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Understanding the Blogging Practices of Women Undergoing In Vitro Fertilization (IVF): A Discourse Analysis of Women's IVF Blogs

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Abstract

Infertility and its associated treatments, including in vitro fertilization (IVF), can have a profound impact on the emotional health and well-being of women desiring to become mothers. Researchers have measured the impact of infertility and described the experience of infertility and its treatment, leaving the rich descriptions of the IVF experience as captured in women's blogs to be explored. This discourse analysis describes the blogging practices of women undergoing IVF, exploring both the content and function of the IVF blog discourse. Data were collected from the text of seven women's blogs (n=1,149 blog posts) and resulted in four main functions of the discourse: creation of and connection to a community, emotional support, blogging as therapy, and creation of an IVF resource. Findings suggest that blogging can have a positive impact on the psychosocial consequences experienced by women in fertility treatment.

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Infertility and its associated treatments, including in vitro fertilization (IVF), can have a profound impact on the emotional health and well-being of women desiring to become mothers. Researchers have measured the impact of infertility and described the experience of infertility and its treatment, leaving the rich descriptions of the IVF experience as captured in women's blogs to be explored. This discourse analysis describes the blogging practices of women undergoing IVF, exploring both the content and function of the IVF blog discourse. Data were collected from the text of seven women's blogs (n=1,149 blog posts) and resulted in four main functions of the discourse: creation of and connection to a community, emotional support, blogging as therapy, and creation of an IVF resource. Findings suggest that blogging can have a positive impact on the psychosocial consequences experienced by women in fertility treatment. Keywords: Discourse Analysis, Fertility/Infertility, Internet, Research Online, Research Qualitative, Blogs

Childbearing and parenthood are some of the most universally desired pursuits in adult life that often, but not always, occur when planned and hoped for. For the nearly 73 million couples around the world who experience fertility problems (Boivin, Bunting, Collins, & Nygren, 2007), realization of this desire is fraught with significant challenges. The World Health Organization (WHO, 2012) has defined infertility as a failure to conceive following 12 months of unprotected intercourse. In the United States, the estimated prevalence of infertility for women is 7.4% (Stephen & Chandra, 2006).

Infertility, and the desire to have children, have led many couples to seek medical care. According to a review of 25 population-based studies from around the globe, on average 56% of couples seek medical advice for their infertility, with approximately half of those couples actually receiving medical treatment (Boivin et al., 2007). Following consultation and assessment by reproductive health specialists, the primary option for conception for many couples involves medically-assisted reproductive interventions. Medically-assisted reproductive interventions include ovulation induction; controlled ovarian stimulation; ovulation triggering; intrauterine, intracervical, and intravaginal insemination with semen of the partner or donor; and a range of assisted reproductive technologies (ART; Moreau, Bouyer, Ducot, Spira, & Slama, 2010; Zegers-Hochschild et al., 2009). Assisted reproductive

technology procedures are treatments that involve the *in vitro* handling of both human oocytes and sperm or of embryos for the purpose of establishing a pregnancy. These procedures include in vitro fertilization (IVF) and embryo transfer, intra-cytoplasmic sperm injection (ISCI), gamete intrafallopian transfer, zygote intrafallopian transfer, tubal embryo transfer, gamete and embryo cryopreservation, oocyte and embryo donation, and gestational surrogacy (Zegers-Hochschild et al., 2009). Since the introduction of IVF in the late 1970s, and the subsequent birth of the world's first IVF baby on July 25, 1978 (Loughlin, 2012), in Great Britain, approximately 3.5 million children worldwide have been born with ARTs (Chambers, Sullivan, Ishihara, Chapman, & Adamson, 2009).

Despite the well-documented physical and emotional outcomes associated with infertility and ARTs for couples, and the associated costs, women continue to consent to these procedures to achieve conception, pregnancy, and ultimately parenthood. With the advent of the Internet and social media, couples have discovered new channels for describing and sharing their personal, and often difficult, experiences of undergoing ART and uncovered a new medium for empowerment and support (Hinton, Kurinczuk, & Ziebland, 2010).

Health and the Internet

The Internet connects people who share interests of all kinds and health is no exception. Eighty percent of Internet users (or 59% of all adults) look online for information about health-related topics and 34% of Internet users have read someone else's commentary or experience about health or medical issues on an online news group, website, or blog (Fox, 2011). One in five Internet users go online to find others who might have health concerns similar to theirs (Fox, 2011). Accessing health information is one of the most common uses of the Internet and couples undergoing fertility treatments are turning to the Internet for information, education, support, and empowerment (Hinton et al., 2010).

Blogs in Qualitative Health Research

Reading and hearing others' accounts of personal experiences of health and illness is a primary use of the Internet for health-related purposes. Participating in the creation of health content through blogging and social networking is an important part of patients' health experiences and has implications for health care providers' understanding of the patient's role in health care management and information (Ziebland & Wyke, 2012). Blogs, often compared to an online journal or diary, are a unique source of unsolicited narratives that allows the sharing of information, thoughts, feelings, and creativity, and provides insight into the authors' health experiences (Heilferty, 2009). Blogs cover a vast array of subject matter and attract an extensive readership. The proliferation of blogs and blogging practices has recently attracted the attention of researchers as blogs are becoming recognized as a rich source of qualitative data. The advantages of using blogs as a data source for qualitative research are (a) they are a publicly available, low-cost, and instantaneous technique for collecting substantial amounts of data; (b) they are a source of naturally occurring text, eliminating both research interference or influence and the need for transcription, which is both costly and time consuming; (c) the archived nature of blogs makes them amenable to examining social processes over time; (d) they provide fast and easy access to the information of greatest value through categorization of blog content; they provide candid and genuine personal accounts of human experiences; and (f) they afford an added option for confirmation and consistency through interaction with the blogger (Hookway, 2008; Jones & Alony, 2008). Some shortcomings that may be faced by researchers when using blogs as a source of research data include the variability of blog content as not all blogs are well-written, succinct, concise, or elaborate; and there are no means to

prevent fictitious blogs. However, "with adequate research parameters in place, blogs can have an important and valuable place in the qualitative researcher's toolkit" (Hookway, 2008, p. 107).

Health researchers and practitioners are learning from blogs in two ways: (a) analysis of blogs is providing insight and understanding into the health and wellness of individuals, and the impact of illness on their lives (Clarke & Lang, 2012; Keim-Malpass et al., 2013; Keim-Malpass, & Steeves, 2012; Leggatt-Cook & Chamberlain, 2012; Marcus, Westra, Eastwood, & Barnes, 2012; Rubarth, Schoening, Cosimano, & Sandhurst, 2012; Shah & Robinson, 2011); and (b) blogging is being examined as a variable in the evaluation of different health-related outcomes or as a specific intervention itself (Andersson, Gustafsson, Hansson, & Karlsson, 2013; Graham, Rouncefield, & Satchell, 2009; McDaniel, Coyne, & Holmes, 2012; Ressler, Bradshaw, Gualtieri, & Chui, 2012). While studies using blogs in health research are few, researchers are explicit about (a) the need to incorporate blogging as an intervention in future research efforts and (b) developing research methods that utilize blogs as a primary data source (Chung & Kim, 2008; Heilferty, 2009; West et al., 2010).

