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Bringing Patients' Social Context into the Exam Room: an Investigation of the Discussion of Social Influence during Contraceptive Counseling

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INTRODUCTION AND BACKGROUND

In the United States, unintended pregnancy is a major public health concern, accounting for 50% of all pregnancies (Finer & Zolna, 2011). Unintended pregnancy leads to worse health outcomes than intended pregnancies for women and their children (Cheng, Schwarz, Douglas, & Horon, 2009; Kost, Landry, & Darroch, 1998). For women at risk of unintended pregnancy, the lack of any or consistent contraceptive use as well as improper adherence to methods all contribute to the high rate of unintended pregnancy (Kost, Singh, Vaughan, Trussell, & Bankole, 2008; W. D. Mosher & Jones, 2010; Vaughan, Trussell, Kost, Singh, & Jones, 2008). There are many complex factors that have been studied as influences on women's contraceptive use, including knowledge about contraception, pregnancy intentions,

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and concerns about side effects and safety (Carter, Bergdall, Henry-Moss, Hatfield-Timajchy, & Hock-Long, 2012; Cheung & Free, 2005; Crosby, 2002; Frost & Darroch, 2008; Gilliam, Warden, Goldstein, & Tapia, 2004; Jaccard & Dodge, 2003; Ryan, Franzetta, & Manlove, 2007; Schunmann, 2006; Zapata, Steenland, Brahmi, Marchbanks, & Curtis, 2012). An additional factor that has begun to receive attention is the role of women's social context on contraceptive behavior (Ali, Amialchuk, & Dwyer, 2011; Blackstock, Mba-Jonas, & Sacajiu, 2010; Carter et al., 2012; Gayen & Raeside, 2010; Valente, Watkins, Jato, van der Straten, & Tsitsol, 1997; Westoff & Koffman, 2011). Social context includes the members of the woman's social network (friends, family, partners), as well as her exposure to various media.

Quantitative studies exploring how contraceptive behaviors are transmitted throughout social networks have largely been conducted in the developing world, (Gayen & Raeside, 2010; Kohler, Behrman, & Watkins, 2001; Valente et al., 1997) and have found that women's contraceptive use was associated with their perceptions of their friends' contraceptive use, (Valente et al., 1997) and that the perception of network members' attitude towards family planning was found to be positively associated with contraceptive use (Gayen & Raeside, 2010). Only one quantitative study of social influence has been conducted in the United States, which found that, among adolescents, having a higher proportion of classmates using contraception increased the likelihood of an individual using contraception (Ali et al., 2011). Additionally, investigation of the effect of media-such as television - on contraceptive use has largely been conducted in the developing world, finding that increased TV exposure was found to be associated with increased contraceptive use (Westoff & Koffman, 2011). In the United States, research on media influence has focused on social media such as Facebook. One study found that women who had access to a Facebook page with contraceptive information had increased contraceptive knowledge as compared to women who did not (Kofinas et al., 2014).

Several qualitative studies conducted in the United States over the past few years have confirmed that social context is an important factor to consider in women's contraceptive use. Two of these studies found that women report that their social networks are often their dominant and most trusted source of information about contraception (Blackstock et al., 2010; Carter et al., 2012). Another qualitative study found that women indicate that social networks affect their decision-making and that they had specifically utilized or rejected a method based on their social network's opinions and experiences (Yee & Simon, 2010). These findings are consistent with research done on women's decision making about unplanned pregnancy (Faria, Barrett, & Goodman, 1985), as well as in other areas of health – such as obesity, smoking and breast cancer screening - which have shown that social networks influence peoples' health decisions (Allen, Sorensen, Stoddard, Peterson, & Colditz, 1999; Allen, Stoddard, & Sorensen, 2008; N. Christakis, 2007; 2008; Keating, O'Malley, Murabito, Smith, & Christakis, 2011).

