

Exploring the Relationship Between Online Health Information Seeking Motivations and Patient Narratives for Orthopedic Practice Web Sites

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Online health information seeking is increasing as people search for information about symptoms, diagnosis, treatment options, physician ratings or caregiver information. As a Midwest-based orthopedic practice was rebuilding its website and updating its content, an online survey was conducted to explore relationships between motivations for online health seeking and preferences for narrative qualities in patient-centered narratives. Participants were asked whether they were experiencing orthopedic symptoms, or had received a diagnosis, and subsequently rated their preferences for certain narrative qualities in patient-centered stories. Individuals who had received an orthopedic diagnosis and were worried about it expressed a preference for narratives about diagnosis/treatment and lifeworld concerns. Those who were under a doctor's care or receiving treatment for an orthopedic condition expressed less interest in narratives about initial symptom experiences. Further research is called for to determine what kinds of content physicians can feature on their web sites in order to build patient trust, provide reliable education and broaden awareness of their practice.

Keywords: Online information seeking, patient narratives, narrative paradigm, orthopedic practice

Cyberspace is an increasingly popular destination for those seeking health information. According a Pew report (2013), 72% of Internet users reported searching online for health information in the past year. Further, 35% of U.S. adults search specifically for a medical condition that they or someone else might have (Fox & Duggan, 2013). Although self-diagnosis and seeking the input of network members have always been important “lay responses” to illness (Dean, 1986; Segall & Goldstein, 1989), “many have now added the Internet to their personal health toolbox, helping themselves and their loved ones better understand what might be ailing them” (Pew, 2013, p. 2). Fox and Duggan (2013) explored how people used the Internet as a diagnostic tool and noted that “online diagnosers” subsequently talked with a clinician about what they found online or had their condition confirmed (p. 4). In addition to diagnosis, online seekers also used the Internet as a means of social support.

Although individuals are seeking health information on the Internet, health care organizations have responded more slowly to this trend. For example, Sanchez and Sanchez (2011) found that only 31% of 208 family practices had a physician website. That same study concluded the information most desired by patients was often not represented on physician/health care organization websites, a situation also found by Perrault and Smreker (2013). Yet, 69% of patients in Hu, Bell, Kravitz, and Orrange's (2012) study of pre-appointment information seeking reported visiting a medical association's website. As health care organizations seek to be responsive to patient desires, their virtual presences will likely increase. In this expanding online environment, patient narratives offer a potentially effective means of gaining attention as well as instructing and persuading (Gray, 2009). However, information seekers' preferences when scanning patient narratives are understudied. If health care providers decide to incorporate patient stories on their websites, what aspects of patient experiences should they include? Does it depend upon the information seeker's motivations for searching the Internet? This study represents an opportunity to explore these questions. The next section examines the role of narratives in healthcare, focusing particularly upon illness management, caregiving, and physician experiences. Next, online health information seeking is reviewed, concluding that online users often seek the same categories of information and support provided in narratives. The intersection of these two areas remains understudied, leading to a research question about the aspects of patient

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narratives preferred by Internet users with differing motivations. A study is then reported where a survey was linked to an orthopedic practice website; participants were asked questions about orthopedic symptoms or experiences, and then reported their preferences for different components in patient narratives.

Narratives in Health Care

The power of storytelling has been noted as an effective communication tool in the healthcare environment (Frank, 2000; Kleinman, 1988; Sharf & Vanderford, 2003). Walter Fisher's (1984, 1987, 1989) narrative paradigm acknowledges the power of storytelling and narration as the basis for human communication, arguing that the activities of *homo narrans* have "relevance to real as well as fictive worlds, to stories of living and to stories of imagination" (Fisher, 1984, p. 2). Fisher's approach is grounded in five principles: (1) people are storytellers; (2) people make decisions on the basis of "good reasons" (Fisher, 1978); (3) history, biography, culture and character can determine what people believe are good reasons; (4) the rationality of stories is determined by narrative probability and fidelity "whether the stories ring true with the stories they know to be true in their lives" (Fisher, 1984, p. 8); and (5) the world is a "set of stories which must be chosen among to live the good life in a process of continual recreation" (p. 5). Fisher's exploration of narrative probability and fidelity point to persuasive storytelling's power; such power can serve as a foundation for building effective online communities where people are continually telling, sharing, persuading and evaluating a story's credibility.