Infertility is a health experience that is chronicled in personal blogs. The emergence of blogging as a communication channel is currently permitting women to share their personal experiences of infertility and related treatment in a very public forum, leaving behind a collection of rich descriptions of the IVF experience. Blogging about the IVF experience has not been explored in the infertility or related literature. However, understanding the blogging practices of women undergoing IVF can create a more complete picture of the IVF experience. A thorough understanding the IVF experience from this unique perspective can lead to more sensitive, empathic, and holistic care of these women by health care providers, thus limiting the severe long-lasting negative social and psychological consequences of childlessness and infertility. The scarcity of research on this blogging phenomenon and its potential implications combined with the apparent call for a better understanding of blogs in general within the health literature created the motivation for this study.

Therefore, the purpose of this discourse analytic study was to describe the blogging practices of women undergoing IVF for treatment of infertility and to identify the impact blogging may have for this population. This exploration was guided by the following research questions: (a) what are the blogging practices of women undergoing IVF?; (2) what does writing a blog throughout the IVF experience accomplish?; and (c) what impact does blogging have on the IVF experience?

Researcher Context

This study was completed as part of the first author's (EO) Master of Science degree in the School of Nursing at McMaster University, Hamilton, Ontario, Canada. Authors two through five (SMJ, SI, WS, and LO) comprised the first author's thesis committee.

EO became interested in the use of blogs as a rich source of qualitative data during a graduate qualitative research methods course. Having been exposed to the phenomenon of blogging about IVF through personal experience with infertility (however not blogging herself), EO was fascinated by the detail, emotion, and honesty documented by these women using a medium that allowed access to the entire world wide web. These women were evidently motivated to chronicle their experience, and it was believed that understanding why they blogged had the potential to lead to a better understanding of the infertility and IVF experience. It was also believed that this improved understating of the IVF experience could lead to more sensitive, empathic, and holistic provision of care for women undergoing fertility treatment.

The remaining authors (SMJ, SI, WS, and LO) are seasoned researchers with extensive qualitative research experience. They provided guidance, direction, and support to the novice

researcher (EO) throughout each phase of the research process. The fifth author (LO) is also a full-time social worker who at the time of the study had a private counselling agency for families managing infertility or undergoing fertility treatment. Together the team represented experts in both qualitative research methods (SMJ, SI, WS, LO) and maternal-child and women's health (SMJ, WS, LO).

Methods and Research Design

Discourse analysis was used to explore the naturally occurring text of women's IVF experiences as presented in their blogs. Discourse analysis was the chosen research method due to its congruence with the study's purpose in that a discourse is treated as a potent, action-oriented medium that can point to why people do what they do (Potter & Wetherell, 1987). This study relied on the principles of discourse analysis developed within the realm of social psychology to guide sampling, data collection, and analysis. The theoretical, methodological, and empirical work of Jonathan Potter and Margaret Wetherell (1987) focuses on practical versus analytically relevant research, which is congruent with the goals of health research and the study of health-related issues.

Sampling and Recruitment

All blogs with the potential to inform about the blogging practices of women undergoing IVF for the treatment of infertility were considered for this study. To obtain this sample of blogs, the keywords "IVF," "infertility," and "my experience" were entered into two separate blog specific search engines: GoogleBlog and Technorati. The keyword, infertility, was included to ensure that blogs were about IVF for the treatment of infertility. The phrase, "my experience," was used in an attempt to obtain blogs written by individuals experiencing IVF themselves, and to avoid blog content written by professional organizations and fertility experts.

Snowball or chain sampling was also used as another approach for locating information rich cases (Patton, 2001). Bloggers often include references to other blogs or bloggers they are following (or reading their content regularly). This process allowed the researcher access to other potentially rich sources of data that may not have appeared in the initial blog search. This combined purposeful and snowball sampling approach has been applied in other studies utilizing blogs as the primary data source (Miller, Pole, & Bateman, 2011; Neal & McKenzie, 2011).

For pragmatic reasons, blogs had to be written in English to be considered for inclusion. They also had to be written by a woman who had either undergone or was undergoing IVF for primary cause infertility (childless at time of treatment) to best inform the research questions. In addition, the blog must demonstrate the following: (a) have been initiated after January 1, 2000, and updated within the previous 2 years; (b) had a primary focus of infertility, including IVF treatment (i.e., the primary focus of the blog was to document the infertility experience that led to treatment with IVF); and (c) have been authored in North America. These criteria allowed for adequate description of the sample that in turn allows for readers to determine the transferability of the study results to their own context.

For this study, the mean age of bloggers for whom demographic information was obtained (n=7) was 33 years, with a range from 24 to 40 years at the time of their first blog post. The mean time spent trying to conceive (TTC) as reported by the bloggers at the start of their blogs was 41 months, with a range from 20 to 132 months. The majority of bloggers (n=6; 86%) blogged about more than one IVF experience, with an average of three IVF attempts written about. To highlight this range of experience, one blogger achieved pregnancy

on her first IVF attempt and another chronicled five IVF cycles and two frozen embryo transfers (FET). Three of the seven (43%) bloggers identified themselves as having female factor infertility, two of the seven had combined male and female factor infertility (29%), and the remaining two (29%) had unexplained infertility. The bloggers were diverse based on geographic location. The majority (*n*=6; 86%) of bloggers were from the United States and one blogger was from Canada, and were from rural, suburban, and urban areas. Some reported commuting over 4 hours for their infertility treatments while others were located only a few city blocks from their treatment centers.

Sampling continued until the point of redundancy or data saturation. In discourse analysis, data saturation is the determination by the researcher that there are sufficient data to make an interesting argument and for those arguments to be well-grounded in the data (Wood & Kroger, 2000). Due to the depth and breadth of the writing (over 1,000 individual blog posts), there were sufficient data to form an interesting argument following the analysis of five blogs. Two more blogs were analyzed to ensure that there were sufficient data to support the arguments and that no new arguments were warranted.

Ethical Considerations

Ethical approval from the Hamilton Health Sciences/McMaster University Faculty of Health Sciences Research Ethics Board (HHS/FHS) was obtained to protect the rights, safety, and welfare of all research participants. Once blogs had been identified and met the preliminary inclusion criteria, they were evaluated using the decision tree proposed by Eastham (2011) to assess the privacy intentions of the blogger. The assessment of the blogger's privacy intentions was important because this guided whether or not informed consent was sought from the blogger. Based on characteristics of the blog, one of three conclusions related to privacy intention was reached: (a) intent most likely privacy; (b) may intend some level of privacy; or c) supports public intent (Eastham, 2011). When a blog met the preliminary inclusion criteria, contact information (email) was available, and its intent fell into the first category, the researcher sought informed consent. The blogger was contacted by email to explain the study and seek consent to use the blog content for analysis. When the blogs' presumed privacy intentions fell into the second category and contact information was provided, a passive consent process was initiated. The blogger was contacted by email on two occasions (1 week apart) to explain the study and request a reply to consent to the study or decline participation. If no reply was received by one week following the second email contact, the blog was enrolled in the study. If a blog fell into the second privacy category and contact information was not available, the blog was enrolled in the study and strategies were employed to protect blogger privacy (e.g., removal of personal identifiers). Blogs that met the initial inclusion criteria and were deemed to be written with public intent were enrolled in the study without consent from the blogger. These decisions have been summarized in Figure 1.

