

The Desktop Doctor: Medical Rhetoric in the Emergent Online Context

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Online medical resources, most typified in the service WebMD, have become a common source of medical information for many consumers. This study used an online survey and content analysis of several popular online medical resources to determine users' motivations for using these services, and differences between clinical and online medicine. Results indicated the high level of user choice present in these resources. Clinical medicine was found to have a larger influence on patient decisions than online medicine, despite high levels of online use. Results also highlighted these resources' low level of direct user involvement, in contrast to their high level of user choice.

Medical communities, like all professional communities, rely on the appropriate use of rhetoric to function effectively. Modern medical communities have developed rhetorical conventions and genres, such as the medical interview, the patient history, and the standardized examination, to mediate physician-patient interactions and to maximize both the number of patients that can be assisted and the effectiveness of this assistance. Today, clinical medicine is an established social and rhetorical force with genres for different facets of the physician-patient relationship. This relationship is generally carried out interpersonally, in a clinical setting, with medical information passing from the physician to the patient in response to the patient's needs.

As a rhetorical system, however, medicine is subject to change that can reshape the ways it operates and delivers services. One of the most powerful forces bringing about change in the medical community has been the Internet. With the creation of medical websites like WebMD, MedicineNet, Healthline, and others, medical information has become

more readily available and easily accessible to online users. These changes have naturally brought with them new genres to operate in this new context, which, in turn, have altered the ways in which patients can interact with medical rhetoric and their doctors.

Online medical services have expanded not only the sheer volume of medical information available to users, but also the agency of these users in choosing what parts of that information to consume. It is not the information itself that is so potentially threatening to the ideological monopoly of clinical medicine, but rather users' ability to search through it without professional curation. I will argue that this ability of online users to choose how they access medical information in online genres represents a radical departure from the traditional relationship between doctor and patient. I will also show that despite the ideological challenges resulting from this increased user choice in online genres, clinical medicine still remains an entrenched discipline. Finally, I will identify a possible route for bridging the gap between these two medical

arenas, established clinical medicine and the emerging online medical context.

Review of Literature

The published literature relevant to the investigation of online medical communities and their conflict with the clinical model falls into three distinct categories: the physician-patient relationship, institutional medical genres, and online medical communities. Firstly, the differences between clinical and online medicine need to be understood in terms of the current rhetorical relationship between physician and patient. It is the absence of this relationship in online medical communities that marks these communities as fundamentally different than, or even opposed to, clinical medicine. Secondly, to understand how online users access online medical genres, one must have a grasp of the established rhetorical genres used by the clinical medical community. These genres, whether primarily verbal, like the physician-patient interview, or written, like the patient history form, have had decades of institutional design and change to maximize their effectiveness. Thirdly, the existing literature on online medical communities needs to be explored. Though not nearly as expansive as that of clinical medical rhetoric, this body of work, produced over the past two decades, reflects the discourse that is most immediate to my work.

Defining Features in Patients' Interactions with Doctors

The relationship between patient and medical caregiver is affected by a wide and diverse set of factors (Hughes; Segal; Schleifer; Yoels et al.). David Hughes points out the asymmetry of knowledge present between the two interacting parties (362). He sees the

healthcare professional as the primary guiding force in his or her communications with patients. However, he does not view this professional control of the conversation as a negative quality. Hughes instead views it as a necessary way for the professional to guide the patient's answers to questions when there is a misunderstanding or misinterpretation (370). Judith Segal also sees the professional as occupying the dominant role in the patient-doctor relationship. Rather than an asymmetry of knowledge, however, she sees this interaction being strongly affected by a difference in values (94). She sees the biomedical model as clashing with the less structured worldview of the patient. Further, Segal even suggests that the patient-doctor relationship is not rhetorical at all, pointing out that doctors and most patients do not share a common set of terminology or a common set of starting principles. She sees the current state of this patient-caregiver relationship negatively and in need of rhetorical improvement (99).