The growing evidence of the influence of social context on women's contraceptive behavior suggests this may be a contextual factor that family planning providers should address during counseling. The value of this approach is supported by previous research in contraceptive counseling. While the quality of counseling has been found to have positive

effects on women's contraceptive use; (Forrest & Frost, 1996; Harper, Brown, Foster-Rosales, & Raine, 2010; Rosenberg, Waugh, & Burnhill, 1998), interventions to improve contraceptive counseling have largely been unsuccessful (Halpern, Lopez, Grimes, & Gallo, 2011; Moos, 2003). These interventions have often relied on counseling frameworks or theoretical models - such as motivational interviewing, the health belief model and the transtheoretical model - which largely fail to include social influences as a key point of discussion (Kirby et al., 2010; Peipert et al., 2008; Petersen et al., 2004). Of the few interventions that have shown success, two focused on eliciting patients' specific preferences and beliefs – factors influenced by a woman's social context - in order to provide tailored counseling (Garbers, Meserve, Kottke, Hatcher, & Chiasson, 2012; Nobili, Piergrossi, Brusati, & Moja, 2007). The growing attention to the concept of patient-centeredness, including the importance of acknowledging the patient perspective during clinical care, further supports the importance of understanding a patient's social context as a way of relating to the patient as a whole person (Roter, 2000).

To begin to elucidate the ways in which social influence emerges during family planning counseling and how it is currently being addressed, this study utilizes a unique dataset of recorded contraceptive counseling visits and a mixed-methods analysis. Quantitative analysis allows us to examine potential independent predictors of discussion of social influence arising in a contraceptive counseling visit to determine if this phenomenon is more pervasive within certain subgroups. The qualitative analysis enables us to explore the content and process of the discussion of social influence to better identify strategies of approaching this topic in contraceptive counseling. With this analysis, we hope to develop a better understanding of the discussion of women's social context as it arises during these visits with the goal of informing future counseling interventions designed to address this influence on contraceptive behavior.

METHODS

Study Population and Procedures

For the parent study, which was designed to look at disparities in family planning counseling and predictors of contraceptive continuation, 349 women of reproductive age were recruited at six different clinics in the San Francisco Bay Area. Women were eligible if they were interested in discussing birth control during that day's visit. In addition, participants needed to speak English and self-identify as African-American, Latina or white. The race/ethnicity specifications were due to the parent study's interest in disparities. After obtaining written informed consent, patients completed a survey regarding their demographic information and basic reproductive history. Visits were then audio recorded and later transcribed in a HIPAA-compliant manner. Seven patients were dropped from this analysis as a result of missing audio recordings due to equipment malfunctioning. Providers were nurse practitioners (NPs), physician assistants (PAs), certified nurse midwives (CNMs) or MD/DOs, and were consented for participation in this study with the understanding that we were trying to improve the understanding of women's experiences with contraception. Providers completed a one-time survey providing demographic information and were instructed to

provide usual care. The UCSF Committee on Human Research provided human subjects approval and patient recruitment occurred between August, 2009 and January, 2012.

Quantitative

Measures: Primary patient-level predictor variables of interest were age, race/ethnicity, highest level of education obtained by a parent when the participant was 13 (as a measure of socioeconomic status) and parity, as these have been previously shown to be associated with women's contraceptive use (Dehlendorf et al., 2011; Finer & Henshaw, 2006; W. D. Mosher & Jones, 2010). Other patient-level variables considered as potential covariates were whether the participant reported having had an abortion, number of prescription contraceptive methods used in the past, and income as a percent of the federal poverty level (FPL). Provider-level variables were age, race/ethnicity, whether the provider was an MD/DO or NP/PA/CNM, and clinic site.