Gray (2009) argued that narratives of patient experiences are important across a variety of healthcare settings, such as patient/physician interactions; medical school training and public education and persuasive campaigns.¹ Tang and Bie (2016) echoed this perspective, forwarding four reasons why health communication narratives are important. First, as a way of making sense of experience, narratives can explore the "lived experiences" (p. 173) of those involved in healthcare. Second, health care providers often use stories when explaining diagnosis and treatment options. Third, narratives are important components of identity construction, a particularly important feature when dealing with chronic or life-altering medical conditions. Finally, narratives provide a link between "micro-level individual experiences and macro-level cultural values and ideologies" (Tang & Bie, 2016, p. 173). That is, patients and health care personnel may draw upon both canonical and resistance narrative themes (Bochner, Ellis, & Tillman-Healy, 2000) in the often co-constructed process of crafting satisfactory versions of events. In dialectical fashion, the end results may provide both an affirmation of core cultural values (e.g., "thinking positive" as a response to cancer, Wilkinson & Kitzinger, 2000) while also allowing room for some assertion of autonomy (e.g., expressing socially taboo fears of death, see Fisher & Wolf, 2015).

The persuasion context is one area where health communication researchers have examined narratives. For example, in Green and Brinn's (2003) study on tanning bed use and the risks of skin cancer, female college students were either assigned to read a narrative or a statistical text-based message on skin cancer risks. The story featured a woman named Alicia who used tanning beds and subsequently developed skin cancer. In the study, the narrative was more persuasive in decreasing an intention to tan and increasing perceptions of reality. The *keepin' it REAL* substance use prevention campaign developed by Michael Hecht and associates (Warren et al., 2006) provides another example of campaign-based narratives. One benefit of such research is that it allows for the articulation and testing of theoretical mechanisms detailing the workings of narratives. Consistent with what Fisher calls narrative rationality or "identification rather than deliberation" (Fisher, 1987, p. 66), research has confirmed that audience identification and involvement are key foci of narrative effectiveness (Hong, 2013; Lee, Hecht, Miller-Day, & Elek, 2011; Miller-Day & Hecht, 2013).

However, researcher-crafted campaign and prevention narratives are only one side of the story. As health information seekers increasingly go online for information either about their own, or a loved one's, condition, the abundance of stories on the Internet and the multitudinous opportunities for storytelling provide rich avenues for research. The stories that ill persons and patients share in online environments can involve aspects of illness management, the joys and burdens of caregiving, and physician experiences, to name just a few.

Managing illness experiences. The symptom experience often begins with perceived alterations in bodily states or sensations (Telles & Pollack, 1981). Such changes can be ambiguous (Kleinman, 1988) and because interpreting these alterations involves socially shared meanings, ill persons frequently turn to others for interpretive assistance and advice. The Internet offers an outlet that may be more expansive than one's lay network. In a study of four online communities for arthritis sufferers, Willis (2016) found sharing information about medication and

treatments, symptoms, and coping advice were especially prominent. Similar themes were uncovered in a study of support groups for rare vascular conditions (e.g., thoracic outlet syndrome) (Walker, 2015). Thus, online narratives of experiences such as symptoms, treatments, recovery, and trajectories may provide social meanings that help patients make sense of their own experiences.

Caregiving. Patients are not the only ones who turn to the Internet for information and advice about illness experiences; caregivers often have the same needs, as well as needs related to the burdens of caregiving (Boots, de Vugt, van Knippenberg, & Verhey, 2014; Marziali, Damianakis, & Donahue, 2006). Alpert and Womble (2015) argued that narratives of caregiving provide both the story-tellers and their caregiver audiences opportunities to make sense of their new roles, cope emotionally, and act more efficaciously. Their study of online narratives from the AgingCare.com website found that humor usage, positive framing of caregiver experiences, and acceptance were prominent themes in caregiver narratives.

Physician experiences. One platform that affords patients the opportunity to provide narratives of physician experiences is physician rating websites (PRWs). In a review of PRW research, Emmert, Sander, and Pisch (2013) found that overall levels of physician ratings were low, but appear to be increasing as awareness and availability of PRWs increases. They also found that, contrary to concerns of “physician bashing” by disgruntled patients, ratings were largely positive. In a section specifically devoted to addressing the role of patient narratives, they argued that information provided by patient stories might not only help other patients, but might be more informative for doctors seeking to improve care, compared to numerical rating scales. Terlutter, Bidmon, and Röttl (2014) found, in a sample of German patients, that those who had used PRWs were more likely to use the Internet for health information seeking and to trust information found on PRWs. Although certain aspects of the physician-patient relationship have always been discussed online (e.g., support groups), PRWs are becoming an additional virtual space dedicated to reports of specific physicians.

From this brief review, it is clear online health information seekers will encounter stories about healthcare experiences. It is unlikely, however, that information seekers come upon narratives haphazardly, or that they will attend to particular stories, unless those narratives are consonant with their own goals. Why individuals seek information and advice online are important considerations for health care organizations determining the efficacious use of narratives.

