

PETTT TECHNICAL REPORT

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ARTHRITIS SOURCE: Online Survey Results

Jennifer Turns and Kristina Liu
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Abstract:

An online web-based survey provides one method of concurrently evaluating a web-based information resource and gathering information to support the making of design recommendations. Concerning the issue of design recommendations, a main contribution of this survey is to gather information to better understand the users of such a resource.

This document presents and discusses results from the online survey of users of the Arthritis Source (a web-based information resource providing learners-at-large with information about arthritis). Users of the Arthritis Source were invited to respond to an online survey containing questions about their current visit to the site, about their cumulative past experiences with the Arthritis Source, about their relationship to arthritis (i.e., patient, physician who treats arthritis, etc.), the information sources they normally use, demographics, and their opinions about the site. This document reports the results of this survey and then relates the information to the goals of evaluating the site and understanding the users. In addition, the report discusses the feasibility of using such an online survey for these purposes.

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Introduction

This document presents and discusses results from the online survey of users to the Arthritis Source (a web-based information resource providing learners-at-large with information about arthritis). The questions explored in the survey are listed below, along with comments about how the question was explored.

1. How effective is the arthritis source? Is the Arthritis Source reaching intended user populations of patient, patient relations/caregivers, physicians, medical students, and other students? Are users able to accomplish their goals?

There are many ways to evaluate effectiveness. A site such as the Arthritis Source can be considered effective if it (a) reaches the intended audience, (b) users consider their visits successful, and (c) users give a positive overall evaluation to the site.

2. Who are the current users of the Arthritis Source? Analysis of the visitor characteristics with emphasis on those that suggest how the Arthritis Source should be designed/modified.

There are many ways to characterize users. Important user characteristics may include goals/reasons for visiting, visit frequency, computer expertise, and user demographics.

3. Design Recommendations - How should the Arthritis Source be changed? What topics should be added? What other changes are necessary?

These design recommendations can come directly from evaluations of effectiveness and user feedback or can be implied more directly through learning about the user.

4. How effective/feasible is an online survey for these purposes? How effective is an online survey for concurrently evaluating informational websites and characterizing users of the site?

The effectiveness and feasibility of the online survey will be determined by the quantity and the quality of the data received. The results of this survey will be compared to the findings of other similar projects. Whenever applicable, the statistics of other web-based user survey projects will be consulted.

Each of these four questions is important. Answers to the first question can help to demonstrate the value of a resource such as the Arthritis Source. Answers to the second question can potentially help explain effectiveness issues and also form the basis for future design. Developing design recommendations is key goal of this research effort – and such design recommendations will stem from answers to both of the first two questions. Finally, while this survey was conducted primarily to inform evaluation and design of the Arthritis Source, the results also represent the general effort of using an online web survey for these types of questions. Therefore, we address the final question.

Method

When conducting research on non-web-based educational technologies, researchers can choose from a variety of strategies for exploring issues of effectiveness and user characterization. In a web-based environment, the options are more limited. We chose an online survey so that we could interact with our users – irrespective of time and geographical location.

Development of Online Survey

The design of the survey required synthesis of a number of different issues. Specifically, information from the following sources was used:

- Literature about conducting surveys (a document prepared by Julianne Fondiller)
- Ideas arising from an interview with the Arthritis Source designer concerning the underlying design of the Arthritis Source website.

The design of the survey took into account two separate issues – what information was desired and how to format questions that would effectively elicit the information. Table 1 provides an overview of the types of information explored in this survey and how that information relates to the overarching study questions. A copy of the final survey is included in Appendix 1. The next sections present the results in each area. The discussion returns to the three main questions and synthesizes the results relative to each question.

Table 1. Roadmap of Survey Questions Mapped to Study Questions

<i>Area of Interest</i>	Evaluation	Users	Improved?	Method

Knowing Users I: Current Visit - Why are users visiting site? - How did users get to the Arthritis Source site? - Did they find information they were looking for?	X	X	X	x
Knowing Users II: Visits to Date - How many times have users visited the site? - How have users used the site in the current visit (or in the past)?	X		X	x
Knowing Users III: Visitor Type - What types of users are visiting the Source? - What is their relationship with arthritis? - Officially diagnosed? - If diagnosed, what type of arthritis? - Access to general practitioner - Access to specialist - How they planned to use information they gathered		X	X	x
Knowing Users IV: Information Sources - What sources do respondents use to get information?		X	X	x
Knowing Users V: Computer Expertise - What is computer expertise among respondents? - How confident are respondents that they could do the computer tasks, even if they have not done them yet.		X	X	x
Knowing Users VI: Demographics - Where are users located? - How old are the users? - How populated is the community respondents live in? - What is highest level of education?		X	X	x
User Overall Evaluation - Would they recommend Arthritis Source to others? - What suggestions do they have?	X		X	x
Online Survey Development Effort - The language used in the Arthritis Source is.... - What level of effort was required to put the survey in place? - How many responses have we had? How many people are completing the survey? - From what page did users start the survey? Did they all start in the same place of the Arthritis Source?			X	X

Data

The online survey resulted in the storing of the data stored in the following table.

Identifying Information	Timing	Visitor Type
Survey ID Referrer URL Visitor's IP Address Visitor's Hostname	Start Time Page 1 Time Page 2 Time Page 3 Time Page 4 Time Page 5 Time Stop Time	Visitor Type Diagnosed? Time diagnosed Arthritis Type Can Visit GP Can Visit Specialist How related? Profession Type Med. Student Type Percent Dealing w/Arthritis Search for Patient? How Info is Used Student Type
Current Visit	Experience to Date	Overall Evaluation
Came From Came From Description Why Visiting Info Found?	Times Visited Medication Info? Sensitive Info? Watched Video? Follow Up? Second Opinion? Referred Patient? None of the above	Language is Understandable? Would Recommend? Suggestions
Information Sources	Computer Expertise	Demographics
Gets Info From web sites Gets Info From journals Gets Info From books Gets Info From brochures Gets Info From Internet groups Gets Info From print media Gets Info From other	Use: email Use: audio Use: video Use: chat Use: bookmarks Use: custom web pages Use: create web pages Use: cookies Computer Confidence	Geog. Location Pop. Density Pop. Density Other Education Age Sex

Subjects

The survey was made available over the website. Subjects were self-selecting – those that chose to take the survey were our subjects.

We recognize a variety of limitations associated with this procedure. For example, it is quite possible that physicians who use the site may have less of a tendency to respond to the survey than patients might.

The survey was live from September 1 through September 6, and then again from October 4 on. The data analyzed in this document represents responses through December 17. During this period, 255 users of the Arthritis Source initiated responding to the survey. As discussed below, many did complete the entire survey. Specifically, 166 completed the entire survey. In our implementation of the survey, we collected data as people proceeded through each page of the survey. If a user stopped at some middle page, we retained their responses through that page.

Analysis

The survey data required two main types of analyzes. Much of the data required simple tabulation of the number of subjects indicating specific responses. For many of these cases, the responses are mutually exclusive, and thus the data can be presented in terms of the percent of subjects in each category. Other responses are not mutually exclusive – and thus the data is presented via bar charts showing the percent of respondents with each response.

The survey as resulted in some open ended data. Specifically, this included respondents indications about (1) why they were visiting the site, and (2) their suggestions for improving the site. The analysis of these responses proceeded via the method of constant comparison. The ultimate goal was to create categories capturing the essence of the different responses. The categories were created in a bottom up manner, based on the content of the responses. The constant comparison method involves iteratively creating categories and comparing categories to the data until all data have been categorized. This procedure was used to analyze both sets of responses.

In the next section, the analysis of responses to each question is presented. In the discussion section of this report, I return to the overarching goals of the study and use the data and results to evaluate the Arthritis Source, characterize users, make design recommendations, and comment on the feasibility of using online surveys for these goals.

Results

Current Visit. Why are users visiting site?

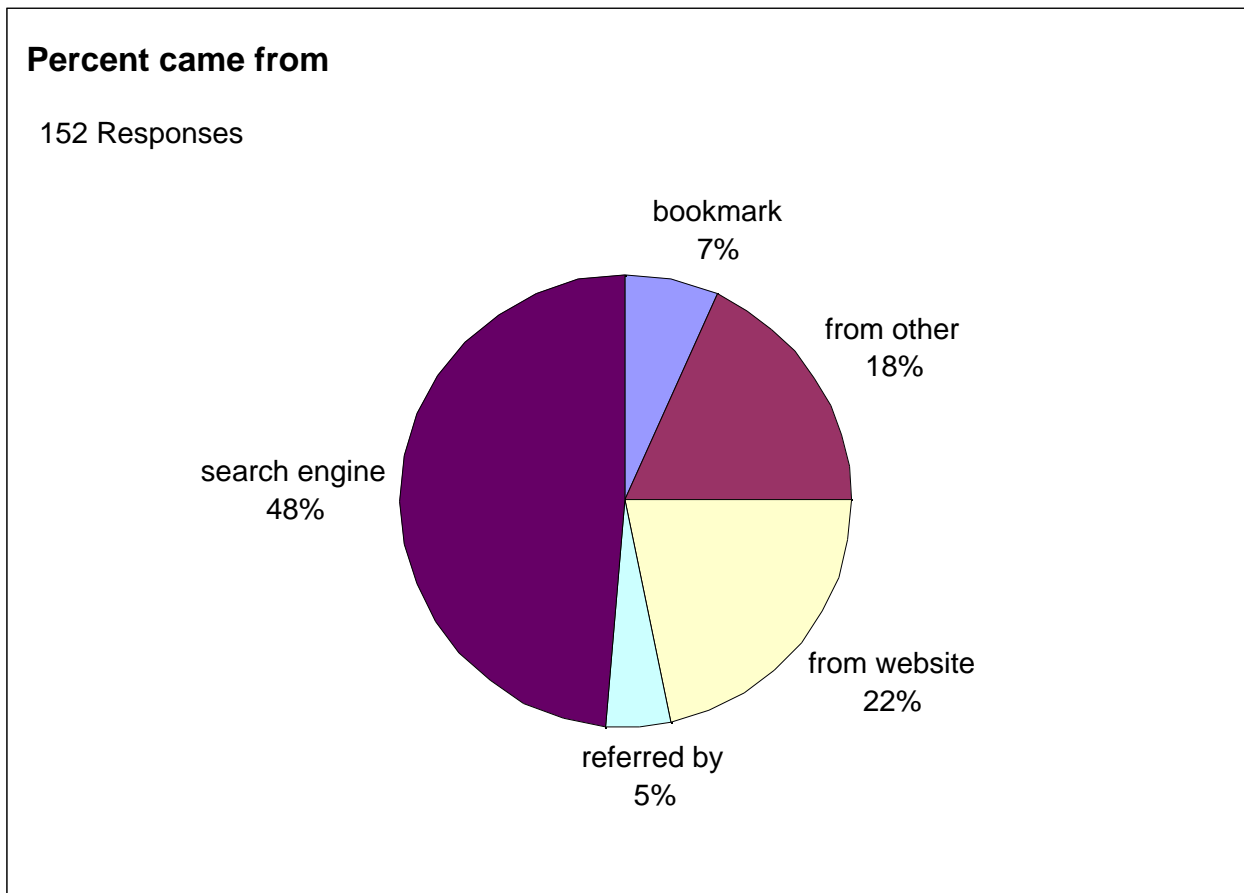
One-hundred and twenty-four (124) respondents replied why they visited the Arthritis Source website. Their responses were grouped into 15 categories using the constant comparison method described earlier. Multiple codes were assigned to many of the descriptions. Tabulation of the 15 categories is shown in the following chart.

<i>Number of Responses</i>	Reason for visiting site
121	seek information about certain types of arthritis or arthritis in general
27	pain as the reason or one of the reasons for their visit
12	seeking emotional support
23	sought clarification or a second opinion on diagnoses
11	expressed the desire to better control their arthritis condition.
16	wanted to gain knowledge to help relatives or friends
9	either had or were going to have surgery for their condition
10	sought information on medications
6	looked for exercises suitable for people with arthritis
6	wanted to know about diets that may help arthritic conditions
2	looked for rehabilitation related information
5	looked for alternative remedies

One-hundred and twenty-one (121) respondents visited the site to seek information about certain types of arthritis or arthritis in general. Twenty seven (27) respondents mentioned pain as the reason or one of the reasons for their visit. Twelve (12) entries contained descriptions indicative of seeking emotional support. (eg.. In desperation, I hurt; Because the fatigue and pain are more than I can cope with lately; ...and I find I have to do pretty much my own research; I NEED SOME ANSWERS!!! Somethings going on and I can't get answers. HELP!!!) Twenty-three (23) respondents sought clarification or a second opinion on diagnoses. Eleven (11) respondents expressed the desire to better control their arthritis condition. Sixteen (16) respondents wanted to gain knowledge to help relatives or friends. Nine (9) respondents either had or were going to have surgery for their condition. Ten (10) respondents sought information on medications. Six (6) respondents looked for exercises suitable for people with arthritis. Six (6) respondents wanted to know about diets that may help arthritic conditions. Two (2) respondents looked for rehabilitation related information. Five (5) respondents looked for alternative remedies.

Current Visit: How did users get to the Arthritis Source site?

A total of 152 responses were recorded. Seventy-four (49%) of the respondents visited the Arthritis Source site from a search engine; thirty-three (22%) of the respondents visited the Arthritis Source site from a website link; ten (7%) of the respondents had bookmarked the Arthritis Source site on their computers; seven (5%) of the respondents were referred to the Arthritis Source site by friends; twenty-eight (18%) of the respondents said they used another mechanism to get to the Arthritis Source site.