The first outcome variable was whether or not there was any mention of social influence during the visit. For identification of whether social influence occurred, a comprehensive coding of transcripts was conducted for which coders received intensive training and had to have an agreement of at least 90% of items for five transcripts prior to conducting independent coding. Team meetings were held to discuss ambiguities. Social influence was defined as any mention by the patient or provider of influence from any member of the patient's social network (a friend, family member, coworker or partner) or the media (online, TV or radio) with regards to contraception. Media was included in the analysis of social influence because it is a non-clinical source of patient information with documented effect on contraceptive use (Westoff & Koffman, 2011). Visits were also coded regarding whether mention of social influence had been patient or provider-initiated. It was possible for one visit to have both patient and provider-initiated mentions of social influence at different points in the visit if the conversations were about completely separate topics. For example, a patient could initiate a discussion saying that her sister used the ring and liked it. Later, the provider could initiate a separate discussion if she asked the patient if she had any friends using the IUD. In coding the presence of social influence, information about a method that had come from a previous medical provider was explicitly excluded. For example, a patient saying she heard something about a method would not count unless it became clear what she heard came from her social context. Following identification of all visits with social influence using this coding schema, the first author then read through all transcripts to confirm the identified mentions of social influence, as well as to confirm who had initiated such conversations.

Data Analysis: We performed bivariate and multivariate logistic regression to explore patient and provider characteristics associated with social influence arising during contraceptive counseling visits. Associations were considered significant at $P < .05$. For the multivariate model, we pre-specified patient age, race, parents' level of education, and parity as. Using forward selection, we then added the additional covariates one at a time, and kept any variables in the model if they were associated with the outcome or modified the relationship between the other predictors and the outcome. In a similar manner, we constructed two additional models to analyze the outcome based on whether the visit had

patient or provider-initiated discussions of social influence. Due to small cell size, we used Fischer Exact tests to determine the p values for the provider-initiated analysis. Because we recruited providers at six clinics and recruited between 1-16 patients per provider, we tested a mixed effects model to determine if adjusting for clustering by clinic and/or provider altered the results. Statistical analysis was conducted using Stata 12.1 (StataCorp, College Station, TX).

Qualitative

Data Analysis: Using NVivo 10 software, we conducted a template analysis, as described by King (1998) of the 142 contraceptive counseling visits in which social influence arose. The template analysis involved construction of a coding template that represented themes identified in the data through careful reading and rereading of the text. In order to create an initial coding template, 15 transcripts were coded using a priori content codes that were predetermined to be of importance to the discussion of social influence including method discussed, quality of social influence, source of social influence, and subject matter. The quality of the social influence was considered positive if the influence was likely to endorse the specific method, while a negative influence was likely to deter use of a specific method. A neutral influence was one that had neither a positive or negative component, regardless of the patient's personal opinion (e.g., "Somebody was talking to me about the Nuvaring, but I'm scared of it"). The source of social influence was coded and included an unspecified category for instances when the source wasn't specified (e.g., "someone told me the IUD can get lost.") Additional thematic codes were added to the template as they emerged from the transcripts, including how providers engaged around the social influence. After independently developing codes for the initial template based on the first 15 transcripts, KL and CD met to discuss and reorganize themes into a finalized initial template before applying it to another 50 transcripts. To ensure consistency in coding, CD also coded 10 of these transcripts independently. A detailed codebook was developed that included examples and clear descriptions of each code. Once the initial template was finalized, KL coded another 50 transcripts to further develop the template until it was a comprehensive representation of the themes identified in the data. Throughout this process of adapting the initial template, researchers met weekly to discuss in detail new themes that emerged and to modify the template as indicated. The finalized template was applied to the remaining transcripts and used to recode initial transcripts.

RESULTS

Quantitative Results

The study sample was well-distributed by age and race/ethnicity, and the majority had never had a child (Table 1). There were 38 providers of which the majority were NPs, CNMs, or PAs (71%) and white (68%). All of the providers but one were female. Of the 342 recorded patient visits, 42% had at least one mention of social influence, with mention of social influence initiated by the patient in 75% of these visits, by the provider in 10% of these visits, and by both in 15% of these visits.

Bivariate logistic regression was used to determine the association of patient and provider demographics with any mention of social influence (Table 1). Patient age was found to be associated with mention of social influence, with younger patients (<20) being more likely to have social influence mentioned during a counseling visit than older patients, with decreasing likelihood as participant age increased.

The association between age and social influence was unchanged by multivariate logistic regression or a mixed effects model which accounted for clustering by clinic and provider. The other variables that were associated with mention of social influence in bivariate analysis were parity and provider race, but they did not remain significant in multivariate analyses.