Health Information Seeking

Motivations for seeking information online are varied, but they are not random. People often go online to search for information on a specific condition, prior to or following a physician visit, receiving or wanting to confirm a diagnosis, desiring to learn more about their physicians and a doctor’s “ratings,” or seeking treatment options for themselves or others (Cline & Haynes, 2001; Hu et al., 2012; McMullan, 2006; Tustin, 2010). Search engines, web sites dedicated to diseases and symptoms such as Web MD, physician rating sites that provide anecdotal patient ratings, or online support groups are likely options for the online seeker or diagnoser.

Manierre (2016) argued for two general benefits to seeking information about health. First, individuals who seek information can become empowered to change behaviors on their own, and/or to be more active participants in medical encounters. Second, information can facilitate coping with the ambiguities of many medical conditions. These benefits accord with channel complementarity theory (Dutta-Bergman, 2004a, b), which argues individuals who are seeking information from one source (e.g., friends) are also likely seeking information from other sources (e.g., the Internet). For example, an individual looking at an orthopedic practice website may do so following a referral from a primary care physician, but may also simultaneously be looking up general information on orthopedic conditions and talking to coworkers and/or family members who have had similar conditions. Such a motivated information seeker is likely to evaluate each source differently.

Ruppel and Rains (2012) argued that four source characteristics are important to patterns of complementarity. The first factor, expertise/credibility, is of special relevance in the health information seeking context. As noted, with the proliferation of online health seeking and the virtually limitless sources of information, researchers have become increasingly concerned with the quality of information available (Keselman, Browne, & Kaufman, 2008). As Cline and Haynes (2001) argued, “much of the health information is inaccurate...and meager information-evaluation skills add to consumers’ vulnerability” (p. 671). More than a decade later Karras and Rintamaki (2012) also reported “those who can access the internet may be uncertain as to the quality of health

information they find...or be unable to distinguish between reputable and questionable health information sources” (p. 194). It is reasonable to assume, however, that a physician practice website would be perceived as credible by information-seekers.

The second and third factors, convenience, and anonymity, are also high in most online environments (Ruppel & Rains, 2012, pg. 394, Table 1). The last variable, tailorability, refers to “the degree to which a source makes it possible to acquire information unique to one’s situation” (p. 389). When highlighting patient narratives, tailorability presents an opportunity for physician practice web sites, insofar as individuals with different motivations should identify with different kinds of narratives. Prior research has established the general kinds of information sought online. In a study of cancer patients, Tustin (2010) found that patients used the Internet to supplement information from an oncologist, side effects of treatments and medications, treatment and medication decision-making, symptom explanation, diagnosis confirmation, and verification of physician/hospital credentials. In a study of queries posted to an orthopedics website, Shuyler and Knight (2003) found that the most common categories of questions involved seeking information about a condition, treatment, or symptoms and/or seeking advice about symptoms or treatment. Additionally, where the relation between information-seeker and patient could be established, 21% were on behalf of someone other than the asker.

The experience of symptoms, concerns about illness trajectories and available treatments, physician experiences, and aspects of caregiving are common reasons for seeking medical information online. Not surprisingly, many of these same reasons are echoed in online medical and health-related narratives. With respect to the issue of tailorability, this area of medical practice marketing is continuing to evolve as physicians build new web sites with the expectation of growing their patient base and creating awareness in their respective local communities. Determining content preferences among health seekers could provide necessary insight on content creation and its return on investment. Because there is not a large body of literature on this topic, this study is an exploration of the potential role patient stories could fill in physician practice web sites, specifically, in this case, web sites in the orthopedic specialty. This exploratory study posed the following general research question:

RQ1: What is the relationship between health information seeker motivations and preferences for narrative features in a patient story?

Method

Orthopedic conditions (including various forms of arthritis, rheumatic diseases, and musculoskeletal injuries) are a common source of pain and disability across the globe (Brooks, 2006; Peat, McCarney, & Croft, 2001; Reginster, 2002). Given the social and economic burden of these conditions, and the likelihood of their increase among aging populations, the intersection of online health information seeking and narrative approaches in an orthopedic context is timely. In 2013, a large orthopedic practice in the Midwest redesigned its website to more prominently feature patient-related stories. By featuring patients and their successful recovery from orthopedic illness or surgery, it was expected the narratives would serve several purposes, including raising awareness of the practice, contributing to the likelihood of patient-to-patient referrals, and providing an accessible way to educate patients and help them understand how orthopedic treatments and surgeries could improve their lives. The present investigation was not conducted by the practice, but was inspired by its goals. By virtue of being linked to the practice’s website, the study examined information seekers’ narrative preferences based on their motivations for visiting the site.

