

# Research

# Spousal influence on son preference among antenatal attendees in a developing nation with limited prenatal sex-detection technology



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#### Abstract

**Introduction:** son preference has been exhibited by couples within Nigerian ethnic groups. This preference may affect the sex-ratio at birth and increase discriminatory practices against girls/women. However, the influence of the spouses has not been explored in our context. The aim of this study is to generate reliable data for evidence-based interventions to eliminate son preference. **Methods:** a cross-sectional survey was conducted in the antenatal clinics of Ekiti State University Teaching Hospital, Ado-Ekiti, Nigeria, using the Son Preference Index (SPI). **Results:** the overall son preference index was 1.2. Mothers with a high son preference index were significantly younger, nulliparous, had husbands with only a primary education, and who had greater preference for a male child. Also, SPI was higher among women who had problems with their husbands because they had failed to "produce" a son. Respondents who had high SPI were willing to have fewer babies, provided they had a son. Multivariate logistic regression analysis revealed that having a husband who preferred a son (AOR: 0.423; 95% C. I. 0.300-0.595, p < 0.001), had only a primary education (AOR: 0.458; 95% C. I. 0.239-0.876, p = 0.018), and had problems with the woman for failing to have a son (AOR: 2.741; 95% CI1.531-4.910, p = 0.001) were independent predictors of son preference. **Conclusion:** son preference is influenced by spousal characteristics in south-west Nigeria. If it remains unchanged, with declining fertility rate and widespread availability of sex-determination procedures, female-directed gender-based discrimination may worsen.

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# Introduction

Like many low-and middle-income nations, preference for the male child is deeply rooted in the culture of some ethnic groups in Nigeria [1]. Although, several societies have documented son preference at some time in their history, this has persisted and remained prevalent in some nations of the world, especially North Africa, South Asia and East Asia. Even in nations with balanced sex ratios at birth, only a few societies deliberately prefer daughters [2-4]. The consequences of this bias for the male offspring include gender inequality and discriminatory practices against women and the girl-child [5]. Since son preference is significantly a social and cultural issue, there could be devastating consequences for daughters born in communities with low socio-economic status that are also resistant to the benefits of modernization/civilization [6]. In patrilineal societies like Nigeria, sons are expected to continue the family name, provide support in agriculturally-sustained economies, and have the right of inheritance. Women are valued more as domestic hands, for procreation and better emotional support for aged parents [7,8].

Several studies from largely developing nations, including Nigeria, have documented varying degrees of discrimination against the female offspring. This begins with a distorted sex ratio at birth (SRB) (proportion of male to female births in a population, multiplied by 100) [9,10]. Even when the SRB of a community is near the expected range, son preference cannot be excluded because of the interplay of other factors, such as improved recording of female births and location of the study. Girls have suffered inadequate nutrition, exclusion from preventive care (such as immunization), and inability to access health care during illnesses [11]. The decision to breastfeed among Korean women is affected by their preference for sons [12]. Furthermore, within the last decade, 90% of the neonates and children killed, dumped or abandoned in Pakistan were girls, including girl-child infanticide [13]. According to a study that utilized data from the 2008 Nigeria Demographic and Health Survey, the effect of sex of prior births on the birth interval is slightly significant among the Igbo and the Southern minorities, who tend to desire to have a male child sooner if preceding births were female, with the possibility of increasing their total fertility [1]. Apart from these, in mothers who desire at least one son, the gap in the time spent on weekly housework for an average girl in that family, compared to that of a boy, increases by 2.5 hours, pointing to heavier girl-child labour due to son preference [14].

Going forward, the advocacy or desire for smaller families could worsen the already grim statistics due to son preference. With improving contraceptive uptake and reduction in total fertility rates, couples may seek to know the sex of the limited number of babies they desire [10]. If this curiosity is met by universal availability of prenatal sex-detection technology, countries with bias for sons will experience a worsening of their SRB, an atmosphere of hostility towards girls/women and an infringement on their rights. A necessary preliminary step to prevent such a scenario in Nigeria will be to obtain more reliable and accurate data identifying the existence and factors that influence, son preference in our environment, so that more evidence-based interventions can be designed to eliminate it. While the sparse data from our region have considered socio-demographic determinants of son preference, to our knowledge, this is the first study from southwest Nigeria exploring spousal influence on the preference for sons using the son preference index.