We then conducted two identical analyses with any patient-initiated mention of social influence and any provider-initiated mention of social influence as two separate outcomes (Table 2). Again, the only variable associated with either patient or provider-initiated mention of social influence was age. Those greater than 30 years of age were less likely to have patient-initiated mention of social influence than those less than 20. For the outcome of having mention of social influence initiated by a provider, it was less likely to occur in visits with those between the ages of 25 and 29 and older than 35 than those younger than 20, with a similar trend for those between the ages of 30 and 34. Multivariate regression analysis using our pre-specified variables of interest and forward selection and adjustment for clustering did not change the bivariate results.

Qualitative Results

Qualitatively, our overarching themes related to the context in which patients and providers initiated the topic of social influence, the content of the social influence, and providers' engagement around the social influence.

Initiation

Patient initiation: When patients initiated the topic of social influence, the nature of their comments fell along a spectrum of uncertain to certain about their contraceptive preferences. Participants on the uncertain side of the spectrum, which were the majority, used initiation of discussion of social influence as a way to express being either conflicted or undecided about their method choice. The conflicted patient was often interested in a method but had a concern generated by a social influence that they wanted to have addressed. For example, one patient who had previously used the pill and was considering restarting it this visit, told the provider:

Yeah, something that my mom always made me feel worried about--even though she has no clue. She was never on the pill. She felt like, 'Oh, it probably messes with your body.' She always thought since my aunt had a couple of miscarriages and she was always on the pill she was always like, 'Oh, maybe it had something to do with the pill.'

In these instances patients were struggling with picking the best method for themselves given competing information about the pros and cons of methods.

Undecided patients, while not particularly conflicted or concerned about the information obtained from their social influences, were eager for provider input and often lacked substantial knowledge about birth control. For example, one patient stated:

So I've been talking to friends and family, they give me advice, but I really have no idea. So that's why I'm here.

On the other end of the spectrum, patients initiated the topic of social influence with a sense of certainty, either explicitly relying on or discounting information provided by social context to support their method preferences. This took the form of referencing network members' experiences with particular methods to clearly support their disinterest or interest in a method. One patient declared her interest in the pill in the following way:

My mom was talking to me about how -- you know, with her birth control, it regulated her period and made her acne go away. I was like, 'That sounds great.'

Provider initiation: Providers initiated discussion of social influence in two main ways: 1) inquiring about information or interest a patient might have based on her social network, and 2) addressing the negative media coverage of a specific pill brand (Yaz).

In general, providers inquired about a patient's prior information or interest in a method with close-ended questions. For example, providers asked questions such as the following:

Is there something that a friend is using that you wanted to check out?

Okay. Do you have friends that have been on birth control; the pills?

As a result of these close-ended questions, the discussion of social influence was often cut short, as there was not much space for patients to share their experiences outside of directly answering the providers' question. Providers usually asked specifically about social influence from friends and rarely asked about influence from sisters or other family members.

Lastly, several instances of provider-initiated discussion of social influence were specifically designed to address information women may have received from the media. Most commonly these were directed at the media controversy about Yaz, with the goal of proactively addressing potential patient concerns. One provider told a patient who had already decided she would like to start Yaz:

The thing that you might be hearing about Yaz is they have all those ads on the radio and TV about that it can cause blood clots and to call the lawyers, and blah, blah, blah. They've looked at it. One study showed that it might have a slightly increased risk. Another study showed that it didn't. Okay? And I haven't had anybody had a blood clot with it, okay?

In addition, in two cases providers also mentioned the IUD in context of seeing commercials about them.

Content—Each instance of discussion of social influence was coded based on the following content themes: the method mentioned, the quality of social influence (i.e.,

positive, negative or neutral), the source of the social influence (e.g., friend), and the subject matter of the social influence (e.g., side effects). The numeric summary of our findings for method, quality and source of influence are presented in Table 3.