Figure 1. Inclusion or Exclusion of Blogs Based on Privacy Assessment
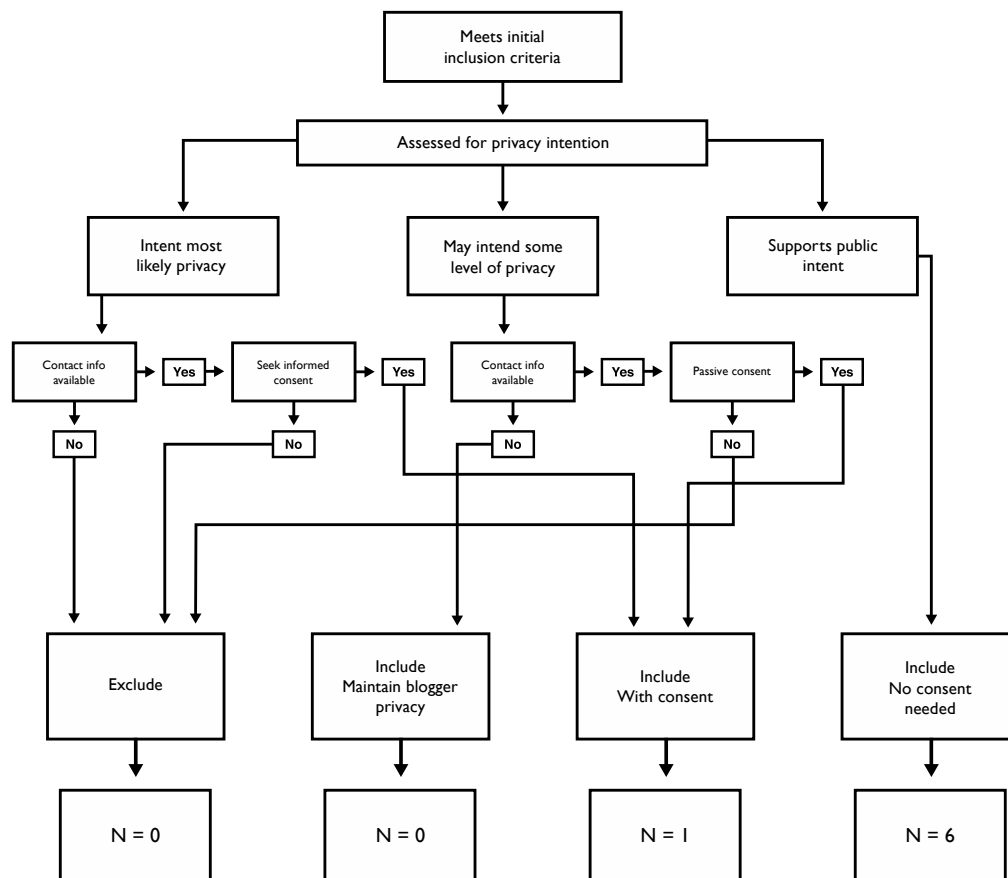
Data Collection

I (EO) collected the naturally occurring texts provided by women's accounts of their infertility and IVF experience as recorded in their blogs. These texts had the advantage of not only providing rich data related to the topic of inquiry but also of being already transcribed. Basic demographic information was extracted where available from each blog: blogger age at start of blog, number of IVF cycles or attempts, start date and current status of blog, geographic information, cause/type of infertility, number of blog posts, number of blog followers and peak and average number of comments on blog posts.

A vast amount of text was created by each of the bloggers included in this study. One thousand, one hundred forty-nine (1,149) blog posts were included and were read in their entirety during the initial phase of analysis. Length of posts varied from one or two sentences to mini-essays that were thousands of words long. Bloggers posted an average of 8 posts per month with a range of 3 to 12 posts. The average amount of time that the blogs covered was 23 months, with a range between 3 and 48 months. Some blogs remained active after the data collection phase of this study while others were no longer being actively updated. In some cases, blogs shifted focus from IVF to pregnancy and parenting once pregnancy was achieved (these posts were not included in data analysis). The blog posts included in the analysis were written between June 2008 and June 2013.

Data Analysis

Analyzing discourse according to the method outlined by Potter and Wetherell (1987) can be separated into two phases, coding and "analysis proper" (p. 167). Coding does not refer to the central activity of analysis; rather it is a process that involves preparing the data where the goal is not to find results but to pare down an often-insurmountable body of discourse in to manageable chunks (Potter & Wetherell, 1987; Wood & Kroger, 2000). I performed coding by reading each blog post and identifying every reference made to the issues of interest as identified by the research questions. For example, a blogger referencing feeling better about a particular part of the IVF process following a reflective blog post would be retained from the transcripts for further analysis. Coding was done as inclusively as possible, where even borderline cases were included in the early stages of coding (McCloskey, 2008; Potter & Wetherell, 1987). The Ncapture feature of the Nvivo10 qualitative software was used to download each of the blog posts as it appeared on the web and was also used in the coding of the raw data and the organization of researcher notes (QSR International, 2010).

Following coding, I carefully read and re-read the data, and asked, "why am I reading this passage in this way?" (Potter & Wetherell, p. 168). The purpose of analysis is to determine and explain what action the discourse is taking or what function the discourse performs based on the theoretical underpinning of discourse analysis "that people's talk fulfills many functions and has varying effects" (p. 168). Wood and Kroger (2000) offer 15 strategies intended to assist the researcher in adopting the discourse-analytic orientation and also outline 8 strategies for interpretation. For example, Wood and Kroger (2000) suggest that the discourse analyst pay careful attention to the multiple functions of a discourse (strategy 3). Function as a concept is central to discourse analysis and refers to what the talk or text is doing (Wood & Kroger, 2000). This strategy can be demonstrated in the analysis of the IVF blog discourse using the example of the TTC (trying to conceive) timeline (described in the findings section below). The TTC timeline is a blog feature or post common across all the participant's blogs. One function of this particular piece of the blog discourse is to orient the reader to the blogger's history and current stage in the IVF process. However, when reading for multiple functions, this TTC post can also be viewed as a way to establish common ground with other IVF bloggers, provide evidence of inclusion in the IVF or infertility community, present information for outsiders to understand all the blogger has gone through, and as way to differentiate themselves from other IVF bloggers.

Multiple functions, among other strategies, were used to approach the coded blog data and move toward the formation of claims or hypotheses about the functions and effects of the discourse. Evidence from the discourse was then used to support these claims. To continue the above example, the multiple functions of this small (yet not insignificant) TTC timeline post, contributed to the overall understanding of the entire blog discourse and its functions. In this case, the TTC timeline supported the claim or hypothesis that blogging throughout the IVF experience formed community amongst IVF bloggers. Often discourse analysts will give the title, analysis, to their findings section because it involves a demonstration of the analysis process (Wood & Kroger, 2000). In this study, the claims and supporting evidence comprise the findings of this study, four functions of IVF blog discourse, and are presented in a way that further demonstrates the analysis performed.