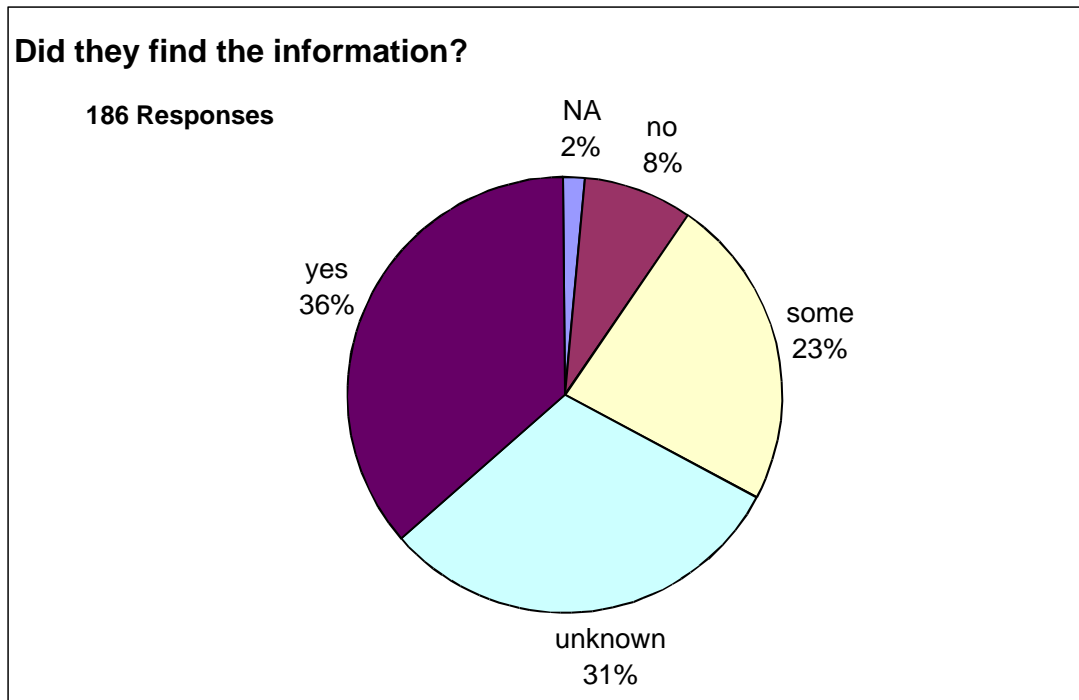
Current Visit: Came From Description

A list of user described sources to get to the Arthritis Source site with frequency counts is shown below.

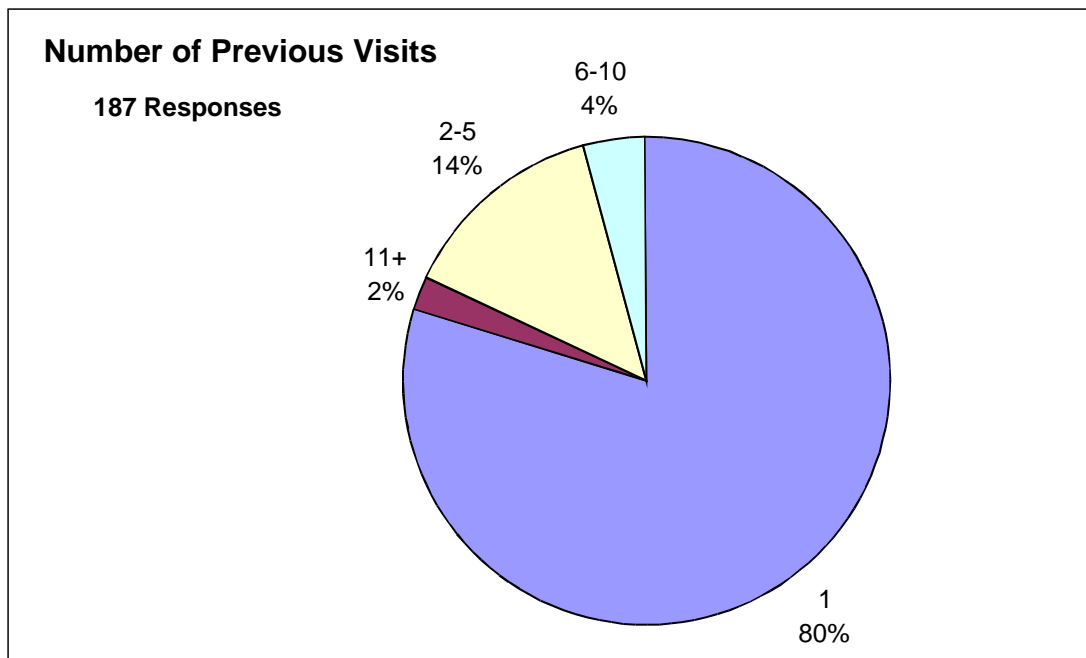
Came From Description	Count Of Came From Description
http://iom.nlm.nih.gov	1
?	1
@home	1
friend & relatives	6
about.com	1
altavista	2
AOL	9
arthritis	5
arthritisinsight.com	1
at AHCPR site and saw a reference to the Spine Resource Clinic at U of W	1
Can't remember	2
Cat Bites	1
chance	4
compuserve	1
copernic	1
cs.com	1
daily apple	1
direct hit	1
Dogpile	1
Ehlers-Danlos	1
Encarta Encyclopedia weblink	1
Encarta Enquire	1
general web search	1
go.com	1
GOOGLE	6
gout	1
healthlinksusa	1
Healthsurfing	1
hotbot	2
http://www.healthlinkusa.com/fibromyalgia.htm	1
Hunting info on SS	1
I am constantly hunting for a site like this	1
I think it was through a link to the American College of Rheumatologists,	1
info seek	1
Internet Explorer	6
Jeeves	1
kneeguru	1
looked up sjogrens	1
lookink for help and info	1
looksmart	1
lupus	2
Lupus Around the World	1
Lycos	2
MEDLINEplus: Fibromyalgia	1
Metacrawler	1
mindspring	1
MSN	7
netscape	3
osteoarthritis	1
pagets foundation	1
pain search	1
physical therapist	2
polymyalgia rheumatica	1
risg.org	1
rotator cuff repair	1
rotator cuff surgery	1
sjogren's syndrome	4

Still's Disease???	1
www.health.com	1
yahoo	8
vooz	1

Current Visit. Did they find information they were looking for?

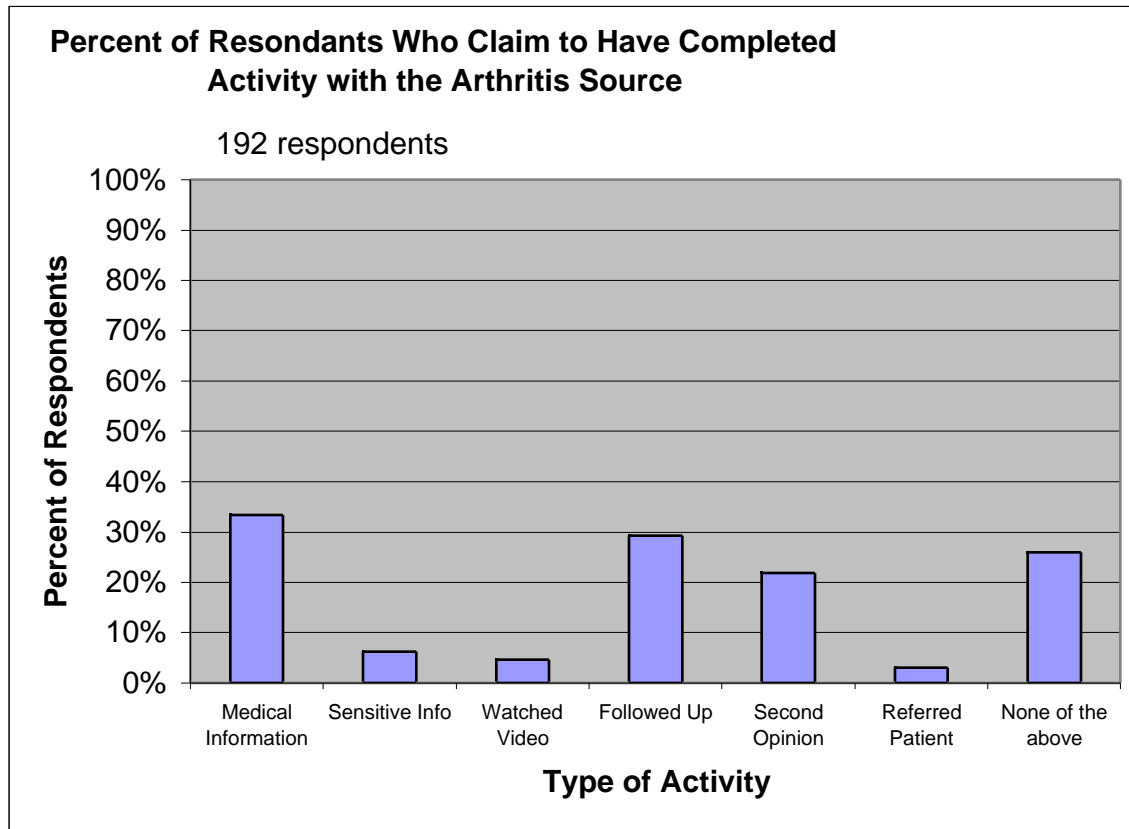


A total of 186 responses were recorded. Sixty-eight (36%) of the respondents found information they were looking for; forty-three (23%) of the respondents found some but not all information they were looking for; fifteen (8%) of the respondents did not find information they were looking for; fifty-seven (31%) of the respondents could not decide whether they were able to find information they were looking for (some of them participated in the survey before reviewing the website); three of the (2%) respondents were not looking for any specific information.

Visits to Date. How many times have users visited the site?

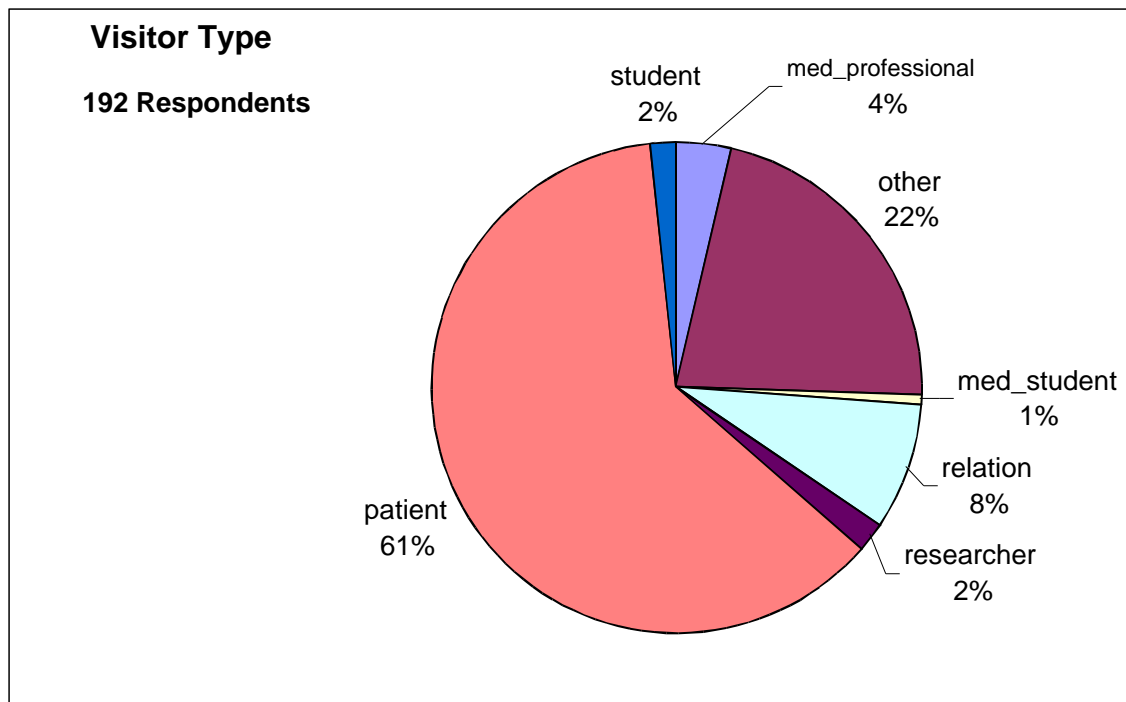
A total of 187 responses were recorded. One-hundred-and-forty-nine (80%) of the respondents were first time visitors; twenty-six (14%) of the respondents visited the Arthritis Source site 2-5 times; eight (4%) of the respondents visited the site 6-10 times, four (2%) of the respondents visited the site 11+ times.

Visits to Date. How have users used the site (current visit or past)?



One hundred and ninety-two one (192) respondents answered this multiple-choice question. Sixty-four (33%) looked at information about medications; twelve (6%) looked at sensitive information that may be too embarrassing to ask; Nine (5%) watched a video to perform an exercise; Seventy-six (29%) searched the Arthritis Source to follow up on information from a doctor’s visit; Forty-two (22%) searched the Arthritis Source for a second opinion about a diagnosis; Six (3%) referred another patient to the Arthritis Source; Fifty (26%) selected none of the above options.

Relationship to Arthritis: What types of users are visiting the Source?



A total of 192 responses were recorded. One-hundred-and-nineteen (61%) of the respondents identify themselves as someone with arthritis; sixteen (8%) identify themselves as friends or relatives to arthritis patients; seven (4%) identify themselves as medical professionals; four of the (2%) identify themselves as researchers; three (2%) respondents identify themselves as students; one respondent (1%) identify him/herself as a medical-student; forty-two (22%) said they do not belong to any of the above options.

Relationship to Arthritis: Persons with Arthritis

Respondents identifying themselves as related to someone with arthritis were asked five additional questions: (i) whether they had been diagnosed, (iia) when they had been diagnosed, (iib) what type of arthritis they have, (iii) can the person with arthritis visit a general practitioner, and (iv) can the person with arthritis visit a specialist.

One-hundred-and-ten (110) respondents identified themselves as someone with arthritis. Of these, one-hundred-and-twenty-four (124) answered the related sub-questions.

- i. Officially diagnosed? 101/110 indicated that they had been officially diagnosed, while the remaining 9/110 indicated that they had not.
- ii. When diagnosed, What type of arthritis? Of the one-hundred (100) that responded, the following timeframes and types were mentioned.

