

Ideal Child Gender Preference in Men's Worldview and Their Knowledge of Related Maternal Mortality Indices in Ekiadolor, Southern Nigeria

¹Omokhoa A. Adeleye and ²Chukwunwendu A. Okonkwo

¹Department of Community Health,

²Department of Obstetrics and Gynaecology,
University of Benin Teaching Hospital, Benin City, Nigeria

Abstract: The objective was to investigate men's gender preferences and the possible association with their knowledge of related maternal mortality indices. Using a cross-sectional design, a structured questionnaire was administered to 369 randomly selected males aged 18-75 years in Ekiadolor, Nigeria. A total of 176(47.7%) respondents had gender preference, 135(36.6%) preferring sons. Respondents who stated values >4 as the maximum safe parity per woman were 175(47.4%). Of these, 67.4% (118/175) had gender preference compared to 29.9% (58/194) who stated values ≤4 (logistic regression: $p = 0.000$; OR = 4.6, 95% CI = 2.97 - 7.25). Respondents who were aware that pregnancy and delivery could put a woman's health at risk were 263 (71.3%). Of these, 58.6% (154/263) had no gender preference compared to 36.8% (39/106) of those who lacked this awareness. The association in this distribution was initially masked in a χ^2 -test but demonstrated in the binomial logistic regression analysis ($p = 0.002$; OR = 0.46, 95% CI = 0.28 - 0.75). The variabilities in gender preference with respect to age, marital status and educational level were not statistically significant. This study is of priority public health importance because it broadens the opportunity to reduce maternal death by educating males on the dangers of grandmultiparity, which may be influenced while seeking to satisfy their gender preference. The traditional hierarchy should be engaged as cultural gatekeepers and potential change agents.

Key words: Gender preference, grandmultiparity, male involvement, maternal mortality, Nigeria, son preference

INTRODUCTION

The literature has long indicated that when couples have sex preferences, the female partners tend to have higher parities than they would otherwise have had (Seidl, 1995). One logical explanation, which is also known to be the case in societies with strong gender preference, is that women continue to bear children until the couples' desired sex compositions are satisfied (Dalla and Leone, 2001), typically after the birth of at least a son (Leone *et al.*, 2003). Sometimes, son preference is so strong that selective female abortions are done, as has long been known in Korea and China, despite the low aggregate fertility rates in those countries. The public health literature has drawn attention to the disturbing implications of the selective abortions for population structure, marriage, the labour market and women's status (Leone *et al.*, 2003).

Intra-country variations in the direction of gender preferences do occur. In India, for example, a strong preference for male children has been shown to be associated with a low status of women, contraception and fertility, but the pattern varies very widely from region to

region (Arokiasamy, 2002). Using data from the Family and Fertility Surveys, some investigators demonstrated that couples in the eastern part of Germany had female child preference, while those in the western part had male preference (Hank and Kohler, 2000).

The literature shows that western societies appear to have experienced a transition from male first child preference to no gender preference (Marleau and Saucier, 2002). This contrasts with the situation in an Indian community where, in a recent study, 70% of men favoured a son and 2% favoured a daughter as their first child. Among female respondents, the respective values were 55 and 2.5% (Varma and Babu, 2007).

In a study conducted in Nyeri district, Kenya, women's preference for male children was shown to be associated with high parity. The investigators attributed the son preference to possible fear among the women that they would have no share in the inheritance if they had no sons through whom they would access the inheritance (Kiriti and Tisdell, 2005).

In a study conducted in Ekpoma, Edo State, southern Nigeria, 89.5% of women preferred sons to daughters. Some of the reasons given for male preference were the

traditional inheritance pattern which had no room for female children (as with the Kenyan study) coupled with the fact that female children, once married, could not continue to bear their fathers' family names, a value very highly cherished in nearly all African cultures. About 65.1% of the respondents were of the view that men stood out as traditional heads of the home and therefore the sole decision makers including reproductive decisions, compared to only 4.8% who opined that married women were reproductive decision makers. About 94.4% said that the sex of the children was the overriding determinant of parity rather than economic considerations (4.4%) (Eguavo *et al.*, 2007).