Data Credibility

Credibility is established when the researcher demonstrates sufficient immersion in the data and research setting enough to enable recurrent patterns to be identified and verified and to answer the question, "are the findings representative of the true picture of the phenomenon"

(Krefting, 1991). Peer examination and reflexivity were two strategies used by the researcher to establish credibility for this study. Peer examination, or regularly discussing the research process and findings with the research team (comprised of experts in both qualitative methods and the study context) and reflexivity, or an ongoing analysis of the researcher's influence on the study through reflexive journaling, were of particular importance throughout this study because the interest in this research topic originated from personal experience with IVF. These strategies ensured that findings were well supported by the discourse and as free from researcher influence or bias as possible.

Findings

About the Blog Content

While the focus of the analysis was on the function of the IVF blog discourse, function is a result of the sum of the individual posts and exists within the context of documenting the IVF experience. Therefore, it is important to note what these women were blogging about, or the general content of the blogs.

Blog posts were categorized by topic. The writer often completed the categorization for the researcher by giving the post an appropriate topic title or linking the post within the blog to posts with similar content. For example, this excerpt labeled a "procedural update" for the study, was posted by the author under the title "Day 8 update:"

> A few quick updates from my last post. Estradiol came back <5, which is great — means no activity and a clean slate to grow good follicles. I have been doing my Lupron injections in my thigh, which I'm (weird word, I know) loving. Most have been painless, and even when it pricks a bit, it's less intimate than my tummy, so less of a big deal. (Blog #2)

This was by far the most frequently written category or topic posted by bloggers with over 300 references made to blood work or other laboratory values, procedure preparation or results, and medication administration practices (see Table 1). Other frequent post topics included symptom reporting or "all I have to go through," exploring alternatives, navigating relationships, and being grateful or "counting one's blessings." While blog posts documented other areas of the IVF experience, the preceding categories represent the most frequent content posted and the most common topics written about across all seven bloggers.

Table 1. Summary of Blog Content

Number of references to…	Blog 1	Blog 2	Blog 3	Blog 4	Blog 5	Blog 6	Blog 7	Total	Overall Mean
Procedural Updates	45	69	15	104	15	44	25	N=317	45
Symptom reporting	16	18	8	46	14	23	3	N=128	18
Exploring alternatives	2	8	4	28	2	1	4	N=58	8

Navigating relationships	3	4	3	10	5	7	18	N=50	7
Being grateful or blessed	5	2	2	9	3	3	6	N=30	4

Four Functions of IVF Blog Discourse

Four key functions of IVF blog discourse emerged from the data analysis: creation of and connection to community, emotional support, therapy, and creation of an IVF resource. Each of these are discussed in turn with attention paid to both what is being accomplished by the discourse and the effect attained.

Creation of and Connection to a Community. Blogging throughout the IVF experience connected the writer to other IVF bloggers, and as bloggers connected to one another, a community was formed. Evidence that women blogging about their IVF experience created a community amongst one another and their readers can be seen through how they wrote and what they wrote about as well as in features of the blog itself. The evidence is outlined through the concept of inclusion through exclusion, blogging practices that lead to community, requisite posts and language, blog attributes, when bloggers no longer fit within the blog community, and effects of community.

Inclusion Through Exclusion. Common attitudes or interests are a requisite part of community by definition. The notion of community among IVF bloggers was often first established by a blogger proclaiming her exclusion from the fertile/baby-making/child-having world and thus including herself in the infertile and childless world. Blogger #4 demonstrated these feelings of exclusion by expressing frustration with the "fertile world":

> I'm going to admit to a pet peeve of mine — stick figure family car window stickers…. Do you know the stickers I mean? The ones people plaster on their car rear windows for all the world to see? …And perhaps needless to say, but there seem to be no family stickers for those without children. Oh wait, since we're childless, maybe we don't even qualify … Honestly, it's because they seem to be yet another unintended sucker punch from the fertile world. Another proclamation of fertile people's normality, their damn irritating fecundity. And another reminder of my defectiveness... (Blog #4)

Others described their exclusion more explicitly using language such as "left out" or "missed something."

> Secondly, I feel so left out. I'm either surrounded by early 20-somethings who haven't even begun thinking about pregnancy (and the daunting prospect of IF isn't even a blip on their radar screens—how I miss those days!) or 30-somethings who have children who look old enough to enter high school. I swear, I look at some of these kids and feel so behind. I find myself wondering if I missed something somewhere...how the hell did I get here again? (Blog #7)

These excerpts demonstrate how exclusion from one community lead to inclusion in another. These women felt "left out" of one group/community/world and decided to blog about it, which led to inclusion in the community of IVF bloggers. Also highlighted in these excerpts

is the common interest expressed amongst IVF bloggers to be part of this fertile/child having world and the pain of being excluded from it.

   Blogging Practices that Lead to Community. An awareness of the active nature of blogging (or the ability for words to perform actions) was evident in many of the blog posts. These actions or blogging practices, while not always intended by the blogger, fostered the sense of community among the blogger and her readers.

> I'm [name of Blogger 5]. I am currently struggling with infertility and am trying to share my experience with others who may be going through the same thing.

This blogger accomplished two things that supported the establishment of community. First, she introduced herself and second, she created common ground. As a newcomer to the community (this was her first post) an introduction would be the social norm. Her declaration of infertility and wanting to share her experience with others demonstrated that she belonged in the community. Accountability to readers as demonstrated in the following excerpts was another common practice performed by bloggers that supported the creation of a community.

> So sorry to be silent for so long. I've been reading your blogs, cheering you on quietly, not commenting very much at all. I have had my head down and have been just slogging through the depot lupron...one foot in front of the other. I don't recommend it to anyone, but those days are behind us. (Blog #4)

> As promised, here are a few details about my Colorado FET prep and their post-transfer recommendations. These are just some of the things that stick out in my mind since they differ from my prior clinic. (Blog #4).

> I have Blogger's Block. Yep—after so many months of so much to say, today, I've got nuttin'. I suppose I could give The Update...but even at that, there isn't much to report! (Blog #3).

> I'm still here… (Blog #6)

Women who had established themselves within the IVF blogger community and were recognized by others in the community as consistent contributors felt a certain duty to remain active within the community. Excerpt one demonstrates that even while not actively posting or commenting, this blogger was still part of the community and more active contributions were forthcoming. The words "as promised" in the second excerpt conveyed that the blogger was following through on a request or comment from someone else in the community thus displaying commitment to the community. Excerpts three and four are examples of when bloggers felt they had nothing to say but did not want to be forgotten by others in the community. Any activity from the blogger, even just an "update" brought the blogger back to the top of the list of anyone following her posts. Posting ensured that the blogger remained part of the community.

   Requisite Posts and Language. An unwritten set of rules or norms appeared to govern how and what was written by women blogging about their IVF experience, and served as requisites for inclusion within the IVF blogger community. Certain language and acronyms were used in the posts that would appear foreign to someone outside the community. This language was common amongst all seven blogs analyzed and one blogger (Blog #7) had a glossary displayed within her blog titled "IF Terms/Acronyms You Never Wanted to Know."

(IF is an acronym for infertility). Even this title implied that those included in the community already "knew" these terms and outsiders would need to consult the glossary.

