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Short report

Online and in-person health-seeking for infertility

Kathleen S. Slauson-Blevins [a,*], Julia McQuillan [b], Arthur L. Greil [c]

[a] Old Dominion University, Department of Sociology and Criminal Justice, 6032 Batten Arts and Letters, Norfolk, VA 23529, USA
[b] University of Nebraska – Lincoln, Department of Sociology, 706 Oldfather Hall, Lincoln, NE 68588, USA
[c] Alfred University, Social Sciences Department, Olin Building 208B, Alfred, NY 14802, USA

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ABSTRACT

Using data from Wave 1 (2004–2006) of the National Survey of Fertility Barriers (NSFB), a national probability sample of women ages 25–45, we examine online information-seeking among ever-infertile women. Of the 1352 women who met criteria for infertility, 459 (34%) neither talked to a doctor nor went online for information, 9% went online only for information, 32% talked to a doctor but did not go online, and 25% did both. Guided by Chrisman's Health-Seeking Model and previous research on Internet use to obtain health information, we employ multinomial logistic regression to compare these four groups of ever-infertile women. Findings generally support Chrisman's model. Infertile women tend to seek information online as a complement to, rather than as a substitute for, in-person health-seeking. Greater faith in the ability of medical science to treat infertility and greater perceived stigma were associated with higher odds of using the Internet to obtain information about infertility. In general, women who perceived the symptoms of infertility as more salient had higher odds of using both online and in-person or only in-person health-seeking compared to online health-seeking. Women with greater resources had higher odds of using online sources of information. Strong network encouragement to seek treatment was associated with higher odds of in-person health-seeking and combining in-person and online health-seeking compared to only going online or doing nothing.

As of 2012, 81% of Internet users have searched for health information online (Fox, 2013), with the majority looking for information about a specific condition or disease (Fox & Fallows, 2003). Seeking health information online is an important area to explore because it is becoming more common, because physicians have expressed concern over the quality of online health information (Silberg, Lundberg, & Musacchio, 1997), and because online information-seeking may be changing health-seeking processes. To date it is unclear whether going online for health information is complementing, altering, or replacing the process of in-person health-seeking.

Infertility, defined as twelve months of unprotected intercourse without conception (American Society for Reproductive Medicine, 2008), is a particularly appropriate condition for assessing use of the Internet for health information. Infertility is a condition for which treatment is discretionary; adoption and a childfree lifestyle are alternatives to treatment. In addition, infertility is a stigmatized condition, and the anonymity provided by the Internet may be particularly attractive to those with stigmatizing health problems (Berger, Wagner, & Baker, 2005; Kahlor & Mackert, 2009; Powell, Darvell, & Gray, 2003).

Studies examining use of the Internet for infertility are usually descriptive. Many studies employ online samples, thus limiting our ability to compare those who go online to those who do not. Other studies rely on clinic samples and therefore exclude those who go online only or do no health-seeking. Using Chrisman's (1977) health-seeking framework, we explore what factors are associated with patterns of health-seeking activities among infertile women. We employ multinomial logistic regression to compare four groups of infertile women: women who did not do any health-seeking, those who only went online for information, those who only saw a doctor, and those who did both.

Theoretical and empirical background

Chrisman (1977) has proposed a holistic approach to understanding health behavior and decision-making. Chrisman defines health-seeking as the activities that *non-practitioners* undergo in their attempt to address a health condition. The Health-Seeking Model suggests that after identifying a symptom people will make illness related shifts in their role behavior and consult with members of their social network about possible ways to manage a

* Corresponding author.
E-mail addresses: kslauson@odu.edu (K.S. Slauson-Blevins), jmcquillan2@unl.edu (J. McQuillan), fgreil@alfred.edu (A.L. Greil).

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condition. Network members can also provide cues as to when medical interventions are needed. People often try to exhaust all possible options to manage a health condition on their own before consulting a professional, but Chrisman (1977) acknowledges that several strategies may be employed simultaneously. In this study, we examine how individual characteristics, symptom salience, resources, and social network encouragement are associated with patterns of health-seeking among women with infertility.

Individuals can undertake a wide range of health-related activities online (Fox & Fallows, 2003). Pandey, Hart, and Tiwary (2003) have suggested that it can "cost" a lot, both in terms of time and money, to obtain health information from traditional sources. Research suggests that online information-seeking is common among patients at infertility clinics (Haagen et al., 2003; Wingert, Harvey, Duncan, & Berry, 2005). Haagen et al. (2003) surveyed couples attending a fertility clinic and found that 66% of couples with Internet access were using the Internet for infertility-related activities. The majority (72%) sought information, while 41% reported seeking social support. Most searches were for information about a specific diagnosis or treatment (Huang, Al-Fozan, & Tulandi, 2003; Weissman, Gotlieb, Ward, Greenblat, & Casper, 2000). Women also search for information on the causes of infertility (Haagen et al. 2003), information to evaluate clinics (Weissman et al., 2000), or information on alternative treatments (Porter & Bhattacharya, 2008).