Method and quality: The IUD was the method that came up most frequently, mentioned in 59 visits with social influence. Every method had more negative than positive social influence attributed to it, with the exception of the levonorgestrel IUD, which had equal numbers of visits with positive and negative influence. While only nine visits contained a social influence about the patch, it is notable that none of the influences were positive. Negative influences tended to be more detailed in nature (e.g., specific side effects of concern) than positive or neutral influences. For example, a provider asked a patient why she preferred the levonorgestrel IUD to the copper one, and the patient replied:

Um, because I heard the um, Mirena was good? And, um, the other one you might have more bleeding and more cramping and heavier periods and I already have, like, heavy, bad periods so I am not trying to do that.

Source: Overall, friends were the most common source of social influence, followed by the media and then sisters, mothers, other family and partners. The majority of influence about the pill and patch came from the media, while the majority of influence about the ring, injection, IUDs and implant came from friends. Partner influence came up in 6 visits and was usually related to whether the partner had a preference for (IUD, injection, pill) or against (condoms) a method, as opposed to indicating that the partner had provided information about a method. Partners' method preference most often agreed with the patients' preference. Only one patient mentioned that her partner wanted her to stay on a method she didn't like.

Subject matter: Method side effects and adverse events, whether medically confirmed or not, were the most common subject matter of social influence coming up in 58 and 34 visits, respectively. While the vast majority of mentioned side effects were negative, certain positive side effects were mentioned, including lighter, regulated periods, decreased acne, and protection against ovarian cancer. Adverse events included concern about blood clots (on combined hormonal methods), the method "killing people", future infertility, complications of the IUD (ectopic pregnancy, uterine perforation), and recurrent vaginal infections. For example, one patient said:

I mean, I'm sort of nervous about, like I am interested in the pill, one of the pills or something. But I'm a little nervous about it because, granted I know this isn't common, but my mom who's a nurse was telling me about women who've come in with serious blood clots because of it.

Other than side effects and adverse events, general social influence - such as simply knowing a network member who used a particular method -was the most common subject matter, coming up in 32 visits. Other topics that came up less frequently were method discovery (23 visits), and fear of unwanted pregnancy based on experiences of network members with specific methods (11 visits). Of note, eight of these were about someone

getting pregnant on the IUD. While much less prevalent, the convenience of a method, and difficulty with method compliance were also mentioned.

Provider Engagement—In analyzing provider engagement during discussions of social influence, we considered both the degree to which providers engaged with the subject matter (e.g., the specific side effect or adverse event) and the engagement around the source of the social influence itself (e.g., inquiring more about the patient's sister's experience on a method).

Content engagement: Overall, providers were much more likely to engage with the subject matter of the social influence than around the source of the social influence. However, the majority of subject matter engagement was characterized by limited engagement, with the provider acknowledging the content shared by the patient and giving general information in response. Less commonly, the provider either did not address the content at all or addressed it extensively by giving detailed and tailored information (Table 4).

Social influence engagement: Provider-initiated engagement was by definition about the social influence itself in that providers asked, for example “what have you heard from your friends?” Despite this, we found that providers often did not follow-up after their initial inquiry and thus did not have a substantive conversation with the patient about social influences.

In the vast majority of patient-initiated mentions of social influence, there was no acknowledgement by the provider of the social influence at all. In the example of no engagement around social influence in Table 4, the provider did not attempt to further understand the patient's friends' experiences with the implant in order to elucidate the patient's thoughts and possible concerns about the method. Limited engagement – in which the provider simply acknowledged the social influence without asking for more information, and extensive engagement - if the provider explored the social influence in more depth – were less common (Table 4).

Addressing negative social influence: As negative influence greatly outweighed positive influence, we considered the ways providers responded to negative influence specifically. The most common response was to shy away from the particular method in question without challenging the negative influence. After one patient told a compelling story about her aunt being born with an IUD in her leg, the provider responded:

Okay. So, you've got some interesting experiences to go on. So, what about the Depo?

In the instances when providers tried to address the negative influence, they used three main techniques: 1) stating that “everyone is different” 2) relying on what “most women” experience and, less commonly, 3) providing another explanation for the negative social influence. Providers used “everyone is different” to suggest that the patient may have a different experience from her social network members. For example, after one woman said her sister was a “raving lunatic” on the pill, the provider replied:

“It's different for everyone. It's different with everyone and the type of -- and it's just trial and error. You have to try it and see if it works for you.