#### Methods

**Type and setting of study:** this descriptive cross-sectional study was conducted in the antenatal clinics of the Ekiti State University Teaching Hospital (EKSUTH), Ado - Ekiti, Ekiti State,

over a six-month period between January 1<sup>st</sup> and June 30<sup>th</sup>, 2014. EKSUTH is the only state-owned teaching hospital, serving the population within Ekiti State and its environs, who are majorly of Yoruba extraction.

**Data collection:** after explaining the purpose of the study during the regular prenatal education session, all antenatal attendees who indicated interest in participating in the survey were handed a questionnaire. They were assured of their anonymity and the confidentiality of their responses, and that they were free to opt out of the survey whenever they so desire. Completion of the study instrument was taken as consent from the respondents. The semi-structured questionnaire enquired about the age, parity, religion, ethnicity, level of education, employment status, husband's level of education, preference for a male, and desired number of children in their life time. Other enquiries included the number of babies they were prepared to have until they had a son, and whether they had domestic problems (including violence) with their husbands when they had not conceived the spouses' desired sex? A mix of questions were employed to deduce the son preference among the women [15]: do you want more boys than girls? Would you prefer that all your children be boys? If you were to have only one child, what sex would you prefer? Grouping the responses to these questions provided the child-sex preference of the respondents. The Son Preference Index (SPI) was defined as the ratio of the number of women who preferred a son to that of women who preferred a daughter [16].

**Sampling and data analysis:** assuming a 50% prevalence of son preference in our environment, to achieve 80% power and a confidence interval of 95% at 5% precision, a minimum sample size of 384 would be needed for this study. If a 10% non-response rate is added, the sample size would be 422 women. To ensure robustness, this number was multiplied by two, thus 844 questionnaires were distributed during the study duration. The survey was approved by the Ethics and Research

Committee of the Ekiti State University Teaching Hospital, Ado - Ekiti. The retrieved data was coded and analyzed using the Statistical Software for the Social Sciences (SPSS) package version 20. Results were presented as percentages and means. Chi-square test was used for univariate analyses; variables with p value < 0.05 were included in multivariate logistic regression analyses to identify the independent factors and spousal variables influencing maternal preference for sons. The results were expressed as adjusted odds ratio at 95% confidence interval (C. I.), with level of significance set at p < 0.05.

#### **Results**

Of the 844 questionnaires distributed within the study duration, 794 (94.1%) were satisfactorily filled and returned. Data analysis and result presentation were based on them. Overall Son Preference Index (SPI) was 1.2. Respondents' characteristics: The socio-demographic characteristics and SPI are as shown in Table 1. The mean age of the women was 28.44 ± 4.83 years, with a range of 17 - 44 years. The mean parity was  $1.2 \pm 1.1$  (range: 0 - 5). Most of the women were below 30 years of age, 478 (60.2%), multiparous, 562 (70.8%), Christians, 663 (83.5%), and of Yoruba ethnicity, 721 (90.8%). Forty-six percent of the respondents had no more than a secondary level education, and 208 (26.2%) were unemployed. Among the husbands, 57 (7.2%) had only primary level of education. Factors associated with high son preference index: From Table 2, mothers with a high son preference index were significantly younger (less than 30 years old) (1.5 versus 0.8, p < 0.001), nulliparous (2.2 versus 0.9, p < 0.001), had husbands with only a primary education (2.2 versus 1.1, p = 0.024), with greater preference for a male child.

