular study looks at the effect of infant and child mortality on fertility trends in Kenya from 1993 to 2003 to explore if the stagnation is a result of increased infant and child mortality rates.

Data Sources

Data used for this study are from the series of the Kenya Demographic and Health Surveys conducted in 2003, 1998 and 1993. Apart from



establishing the relationship between childhood mortality and fertility using the 2003 KDHS data, the study also ventured into trend analysis by using the 1998 and 1993 KDHS data. The 2003 KDHS was undertaken on a nationally representative sample, while the 1998 and 1993 surveys did not include North Eastern Province, which accounts for 5 per cent of the country's population. The province is therefore excluded from the 2003 KDHS data sets for the purpose of comparison with the 1998 and 1993 survey results. The numbers of women age 15–49 years covered in the surveys were 8,195, 7,881 and 7,540 in 2003, 1998 and 1993, respectively.

Method of Analysis

Bivariate analysis was used to determine the physiological effect, while multivariate analysis was applied to estimate the replacement factor. The dependent variable was the number of children ever born while independent variables were the mother's age, level of education, type of place of residence, region of residence (province), religion, and desired family size, along with the proportion of children dead in a family (number of the dead children).

Summary of Findings

The occurrence of a mother losing a child and her fertility behaviour are closely related through three mechanisms, physiological, replacement and insurance. This study addressed the first two mechanisms and recommends that the insurance effect be studied separately because it requires more qualitative data.

The results show that the survival status of the index child has a strong influence on the interval of a subsequent birth. In 2003, for example, the median interval to the second birth was about 26 months among women whose first child survived as compared with 22 months among those who lost their index child in the five years prior to the survey – a difference of 4 months.

There seems to be a linear relationship across the three data sets between the mother's age cohort, level of education, region of residence, place of residence, religion and desired family size, on the one hand, and the timing of birth intervals, on the other hand.

There is no consistent relationship between region and birth interval relative to survival status of the index child. Neither of the high childhood mortality provinces (Nyanza and Coast) exhibited as large differences as women in Eastern, Central and Rift Valley provinces. Moreover, no clear pattern between religion and birth intervals relative to the survival status of the index child comes out in the analysis. By contrast, there was clear relationship between current use of contraceptives and birth intervals relative to the survival status of the index child. Multiple regression analysis undertaken indicates that age of mother, desired family size and level of education have a direct relationship with the number of children ever born.

The replacement effect has been strong but declining over the ten-year period. Replacement factors were 0.263, 0.329 and 0.173 in 1993, 1998 and 2003, respectively. This implies that the replacement effect was not as strong in 2003 as it was in 1993 and 1998. Therefore the stagnation in fertility in not likely to be the result of the increased childhood mortality currently being experienced in Kenya.

Conclusion and Recommendations

Results of the study show very close association between childhood mortality and fertility behaviour, especially on the physiological and replacement effects. Replacement factors for the three surveys 1993, 1998 and 2003, however, do not show that the fertility stagnation documented in the 2003 KDHS results from observed increases in childhood mortality since the mid 1990s. There is thus a need to explore the insurance effect side of the relationship.

From the study, the following recommendations are made:

- Scale-up child survival programmes all over the country because child death is one of the direct factors affecting fertility rates especially of mothers with 2 or more children.
- Undertake qualitative research to explore the insurance mechanism effect of infant and child mortality on fertility.

Summary Three

Socio-Economic Correlates and Determinants of Fertility and Contraceptive Use in Kenya 1993–2003

Shanyisa Anota Khasiani and Elias H.O. Ayiemba

The stall in fertility decline in Kenya is associated with a stall in contraceptive use. This study intended to identify the socio-economic determinants and correlates of the two phenomena by analysing: changes in reproductive preference, the nature and magnitude of relationships between contraception variables and observed changes in fertility indicators, and the changing socioeconomic and cultural variables as explanatory factors in contraceptive use and fertility levels and trends.

Conceptual Framework

The Easterlin and Crimmins (1982) "synthesis framework" was used in the study of socio-economic and socio-cultural correlates of contraceptive use and fertility within the broader theoretical construct of the demographic transition theory. The model was modified by introducing composite indicators such as socio-economic status (SES). In this summary we use the expression SES as a synonym for education and employment. The analysis has two distinct categories of independent variables. The first category consists of background determinants – the institutional and programme variables that create the environment for contraception and fertility behaviour. The second category of determinants comprises socio-economic and cultural factors. These function through contraceptive demand variables, by shaping the fertility preferences that influence the dependent variables, which are contraceptive use and fertility.

Methodology

This study was based on 1993, 1998 and 2003 KDHS data, focusing on the women's module and complemented by information from the husband's module. The modules have expanded in scope

Towards the end of the decade fertility stalled and even began to decline, as more women shifted towards having smaller families of two to three children, probably in response to changing reproductive preferences or economic imperatives.

over the years, which introduced problems of comparison in analysis. North Eastern Province, which was included in the survey in 2003 for the first time, was excluded from the analysis. Female circumcision, a cultural factor and a proxy for the start of reproduction, was excluded because of data limitations.

Summary of Findings

Findings relate the the socio-economic and socio-cultural characteristics of respondents, related to to trends in reproductive preferences, contraceptive use and fertility.

Socio-Economic Characteristics of the Respondents

Education improved over the study period as indicated by the decline of women with no education, from 22 per cent to 19 per cent, and significant increases in the proportion of women who completed primary education. The latter rose from 19 per cent to 25 per cent and those with secondary and higher education, mainly among younger respondents, increased from 20 per cent to 27 per cent.

This improvement was nevertheless countered by the substantial proportion of women with incomplete primary education; they formed one-third of the total and their numbers declined only slightly. The respondents in rural areas were mainly older women and remained the majority despite the decline from 87 per cent to 70 per cent. Those in urban areas were fewer and mainly younger women; their numbers increased from 13 per cent to 30 per cent. The proportion of women who were working fell from 55 per cent to 38 per cent, while those who were not working increased substantially from 43 to 62 per cent.

Socio-Cultural Characteristics of the Respondents

At the beginning of the decade, polygamy was relatively uncommon, practiced by only 7 per cent of the currently married women, mainly older women, and the proportions did not change. The other 93 percent of married women were in monogamous unions and no change was observed at the end of the decade. Muslim women formed a small proportion of the respondents, registering 10 per cent at the beginning of the decade and increasing to 17 per cent by the end.

Trends in Reproductive Preferences, Contraceptive Use and Fertility

Respondents who desired three or more children increased from 82 per cent in 1993 to 84 per cent in 1998 but fell back to 82 per cent in 2003. Among these respondents, the majority desired four or more children; their proportions increased from 66 per cent in 1993 to 68 per cent in 1998, but then declined to 65 per cent in 2003. It is the substantial segment of the respondents – ranging between 31 and 32 per cent – who desired two to three children, however, that could provide direction of decline in desire for four or more children.