Invoking what “most women experience”, one provider responded to a patient who had heard about IUDs migrating out of the uterus:

We've all heard of that experience and know that dramatic situations stand out. I put an IUD in every week and 99% of people are totally fine.

With respect to explaining a negative social influence in a different way, providers often did this in response to the media press about Yaz causing blood clots by explaining to patients that there were lawyers driving the lawsuits for financial gain, thus dismissing an actual increased risk of blood clot associated with the method.

DISCUSSION

The results from this study indicate that social influences are a common point of discussion during contraceptive counseling in clinic visits, with these discussions most commonly initiated by patients. Discussion of social influence was found to be particularly common among younger patients. The content of social influence focused on side effects and adverse events, with the reported sources of this influence predominantly being patients' friends and the media, with little input from partners. While providers' engagement with social influence was most often limited, in general, providers were more likely to engage around the subject matter of the information received than to engage around the source of the information.

Overall, the frequency with which social influence was discussed during counseling visits supports the importance of these non-clinical sources of information on women's contraceptive decision making. However, the fact that patients initiated the discussion in the vast majority of cases suggests that providers may not recognize the relevance of these influences or may not know how to engage with them. This is particularly important given that our results indicate that women often report negative information about contraceptive methods being disseminated through their social networks, and that this information often causes women to either discount a method entirely or to express uncertainty about it. Increasing providers' ability to elicit and engage patients in discussing the influence of their social context could expand their ability to understand women's contraceptive preferences and to provide appropriate counseling to address misinformation or misconceptions about women's options. We note that it is also possible that women are experiencing more positive influences from their network, but not bringing it up during counseling visits. If this were the case, it would further support the benefit of having providers directly inquire about social influence, as in this way, they would be aware of, and able to engage with, positive social influence.

While a necessary first step towards accomplishing this engagement is to elicit the information women have received from non-clinical sources, providers must also effectively engage once this information is elicited. Our analysis revealed missed opportunities for patient education, as there was often limited or no engagement with the content of information received through social communication. Further, the lack of engagement around

the social influence itself often presented a missed opportunity for exploration into what the patient had heard and how this influenced her preferences.

The increased frequency of discussion of social influence in visits with younger patients was mostly due to differences in patient-initiated discussions, although providers were most likely to initiate discussion of social influence with patients in their teens as well. The age differences in patient-initiated discussions may reflect the fact that these women have had less interaction with the health care system around reproductive health and less personal experience with contraception, resulting in them relying more heavily on social networks and the media for their information. Alternatively, this may result from different patterns of social communication, with younger women more likely to have close personal friends with whom they discuss contraception and/or greater exposure to media. Regardless, the tendency for these influences to be mentioned by younger patients suggests that engagement with these patients around social influences may be particularly valuable. While the reasons for the greater incidence of provider-initiated discussion in visits with younger women is unknown, it is possible that providers have learned about the relevance of social influence to younger women through their previous interactions with patients in this age group, and as a result are more proactive in inquiring about this influence with these individuals than with older patients.

As one of the least utilized methods of contraception in the United States (Jones, Mosher, & Daniels, 2012), it was surprising that the IUD was the most frequently mentioned method within the context of social influence. This may in part be due to the notoriety that the IUD received during the 70s, (Boonstra et al., 2000) which is consistent with the fact that this was the method about which influence from mothers was most likely to be mentioned. However, there were also many IUD mentions that were based in patients' current social networks' experiences, suggesting that this method, despite its relatively low rate of use, is a frequent subject of conversation. The fact that the IUD has been gaining traction in the United States (Finer, Jerman, & Kavanaugh, 2012), is consistent with the fact that it was the method with the greatest amount of positive influences.