Ronald Schleifer approaches medical communication from a different angle, focusing on the concept of narrative. For Schleifer, the ability of doctors to complete patients' "not-yet-completed" narratives is synonymous with the Aristotelian idea of *phronesis* or "practical reason" (68). He contrasts this with the knowledge of medical facts and data, which he does not view as equally important in the professional's interactions with patients. A physician must be able to answer patients' concerns in such a way that is both medically correct and fitting within the patients' conception of their own narrative (Schleifer 69). Yoels and his co-researchers found that medical discourse is less dependent on the interplay of narrative and more so on the similarity between caregiver and patient. They found that

doctors and patients of the same gender or race displayed a greater understanding of each other's roles (196). Supporting the social contact theory of interaction, this view focuses on the social identity of the relevant individuals in determining the quality of their communication (Yoels et al. 185).

The four articles described above demonstrate the diversity of conclusions that researchers have reached concerning physician-patient interaction. These varied findings point to the complex nature of this multivariate relationship. However, this apparent diversity hides a commonality: the inherent, institutionalized supremacy of the physician in the caregiver-patient relationship. Only Segal sees this superiority in a negative light, as biomedical values conflicting with the patient's needs, but all the researchers would agree that the patient is a mostly passive agent seeking the physician's aid. Schleifer's vision of patients' "not-yet-completed" narratives consists less of a collaborative interplay and more of an unfinished problem which is given an answer, satisfactory or not, by the physician. Even in Yoels's model, in which the relationship relies primarily upon identity commonalities between doctor and patient, the physician, inevitably seeing diverse patients, will in this view necessarily provide differing levels of understanding toward different patients, dependent upon the physician's own identity. Thus, the authors all identify, to varying degrees, the physician as the dominant controller in the physician-patient relationship.

Genres:

The Primary Rhetorical Framework

The medical profession contains many rhetorical genres, all designed to carry out the profession's goals (Devitt, Bawarshi, and

Reiff; MacDonald; Wilce). Borrowing from Charles Bazerman and Carolyn R. Miller, Amy J. Devitt, Anis Bawarshi, and Mary Jo Reiff closely identify the forms genres take with the discourse communities that produce them (550). In particular, they point out that communities and their genres can be abrasive toward community outsiders, such as the tendency of medical professionals to linguistically dehumanize patients (551). Malcolm N. MacDonald also views genres as products of their discourse communities. In addition to achieving the community's shared goals, however, he also emphasizes the role that institutional ideology plays in developing genres (449). In other words, genres for MacDonald can be affected by what the professionals—the people who use the genres—think about the genres themselves. He describes how genres like medical interviews and medical research articles have both a general exigence to address as well as an in-community ideology surrounding their purpose. MacDonald also emphasizes medical genres as a genre set, interacting with and complementing each other within the framework of an overriding biomedical ideology. James M. Wilce, like Devitt, Bawarshi, and Reiff and like MacDonald, points to discourse communities in order to describe medical genres, but unlike them, he strongly emphasizes the role played in this process by culture and historical development (202–03). For example, he points to the development of Western medical genres, from their concern with the details of individual cases to their statistical and more standardized modern design (203). Wilce's view of genres is thus far more concerned with long-term cultural and economic factors.

All three articles identify the important basis for genres as the discourse communities that produce and use them, although they

emphasize differing elements within those communities. A more subtle, but, in my view, equally important element of genre that all the researchers identify is institutional ideology. MacDonald, who argues this point most explicitly, sees the fulfillment of the mandates of the modern scientific, biomedical worldview as just as central to medical genres as the actual exigencies they resolve. Wilce has the same view, though he focuses on the development of modernity more broadly. Devitt, Bawarshi, and Reiff focus on the cultural and linguistic peculiarities of the community professionals as opposed to the larger institutional framework, but this is still a reflection of rhetoric being shaped by the ideological worldviews of the specialized community. For all three articles, clinical medicine is a space constructed by and situated in a discourse community with specific ideological imperatives. The patient, simultaneously the object of treatment and a community outsider, must enter this institutional world and is strongly encouraged to either submit to its conventions or, unable to cooperate with the rhetorical system, potentially receive substandard care.