Participants

An online survey was linked to an orthopedic practice website for one week in April 2014 and one week in September 2014.² A total of 116 respondents provided usable data for this study. The predominantly female ($n = 83$, 72%; male $n = 30$, 26%; 3 respondents did not indicate sex) sample was heterogeneous in terms of age: 6 in 18-25 age category (5%); 16 in the 26-35 age category (14%); 22 in the 36-45 age category (19%); 36 in the 46-55 age category (31%); 23 in the 56-65 age category (20%) and 13 in the 66+ category (11%). The practice predominantly serves northwestern Illinois and eastern Iowa and this was reflected in respondent residency: 60 lived in Illinois (52%) and 46 lived in Iowa (40%); 9 respondents did not live in either state (8%). Finally, participants were asked

if they had received orthopedic care within the last six months. Eighty-nine indicated “no” (77%) and 27 indicated “yes” (23%).

Procedure

The survey, created using SurveyMonkey, was advertised in an online e-newsletter that the orthopedic practice sent to approximately 9,000 email addresses. The addresses included current patients, families and other community stakeholders with an unknown connection to the practice.

The survey was comprised of three sections: the first section on information seeking motivations determined if the respondents were experiencing orthopedic symptoms; been given an orthopedic diagnosis; were under the care of a physician or being treated for an orthopedic condition, or whether they served as a caregiver for someone else recuperating or suffering from an orthopedic condition. The second section contained items on preferences for narrative qualities specifically designed for this study. The four subscales of the measure were symptoms, diagnosis, recovery and caregiving. The final section contained demographic questions. Individuals who provided an email address were entered into a drawing for one of four \$75 gift cards to a grocery store chain located in the Midwest. This study was approved by the Institutional Review Board of the university to which the investigators’ were affiliated.

Measures

Information seeking motives. The first section contained questions about motivations to seek information on the orthopedic practice’s web site. Symptom experience was assessed with the question “Are you currently experiencing orthopedic symptoms?” using a 5-point Likert-type scale with endpoints (1) “No Symptoms” to (5) “Many symptoms” ($M = 2.16$, $SD = 1.32$). Although this mean is low, 41 participants (35%) reported experiencing symptoms at or above the midpoint of the scale. Concern over symptoms was measured with a Likert-type question “Do these current orthopedic symptoms worry you?” with endpoints (1) “Not Worried” to (5) “Worried” ($M = 1.97$, $SD = 1.28$). In this case, 29 participants (25%) reported concern/worry at or above the midpoint of the scale.

These two questions were followed by a series of filter questions and follow-up questions regarding specific factors that may motivate information seeking. *Diagnosis* was assessed with the question “Have you been diagnosed with an orthopedic condition in the last 6 months?” For the respondents who answered “yes,” a Likert-type question asked about degree of concern or worry with endpoints (1) “Not Worried” to (5) “Worried” ($M = 3.13$, $SD = 1.14$). *Physician care* was assessed with the question “Are you currently under the care of an [name of practice] physician?” For the respondents who answered “yes,” a follow-up Likert-type question asked about the likelihood of returning to the website to their own or other physicians on staff with endpoints (1) “No; I won’t visit to read physician info” to (5) “Yes I would visit the website for physician info” ($M = 3.73$, $SD = 1.28$). *Treatment* was assessed with the question “Are you currently under treatment at [name of practice] for an orthopedic condition?” For the respondents who answered “yes,” a follow-up Likert-type question asked if they were concerned about any aspects of their treatment or procedure with endpoints (1) “No, I am not concerned” to (5) “Yes, I am concerned” ($M = 2.75$, $SD = 1.48$). Finally, *caregiving* was assessed with the question “Are you currently acting as a caregiver to someone else (such as a friend or family member) who has an orthopedic condition or is scheduled or in recovery from an orthopedic surgery?” For the respondents who answered “yes,” a follow-up Likert-type question asked if they were concerned about their ability to understand the person’s health care needs or assistance they may provide with endpoints (1) “No, I am not concerned” to (5) “Yes, I am concerned” ($M = 3.29$, $SD = 1.59$).

Preferences for narrative qualities. In the survey’s second section, participants were asked to rate narrative qualities. The general question was asked: “If you read about a patient, what aspects of the story would you be most interested in?” This prompt was followed by a series of 20 statements regarding narrative qualities including symptoms, diagnosis, treatment, recovery, and caregiving. Items were rated on a 5-point Likert-type scale anchored with endpoints (1) “Strongly Disagree” to (5) “Strongly Agree.” Although the initial subscales were reliable, the resulting variables were highly intercorrelated, prompting the decision to subject the items to an exploratory factor analysis. The EFA using principal axis factoring with oblique rotation yielded three factors that together accounted for 67.83% of the variance. The first factor (56.65% of variance) consisted of 7 items concerning diagnosis and treatment (e.g., “How the patient was diagnosed,” “The pro’s and con’s of a particular treatment”). The factor was labeled *diagnosis/treatment* and was reliable ($\alpha = .94$, $M = 4.09$, $SD = .93$). The second factor

(7.21% of variance) contained 7 items reflecting general concerns about dealing with a condition (e.g., “A patient’s advice for others with similar symptoms,” “A patient’s assessment of his/her quality of life after treatment”). This factor was labeled *lifeworld concerns* and was reliable ($\alpha = .91$, $M = 3.61$, $SD = .88$). The final factor (5.97% of variance) was comprised of 3 items dealing with symptoms (e.g., “When the patient first noticed something was wrong”). Given the focus on the beginning of the symptom experience, this factor was labeled *initial symptoms* and was reliable ($\alpha = .87$, $M = 3.75$, $SD = 1.00$). Scale items and results of the EFA are presented in Table 1.