Also, SPI was higher among women with a higher desired number of life time pregnancies (2.1 versus 1.1, p = 0.018), and who had problems with their husbands because they had failed to "produce" their spouses' preferred child-sex (3.6 versus 1.1, p < 0.001). Respondents who had high SPI were willing to have fewer babies, provided they had a son. However, there was no significant association with maternal religion, ethnicity, level of education, and employment status. Spousal influence on son preference: Results of the multivariate logistic regression analysis are shown in Table 3. Maternal desire for  $\geq 5$  lifetime pregnancies (adjusted odds ratio (AOR): 0.497; 95% C. I. 0.272 - 0.909, p = 0.023), and nulliparity (AOR: 0.431; 95% C. I. 0.302 - 0.616, p < 0.001) were independently associated with son preference. Having a husband who preferred a son (AOR: 0.423; 95% C. I. 0.300 -0.595, p < 0.001), who had only a primary education (AOR: 0.458; 95% C. I. 0.239 - 0.876, p = 0.018), and who had problems with the woman for failing to have a son (AOR: 2.741; 95% C. I. 1.531 - 4.910, p = 0.001) were independent predictors of son preference among the women studied.

### Discussion

Statement of principal findings: the Son Preference Index obtained from this study is 1.2. Although this is not as high as figures (4.9 to 1.9) obtained from countries with the strongest son preference, it falls within the range of 1.5 to 1.2 among countries with moderately high SPI [16]. This modest SPI could increase, and reach alarming proportions if other enabling factors are present. For example, if the efforts by the Federal Government of Nigeria to improve contraceptive uptake and reduce unmet contraceptive needs succeed, there will be a reduction in the total fertility rate, and consequently family size. However, as couples begin to have fewer children, the desire for prenatal sex determination will increase [10]. When the use of prenatal sex-determination technologies become widespread, against the backdrop of a modest preference for sons and declining family size, this could encourage sex selective abortion, worsen the SRB, and increase gender discriminatory practices [17]. This study showed that women giving birth for the first time had a higher preference for sons. Having a son as the first born appears to give women a sense of fulfilment, and assures them of a "comfortable" unrivalled place within their matrimonial homes. Until and unless they have a son, women may not be given due regard among the husband's families [18,19]. This also fits into the expectations of a patrilineal society, like Nigeria, where the son, especially the first, continues the family name, and is bequeathed the greater percentage, if not all of the family wealth. Women from our study also desired large families. The ideal number of children desired by currently married women is 7.1 [20]. Significantly, more women who desired to have larger families had a preference for sons. Our study also revealed that spousal characteristics influence maternal son preference. Women who were married to husbands with only a primary education were more likely to prefer sons to daughters. Higher education has been shown to weaken gender preference significantly; husbands with limited education are more likely to be unexposed to modern/civilized ideas [21]. Besides, having only primary education will more likelv keep the а husbands/families at the lower wealth guintiles and socioeconomic class, and these have been found to be predictors for son preference [22,23],

To effect a change, public health education and counselling dissuading the practice should be communicated through means that will be clearly understood even by the citizens with limited/no education. The index study found that women with spouses who had a son preference were also more likely to have a son preference. Our cultural norms dictate that wives should submit to their spouses [19]. Decisions regarding the reproductive health and choices of families in Nigeria are made mainly by the husbands, sometimes without any input from their wives. In 2013, the Nigeria Demographic and Health Survey revealed that almost half of currently married women do not participate in the decision-making regarding three specified issues, including their own health care [20]. Patriarchal societies encourage male dominance, and vilify the

women who have differing opinions from their spouses [19]. In fact, more than one-third of Nigerian women of reproductive age agree that wife-beating is justified in at least one of five specified situations, including arguing with the husband [20]. This is more pronounced in communities where the women contribute little to the family income, and are largely economically-dependent on their husbands. Scaling up women empowerment efforts and uplifting the value/role of women in the society are advocated. Results from our study showed that women who experience hostilities from their spouses for failing to produce a son are about three times more likely to have a son preference than women who do not. This is likely to be heightened in families with no prior/living children [24]. Women have experienced various forms of intimate partner violence and divorce for giving birth only to daughters. In other to avoid such perils to their lives, it is logical to expect them to prefer sons. Policy- and decisionmakers must address the evolving inequalities between girls/women and men in our society, promoting the human rights principles of gender equality and non-discrimination, to ensure a balanced community post-2015.