Contraceptive use was reported among more than one-half of the respondents, mostly older women, a proportion that increased substantially from 54 per cent in 1993 to 60 per cent in 1998 and 62 per cent at the end of the period. Respondents who had never used contraceptives were fewer and equally divided among younger and older women. Their proportion declined from 47 per cent in 1993 to 40 per cent in 1998 and 38 per cent in 2003.

Although lower than reproductive preferences, fertility remained remarkably high among a large proportion of respondents, especially older women, over the entire decade. The proportion of women with three or more children remained high despite the decline from 69 per cent in 1993 to 64 per cent in 1998 and 61 per cent in 2003. Among these respondents, those who had four or more children dominated, although their numbers declined from 56 per cent in 1993 to 51 per cent in 1998 and further to 45 per cent in 2003. A notable shift was discernible in the proportion of women having two and three children, however. This group registered a consistent increase from 27 per cent in 1993 to 30 per cent in 1998 and 33 per cent in 2003. This could represent a shift towards lower fertility in response to the declining reproductive preferences.

Socio-Economic Correlates of Reproductive Preferences, Contraceptive Use and Fertility

Proportions of women who desired four or more children varied considerably with education and place of residence. These include, for example, those with no education (9–18 per cent), incomplete primary education (21–27 per cent), complete primary education (11–16 per cent),

rural women (50–60 per cent), and women living in specific provinces such as Eastern (7–8 per cent), Rift Valley (9–19 per cent) and Nyanza (11–14 per cent). Among employed women the portion was 37–38 per cent and for unemployed women it was 24–29 per cent. Conversely, fewer women desired four or more children among respondents with secondary and higher education (9–13 per cent), urban residents (6–15 per cent), Nairobi residents (2–5 per cent), and residents of provinces such as Central (5–8 per cent), Coast (3–11 per cent) and Western (9–16 per cent).

Women who did not use contraceptives were mainly those with no education (10–16 per cent) and with incomplete primary education (12–20 per cent), rural women (30–42 per cent), and women living in Rift Valley (9–13 per cent), Nyanza (7–10 per cent) and Western (4–7 per cent) provinces. On the other hand, more women reported having used contraceptives among those with complete primary (12–18 per cent) and secondary and higher education (16–24 per cent), urban women (9–21 per cent), and women in Central (8–14 per cent), Nairobi (3–10 per cent) and Eastern provinces (10–11 per cent).

Socio-Cultural Correlates of Reproductive Preferences, Contraceptive Use and Fertility

Women who desired four or more children were mostly respondents in polygamous unions (5 per cent), Muslim women (7–15 per cent), women of various ethnic communities such as Kalenjin (7–14 per cent), Luhya (11 per cent), Luo (9–11 per cent) and Miji Kenda/Swahili (9–10 per cent). Relatively fewer respondents desired four or more children among women in monogamous marriages (31–33 per cent), Christian women (29–33 per cent), and women of selected ethnic communities such as Kikuyu (8–19 per cent), Kamba (4–5 per cent) and Kisii (2–3 per cent).

Women who had four or more children were mostly those in polygamous unions (4 per cent), Muslim women (4–9 per cent), members of various ethnic communities such as Kalenjin (5–10 per cent), Luhya (8–10 per cent), Luo (6–7 per cent), and Miji Kenda/Swahili (5–6 per cent). In contrast, relatively fewer respondents reported four or more children among women in monogamous marriages (42–51 per cent), Christian women (39–47 per cent), and members of selected ethnic communities such as Kikuyu (9–17 per cent), Kamba (4–6 per cent) and Kisii (3–4 per cent).

Non-use of contraception was reported by the following categories of women: Women in polygamous, unions (3–4 per cent), Muslim women (6–13 per cent), and women of various ethnic communities such as Kalenjin (5–9 per cent), Luo (7–8 per cent) and Miji Kenda/Swahili (6–7 per cent). In contrast, respondents who reported having used contraceptives were mostly women in monogamous marriages (51–58 per cent), Christian women (50–58 per cent), and women of selected ethnic communities such as Kikuyu (13–22 per cent), Kamba (7–8 per cent), Luhya (8–12 per cent) and Kisii (5–6 per cent).

Conclusion

The socio-economic and socio-cultural characteristics among the respondents, and their levels and trends, presented mixed results over the decade. At the beginning of the decade, the socio-economic and socio-cultural conditions of the respondents were characterized by positive indicators. Within the education sector, there was improvement reflected in the significant reduction of women with no education combined with increases among those who had completed primary and secondary and higher education. Women, especially those who were younger, increasingly resided in urban areas as urbanization increased. Besides these factors, respondents were well represented among those who were working. Practices such as polygamy declined as monogamy became more universal. A majority of the women were Christians.

Towards the middle and end of the period, however, other conditions of the respondents declined and the majority were increasingly characterized by poor socio-economic and socio-cultural indicators. A substantial and stable segment of respondents reported incomplete primary education over the entire decade, for example, undermining the gains in education. Polygamy, which had declined, re-emerged towards the end of the decade.

Over the study period, most Kenyan women, especially those who are older, desired large numbers of children. There was, however, an emerging trend towards a desire for fewer children, especially two and three children, but with clear indication of a stall and even decline in reproductive preferences towards the end of the

decade. The majority of respondents had used contraceptives. Although women who had never used contraceptives were substantial, their numbers were fewer and declined over the decade. Contraceptive use was high and increased over the entire period but stalled towards the end. Fertility remained high, and initially increased, although it was lower than reproductive preferences. Fertility was particularly high among older rural women who had large families. Towards the end of the decade, however, fertility stalled and even began to decline, as more women shifted towards having smaller families of two to three children, probably in response to changing reproductive preferences or economic imperatives.

The socio-economic factors that correlated with high reproductive preferences were lack of education and incomplete primary education, rural residence, and working. The socio-cultural factors associated with high reproductive preferences were polygamy and Islam. Socio-economic factors that correlated with low reproductive preferences included complete primary education, secondary and higher education, urban residence, and residence in Nairobi and Central provinces. The socio-cultural factors associated with low reproductive preferences were monogamy and religion, specifically Christianity.

Recommendations

Recommendations are made in the areas of policy options, programme design and future research.

Policy

- In order to increase contraceptive use and achieve sustainable fertility decline, there is need for formulation of national development policies that address the prevailing low socio-economic and socio-cultural conditions that support high reproductive preferences.

Programme

- National development should target regions characterized by low socio-economic development, particularly rural areas and Coast, Nyanza, Rift Valley and Western provinces in order to promote contraceptive use and achieve fertility decline.