According to the 2003 National Demographic and Health Survey (NDHS) of Nigeria, only 24.2% of men opined that the ideal parity per woman was ≤ 4 . The NDHS also puts the country's total fertility rate at 5.7 per woman and the completed or cumulative fertility rate as 6.8 per woman (National Population Commission of Nigeria, 2004). The State of the World Population 2008 puts Nigeria's total fertility rate at 5.27 per woman, and the maternal mortality ratio at 1,100 maternal deaths per 100,000 live births (UNFPA, 2008). These values show that fertility rates (and therefore parity) and maternal deaths are still very high in Nigeria. Yet, while studies in developing countries, including Nigeria, continue to demonstrate a relationship between high parity and high maternal mortality (Abe and Omo-Aghoja, 2008; Olopade and Lawoyin, 2008) as matters of priority public health importance, gender or son preference is rarely explored as a variable associated with high parity and other risk factors of maternal death.

A Jordanian (USAID, 2003) and a Nepalese (Stash, 1996) study demonstrate that a higher proportion of men than women had son preference. The Nepalese study, however, showed that the preferred sex ratio was 1.59 for wives and 1.51 for husbands, showing that wives preferred a slightly higher number of male children than husbands.

Studies above have largely concentrated on the child gender preferences of couples or women in terms of their current desires. Studies addressing gender preferences in terms of the perceived ideal are uncommon. In addition, studies investigating men's relative gender preferences for total number of children are uncommon, despite the dominant role men are known to play in their partners' parity in many societies, especially in Africa. Furthermore, no study is known to have explored an association between men's gender preferences and their knowledge of selected safe motherhood indices.

Given these gaps, this study sought to investigate men's perceived ideal gender preference in their worldview vis-à-vis their knowledge of related safe motherhood indices, especially safe parity and health risks

to women as a result of pregnancy and delivery. The findings of the study will hopefully contribute to planning, implementing and evaluating interventions to enable men to have improved knowledge, attitudes and practices that are safe for their partners' maternal health.

METHODOLOGY

This study was conducted in Ekiadolor, a periurban community in Edo State, southern Nigeria. It is about 10 minutes drive from the outskirts of Benin City, the state capital. Official estimates of the community's population at the time of the study, computed from baseline census data and growth rate, was 3,934 (National Population Commission of Nigeria, 1992, 2004). Younger persons in the adult population have a higher level of formal education than the older ones. Many are poorly employed, and the working population largely consists of artisans, peasant farmers, junior civil servants and petty traders. A crude estimate of income per capita in the community is \$1.00 per day. About 70% of the population is Benin; other ethnicities include Igbo, Urhobo, Esan, Etsako and Ijaw (Adeleye and Chiwuzie, 2007). Data from this study is part of a larger database of integrated studies on male involvement in safe motherhood, which was commenced in 2001 with initial publication in 2007 (Adeleye and Chiwuzie, 2007).

The study design was descriptive cross-sectional. The study population consisted of males aged 18-75 years in Ekiadolor. The exclusion criteria were non-permanent residents and those who had severe cognitive impairment.

For the purpose of computing the sample size for this study, the assumptions included a standard normal deviate of 1.96, a power of 90% (given that 80% in the result would be satisfactory) and the anticipation of non-respondents; a minimum sample size of 329 was thus determined using a one-sample 2-tailed proportion-based formula (Rosner, 2006).

From the official age-sex distribution for the state, the expected male population for the age range 18-75 years was computed as 22.21% of the total, giving a value of 874. Cluster random sampling technique was used to select the number of residential houses that would yield a number of participants exceeding the minimum sample size. A total of 369 participants were thus enrolled.

