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The ART of Social Networking: How SART member clinics are connecting with patients online

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Abstract

Objective—To study and describe the use of social networking websites among SART member clinics

Design—Cross-sectional study

Setting—University Based Practice

Patients—Not Applicable

Interventions—Not Applicable

Main Outcome Measure—Prevalence of social networking websites among SART member clinics and evaluation of content, volume and location (i.e mandated state, region) using multivariate regression analysis

Results—384 SART registered clinics and 1,382 social networking posts were evaluated. Of the clinics, 96% have a website and 30% link to a social networking website. The majority of clinics (89%) with social networking websites were affiliated with non-academic centers. Social networking posts mostly provide information (31%) and/or advertise (28%), while the remaining offer support (19%) or are irrelevant (17%) to the target audience. Only 5% of posts involved patients requesting information. Clinic volume correlates with the presence of a clinic website and a social networking website ($p<0.001$).

Conclusion—Almost all SART member clinics have a website. Nearly one-third of these clinics host a social networking website like Facebook, Twitter and/or a Web-log (“blog”). Larger volume clinics commonly host social networking websites. These sites provide new ways to

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communicate with patients, but clinics should maintain policies on the incorporation of social networks into practice.

Keywords

in-vitro fertilization; social networks; Twitter; Facebook; assisted reproductive technology; infertility; Internet; blogs

As of 2010, 77% of North Americans were “online” (1). Over the last ten years, the Internet has improved how physicians and patients exchange medical information amongst themselves and with each other. Many patients use the Internet as a primary source for information about physicians, diagnoses, and therapies. According to a recent study, 42% of adults report they or someone they know gets medical advice online (2, 3). While the potential benefit of widely disseminated information and communication is ideal under many circumstances, opportunities for misrepresentation and the distribution of misleading information persist. For example, in 2008, there were 1,434 medical-related blogs; however only 279 were actually written by medical professionals (4).

Patients undergoing infertility treatments are likely to use the Internet for medical advice and support. A Google search using the term “infertility support” yields over 3.5 million links while a search using the term “IVF clinic” yields 215,000 links (5). Although the decision of choosing an infertility practice is complex, patients state that the Internet is highly influential (6–9). As a result, physicians are increasing their online presence in order to enhance communication with patients.

In an effort to guide physicians online, the American Medical Association (AMA) responded to the initial Internet boom a decade ago by adopting policies for the incorporation of the Internet into medical practice. Their recommendations addressed content, marketing, confidentiality and commerce (10). In 2005, *Fertility and Sterility* featured several articles that discussed the increasing impact and inherent challenges that the Internet posed to both patients and physicians in the world of assisted reproduction. An editorial in this same issue raised concerns about fertility clinic website compliance with the 2004 ASRM/SART guidelines for advertising (11, 12) which yielded a follow up assessment and commentary on the Internet as a growing marketing force in the field (13).

The way people use the Internet today – sometimes referred to “Web 2.0” – has changed drastically since these articles were published. The dominance of social networking websites is one example of this evolution. Social networks are “website[s] where one connects with those sharing personal or professional interests, place of origin, education at a particular school, etc” (14). This often involves creating a profile and may include text, images, video or other media. Social networking websites, like Facebook and Twitter are proliferating rapidly among advertisers, businesses, and particularly the medical community. One example of this trend is that 75% of hospitals in the United States host a Facebook website or Twitter account (15). The penetration of social media websites into healthcare has the potential to enhance the patient-physician relationship, but concerns about patient privacy, information accuracy, and disclosure of conflict-of-interest remain.

In response to the rapid growth of social media within the healthcare community, the AMA recently adopted a new policy to reflect the growing use of social networking websites amongst its members. This policy essentially provides common sense guidelines for physicians involved in online social networking by advising physicians to “be cognizant of patient privacy,” “separate personal and professional content online,” and “recognize that actions online and content posted...can undermine public trust in the medical profession” (16).

Traditionally, men have dominated the Internet, but over the last 10 years women have comprised the majority of online users. The rise of social networking websites is thought to be the primary contributor to this increase (17,18). Women over the age of 18 spend the most time online and are more likely to use social networking websites (17–18). Additionally, women are more likely than men to visit health-related websites and the disparity increases in the 35–44 year age group, where usage among women is the heaviest (17–18). Not surprisingly, this 35–44 year old demographic is the same group that comprises the majority of social networking website traffic, as well as the majority of IVF cycles performed due to infertility (19,20).