- Within national development programme priorities, there should be affirmative action that targets ethnic communities associated with poor socio-economic and socio-cultural indicators, in particular the Kalenjin, Luhya, Luo, Meru/Embu and Miji Kenda/Swahili.

- Interventions implemented within the educational sector should focus on the enrolment and especially the retention of children, particularly girls, within the free primary education programme.

Research

- Female genital mutilation (FGM), a rite of passage widely practiced in Kenya, needs to be investigated through further research to determine its role in contraceptive use and fertility.

Summary Four

Trends, Levels and Determinants of Non-Use of Family Planning in Kenya

Lawrence Ikamari

This study sought to analyse the trends in the socio-demographic profile of non-users of family planning methods, to identify factors associated with non-use of family planning, and to determine the reasons for non-use of family planning between 1998 and 2003. Data drawn from both the 1998 and the 2003 Kenya Demographic and Health Surveys were used to achieve these objectives. Descriptive statistics and logistic regression were used to analyse the data.

Conceptual Framework

This study was generally based on Bongaart's (1978) framework on proximate determinants of fertility and in particular on the approaches used by Casterline et al. (1997) in the Philippines and more recently by Magadi et al. (2001) in their comparative study on contraceptive dynamics in Kenya. This study focused on individual women, irrespective of their current marital status, who had ever had sex. This was done in order to permit comparison of the results of the study with those obtained from similar previous studies in Kenya and to obtain a large number of cases, which is necessary for robust analysis.

Sources of Data

The data for this study were drawn from the 1998 and 2003 Kenya Demographic and Health Surveys (KDHS) carried out as part of the worldwide DHS programme. The 1998 KDHS covered a national representative sample of 7,881 women aged 15–49 years and the 2003 KDHS covered a national representative sample of 8,195 women aged 15–49 years and men aged 15–54 years. Both surveys collected data on fertility, marriage, sexual activity, fertility preferences, family planning, maternal and child health, information about

The high level of non-use and unmet need for family planning indicates that the existing reproductive health and family planning programmes in the country have not been very effective in enabling the majority of Kenyan women to realize their fertility preferences.

HIV/AIDS and other sexually transmitted diseases, and information on female circumcision (NCPD et al., 1999). The 2003 KDHS, in addition, included data on malaria and the use of mosquito nets, as well as domestic violence.

This study focused on the 7,881 women of the 1998 KDHS and the 8,195 women of the 2003 KDHS. The units of analysis were individual women. The sampling methodology as well as an assessment of the quality of the data are presented and discussed extensively in the country reports of the respective surveys and no attempt was made in this study to assess the quality of the data (NCPD et al., 1999; CBS et al., 2004).

Methods of Data Analysis

The study used frequencies, cross-tabulations and logistic regression analysis. Frequencies provided a profile of the non-users among the study population in 1998 and 2003, and established the level of non-use and the magnitude of unmet need for contraception. Cross tabulations were used to show the magnitude and differentials of the various components of unmet need for contraception according to the selected variables. Logistic regression analysis was used to assess the effects of the variables on non-use of family planning and on the unmet need for family planning. This was an appropriate statistical procedure since the dependent variables were dichotomous.

Explanatory variables used in this study included: husband's or partner's approval of family planning, age and education of the respondent, the type of place of residence, province of residence, number of living children, ideal family size, fertility preference and marital status. Past studies show that these factors are important explanatory variables of non-use of family planning elsewhere (Westoff and Bankole 1995; Robey *et al.*, 1996; Casterline *et al.*, 1997; Stash 1999; Bankole and Ezeh, 1999).

Summary of the Findings

The results obtained showed that the level of non-use of family planning was fairly high. It was 64.6 per cent in 1998 and 65.2 per cent in 2003 indicating that it remained more or less the same over the period. In both 1998 and 2003, the majority (70 per cent) of the non-users did not have unmet need for family planning. These results indicate that the levels of both non-use and unmet need for family planning stalled over the period. The majority of the non-users were women who were currently married, those with low education and those who resided in rural areas. The majority of them resided in Nyanza, Rift Valley, Western and Eastern provinces. The majority of the non-users wanted to either delay or stop childbearing, and most had never used a family planning method before. The socio-demographic profile of non-users of family planning did not drastically change between 1998 and 2003. Over the period, however, there was a modest increase in the percentage of non-users, those with no primary education, and those in urban areas and in Nairobi, Rift Valley and Central provinces.. There was a slight decline in the percentage of non-users in Nyanza, Western and Eastern provinces.

Significant socio-demographic differentials in the non-use of family planning were evident in the data. By and large these differentials remained the same between 1998 and 2003, but with modest changes. There was an increase in the percentage of non-users among women with no education, among those in Nairobi province and in urban areas, among women without children, and among singles. However, there were modest decreases in the percentage of non-users among women with 3–4 living children, among women whose partners approved of family planning and among women who wanted no more children.

All the variables included in the study had significant effects on non-use of family planning in 1998 and in 2003. Older women, educated women and women in rural areas were more likely to be non-users. Women in Coast, Nyanza, Rift Valley and Western province were significantly likely to be non-users compared with women in Nairobi province. However, women in Central Province were significantly less likely than women in Nairobi to be non-users of family planning. Non-use of family planning decreased with the number of living children but significantly increased with ideal family size. Non-use also varied significantly according to future fertility desires and marital status. The respective effects of education, number of living children and ideal family size were greater in 2003 than in 1998. On the other hand, the effects of age, type of place of residence, region of residence, future

fertility desire and marital status were less in 2003 than they were in 1998.

In 1998 all the variables except for the type of place of residence and ideal family size had significant effects on unmet need for family planning. Similarly in 2003, all the factors except for the type of place of residence had a significant effect. In 2003, the respective effects of age, education, number of living children, ideal family size, future fertility desire and marital status were greater than they were in 1998. However, the effect of region of residence declined over the period.

Various reasons were provided for non-use of family planning in both periods. In both 1998 and 2003, the main reasons given for non-use were no/low pregnancy risk, disapproval of family planning and health related reasons. Over the period, the percentage of non-users giving no/low pregnancy risk as the main reason declined.

Conclusion and Recommendations

The high level of non-use and unmet need for family planning indicates that the existing reproductive health and family planning programmes in the country have not been very effective in enabling the majority of Kenyan women to realize their fertility preferences. Since the purpose of the reproductive health/family planning programmes in the country is essentially to enable couples and individuals to achieve their fertility preferences, it is therefore important that couples and individuals countrywide be provided with effective means and facilities of doing so. This requires a substantial increase in the availability of contraceptive methods and enhanced method mix, plus qualified and user-friendly staff, well equipped health facilities, and adequate information about contraceptive use. Therefore, reproductive health and family planning programmes should aim not only at increasing their coverage, but also at making effective contraceptives available to all individuals needing them and providing education and information on the efficacy and side effects of all family planning methods. This entails persuading non-users to become users of effective methods and maintaining the existing users.