Chrisman's Health-Seeking Model and prior studies suggest that people generally exhaust non-medical options before seeking medical treatment. Therefore we expect that women will use online information-seeking as a step on the way to or as a complement to in-person health-seeking rather than as an alternative. Women with more positive attitudes towards medical science might use the Internet to find more detailed information, but those with more negative attitudes could prefer to do their own search rather than endure an in-person encounter with a medical professional. Bunting and Boivin (2007) found that people delayed seeking treatment if they feared receiving a label of "infertile." Because the Internet offers those with stigmatized conditions a means of accessing information and support that they otherwise might not access due to the desire to keep a health condition hidden (Berger et al., 2005), we expect higher perception of infertility as stigmatizing to be associated with higher odds of seeking information online.

The Health-Seeking Model suggests that higher symptom salience is likely to lead to more active engagement with health-seeking behaviors. We assess symptom salience by whether or not people perceive that they have a fertility problem, desire for a child, the strength and immediacy of the intent to have a child, and whether or not they have prior children (primary versus secondary infertility). Based on prior research, we expect that infertile women who perceive that they have a fertility problem (White, McQuillan, Greil, & Johnson, 2006), would like to have a child (McQuillan, Greil, & Shreffler, 2011), have stronger intentions to have a child at the time of the infertility episode, and who have no prior children (Greil, McQuillan, Shreffler, Johnson, & Slauson-Blevins, 2011) will be more likely to engage in both online and in-person health-seeking.

Access to resources has been linked to Internet use generally (Powell et al., 2003) and health information-seeking online specifically (Ayers & Kronenfeld, 2007; Cotton & Gupta, 2004). Therefore higher levels of education and family income, having private health insurance, and having a regular doctor should be associated with both online and in-person health-seeking. In addition, younger women are more likely to use the Internet than older women (Fox, 2011); therefore, Internet use for infertility should be inversely related to age.

The Health-Seeking Model also suggests that social networks influence health-seeking. Among women trying to get pregnant, those who perceive that their close family and friends wanted them to see a doctor were more likely to do so (Bunting & Boivin, 2007). Having a partner who would like to have a baby and having parents who would like to become grandparents should be related to higher levels of both online and in-person health-seeking. Talking to friends and family about infertility and perceived pressure from friends and family to seek help should facilitate health-seeking, but it is also possible that women who do not get such encouragement through direct interaction may seek it online.

Methods

Data come from the National Survey of Fertility Barriers (NSFB), a national probability sample of women ages 25–45 years of age. The NSFB was designed to assess the social, psychological, and health factors associated with women's and couple's fertility and childbearing choices. NSFB survey data was collected between September 2004 and December 2006 during which interviews were conducted with 4796 women and some of their partners. To identify women at risk for infertility, the survey included screening questions. Using the American Association of Public Opinion Research (APPOR) response rate number 4, the response rate to the screener is 53 percent, typical for contemporary Random Digit Dialing (RDD) surveys (McCarty, House, Harman, & Richards, 2006). For more details on the generalizability of the sample, see the methodology report located at http://sodapop.pop.psu.edu/data-collections/nsfb/dnd).

Although 2363 women were identified as infertile, a large number of cases ($n = 987$) were excluded because they were not trying to get pregnant at the time of their episode and reported that they had never wondered if they had a medical problem. An additional 24 women had excessive missing data. Our final analytic sample ($N = 1352$) includes heterosexual women who had infertility with intent (said that they were "trying" to conceive at the time), infertility without intent (were "okay either way" about conceiving a child at the time), or other physical health barriers (e.g. diabetes or cancer) that prevented them from having desired children.

The main outcome for this study was the *type of health-seeking*: 1) no health-seeking, 2) Internet only, 3) in-person only, and 4) both online and in-person health-seeking. Women were classified as having engaged in in-person health-seeking if they reported talking to a doctor about getting pregnant. Not all women who consulted a doctor also underwent tests and treatments. In order to assess Internet use, participants were asked if they had ever looked on the Internet for information about getting pregnant. Details about variables suggested by the Health-Seeking Model and previous research and therefore included in the analysis can be found in Table 1.

We use multinomial logistic regression to predict the odds of being in the four health-seeking categories. Multinomial logistic regression is appropriate for dependent variables with more than two non-ordered categories (DeMaris, 1995) and allows us to compare coefficients across groups.

Results

More women did no health-seeking (34%) than went online only (9%), saw a doctor (32%), or both went online and talked to a doctor (25%). We provide descriptive statistics for the sample at (http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1228&context=sociologyfacpub). Table 2 presents the multinomial logistic regression analysis. For ease of interpretation,