The rapidly growing popularity of social media in women’s health care garnered attention by reproductive endocrinologists within the last year. The 2010 Annual Meeting of the American Society of Reproductive Medicine included a symposium on the use of social media in IVF practice, (21) and the 2011 Pacific Coast Reproductive Society Meeting held a roundtable to discuss the use of social media in clinical practice.

With rising interest in the topic, we felt it was important to understand how online social networks are utilized by IVF clinics and provide a backdrop for physicians who might be interested in launching one themselves or for their own clinic. In order to accomplish these goals we visited nearly 400 SART member clinics’ websites and identified usage trends based on clinic size, region and/or clinic presence within a mandated state. We viewed over 1,300 social media postings to further characterize how SART member clinics use social media and conclude by providing recommendations for incorporating social media into clinical practice.

Describing the ART of Social Networking

On October 16 and 17th, 2010, the ASRM/SART website (19) was queried and clinic websites were identified either through the SART website or a Google Internet search using the name of the clinic (5,19). Each clinic’s website was searched for the presence or absence of a link to a social networking website like Facebook, Twitter and/or a Web-log or “blog.”

All clinics were subdivided into five regions (West Coast, Midwest, South, Mid-Atlantic, and Northeast) based on similar geographic divisions used by the Centers for Disease Control (CDC) (22). Clinics were subdivided into two groups based on whether or not they were located in one of 15 states with laws that mandate coverage for assisted reproductive technology (23). Cycle data was collected from the SART website averaging the cycles/year over the period described for that clinic. The cycles/year variable was subdivided into

quartiles in order to highlight any differences with social networking usage among the extremes of clinic volume.

Uni-variate analyses were performed using student's t-test, ANOVA, and Pearson Chi-square. Multi-variate regression analyses were performed to further analyze the association between social networking and cycles per year, controlling for region, location in a mandated state, and presence of a website. The cycles/year variable was log-transformed due to a lack of normality in distribution, specifically a positive skewing. Analyses were performed using SPSS (v18.0) and STATA (v11, StataCorp, College Station, TX). *P*-values <0.05 were considered significant. The Washington University-St Louis Institutional Review Board (IRB) determined this study exempt from IRB review.

Clinic size is associated with the use of social networking

A total of 384 SART member clinics were identified from 46 states throughout the United States. Of these clinics, 96% (369/384) had a website. Most (70%) website links were listed directly on the SART clinic information window which included the clinic's ART report. Of the clinics that had a website, 30% (109/369) had a link to a social networking site. (Table 1)

Of the 384 clinics, 345 had documented cycle data on the number of IVF cycles/year listed on the SART website. Of the clinics that did not have a social networking website, there was little difference in volume, but of those clinics with social networking websites, 41% of clinics were in the larger quartile group (>450 cycles/year) whereas only 14% of clinics were in the smallest quartile (<105 cycles/year) ($p=0.015$). (Figure 1)

After controlling for existence of a SART website, mandated state location, and region, the presence of a website on SART and the use of a social networking website were associated with higher mean cycles/year compared to the clinics that did not have a website on SART or use social networking ($p<0.001$). (Table 2)

Nearly one-third of SART member clinics host a social networking page. Clinics that actively utilize social networking perform a higher average number of IVF cycles/year than clinics that do not and tend to be in more densely populated markets. Although our study was not powered to make this determination, it is unlikely that social networking websites are contributing to higher cycle volumes, as many high volume clinics were in the larger quartiles for cycle/year before the advent of social networking altogether.

Not all clinic social media is equal, though, and these findings suggest that larger clinics have more resources available to allocate toward social networking and advertising, which may be advantageous in competitive markets. Ultimately, with their increasing popularity and ease of use, social networking websites are providing a unique communication strategy that clinics are adopting in order to attract patients who are increasingly seeking advice online.

The ART of social networking: How are SART member clinics using social media?