Table 1

Factor Analysis of Narrative Preferences Scale

Item	I	II	III
1. This patient’s first experience of symptoms.	.17	.00	.77
2. When the patient noticed something was wrong.	.16	.18	.68
3. How the patient felt when something was wrong.	-.04	.30	.65
4. How a patient’s pain affected their life.	-.05	.67	.24
5. How the patient was diagnosed.	.74	-.21	.39
6. How the patient felt about his/her diagnosis.	-.12	.77	.19
7. How the physician determined the diagnosis	.66	-.08	.24
8. What the chances were of recovery.	.73	.13	.05
9. What treatment options did the patient consider.	.83	.17	.00
10. Why the patient chose a particular treatment.	.63	.30	-.06
11. The pro’s and con’s of a particular treatment.	.90	.05	-.06
12. The outcomes of a particular treatment.	.86	.08	.05
13. A patient’s opinion and experience with his/her condition.	.39	.49	.05
14. A patient’s advice for others with similar symptoms.	.19	.67	.01
15. A patient’s views about a particular physician.	.33	.57	-.14
16. A patient’s assessment of his/her quality of life after treatment.	.22	.68	.01
17. Whether the patient needed a caregiver.	-.09	.79	.03
18. How the patient experienced recovery.	.19	.67	.02
19. Whether the patient fully recovered.	.49	.48	-.02
20. Obstacles the patient experienced in recovery.	.42	.50	-.01

Results

Preliminary Analyses

Preliminary analyses were undertaken to explore overall preferences for narrative qualities. First, correlations among the three narrative qualities were examined. Results of that analysis reveal that the subscales were positively associated with one another: diagnosis/treatment and lifeworld concerns, $r = .68$, $p < .01$, diagnosis/treatment and initial symptoms, $r = .58$, $p < .01$, and lifeworld concerns and initial symptoms, $r = .55$, $p < .01$. Second, to evaluate the salience of the information seeking dimensions, narrative preferences scores were compared against the mid-point of the scale (3 on the 5-point scale) using one-sample t-tests. Using the means reported above in the method section, results of all three analyses were significant: diagnosis/treatment, $t(115) = 12.68$, $p < .01$; lifeworld concerns, $t(115) = 7.39$, $p < .01$, and initial symptoms, $t(115) = 8.11$, $p < .01$. Thus, preferences for all three narrative qualities were positively related to one another and exceeded the mid-point of the scale.

RQ1: Relationships between health information seeking motivations and narrative preferences.

Experiencing Symptoms. The first motive revolved around the experience of orthopedic symptoms and its relation to preferences for narrative qualities. The question was addressed with correlations, presented in Table 2. The experience of orthopedic symptoms was not significantly correlated to any of the narrative qualities. Similarly, the degree of concern about orthopedic symptoms was not significantly related to narrative preferences.

A post hoc analysis was conducted to confirm that the experience of, and concern over, orthopedic symptoms was greater among those who had actually received a diagnosis. Independent samples t-tests found that those who reported having received a diagnosis reported more orthopedic symptoms ($M = 3.29$, $SD = 1.32$) compared to those who had not ($M = 1.74$, $SD = 1.06$), $t(114) = 6.51$, $p < .01$. Additionally, those who reported having received a diagnosis reported more worry about symptoms ($M = 3.19$, $SD = 1.33$) compared to those who had not ($M = 1.52$, $SD = .92$), $t(41.23) = 6.45$, $p < .01$.

Table 2

Correlations between Narrative Preferences and Motivations

Motivations	Diagnosis/ Treatment	Lifeworld Concerns	Initial Symptoms
1. Concern over orthopedic symptoms	.15	.07	-.03
2. Worry over orthopedic symptoms	.15	.10	-.01
3. Concern over orthopedic diagnosis	.45*	.54**	.21
4. Revisit the site to learn about physicians	.23	-.03	-.03
5. Worry about aspects of treatment	.29	.11	.25
6. Concern with caregiving	-.10	-.48	-.36

Note. n for questions 1 and 2 = 116, for question 3 = 30, for question 4 = 15, for question 5 = 16, for question 6 = 14. * $p < .05$, ** $p < .01$.