Limitations of this study include that it was conducted in the San Francisco Bay Area, which may limit the generalizability of findings to other settings with different patient populations. In addition, as we directly observed clinicians through audio recordings, it is possible that our study was biased by a Hawthorne effect, in which providers, although instructed to provide usual care, may have altered their counseling to be more engaged than normal

IMPLICATIONS FOR PRACTICE

This study supports the importance of social influence in women's contraceptive decision making and suggests the need for providers to discuss it more intentionally and thoroughly with patients, especially younger patients. Our research highlighted how infrequently providers engaged patients in discussions of social influences, underscoring the need to heighten provider awareness about the influential role social influences assume in contraceptive uptake and use. We recommend that providers initiate the discussion of social influence with their patients by asking open-ended questions such as “what have you heard

about methods from your friends and family?” By attending to patients’ specific concerns and previously established beliefs about specific methods, providers can tailor counseling to ensure it is contextually relevant, including addressing misconceptions and reinforcing accurate information. Many of the women in our study expressed interest in providers’ input on the information received from social networks during their visits, indicating the acceptability of this engagement. Addressing these influences in an efficient and respectful manner is a challenging task to do well, and further research is needed to elucidate the most effective strategies to address these topics so that family planning providers can receive training to optimize their counseling in this area.

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Table 1

Participant characteristics and association of demographics with mention of social influence during visit

	Total n (%)	Visits with mention of social influence n (%)	Visits without mention of social influence n (%)	Unadjusted logistic regression p value
Patient demographics	342 (100)	142 (42)	200 (58)	
Age				
<20 (reference)	41 (12)	25 (61)	16 (39)	ref
20-24	115 (34)	54 (47)	61 (53)	.13
25-29	88 (26)	35 (40)	53 (60)	.03
30-34	41 (12)	12 (29)	29 (71)	.005
35+	57 (17)	16 (28)	41 (72)	.001
Race/ethnicity				
White	158 (46)	62 (39)	96 (61)	ref
African-American	98 (29)	45 (46)	53 (54)	.29
Latina	86 (25)	35 (41)	51 (59)	
Parent's education *				
High school or less	126 (37)	54 (43)	72 (57)	ref
Some college	87 (26)	38 (44)	49 (56)	.91
College or more	128 (38)	50 (39)	78 (61)	.54
Parity				
0	230 (67)	104 (45)	126 (55)	ref
1+	112 (33)	38 (34)	74 (66)	.05
Past abortions				
0	230 (67)	99 (43)	131 (57)	ref
1+	112 (33)	43 (38)	69 (62)	.41
No. past methods used				
0	39 (12)	21 (54)	18 (46)	ref
1	158 (46)	63 (40)	95 (60)	.12
2	90 (26)	35 (39)	55 (61)	.12
3+	55 (16)	23 (42)	32 (58)	.25
Federal poverty level				
<100%	145 (42)	64 (44)	81 (56)	ref
100-200%	71 (21)	28 (39)	43 (61)	.51
201%+	126 (37)	50 (40)	76 (60)	.46
Provider demographics **				
Age				
<46	127 (37)	46 (36)	81 (64)	ref
46-55	124 (36)	59 (48)	65 (52)	.07
56+	91 (27)	37 (41)	54 (59)	.51
Race				
White	244 (71)	110 (45)	134 (55)	ref

	Total n (%)	Visits with mention of social influence n (%)	Visits without mention of social influence n (%)	Unadjusted logistic regression p value
Patient demographics	342 (100)	142 (42)	200 (58)	
Other	98 (29)	32 (33)	66 (67)	.04
Degree				
NP, CNM, PA	260 (76)	113 (43)	147 (57)	ref
MD/DO	82 (24)	29 (35)	53 (65)	.20

* One patient refused to answer parent education question so adds to 341.

** Provider demographics reflect traits of 38 providers across the 342 visits.

Table 2

Association of patient age with patient-initiated or provider-initiated mention of social influence

	Total (n)	Patient initiated n (%)	p value	Provider initiated n (%)	p value
Total *	342	128 (37)		35 (10)	
Patient age					
<20	41	22 (54)	ref	9 (22)	ref
20-24	115	48 (42)	.19	16 (14)	.23
25-29	88	34 (39)	.11	2 (02)	.002
30-34	41	10 (24)	.008	4 (10)	.14
35+	57	14 (25)	.004	4 (07)	.04

* The total for patient and provider-initiated do not add to 142 (the total with discussion of social influence) because one visit could have both patient and provider-initiated discussions.