Arthritis Type	Time diagnosed
gout	1998
Sjogren's Syndrome	Sjogren's syndrome is a related Autoimmune 10 years ago
rheumatoid	30 years
AS	1 week
Don't know but they say bad in back & Neck	a number of years Dont Know but they say bad in
psoriatic	4 months
osteo and polymyalgia	several years
rheumatoid	7 years
rheumatic arthritis	since 1985
ortho	years
gout	
osteoarthritis	probably about 15 years ago.
Psoriatic arthritis	3 days
osteo	8 yrs.
RHEUMATOID	FOUR YEARS
osteo	one month
rheumatoid	22 years
don't know	1 year
polymyalgia rheumatica	1 month
Osteoarthritis	I was diagnosed in 1993
shoulder	16 years
I am still under evaluation and will not know until	September 2000
Psoriatic Arthritis	12 months
Osteoarthritis	June 1995
not entirely sure, so far the diagnosis is psoriatic	7 or 8 years
Rheumatoid	4 years
r.a.; fibro; sjogren's	ten years
ostreoarthritis	March 1998
polymyalgia rheumatica	six months
osteoarthritis	6 years
I am guessing osteo(new at this)	
osteo and rheumatoid and sjogren syndome	about 10 years
osteoarthritis	just today
GOUT	TWO YEARS

knee	today
not sure, some say RA and fibro, my RD doesn't	6-7 months--I've been told
PA	15 years
Polymyalgia Rheumatica	3 days
osteo	20 years
DJD-hands, knees	4 months
rheumatoid	2yrs.
rhematic	1985
osteo and Fibromyalgia	approxamatly 10 years ago
Degenerative Joint Disease	Several Years
DEGENERATE ARTHRITIC	ONE WEEK
osteoarthritis	12 years
combination-psoriatic & fibromyalgia	since early 1995
rheumatoid	about 10 years
osteoarthritis	four months
osteo	30 years
osteo and RA	January 2000 w/ os. Nov 78 w/ra
osteo	
progressive degenerative osteoarthritis	opne week
PMR	April-may '99
psoriatic	17 yrs
psoriatic arthritis	four or five years
Fibromyalgia /Ankylosing Spondylitis	Years
Gout	About 2 months
trama induced	four years
osteoarthritis	two years
osteo	5 years
Inflammatory, non-rheumatoid	Five years
polymyalgia rheumatica	4 months
A.S.	snice 10 years ago
spondylitis	3-4 years
Rheumatoid	Two years
That has not been defined, but I think it is	10 years or longer
psoriatic	2years
Polymyalgia Rheumatica and osteoarthritis	4 years
Osteoarthritis	1976--24 years
reactive, (reiter's Syndrome)	1 month
probably Pseudogout	two months
Rhumetoid	8 years
anklosing spondilitis	2 months
paget's	
Rheumatoid Arthritis	About 2 years
Juvenile Rheumatoid Arthritis	26 years
osteoarthritis	self
fibromyalgia	4 yrs.
probably have/humeral ball lost 25% of bone	3 months
osteoarthritis of spine and joints	8 months

narrowing of joint spaces due to multiple	3 mos.
Sjogrens, Fibromyalgia now; earlier Lupus	I was first diagnosed in 1986.
i don't know related to lupus	6yrs.
Anklyosing Spondylitis	7 yrs
psoriatic arthritis	4 years
PMR	3/0/2000
ostero and rheumotied	2 months
not sure	about 6 months
POLYMYALGIA REHEUMOTICA	1 WEEK
Osteoarthritis	40 years/osteo, 1 year polymyalgia rheumaticaa
osteo	one year plus
Reiter's Syndrome	1 year
RA & DJD	6 years
inflammatory polyarthritis nos	7 years
osteoarthritis	twenty years
sjogrens syndrome : primary	
osteoarthritis	7mos
ankylosing spondylitis	one year

- iii. *Access to General Practitioner:* Of the one-hundred-and-nine that responded, one-hundred-and-six (97%) said that they have access to a general practitioner; two (2%) said no; one said unknown (1%).
- iv. *Access to Specialist:* Of the seventy-one that responded, eighty-nine(82%) said they have access to a specialist; four (4%) said no; sixteen (15%) said that they did not know.

Relationship to Arthritis: Relation of Person with Arthritis

Respondents identifying themselves as related to someone with arthritis were asked five additional questions: (i) what is the nature of their relationship, (ii) whether the person with arthritis had been diagnosed, (iib) when they had been diagnosed, (iii) what type of arthritis they have, (iv) can the person with arthritis visit a general practitioner, and (v) can the person with arthritis visit a specialist.

Fourteen respondents identified themselves as related to someone with arthritis. The specific sub-question responses are below:

1. Nature of relationship: Of the fourteen that responded to this question, there were six parents, four children, and three spouses, and one care-giver.
2. Officially diagnosed? Of the fourteen that responded, twelve said yes; two said unknown.
3. When diagnosed, What type of arthritis? Of the twelve that responded, the following timeframes and types were mentioned.

Time diagnosed	Arthritis Type
5 months	Polymyalgia Rheumatica
2 years	osteoarthritis left knee
Mom was diagnosed in the early to mid-60's	She was diagnosed with acute
1 year	Systemic JRA
4 mo	infectious arthritis
6 months	Idon't know
one month for latest diagnosis	Paget's disease
about 10 or 15 years ago	gout
6 months	rheumatoid
5 yrs	don't know
3 weeks	Juvenile Rhumatoid Arthritis
one month	osteoarthritis/spondylosis

4. Access to General Practitioner: Of the fourteen that responded, thirteen () said YES and one said NO.
5. Access to Specialist: Of the fourteen that responded, nine said YES and two said NO, three UNKNOWN.

Relationship to Arthritis: Medical Professional

Respondents identifying themselves as medical professionals were asked four additional questions: (a) what type of medical professional, (b) what percent of their work involves arthritis, (c) whether they were searching on behalf of a patient, and (d) how they planned to use the information gathered.

Seven respondents identified themselves as medical professionals. Six responded to the aforementioned questions as shown below.

Type of medical professional:	Percent of work related to arthritis	Searching on behalf of a patient	How use information
Nursing Assistant and Housekeeper	76-100	no	I don't know yet
Physical Therapist	26-50	yes	To improve the care of shoulder patients with and w/o arthritis
Gynecologist	6-25	yes	improve my knowledge
nurse	26-50	yes	better information for the patient
RN	6-25	yes	will be better informed for the next patient that I come in contact with that has the same complaint.
doctor	6-25	yes	plan therapy

Relationship to Arthritis: Medical Student

Respondents identifying themselves as medical students were asked one additional question – how they planned to use the information they gathered.

One respondent identified him/herself as medical student without indicating how the information will be used.

Relationship to Arthritis: Student

Respondents identifying themselves as students were asked one additional question – how they planned to use the information they gathered.

Two respondents identified themselves as a student. One student indicated that he would be using the information for a poster.

Relationship to Arthritis: Researcher

Respondents identifying themselves as researchers were asked one additional question – how they planned to use the information they gathered.

Four respondents identified themselves as researchers. One said information gathered will be used “as a tool to go to my next doctor visit.”

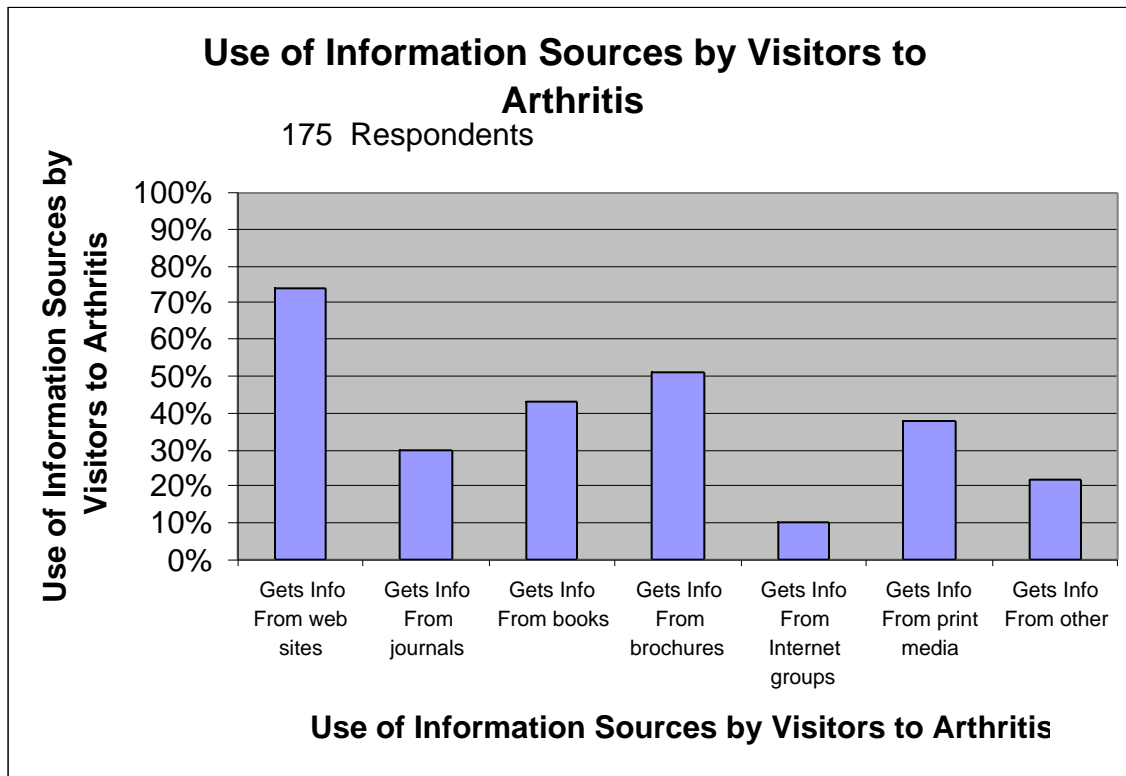
Relationship to Arthritis: Other

Respondents identifying themselves as other were asked one additional question – how they planned to use the information they gathered.

Forty-two (42) respondents identified themselves as other. Thirty-three (33) of these respondents continued taking the survey and eleven responded to the question of how they would use additional information. Their responses are shown below:

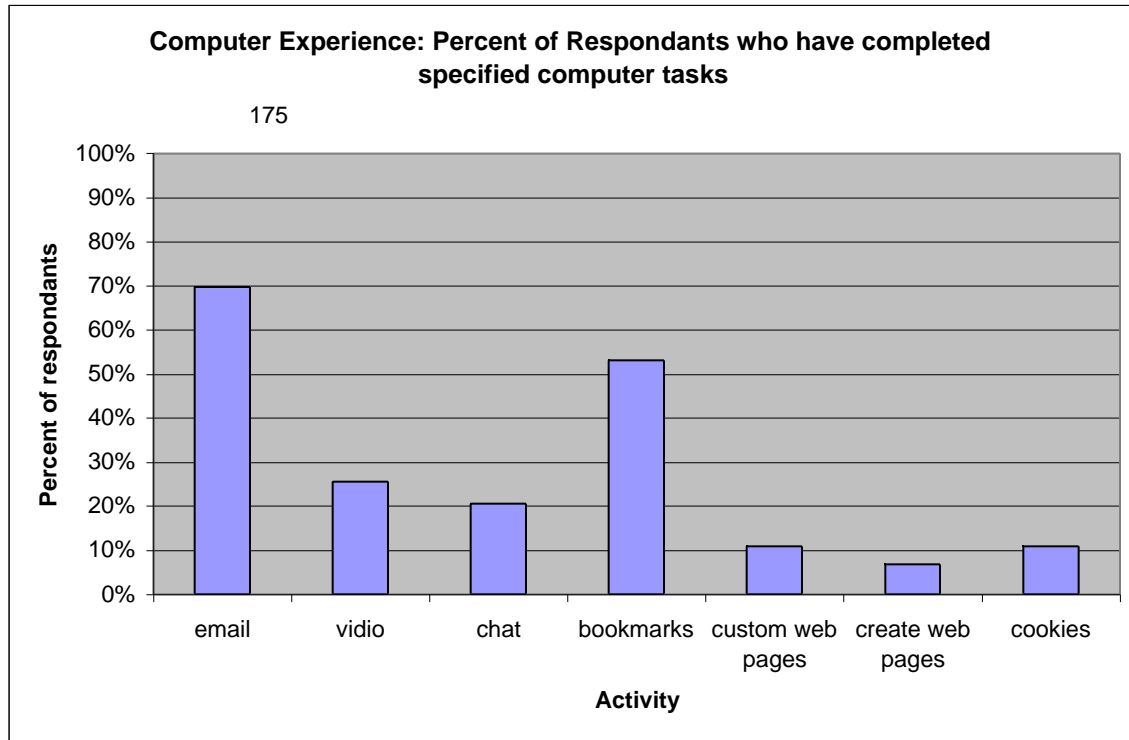
1. How Info is Used
2. I hope to become well enough informed about gout to discuss my condition with my doctor as well as feeling i'm a partner in establishing a treatment plan.
3. to understand my condition better
4. Trying to understand my condition, so that I can cope better, and more clearly explain to my friends, and family.
5. Yes, good general source of information. Supplemental to information I already gathered.
6. For pesonal info to futher understand how RSD is effecting me.
7. To help make descisions
8. To aid in dealing with Ehlers-Danlos and the symptoms. Gain information to discuss with my rheumatologist.
9. Help me better understand what my former employee is undergoing, as well as help me ask intelligent questions if I choose to have my own pain further evaluated.
10. DR. PRESCRIBED MEDICINE FOR R.A. AND RAYNAUD'S & GAVE MEDICINE FOR THESE. BUT FILLED A MEDICAL LEAVE FORM SAYING I HAVE SJOGREN'S SYNDROME AND NOTHING ELSE WAS ADDED. (NOT CONFIDENT ON FINDINGS BECAUSE HE ACTED AS THOUGH HE WASN'T SURE.)
11. educating my father and being a better informed daughter.
12. Should help with therapy; helps when conversing with my physician and understanding the scope of back problems
13. I may try to up my dosage of medication for a time until the pain goes away.
14. to learn more about my operation for rotator cuff
15. To question my doctor on my prognosis.
16. I hope to gain some insight into my problem.
17. Information for clients and myself
18. TO BETTER MY KNOWLEDGE OF FIBROMYALGIA AND ARTHRITIS
19. To help relieve symptoms.
20. I don't know
21. I will consider some of the exercises for my condition which were diagramed.
22. hoping to find solutions to ease sympton with syndrome
23. background information
24. General knowledge about my surgery-rotator cuff repair
25. I will be able to speak to my doctor about what the consultant has diagnosed. I now know why I have been feeling the way I do.
26. More information to talk to my doctor. My doctor has limited info on sjogrens.
27. I will research knowledge provided at this sight for auto immune diseases, as i am still being tested for others. I will refer any friend seeking interest of their selves or others to this sight.
28. Just as a reminder of my medical condition, which I usually ignore until something happens.
29. The information was helpful in this: It gave me peace of mind and was consistent with my doctor's treatment of the disease.
30. inorder to develop a better understanding of a torn rotator cuff of which I am currently being treated for under Labor and Indistries.
31. "I will incorporate it in my accident report under ""Suggestions."" "
32. To ask Dr. of other possible treatments;or different dosage levels.
33. I'm just looking for anything at this time. I don't think I'll be able to find out enough about Behcet's Disease.So I'm not even sure I'll find anything that I can even tell you how I'd use it.

