



Research Article

Sex and Gender Differences in Health Information Needs for Arthritis Patients

Tania Al-Jilawi^{1*}, Joy MacDermid², Katherine Salter³, Armaghan Dabbagh⁴

¹Health Information Science, Western University, Canada

²School of Physical Therapy, Western University, Canada

³Faculty of Medicine, Dalhousie University, Canada

⁴Temerty Faculty of Medicine, University of Toronto, Canada

*Corresponding author: Tania Al-Jilawi, Health Information Science, Western University, Canada

Citation: Al-Jilawi T, MacDermid J, Salter K, Dabbagh A (2024) Sex and Gender Differences in Health Information Needs for Arthritis Patients. Chron Pain Manag 8: 154. DOI: 10.29011/2576-957X.100054

Received Date: 07 February 2024; **Accepted Date:** 17 February 2024; **Published Date:** 21 February 2024

Abstract

Background: The onset and progression of both degenerative and inflammatory arthritis can be affected by sex and gender. Both age and gender can affect people's decisions about their health. Men, for instance, may employ fewer, and less varied coping mechanisms than women. **Objectives:** To focus on the health information needs of arthritis patients and investigate the experiences of arthritis patients from various sexes and genders, as well as how they think their sex and/or gender might influence their health information needs. It also sought to determine whether they would benefit from a health information intervention, and if so, what kind of intervention they would like and how it should be delivered. **Methods:** This study followed a qualitative approach, interpretive description, where 13 participants were recruited from Roth McFarlane Hand & Upper Limb Centre at St. Joseph's Health Centre. The inclusion criteria were patients with confirmed arthritis aged 18-75, who could speak and understand English, and could consent to participate. Thematic analysis was conducted. **Results:** Ten overarching themes were identified with various subthemes across 13 transcripts. These themes were: positive therapeutically alliance with physicians, need for online resources, men are more reluctant to seek help, systemic challenges to accessing healthcare, patients' health information needs, perceived facilitators, level of satisfaction with the information or services provided by physicians, gender affects information needs but not the ability to establish a therapeutic alliance, dire need for more access to arthritis information programs, and mixed understanding about the meaning of sex/gender. **Conclusion:** The demands of patients for health information are influenced by their gender and/or sexual orientation. Given patients' challenges while accessing health information, it is critical to adopt a patient-centred strategy that focuses on their needs and allows them to express their opinions.

Keywords: Sex and gender; Health information needs; Thematic analysis; Interpretive description; Arthritis; Online resources

Introduction

Arthritis is joint inflammation [1]. Arthritis comes in various forms; each with a unique etiology and course of treatment. Joint discomfort, redness, heat, and swelling are all typical signs of arthritis. Although arthritis is more prevalent in older adults, it can affect anyone at any age, including men, women, and children. Studies in the literature reveal that females were more likely than males to develop osteoarthritis, particularly after age 50 (rising sharply around menopause), and to feel restraining pain [2]. Therefore, there is a need for better knowledge of patients' needs because the burden of arthritis continues to rise with the aging of the population.

Both sex and gender can affect the onset and development of rheumatic and autoimmune diseases. In fact, males and females react differently to both internal and exterior antigens from a hormonal and genetic standpoint. Compared to men with arthritis or women with other chronic conditions, women with arthritis frequently report higher levels of anxiety, feelings of sadness, disability, and difficulty sleeping. Dr. Angela How, a rheumatologist in Burnaby, BC, comments, "I think women may tend to have more disability because they do a lot at home and at work". "I think we sometimes forget about how different women's roles are. There is employment, but there is also home life, raising children, and recreational activities". Compared to men, women spend almost an hour longer a day on routine child care responsibilities [3]. Caregiving for an adult family member or friend was three times as common among women as among men [3].