A requisite post was the TTC (trying to conceive) timeline or infertility history. This was a lengthy list of dates, sometimes starting with the woman's first menstrual cycle that outlined in detail her journey of trying to become pregnant and, in some cases, stay pregnant. This post provided an example of another way that bloggers established themselves as legitimate members of the community. Other requisite posts included medication delivery photos and cycle updates, complete with laboratory values and follicle sizes.

Blog Attributes. Many of the key characteristics of a blog and the features available through blog service providers served to support the IVF blog community. The ability to follow or subscribe to individual blogs was one such attribute that facilitated interaction and creation of community. First, allowing one's blog to be followed demonstrated the willingness or desire for the blog to be read by others, therefore indicating that the blogger was open to the idea of community. The majority of bloggers displayed the blogs they were following on the main page of their blog. These lists then became a virtual directory of bloggers belonging to the IVF blogger community.

When Bloggers No Longer Fit within the Community. The existence of a community among women blogging about their IVF experience was also evident in the conflict that arose when a blogger's status changed; for example, when they became pregnant or pursued adoption. Three bloggers documented this struggle to understand where they now stood after becoming pregnant. One of these women realized her status as pregnant may have compromised her inclusion in the community and felt conflicted because she did not want to lose her infertility identity:

> I don't know if I'll start posting again. I've noticed that sometimes people create new pregnancy blogs, which I can completely understand. But somehow, this doesn't feel like the right venue for me because I still feel like infertility is undeniably my shadow, even throughout pregnancy: in no way does it feel like a part of my life that's completely finished. (Blog #7)

The second woman struggled to reconcile feelings of excitement about her pregnancy and not wanting to appear insensitive toward a group that she perceived would be so openly envious of her situation:

> I originally wanted to post about every aspect of my pregnancy, but somehow it didn't seem appropriate to do so this in this forum because every time I did, I felt like I was evoking pain for someone else. I know that's presumptuous—I mean, in all likelihood if my posts caused pain for anyone out there, surely they'd just stop reading my blog. I know that, but it still felt like "that girl" who can't stop talking about her pregnancy, and my heart has been broken by that person so many times throughout this experience in my life. (Blog #2)

A third blogger assumed that her recent pregnancy announcement would result in her dismissal from the community and she was surprised at the continuing support despite her status change: "I have more love and support from you guys than I could ever have imagined. Isn't this when you're all supposed to un-follow me and stop reading? Guess not. Or not yet at least" (Blog #4). This quote also suggests that relationships formed within the community of IVF bloggers could withstand the negative emotions felt toward other pregnant women who had not experienced IVF.

One blogger did not appear to struggle with the conflict felt by other IVF bloggers when she became pregnant. Instead she recognized that the IVF blog community was there for her during a time when she needed it and since becoming pregnant it was no longer a group she felt she needed to belong to.

Effects of Community. Support for the existence of a community also was determined through the documented outcomes of participation in a community. One effect of being part of the blog community was the formation of meaningful relationships. Bloggers often referenced the care, love, and support received from readers and other bloggers throughout the ups and downs of their IVF journeys. Some online relationships even developed into real-life friendships.

A sense of hope was the other outcome of belonging to the IVF blog community. Women found hope in the successes that had been recorded within the IVF blog discourses either through other bloggers' posts or comments on their own posts. This hope was accessible only through the connection to the IVF blog community. Another unique aspect of hope within the community was found in how bloggers searching for hope in a particular part of their journey demonstrated the ability to provide hope to someone else in a different time or stage of their journey.

Emotional Support. A woman's blog and connection to the blogosphere was a source of emotional support during the IVF experience. Evidence to support this claim was demonstrated in how women looked to the blogosphere for support, how women confirmed emotional support received from the blog community, and used the blog to support others, as well as in blog attributes that facilitate emotional support, and the observed effects of emotional support.

Looking to the Blogosphere for Support. In between the procedural updates and posts stressing the difficulties with infertility and navigating personal relationships, there was a subtle but detectable reaching out from the blog writer to the reader for emotional support, for example:

> I'm trying to stay optimistic—given the amount of meds going into my body, SOMETHING should happen by Saturday... Right...? (Blog #2)

The questions posed tended to be rhetorical, however, they indicated an emotionally low point in the IVF process. Simple questions, such as "you know?", were often enough for the community to spring into supportive action by way of advice, kind words, or the collective "we know." Other bloggers were not as subtle when looking to the blogosphere for emotional support, this blogger explicitly asks for a response from her readers:

> So tell me, have you ever just felt like enough is enough, and how in the hell did you find it in yourself to keep trudging through this? By the way, this is not a rhetorical question—I would really like your feedback. I need some momentum. Badly. (Blog #7)

Emotional Support Received from the Blog Community. Bloggers very often took the time to acknowledge the emotional support received from the blogosphere. For example, one woman commented, "You guys have been a great source of support for me—thanks for being there and cheering me on" (Blog #2). Sometimes even the fact that her blog was read by others was enough to be seen as emotional support for the blogger, like for this woman:

> If you read this here today, or any day, I want to thank you. Writing about it is helping me work through my anguish…The fact that others read and care is comforting and surprising, and encourages me to go on... (Blog #1)

Using the Blog to Support Others. The caring and support shared amongst the IVF blog community was reciprocal in nature. Bloggers who received emotional support from others were also responsible for distributing it to others, most commonly by referring to other writers in the IVF blogosphere:

> im thinking of [Blogger name] tonight...she hasn't updated since her fert report but I'm assuming her transfer should be tomorrow if my IVF timeline isn't off… if you have some time, mozy on over there and show her some love. (Blog #1)

Support from within the community of IVF bloggers also seemed to be more meaningful when someone with similar experiences wrote it. For example one blogger wrote, "It makes such a difference to hear from ladies who have been there and know exactly what it's like to deal with infertility" (Blog #3).

Blog Features. Similar to the attributes of blogs that foster the creation of an IVF blog community, there were features of the blog itself that facilitated emotional support through blogging such as the ability to leave comments and linking to other blogs within the body of a blog post. The comment section in the blog template provided a space for the reader to respond to the blogger's writing and provide emotional support. Linking was a way to share a blog with the community and bloggers used this feature to introduce new blogs to the community and when needed send the support of the community to their pages.

Effects of Emotional Support. The effects of the emotional support received throughout the IVF blogging experience were evident throughout the writings of the bloggers. Bloggers described this support as helping them "get through" or "buoy" them "on the rough days" and feel "not alone." They also called their IVF blog community a "cyber-shoulder to cry on." One blogger described the impact of the emotional support received following a miscarriage after IVF #4:

> You may think that when you're the 128th, or the 209th, commenter that it doesn't matter if you leave a message, but it does. We read every single one. Many of them while I was waiting for surgery. And they helped. Each of them. All of them. So thank you. (Blog #4)

Blogging as Therapy. Women viewed blogging throughout the IVF experience as therapeutic. The motivation for some bloggers to begin writing was the perceived therapeutic value attained through the process of simply writing or sharing and receiving feedback and comments from others in the community.

> How Did I End Up Here? I don't really have the answer to that. All I know is that I needed this space in order to collect my thoughts. I have been meaning to do this for so long now; I'm hoping that it will be therapeutic. (Blog #3)

Other women discovered its therapeutic significance later in their blogging experience.