Information Sources: What sources do respondents use to get information?



A total of 175 responses were recorded.. One-hundred-and-twenty-nine (74%) of the respondents who visited the Arthritis Source website said they get information from websites; fifty-two (30%) of the respondents get information from journals; seventy-five (43%) of the respondents get information from books; eighty-nine (51%) of the respondents get information from brochures; eighteen (10%) of the respondents get information from internet group; sixty-six (38%) of the respondents get information from media; thirty-eight (22%) of the respondents get information from other sources.

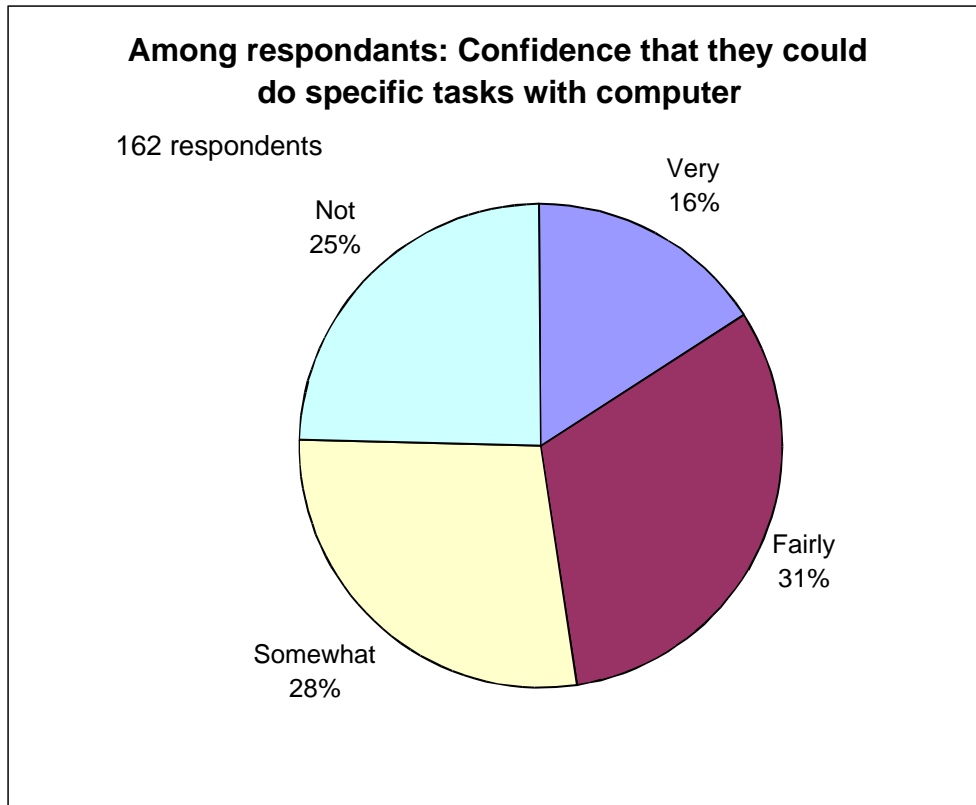
Computer Expertise. What is computer expertise among respondents?



Respondents' computer expertise is reflected by the activities they have done on the computers. A total of 175 responses were recorded. One-hundred-and-twenty-two (70%) of the respondents said they have used Email; forty-five (26%) of the respondents said they watched a video on the web; thirty-six (21%) of the respondents said they have participated in an online chat or discussion (not including email); ninety-three (53%) of the respondents said they have "bookmarked" a web page or saved it as a "Favorite"; nineteen (11%) of the respondents said they have customized a webpage; twelve (7%) of the respondents said they have created a web; nineteen (11%) of the respondents said they have changed their cookies preferences.

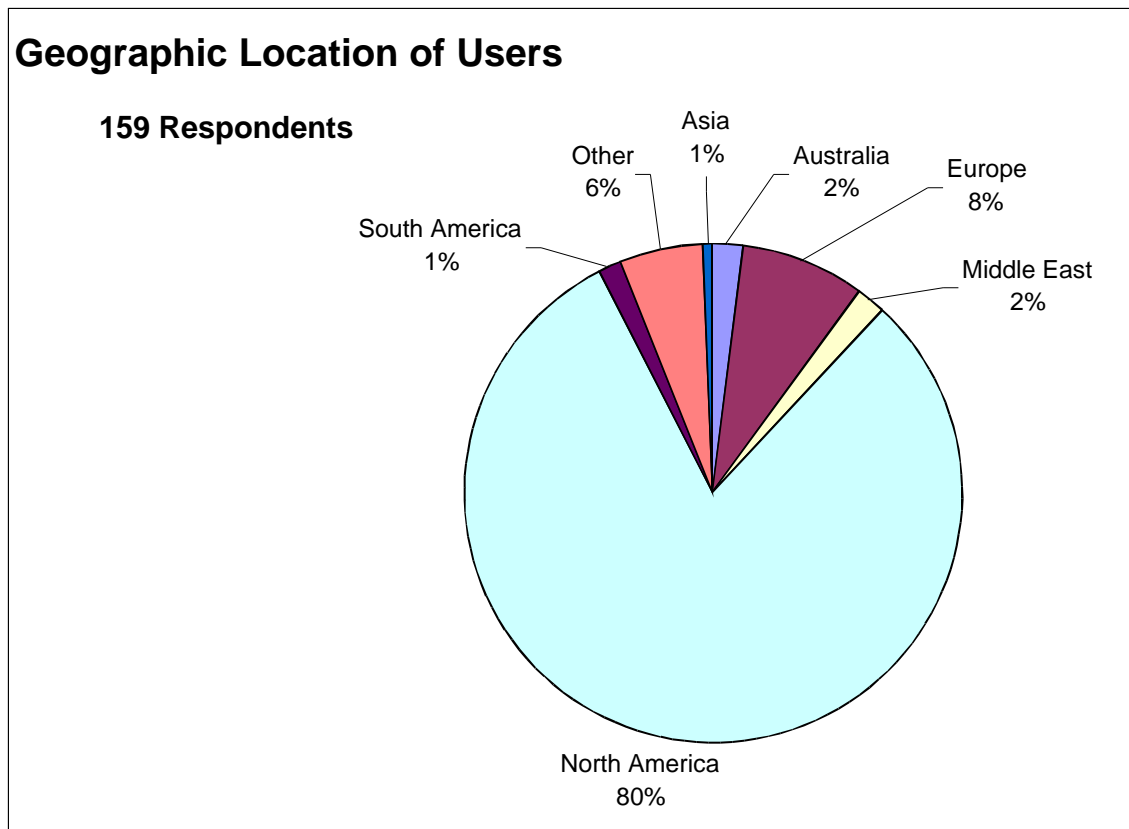
Computer Expertise: Confidence they could do tasks?

How confident are respondents that they could do the computer tasks listed, even if they have not done them yet.

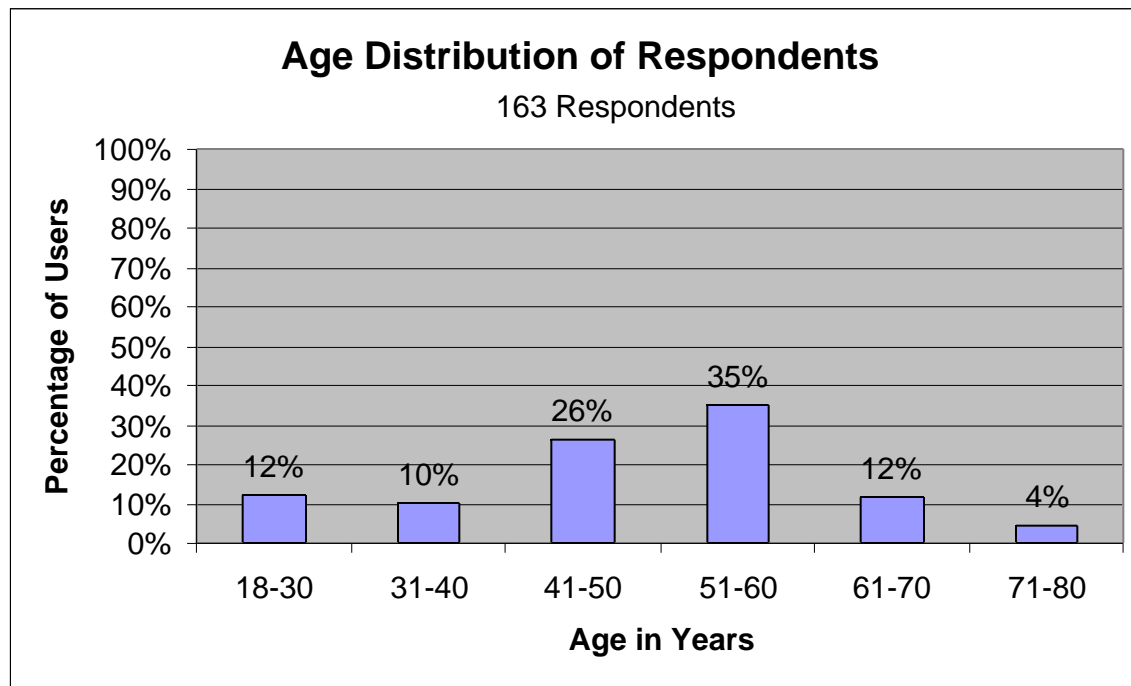


Twenty-six (16%) of the one-hundred-and-sixty-two (162) respondents said they were very confident; fifty-one (31%) of the respondents said they were very fairly confident; forty-five (28%) of the respondents said they were somewhat confident; forty (25%) of the respondents said they were not confident.

Demographics: Where are users located?

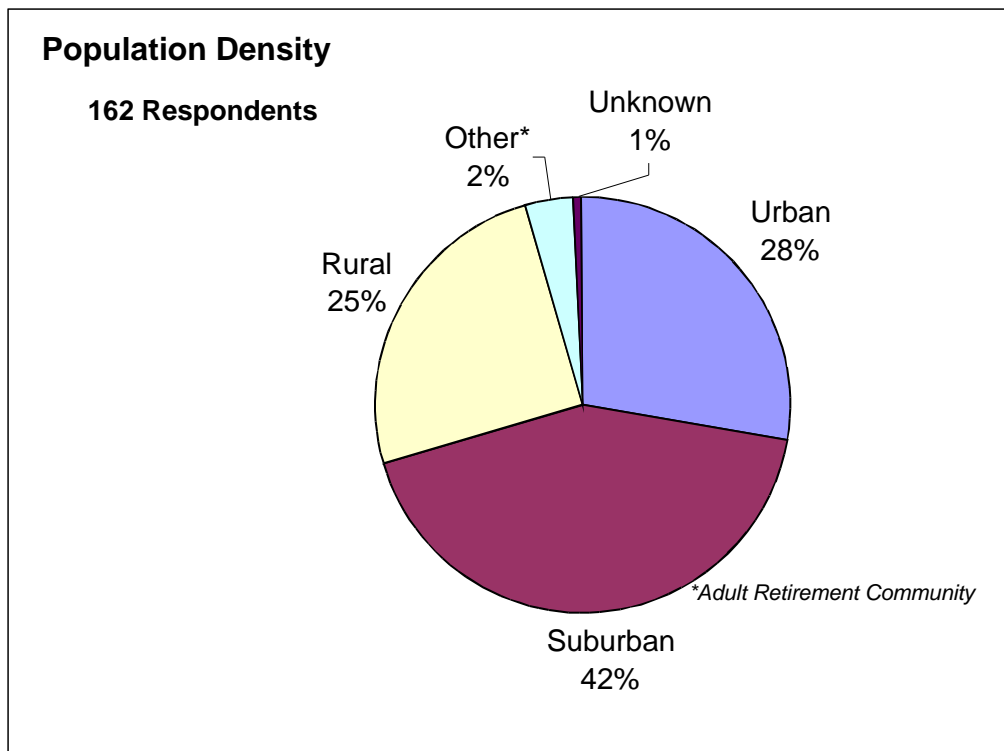


A total of 159 responses were recorded. One-hundred-and-twenty-nine (80%) of the respondents were located in North America ; thirteen (8%) of the respondents were located in Europe; three (2%) of the respondents were located in Australia; three (2%) of the respondents were located in the Middle East; two (1%) respondent was located in South America; one (1%) of the respondents were located in Asia nine (6%) of the respondents selected “Other” as their geographical location. (Excluding Asia, Central America, and Africa). located

Demographics: How old are the users?

A total of 163 responses were recorded. Twenty (12%) of the respondents were in the 18-30 age group; seventeen (10%) of the respondents were in the 31-40 age group; forty-three (26%) of the respondents were in the 41-50 age group; fifty-seven (35%) of the respondents were in the 51-60 age group; nineteen (12%) of the respondents were in the 61-70 age group; seven (4%) of the respondents were in the 71-80 age group.

