

Effects of a Social Network Diffusion Intervention on Key Family Planning Indicators, Unmet Need and Use of Modern Contraceptive Methods in Benin

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Background

Use of family planning is relatively low in Benin. Trends over more than a decade among women in union aged 15 to 49 show little change in prevalence of modern method use from 5% in 2001, to 6% in 2006, and 8% in 2011-2012 (Benin DHS, 2012). According to the most recent surveillance data, only 14% of sexually active women aged 15 to 49 use any method of contraception (Benin DHS, 2012). Family planning interventions have traditionally focused on individual level behavior change to increase use. During the 1990s, the importance of social interaction and social context began to be considered and social network analysis emerged as a theoretical and methodological approach in promoting family planning (Kohler et al 2000). Social network theory proposes that individuals are connected to others in nonrandom networks, and that social interaction through these networks influence individuals' decisions and behaviors. Based on social network theory, the Tékponon Jikuagou (TJ) project uses social mapping to identify and train influential community actors, who in turn, encourage community dialogue about fertility desires and family planning, which reduce social barriers that impede access to individuals seeking and using family planning services. This paper describes the evaluation of the effectiveness of TJ on key family planning outcomes including accessing family planning services, taking steps to access family planning, couple communication, use of a modern method, and unmet need for family planning.

The TJ intervention involved five major components. Community mapping identified groups and individuals who were perceived to be most influential in community health and wellbeing. These influential individuals and group leaders, dubbed "influentials", were oriented by TJ staff on unmet need for family planning and were asked to engage with others in their social groups and networks in discussions about unmet need. The intervention was designed to diffuse ideas and discussion about family planning through influential groups and from knowledgeable influential individuals talking with their constituencies. TJ materials provided influentials with resources for giving information and facilitating critical reflection in groups, and for outreach. TJ materials were designed to facilitate discussion about fertility, family planning, and gender norms related to family planning including story and activity cards that included trigger questions to provoke discussion and debate. In addition, influentials were provided infographs that displayed data on indicators such as women's intentions to use family planning methods or women's intention to talk with their spouse about family planning. Community-identified influential groups included village savings and loan groups, religious groups, and folkloric groups and influential individuals included farmers, merchants, as well as people in more formal positions. Group discussions were recorded and broadcasted on TJ radio shows, reaching women and men in the broader community. Health providers were encouraged to attend group meetings to help diffuse accurate information about family planning. To more closely link community members to health services, TJ groups and influentials participated in a family planning campaign using social diffusion concepts called "Each One Invites 3". TJ influentials talked with family members and peers about their experiences and advantages of using family planning methods and simultaneously distributed family planning invitation cards, which invited people to health centers to learn more about family planning methods and services. Service providers welcomed women and men who came with invitation cards to their service sites; many ended up choosing to begin using a family planning method.

Methods

TJ evaluation used a pre-post study design. A baseline survey was conducted before the intervention, followed by an 18 month intervention period and an endline survey. Exposure to different types of TJ messages in the endline survey including messages about the benefits of family planning, the importance of couple communication in making fertility and family planning decisions, and where to access information

and services were measured. Exposure to family planning messages through each component of the intervention (radio show, influentials, influential groups, TJ materials) was measured in the last 3 months of the intervention. Primary outcomes included use of a modern method of family planning and unmet need for family planning. Secondary outcomes included couple communication, access to family planning, and taking steps to obtain a family planning method.

Couffo Department was selected as the study area with 45 of 90 villages sampled. In 2011, a total of 10.4% of women in union aged 15 to 49 reported currently using a modern method of contraception, slightly higher than the national prevalence of 8% (Benin DHS, 2012).

A sample of 2,160 (1,080 women and 1,080 men) were recruited at baseline in February 2013 and the same number of women and men were recruited for endline data collection in December 2014. Only men and women aged 18 to 44, and current residents of the selected communities were included in the study sample. Households were selected using two stage sampling with the household as the sampling unit.

Ethical approval was granted in 2012 by the Institutional Review Board of Georgetown University and the Research Ethics Committee of the Institute of Applied Biomedical Science in Benin.

For the purpose of this paper, effects of the intervention are assessed by looking at the difference in key indicators between exposed and unexposed groups. Bivariate and multivariate tests of association using logistic regression with endline data were calculated to assess the effectiveness of the intervention on key family planning outcomes including access to family planning services, taking steps to obtain a method of family planning, couple communication, use of modern methods, and unmet need for family planning.

Results

Overall exposure to the TJ intervention was low. At endline, 15% of women and 12% of men said they heard TJ radio broadcasts at least once in the past 3 months. A total of 24% of women and 18% of men heard a community leader talk about family planning the past 3 months; but only 10% and 6% of women and men, respectively, had participated in a community group in the past 3 months.