Medicine in a Murky New Context: The Internet

The creation and popularization of the Internet has changed, and still is, the way that patients interact with sources of medical information and healthcare (Goldner; Kopelson; Wagner et al.). Karen Kopelson sees the greatest impact of the Internet in the recent phenomenon of so-called “e-patients” or individuals who actively research medical information online, up to and including the most recent peer-reviewed articles (355). She derives this conception of the e-patient through analysis of discussions of online medical resources in the professional medical

community, the online user community, and social scientific discussions of the physician-patient relationship. Kopelson sees a role for this new model of patient in cooperating with medical professionals to provide new kinds of healthcare and to reduce medical costs (368). She argues against those doctors who have condemned the e-patient movement, while at the same time stressing the need for doctors to understand and utilize this electronic medium.

In contrast with Kopelson’s focus on the nature and behavior of these e-patients, Melissa Goldner approaches the concept of online medicine with an emphasis on the health status of these services’ users. Analyzing data collected by the Pew Research Institute on American adults’ Internet usage and how this usage corresponds with various personal and demographic variables, she identifies a relationship between individuals’ health status and their likelihood of using the Internet for medical purposes. She demonstrates significant differences between the percentages of groups, classified according to their level of health, that accessed the Internet for medical information or used email to communicate with healthcare providers during a set period (698–99). Specifically, she demonstrates that less healthy individuals were much more likely to use the Internet for medical purposes than healthy individuals, although she was not able to investigate the motives of why individuals chose or chose not to use the Internet for these purposes (705).

Applying a similar analytical approach, Todd H. Wagner and his co-researchers investigated online medical information in the context of the “digital divide,” the modern phenomenon in which large percentages of the population have little to no access to the Internet. Just as Goldner’s goal was to identify a relationship between user health

status and online medical resource usage, this study attempted to identify a similar relationship between resource usage and online access. The researchers therefore constructed a survey designed to identify such a relationship between online access and the likelihood of using the Internet for medical purposes. There were two experimental groups, one of individuals who had had online access for some time prior to the study and the other of those who had only recently acquired such access. Wagner et al.'s study emphasizes a lack of interest in online medical information, as most individuals given Internet service for the first time did not use it for medical purposes (417). Studied individuals who had already had Internet service for some time used the Internet for this purpose much more often, but still only around a quarter of their total number did so (420). Again, the study does not investigate the reasons why individuals did or did not access medical information online.

All three of these studies focus on either individuals who use the Internet for medical purposes or on the demographics of these groups. However, they did not collect data on the genres used during these online activities. Goldner and Wagner et al. both seek to understand user motives for accessing online medical resources by compiling data on how patient health status and level of Internet access, respectively, affect the likelihood of using such resources. Kopelson takes a different approach, analyzing online resources directly to determine, from their design, the exigencies they are crafted to fulfill. Her interpretation of online medicine is a revolutionary, perhaps even subversive, challenge to the controlled world of professional medicine. Regarding this high degree of user control, Kopelson is cautiously optimistic.

While prior research has provided us with an understanding of the types of people who are more likely to use online medical resources, and with rich discussion of rhetorical concepts like genre and discourse community, we lack information on how these concepts transfer into a digital setting. Specifically, there is a lack of work, outside Kopelson, on the effects of the absence of physician control in online medical communities. The rhetoric of the clinic is carefully directed by physicians and their genres; however, the medical information and diagnostic tools of WebMD and other online services are outside such institutional control. Compared to traditional medicine, online medical communities are strikingly chaotic, with a level of user choice that contrasts sharply with physician-managed spaces. There has been almost no investigation into what effect this level of choice has on the consumption of medical information. Additionally, the literature has little to say about individuals' motivations for using these online resources or their uses of them. Thus, my study employs content analysis of several popular online medical websites to identify elements of user choice in their design and a survey to inquire into users' motivations and goals for using these services.

Methods

The first research method used in this project was content analysis of several popular websites that offer access to online medical resources. The largest and most important of these is the service WebMD, but I also selected the websites of the Mayo Clinic, the U.S. Centers for Disease Control (CDC), and the service MedicineNet. These sources were chosen based on their overall similarity to each other; despite any minor differences, they each fit into the same genre set, which could be labeled as the

medical resource website. Additionally, these four sources allowed for analysis of the possible minor differences between sites depending on their institutional source, whether governmental, professional, or corporate. These sites were analyzed both as a genre set of organizing information and as collections of individual texts, each accomplishing unique goals. The objective was to examine how these websites mediate the consumption of medical information by interested individuals.