Diagnosis. The second motive concerned narrative preferences based on whether or not respondents had received an orthopedic diagnosis. An independent samples t-test was utilized to compare those who had received an orthopedic diagnosis ($n = 31$) to those who had not ($n = 85$). Means for the two groups are presented in Table 3. Results of the t-test reveal no significant differences for any of the narrative elements: diagnosis/treatment, $t(114) = 1.68$, $p = .10$; lifeworld concerns, $t(41.87) = -.22$, $p = .83$; and initial symptoms, $t(114) = -.66$, $p = .49$.

For those individuals who answered “yes,” correlations between worry scores and narrative preferences were examined. As evident in Table 2, worry scores were significantly positively correlated to preferences for diagnosis/treatment and lifeworld concerns in narratives.

Physician Care. The third motive concerned narrative preferences based on whether or not respondents were under the care of a physician from the practice. An independent samples t-test was utilized to compare those who were under the care of a physician from the practice ($n = 15$) to those who were not ($n = 101$). Means for the two groups are presented in Table 3. Results of the t-test reveal no significant differences for the narrative elements of diagnosis/treatment, $t(114) = .19$, $p = .85$ and lifeworld concerns, $t(114) = -.12$, $p = .91$.

However, there was a significant difference for preferences for narratives of initial symptoms, $t(114) = -2.24$, $p < .05$. Examination of the means suggests that those who were under a physician’s care were less interested in reading narratives about the experience of initial symptoms.

For those individuals who answered “yes,” correlations between plans to revisit the website for physician information and narrative preferences were examined. As evident in Table 2, revisit scores were not significantly correlated to narrative preferences.

Treatment. The fourth motive concerned narrative preferences based on whether or not respondents were currently being treated at the practice for an orthopedic condition. An independent samples t-test was utilized to compare those who were currently being treated ($n = 13$) to those who were not ($n = 100$). Means for the two groups are presented in Table 3. Results of the t-test reveal no significant differences for the narrative elements of diagnosis/treatment, $t(111) = -.23$, $p = .82$ and lifeworld concerns, $t(111) = -.48$, $p = .63$. Once again, there was a significant difference for preferences for narratives of initial symptoms, $t(111) = -2.33$, $p < .05$. Examination of the means suggests that those who were currently being treated for an orthopedic condition were less interested in reading narratives about the experience of initial symptoms.

For those individuals who answered “yes,” correlations between concerns about treatment and narrative preferences were examined. As evident in Table 2, concern scores were not significantly correlated to narrative preferences.

Caregiving. The fifth motive concerned narrative preferences based on whether or not respondents were currently caregivers for someone else dealing with an orthopedic condition. An independent samples t-test was utilized to compare those who were caregivers ($n = 14$) to those who were not ($n = 101$). Means for the two groups are presented in Table 3. Results of the t-test reveal no significant differences for any of the narrative elements: diagnosis/treatment, $t(113) = .84, p = .41$; lifeworld concerns, $t(113) = -.21, p = .84$; and initial symptoms, $t(113) = -1.39, p = .17$.

For those individuals who answered “yes,” correlations between concerns about understanding care recipient’s needs scores and narrative preferences were examined. As evident in Table 2, concern scores were not significantly correlated to narrative preferences.

Table 3

Means for Narrative Preferences across Groups

Motivations	Diagnosis/ Treatment	Lifeworld Concerns	Initial Symptoms
Question 1: Received Diagnosis			
Yes: 31	4.33 (.83)	3.57 (1.10)	3.65 (1.09)
No: 85	4.00 (.95)	3.62 (.79)	3.79 (.97)
Question 2: Under Physician’s Care			
Yes: 15	4.13 (.90)	3.58 (.94)	3.22 (.84)
No: 101	4.10 (.93)	3.61 (.88)	3.83 (1.00)*
Question 3: Receiving Treatment			
Yes: 13	4.01 (.91)	3.47 (.95)	3.13 (.87)
No: 100	4.07 (.93)	3.60 (.87)	3.80 (.98)*
Question 4: Being Caregiver			
Yes: 14	4.29 (1.07)	3.56 (1.11)	3.40 (1.05)
No: 101	4.06 (.91)	3.61 (.86)	3.80 (.99)

Note. * indicates that “Yes” and “No” groups of respondents differed at .05 level of significance.

Discussion

This study examined relationships between online health information seekers’ motivations and the preferred qualities of patient stories. Results revealed three clusters of narrative information preferred by respondents: stories about diagnosis and treatment experiences, stories about lifeworld concerns (i.e., how pain affected their life, advice for others), and stories about the initial symptom experience. Preferences for all narrative elements significantly exceeded the midpoint of the scale and were positively interrelated. Regarding motivations, individuals who had received an orthopedic diagnosis and were worried about it expressed a preference for narratives about diagnosis/treatment and lifeworld concerns. Those who were under a doctor’s care or receiving treatment for an orthopedic condition expressed less interest in narratives about initial symptom experiences.