Results of exposure to influentials on key family planning outcomes are presented in Table 1. Women and men who were exposed to these influentials had at least 2.5 times the odds of taking steps to access family planning services compared to those who were not exposed. Women who heard leaders talking about family planning were significantly more likely to feel they had the information needed to make a decision about using family planning and knew where to go to obtain a method than those who did not hear leaders talking about family planning. Both women and men who were exposed to leaders compared to those who were not exposed were significantly more likely to communicate with their partner about family planning.

	Female (n=1080)		Male (n=1080)	
	Exposed to influentials (AOR)	95%CI	Exposed to influentials (AOR)	95% CI
Taking steps in obtaining FP				
<i>Asked a health worker about information regarding FP method (past 12 months)</i>	2.8	2.16-3.66***	2.7	2.12-3.60***
<i>Visited a health facility to obtain a FP method</i>	2.8	2.09-3.67***	2.4	1.84-3.38***

<i>With spouse, visited a health facility to obtain a method (n=431, among women visited facilities; n =241 among men)</i>	1.4	0.83-2.50	0.5	0.31-1.06
Access				
<i>I have the information I need to make decision on FP use</i>	1.2	1.01-1.51*	0.9	0.79-1.23
<i>I know where to obtain a FP method</i>	1.3	1.06-1.66*	1.0	0.80-1.27
Couple communications				
<i>Discussed with spouse about having children (past 12 months)</i>	1.8	1.47-2.28***	1.8	1.52-2.35***
<i>Discussed with spouse about which method to use to prevent pregnancy</i>	2.7	2.25-3.44***	1.8	1.49-2.33***
<i>Discussed with spouse about how to obtain a FP method if wanted to use</i>	2.9	2.31-3.73***	1.9	1.57-2.46***
Currently use a FP method	1.4	1.03-1.80*	0.9	0.73-1.32
Actual met need for FP	1.4	1.06-1.85*	1.1	0.86-1.42
Notes: Adjusted for age, education, religion, # of living children, number of co-wives; *: sig at p< 0.05; **Sig at p<0.01, and ***: sig at p<0.001				

Table 2 shows results of exposure to any interpersonal communication (IPC) component of the intervention including group participation, interaction with influential and TJ materials. Women and men who were exposed to IPC components versus those who were not exposed had at least 2.5 the odds of taking steps to obtain family planning. TJ IPC components also had a significant and positive effect on couple communication, with exposed as compared to unexposed men almost twice as likely to report discussing fertility and family planning with their spouse. Women who were exposed to IPC components had 1.5 times the odds of unexposed women in using a modern method and having met need for family planning. There was no significant effect on these outcomes for men.

Table 2: Associations between exposure to influentials, influential groups, and TJ materials, and key family planning outcomes				
	Female (n=1080)		Male (n=1080)	
	Exposed to IPC (AOR)	95% CI	Exposed to IPC (AOR)	95% CI
Taking steps in obtaining FP				
<i>Asked a health worker about information regarding FP method (past 12 months)</i>	2.7	2.06-3.44***	3.0	2.34-3.86***
<i>Visited a health facility to obtain a FP method</i>	2.5	1.92-3.36***	2.7	2.09-3.71***
<i>With spouse, visited a health facility to obtain a method (n=431, among women visited facilities; N =241 among men)</i>	1.6	0.91-2.71	0.4	0.26-0.83**
Access				
<i>I have the information I need to make decision on FP use</i>	1.4	1.16-1.71	1.1	0.91-1.36

<i>I know where to obtain a FP method</i>	1.5	1.21-1.84***	1.2	0.99-1.52
Couple communications				
<i>Discussed with spouse about having children (past 12 months)</i>	1.7	1.41-2.14***	1.8	1.54-2.29***
<i>Discussed with spouse about which method to use to prevent pregnancy</i>	2.5	2.00-3.16***	1.7	1.46-2.19***
<i>Discussed with spouse about how to obtain a FP method if wanted to use</i>	2.7	2.17-3.46***	1.9	1.56-2.36***
Currently use a FP method	1.5	1.12-1.90**	1.0	0.77-1.33
Actual met need for FP	1.5	1.15-1.93**	1.1	0.91-1.43
Notes: Adjusted for age, education, religion, # of living children, number of co-wives; *: sig at p< 0.05; **Sig at p<0.01, and ***: sig at p<0.001				

Conclusion

Hearing TJ messages about family planning from individuals and groups identified as socially-influential by communities and using TJ IPC materials had significant and positive effects on family planning outcomes. Exposure to the combined components had more significant effects than exposure to influentials alone. Using socially-influential groups and individuals to diffuse new ideas can have a positive effect on proximal determinants of family planning use such as couple communication and taking steps to access family planning. Capitalizing on social interaction with influential individuals and community groups can have positive, significant effects on use of modern methods and unmet need for family planning in a context where there is low family planning use. These results underscore the importance of engaging in the broader social context in changing norms related to family planning, particularly couple communication, which is a predictor of family planning use.