**Strengths and weaknesses of the study:** this facility-based survey has a few limitations: we did not explore the responses of spouses, especially those from polygamous settings; also, the design did not include the sex of the living children. Further population-based studies should address these limitations.

**Meaning of the study:** this son preference, if enabled by declining fertility rates and widespread availability of prenatal sex-detection technologies, could snowball into sex-selective abortions, a worsening of the SRB, and a climate of increased hostilities and discriminatory practices against women.

**Unanswered questions and future research:** although we have shown the existence of son preference in our society, we did not explore the extent of its influence on our sex ratio at birth. Will a policy of non-disclosure of fetal gender to

pregnant women limit the potential problems of son preference? Our current abortion laws are restrictive enough. Exploring the effects of liberalizing our abortion laws and the possibility of encouraging sex-selective abortion is needed.

# Conclusion

Son preference still occurs in our society. The reasons for this are deeply rooted in our cultural norms and beliefs, and may be channeled through spousal influences. Although our study found that nulliparous women and those who desired large families had son preference, their choices were also strongly influenced by spousal characteristics: level of education, preference for sons, and hostilities from spouses (including domestic violence) for their inability to give birth to a son.

#### What is known about the topic

- Son preference has been documented in many societies, with its attendant negative influence on the sex ratio at birth, and hostilities towards girls/women;
- Technologies for prenatal sex determination are increasingly becoming available in developing nations.

#### What this study adds

- The preference for sons in our society was explored using a definite index;
- Apart from the other reasons for son preference in our setting, we have established the link between spousal characteristics and maternal preference for male offspring;
- If this could be addressed using strategic public health interventions, the time to elimination of son preference may be shortened.

#### **Competing interests**

The authors declare no competing interests.

# **Authors' contributions**

JOA: study conceptualization and design, data analysis, writing of major portion of the manuscript, gave approval for final version, and agreed to take responsibility for the work. BAO and ODO: study design, data acquisition, contribution to intellectual content, gave approval for final version, and agreed to take responsibility for the work. All the authors have read and agreed to the final manuscript.

#### **Tables**

**Table 1**: the socio-demographic characteristics and son preference index of the respondents

**Table 2**: determinants of son preference among therespondents

 Table 3: logistic regression analyses of predictors of son preference

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	o-demographic c		and Son				
Preference Index	reference Index of the respondents						
Characteristics	Groups	Frequency	%				
Age (years)	< 30	478	60.2				
	≥ 30	316	39.8				
Mean Age	28.44± 4.83						
(years)±S. D.	(17- 44)						
(Range)							
Parity	Nullipara	232	29.2				
	Multipara	562	70.8				
Mean Parity±	1.21±1.12 (0 -						
S. D. (Range)	5)						
Religion	Christianity	663	83.5				
	Islam	127	16				
	Traditional	4	0.5				
Ethnicity	Yoruba	721	90.8				
	lgbo	55	6.9				
	Hausa	18	2.3				
Level of	Primary	46	5.8				
education	-						
	Secondary	319	40.2				
	Tertiary	429	54				
Employment	Unemployed	208	26.2				
status							
	Employed	586	73.8				
Husband's	Primary	57	7.2				
level of							
education							
	Post-primary	737	92.8				
Prefers son	Yes	429	54				
	No	365	46				
Overall son	Son/Daughter	429/365	1.2				
preference							
index							
	nce Index (SPI) i						
preferred a son t	o daughter in the	e index pregna	ancy				