> Discovering the blog world. This is certainly one of the best things that happened to me this year. Blogging has become an incredible, invaluable therapy for me through this infertility experience. (Blog #7)

Some bloggers did not directly comment on the blog's therapeutic consequence but their text provided indirect evidence that they engaged in therapeutic activities such as working through decisions, seeking advice, and venting emotions. Women used their blogs and their connection to the IVF blog community as a sounding board or place to just think out loud. Often the bloggers simply allowed the reader in on what was currently occupying her thoughts. This practice also facilitated the feeling of relief that accompanies saying something out load and clearing one's head as demonstrated in this statement, "Now, for the whining. I'm going to try to get this out for now so I can go about the day maybe a little more relaxed" (Blog #5).

Seeking advice from the blogosphere also had therapeutic benefit. The IVF blogger community was seen as having experiential authority over all things IVF, so when a blogger posed the question, "any tips/advice for my hysterosonogram tomorrow?" (Blog #4), any stress or anxiety could be dispelled by the blogosphere "experts." Similarly, bloggers could work through decisions with the input of the IVF blogger community.

The expression of deep felt emotions was an activity common amongst all bloggers, pointing to its benefit as a therapy. These posts represented emotionally low times and often garnered the full emotional support of the blogosphere as discussed in the previous section.

> So here's what I think of this "Fall seven times, stand up eight" proverb right now...I really don't feel like standing up again. Not one bit. What do I feel like? I feel like giving up. I feel broken. I feel incensed. I feel helpless. Why is it so hard to find our way out of this? (Blog #4)

Meeting a Need. One blogger reflected on blogging meeting a need or having experienced the need to write after the loss of her IVF twin pregnancy:

> Many times, my posts have poured out of me after I sat stewing and overwhelmed. Sometimes I'd open the computer and be weeping, feeling what I needed to say before the words appeared on the page. When I put the computer down after these times, I felt closer to my girls, relieved of a little bit of pain, and happy with how I remembered my babies. (Blog #1)

In a later post, she also described needing to write but this time she also identified the need for the blog to be read:

> Even though I thought I was here because I needed to write out loud, I guess I'm also here because I needed someone to read it. (Blog #1)

Blog Features that Facilitated Blogging as Therapy. Blogs were a safe place to express the emotions expressed above and to share one's innermost thoughts. Based on an analysis of the discourse, this safety was created though anonymity and community. Because many bloggers used pseudonyms and censored the amount of personal information communicated, the content of the blog posts were often raw and uncensored compared to a real-life conversation, for example, one blogger posted a brutally honest opinion of why her newly pregnant sister shouldn't have a baby. Others used the anonymity to share good news that was felt to be too early to tell family and friends in the real world.

There was also an observed sense of safety created with membership in the blog community. Because of the shared attitudes and interests amongst the bloggers, one could post without fear of judgment or ridicule, or if a negative comment or response were to arise it evoked the fury of the entire community.

I don't know what kind of sick, sadistic people leave a comment on the blog of someone who has lost their babies to stillbirth asking for their funniest pregnancy story?! What a horrible and heartless thing to do, all to drum up business. You can all go fuck yourselves." … if you'd like to join me in spamming the shit out of them, or share your thoughts, go here. Feel free to use a fake email. (Blog #1)

When the Blog Becomes Non-Therapeutic. Blogging sometimes became non-therapeutic. This was demonstrated when writers wrote about taking time away from their blog, the potentially addictive nature of blogging and the Internet, and concerns about the blog no longer feeling safe.

Due to the accountability bloggers felt to their readers, a prolonged absence from posting was often explained in a blog post. Some described just needing time off:

I've been away from the blog, burrowed down into myself, trying to remember what my life was like before we started trying to conceive, trying to reconnect with my husband, trying to reconnect with my former, happy self. (Blog #4)

Another blogger described not feeling part of the community during a time when she was not actively cycling. Two bloggers described how blogging had stopped being a therapeutic activity or space:

there was a time when coming online and writing made me feel better but lately I push the idea out of my head as soon as it pops in… I can't be a good support right now, reading good news makes me so sad (sorry, but honest) and reading sad news makes me feel even worse. I just hurt so acutely. (Blog #1)

I've been quiet a lot longer than I intended to be. And I hope I haven't worried anyone. It's just been hard, so so hard over here. I've been kind of shut down around this whole infertility situation, honestly, because things just feel overwhelming in that department. Every time I think of our situation, I just feel hopeless and I want to go back to bed, avoid, and give up, which is such a change from the hard-driving person I've been around all of this for the past four years. (Blog #4)

In the first excerpt, the blogger attributes the lack of therapeutic value to the blog community. Reading the stories of others caused her pain and she felt conflict around not being able to support others in the community during this time. The second excerpt demonstrated how the blog was a reminder of the "whole infertility situation" and being "around all this" for the blogger was overwhelming.

Blogging often crossed the line from therapeutic to non-therapeutic when it led to addictive behaviors. While it was difficult to ascertain true addictive behaviors from a handful of blog posts, language used like "maniacally" in the excerpt below highlights the potentially negative or non-therapeutic side of blogging and being part of the IVF blogger community.

I have to admit, it hasn't helped for me to maniacally read various posts on internet forums from other women about the low numbers they have and their subsequent disappointments. (Blog #3)

One blogger felt that her public blog was no longer a safe place to continue posting and a new, invitation only, password protected space was created. Going private allowed the blogger to continue the therapeutic act of blogging while maintaining some control over the community aspect.

> Im sorry it has come to this. I am sorry that I may not be able to invite all of you, for fear of letting a wolf in sheep's clothing in the mix … again I am feeling the need for privacy, especially after some questionable search terms in my stats this week … I knew this was a possibility all along. Naturally if you put your business in the street someone you know might come along and see it. Oh well. Still hurts. (Blog #1)

Creation of an IVF Resource. IVF blogs documented the personal IVF experience of women extensively, thus creating a permanently archived resource for anyone who may find it of value. This creation of an IVF resource was evidenced in the way that bloggers wrote with two distinct audiences outside of the IVF blogger community in mind, the "next infertile" and the outsider. Similar to the previous claims there were blog features that supported the blog becoming a resource.

The "Next Infertile." Whether helping others was the intent of a woman's IVF blog at its conception is debatable. However, as bloggers wrote and became part of the IVF blog community they felt a duty to leave something for the ones who would come after them.

> I know the risks are low, but my nerves are getting the better of me. So I am thinking that hearing your experiences will help. Your shared stories will then be out there for the next infertile googling for info on this procedure, helping her to feel a little less afraid. (Blog #4)

> Phew. I think that's it. Time to step off the soapbox. But I do hope that it helps someone who may stumble upon my humble little blog, seeking answers. Know that I wish every woman out there, struggling the way that I did, the very, very best. (Blog #3)

These excerpts demonstrate how the blogger wrote with this "next infertile" in mind. In excerpt one, the blogger posed a specific question in her post and solicited the experiential knowledge of the blogosphere. Others were more passive about creating this resource but, like in excerpt two, they also wrote with others struggling with infertility in mind. Another blogger found the "next infertile" to be motivation to continue blogging even when considering making the blog private.

