

**Title: Descriptive and Injunctive Norms and Contraceptive Use among women in urban Nigeria**

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**Introduction**

The demographic transition observed in many parts of the world has largely bypassed Nigeria. Total fertility rates have remained consistently high for the past twenty years and the population, already the largest in Africa, is expected to double between 2010 and 2050, with much of that growth projected to occur in cities. Many attribute these high fertility rates to the low acceptance of contraceptive methods. According to the 2008 Nigeria Demographic and Health Survey, only 17 percent of currently married women of reproductive age living in urban areas and seven percent of women in rural areas of Nigeria currently use a modern contraceptive method.

Both descriptive and injunctive social norms have long been recognized as an influential factor in a woman's use of modern contraceptive methods throughout Sub-Saharan Africa. The importance of descriptive norms, defined as perceptions of how others behave, is reflected in the frequent observation that women are more likely to use a contraceptive method when they believe that many of their friends and neighbors use a contraceptive method themselves (Boulay & Valente, 1999; Valente et al., 1997; Behrman et al., 2002). Other studies have highlighted the role of injunctive norms, defined as one's perceptions of how others want you to behave, by noting that the disapproval of family planning among influential individuals limits women's contraceptive use (Rutenberg & Watkins, 1997; McQuillan, 2004).

This analysis will address two substantial gaps in the current understanding of the relationship between social norms and contraceptive use. First, most studies have examined the association between contraception and either descriptive or injunctive norms in isolation. However, we follow recent suggestions that descriptive and injunctive norms interact with each other to produce a joint effect on behavior (Rimal & Real, 2003).

Second, few studies have compared the relative effect on contraceptive use of injunctive norms spanning multiple referent groups. Women may identify consistent or conflicting social attitudes towards family planning within their household, the broader community, and among informal and formal leaders. The relative and combined effects of these varied sources on contraceptive use remains unclear.

To address these two gaps, the following analysis was organized around the following objectives:

1. To identify the association between descriptive and injunctive norms, measured at multiple levels, and use of a modern contraceptive method.
2. To assess the interaction between descriptive norms and injunctive norms at each level and the use of a modern contraceptive method.
3. To assess the interaction between descriptive norms and positive injunctive norms at multiple levels and the use of a modern contraceptive method.

**Methods**

Data for this analysis come from the 2011 Nigeria Urban Reproductive Health Initiative (NURHI) Baseline Survey. This survey used a multi-stage, cluster sample of 16,935 households in six Nigerian cities to collect a representative sample of 16,144 women between the ages of 15 and 49 years. Pregnant and infertile women were excluded from the analysis, resulting in an effective sample size for this analysis of 13,836.

A single outcome variable, measuring use of a modern contraceptive method, was used throughout this analysis. Overall, 26 percent of women in the sample reported that they or their partner were currently using a modern contraceptive method.

Descriptive norms were measured in two ways. First, each respondent was asked to list up to three women with whom they discuss personal matters and, for each woman listed, was asked if she currently uses a contraceptive method. Second, each respondent was asked to indicate how many close friends and relative currently use contraception. The two measures were combined into a single binary variable recording whether a majority of their social network currently uses contraception.

Injunctive norms were measured at the household, community, and leadership level. Household-level injunctive norms were measured as a binary variable recording whether the respondent believed that at a majority of the following four people supported their use of family planning: their mother, mother-in-law, sister-in-law, and father-in-law. Community-level injunctive norms were measured as a binary variable recording whether they believed that people in their community would praise, encourage, or talk favorably about them if they knew the respondent were using a contraceptive method. Leadership-level injunctive norms were measured as a binary variable recording whether they had heard a religious leader or government official speaking publicly in support of family planning.

The descriptive norm variable and the three injunctive norm variables were only slightly correlated with each other. Correlations among these four variables ranged from 0.05 for the correlation between descriptive norms and community injunctive norms to 0.19 for the correlation between community and household injunctive norms.

The data were analyzed in Stata version 11.2, using the svy suite of commands to incorporate probability weights and account for the design effect of the sampling approach. Tests of independence and logistic regression models were first used to assess the bivariate association between the descriptive and injunctive norms and modern contraceptive method use. A multivariate logistic regression model measured the main effects and interaction terms between descriptive norms and injunctive norms on contraceptive use, controlling for marital status, age, education, religion, wealth quintile, residence in the northern half of the country, and use of mass media channels. Finally, the average marginal effects presented in Figure 1 were calculated following a similar multivariate logistic regression model that included an interaction between descriptive norms and the number of positive injunctive norms (0-3).