Efforts should be made to eliminate these and all other obstacles that prevent couples and individuals from using family planning. These should include:

- Encouraging continuous discussions of family planning between partners and spouses.
- Encouraging men to support their spouses and partners in their efforts to achieve their fertility preferences.

In addition, concerted efforts should be made to provide information and education about the side effects of all the family planning methods currently being used in the country and to assure potential and actual users that side effects can be effectively managed whenever they occur. Finally, further research, particularly applying qualitative approaches, should be undertaken to gain additional insights into reasons for non-use of family planning from a wider spectrum of women and men of reproductive age in the country.

Summary Five

Contraceptive Use Dynamics in Kenya: Analysis of Method Choice and Discontinuation

Alfred Titus Agwanda

Driving the change in fertility patterns in Kenya over time has been the use of modern contraception. Contraceptive use is the consequence of contraceptive acceptance, method choice, continuation, switching and failure. When fertility preferences decline and contraceptive prevalence increases, contraceptive use becomes a more established behaviour, and therefore prevalence rate is no longer a sufficient marker of programme success (Hammerslough, 1991; Jejeebhoy 1991; Wang and Diamond, 1995). As a consequence, contraceptive failure rate becomes an important determinant of fertility (Hammerslough, 1991; Wang and Diamond, 1995). Moreover, the current contraceptive prevalence rate is an outcome of the rate of acceptance and discontinuation. The study was therefore guided by the following key questions:

- What factors influence contraceptive method choice in the recent past?
- What are the experiences and behaviour of women who have used contraceptives?
- What factors contributed to contraceptive discontinuation in the five years prior to the 2003 survey?

Study Objectives

The broad objective was to facilitate the understanding of the overall effectiveness of family planning programmes intended to meet the reproductive health needs of Kenyans.
Specifically, the study was aimed at:

- Identifying changes in the profile of users.
- Identifying factors influencing method choice.
- Determining overall and method specific discontinuation rates.
- Determining method specific reasons for discontinuation.
- Examining factors associated with contraceptive failure, switching and abandonment of use.

Conceptual Framework

Fertility regulation is a dynamic process where individuals or couples are in any of three states: using an effective method, using a non-effective method or not using at all. The choice of a specific method is a function of the characteristics of the users, the community in which they live including

the extent of their access to contraception, and the effectiveness of programme efforts (Bruce, 1990; Entwisle et al., 1997).

The socio-political environment influences the overall supply of contraceptive services through interventions that can enhance distribution of contraceptives, on the one hand, and, on the other, facilities' readiness to provide quality care. Readiness encompasses factors such as the available infrastructure, contraceptive supplies, management and availability of trained staff, and the service provision environment.

Improvements in the overall supply environment together with other demand factors such as reproductive preferences are expected to result in client acceptance or discontinuation of contraceptive use. The reproductive preferences, however, are shaped by other background factors that may be social, cultural, economic or demographic. The interplay between acceptance and discontinuation determines the overall contraceptive rate, which is a direct determinant of fertility outcomes, although the fertility outcomes are also the results of other proximate factors.

Methodology

Simple bivariate analysis was used to examine trends in the profile of users, while a simple multinomial model assessed correlates of method choice. The data for analysis of contraceptive discontinuation were derived from the 2003 DHS calendar on contraceptive use and the unit of analysis was the episode of use. An episode of contraceptive use is defined as a continuous period of use of a specific contraceptive method. The methodology for this section was based on life-table methods since calendar data are censored**.**

Summary of Findings

This study aimed at identifying correlates of contraceptive method choice and discontinuation. At national level, the continued trend in method mix shows declining pill and IUD use but continued increase in the use of injectables. All regions show there has been decline in the use of the pill and sterilization. All regions except Central Province showed a decline in the use of the intrauterine contraceptive device (IUCD), which in contrast increased in Central.

In most of the regions the observed contraceptive prevalences do not match the fertility levels. It is only in Nyanza where the CPR corresponds to the actual fertility levels. In Nairobi and Coast there is markedly lower than expected CPR, while in Eastern, Central and Rift Valley the trend showed a higher fertility than can be matched by the observed CPR. These trends have persisted over time.

Socio-Demographic Profile of Current Users

About one in five of the users of the pill are under 25 years of age while one-third of the total users are over 35 years of age. Nearly half of the users have one to two living children, and 61 per cent of the users of pill would prefer to have three children or fewer. Most (92 per cent) of the users were in some form of union, with non-married women constituting less than 10 per cent of the total users. Although the use of IUCD has been declining, IUCD/Norplant is still popular among older women, who constitute half of the total users. The injectables have been the most popular method since the early 1990s with half of the users being in the prime childbearing age group (25–34 years). The share of younger women (15–24 years) has increased over time to 24 per cent of the total number of users of this method.

There has been an increase in the use of condoms since 1993 from about 0.9 per cent to about 1.7 per cent among all women of reproductive age. Condom users are mainly younger women, who constitute 45 per cent of the total number of users. The use of traditional methods has been declining, although the prevalence is still high compared with other methods. The share of users is similar between middle-aged and older women, while younger women constitute about 25 per cent of the users.

Method Choice

Analysis of method choice and mix shows continued shift to use of highly effective injectable methods away from pills and traditional methods, especially among younger women across all the regions. However, there has also been considerable increase in the share of older women using pills. The choice of non clinical methods over long-lasting and highly efficient clinical methods may be motivated by factors other than the relative costs. This is noticed in the relatively low chances

of using modern methods in rural Nyanza, Coast, Western and Rift Valley Provinces. In addition, there is an increased skew towards the use of injectables in Nyanza, Coast and Western Provinces.

Method Discontinuation

There was a total of 3,522 episodes of use contributed by a total of 2,654 individual women, giving an average of 1.3 episodes per woman. The number of episodes per woman in 2003 seems to have declined compared with data from 1998 (1.6 episodes per woman). Total discontinuation rates excluding sterilization stand at about 38 and 59 per cent (i.e., per 100 episodes of use) within 12 and 24 months, respectively.

The median duration of use declined from 23 months in 1993–1998 to about 19 months in the period 1998–2003. The longest duration of use was observed in Central Province at an average of 23 months and the lowest average of about 13 months was seen in Western Province. The differences in discontinuation rates between regions largely reflect the method mix in the regions. Six per cent of users discontinued as a result of method failure, 8 per cent switched to another method, and 15 per cent discontinued although they still needed to use contraception. There was a slight decline in method failure rates but an increase in the proportion that abandoned but still needed to use contraceptives. Programme managers and planners should expect that about 4 women in 10 are likely to discontinue use within 12 months of initiation of use.