> I have been tempted to make this blog private. Actually, I did, then I changed my mind. As [husband] said, I could possibly be for someone else what many of you were for me. I could be the person with the story that makes them realize they aren't alone … it meant everything to me to find some of the most wonderful people's blogs. People that helped me realize that I wasn't alone. (Blog #1)

Blogging for Outsiders. Bloggers occasionally addressed people who were external to the IVF community directly. For example, one woman wrote "and for you non-IF types, PUPO is a term used by IF people. It means 'pregnant until proven otherwise'" (Blog #1). Other times

a definition or plain language explanation was given to assist the reader not versed in infertility terminology.

Bloggers also provided a form of sensitivity training to anyone from the outside world who would perhaps stumble upon the blogs. Healthcare professionals were frequent targets of these "teaching moments":

> Well, we were sitting there trying to make the most of the clinic waiting room this morning (which is a challenge in and of itself) when in walks a couple with an INFANT!! Apparently, even the reproductive endocrinologist's office isn't safe anymore! (Blog #7)

One blogger wrote this plea to the world:

> Don't ask me if I'm pregnant, or speculate with others. This hurts me more than you could ever know. Plus, it makes me feel fat. When the time comes, I'll share the blessed news. But being asked all the time if I am pregnant is a constant reminder that I am NOT. Don't feel compelled to share the latest "get pregnant" trick. Believe me, we've tried them all. Putting my feet up. Simultaneous orgasms. Drinking raspberry leaf tea. OPK sticks. Fertility monitors. Pineapple juice. Vitamin B. Acupuncture. Chinese herbs. Cutting out caffeine. Going on a vacation. If I had a dollar for every trick we've tried… (Blog #3)

Blog Features. Two main features make a blog accessible as an IVF resource: categorizing posts by topic and indexing within major search engines. Bloggers often organized their posts by topic and displayed an index on their page to allow easy access to all posts belonging to a certain category. Blogs are also indexed for search in major search engines such as Google thus making blog posts about certain topics easy for readers to find. One blogger described how one of her blog posts made it high up on the Google search results for that topic.

> My Vegas post got to #14 on Google for a search on "vegas ivf," although it's currently at #16 and will likely sink from there. Hee! Thanks for all the nice comments on it –I'm glad it's helpful for folks. (Blog #2)

Discussion

This study highlights what blogging throughout the IVF experience accomplishes for women. The results also underline the impact blogging has on the IVF experience in that blogging can have a positive impact on the psychosocial consequences of infertility by helping meet the common needs identified by those seeking psychosocial support during infertility treatment.

Need for Connection to Others with Similar Experiences and Access to Peer Support

The findings of this study revealed that through their blogs, women undergoing IVF developed a deep connection with other women in infertility treatment resulting in the creation of an online community centered on this shared experience. When studying psychosocial services for couples in infertility treatment, Read and colleagues (2013) found that contact with others in the same situation was a form of psychosocial support that was missing from traditional support services, and couples undergoing infertility treatment wanted to share

experiences and understanding with others facing a similar struggle. Participants in their study also suggested peer support as a method to fulfill needs for coping, sharing experiences, and receiving guidance through the treatment process (Read et al., 2013).

Peer support as an intervention for providing education, information, or different forms of social support is well documented in the health literature. In a qualitative synthesis of the perceived impact and experience of participation in peer support interventions for individuals with chronic disease, researchers found participants' experiences of support to be largely positive (Embuldeniya et al., 2013). Various forms of peer support also were found to be effective in the immediate postpartum period with women at risk for postpartum depression (Dennis, 2010), for women with gynecological cancer (Pistrang, Jay, Gessler, & Barker, 2012), and for reducing symptoms of depression (Pfeiffer, Heisler, Piette, Rogers, & Valenstein, 2011).

Technological developments have created new opportunities for individuals to provide or receive peer support through the use of the Internet and social media. One in four Internet users living with a chronic condition reported going online to connect with others with similar health concerns (Fox, 2011). A qualitative study exploring mothers' experiences of online peer support through an Internet discussion group following the death of a child described very similar results to those presented in this study and included emotional support, informational support, and support through communality (Aho, Paavilainen, & Kaunonen, 2012). Coulson, Buchanan, and Aubeeluck (2007) performed a content analysis of communication within a Huntington's disease online support group and found that group members most frequently offered informational (e.g., referral to experts, advice, education about the disease and other resources) and emotional support (virtual affection, sympathy, prayer, or encouragement) to one another. Loss of a child, having a rare disease, and pursuing infertility treatment are all examples of relatively uncommon or isolating conditions or experiences. The Internet has become a medium that provides opportunities to connect with others with similar experiences regardless of location, resulting in a dramatic increase in the size of the social network available to people (Hinton et al., 2010). In this study, bloggers supported one another emotionally through words of encouragement or supportive comments written on each other's blogs. Blogging that is perceived to be a resource to others could be considered a form of informational support. Those looking for a real-life account of the IVF experience valued blogs for their detailed and honest approach to describing the experience.

Researchers caution that while the Internet is a place where people can find others with whom to share experiences and draw support, negative consequences may occur. Epstein, Rosenberg, Grant, and Hemenway (2002) found that individuals whose only outlets for talking about infertility were Internet forums were more depressed and got less real-world support than those who had additional outlets. Similarly, Hinton and colleagues (2010) warned that the isolation often felt during infertility might be compounded by use of the Internet for community and support if it appears to undermine real world social connections and support. Findings of the current study suggest that blogging through infertility too can have the opposite of its desired supportive and therapeutic effect, for example, when the blog community no longer felt like a safe space due to privacy concerns or malicious comments on blog posts.

Need for Practical and Experiential Information about Infertility and its Treatment

According to Read and colleagues (2013), the other type of psychosocial support viewed by couples seeking infertility treatment as scarcely available was practical information about infertility treatment. One study participant highlighted the importance of experiential knowledge in the following quote about what support she would find significant, "a little guidebook that explains all the terms and abbreviations, as well as more subjective things like

emotions" (Read et al., 2013, p. 4). Analysis of the IVF blog discourse revealed that blogs are a valuable source of these kinds of information. Perhaps this is why bloggers in this study viewed their own experiential knowledge and the experiential knowledge of others as an esteemed information source as evidenced by their need to leave a record of their experiences as a reference for others.

Thirty-four percent of Internet users in the United States have read someone else's commentary or experience about health or medical issues on an online news group, website, or blog (Fox, 2011). Ziebland and Wyke (2012) described the potential for both positive and negative health effects from seeing and sharing experiences online. They described how other people's experiences of illness could provide valuable information to readers. Experiences of others can boost confidence or calm fears, make information about different treatments and outcomes more relevant, offer practical tips or coping strategies, and aid decision making with information that is both social and emotional (Ziebland & Wyke, 2012). The Internet's unregulated nature means that all information sources might be seen as equivalent, regardless of their trustworthiness, which serves as a caution for those using or recommending blogs or online health narratives as a source of knowledge (Ziebland & Wyke, 2012). However, the experiential knowledge of others, while valued by Internet health information seekers, is mostly seen as complementary and does not replace medical expertise (Armstrong & Powell, 2009; Kivitis, 2004).