Table 2: determinants CHARACTERISTICS	GROUPS	PREFERRED SEX OF CHILD		SPI PER	χ2	p value
		SON	DAUGHTER	GROUP	~-	praiae
		n (%)	n (%)			
Age (years)						
<b>J V /</b>	< 30	284 (66.2)	194 (53.2)	1.5	14.017	< 0.001;
	≥ 30	145 (38.8)	171 (46.8)	0.8		
Parity						
,	Nullipara	160 (37.3)	72 (19.7)	2.2	29.437	< 0.001*
	Multipara	269 (62.7)	293 (80.3)	0.9		
Religion	·					
5	Christianity	368 (85.8)	295 (80.8)	1.2	3.540	0.170
	Islam	59 (13.8)	68 (18.6)	0.9		
	Traditional	2 (0.5)	2 (0.5)	1.0		
Ethnicity						
	Yoruba	384 (89.5)	337 (92.3)	1.1	2.953	0.228
	Igbo	32 (7.5)	23 (6.3)	1.4	1	
	Hausa	13 (3)	5 (1.4)	2.6	7	
Level of education	1					
	Primary	28 (6.5)	18 (4.9)	1.6	1.116	0.572
	Secondary	174 (40.6)	145 (39.7)	1.2		
	Tertiary	227 (52.9)	202 (55.3)	1.1		
Employment status	,					
	Unemployed	124 (28.9)	84 (23)	1.5	3.540	0.060
	Employed	305 (71.1)	281 (77)	1.1		
Husband's level of						
education						
	Primary	39 (9.1)	18 (4.9)	2.2	5.120	0.024*
	Post-primary	390 (90.9)	347 (95.1)	1.1		
Desired lifetime						
pregnancies						
	≤ 4	383 (89.3)	343 (94)	1.1	5.552	0.018*
	≥ 5	46 (10.7)	22 (6)	2.1		
Number of						
pregnancies for						
preferred sex						
	1	4 (0.9)	1 (0.3)	4.0	14.587	0.001*
	2 - 3	216 (50.3)	138 (37.8)	1.6		
	≥ 4	209 (48.7)	226 (61.9)	0.9	1	
Husband's						
preference						
	Male	210 (49)	97 (26.6)	2.2	49.199	< 0.001*
	Female	39 (9.1)	25 (6.8)	1.6	]	
	Either sex	180 (42)	243 (66.6)	0.7		
Problem with						
husband						
	Yes	64 (14.9)	18 (4.9)	3.6	21.239	< 0.001;
	No	365 (85.1)	347 (95.1)	1.1	7	

<b>Age (years)</b> < 30	Son			p value
	(0()	Daughter		
	n (%)	n (%)		
< 30				
	284	194 (53.2)	1.000	
	(66.2)			
≥ 30	145	171 (46.8)	1.251 (0.901 - 1.739)	0.181
	(33.8)			
Desired lifetime pregnancies				
≤ 4	383	343 (94)	1.000	
	(89.3)			
≥ 5	46 (10.7)	22 (6)	0.497 (0.272 - 0.909)	0.023*
Number of babies before				
preferred sex				
1	4 (0.9)	1 (0.3)	1.000	
2 - 3	216	138 (37.8)	3.368 (0.334 - 33.937)	0.303
	(50.3)			
≥ 4	209	226 (61.9)	5.534 (0.549 - 55.749)	0.147
	(48.7)			
Parity				
Nullipara	160	72 (19.7)	0.431 (0.302 - 0.616)	<0.001*
	(37.3)			
Multipara	269	293 (80.3)	1.000	
	(62.7)			
Husband's preference				
Vale	210 (49)	97 (26.6)	0.423 (0.300 - 0.595)	<0.001*
Female	39 (9.1)	25 (6.8)	0.394 (0.210 - 0.739)	0.004*
Either sex	180 (42)	243 (66.6)	1.000	
Husband's level of education				
Primary	39 (9.1)	18 (4.9)	0.458 (0.239 - 0.876)	0.018*
Post-primary	390	347 (95.1)	1.000	
	(90.9)			
Problem from husband				
Yes	64 (14.9)	18 (4.9)	2.741 (1.531 - 4.910)	0.001*
No	365 (85.1)	347 (95.1)	1.000	