A largely structured questionnaire was developed, pretested and interviewer-administered to consenting participants. The central questions asked were whether they considered pregnancy and delivery potential risks to maternal health, and their ideal gender distribution of the maximum parity they considered safe for a woman. An equal number for both genders was considered non-preferential; the assignment of a higher number to a gender was considered preferential for that gender.

Gender preference on who should use family planning methods was also sought as a gender-bias variable that was associable with child gender preference.

Data were collated into Stata/SE 10.0 for Windows (StataCorp, 2007) in which analysis was also done. Analysis was done to demonstrate possible associations between child gender preference on one hand and potential explanatory variables (age, educational level, marital status, awareness that pregnancy and delivery can put a woman's health at risk, maximum parity believed to be safe per woman and opinion on who should use family planning methods (by sex) on the other. Data was presented as distribution cross-tables from which χ^2 tests were conducted and corresponding p-values obtained. Further analysis to control for possible confounding involved binomial logistic regression that initially included the potential explanatory variables. Backward selection was used to obtain the final model. Statistical significance was taken as at least one of the following: A

p-value of <0.05 or an odds ratio that excluded 1.00 from its 95% confidence interval.

Ethical approval for the study was given by the Research Ethics Committee of the University of Benin Teaching Hospital, Benin City, Nigeria.

RESULTS

Table 1 shows the socio-demographic and maternal safety-related characteristics of the total of 369 participants. The binomial logistic regression outputs are shown in Table 2, which demonstrates an additional significant association masked in Table 1.

A total of 193 (52.3%) respondents did not have gender preference and 135 (36.6%) had son preference. A total of 288 (78.0%) respondents had at least attempted secondary education. Males aged 18-39 years were 293 (79.4%) and those never married were 228 (61.8%).

Table 1: Factors associated with child gender preference by men

	Preferred child gender (%)			Total (100.0) [N=369]	p-value
	Male (36.6) [n ₁ =135]	Female (11.1) [n ₂ =41]	None (52.3) [n ₃ =193]		
Educational level attempted					
None	4 (23.5)	4 (23.5)	9 (52.9)	17 (100.0)	0.442
Primary	24 (37.5)	8 (12.5)	32 (50.0)	64 (100.0)	
Secondary	76 (39.4)	21 (10.9)	96 (49.7)	193 (100.0)	
Tertiary	31 (32.6)	8 (8.4)	56 (58.9)	95 (100.0)	
Age group (years)					
18-19	18 (36.7)	7 (14.3)	24 (49.0)	49 (100.0)	0.169
20-39	91 (37.3)	22 (9.0)	131 (53.7)	244 (100.0)	
40-59	18 (35.3)	5 (9.8)	28 (54.9)	51 (100.0)	
60-75	8 (32.0)	7 (28.0)	10 (40.0)	25 (100.0)	
Marital status					
Never married	80 (35.1)	23 (10.1)	125 (54.8)	228 (100.0)	0.438
Ever married	55 (39.0)	18 (12.8)	68 (48.2)	141 (100.0)	
Awareness that pregnancy and delivery can put a woman's health at risk					
Aware	91 (34.6)	18 (6.8)	154 (58.6)	263 (100.0)	0.414
Not aware	44 (41.5)	23 (21.7)	39 (36.8)	106 (100.0)	
Maximum parity believed to be safe per woman					
≤4	46 (23.7)	12 (6.2)	136 (70.1)	194 (100.0)	0.000
>4	89 (50.9)	29 (16.6)	57 (32.6)	175 (100.0)	
Who should use family planning methods (by sex)					
Males only	31 (33.7)	13 (14.1)	48 (52.2)	92 (100.0)	0.197
Females only	57 (40.1)	17 (12.0)	68 (47.9)	142 (100.0)	
Males and females	25 (29.4)	10 (11.8)	50 (58.8)	85 (100.0)	
Nobody	10 (55.6)	1 (5.6)	7 (38.9)	18 (100.0)	
Undecided	12 (37.5)	0 (0.0)	20 (62.5)	32 (100.0)	