Over the last three years, reports describing the use of social media in medicine have been published, (4, 24–27) although none have examined its use in women's health. A recent study described how patients with diabetes use social networking websites and found approximately two-thirds of posts dealt with patients providing unsolicited information while the fewest percentage of posts deal with patients requesting specific medical information (24). Although these social networking websites are forums for people to share common interests and dialogue, much of the communication is directed one way.

In order to describe how SART member clinics are using social media, we categorized 1,382 individual posts from 103 SART member clinics (academic centers n=140, non-academic affiliated centers n=1242) that use social networking websites like Facebook, Twitter or host a blog. The content of the posts were classified by the authors (KO, PJ) into five categories as described elsewhere: “advertising,” “providing information,” “requesting information,” “support,” (i.e. “thank you’s,” pictures of children, or other personal experiences) and “irrelevant” (i.e. “spam,” products or job post unrelated to infertility) (24).

Most SART member social networking website posts deal with “providing information” and “advertising” (31% and 28% respectively). The remaining posts “provide support,” (19%) were “irrelevant,” (17%) and/or requested information (5%). (Figure 2) Comparative analyses between academic and non-academic affiliated clinics were limited by the overwhelming majority (≈90%) of social networking posts from non-academic affiliated centers.

Interestingly, each social networking venue, likely by nature of its interface, was used differently. Blogs typically “provide information” that is mostly educational about an infertility topic. Twitter posts, which act as “microblogs” due to their 140 character limit, followed this pattern however “advertising” was more prominent in clinic Twitter posts. Videos on these clinic social media sites (mostly via YouTube) were mostly educational as well, although many videos were television interviews of clinic physicians on local news media.

In general as one clinic's audience increases, so does the posting frequency. The more people “like” your Facebook page or “follow” you on Twitter, the larger your audience to broadcast a message. Performing a secondary analysis of 71 clinics, we found that SART member clinic Facebook sites average 285 “likes” whereas SART member clinics average 440 followers on Twitter. To put this into perspective, RESOLVE has over 6,800 “Likes” and over 1,700 Twitter followers (28,29). ASRM has over 1,200 and 850 respectively, (30,31) and the Mayo Clinic has over 58,000 “likes” (32).

SART member clinics with a social media presence vary their usage. Clinics average about 7 posts/month across the various social media venues. Post frequency is a challenging metric as it can fluctuate with current events, loss of a dedicated site administrator, etc. Despite this challenge, it seems that clinics can be separated into three groups based on posting

frequency: a) <5 posts/month (49% of clinics, n=71) b) 5–9 posts/month (27% of clinics) c) >9 posts per/month (24% of clinics). Clinics with a greater number of “likes” and/or followers posted information more frequently (moderate correlation $r = 0.6$). Of note, ASRM’s Facebook page averages 5–10 posts/day (30).

Data collection over a single point in time and the subjective nature of the categories limits the strength of any conclusions, but our findings provide a snapshot of how SART member clinics are using social media, which is to provide information and advertise - not surprisingly - the two most common uses of the Internet (33). Additionally, patients, likely due to privacy concerns, seem reluctant to broadcast their search for information directly from the clinic’s social networking website.

New Media, Same Concerns

The emergence of “Web 2.0,” characterized by social networking websites, has shifted the way in which patients and physicians interact. A recent survey found that 20% of Americans cannot easily reach their physician to ask questions or schedule appointments, and prefer secure online communication. The survey found that over 75% of respondents would participate in secure communication online and that nearly 60% of younger patients (teens to early 30s) would actually prefer physicians with an online presence over those without one (34).

In light of such expectations, the use of the Internet has not gone unnoticed by SART member clinics. In 2005, two-thirds of infertility clinics had websites (7). In 2007, nearly 80% of SART member clinics had websites, (13) and today, 96% of SART member clinics are online with a clinic specific website. This trend is directly due to an increased acceptance of the Internet, as an information and marketing tool.

Concerns about the reliability of information on clinic social networking websites remain, particularly those posts that might advertise success rates since pregnancy rates tend to drive patient decision making (9,11,13). The Federal Trade Commission (FTC) has taken action in the past among fertility clinics who misrepresent their success rates, (35) but social networking websites may prove more difficult to regulate. The FTC is currently working to update its online advertising guidelines to reflect the use of social networking websites (36,37).