Table 3

Number of visits with content of social influence (quality and source) for each method

	Total (n)	Content Quality (n)	Positive	Negative	Neutral	Source (n)	Friend	Media	Sister	Mother	Other family	Partner
# of visits*	142	57	95	39	68	51	20	15	10	06	06	06
Pill	45	16	31	08	16	25	05	04	02	02	02	02
Ring	34	12	15	09	15	08	06	00	00	00	01	01
Injection	30	07	21	05	14	02	04	03	01	01	02	02
Patch	9	00	07	02	02	04	01	00	00	00	00	00
IUD	59	23	38	12	11	04	05	06	04	00	00	00
Levonorgestrel	12	06	06	02	07	02	01	00	01	00	00	00
Copper	15	07	10	03	06	04	02	01	00	01	00	01
Implantable	8	03	04	02	03	02	00	00	01	00	00	00
Condoms	1	00	01	00	00	00	00	00	00	00	00	01
Sterilization	4	00	02	02	01	01	00	01	01	01	01	00

* Rows might not add to total column because each visit could have more than one social influence quality or source. It is also possible for the source to be unspecified.

Table 4

Examples of provider engagement with both the content and the social influence

	Engagement with content	Engagement with social influence
Extensive	<p>One 17 year-old patient, concerned about breakthrough bleeding on the oral contraceptive pill said, “Well, that happened to one of my friends. It [the pill] wasn't strong enough. So, she switched.” To which the provider replied, “Yeah. Birth control pills are always a little bit—for early—people that are just starting them, it's a little bit of a random choice. We shoot for what we think is safe and a good pill...That being said, no one pill is right for everybody for sure...And they have different – every single one of them has estrogen and progesterone in it, but they have different estrogen and progesterone. And the progesterone is often the thing causing the problem. It sounds like that in this case. So, what we'll do is switch you to one that has less breakthrough bleeding and a different progesterone and hope that we can find one that will be a little bit more suited to you.”</p>	<p>One 25 year-old patient, after explaining that she doesn't want to use the injection due to her past experience with the method, said, “And then my sister has like the IUD thing, and, I don't know like if you have to check for that monthly, I don't know. [laugh]” To which the provider replied, “Well, you know, we do sort of recommend that people check and see if they can feel the string on a regular basis. Most of the time that -- the time that people are going to lose the IUDs very soon after it gets put in. If it's stayed in for a couple of months, it usually stays put pretty well. Has she been -- has your sister been happy with that method?”</p>
Limited	<p>One 19 year-old patient said, “Yeah, the shot, it's just like, it really messed with my sister—she got, she gained a lot of weight.” To which the provider replied, “Some women gain weight, but that doesn't necessarily mean that it's going to happen.”</p>	<p>One 22 year-old patient said, “So, my friend told me about the Depo shot. And she takes it or whatever. She hasn't really had many side effects, but I know in my family like my cousins and my aunties, they've had side effects from the Depo shot. It makes them gain weight. My cousin, she lost some of her hair or whatever. So I don't know, maybe that was just her body and how she reacts.” To which the provider replied, “Yeah. So everybody's different.”</p>
None	<p>One 17 year-old patient said, “Yeah, and actually, I had got it [the IUD] because it -- my daughter will be two in September. So, it did last a year, but my mom also had the IUD and got pregnant with it. And so, I just wanted to -- and plus, the IUD, it pokes around. So, I just want to probably change to the pill.” To which the provider replied, “You want to change to the pill?” and never returned to address the patient's concern about the efficacy of the IUD based on her mother's experience.</p>	<p>One 26 year-old patient responded to a description of the contraceptive implant, “I'm familiar with it. A few of my friends have one.” To which the provider continued, “Oh, all right. All right. So you know, it's just a little thing that's just -- about that big.”</p>