The content analysis was complemented by a survey designed and administered through SurveyMonkey. Due to SurveyMonkey's restrictions, this survey consisted of ten questions, which are included in Appendix A, with a maximum respondent cap of one hundred. The survey was administered randomly to SurveyMonkey's approximately twenty-five million users. Aside from requiring that respondents be adults, there were no other demographic requirements placed upon respondent selection. The survey concerns respondents' usage of online medical resources, both in actual online practice and in traditional medical consultation. The questions were generated in two steps. First, there were questions investigating the place of online medical resources in users' medical experiences. Second, there were questions developed after content analysis that concerned how users interacted in specific systems, such as in the types of genres they used. The response data of one hundred respondents was collected and analyzed. All respondents completed the survey, but two respondents opted not to respond to certain questions. The resultant data was combined with findings from my content analysis to look at how design affects the utilization of online medical genres.

Results

The content analysis led to broad qualitative conclusions and illustrative quantitative findings. It showcased the degree to which user choice is supported by online medical system design. It also identified reoccurring genres, such as the "Symptom Checker" and "Pill Identifier." Differences among the various websites also appeared. For example, the CDC website focused on disease prevention and highlighted public health measures such as immunization. The Mayo Clinic website, with its institutional ties, contained sections addressing not only a popular audience but also one of medical students and another of medical professionals. WebMD and MedicineNet, on the other hand, had a much broader focus, with large sections devoted to personal fitness, healthy eating, and mindfulness, while also including more traditional medical subjects.

The responses for the survey were collected through SurveyMonkey and are recorded in Appendix A. Seventy-three percent of respondents were found to use online medical services infrequently. Forty-five percent reported that they used online medical services in making clinically significant medical decisions, and 21 percent did so in choosing prescription medication. The survey also identified some nonclinical areas, such as nutrition and meditation, in which individuals make use of online medical services. The survey found that user input into these systems, such as in a medication or physician review, was performed by 13 percent of respondents. The survey indicated that the primary motive for online medical users is to better understand their own symptoms and the potential solutions to the problems underlying these symptoms.

Discussion

The central dichotomy between medical communities in clinical medicine and in online services is the presence or absence of the modern medical institution and by extension the physician. Whereas clinical medicine is an intellectual community that patients enter as an outsider, online medical resources have elements allowing users to actively explore content. Online medical users, therefore, have a much greater choice in how they consume medical information, as opposed to this consumption being managed by a dedicated institution and physician. This high level of user choice is reflected in the online services themselves. Still, despite the enormous control given to online medical users, online medicine has by no means displaced the clinic as the primary context in which medical issues are explored, as I explain below.

Clinical Medicine:

A Challenged but Enduring Institution

Despite the increasing popularity of online medical resources, clinical medicine has by no means been displaced as the dominant institutional source of medical information. For example, while 45 percent of respondents reported using online medical resources in evaluating treatment options, other survey responses suggest that such usage is infrequent. Forty-nine percent of respondents stated that they use online medical resources less than once per month. Only 8 percent do so once per week, and no respondents used them several times per week or daily. This result shows that while medical websites can affect users' medical experiences, they tend to do so only infrequently. In addition, users often utilize online medical resources in conjunction with professional medicine. As mentioned

above, 45 percent of respondents reported that they have used online medical services to research various medical treatment options before deciding whether or not to pursue them. However, these treatment options, of course, can only be pursued within the clinical medical institution. For so many important medical services, such as prescription medication and surgery, clinical medicine is a powerful professional and legal gatekeeper. Online medical resources, for all their attempts to empower user choice, cannot provide users with physical services or replace traditional medical treatment. In this way, while online medical communities represent a challenge to clinical medicine, there is no real possibility that these online services will replace the longstanding institution that is modern medicine.