The pharmaceutical and device manufacturer industries are eyeing social networking websites as the future of direct-to-consumer marketing of their products (25). The increasing presence of these manufacturers has led the FDA to consider regulating social media advertising for such products, a possibility that has incurred scrutiny from all sides, especially since Facebook recently revoked their ability to turn off user comments (38,39).

As many as 29% of healthcare-related social media authors report being approached by advertisers to endorse certain products (4). Of the 1,382 social networking posts we examined, few posts directly advertised retail locations where IVF cycle medications could be ordered and few directly endorsed products or services from the clinic. Currently, the FTC holds site administrators responsible for voluntarily and clearly identifying any

financial relationship to a product or service they endorse on any social networking website, (40) further reinforcing the need for transparency within healthcare-related social networking websites.

The use of social networking websites raises questions about patient confidentiality and the disclosure of conflicts-of-interest. These new mediums could easily streamline many aspects of the IVF clinic. The complexities of open communication regarding sensitive patient information have led to independent codes of ethics among those maintaining medical blogs (41) and other health information online, (42) and should motivate clinics to adopt written policies that emphasize patient privacy when incorporating social networking into their practice.

A Bit of History Repeating?

The assisted reproductive medicine community has previously reacted and responded to the way the Internet has molded the patient-physician relationship (7,43–45). Long before the popularity of social networking websites, online discussion groups allowed users to post questions and get responses from other members in the group. Vetting the source and quality of the content was similarly challenging, though. Regardless, online infertility discussion groups were highly influential and may be a harbinger of social media's impact.

A 1998 survey of approximately 600 patients seeking information about infertility via online discussion groups showed that almost 50% felt the information they received was valuable and helped them communicate better with their physician (45). Furthermore, nearly 25% of respondents used conversations from the discussion group to not only switch providers but to ask for tests not previously ordered (45). As a result, previous authors have advocated for the creation of a discussion group moderated by ASRM members as well as the use of a "trustmark" certification process to ensure quality websites (7,11,44,45). In an effort to broadcast a reliable source of information via social networking websites, ASRM uses Facebook and Twitter to disseminate a wide range of assisted reproduction-related health information to over 1,500 followers (30,31).

Incorporating Social Networking into Practice

Social networking websites provide a forum where clinics can enhance correspondence with patients, showcase their services through multimedia, and direct common information to a large audience. Incorporating these websites into one's practice is a large commitment and can be daunting. Certain key elements of strategic communication should be considered before venturing into social networking.

First, identify the *audience* and the *objective* of one's audience. Is the objective to provide general news to patients about relevant topics? Is it to advertise upcoming events associated with one's practice? Once identified, *frequent monitoring* by a primary site administrator is paramount to ensure that objectives are met and overall site integrity is maintained. The site administrators can be an individual physician, but often it is a part-time employee hired specifically for the job as it can be time consuming. Although physician blogs are generally authored by the physician themselves, maintenance may be left to a third party that also

administers that physician's or clinic's social media presence. If the goal is to advertise, daily monitoring is not required. However, if the aim is to share ideas and give up-to-date news to patients, daily monitoring is advised. The plethora of social media websites available can be intimidating and confusing however *choice of platform* is critical. Although many platforms can be used simultaneously and serve overlapping functions, choice of platform should be tailored to the practice objectives. For example, videos on injection teaching for patients would be served best on either YouTube or Facebook. In our dataset, clinic videos, using links to YouTube, were found to be predominantly educational. Short updates about clinic closures due to inclement weather, drug shortages, or links to drug alerts from the Food and Drug Administration (FDA) can be broadcast easily using Twitter. Finally, recognizing the limitations of *security* inherent to social media is crucial in shaping your communication strategy (46).

A recent survey of both men and women in the United States showed that 84% of respondents were not interested in communicating with their physician via social networking websites, whereas 52% felt comfortable with email communication (47). Although 70% of respondents were over the age of 46 and not specifically infertility patients, this survey suggests that social media may not be for everyone and every practice. Therefore, it is helpful for individual clinics to survey their patients before implementing any social media strategy into practice. Surveying patients about their social media habits and their perceptions of how any electronic communication may enhance their infertility care may help clinics improve communication with patients.