Conclusion and Recommendations

The increasing skew in the use of methods should be addressed by programme planners to determine whether it is due to service providers or demand by clients. Programmes must continue to provide a wide variety of choices. The declining use of IUCDs is a concern requiring active promotion especially for older women who require long-lasting methods. The failure rate of methods other than IUCDs or implants has obvious implications, especially for unintended pregnancies.

There is need to examine continued low and declining use among poor and less educated women. Those with no education are also more likely to abandon use of methods while still in need. Special focus should be on increasing access to contraceptive methods so that poor women and those with no education are able to control their fertility. Similarly, programmes need to target rural Nyanza, Coast, Western and Rift Valley provinces as the regions with low as well as shorter durations of use.

Finally, methodological issues regarding appropriate estimation of the factors influencing method continuation need further examination. The analysis of the determinants of contraceptive continuation is still in its infancy, especially in developing countries with limited data. There are still debates on the appropriate techniques. Factors influencing method choice jointly influence the reasons for discontinuation as well as fertility choice. The choices are made within a dynamic environment and hence selection effects may bias some of the results. In addition, the DHS only asks questions about the principal reason for discontinuing, yet on many occasions couples may be faced with several equally important reasons that may act synergistically. Lastly, the models used in the analysis do not account for dual method choice, which is especially important in the era of HIV/AIDS, nor for issues regarding the postpartum period.

Summary Six

HIV Serostatus and Its Association with Fertility and the Use of Contraception in Kenya

Mabel N.N. Nangami and Fabian Esamai

It has been hypothesized that the stagnation in key reproductive health indicators is associated with the high national prevalence of HIV in Kenya. However, the pathways through which HIV could operate to effect such stagnation are likely to be multiple, and are currently under exploration. One such pathway is through differential reproductive health behaviours and preferences by HIV serostatus. However, it is not known whether reproductive health service utilization, contraceptive utilization, or fertility behaviour and outcomes differ by HIV serostatus at individual or regional levels.

Objectives

This study intended to determine:

- Whether there are differences in use of reproductive health services, fertility preferences, use of contraceptive methods, and fertility outcomes among women and men by HIV serostatus.
- The use of reproductive health services, fertility preferences, use of contraceptive methods and fertility outcomes according to HIV prevalence by province in Kenya.

Data and Methods

Data for this study were drawn from the 2003 Kenya Demographic and Health Survey (KDHS). The KDHS collected information from a nationally representative multistage probability sample of women and men on various health, sexual, marital and household characteristics. For the first time, in the 2003 KDHS, 75 per cent of the sample of women and men were tested to determine their serostatus. The analysis was based on weighted sero-prevalence data of 6,001 men and women whose records are linked to individual files with socio-demographic and behavioural factors. The

Cultural norms that support high fertility can also serve to inhibit levels of HIV prevalence. For example, high socio-economic development expected to result in low fertility may also be a mechanism for high-risk behaviour and result in high HIV prevalence.

main independent variable is HIV serostatus, which was measured as sero-negative or positive (274 women and 130 men). Other independent variables included socio-demographic characteristics, knowledge and practice. The set of dependent variables included use of reproductive health services, fertility preference, use of contraceptive methods and fertility outcomes. Fertility preferences were defined by fertility desired for the future and ideal family size. Fertility outcomes were measured as total number of births in the five years before the survey and total number of children ever born.

Data analysis is descriptive and conclusions are based on bivariate analyses. Regional comparisons are drawn for high (Nyanza and Nairobi), medium (Coast and Rift Valley) and low (Central, Western, Eastern and North Eastern) HIV prevalence regions classified on the basis of 2003 provincial HIV prevalence rates. We are cautious to infer causality because of the temporal sequence of events especially with respect to HIV test results and socio-economic and cultural behaviour.

Findings

Generally, seropositive individuals were most likely to be younger women (25 to 34) but older men (35 to 49), the formerly married, those who reported completing primary level schooling, urban residents, those in the richest wealth quintile, and those in Nyanza and Nairobi provinces.

HIV Serostatus and Use of Reproductive Health Services

HIV positive women and men used reproductive health services more than their HIV negative counterparts. Seropositive women were significantly 1.4 times more likely than seronegative women are to use these services; and seropositive men were 1.6 times more likely than seronegative men to use VCT services. Differences in use of the rest of reproductive health services are insignificant. There are no differences among seropositive women attending antenatal clinics at an earlier or later stage of pregnancy compared with seronegative women.

Fewer HIV positive women than men used reproductive health services, but utilization among both women and men was generally low (less than 30 per cent) except among those who sought any antenatal care, delivered in a health facility or sought treatment for recent symptoms of sexually transmitted disease (STD).

It is difficult to draw a direct correlation between a stall in the use of reproductive health services and serostatus because the regional analysis does not reveal a true underlying pattern of differences in use across provinces by HIV prevalence. The likely explanation is that the HIV pandemic has drawn resources away from other reproductive health services, a process that may have contributed to lower quality of services and discouraged real and potential users.

Variations in use of reproductive health services across high, medium and low HIV prevalence provinces are unclear. Provinces where stalls in the use of reproductive health services occurred appear to have higher proportions of women using these services, but there is no clear pattern of association. The relationship can be explored further by using a large sample size that allows for disaggregation of women by serostatus across these provinces.

It is also difficult to draw a direct correlation between the stall in use of reproductive health services for Nairobi, Central and Rift Valley provinces because there is no clear pattern between women and men in these regions and the use of reproductive health services. This is in part because the stall appears to have occurred in specific provinces in each of the three HIV prevalence regions.

HIV Serostatus and Fertility Preferences

Seropositive women were significantly more likely to desire to stop childbearing in the future (47 per cent) and significantly less likely to continue childbearing in the future (52 per cent) than women who were seronegative (39 and 58 per cent, respectively). By contrast, fewer seropositive men desired to stop childbearing (31 per cent) but more desired to continue childbearing (65 per cent) than seronegative men (36 and 57 per cent, respectively). The differences among seropositive and seronegative are relatively small, ranging from 5 to 8 per cent.

The reason for these observed differences is that seropositive women may be concerned about leaving orphans, while those who are seronegative may be concerned about taking care of orphans left behind by relatives who have died. For those

who want to continue childbearing, the primary reasons may be prevailing large family size norms, especially for men in communities where childlessness is stigmatized.

There are gender differences in fertility preferences. About 47 per cent of seropositive women desired to stop childbearing compared with 31 per cent of seropositive men. The desire for larger family size is positively associated with seropositive women and seronegative men and negatively associated with seronegative women and seropositive men. The differences in desire to stop or continue childbearing are large for seropositive individuals (13–16 per cent), but very low between seronegative categories (1–3 per cent).