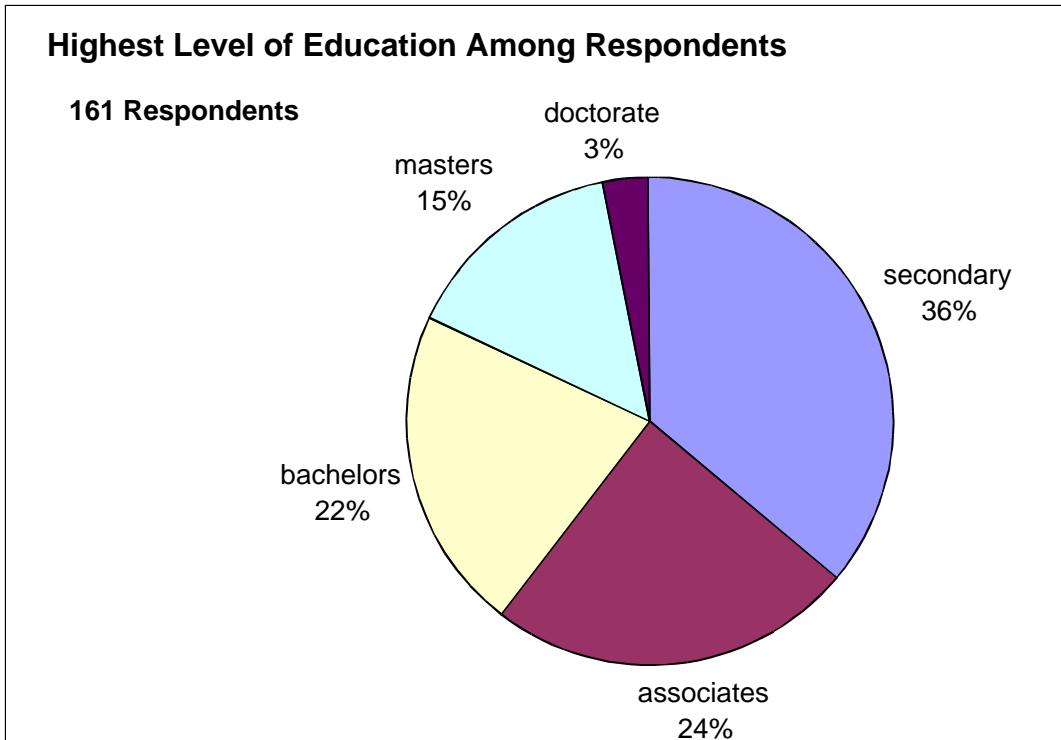
Demographics: What type of community do respondents live in?



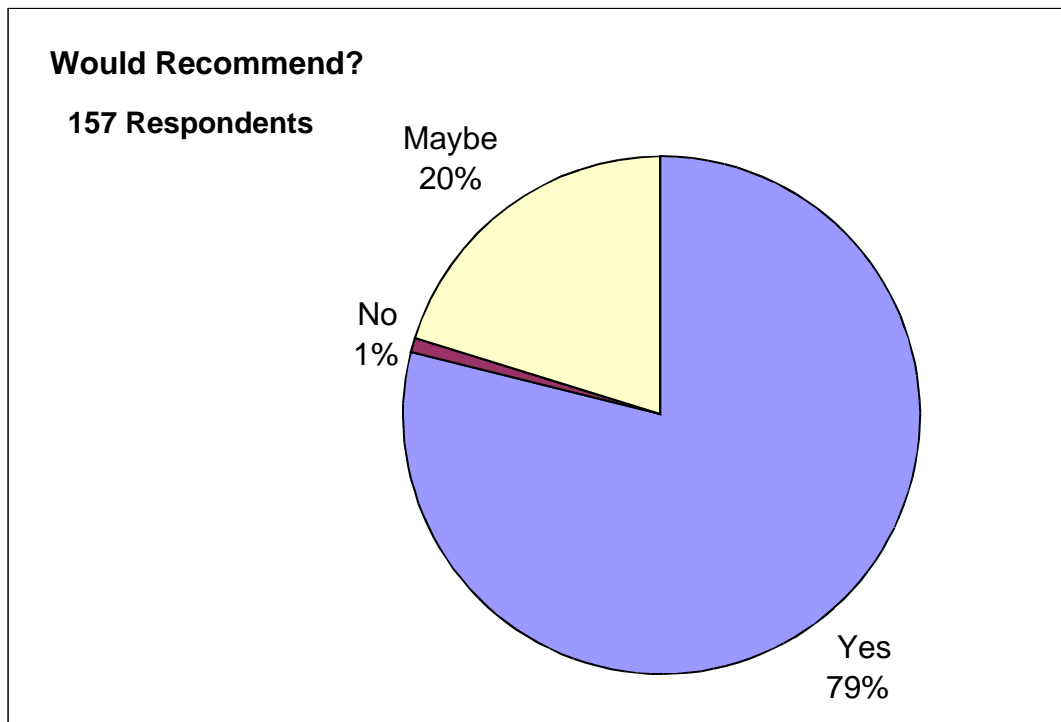
A total of 162 responses were recorded. Sixty-nine (42%) of the respondents live in a Suburban community; forty-five (28%) of the respondents live in a Urban community; forty-one (25%) of the respondents live in an Rural community; six (2%) of the respondents specified they live in an “Other” community; one (1%) respondent said the type of community he/she lives in is unknown.

Demographics. What is your highest level of education?

A total of 161 responses were recorded. Fifty-eight (36%) of the respondents received secondary education; thirty-nine (24%) of the respondents had an associate degree; thirty-five (22%) of the respondents had a bachelor degree; twenty-four (15%) of the respondents had a master degree; five (3%) of the respondents had a doctorate degree.



Overall Evaluation: Would you recommend the Arthritis Source to others?



A total of 157 responses were recorded. One-hundred-and-twenty-four (79%) of the respondents said they would recommend the Arthritis Source to others; thirty-two (20%) of the respondents said maybe they would recommend the Arthritis Source to others; only one said he/she would NOT recommend the Arthritis Source to others.

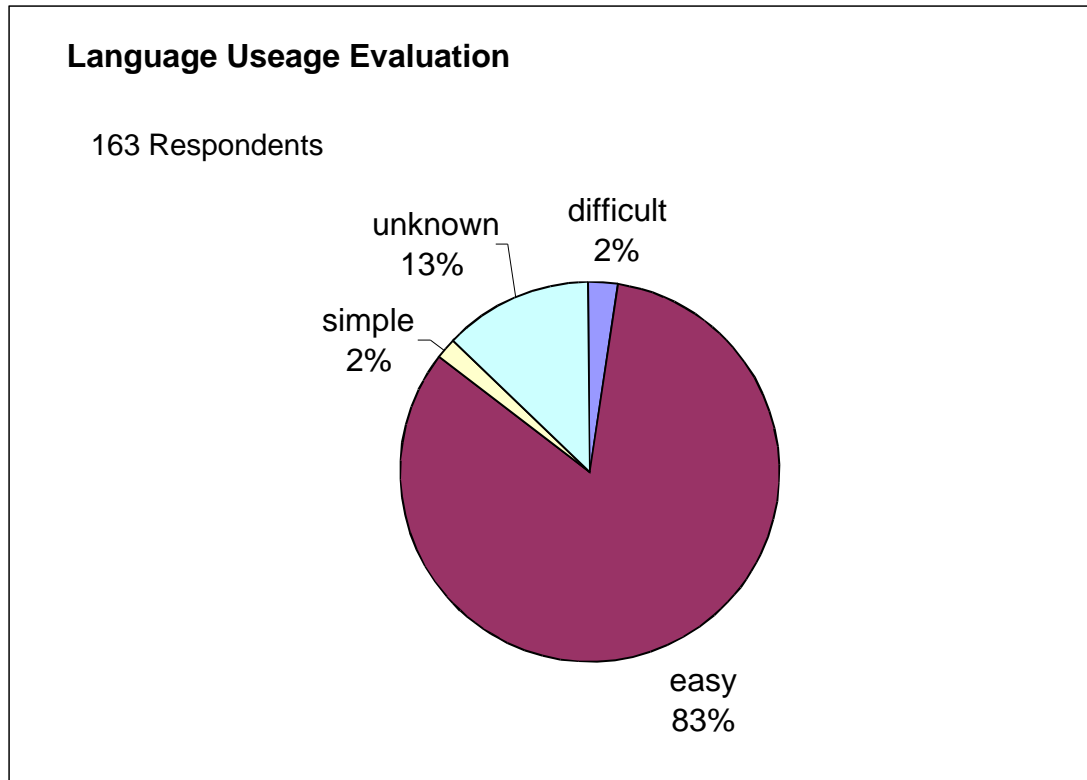
Overall Evaluation. What suggestions do you have?

A total of 125 responses were recorded. The constant comparison technique was applied to categorize the suggestions. Twelve categories were established. Multiple codes were assigned to many of the descriptions. Tabulation of the 12 categories is shown in the following chart. Specific responses are included in Appendix III.

<i>Number of Responses</i>	Suggestions
39	good coverage
4	more on Sjogren's
2	more on RSDS
2	more on Paget's disease
2	more on polymyalgia
5	want referrals
7	new updates
3	search problem
7	good layout
12	support & interaction
4	alternative treatments
5	about the one-line survey

Thirty-nine (39) of the one-hundred-and-twenty-five (125) respondents said the coverage of information was good. Seven (7) respondents praised the web pages layout and said the index allowed them to find information easily. Suggested improvements for the site include: twelve (12) requested interactivity & feedback or a patient support mechanism; ten (10) requested more frequent updates on treatments and medications for the following diseases: Sjogren's, RSDS, Paget's, and Polymyalgia; seven (7) requested more frequent updates on information provided on the site in general; five (5) requested patient ratings and referrals of local doctors; four (4) requested information on home remedies and non-prescription medicine; three (3) requested better search mechanisms for specific information. Ten respondents stayed with the survey to the end even though they had not explored the site yet.

Overall Evaluation. The language used in the Arthritis Source is....



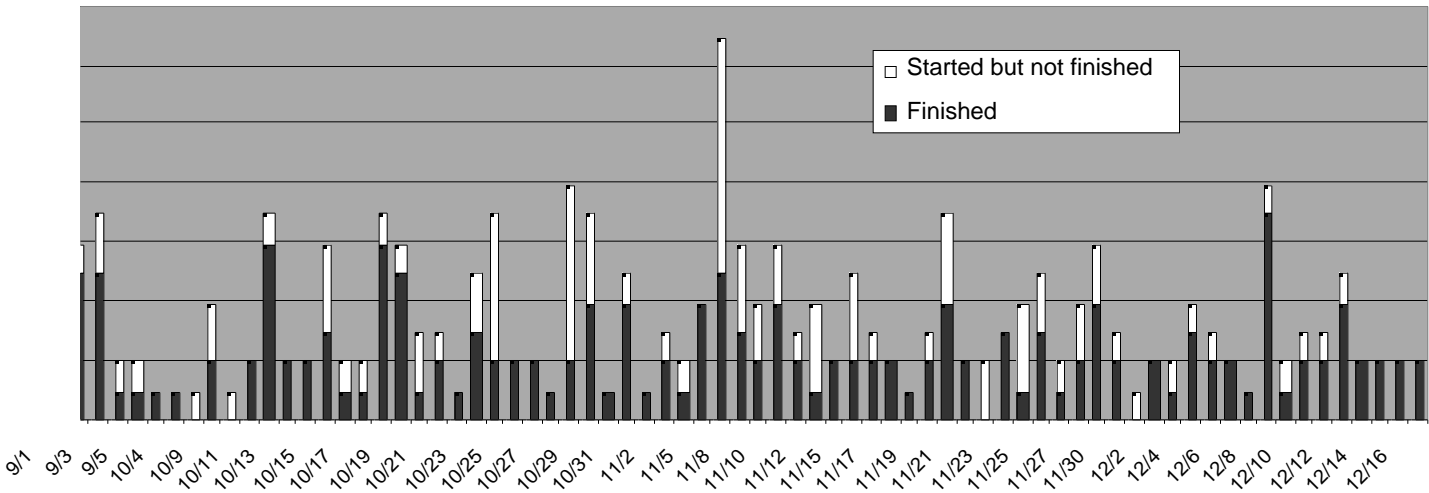
A total of 163 responses were recorded. One-hundred-and-thirty-five (83%) respondents thought the language used in the Arthritis Source was easy; three (2%) said it was simple; four (4%) said it was difficult; twenty-one (13%) said it was unknown at the point of the evaluation.

Online Survey Development. What level of effort was required?

The development of the survey has been a long term and interdisciplinary effort. Planning for the survey started in the fall of 1999 through a joint collaborative effort of Julianne Fondiller, Jake Burghart, and Jennifer Turns. The implementation started in the winter of 2000 and continued through the Spring of 2000, concurrent with the submission and negotiation of human subjects approval. Testing occurred in the summer of 2000. The survey went live in August of 2000. A breach of security caused the server (and survey) to be down for three weeks, after only one week of responses. After that, however, data collection has proceeded smoothly. The analysis contained in this paper consists of results from September and October.

Online Survey Development: How many responses did we get? Completions?

One-hundred-and-sixty-seve (167) of the two-hundred-and-seventy-two (272) (62%) respondents completed the survey. Daily breakdowns of the data gathered from sep-1 through Dec-15 are shown bellow.



Online Survey Development. Starting pages?

From what page did users start the survey? Did they all start in the same place of the Arthritis Source?

A table containing the detailed starting points for all participants is included in Appendix IV. This table indicates that seventy-one subjects started from unique pages; fourteen subjects started from the survey page.

Discussion

This project demonstrated that an on-line survey could concurrently **evaluate** a web-based information resource and **gather information** to support the making of design recommendations. Two aspects are considered in the evaluation of the Arthritis Source website. First is the effectiveness of the Arthritis Source as an information dissemination site. This will be discussed in the following section. Second is whether this site successfully reaches out to the intended audience base. This is a more complicated question which will be addressed in the “Understanding the Users” section. The feasibility of concurrently gathering information to support the making of design recommendations was evident in the amount and quality of the direct and implied information generated by the on-line survey participants. These user generated recommendations are described in the “Design Recommendations” section. Further discussion on using on-line surveys as a research method to evaluate a web-based information site is covered in the “Feasibility of Online Survey” section.

Effectiveness of Arthritis Source?

The effectiveness of the Arthritis Source web site are determined by the following criteria: 1) how successful are the users' current visit to the site, 2) what were the users' up to date experiences with the site, and 3) the users' overall evaluation of the site.

Current Visit

Total of 186 respondents gave rating for the success of their current visits. 36% said they were successful in achieving their goal, 23% said they had some success, 8% said they were not able to achieve their goal. One third of the participants (33%) said they did not know whether their visits would be successful or not yet. Of those who can not determine whether their visits were successful, the most often cited reasons for their visits were for pains, information on Fibromyalgia, Sjogren disease, RSD and Psoriatic arthritis. Participants who said they were not successful in their current visit came to the Arthritis Source site for the following reasons: looking for information on sjogrens disease, alternative remedies for pains or arthritis, management for advance rheumatoid arthritis, rheumatoid arthritis and pregnancy, information relating tendonitis to osteo arthritis and a few very specific questions. Overall, 59% of current visits were rated successful or somewhat successful.