Online User Choice

As opposed to traditional medical practice, where medical professionals control the ways in which medicine is discussed, in online medical discourse, the users, the online equivalent to patients, choose how they access medical information. For example, the "Symptom Checker" found on WebMD, MedicineNet, and the Mayo Clinic's websites, had easily the most well-developed user interface on any of the sampled sites and is almost totally driven by the user. Users can input demographic data, such as age and gender, and use an interactive image of the human anatomy to identify multiple symptoms simultaneously. The "Symptom Checker" was used much more often by survey respondents than other commonly appearing genres, such as the "Pill Identifier," which identifies medications and their effects based on their appearance, and the "Physician Directory," which points users to nearby medical

professionals, sometimes with user reviews. Forty-six percent of respondents reported that they used the Symptom Checker, while the second most used, the Pill Identifier, had been used only by 27 percent. This clear preference among different systems suggests that users are motivated by specific exigencies, whether it is to identify certain symptoms, investigate the potential effects of a particular medication, or find an effective care-provider.

The high degree of user choice to resolve these exigencies was reflected by the variety of activities for which surveyed individuals used online medical resources for assistance. Most significantly, 45 percent of respondents reported that they have used online medical resources in deciding whether or not to pursue various medical treatments. Most interestingly, the ability of users to decide how to use medical information displays a selectivity absent in the traditional patient role. When the patient enters the clinical setting with his or her problems, he or she generally accepts the solution, whether medication, surgery, therapy, or a watchful nonintervention, offered by professionals. When accessing online medical resources, users can examine every available solution to their problems. Rather than simply accept the solution offered by the clinical professional, the user can choose to pursue a particular option after surveying every available alternative. The emergence of online medical services has in this sense empowered patients, as it allows them more opportunities to explore their problems and the numerous solutions at their disposal, as well as allowing for more investigation into each of these solutions.

In addition to this variety of options concerning medical treatments, responses also showed that many users take advantage of

these websites in a variety of activities outside medical care. For example, 24 percent of respondents reported that they use online medical resources to help carry out physical exercise, and 26 percent reported doing so when dieting. Medical websites use their design to cater to these minorities. On the MedicineNet homepage, for instance, there is a “Healthy Living” tab that contains information on physical fitness, nutrition, and emotional wellness. All of the other sampled sites have similarly named sections, easily visible on the main page of the site. This demonstrates that not only is user choice an important feature in this context, but that web designers are aware of and market to users with particular interests. The web designers of these services could be said to be more purely motivated by the profit motive than their equivalent rhetorical community designers in the clinic. This is not at all to suggest that medical professionals are perfect humanitarians unconcerned with financial gain. Rather, the clinical medical field possesses, in addition to the profit motive, a scientific, biomedical ideology, with no real analog in the medical web design community. Clinical professionals seek both revenue and the logical expression of the ideology inherent to their profession, while online professionals are more concerned with raw market forces, such as users’ demand for systems supporting user choice.

Reflecting this emphasis on the demands of the users, the main feature of these sites is information on disease symptoms and medical treatments, which is what appears in “Featured Articles” sections or their equivalent. This emphasis, combined with the popularity of the Symptom Checker system, shows that users are especially interested in understanding their symptoms and identifying the underlying cause. For those

users not interested in symptoms and their causes, online medical sites are able to direct niche audiences quickly to their desired destinations with carefully designed tabs and subtabs. As an example, WebMD, with the most developed system in this respect, has a homepage tab entitled “Family & Pregnancy,” under which is listed more tabs, such as “Second Trimester” and “Children’s Vaccines.” Accessing any of these options directs the user to a page with links to dozens of relevant articles. Such design allows users to conveniently find their desired information, thus reinforcing the user’s ability to choose and easily access particular topics. This democratic model for accessing medical information clashes with established medicine, with its asymmetrical informational organization (Hughes 362). Hughes characterized the professional-patient relationship as unequal in both knowledge and power, and online medical services, in contrast, appear as strikingly egalitarian. They are systems with literally thousands of articles describing a broad spectrum of medical issues, which users, rather than relying on the curation of clinicians, are free to sift through and consume as they desire.