Need for Alternatives or Supplements to Traditional Therapy

Findings of this study revealed that women bloggers saw blogging throughout the IVF experience as therapeutic. This claim was supported by the discourse when women described their blogging as meeting a need or when bloggers were engaging in therapeutic activities such as seeking advice or venting emotions. Research shows that women often do not seek help for the emotional and psychological distress experienced during infertility and IVF (Boivin, Scanlan, & Walker, 1999) despite the well-documented psychosocial consequences associated with infertility and its treatment (Griel, 1997; Hinton, et al., 2010; Mazure, Takefman, Milki, & Lake Polan, 1992; Metwally & Ledger, 2011). Instead, both men and women most frequently utilized informal sources of support. These sources included family, friends, and information on the emotional aspects of infertility obtained through the clinic and media sources. Less than 11% percent of patients used formal sources of support such as counselors or support groups (Boivin et al., 1999). Factors contributing to the low uptake of psychosocial counseling also were studied and patients described three main factors that prevented them from making an appointment: comfort level (e.g., too shy, awkward); coping resources (e.g., don't feel the need); and practical concerns (e.g., cost of session) (Boivin et al.,   1999).   Boivin   and colleagues (1999) performed their research before the advent of the blog, but based on the results of the current study, blogs can be an effective resource for coping and eliminate the need to seek professional help, especially in those experiencing low or manageable levels of distress.

Curtrona and Russell's (1990) theory of optimal matching provides a similar explanation for why blogs may provide the kind of psychosocial support needed by women in infertility treatment. The theory proposes that certain types of support are most beneficial when matched to particular types of stress. In the current study, IVF bloggers were actively involved in giving and receiving emotional support through their blogs, which could be a more appropriate match for the level of support needed to facilitate effective coping, thus eliminating or decreasing the need for other forms of support. It is possible that women also were engaging in therapeutic activities that would typically be included in a counseling or psychosocial intervention, such as telling one's story, working through decisions, and venting emotions.

It is not being suggested that blogging replaces the expertise of professionals (counselors, social workers, therapists, or other practitioners providing psychological or mental health support), especially when the level of distress is no longer an appropriate match for the level of support offered through blogging and reading others' blogs. However, blogging can be used to supplement more traditional therapeutic activities. Two bloggers in this study blogged about their experiences seeking psychiatric help and group counseling while also engaging in the therapeutic benefits of blogging.

When blogging, women are engaging in an act often used as an aide to traditional psychotherapy—writing or telling one's story. Psychotherapy frequently involves putting together a story that explains and organizes major life events causing distress, assuming that this act of constructing stories helps individuals to understand their experiences and allows for better management of the emotional effects (Pennebaker & Seagal, 1999). In a review of the literature, Pennebaker and Seagal (1999) outlined results of more than two dozen studies describing the benefits of writing, with impact seen on mood, personality, and immune function across a variety of populations. Van Emmerik, Reijntjes, and Kamphuis (2013) performed a meta-analysis of studies evaluating writing therapy in posttraumatic stress conditions and found that individuals participating in writing therapy demonstrated significant and substantial short-term reductions in posttraumatic stress when compared with waiting-list controls. They also suggested that Internet adaptations of writing therapy might be useful for trauma survivors in remote areas or for those who prefer to remain anonymous. Research into the therapeutic benefit of writing a blog is also starting to emerge (Chung & Kim, 2008; McDaniel, Coyne, & Holmes, 2012; Rains & Keating, 2011). Women blogging throughout the IVF experience, as the analysis of the blog discourse revealed, are engaging in therapeutic practices such as working through decisions, seeking advice, and venting emotions with the safety provided by the blog community and a concealed identity.

In this study, the impact that blogging has on the IVF experience was observed through its influence on the psychosocial needs of women. The findings suggest that blogging meets the need for connection to others with similar experiences and the desire for peer support during infertility treatment; it meets the need for practical and experiential information about infertility and its treatment; and it is an alternative or aid to traditional therapeutic effort aimed at easing the social and psychological distress experience by women in infertility treatment.

Implications for Healthcare Providers and Health Researchers

Based on the results of this study, women undergoing IVF could benefit from the emotional and peer support provided by connection to the IVF blog community. Blogging can also be used as an alternative or aide to traditional counseling or psychotherapy. For women who are unable to access more traditional psychosocial supports due to financial, geographic, or other perceived barriers, blogging can be recommended by healthcare providers as an alternative strategy for support. Counselors and therapists providing care to women undergoing IVF can use blogging as a strategy within their practice to support and perhaps enhance the therapeutic effect of more traditional methods. As blogging is not without its possible negative effects, women should be screened for ineffective coping and referred to professional services when necessary.

Healthcare professionals should be made aware of the importance of information based on the personal experiences of others and incorporate this type of information into their care of women undergoing IVF. Healthcare professionals need to be aware that women are going online to find practical and experiential information about infertility and its treatment. Instead of viewing this practice negatively, clinicians can use this knowledge as part of their routine care by having open dialogue with their patients about what resources are being accessed

online. Results of studies, such as this one, need to be disseminated to frontline healthcare professionals working with women undergoing IVF to highlight the value of blogs as a source of information and support. Access to this information will allow caregivers to incorporate relevant blog attributes into their care.

In this study, inferential conclusions were drawn about the impact of blogging on the IVF experience; future studies evaluating the effect of blogging throughout the IVF experience on women's overall mental health and coping using quantitative measurement tools could strengthen the claims made in this study. Blogging as an intentional intervention to support women's psychosocial needs throughout infertility treatment remains an area to be explored.

Study Strengths and Limitations

To our knowledge, this is the first study to take a qualitative approach to the examination women's IVF blogs making it unique in the current health literature. The use of blogs as the primary qualitative data source in this study is one of its main strengths. Blogs offer rich descriptions of peoples' everyday experiences and provide insight into a range of phenomena with unprecedented accessibility to researchers. What is most interesting about blog data is that they are free from researcher influence, thus minimizing many of the weaknesses and biases of other forms of data collections (Jones & Alony, 2008).

This study ensured ethically admissible results by building upon a pre-existing framework to guide the informed consent process. While other studies have included only blogs that were within the public domain, this study guaranteed that even bloggers that appeared to expect some level of privacy were given the chance to have their blogs included in analysis.

Limited contact with the bloggers in the study eliminated the opportunity for member checking, a strategy used to increase rigour in qualitative research by soliciting the participants' views of the credibility of the study findings (Creswell, 2007). In this study, bloggers were unable to provide feedback related to the validity of the researcher's analysis of their text, and therefore readers must judge the credibility of the findings based on other measures of trustworthiness. Rigour was maintained by presenting the analysis in such a way that the analytic steps taken were clear for each claim made.

Limited contact with the bloggers also affected the demographic data available for the purposes of describing the sample. Describing the research participants is important to highlight the research context and aids the reader in determining whether the findings can be transferred to other situations (Krefting, 1991). Rigour was maintained in this case by collecting as much information about the blogger as possible from the text of their blog. This method actually proved to be almost equivalent to the blogger completing a demographic questionnaire; however, some bloggers provided more detailed demographic data in their blog than others.

A source of bias impossible to control for when using blog data in research is the inherent bias due to the medium (Jones & Alony, 2008). Bloggers need access to a computer and the Internet, and those less technically savvy may be underrepresented in samples of bloggers. As this study examined the act of blogging itself, the issue of representativeness is less problematic; however, caution should be used when applying the findings to others' contexts.

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