Visits to Date

80% of the 187 users who revealed how many times they have visited this site were first-time users. 14% of these users visited the site 2- 5 times, 4% visited the site 6-10 times, and 2% visited more than 10 times. The reason for this question was to find out the visitor retention rate. It is highly likely that people filled out the on-line survey only when they visited the site for the first time and would not participate in their subsequent visits. Based on the steady flow of survey data (approximately 100 /month in the past three months) and the high percentage of first time users, it is evident that the Arthritis Source continues to attract new visitors.

Limitation: If the repeated visits occur after the participants fill out the on-line survey, they will not be counted.

Solution: Simple Utility Tool add-on to ask the users to tell us how many times they have visited.

When asked about the activities they engaged in during their prior or current visits, 33% of the 192 participants said they looked at information about medications, 6% looked at sensitive information that may be embarrassing to ask (such as “sex and arthritis”), 5% watched a video on how to perform an exercise, 40% search the Arthritis Source to follow up on information from a doctor’s visit, 22% search the Arthritis Source for a second opinion about a diagnosis, 3% referred another patient to the Arthritis Source, 26% of the participants described the activities they have completed as “none of the above”. When the reasons for their visit to the site were examined, the majority of the participants who engaged in “none of the above” activities said they came to the site for information about certain types of arthritis. Given this, we can conclude that the content information of Arthritis Source was most effective in providing information about different types of arthritis (59% usage), followed by information about arthritic medications (33%), offering second opinion about diagnosis (22%), providing sensitive information (6%), video demonstration of exercises (5%), and references (3%).

User Overall Evaluation

The user’s overall evaluation of the site was based on the question of whether they would recommend this site to someone seeking information on arthritis. 79% of the 157 respondents said yes, 20% said maybe, 1% said no. In addition, the users were asked to rate the language usage on the site. Of the 163 respondents, 83% said it’s easy, 2% said it’s simple, 2% said it’s difficult, 13% said it’s unknown. These results indicated that the majority of users who came to this site for arthritis related information were satisfied by the content and the presentation of the information to the extent that they would recommend this site to others with the similar needs. Comments and suggestions were solicited at the end of the survey to gain deeper understanding of users' needs. Responses to questions on suggestions were analyzed to formulate recommendations for the Arthritis Source revisions. List of user suggestions can be found in Appendix III .

Understanding the Users

To determine whether the Arthritis Source reached its intended audiences which include patient, friends and relatives of patient, caregivers, physicians, medical students, and other students. User profiling were conducted through a series of questions. Several areas of user characteristics were captured.

How did users get to the Arthritis Source Site

First area of interest about the users was how they got to the Arthritis Source Site. Of the 115 respondents 39% came to the site through a search engine. The most often used engines were: Yahoo (8), Google (6), and Internet Explorer (6). Others came to the site through links from other websites. The most mentioned websites were: AOL (9), MSN (7), and Arthritis (5). Six participants were referred by friends, relatives, or physical therapists.

Visitor Type

Being cognizant of the self-elective nature of this on-line survey, we recognize the potential bias of the result.

Who: The majority of the 192 participants who answered this question identify themselves as patients with arthritis (83%) or friends and relatives of an arthritis patient (85). Six identified themselves as medical professionals (4%), one as a medical student (1%), three as other students (2%), and four (2%) as researchers. It is arguable that the arthritic patient population is more motivated to participate in the on-line survey, and therefore is over-represented in the sample population. However, it is highly possible that the audience of the Arthritis Source site is primarily the arthritic patient population and therefore the sample of mostly arthritic patients is valid. More data are needed to confirm this hypothesis.

Limitation: Over representation of the patient group.

Solution: Over sampling of the users base

What: Of the 97 patients who were officially diagnosed, 31% were diagnosed with Osteoarthritis, 29% with Rheumatoid Arthritis, 16% with Fibromyalgia, and 11% with Psoriatic arthritis. 96% of the patients have access to a general practitioner and 83% have access to a specialist.

Why: The most often cited reasons for visits was to **get information about patient condition**, followed by **pain management**. Needs for **emotional support** were indicative, though not explicitly stated, in these responses: *"I hurt"*, *"I was mainly looking for information on pagets disease or some kind of support group that may exist."*, *"I would like to talk to someone with similar symptoms of"*, *"I would like to see some information from people who live with this disease and how they cope"*, *"To find an organization to join..."*, *"It would be good if there were some sort of links for finding heumatologists /neurologist /orthopedic surgeons and support groups for various geographic area"*. Another frequently cited reason for visiting the site was to **find information on related surgical procedures and rehabilitation**.

How: When asked how they planned to use the information they gathered, ten (10) of the twenty-eight (28) patient respondents said they planned to use it in their discussions with their doctors. Ten (10) planned to use the knowledge to better control their arthritis conditions. Two (2) planned to make decisions on their treatment options based on the information gathered. Four participant identifying themselves as medical-professionals. Two planned to use the information gathered to better inform the patients. One planned to improve the care of shoulder patients with and w/o arthritis. One would use it to plan therapy. One students will use the info about Marfan Syndrome in Masters Thesis. The other student planned to use the information in a poster.

Information Sources

When given multiple choices on what information sources the respondents used to get information on arthritis, 74% said they used websites, 51% used brochures, 43% got information from books, 38% from newspapers and magazines, 30% from medical journals, 22% from other sources, and 10% from internet groups (news groups, chat rooms, bulletin boards).

Computer Expertise

The users' computer expertise was determined by two questions. First they were asked to select which of the 7 computer tasks they had previously performed. 70% of the 175 respondents had used Email; 50% had "Bookmarked" a webpage or saved it as a "Favorite"; 26% had watched a video on the web; 21% participated in an online chat or discussion; 11% had customized a webpage; 7% had created a webpage; 7% had changed their "cookie" preferences. Next the participants were asked how confidently they would feel in accomplishing any of the previously mentioned tasks that they had not done before. 16% were very confident; 31% were fairly confident; 28% were somewhat confident; 25% were not confident. These statistics revealed the diversity of the users' computer skills. While there were users with advanced computer skills, most users engaged in less complicated tasks such as sending Emails or bookmarking a webpage. The different confidence levels

of users' computer competency further indicated that the users need not to perceive themselves as sophisticated computer users to visit an informational website.

Demographics

The age distribution of the 162 participants has a bell-curve distribution. 61% fall between ages 41 – 60 which correctly reflects the ages when people first begin to experience arthritis symptoms. On the one side of the bell-curve, 10% of the participants are between ages 31-40, 12% are between 18-31; on the other side of the bell-curve, 12% are between 60-71 and 4% are between 71-80. The wide age range of the participants indicates the Arthritis Source has a broad audience base. This claim can be backed up by the various types of visitors discussed earlier.

Of the 161 participants who responded to the question of the highest level of their education, 60% had a secondary or associate degree, 22% had a bachelors degree, 15% had a masters degree, and 4% had a doctorate degree. Language on the Arthritis Source site was targeted at the 10th-12th grade reading level. 85% of the participants found the language use on the site was easy or simple which indicates the presentation of information was adequate for the current users

159 participants responded to the question on geographical location. The majority (80%) of the participants are from the North America region, 8% are from Europe, 2% are from the Middle East, 2% are from Australia, 1% are from South America, and 1% from Asia. 6% selected "Other" locations which can not be identified. These data indicate that the web-based Arthritis Sources already has an international presence in its current form. Whether the new releases of the content should consider international appeals or multi-cultural sensitivity is to be determined by the authors.

Of the 162 respondents who indicated what types of community they live in, 42% lived in the suburban area, 28% lived in the urban area, 25% lived in the rural area, 2% lived in adult retirement or other types of communities, and 1% could not determine what type.

In summary, typical visitors of the Arthritis Source site are individuals with an arthritic condition, between 41-60 years of age of age, and live in North American suburban communities with easy access to general practitioners and specialists. They typically use search engines or follow website links to find information on the Internet.

Design Recommendations

Based on the findings of the effectiveness of the content, the characteristics of the user populations of the Arthritis Source site, together with suggestions offered by the users, a list of recommendations to further enhance user satisfaction is provided as follows.

1. Address patient-centered issues in the site. – The survey has uncovered a variety of issues of great concern to patients. Issues that appear to be at the top of the list include: how and where to find local specialists, what patients should ask their doctors in order to be better informed of their diagnosis, what specific knowledge they should have in order to be active participants in the decision making process for their treatments, and overall arthritis management planning. Concerns like these were expressed in the participants' comments. These issues should be acknowledged/addressed in the site.
2. Help Visitors Find Site and Information in the Site. One way to do this is through search engine positioning and links to other related websites. The majority of the participants said they navigated to the site either via a search engine (48%) or from links on other websites (22%). Promoting the site's hit rates by major search engines is certainly an important design consideration to better reach out to intended users, although this may be difficult to directly accomplish. Establishing links from other frequently visited health care/ patient education/medical information websites will also help increase the site's intended audience base. Work on both of these fronts is already underway. In addition, a site-specific user-friendly content search mechanism will also be helpful. Some participants said they

did not find the information they were looking for, when in fact pertinent information was available on the site. Actual inquiries, that may be representative of the search capability desired, included: "looking for info about exercise and diet ", and "find out diet information on foods that would lower my uric acid level". Others asked for an easier way to search for particular information. One participant commented: "it seems like you have to go through too many things to get to what you are looking for".

3. Acknowledge and address visitor efforts to find social/community support. Many participants either explicitly or implicitly expressed their needs for emotional support. Some mentioned they would appreciate hearing about other patients' experiences of how to cope with specific arthritic conditions. While the existing link to the Arthritis Foundation may serve this purpose, an additional mechanism to allow sharing among participants may help create a sense of community. The current on-line survey is generating a rich set of data directly from the patient population. One possibility is this -- perhaps with permission from the participants, some of this material can be fed back to the Arthritis Source user community.
4. Provide support for users asking very specific questions. Some participants came to the site with specific requests. Example requests related to: pregnancy and rheumatoid arthritis, the relationship of tendonitis to osteoarthritis, the effectiveness of a magnetic band for back pain due to AS, Avascular necrosis, and how to deal with suffering from a severe generalized rebound of psoriatic arthritis after discontinuing methotrexate therapy. Others looked for home remedies or non-prescription medicine, which are beyond the goals of what this site was designed for.

While it is not possible, nor is it the goal of the current site, to satisfy all needs or make recommendation in lieu of a physician, there may be strategies by which we could help users with specific questions. For example, there are specific areas that can be more effectively addressed through a Q&A list. One possible solution is to compile a publicly accessible Q&A listing covering side discussions (between participants and the site authors or among the users) that might be of interest to others. Another is to compile answers to those questions most frequently asked in the survey. Limitation: Security, Maintenance Resources

5. Acknowledge/address visitors' interest in interactivity. Some participants expressed a need for more interaction: "You can't do it all through a brick wall.", and "I want to have a way to address my questions and receive feedback. These comments suggest that the visitors had a need to communicate to each other either for emotional support, information sharing, or feedback.
6. Acknowledge/address visitors' interest in up-to-date information. Many visitors asked for more information on Sjogrens Syndrome, Paget's disease, Polymyalgia, and Psoriatic arthritis. Others requested more frequent updates: "Keep updated articles regarding current research especially on SLE", "new areas of research that are currently going on to alleviate uncomfortable times...", and "Interested in finding out most up to date treatments and research".

Possible ways to address this include: (a) providing such updates and (b) letting users know that providing such information is outside of the scope of the Arthritis Source but also pointing them to another location.

7. Find ways to address user frustration with site responsiveness and reliability. Some users expressed frustration with site responsiveness and reliability. Comments on the current site included: "Slow video viewing", "excess java script errors", and "computer crashes". Clearly one direction is to make the site quicker to access for those with slower modems and more reliable to reduce frustration. We might also provide more information to help users have realistic expectations about the speed of certain activities.
8. Address user frustration with page layout. One way to address this is through better document page layouts – something already underway.

Feasibility of Online Surveys

To determine whether an on-line survey can be a feasible method to evaluate the effectiveness of a website like Arthritis Source, we examined the statistics of the survey results. Limitations and possible solutions were laid out.

Given that no advertisement was done, the number of responses to the survey is encouraging (#270 in approximately three months). The average time participants who completed the survey spent was 13 minutes and 14 seconds. The completion rate was 61.76%. The number and level of responses was remarkably good compared to other similar projects of a similar scope ((What is the response rate based on the number of visits?)???). The majority of participants were individuals with arthritic conditions. At this point it is not clear whether they adequately represent the overall user population for the site.

This sample bias may potentially be more pronounced in an on-line survey than in other forms of surveys. One possible remedy is to request site visitors to indicate whether they are individuals with arthritic conditions even if they do not wish to participate in the survey. Another way to strive for validity is to over-sample to compensate for self-selection by extending the survey with the suggested correction. Currently, this on-line survey attracts about 100 participants each month, if this trend continues, six more months of data collection (around 800-900 responses) will provide a clearer picture.

Sixteen participants took the survey before viewing the site. While much of the information they provided was valuable, using their responses would invalidate the evaluation survey of the site. One such participant stated: "Ask people to take the survey after they have had the chance to read your site--not before!" Apparently the placement of the survey on the website is very effective, however it may help to make it clearer that the survey should be taken at the end of the site visit. The effectiveness of the on-line survey is evident in the amount and quality of data received. Furthermore, some of the information obtained by the on-line survey coincides with data gathered by other research methods employed in the Arthritis Source project. (More on other projects such as OrthoEdu, Hotline, and Chatroom....)

The feasibility of concurrently evaluating informational websites and characterizing users of the site may depend on the nature and the audience base of the site. The majority of survey participants identified themselves as patients with arthritis. Therefore some questions may serve dual purposes, evaluation of the sites and characterization of users, at the same time such as: why they visited the site, how did they find this site, what types of arthritis they have, and what suggestions they have for the authors of the site. Due to the unique nature of the participants, some of them came to this informational only website looking for more than information alone. They sought peer support, advice, or information on organizations to join. They might be more willing to stay with the survey and reveal characteristic data about themselves than non-patient population.

Bibliography

Appendix 1: Online Survey Form

This section contains the survey form as seen online. The online version can be seen at <http://depts.washington.edu/pettt/survey>.



Bone & Joint Sources

Arthritis Source Survey

Help us improve our website! Take a few minutes to tell us about yourself so that we can make the Arthritis Source better fit your needs.