User Input into Online Medical Resources

The users of these websites clearly display a well-developed, though usually infrequent, level of access to the information at their disposal. Conversely, however, the level of user input into these sources, beyond features such as the “Symptom Checker” or “Pill Identifier” systems, is comparatively low. By “user input,” I do not mean tools into which the user enters information to receive a response, such as the “Symptom Checker” and “Pill Identifier.” I refer instead to genres in which users enter evaluative information

of use to other users, such as physician reviews, medication reviews, or other less specific posts. While the websites allow for these kinds of user input, only 5 percent of respondents report posting a review of a physician’s medical services on a medical website. Four percent have submitted a review of over-the-counter products, and 2 percent have reviewed their experiences taking a prescription medication.

While this study cannot answer the immediate question of why user input is low, the lack of development on these interfaces in the websites may influence it. WebMD, by far the most interactive system among the four examined, restricts its users’ reviews of physicians to a series of one-to-five stars ratings for topics such as “explains conditions and treatments” and “courteous staff,” all of which are then averaged together to produce an overall score. Nowhere is the user able to offer descriptive evaluations of their clinical medical experiences. WebMD’s medication reviews allow for about a paragraph of discussion of the product, combined with a one to five rating system, but there is no way to search through the accumulated collections of reviews to find highly descriptive and useful ones.

This lack of opportunity for user input contrasts sharply with the high degree of choice users have for information consumption, which is supported by the design of the websites. WebMD’s physician and medication reviews, as bare as those features are, are much more interactive than those of the other sites sampled, which have essentially no forums for users to exchange information with each other. Such forums on WebMD are buried under multiple tabs, a sharp contrast with the rest of that service’s usually accessible interface. If WebMD, the most used and in many ways most

developed such site, has a comparatively small amount of support for user input, this suggests that this is a deficiency affecting online medical resources as a whole. These resources offer a wealth of information to users and a high degree of choice in accessing that information, but offer almost no opportunities for users to communicate with each other about this information. These services are largely solitary arenas for lone users to access a wealth of information autonomously. There are almost no user communities where users can discuss, for example, their experiences with various conditions and the effectiveness of various treatments they have undergone. Again, this study cannot answer the question of why so few users take advantage of what few user input systems there are on these sites, but future studies should be done to determine if it is because of a lack of interest or because of a lack of development of such systems, or a combination of both.

Conclusion

Clinical medicine remains as an enduring institution and will for the foreseeable future. However, online medical resources have been demonstrated to be a potentially powerful force in shaping an individual's medical life. These online resources represent a revolutionary new way for patients to access medical information, a power that will only continue to grow as the Internet retains and expands its influence in modern life. The key point in the near future will be whether these resources will act in conflict with or in concert with clinical, professional medicine.

The most desirable state would be for the user choice of online medical communities to complement the existing professional skill of the clinical world. To this end, if online medical resources are to benefit older

medical establishments, then clinical medical professionals, with an understanding of the rhetoric of both communities, must be involved in the design and function of these online services. The existence of sites like the Mayo Clinic's website, as an online distributor of information associated with a medical institution, is a positive sign for future increased involvement between the clinician and the web designer. The key is to further extend the clinician's expertise into the online community. The online community already has a wealth of raw medical information and now requires the practical skills of medical professionals.

One option to achieve this union of rhetorical communities would be to simply introduce online medical genres into the interactions between physicians and patients. This is essentially the solution supported by Kopelson, who calls for the introduction of elements of online medical services into the clinical setting and the physician-patient relationship (368). However, doing this would run the risk of subjugating user choice, the most empowering and promising element of online medical services, to the dominant model of professional curation that holds sway in the clinical community.

The more effective option to bring the two communities closer together would be the involvement of rhetorically-proficient medical professionals in the design of online medical resources. Rather than introduce genres from online medical communities into the clinical setting and the physician-patient relationship, it would be preferable to incorporate clinical expertise into the online setting. Clinical expertise, not clinical information, is the crucial component, as online medical resources already contain vast amounts of medical information. Elements of clinical medical genres could be incorporated into online

medical genres. For example, the popular “Symptom Checker” service could be improved with a feature to input medical history in addition to inputting symptoms and their location on the body. This is an element found in the clinical genre of the physician-patient interview and could further identify the cause of users’ symptoms. Similarly, the “Pill Identifier” tool could be improved with a feature to input user allergies and report whether or not an allergic reaction is possible for the medication being identified. Another feature would be to input multiple medications together to identify possible interactive effects. Again, noting allergens and medications currently being taken are standard elements of the physician-patient relationship.