Table 2: Logistic regression of child gender preference by men

Associated Variables	p-value	OR	95% CI of OR	
			Lower	Upper
Maximum parity believed to be safe per woman	0.000	4.64	2.97	7.25
≤4				
>4				
Awareness that pregnancy and delivery can put a woman's health at risk	0.002	0.46	0.28	0.75
Aware				
Not aware				

CI = Confidence interval, OR = Odds ratio

Respondents who stated values >4 as the maximum safe parity per woman were 175 (47.4%). Of these, 67.4% (118/175) had gender preference and 32.6% (57/175) had none. This distribution significantly differs from 29.9% (58/194) and 70.1% (136/194) respectively for those who stated values ≤ 4 (logistic regression: $p = 0.000$; OR = 4.6, 95% CI = 2.97-7.25). This indicates a strong direct association between gender preference and the maximum parity believed to be safe per woman. Respondents who were aware that pregnancy and delivery could put a woman's health at risk were 263 (71.3%). Of these, 58.6% (154/263) had no gender preference compared to 36.8% (39/106) of those who lacked this awareness. The association in this distribution was initially masked (Table 1) in the χ^2 test but demonstrated (Table 2) in the binomial logistic regression analysis (logistic regression: $p = 0.002$; OR = 0.46, 95% CI = 0.28 – 0.75).

Variabilities in gender preference with respect to age, educational level, marital status and opinion on who should use family planning methods (by sex) were not statistically significant, irrespective of regression.

DISCUSSION

The finding that almost half of males expressed gender preference was surprising, the common assumption being a higher proportion. It still remains worrisome, though, that the problem exists to such an extent. But son preference occurring in more than one-third of the respondents and tripling daughter preference, even in most subcategories of other variables, was not surprising. As earlier noted, studies making similar measurements among community-based *males* are uncommon. A Jordanian study showed that 24% of men had son preference (USAID, 2003) compared to 36.6% in this study. Cultural differences with respect to son preference may explain this difference. It is similarly remarkable that the percentage expressing male preference in this study (36.6%) is much lower than the 89.5% found among women in Ekpoma (Eguavoen *et al.*, 2007), a similar socio-cultural setting in the same state about the same period. One possible explanation for this difference between men and women would be that the fears experienced by women about accessing inheritance through their sons, in the event of their husbands' death (Kiriti and Tisdell, 2005; Eguavoen *et al.*, 2007), do not exist among men, and men are not thereby driven to son preference. In a Nepalese study, as earlier observed, women preferred a slightly higher number of sons than their husbands (Stash, 1996). The irregular pattern of differences between men and women in this regard and as earlier alluded to could be explained by cultural differences that are sometimes difficult to specify. But the driver for son preference among Nigerian men is mainly the desire to maintain the family name in patrilineal

successorship, a view supported by other Nigerian studies (Isiugo-Abanihe, 2003; Eguavoen *et al.*, 2007). The fact that almost half of the males in this study expressed gender preference shows that the women in the community still stand the risk of high fertility, grandmultiparity (Seidl, 1995) and induced abortions of fetuses of unwanted sexes (Leone *et al.*, 2003), in addition to the consequent increase in the risk of maternal death.

A striking finding in this study is the ignorance of the fact that risk to a woman's health may occur as a result of pregnancy and delivery, and this ignorance was strongly associated with gender preference, after controlling for confounders. It is equally remarkable that ignorance of the safe maximum parity per woman was also strongly associated with gender preference. One possible implication of these findings is that men would desire more children, given this tripod of factors (the dual ignorance and associated gender preference). The desire for more children is likely to lead to grandmultiparity (Abe and Omo-Aghoja, 2008; Olopade and Lawoyin, 2008; Evjen-Olsen *et al.*, 2008). Grandmultiparity has its attendant dangers, like postpartum haemorrhage, which is the greatest contributor to maternal mortality in developing countries. Of all the major causes of maternal deaths, postpartum haemorrhage is the fastest killer, causing death within hours rather than days (Chukwudebelu, 2003).