In addition, sex, gender, and culture play a significant role in how patients experience arthritis [2]. In some cultures, males are expected to be strong to be "masculine", and females are expected to be sensitive and more expressive of their pain to be "feminine" [4]. Thus, these stereotypes can affect one's willingness to seek help [4]. As a result, males may choose not to talk to healthcare professionals about their pain [4]. "Men with rheumatoid arthritis (RA) report a challenge to their masculine identity due to the impact of RA. They therefore employ strategies to hide their RA in public to maintain their masculine image" [4]. For women, role expectations can work differently in that some women have reported being dismissed because their concerns are not considered valid by professionals [5].

The onset and progression of both degenerative and inflammatory arthritis can be affected by sex and gender [6] and both age and gender can affect people's decisions about their health. Men, for instance, may employ fewer, and less varied coping mechanisms than women [7]. While the causes of these variations

are not yet fully understood, it is essential to comprehend how health information needs differ in arthritis patients depending on their sex and/or gender, to provide improved more personalized health information in the future. The current study explored the experiences of arthritis patients and their health information needs. The goal is to understand how a patient's sex and/or gender can influence their arthritis health information needs.

Methods

Sex vs. Gender

Sex is a biological construct and gender is a social construct. Gender refers to "socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people" [8].

Health Information Needs

Information about a health condition or impairment. It involves information or opinions regarding injuries, disabilities, or illnesses [9].

Interpretive Description

This study followed a qualitative approach, interpretive description. Interpretive description provides a practical and theoretically flexible method for analyzing qualitative data in the context of research on medical education [10]. Since interpretive description can address challenging experiential concerns and produce valuable results, it is a suitable methodological alternative for research on medical education [10]. It permits the expanding our understanding of the educational experience without compromising the methodological integrity of long-standing qualitative methods [10].

Data collection methods and instruments

Patients with confirmed arthritis (any type), aged 18 to 75, at the Roth McFarlane Hand & Upper Limb Centre (HULC) of St. Joseph's Hospital in London, Ontario, Canada, were invited to participate in individual interviews. Patients with arthritis were recruited using purposeful sampling. This technique ensures the recruitment of participants who can provide in-depth and detailed information about the topic. Participants in the study were selected based on the information available in the medical charts provided by the research team at the clinic. The recruitment process was stopped once data saturation (where new information or insights stop emerging from additional interviews) was achieved.

The interviews followed a semi-structured guide, meaning that there is a guide the first author will follow, but specific questions and prompts may come up. This study followed a qualitative approach to interpretive description. A topic guide was created based on literature review and consultations with the research team (see Appendix). We assessed the information that

patients are looking for, how it is delivered, their interactions with healthcare professionals, their satisfaction with the information received, perceived benefits and difficulties, and the available resources. To develop interview questions that appropriately address our objective, we reviewed questions from previous research studies that addressed the information needs of arthritis patients. We then modified and added questions to assess the information needs of patients and determine whether sex/gender affected the information needs/experiences.

The first author conducted these interviews. The interviews were audio recorded, transcribed verbatim and lasted between 10 and 30 minutes. Ethics approval was granted by the Health Sciences Research Ethics Board (reference 2022-121896-74465). Written informed consent was obtained in person from each participant at HULC. No participation incentives were provided.

Demographic information was drawn from a demographics form collected during the interview (Sex, gender, age, marital status, highest level of education, employment status, and citizenship).

Inclusion and Exclusion Criteria

The inclusion criteria were patients with confirmed arthritis aged 18-75, who can speak and understand English and can consent to participate. Exclusion criteria were patients under the age of 18, who cannot speak or understand English, and have no confirmed arthritis.

Demographic information

Table 1 shows the demographic information of the study participants. The average age for participants was 61 years. In total, 13 participants completed interviews, 46% were males (n=6) and 53% were females (n=7).