Online medical genres offer immense user agency in exploring medical information, and these tools could benefit from design contributions from clinical professionals. These professionals, however, need to be rhetorically proficient; that is, they need to have a rhetorical understanding of how the genres both in their community

and in the emergent online medical community function. If these clinicians work with their online medical counterparts, together they can retain the agency of online medical genres while incorporating clinical genre elements. This would have the effect of making these online services more efficient at sifting through vast databases of medical information to provide solutions to users’ exigencies.

If medical professionals are involved in online medical resources, these influential websites can improve not only their quality of information, but also, just as important, the effectiveness with which that information is conveyed to the user. Such a collaboration between the clinic and online service would expand the influence of modern medicine, taking it far beyond the medical establishment and into patients’ homes. Incorporating all the accumulated expertise of the clinical medical institution into the empowerment given to users by online medical services could create a new, more cooperative biomedical institutional system.

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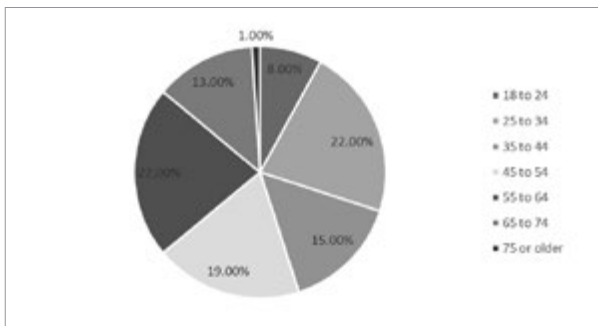
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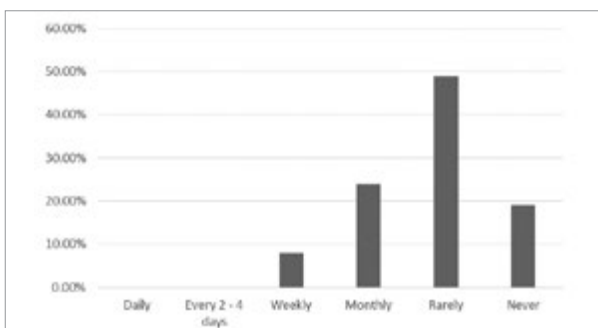
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Appendix A: Survey Questions and Responses

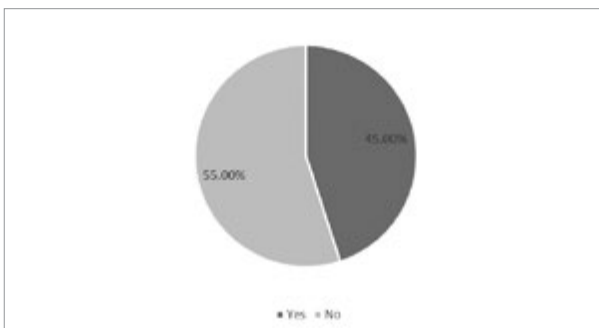
1. What is your age?



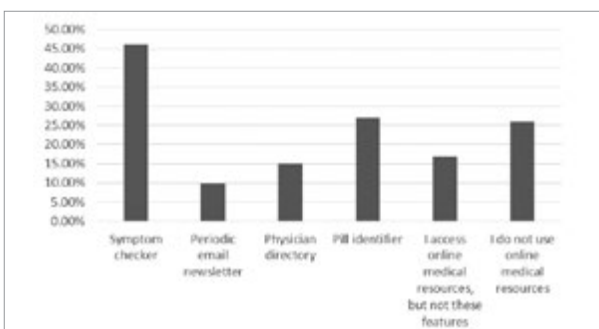
2. How often do you use online medical resources such as WebMD to access medical information?