Policies that direct physicians and staff on the use of social networking at work is recommended when incorporating social networking into a practice and should comply with AMA guidelines (16). The primary site administrator is responsible for ensuring that all content complies with HIPAA, copyright, conflict-of-interest and other relevant policies. Disclaimer language for patients seeking specific medical advice should be clearly visible (46). Using social media for clinical research purposes should have institutional review board approval.

Although not explicitly stated on the site, it is likely that comments were being moderated/filtered across these social media venues. Since anyone with a Facebook or Twitter account who "likes" a page can post comments or broadcast their opinions about a particular clinic or its physicians it is likely that these social networking websites are being monitored by the site administrator. Ultimately, action plans on how to respond to negative feedback should be addressed when devising a social networking policy.

Traditional consumer-driven corporations have showcased success stories on how social media can enhance consumer interest, increase revenue, and broaden brand loyalty (48). The healthcare industry is taking note and adopting social media for similar reasons. Mayo Clinic and The Johns Hopkins Hospital host numerous testimonials, expert answers to commonly asked questions and promotions with the goal of making their sites the default starting point for patients looking for answers to their healthcare needs.

Ultimately, as these websites grow in popularity all segments of healthcare, including SART member clinics are paying attention and adopting this technology in an effort to provide patients with infertility a starting point in their search for treatment.. Additionally, clinics are using the technology to provide information and experiment with ways for patients and physicians to improve communication with each other.

Although the majority of SART member clinics are using social media to broadcast a message rather than create a dialogue, patients with infertility now have numerous forums where they can share experiences with other patients. Social media provides a central location for individual patients to visit and learn from each other, while being exposed to local clinics and their services. Establishing an effective social networking presence involves strategic planning, a thorough understanding of its advantages and disadvantages, and a commitment to its maintenance.

We describe here the increasing use of social media within the realm of reproductive medicine and show that larger clinics have a greater presence online, however other elements in the use of social media warrant further investigation. For example, engaging clinic patients (i.e survey) in an attempt to establish a social networking presence in one's clinic is critical in order to optimize the social networking experience for both parties. Additionally, learning how social media tools are contributing to clinic volume and perhaps quantifying it would be valuable for clinics to consider. Furthermore, a survey of SART member clinics on how they maintain a viable social media presence would help guide other members interested in adopting the technology.

Highlighting the use of social networking websites by SART member clinics helps illustrate social media's growing influence on the patient-physician communication in our specialty. Ultimately, clinics should be encouraged to adopt written policies that address patient privacy, accuracy of health information, and conflict-of-interest before incorporating social networking websites into their practice. The potential benefits of these new online tools is encouraging and customizing them to fit the needs of each clinic, while protecting patients, will only serve to improve clinic efficiency and patient care.

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Figure 1.
Use of Social Networking and Annual Cycle Volume

Figure 2.
Use and Content of Social Media Postings Among SART member clinics

Table 1

Characteristics of SART member clinics

Category	N	Yes (%)	No (%)
Total Clinics evaluated	384		
Those with academic affiliations		43 (11)	341 (89)
Location in a mandated state		204 (53)	180 (47)
Those with a website identified		369 (96)	15 (4)
Regional distribution of clinics with website	384		
Mid-Atlantic	69	50 (74)	19 (26)
Midwest	94	59 (63)	35 (37)
Northeast	51	30 (59)	21 (41)
South	85	53 (62)	32 (38)
West Coast	85	69 (81)	26 (19)
Website link on SART	369	258 (70)	111 (30)
Link to social networking website	369	109 (30)	260 (70)
Clinics with updated social networking sites	109	103 (94)	6 (6)

Table 2

Correlation between online presence, region, location in mandated state and clinic volume

Variable	N	Mean Cycles/Year (+/- SD)	P-value
Presence of website on SART			<0.001
Yes	243	430 (542)	
No	102	226 (263)	
Location in mandated state			0.002
Yes	176	472 (623)	
No	169	264 (237)	
Regional Distribution			<0.001
MidAtlantic	61	407 (637)	
Midwest	83	312 (382)	
Northeast	46	705 (721)	
South	79	234 (243)	
West Coast	76	342 (360)	
Social Networking Use			0.001
Yes	101	538 (663)	
No	244	300 (369)	

t-tests and ANOVA of log-transformed cycles/year