## **Results**

Respondents with favorable descriptive norms and favorable injunctive norms were more likely to be currently using a modern contraceptive method. Perceptions of approval within one's household, community, and among community leaders were all independently associated with modern contraceptive method use. In addition, all three injunctive norms had similar interactions with perceived descriptive norms within one's social network.

Based on the similarity in associations among all three injunctive norm variables, a composite variable was created that recorded the number of positive injunctive norms for each respondent, ranging from 0 to 3. Figure 1 presents the average marginal effects calculated following a multivariate logistic regression. The interaction term was similar in direction to the interaction terms observed in Table 1.

As the Figure 1 shows, the association between injunctive norms and contraceptive use remains relatively constant among women with favorable perceptions of the descriptive norms. In contrast, increases in the favorability of injunctive norms are associated with increasing likelihood of contraceptive use. While there is a 30-percentage point difference at low injunctive norms in the levels of contraceptive use between low and high descriptive norms, there is virtually no difference in contraceptive use between low and high descriptive norms among women who perceive favorable injunctive norms in the household, community, and leadership.

<b>Table 1: Adjusted Odds Ratios (and 95% confidence intervals) of modern contraceptive use associations with descriptive and injunctive norms</b>			
		OR	95% CI
Descriptive Norms		<i>4.42</i>	(3.43-5.71)
Injunctive Norms			
	Household	<i>1.79</i>	(1.50-2.13)
	Community	<i>1.58</i>	(1.36-1.82)
	Leaders	<i>1.36</i>	(1.19-1.55)
Interactions			
	Descriptive Norms X Household	<i>0.71</i>	(0.49-1.00)
	Descriptive Norms X Community	<i>0.54</i>	(0.36-0.81)
	Descriptive Norms X Leaders	<i>0.68</i>	(.050-0.93)
In Union		<i>1.91</i>	(1.64-2.22)
Age		<i>1.03</i>	(1.02-1.04)
Muslim		<i>0.58</i>	(0.52-0.66)
Education			
	None	(ref)	
	Primary or Quranic	<i>1.04</i>	(0.87-1.25)
	Secondary	<i>1.29</i>	(1.10-1.53)
Wealth Quintile	1	(ref)	-
	2	<i>1.11</i>	(0.94-1.31)
	3	<i>1.35</i>	(1.09-1.68)
	4	<i>1.11</i>	(0.92-1.33)
	5	<i>1.00</i>	(0.81-1.23)
North		<i>0.48</i>	(0.41-0.57)
Watches TV		<i>1.54</i>	(1.31-1.81)
Listens to Radio		<i>1.15</i>	(1.02-1.29)
Reads Newspaper		<i>1.44</i>	(1.22-1.70)
italics indicates significance at the $p < 0.05$ level			

## Conclusions

These analyses extend our understanding of the relationship between social norms and contraceptive use in two ways. First, these analyses illustrate the relative roles played by descriptive and injunctive norms on contraceptive use. Women embedded within social networks with high levels of contraceptive use appear not to be influenced by perceptions of family planning approval in their household, community or among community leaders. In contrast, these injunctive norms appear to exert a strong influence on contraceptive use among women embedded in social networks in which descriptive norms are unfavorable to contraceptive use.

Since contraceptive use in Nigeria is low, most women do not have many contraceptive users among their relatives and friends. In the absence of strong injunctive norms favorable to family planning, these women will likely have a difficult time deviating from the descriptive norms in their network and initiating contraceptive use. Increasing the favorability of injunctive norms may provide a supportive and enabling environment that allows women to initiate contraceptive use despite the unfavorable descriptive norms in their network.

Second, these analyses illustrate the similar role played by multiple referent groups in the formation of these injunctive norms. Perceptions that family members, community members and community leaders support family planning were all equally and independently associated with contraceptive use. This highlights the wide range of options available for increasing the favorability of injunctive norms in urban Nigeria, including approaches to encourage religious leaders and government officials to speak publicly and positively about family planning, the use of entertainment-education media programs that model community support for family planning, and by facilitating community-based activities that foster positive dialogue about family planning within households.

It is worth noting that these analyses are based on cross-sectional data and that the direction of causality cannot be firmly established. Although we are assuming that the causal direction leads from the social norms to contraceptive use, we cannot ignore the possibility that contraceptive users are more likely to project contraceptive use onto their networks or perceive that others approve of their behavior or the possibility that a separate confounding variable is causing both contraceptive use and perceptions of favorable norms. However, it also seems likely that these alternative explanations, which assume a single influence on all four perceptions of social norms, would reflect a much high level of correlation among the four social norm variables.