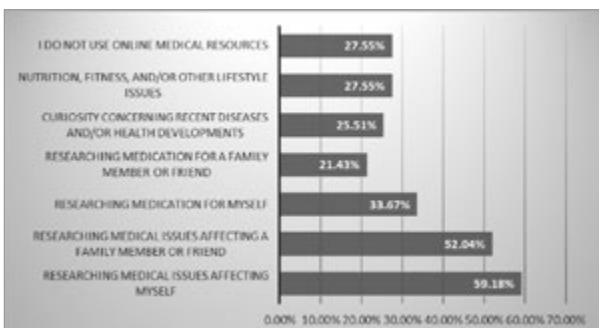
3 Have you ever used online medical resources in deciding whether to pursue medical treatments?



4. Which, if any, of the following common online services have you used?



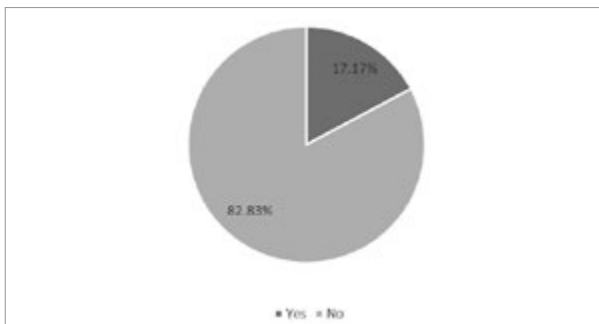
5. For which of the following reasons, if any, do you use online medical resources?



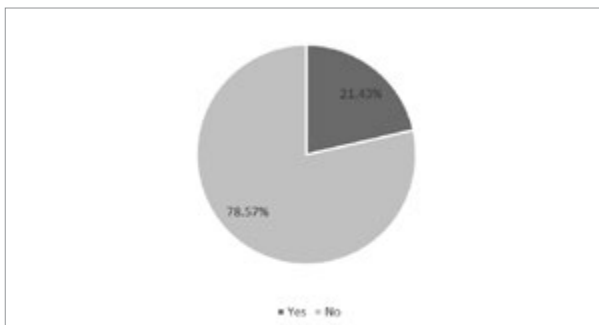
Other (please specify) responses:

1. To identify a found pill
2. Work

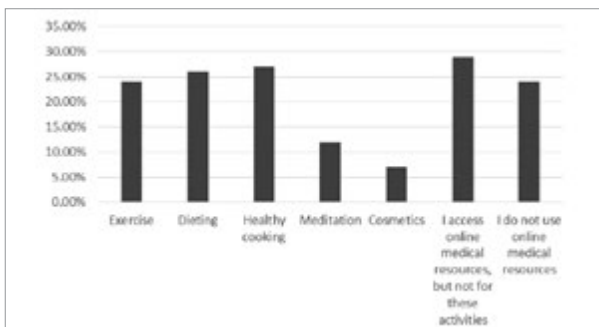
6. Have you ever bought an over-the-counter medication due, in whole or in part, to an advertisement seen on a medical resource website?



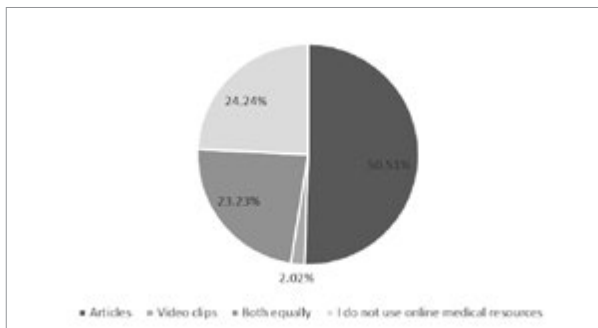
7. Have you ever asked your physician about a prescription medication due, in whole or in part, to an advertisement seen on a medical resource website?



8. Have you ever used online medical resources to help carry out any of the following activities?



9. When accessing online medical resources, do you primarily obtain information from written articles, video clips, or both equally?



10. Have you ever submitted any of the following to online medical resource websites?