The finding that 78.0% of respondents had at least attempted secondary education is fairly consistent with the expected average for the South-South geopolitical zone of Nigeria, if estimated for the same age group. A similar statistic for the zone was 65.5% according to the 2003 NDHS (National Population Commission, 2004), and the 2008-2009 Human Development Report puts Edo State's adult (15+) literacy level at 76.2% (UNDP, 2009). An interesting finding in this study was that son preference was slightly higher among respondents who had at least attempted secondary education than those who had at most completed primary education, and daughter preference was higher among the latter. Non-preference was slightly higher among those the higher-level educational group as expected. These findings differed from the expectation that persons with higher education would have less son preference and higher non-preference. While these unexpected differences were not statistically significant, the relative directions of preference may be of reproductive health significance. Thus, caution should be exercised in expecting that eventual improvement in social development through formal education will necessarily reduce gender preference. Indeed, the World Bank recently published findings from difference countries that point out that son preference do not always decrease with development (Filmer *et al.*, 2009).

In the same vein, this study suggests no significant difference between respondents in the different categories of gender bias or non-bias with respect to family planning use and child gender preference, though son preference was higher among those who felt nobody should use of family planning methods. The apparent general preference for females to use family planning methods may partly reflect the limited number of options of family planning methods available to males. Caution should be exercised in behaviour change communication to promote the use of family planning methods among males in this population: it should preferably be done in its own merit and not as a correlate of gender non-preference.

CONCLUSION

This study has demonstrated that almost half of the men expressed gender preference and that this is strongly associated with the dual ignorance of the highest parity safe for a woman and of the fact that pregnancy carried some risk to a woman's health. These findings point to a high likelihood for persistent grandmultiparity predisposing to postpartum haemorrhage and maternal death. The findings also point to discrimination against females who are not only less preferred but bear the potentially life-threatening burden of bearing children, including the preferred males. The study is of priority public health importance because it broadens the opportunity to involve males in reducing maternal death in developing countries including Nigeria.

The overarching recommendation from this study, therefore, is to give due regard to male involvement by educating them, starting as early as possible in their formative years, on the dangers of gender preference and on balanced value for both genders. The education should strongly emphasise the importance of limiting a woman's parity to 4 or less and not to exceed this limit in pursuit of their gender preference. It should also highlight the fact that every pregnancy carries some health risks for the woman. Since cultural issues are deeply involved, the traditional hierarchy should be intensely engaged as gatekeepers and potential change agents. Judgemental, confrontational and condemnatory postures should be avoided in the process. As Dixon Mueller argued, the promotion of smaller families is futile, if not accompanied by the eradication of legal, social and economic constraints on women (Dixon-Mueller, 1993), including the reversal of gender inequity in matters of inheritance. Thus, broad and long-term multisectoral actions are required to correct child gender preference with potential benefits for the reduction of maternal death.

REFERENCES

Abe, E. and L.O. Omo-Aghoja, 2008. Maternal mortality at the Central Hospital, Benin City, Nigeria: a ten-year review. *Afr. J. Reprod. Health*, 12(3): 17-26.