Narrative Preferences

A primary goal of this study was to identify narrative themes of interest to online health information seekers. Orthopedic conditions (e.g., arthritis) are among the most common types of medical conditions and it is estimated that with the increasing age and weight of populations, the prevalence and burden of these conditions will increase (Brooks, 2006; Peat et al., 2001; Reginster, 2002). Insofar as these conditions may often begin with everyday aches and pains, they may be among the most uncertainty-provoking of symptoms. However, illness is not just ambiguous

because of the experience of symptoms, but also because illness must be performed for multiple audiences (Naidu, 2012; Reissman, 2003). As Naidu (2012) argued, illness affects “‘selves’ rather than just organs” (p. 71), and those selves are embedded in relationships. Though society may provide a sick role (Parsons, 1951), entry into, and occupancy of, that role involve negotiated processes of legitimation. Telles and Pollack (1981) described how others search for observable signs of illness (e.g., fever, bruising) as irrefutable evidence of “feeling sick.” Accordingly, the meanings of illness are social meanings (Kleinman, 1988) and narratives provide a means of acquiring and transacting acceptable accounts. Without denying the reality of personal suffering, learning how to enact illness also involves learning how to act and talk to provide evidence of illness. There is an intersection, then, between the desires of many storytellers to help others with their tales, and the needs of ill persons to learn how to perform illness. Future research should examine whether or not patients incorporate ideas, arguments, even phrases, following exposure to illness narratives.

Given that this survey was made available to a broad audience, the results can be taken to represent a cross-section of those who visited the orthopedic practice website for a variety of reasons. The first factor focused mainly on treatment issues. The exchange of questions and experiences regarding treatment has emerged in studies of other conditions (e.g. arthritis, Willis, 2016; vascular conditions, Walker, 2015), suggesting a common component of illness experiences. Insofar as treatments are intended to “fix” or alleviate the burden of medical conditions, the search for information pertinent to decision-making may be likened to a form of problem-focused coping in the Lazarus and Folkman (1984) framework. They suggested that “defining the problem, generating alternative solutions, weighting the alternatives in terms of their costs and benefits, choosing among them, and acting” (p. 152) represent attempts to address the condition. These same ideas correspond to factor items about treatment options, why a patient chose a treatment, pro’s and con’s, and outcomes.

The second factor was more heterogeneous, reflecting a variety of concerns (pain, quality of life, recovery, need for caregiving, views of a particular physician). Accordingly, this factor was labeled, following Mishler (1984), lifeworld concerns. Once again, many of these concerns appear to be general across conditions, but what distinguishes this factor from the narrower focus on treatments is an emphasis on the more emotional aspects of illness. The specter of illness raises a number of questions, fears, uncertainties, and identity threats, and coping with emotional distress is a vital adaptive aspect of adjustment (Lazarus & Folkman, 1984).

The final factor concerned the initial experience of symptoms. Muscle and joint pain are expectable realities in life and that may make the initial changes in bodily perceptions problematic. Individuals may be wary about alarming spouses or family members, or afraid of being labeled “problem patients” by frequent complaining (Wright & Morgan, 1990). Online patient narratives from those with a confirmed diagnosis may provide some context for interpreting one’s own symptoms, reducing uncertainty but also providing arguments and justifications for broaching the topic.

The results suggest information-seekers were interested in all three kinds of stories, but they are unlikely to desire them indiscriminately. Leydon et al. (2000), for example, found that cancer patients wanted information about diagnosis, treatment options, and side effects, but they wanted certain kinds of information at different times following their diagnosis. This study did not target individuals with an orthopedic diagnosis, but rather, was made available to a wide audience who were visiting the orthopedic practice’s website for any number of reasons. This afforded us an opportunity to compare the narrative preferences of those experiencing orthopedic issues from those who were not, and, for the smaller subsample who were, to examine if different aspects of the experience were associated with different kinds of story preferences.

Information seeking Motivations and Narrative Preferences

The majority of the sample was not experiencing, nor were they worried about, orthopedic symptoms. This most likely explains the lack of significant correlations between orthopedic concerns and narrative preferences across the sample, despite interest in all three narrative elements. With respect to tailorability (Ruppel & Rains, 2012) and identification (Miller-Day & Hecht, 2013), however, what matters are the preferences of those who are experiencing the health condition. For those who had been diagnosed, the more concerned they were about their symptoms, the greater their preferences for narratives about diagnosis/treatment and impact on the lifeworld. Orthopedics is a highly specialized field and orthopedic surgeons tend to talk about surgery as a “last best resort.” As Hudak, Clark, and Raymond (2013) assert, “this orientation works against patient-initiated discussions of the

possibility that their problems may not be fully resolved by surgery” (p. 544). If these concerns are not addressed in patient narratives, this particular group of information seekers (i.e., those who are concerned about their diagnosis) might discount the relevance of any health message embedded in the story.