More than half of the women desired to continue childbearing across all provinces, with over 70 per cent of those in Nairobi desiring to do so. The explanations about concerns for orphanhood seem to suffice. The regional variations in desired ideal family size of three to four children suggest that proportions of such women and men are lowest in high HIV prevalence provinces. The ideal family size is similar for Nairobi and Nyanza, yet the expected childbearing patterns are very divergent. The fact that there was a stall in fertility change in Nairobi but an increase in fertility in Nyanza Province suggests that ideal family size alone cannot explain differences in fertility patterns.

HIV Serostatus and Use of Contraceptive Methods

Differential condom use by serostatus indicates that seropositive women were 1.8 times more likely to use condoms than were seronegative women; but seropositive men were 1.1 times less likely to use condoms than were seronegative men. Seropositive women mainly used the condom to prevent pregnancy or for dual use compared with seronegative women who mostly used the condom to prevent STD/HIV infection. Seropositive men used the condom primarily to prevent STD/HIV infection (43 per cent) compared with seronegative men who used it to prevent pregnancy (36 per cent). The proportions are relatively low among seropositive users for prevention of STIs. There are serious programme implications for low use, dual protection and risk of transmission given gender differences in reasons for use. More men using condoms to prevent infection suggests use with partners outside marriage. Sex differences in condom use reveal that more men irrespective of serostatus used condoms (11.8 and 13.4 per cent) compared with women (2.7 and 1.5).

Regional patterns of condom use and abstinence among women and men do not appear to explain the stalls in contraceptive prevalence in Nairobi, Coast, and Eastern provinces. More men than women used condoms and practiced abstinence across all regions. The lack of a clear pattern in condom use across regions suggests that other factors besides HIV prevalence affect individuals' drive to adopt a method of contraception or seek re-supplies. In addition, in several sub-Saharan countries, contraceptive use has probably reduced because of diversion of resources to HIV/AIDS programmes and by attrition of programme staff due to HIV/AIDS-related morbidity and mortality, among other reasons.

Serostatus and Fertility Outcomes

There is a negative and statistically significant relationship between serostatus and the number of children ever born among women and men. However, the declining proportions of seropositive women and men by parity are higher than are those for seronegative women and men. This finding suggests that HIV depresses fertility, which can be further supported by the proportion of women in the three HIV prevalence regions with three to four children or five or more children: the proportion is lowest in high HIV prevalence regions. The conclusion regarding Nyanza and Nairobi provinces suggests that some factors have contrasting effects on the HIV epidemic and the levels of fertility. Cultural norms that support high fertility can also serve to inhibit levels of HIV prevalence. For example, high socio-economic development expected to result in low fertility may also be a mechanism for high-risk behaviour and result in high HIV prevalence. The key to such an analysis is to find out under what conditions these factors have the reversal effects.

There is a clear negative association between women's serostatus and the number of children born in the five years prior to the 2003 survey at individual and regional levels. More seropositive than seronegative women had one child in that period, but they registered a slightly lower proportion for two or more children.

Conclusion and Recommendations

The findings point towards key recommendations in the areas of programming, policy and future research.

Programme

To tailor family planning and VCT services to meet the needs and demands of women and couples living with HIV, and in accord with unique regional contexts, would require improvements in the integration of VCT into family planning and antenatal services. This would also ensure that HIV positive women get a broad range of quality services as a package offered at a facility. The study finding that more men than women use VCT and STI services suggests that integration would also address the stigma associated with HIV among women.

The concern of quality service delivery through comprehensive reproductive health services is becoming increasingly important with advances in the range of treatments that reduce transmission from mothers to children and the availability of these treatments to the wider infected population, most of whom are poor. Targeting may be one option to reach such groups.

It is critically important to strengthen multi-sector initiatives that ensure the girl-child completes primary and secondary school, given that this would encourage late marriage and childbearing patterns.

Policy

There is need to integrate the condom policy with the overall policy on reproductive health to ensure effective integration of VCT, family planning and antenatal services.

As over half of seropositive women and men desired to continue childbearing, there is need to have polices that protect the rights of HIV infected persons to have children as well as ensure appropriate technology and capacity to support their desire to have children when they want to.

There is need for policies that link and mainstream poverty issues with reproductive health. This need arises from the fact that low educational attainment, formerly married status and provincial variations that reflect poverty levels are correlates not only of HIV prevalence but also of high fertility and low contraceptive use.

Research

In light of the methodological problems arising from the use of cross-sectional survey data to understand behaviour change, we recommend improving the quality of data collected on HIV. National longitudinal studies are more appropriate for examining trends and assessing impact of the HIV epidemic on fertility at individual and community levels, while stratifying for stage of epidemic, patterns of fertility transition, culture and poverty.

Data permitting, future studies should explore further the differential impacts of HIV infection by gender on fertility preferences and outcomes.

We also recommend more qualitative work that would help explain the mechanisms of HIV influence on fertility preferences at provincial level. Such studies will unveil the type and relevance of cultural values and norms related to remarriage and use of condoms, and how these interact with the socio-economic or poverty environment.

Summary Seven

The Effect of Declining Family Planning IEC Efforts on Contraceptive Behaviour

Peter Koome, Daudi Nturibi, and George Kichamu

Kenya Demographic and Health Surveys (KDHS) of 1993, 1998 and 2003 show that the demographic change – which had shown a remarkable momentum – began to slow down as revealed by critical indicators. The contraceptive prevalence rate (CPR) for all methods among married women, which had risen from 27 per cent in 1989 to 39 per cent in 1998, remained stalled at 39 per cent in 2003. Similarly, the total fertility rate (TFR), which had dropped from 8.1 in 1979 to 4.7 in 1998 showed a slight increase to 4.9 children per woman in 2003.

These findings signalled the need to carry out a further analysis of the 2003 KDHS data. In order to establish the effect of declining family planning information, education and communication efforts on contraceptive behaviour, this study aimed at answering specific research questions: What is the nature of trends in the support for FP IEC programmes during the 1993–2003 period? How has access to family planning information changed over the period? How have IEC-related determinants of the adoption of contraceptive changed over the years?

Data Sources and Limitations

The main sources of data for this study were the Kenya Demographic and Health Surveys (KDHSs) of 1993, 1998 and 2003. Only currently married women were selected for analysis: 4,583 in 1993, 4,847 in 1998 and 4,555 in 2003. These data, however, could not fully answer questions relating to changes in information, education and communication programme efforts, hence the need for supplementary data from a purposive sample of donors – the United States Agency for International Development (USAID), the Japanese International Cooperation Agency (JICA), the German Technical Assistance Agency (GTZ) – and

The study posits that the current contraceptive prevalence rate for modern methods among currently married women is sustained by contraceptive and reproductive norms created by past IEC activities and handed down from one generation/cohort to the next.

implementers of the IEC programme – Family Planning Association of Kenya (FPAK), Maendeleo ya Wanawake (MYWO), Family Programmes Promotion Services (FPPS), National Coordinating Agency for Population and Development (NCAPD), Marie Stopes, and the Ministry of Health.