We are part of a team at the University of Washington, Seattle, WA, studying the users and use of the Arthritis Source website. We have worked hard on the design of the website, but we need to know more about the people who are using it. We would like to find out who is using the site, and what you are using it for. To help us improve the site, we have designed the following survey. We will be asking questions about your use of the site, your connection to arthritis, and yourself.

(If you are under 18, you are not eligible to take our survey. Please close this window now.)

Please read the consent form and then click the appropriate button. If you have already taken the Arthritis Source survey, any additional replies will not be counted.

Consent Form:

PURPOSE AND BENEFITS

We are part of a team studying the users and use of the Arthritis Source website. We have worked hard on the design of the website, but we need to know more about the people who are using it. We would like to find out who is using the site, and what you are using it for. To help us improve the site, we have designed the following survey. We will be asking questions about your use of the site, your

Participant's Statement

I voluntarily consent to participate in this survey. I have read the information describing the study and agree that the study has been explained to me. I understand that if I have questions about the research I may contact the investigators at (206) 616-3613. If I have questions about my rights as a subject, I may call the University of Washington Human Subjects Division at (206) 543-0098.

I consent (Continue)

I decline (Exit Survey)



Bone & Joint Sources

Arthritis Source Survey

Questions 1-5 of 17

Visiting the Arthritis Source

First we would like to ask you a few questions about your experience with the Arthritis Source and your reasons for visiting today.

1. How many times have you visited this site?

- This is my first time
- 2-5 times
- 6-10 times
- More than 10 times

2. How did you find us?

- By a search engine called:
- Through a website called:
- By a bookmark/favorite on my computer
- I was referred to the site by:
- Other:

3. Why have you visited the Arthritis Source today?

Have you been successful?

- Yes
- No
- Partially
- Don't know yet
- Not applicable

4. Which of the following activities have you completed at the Arthritis Source (please check all that apply):

- Looked at information about medications.
- Looked at sensitive information that may be embarrassing to

ask about (such as "Sex and Arthritis").

- Watched a video on how to perform an exercise.
- Searched the Arthritis Source to follow up on information from a doctor's visit.
- Searched the Arthritis source for a second opinion about a diagnosis.
- Referred another patient to the Arthritis Source
- None of the above

Who are you?

Different users come to the website for different reasons looking for different information. Your answer here will guide our questions for the rest of the survey.

5. Which category best describes you? (*required)

- Person with arthritis
- Relation of person with arthritis (Parent of, child of, friend of)
- Medical Professional (Doctor, Nurse, Caregiver)
- Medical student
- Student (K-12, college)
- Researcher
- Other

Next Page >>

Submit and Exit

Erase and Exit



Bone & Joint Sources

Arthritis Source Survey

Question 6 of 16

More about you

Since you have told us you are a person living with arthritis, we would now like to know more about your situation. Your answers here will help us develop the website to meet your needs.

6.

a. **Have you been diagnosed with arthritis?**

jn Yes

jn No

If yes, how long has it been since you were diagnosed?

b. **What type of arthritis do you have?**

c. **Can you visit your general practitioner, if you need to?**

jn Yes

jn No

jn Don't know

d. **Can you visit an arthritis specialist, if you need to?**

jn Yes

jn No

jn Don't know

Page 02 of 05



Bone & Joint Sources

Arthritis Source Survey

Question 6 of 16

More about you

Since you have told us that you have a relationship with a person living with arthritis, we would now like to know more about your situation. Your answers here will help us develop the website to meet your needs.

- 6.
- a. **What is your relation to the person with arthritis?**
 - Parent
 - Child
 - Spouse
 - Friend
 - Caregiver
 - Other
 - b. **Has your relation been diagnosed with arthritis?**
 - Yes
 - No
 - Don't know

If yes, how long has it been since they were diagnosed?
 - c. **What type(s) of arthritis does he/she have?**
 - d. **Can they visit their general practitioner, if they need to?**
 - Yes
 - No
 - Don't know
 - e. **Can they visit an arthritis specialist, if they need to?**
 - Yes

- No
- Don't know

Next Page >>

Submit and Exit

Erase and Exit

Page 02 of 05



Bone & Joint Sources

Arthritis Source Survey

Question 6 of 16

More about you

Since you have told us you are a medical student, we now have some questions about your connection with arthritis and how you will use the information on this site. Your answers here will help us develop the website to meet your needs.

6.

a. **What type of medicine are you practicing?**

b. **What percent of your work involves arthritis issues?**

jn 0-5%

jn 6-25%

jn 26-50%

jn 51-75%

jn 76-100%

c. **Are you using the Arthritis Source on behalf of a specific patient?**

jn Yes

jn No

d. **How do you think you will use what you find on the Arthritis Source?**

Next Page >>

Submit and Exit

Erase and Exit

Page 02 of 05

**Bone & Joint Sources**

Arthritis Source Survey

Question 6 of 16

More about you

Since you have told us you are a student, we now have some questions about your connection with arthritis and how you will use the information on this site. Your answers here will help us develop the website to meet your needs.

- 6.
- a. **What type of student are you?** (e.g., 12th grade, senior in college)

- b. **How do you think you will use what you find on the Arthritis Source?**

Page 02 of 05

**Bone & Joint Sources**

Arthritis Source Survey

Question 6 of 16

More about you

Since you have told us you are a researcher, we now have some questions about your connection with arthritis and how you will use the information on this site. Your answers here will help us develop the website to meet your needs.

6. **How do you think you will use what you find on the Arthritis Source?**

[Next Page >>](#)[Submit and Exit](#)[Erase and Exit](#)

Page 02 of 05



Bone & Joint Sources

Arthritis Source Survey

Question 6 of 16

More about you

6. **How do you think you will use what you find on the Arthritis Source?**

Next Page >>

Submit and Exit

Erase and Exit

Page 02 of 05



Bone & Joint Sources

Arthritis Source Survey

Questions 7-9 of 16

How do you learn about arthritis?

We would like to know how you normally find information on arthritis and a little about your computer experience.

7. **Where do you get information on arthritis?** (Check all that apply)
 - Websites
 - Medical books and journals for medical professionals
 - Medical books for general public
 - Brochures (like those found in doctors' offices)
 - Internet groups (news groups, chat rooms, bulletin boards)
 - Newspapers and magazines
 - Other

8. **Which of these things have you done on a computer?**
(Check all that apply)
 - Watched a video on the web
 - Listened to audio on the web
 - Used email
 - Participated in an online chat or discussion (not including email)
 - "Bookmarked" a webpage or saved it as a "Favorite"
 - Customized a webpage for yourself (e.g., My Yahoo, CNN Custom News)
 - Created a webpage
 - Changed your "cookie" preferences

9. **Are you confident that you could accomplish any of the items that you did not check, if you needed to?**
 - Very confident
 - Fairly confident
 - Somewhat confident
 - Not confident

Next Page >>

Submit and Exit Erase and Exit

Page 03 of 05



Bone & Joint Sources

Arthritis Source Survey

Questions 10-14 of 16

General information about you

These questions help give us an idea about how the information on the Arthritis Source can be made to suit your needs.

10. Where are you located?

- Asia
- Europe
- North America
- Central America
- South America
- Australia
- Africa
- Middle East
- Other

11. The language used on the Arthritis Source is:

- Too simple
- Easy to understand
- Very difficult
- Don't know yet

12. Describe the area where you live

- Urban
- Suburban
- Rural
- Other
- Don't know

12. What is your highest level of education?

- Primary school (grades 1-6)
- Secondary school (grades 7-12)
- Associate's degree (A.A.)
- Bachelor's degree (B.S., B.A.)

- Master's degree (M.S., M.A.)
- Doctor's degree (Ph. D., M.D., Ed. D., etc.)

13. **What is your age?**

- 18-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71-80
- 81 and over
- Rather not say

14. **What is your sex?**

- Female
- Male
- Rather not say

Next Page >>

Submit and Exit

Erase and Exit

Page 04 of 05



Bone & Joint Sources

Arthritis Source Survey

Questions 15-16 of 16

What do you think?

Now that we've asked questions about you, it's time for you to give us any feedback you would like to provide about the Arthritis Source. We take your comments and suggestions very seriously!

15. **Would you recommend the site to someone else looking for information on arthritis?**

- Yes
 No
 Maybe

16. **We want to know what you think!**

Please give us any comments you have about the site. All suggestions are welcome! (e.g. information that you were looking for but couldn't find)

Page 05 of 05



Bone & Joint Sources

You have not answered the question(s) indicated in red. We would appreciate if you could provide us with an answer to these questions. To do so, click the "Change Answers" button for the respective section and enter the value in the screen.

If you want to submit as it is now, please click "Submit".

Page 1

Change Answers

Question	Your Answer
How many times have you visited this site?	
How did you find us?	
Why have you visited the Arthritis Source today?	
Have you been successful?	
Activities that you have completed at the Arthritis Source:	
Which category best describes you?	other

Page 2

Change Answers

Question	Your Answer
How will you use the information that you are looking for?	

Page 3

Change Answers

Question	Your Answer
Where do you get information on arthritis?	
Which of these things have you done on a computer?	
Are you confident that you could accomplish any of the items that you did not check, if you need to?	

Page 4

Change Answers

Question

Your Answer

Where are you located?
The language used on the Arthritis Source is:
Describe the area where you live.
What is your highest level of education?
What is your age?
What is your sex?

Page 5

Change Answers

Question

Your Answer

Would you recommend the site to someone else looking for information on arthritis?
Comments or suggestions you have about the site:

Submit Survey



Bone & Joint Sources

Arthritis Source Survey

Can we contact you?

The Arthritis Source survey is only the first step in our research to improve the Arthritis Source website. We are planning two more studies--a phone interview and a lab evaluation. These studies will build on the results of this survey. Our future questions will focus on your use of the Arthritis Source website.

You can participate in either a phone interview, a lab evaluation, or both. Please read the information in the box below if you are interested. Participation is voluntary and will not affect your survey answers. Your contact information will be kept confidential. Giving this information does not commit you to participate in the follow-up study.

If you do not wish to participate in further research, please click the "Finish" button at the bottom of this page.

Please read the consent form and then click the appropriate button. If you have already taken the Arthritis Source survey, any additional replies will not be counted.

Consent Form:

<p>PURPOSE AND BENEFITS We are part of a team studying the users and use of the Arthritis Source website. The survey you have completed will help us to understand who you are and what you do when you visit the site. Because there are limits to what we can learn through a survey, we will do a separate follow-up study with phone interviews. These interviews will</p>
--

Participant's Statement

I would like to be contacted for a follow-up interview. I will provide my contact information to allow this. I understand that my survey answers will be confidentially linked to my contact information for a limited time. My contact information will be deleted after (1) the follow-up study takes place, (2) a year has passed since I provided

the contact information, or (3) I notify the research team through email or phone that I no longer wish to participate in the follow-up study. By providing my contact information in the spaces below, I consent to being contacted to participate in the follow-up study selected and to having my contact information linked to my survey responses.

- e I am interested in participating in the phone interview and I am over 18. I would like to be contacted about this in the future. My contact information is given below. **(Please fill out the contact information below.)**
- e I am interested in participating in the lab study and I am over 18. I am willing to come to the University of Washington, Seattle, Wash, to do this. I would like to be contacted about this study in the future. My contact information is given below. **(Please fill out the contact information below.)**
- e I am interested in participating in both the lab study and the phone interview, and I am over 18. I am willing to come to the University of Washington, Seattle, Wash, to do this. I would like to be contacted about this study in the future. My contact information is given below. **(Please fill out the contact information below.)**

If you have clicked any of the above, please fill up your name and either or both the email address and phone number.

You have selected one or more of the above options and we need you to provide us with your contact information (as indicated in red). Please enter them before you click Finish.

Name:

Email Address:

Phone number:

Country (if outside the USA)

Click the finish button to complete the survey.

Clear

Finish

Arthritis Source Survey

Thank you for taking our survey!

Thank you very much for taking the time to fill out the Arthritis Source survey. Your answers will help us redesign the site to better meet your needs.

Click here to return to the Arthritis Source.

[Return to the Arthritis Source](#)

Appendix II. Verbatim Responses to Question “Why”

Sample size: 184 responses

-
- I am scheduled to have glenoid replacement surgery on Sept. 12 at the University of Washington Medical Center and I wanted to find out more about the procedure.
- Haave recently experience what has been tentatively diagnosed as gout.
- information
- Looking for any new information regarding my condition
- looking for remedies for gout
- I am awaiting surgery in both legs for compartmental syndrome.
- My mother-in-law has Polymyalgia Rheumatica
- I have Sjogren's Syndrome.
- I have two shoulder arthroplasties and have found that one shoulder has superior subluxation with possible cuff tear and the other was not corrected when the shoulder was replaced 1 year ago. I need to find out more about the course to take now. My new
- To get more info in AS
- Doctors say I am effected with Fibromyalgia Syndrome. I am trying to learn more about it for my peace of mind.
- To acquire more information related to RSD.
- Looing for information regarding a disorder I have called reflex sympathetic dystrophy.
- I have been diagnosed with psoriatic arthritis and recommended methotrexate as a treatment. I wanted to find out more information with which to make an informed decision.
- trying to get info on cause of pain and discomfort that I'm experiencing
- because i have polymyalgia and i am interested in finding out what i can about the problem.
- looking for any new information on RA and treatments with Enbrel and Remicade.
- Find information about arthritis
- I had an MRI and my doctor diagnosed my knee with osteoarthritis
- I am seeking diagnosis and have felt left out on my own as many of my doctors have been reluctant to offer treatment (I am pregnant) or even testing.
- To see what information was available.
- I have just been diagnosed as having PMR
- because I want to learn more about my arthritis and what I can do for it.
- Interested due to DJD in hands; just obtained access to Internet at home and decided to see what I could learn
- ihave fibromialgia and it is very painful. i hope i can help somebody
- have been having ain in right leg
- in an effort to find out more information on the above subject due to pain in my joints right leg
- to learn some relevant exercises
- In deseperation.
- Looking for more info about gout
- Read article on SLE.
- I have arthritis in my hands and am always looking for new info on treatments as I use two computers in my office every day. My hands hurt a lot of the time.
- To obtain a deeper understanding of a new diagnosis
- A man my husband works with has degenerative arthritis and lupus and my mother had acute rheumatoid arthritis and was an invalid for 20 years. I refuse to get arthritis, but with the other problems I have, I also know that sometimes we cannot determine ou
- to gather info on the injections of Synvisc
- For info on RSD
- SEEKING INFORMATION.