Interestingly, respondents who were currently under care or treatment were less interested in narratives depicting the initial symptom experience. Most likely, this is because they were already familiar with symptom onset and had their experiences to reflect upon. Of course, another way to read this is to focus on the fact that those who were not under care or treatment were more interested in narratives of initial symptom experience. Either way, the result is important because there may be a natural tendency for patients to tell their stories “from the beginning.” That will usually mean with the onset of symptoms such as pain or discomfort. Once again, such an approach may turn off certain segments of information seekers who may then discount the rest of the story.

Limitations

Overall, because the majority of the respondents did not report symptoms, had not been diagnosed, or who were not serving as caregivers, the study could not draw firm conclusions about the preferences of online health seekers for certain patient narrative qualities. We do not know what brought respondents to this survey or if they were online health seeking at all, since the survey was disseminated by email to a very general audience. On the other hand, health information seekers become aware of and appraise health issues in a variety of ways and for a variety of reasons (Karras & Rintamaki, 2012). When patient narratives enter cyberspace they become available to a wide audience, whether that space is a physician practice website, an online support group, or a personal webpage. Nevertheless, both larger and more targeted samples will help refine our understanding of seekers’ preferences. Future research should also widen the questions beyond the specialty of orthopedics to those seeking health care information on a variety of medical topics.

For future studies, a clearer operational definition of the word “caregiving” is warranted. In the original survey, the motivational quality of “caregiving” was defined as “acting as a caregiver to someone else (such as a friend or family member) who has an orthopedic-related condition, is scheduled or in recovery from an orthopedic surgery.” In the narrative qualities section, there was a related statement about whether the patient needed a “caregiver.” Survey results suggested that in this second reference “caregiver” may have been another word for “doctor or physician” rather than a family member or friend. Those who answered “no” about caregiving, but showed a possible interest in the narrative quality of caregiving, may actually have been alluding to their interest in more information related to treatment and physician information.

Finally, a word about narratives themselves is in order. Given low levels of statistical and numerical knowledge in the general population (Joram et al., 2012), using patient stories to convey information and effect persuasion is a tempting alternative. However, narratives also have their pitfalls. Lundell, Nierdereppe, and Clarke (2013) argued that patient stories can introduce distracting details resulting in rejecting the story-teller and ultimately, the relevance of the story for the recipient’s own life. Additionally, Miller-Day and Hecht (2013) suggested that excessive transportation (i.e., immersion into the storyworld) could result in reduced message attention. Additionally, storytelling is shaped by its context. Chronic illness patients, for example, who tell their stories to researchers may overemphasize certain aspects of their experience (e.g., experiencing a personal transformation, imparting lessons) in an effort to be good research participants (Miczo, 2003). Along similar lines, patients who share their stories with managed care organizations for use as promotional materials may similarly shape their tellings in particular directions. Future research should determine if stories posted on practice websites are perceived as less authentic or credible than, say, stories told on a patient support group website.

Conclusions

In summary, research has revealed that people seek health care information online, and there is a viable concern regarding information quality, as well as people’s abilities to evaluate the health care information encountered. Individuals examining a healthcare organization’s website are most interested in insurance plans accepted, basic contact information, and physician credentials (Sanchez & Sanchez, 2011), as well as a physician’s philosophy of care and communication skills (Perrault & Smreker, 2013). The prevalence of online support groups, PRWs, and online patient sharing of personal health data (Frost & Massagli, 2008) suggests that individuals experiencing symptoms, coping with a diagnosis, or managing a condition want information and advice from those

with first-hand knowledge, but may want it selectively (Leydon et al., 2000). Physicians, especially those tied to local geographical areas, are well poised to become reliable resources for current or future patients seeking credible information about a particular health or caregiver concern. Healthcare organizations should promote patient narratives, but will need to ensure that different aspects of the illness experience are represented. At least in the case of visitors to an orthopedics website, those aspects involved initial symptoms, treatments, and lifeworld concerns. As physician practices invest marketing dollars into designing and generating content for web sites to market their practice, it is important that they provide the information desired and present it in a format that will not only build trust and credibility in the patient relationship, but that patients also get the information they need to maintain or improve their quality of life.

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Endnotes

1. It is readily acknowledged that the term *patient* is problematic, especially when examining online health information seeking. Nevertheless, the term remains a convenient gloss that minimizes the need to repeat a lengthy list of information seekers. As used here, the term includes ill persons, persons experiencing symptoms, diagnosed patients, caregivers, and those simply surfing the Internet for health information.
2. The first author had a working relationship with the orthopedic practice, and obtained permission from the CEO to conduct the study.