The study could have measured IEC programme effort indirectly through other variables such as exposure to mass media family planning messages, discussion of family planning among couples as well as within immediate social networks, and contact with family planning providers. Except for partner communication, however, the variables were not consistent across the three surveys. Thus, partner discussion was the only indirect measure of IEC programme effort that was analysed.

The decision to use partner communication as an indirect measure of IEC effort is based on the premise that the relationship between exposure to IEC activities, on the one hand, and partner communication about family planning, on the other, is monotonic. The contention therefore is that tracking changes in levels of partner communication is a reasonable indirect way to track changes in IEC efforts. There is reliable empirical evidence to support this assertion. For example, a study by Rogers et al (1999) in Tanzania found that exposure to a family planning promotion radio soap opera *Twende na Wakati (*Swahili for "Let's Change with the Times"*)* had strong behavioural effects on family planning adoption, increased listeners' self-efficacy regarding family planning adoption, and influenced listeners to talk with their spouses and peers about contraception.

Another study in Tanzania by Jato and others (1999) on the impact of multimedia family planning promotion on contraceptive behaviour of women found that women exposed to mass media were more likely to discuss family planning with their spouses. Furthermore, analyses of DHS data from sub-Saharan Africa demonstrate that countries with high levels of contraceptive use have correspondingly high proportions of respondents reporting spousal communication (Magadi, 2001). So crucial is partner communication that it has been argued that in Kenya contraceptive non-use is more a function of lack of partner communication than of male resistance (Magadi, 2001).

Methodology

The study utilized KDHS data of 1993, 1998 and 2003 and complemented them with data collected from IEC programme implementers and development partners. Only currently married women were selected for analysis and North Eastern province was excluded because of lack of data. The main analytic method for this study was logistic regression since all the dependent variables were dichotomous. For each measure of contraceptive behaviour (knowledge of modern methods and their source, positive attitudes towards contraceptive use, and intention to use family planning in future), a logistic regression model was fitted using the same covariates for each of the three years under study. This facilitated the analysis of the extent of change in the strength of association between partner communication, on the one hand, and contraceptive behaviour, on the other. Levels of funding for IEC projects and number of projects in 1993, 1998 and 2003 were plotted against each measure of contraceptive behaviour for the respective years.

Summary of Findings

The proportion of women who had ever discussed contraception with their partners in the 12 months prior to the survey increased from 64 per cent in 1993 to 71 per cent in 1998 but there has been a significant decline in the recent past (to 63 per cent in 2003, a rate that is similar to that of 1993). All age groups (except 15–19, which showed consistent increases over the period), experienced increase in the 1993–1998 period and sharp declines thereafter.

Apart from current use of FP, which levelled off in 2003, all other measures of progress towards contraceptive adoption (knowledge of modern methods and their source, positive attitudes towards contraceptive use and intention to use family planning in future) have been declining over time. This deterioration roughly corresponds with changes in support for the IEC programme as outlined below.

To illustrate the extent of decline in IEC support the study used data from two major NGOs implementing family planning IEC programme, FPAK and FPPS. (Many other implementers of family planning IEC programmes were covered in

the study but the data generated were not amenable to statistical applications.) There has been a steady decline in funding for IEC in the country. Between the two organizations, about Ksh23.4 million were spent on IEC in 1993, but the amount dropped to Ksh13.9 million in 1998 and plummeted to Ksh1.1 million in 2003.

Data from one development partner, JICA, demonstrated a similar pattern: between 1993 and 1998, the agency gave out Ksh550 million for IEC activities and nothing between 1998 and 2003. Other data showed that support for family planning reduced most significantly in 1997/98. This included the close of the population TV project by the World Bank in 1997, and the end of the second phase of JICA's Population Education Promotion Project (PEPP) in 1998.

Multivariate analyses demonstrate that the strength of association between partner discussion and each of the four measures of contraceptive behaviour, although decreasing over time, is statistically significant for all the study years. In other words, women who had discussed contraceptive use with their partners were consistently more likely than their counterparts to name a modern family planning method and source, to have positive attitudes towards contraception, to express the desire to use a method in future if they were currently non-users, and to be using a modern method. This underscores the importance of partner communication in contraceptive adoption in Kenya today

The study posits that the current contraceptive prevalence rate for modern methods among currently married women is sustained by contraceptive and reproductive norms created by past IEC activities and handed down from one generation/cohort to the next. Decline in family planning IEC activities, therefore, heralds diminished opportunities or motivation among women who currently are in their reproductive years to set new contraceptive and reproductive norms.

Conclusion and Recommendations

Results of this study show a serious decline in support of IEC programme in Kenya. There is need for immediate programme and policy changes to reposition IEC in order to address the declining contraceptive acceptance rates.

Policy

- Government support for FP should go beyond provision of FP methods to the creation of demand through IEC.
- The new National Reproductive Health Policy being developed, in addition to expanding service provision, should also revive the previous strong emphasis on IEC.

Programme

- IEC activities need to be sustained until every subgroup of women has fully embraced the use of modern family planning and the small family norm.
- IEC activities should specifically target "disadvantaged" groups such as women with no education, the youth and men.

Areas of Application of These Results

- There is need to lobby policy makers and development partners to reposition FP activities back to the national agenda. This will ultimately contribute to increased support for IEC programmes that will help create demand for family planning services.
- There is urgent need to revise and update the 1996 IEC and Advocacy strategy to address the current situation so that it can be used as a tool for programme coordination and planning. This will enhance communication and lead to more focused efforts in addressing important gaps in family planning and reproductive health.

Further Research

- It is necessary to carry out a situational analysis of IEC efforts in the country.
- Given the centrality of partner communication in the adoption of contraception and the trends unearthed in this study in the relationship between the two variables, we recommend more research on determinants of partner communication.

Summary Eight

Impact of Trends in Community-Based Family Planning on Contraceptive Prevalence

Joseph Karanja, Peter Njoroge and Solomon Orero

Community-based approaches for family planning programmes responded to post-independence concerns about rapid population growth. The programme aimed at increasing access to and uptake of modern family planning methods. Beginning in the late 1970s to mid 1980s major community-based distribution (CBD) programmes were pioneered by Family Planning Association of Kenya (FPAK), Maendeleo ya Wanawake Organization (MYWO) and a few-faith based organizations (FBOs). Later the CBD programme expanded with diverse players encompassing NGOs and the private and public sector. The CBD programmes thrived in the 1980s but began to decline in the mid 1990s.