- I have been experiencing symptoms of arthritis and wanted to find out more about how to help myself eg. exercise, diet, lifestyle changes.
- Gathering information for relative on Sjogrens Syndrome
- suffer from knee pain, curious about disease
- I have been diagnosed as having PMR. I believe that it shares cause with RA. It has been said that Minicin is a good treatment for the microplasms that cause RA. I want to know why it is [or not] applicable to PMR. I had been originally assigned with RA a
- Yes
- yes
- Looking for the most updated information on Sjogren's to keep myself, as well as my dentist & physicians, informed of the latest possible help.
- arthritis in knee
- wanted to know about polymyalgia rheumatica
- To look up info on medications and other things.
- I am scheduled for Glenohumeral arthroplasty first week Dec 00 at Tripler Army Medical Center HI
- Looking for more info on Sjogren's Syndrome
- Because I am becoming more and more uncomfortable with my psoriatic arthritis. I would like to find a source that understands that this disease is a tad bit more than uncomfortable as far as the joint pain in the knees and feet but also, the shoulders.
- yes
- To learn more about Ehlers-Danlos Syndrome which I have.
- I am looking for more information on Avascular necrosis. And when I seen the bone section I looked to see if anything was written on it. But nothing seems to be here.
- I have arthritis & I want to learn as much as possible about the disease, related conditions, & treatments. I find it very helpful to understand what is going on - it makes it easier to deal with symptoms & side effects when you know what to expect.
- Looking for exercises for arthritis in shoulders
- Two reasons - I have a former employee on medical disability due to RSD, and the time for review of his condition is coming up. I was wanting to learn more about it prior to review. Also, I have been diagnosed as having arthritis, but none of the normal
- My daughter has been diagnosed with Systemic JRA.
- to get info on Reflex Sympathetic Dystrophy
- TO FIND OUT ABOUT SJOGREN'S SYNDROME. MY DR. WASN'T ALL THAT CONFIDENT ABOUT MY DIAGNOSIS (I FEEL) BECAUSE HE SAID WITH MY SYMTOMS UMMMM LETS CALL IT THIS. I HAVE A LOT OF JOINT PAIN, DEGENERATION OF THE SPINE, AND HAD CARPUL TUNNEL SURGERY IN THE LA
- FOR INFORMATION ON SJOGREN'S SYNDROME
- I recently had surgery for carpal tunnel and trigger finger. I have not responded well. The pain in my hand and shoulder is consuming me. Last week, I was diagnosed with RSDS.
- My father was informed that he may have Paget's disease. I wanted to know more about the disease.
- for a report
- For information about back pain
- I am 25 yrs old. I have rheumatoid arthritis and am planning on getting pregnant.
- new diagnois by my doctor
- I wanted to see if there was any information relating tendonitis to ostroarthritis.
- to get information regarding polymyalgia rheumatica
- I have advanced osteoarthritis, am in a Canadian health plan, and find I have to do pretty much my own research et al.
- To read about arthritis and using swimming pool and whirlpool
- 30 yrs. ago I had a skiing accident and doctors removed the torn cartilage telling me that if I didn't have this procedure done I would get arthritis Later in life. Well, it is later and I hurt (big time) only recently though.
- to learn more about the problem that I have with fatigue and rthritis

- I was just diagnosed with osteoarthritis and wanted some information on dealing with it.
- I HAVE A BOUT WITH GOUT
- i am rheumatologist
- To learn more about the disease I have.
- Because I am in so much pain, all over my body. I was dignosed with fibromyalgia about 5 years ago and have tried a number of things that all turn out to be only temporary.
- Looking for information on Lyme's Disease
- I have polymyalgia and I was looking for info about diet. I am on prednisone and have reduced to 7 mg. I still have some pain and want to get off prednisone as quickly as I can. I am looking for info about exercise and diet.
- I JUST FOUND OUT I HAVE DEGENERATE ARTHRITIC IN MY BACK THAT SEEMS TO BE CAUSING ME A LOT OF PROBLEMS OTHER PLACES ALSO. I WAS TOLD THAT SOME FOODS MIGHT BE THE REASON THAT I SOMETIMES HAVE SO MUCH PAIN I CAN'T HARDLY STAND IT.
- I have some time available
- i had total shoulder replacement surgery on aug 23, 2000, and the results have been nothing less than fantastic. i am scheduled to have my other shoulder done on dec. 11, 2000, and am interested in following your post surgical rehabilitation format that
- I have some time available
- because I think I may have it
- My husband has gout, taking allapurinol, has recently been diagnosed with pseudogout, and has continous flair ups.
- To find advice on exercise with arthritis.
- i wanted more info regarding ehler's danlos syndrome
- To find the latest info on RA and OA for myself and friends
- I have osteoarthritis
- Have lower back pain
- curiosity
- to gain more information
- I have fibromyalgia. My 30 yr old daughter has been diagnosed with \infectious arthritis\ 3 mos after a near-fatal auto accident.
- I wanted to learn more about infectious arthritis.
- I am trying to find information on prescribed medications and alternative remedies to help me formulate a game plan on how to manage my ra and osteoarthritis with a minimum of pill taking
- I have joint pain centered in the knees,feet,wrists.The pain moves around at will.It often leaves one joint and travels to another.
- had fasciotomies for exertional compartment syndrome, as well as microfracture in left knee. looking for more info.
- I have Polymyalgia Rheumatica and I want to find out more about it
- HAVE ALL THE SYMPTOMS AND HAVE BEEN DX WITH FIBROMYALGIA WOULD LIKE MORE INFORMATION
- yes
- Looking for the \Moisture Seekers\ subscription
- seeking alternatives to a recent diagnoses and recommendation for joint replacement surgery
- I needed to find well layed out, detailed, and labled diagrams of the hand. I am making a model of tha hand, and it is nearly impossible to find a clear, step by step layout, of the ligaments and tendons of the hand!
- I am suffering from arthritis and trying to decide whether I want to transfer management of my arthritis to a specialist. I also hope to identify what \type\ of arthritis I currently have.
- establishing a shoulder rehab program at a therapy facility in Louisville, KY>
- To get more information about fibromyalgia.
- i hurt
- i already have R.A.
- to further research/study on back pain and causes as well as possible cures. I am a massage therapist.

- looking for any information on psoriatic arthritis that may be able to help me understand what is happening to me, and any ways I may be able to control it.
- Because the Fatigue and pain are more than I can cope with lately
- I have RSD....I dont know if arthritis is related to RSD
- I have gout and was looking for more information about what causes the desease, drug available for treatments, and the side effects of drugs used to treat gout.
- find out diet information on foods that would lower my uric acid level
- to get information

Appendix III. Responses to Questions on “Suggestions”

1. I think there is about everything a person would want to know on this site.
2. Very good explanations of my condition. Interested in finding out most up to date treatments and research. Site hasn't changed in two years.
3. looking home remedies or non-prescription medicine
4. does Compartmental syndrome class as a form of arthritis? I'm not sure that I am of particular use to use as a subject. However, as I am currently suffering from compartmental syndrome in both legs(on ascale of 1 -100 I measure 45 at rest and 92 when running!), if I can be of any use to you, whilst I appreciate this is supposed to be anomynous my e-mail address is paul.dewison@ic24.net in the UK.
5. It was very informative and will make a copy of it for my mother-in-law
6. I am a registered nurse, who has become frustrated by the fact that very few physicians, nurses or dentists even know what Sjogren's is. I am constantly trying to find any research projects which might help me or others. I do belong to the National SS Foundation. How can we get others to understand this disease?
7. I have been unable to find information specific to my problem, i.e. what type of repair is best if cuff problems occur after arthroplasty.
8. site is informative
9. Ask people to take the survey after they have had the chance to read your site--not before!
10. Your education question confused me! I don't have a degree but professional qualiications in my field. It's the first time I have ever found anything I was actually looking for on the Internet! I shall certainly visit again.
11. To many questions. informations is to difficult to find.
12. This is very helpful information for me.
13. A patient rating system of local doctors would be wonderful. I live in the area and have had trouble finding doctors who respect my research in the areas of concern to me-since I consider myself a medical consumer rather than a passive patient.
14. I was searching for information I did not already know.
15. Having no previous knowledge of PMR I am keen to find out all I can about it.
16. too soon to tell- just started looking at it
17. i found what i was looking for after only a few moments and the site gave me the correct spelling of the source i was looking for.
18. The list of ideas to help sufferers in daily life is daunting. It should be broken up. Snazzier.Humour needed. We all need a laugh you know. Is that mentioned anywhere? Graphics would help. Cartoons. I shall see if I can download the videos after I fill this in.
19. I found the information I needed about RSDS. It confirmed what I had been told. I wish there had been more information about the 'cause'. e.g. could it have been caused by damage to the sciatic nerve during surgery or is it purely spontaneous.
20. Keep updated articles regarding current research especially on SLE.
21. I have just started looking at your site. I will have to provide that info at a later time.
22. What is aggressive arthritis?
23. I liked the directory so I could pick and choose my information. One does not always know the correct wording they need to find (check out legislative bills sometime, very confusing). You made your website simple and quick so I can move on to other things.
24. very informative, helped me with my questions on diet, nutrition, exercise, alternatives to treatments/surgery.
25. Additional info on Reflex Sympathetic Dystrophy, what other parts of the body it effects. My RSD is considers Wide Spread Sympathetic Dysfunction which now effects the Heart my means of Corenary Artery Spasms during flare-ups. How common does RSD effect the body like this?
26. I HAVEN'T REALLY INVESTIGATED THE SITE YET, BUT I WOULD LIKE TO KNOW HOW OTHER PEOPLE WITH A REALLY AGGRESSIVE R A HAVE MANAGED TO WORK AND GET ON WITH THINGS IN GENERAL. IT HAS TAKEN 4 YEARS TO GET IT UNDER CONTROL FOR ME AND I AM NOW FACED WITH SURGEONS REPAIRING THE DAMAGE DONE EG RESECTION OF THE HEAD OF THE ULNA, AND THOMPSONS PROCEDURE ON MY FOOT.

27. So far I have been finding about the same level of information as before. Possibly because so little is known about Sjogren's Syndrome. I also have lymphoma and the two are autoimmune diseases I am presently waiting for a new cancer drug that does not effect the blood and wanted to see if there might be any information on this on your site.
28. good site,any information is helpfull for me
29. information on this athritis was excellent. Looking for other possible books or literature on subject
30. It was a really informative sight. It has a lot of good information.
31. None at this point until I analyze your information
32. Today is the first time I have been on this particular site, however, I have been on several others and different occasions and have collected a lot of info on Sjogren's Syndome, connective tissue, etc.
33. Well thus far we have accomplished what I already knew.....if I take good care of myself I should be better off then an individual that chooses to ignore the symptoms. I would love some revelation to inspire myself and others. Do you have any. Such as new areas of research that are currently going on to alleviate uncomfortable times for those of us with psoriatic arthritis.
34. Interesting and informational. Most is easy to understand but a few medical terms that I'm not familiar with.
35. I was disappointed the information sought was not available, but then again I should not be as it is difficult to obtain the information that I seek. I cannot answer the question in red on the next page as it won't allow me to. The answer is surfing the net.
36. I havn't been thru the entire site as of yet, but so far it has been very clear & informative. Could possibly be more technical, but is better than any other site I have used that is designed for the general public.
37. Have only started to look
38. I would like to see some information from people who live with this disease and how they cope. Currently, I am existing on workman's compensation and my insurance company has not been easy to deal with. I had to retain an attorney. My treatment has been delayed because of the insurance company not wanting to pay. I have no other health insurance.
39. THis is an excellent source of information and developed in a way that can educate the general public. It was great to see something that my father could understand. Thanks for your assistance.
40. Very informative

Appendix IV. Entry points to Online Survey for All Participants

Referrer URL	Count
http://www.orthop.washington.edu/bonejoint/dzzzzzz1_1.html	6
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/uzzzzzz1_2.html	4
http://www.orthop.washington.edu/Arthritis/PMR.htm	4
http://www.orthop.washington.edu/bonejoint/gzzzzzz1_1.html	4
http://www.orthop.washington.edu/Arthriti/	3
http://www.orthop.washington.edu/bonejoint/zzzzzzz1_1.html	3
http://www.orthop.washington.edu/bonejoint/tzzzzzz1_1.html	2
http://www.orthop.washington.edu/bonejoint/dzzzzzz1_2.html	2
http://www.orthop.washington.edu/bonejoint/ezzzzzz1_2.html	2
http://www.orthop.washington.edu/bonejoint/Sources.idx.html	2
http://www.orthop.washington.edu/bonejoint/uzzzzzz1_1.html	2
http://www.orthop.washington.edu/arthriti/Sponathy.htm	2
http://depts.washington.edu/pettt/survey	2
http://www.orthop.washington.edu/bonejoint/zzcozzzz1_2.html	2
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/xzzzezzz1_1.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/xzzzezzz1_2.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/Sources.idx.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/rzzzzzz1_1.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/kkkkkkkk1_1.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/xxzzazz1_2.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/jzzzzzz1_2.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/xzzzxzzz1_1.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/dzzzzzz1_2.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/zlvzzzz1_2.html	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/azzzzzz1_1.html	1
http://www.orthop.washington.edu/Bone and Joint Sources/wzzzzzz1_2.html	1
http://www.orthop.washington.edu/arthriti/rheumarth/page_07b.html	1
http://www.orthop.washington.edu/arthriti/	1
http://depts.washington.edu/pettt/survey/	1
http://www.orthop.washington.edu/Bone%20and%20Joint%20Sources/gzzzzzz1_2.html	1
http://www.orthop.washington.edu/bonejoint/gzzzzzz1_2.html	1
http://www.orthop.washington.edu/bonejoint/yzzzzzz1_2.html	1
http://www.orthop.washington.edu/bonejoint/yycanny1_1.html	1
http://www.orthop.washington.edu/bonejoint/xzzzzjzz1_1.html	1
http://www.orthop.washington.edu/bonejoint/xzzzezzz1_2.html	1
http://www.orthop.washington.edu/bonejoint/xzzzczzz1_2.html	1
http://www.orthop.washington.edu/bonejoint/xgrtzazz1_1.html	1
http://www.orthop.washington.edu/bonejoint/qzzzzzz1_2.html	1
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