- Adeleye, O.A. and J. Chiwuzie, 2007. He does his own and walks away: Perceptions about male attitudes and practices regarding safe motherhood in Ekiadolor, Southern Nigeria. *Afr. J. Reprod. Health*, 11: 76-89.
- Arokiasamy, P., 2002. Gender preference, contraceptive use and fertility in India: regional and development influences. *Int. J. Popul. Geogr.*, 8(1): 49-67.
- Chukwudebelu, W.O., 2003. Preventing Maternal Mortality in Developing Countries. In: Okonofua, F. and K. Odunsi, (Eds.), *Contemporary Obstetrics and Gynaecology for Developing Countries*. WHARC, Benin City, Nigeria, pp: 644-657.
- Dalla, Z.G. and T. Leone, 2001. A gender preference measure: the sex ratio at last birth. *Genus*, 57(1): 33-57.
- Dixon-Mueller, R., 1993. *Population Policies and Women's Rights: Transforming Reproductive Choice*. Praeger, Westport, Connecticut.
- Eguavoen, A.N.T., S.O. Odiagbe and G.I. Obetoh, 2007. The status of women, sex preference, decision-making and fertility control in Ekpoma community of Nigeria. *J. Soc. Sci.*, 15(1): 43-49.
- Evjen-Olsen, B., S.G. Hinderaker, R.T. Lie, P. Bergsjø, P. Gasheka and G. Kvåle, 2008. Risk factors for maternal death in the highlands of rural northern Tanzania: a case-control study. *B.M.C. Public Health*, 8: 52.
- Filmer, D., J. Friedman and N. Schady, 2009. The Preference for Sons does not Always Decrease with Development. Retrieved from: <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,contentMDK:22058877~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html>. (Accessed date: February 2, 2010).
- Hank, K. and H.P. Kohler, 2000. Gender preferences for children in Europe: Empirical results from 17 FFS countries. *Demogr. Res.*, 2(1): 1-20.
- Isiugo-Abanihe, U.C., 2003. *Male Role and Responsibility in Fertility and Reproductive Health in Nigeria*. Ababa Press Ltd., Lagos, Nigeria.
- Kiriti, T.W. and C. Tisdell, 2005. Family size, economics and child gender preference: a case study in the Nyeri district of Kenya. *Int. J. Soc. Econ.*, 32(6): 492-509.
- Leone, T., Z. Matthews and G.D. Zuanna, 2003. Impact and determinants of sex preference in Nepal. *Int. Fam. Plan. Perspect.*, 29(2): 69-75.
- Marleau, J.D. and S.F. Saucier, 2002. Preference for a first-born boy in western societies. *J. Biosoc. Sci.*, 34: 13-27.
- National Population Commission of Nigeria, 1992. 1991 Population Census of Nigeria. National Population Commission of Nigeria.
- National Population Commission of Nigeria, 2004. *Nigeria Demographic and Health Survey 2003*. Abuja: National Population Commission of Nigeria.

- Olopade, F.E. and T.O. Lawoyin, 2008. Maternal mortality in a Nigerian maternity hospital. *Afr. J. Biomed. Res.*, 11: 267-273.
- Rosner, B., 2006. *Fundamentals of Biostatistics*. 3rd Edn., Thompson, Belmont, US, pp: 275.
- Seidl, C., 1995. The desire for a son is the father of many daughters: A sex ratio paradox. *J. Popul. Econ.*, 8: 185-203.
- Stash, S., 1996. Ideal family size and sex composition preferences among wives and husbands in Nepal. *Stud. Fam. Plann.*, 27(2): 107-118.
- StataCorp, L.P., 2007. *Stata/SE 10.0 for Windows*. (15-student edition. Perpetual license: Clement Adebamowo, Serial No.: 81910516846).
- USAID (Interagency Gender Working Group), 2003. *Reaching men to improve reproductive health for all: implementation guide*, 2003. Reaching men to improve reproductive health for all international conference. Sep 15-18, Dulles, Virginia.
- UNFPA, 2008. *State of the World Population 2008*. UNFPA, New York.
- UNDP, 2009. *Human Development Report Nigeria 2008 - 2009: Achieving Growth with Equity*. UNDP. Retrieved from: URL:http://www.ng.undp.org/documents/NHDR2009/NHDR_SUMMARY_2008-2009.pdf. (Accessed date: March 3, 2010).
- Varma, G.R. and B.V. Babu, 2007. Son preference and desired family size in a rural community of West Godavari District, Andhra Pradesh, India. *J. Soc. Sci.*, 15(1): 59-64.