Because of the gains in total fertility rate (TFR) and contraceptive prevalence rate (CPR) in the 1980s and the fact that knowledge of contraceptives was considered generally high, the government and other stakeholders decided to shift their focus towards improving services in facilities rather than demand creation and community distribution. The donor crash of the 1990s due to political differences led to the withdrawal of support for family planning programmes by USAID, Scandinavian countries and some other European countries. The results of KDHS 2003 have caused concern because TFR and CPR seem to have stalled at a level that is demographically unfavourable. This further analysis was therefore an attempt to answer two specific questions:

- Have community-based family planning services declined over the past ten years?
- If so, what impact has this decline had on contraceptive use?

Methodology

The data sources were the 1993, 1998 and 2003 KDHSs, journal articles, reports, current FP guidelines, documents from key players in

Community-based family planning programmes may have been a significant contributor to the impressive gains in CPR and TFR experienced in the 1980s to mid 1990s. Withdrawal of support for such programmes may have contributed to the stalling of the CPR and the fertility decline.

community-based family planning (CBFP) such as GTZ, FPAK, Marie Stopes kenya, Pathfinder International and Kisumu Medical Education Trust. Data on non-prescription methods (pills and condoms) from the last three KDHSs (1993, 1998 and 2003) were analysed to assess the trend of the community-based FP component. This was complemented by interviews with key informants from major CBD programmes.

The major limitation of the data sets was that analysis of KDHS data goes down to provincial level while CBD information was at the district level or even more localized. Additionally, data from CBD organizations were available for the period 1999–2004 only and even then not from all the agencies and not comprehensive enough.

Data were analysed using SPSS and Excel packages. The explanatory variables used in the analysis of trends in pill and condom use over the last three KDHSs include: geographic regions/provinces, residence and level of education. The analysis focused on trends in the volume of commodities distributed overall and by province, number of active CBDs and number of clients (new, re-visits and referrals). Additionally, key informant interviews were held with some of the players in CBD programmes to explain the trends in CBFP distribution in Kenya.

Summary of Findings

The documents indicate that the CBFP initiative was aimed at increasing access to and uptake of contraceptives to slow Kenya's then very rapid population growth. CBFP may have been a significant contributor to the impressive gains in CPR and TFR experienced in the 1980s to mid 1990s, while withdrawal of support from CBD programmes, erratic supply and distribution of contraceptives, and shifts in programmatic emphasis to HIV/AIDS may have contributed to the stalling of the CPR and the fertility decline thereafter. Community-based distributors play a much bigger role than just providing pills and condoms. They educate, advise, counsel and refer clients. This is clearly reflected, for example, in the CBD curriculum of Kisumu Medical Education Trust. The Ministry of Health regards CBDs as one of the community-owned resource persons (CORPs).

The results of the analysis of non-prescription methods indicate a threefold (from 10 per cent to 35 per cent) increase in the proportion of pill users obtaining supplies from CBFP sources but marked by wide variations across the provinces. Nairobi and Nyanza recorded the highest increase. Condom use recorded a similar trend but in this case the dramatic changes were observed in Eastern Province. Western Province had an erratic trend on both commodities. The increase in the proportion of pill users obtaining their supplies from CBFP sources was most marked among users with "higher education", while the increase in the proportion of condom users obtaining supplies from CBFP sources was most marked among those with "no education". The proportion of pill users using CBFP sources increased more than sixfold among the rural population, compared with a twofold increase among the urban users, and no major difference between rural and urban populations in the case of condoms.

As illustrated in Table 1, data from the three KDHSs show that:

- CBDs play a minor role as distributors; their major role is probably referral and IEC (demand creation).
- Shop and relatives/friends have a small but stable role as pill provider, but dominate the condom market (56.2 per cent in the KDHS 2003).
- Pharmacy/chemist emerged as the major provider of pills (21.9 per cent) and condoms (17.9 per cent) as per KDHS 2003.

Table 1: Trends in community-based family planning services – Per cent receiving pills and condoms by source

Source	Method	1993	1998	2003
Pharmacy	Pills	0.9	8.5	21.9
	Condoms	14.6	13.0	17.9
CBD	Pills	6.3	10.9	3.5
	Condoms	3.2	3.9	0.5
Shop, friend, or relative	Pills	2.5	5.3	2.2
	Condoms	21.9	46.3	56.2

Review of data from two of the leading CBD programmes (MOH/GTZ and FPAK) indicate a sharp decline in the number of pill cycles distributed between 2000 and 2004 but a more gradual decline in the case of condoms. The number of active CBDs in the two programmes declined over the same period, with a corresponding but more prominent drop in the

numbers of new and repeat clients. The decline in the case of the MOH/GTZ programme was more gradual and consistent. Surprisingly, the number of effective referrals for long-term and permanent FP methods in both programmes remained high, possibly because of the expanded mandates of CBDs. Key informants from the CBD organizations confirmed these findings.

Conclusion

This analysis has shown that CBD activities have declined markedly in the last decade as a result of the shifting focus of major players. There is also evidence that the pharmacy/chemist has become a significant provider of pills and condoms, while the shop/friend/relative appears to have become an important source of condoms. However, there is no adequate information to determine conclusively whether these changes had an impact on CPR/TFR in the last five to ten years. Further research is needed to elucidate this.

Recommendations

- Revive CBD programmes and utilize them in demand creation for all methods.
- Integrate CBD into the implementation of MOH's CORPs policy.
- Strengthen FP provision through pharmacies, chemists and shops
- Compile an inventory of CBFP providers.
- Undertake cost/benefit analysis of the CBFP approach including market segmentation.
- Hold a national conference of CBFP/CBD stakeholders to share lessons learnt and chart the way forward.

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A Closer Look at KDHS 2003: Further Analysis of the CONTRACEPTIVE PREVALENCE & FERTILITY STALLS

Summaries of Selected NCAPD Working Papers 2005

KENYA's success with providing family planning services yielded substantial declines in the total fertility rate from the late 1970s to the early 1990s. According to the findings of the 2003 Kenya Demographic and Health Survey (KDHS), however, the rate seems to have stalled, and may even be increasing. This is clearly related to a similar plateau in the contraceptive prevalence rate, after a long period of increasing use of family planning. The situation is worrisome because fertility is a major determinant of the population growth rate, and a continued relatively rapid rate of population growth presents major challenges to Kenya's overall development.

To address these concerns a further analysis of the 2003 KDHS was undertaken to provide a foundation for the refinement of the design and implementation of effective population programmes in the country. The results of each set of analyses were compiled into working papers. The summaries presented here were then prepared by the authors of the working papers for the use of a wider audience. The detailed working papers are available on the NCAPD website.

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MEASURE Evaluation

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