Pseudonym	Age, years	Sex	Gender	Marital status	Employment status	Highest level of education	Citizenship/ ethnicity
Laura	61	F	Woman	Married	Teacher	University (Masters)	Canadian
Sally	48	F	Woman	Common law	Team lead (warehouse)	High school	Canadian
John	62	M	Man	Divorced	Sales manager	University	Canadian
Nora	58	F	woman	Married	No employment	Community college	Canadian
Sarah	64	F	woman	Married	Retired	University	Canadian
Sid	55	M	Man	Married	Self-employed	2 years of college	Canadian
Amir	71	M	Man	Common law	Retired	High school	Canadian
Liam	70	M	Man	Married	Retired	University	Canadian
Susan	68	F	Woman	Divorced	Retired	University	Canadian
Ryder	50	M	Man	Married	Custodian	College	Canadian
Gina	70	F	Woman	Divorced	Retired	High school	Canadian
Layla	59	F	Woman	Common law	Personal manager	Some college	Canadian
Tom	58	M	Man	Single	Janitor	High school	Canadian

F=Female, M=Male

Table 1: Participant demographics (n=13).

Data Analysis

Two researchers analyzed thirteen anonymized transcripts. First, each anonymized transcript was read, re-read, and coded. Coding was done manually to enable us to examine data at the micro-level. Then, overarching themes were identified using thematic analysis. Thematic analysis is “a method for identifying, analyzing and reporting patterns (themes) within data” [11]. Quotes that best exemplified themes were colour-coded based on interview questions. This allows us to focus on and extract the needs of patients and determine their health information preferences.

As part of the rigor of coding, a calibration was performed after coding two interviews. The researchers met to discuss the themes after coding two transcripts to ensure that the results were consistent. Meetings were consistent after coding 3 or 4 transcripts to address any concerns and ensure coherence in results.

Results

Important themes have been derived from patients' interviews. These themes ranged from challenges to accessing health information to preferences and sources of health information.

Positive therapeutically alliance with physicians

The majority of participants, 61% (8 out of 13) of respondents, mentioned that they feel comfortable around healthcare providers.

"I: Tell me about your experience with your family doctor and your specialist, how has it been?"

M: It's been great since I've moved here [London]. The family doctor has been good. He's been very willing to send you out to specialists, see a surgeon. The doctors at the hospital there at (St. Joseph's Hospital) have been fantastic. They've been very informative, very helpful. The one that I had when I was living back in (city), they were a little more reluctant to want to do anything as far as work on my shoulder. So that's why I'm saying that they've been exceptional" (Man, 50).

However, participants' individual positive experiences differed. For instance, some participants have stated that their family doctors were helpful and approachable, while others have found that specialists were not.

"Specialist not really, no. The family doctor just does preliminary and then refers you to a specialist. So, I'm going to say, yeah, I'm pretty comfortable with what I've been receiving to this point" (Woman, 70).

One participant felt that they were rushed because physicians have limited time to spend with patients. As a result, this participant felt uncomfortable to seek professional assistance when they needed help.

"Sometimes I find the doctors have a limited time with patients. That it's either a nurse practitioner or another medical person that makes a recommendation, and I'm presuming because he's your doctor, he has to give the recommendation, so sometimes I do feel uncomfortable talking about things or asking them questions. I just sometimes feel rushed" (Woman, 64).

Need for online resources

Most of the participants, 69% (9 out of 13) of respondents, have indicated that they used online resources, such as Google and YouTube, to learn more about arthritis and the kinds of support

available to them. Participants have sought online resources because they are more convenient and more accessible since healthcare providers are not always available or do not have time to answer patients' questions.

"F: Usually fairly quick. The Internet has been a massive help in terms of understanding what a shoulder replacement surgery actually is, and understanding what the implications of that are, and helping me to ask the right questions when I do get into a doctor's office" (Woman, 68).

However, despite online resources being easy to access for most participants, 31% of respondents (4 out of 13 participants) did not find them to be helpful for a variety of reasons. These reasons include technological challenges, literacy challenges, inaccessible online information, and reliance on healthcare providers' input for accurate health information.

".... but it can be sort of scattered information that is just confusing" (woman, 64)

"Sometimes when you go on the website you don't always know if the information is accurate" (Woman, 59).

"The internet is a valuable tool. If it's not coordinated properly or they're organized, I don't know that every individual could have some sort of access because not all people have computers either" (Woman, 70).

Men are more reluctant to seek help

Some participants (both men and women), 31% (4 out of 13) of respondents, have explained that men are less comfortable with demanding their medical needs or opening up. Some women have found that men are direct and know what they want, whereas women are more nervous and non-assertive.

"I think men deal with healthcare differently. Just personality differences. Men and most men I know are generally more together level-headed, direct, know exactly what they want and go for it, whereas my female friends are more nervous about things. They're not as serious, I would say, not as assertive. More passive females generally, now that there's always the exception" (Woman, 59).

"I think women seek out a little bit more emotional support, men, I don't think, we usually don't get into any emotional issues too much and keep that inside from what I've known. They're not openly, they don't get super excited and all happy and lovely, no, they're pretty considerate" (Man, 55).

"Maybe I don't know. Maybe it's just me. It just seems like males tend to hide it more, suck it up and whereas it seems like women they'll open up more to females, right?" (Man, 71).

Women have reported that their partners are less likely to seek help from healthcare providers even if they need it. This is

because men are more stubborn and prefer not to be seen as weak.

“I think when it comes to males and them having anything wrong with them, that they’re pretty stubborn about reaching out and getting help or even trying to find out what is wrong with them. Personally, I think my husband has osteoarthritis, but he’s not doing anything about it, he’s just ‘Ohh, it’s because we’re old and it’s because we work hard’. But I still think that’s where his pain is coming from because he describes a lot of it, the same as and feelings that I’ve had with my shoulder and my osteoarthritis” (Woman, 48).

As a result, 23% of participants (3 out of 13) have felt that women and men are treated differently in healthcare. Men have noticed that their spouses were not receiving the same information as them.

“Yeah, my partner, she’s got a couple of issues herself, she doesn’t seem to be getting a lot of information or any help in dealing with it or managing it. So I think I’m actually a little luckier that way” (Man, 55).

“I would say treated differently, I wouldn’t say negatively but or positively. But yeah, I would say there’s a difference in the way females and males are treated, yes” (Man, 62).

Systemic challenges to accessing healthcare

In this theme, several challenges have emerged based on participants’ responses. These challenges were: impacted by COVID-19 (coronavirus disease), lack of community resources in smaller communities and dependence on online resources, long wait times and slow processes, the importance of distance, age discrimination and societal stigmatization, lack of resources/funding, and other issues such as the age of physician, rushed by physician’s time, and problems with accessing technology.

Impacted by COVID-19

About 23% of respondents (3 out of 13) reported that COVID-19 affected their healthcare services. Participants described how the limited access to services they experienced during COVID-19 impacted their ability to access health information.

“Now the pandemic slowing down a bit, getting a little more access than that and it kind of put me off when I had a doctor before one that’s operated on my shoulder who I never ever met and it was all phone, phone interviews and stuff and “well, go do this, go do that, that,” and to me that was pretty hard sight unseen, no examinations, no nothing, right. As it stands now like I said, we’re slowing down, I seem to have better access and information from the doctors” (Man, 62).

“The beginning of the pandemic, I was a little shy about going to

or got shy, but I felt that I could try and work through it myself, cause I’d worked through a lot of things myself prior” (Woman, 70).

Lack of community resources in smaller communities and dependence on online resources

Thirty-one percent of participants (4 out of 13) had limited access to resources due to their location, especially those in smaller and remote communities. As a result of this, these participants depended on online resources for health information.

“Well, I think we’d all prefer it in our town. I know that’s not always possible a lot of things happen in the bigger cities, London, Toronto, Ottawa, like the bigger places rather than a small community like (community). I just can’t imagine they’d bring anything like that to a small community. And that’s where actually the Webex or the Zoom is good in that case.” (Woman, 59).

Those participants mentioned that their healthcare providers might have not directed them to support groups or other resources because of their location. Location was a big hurdle in accessing services or receiving support.

“And I’ve never had any of my (doctor’s name) or (doctor’s name) even say ‘Are you interested in talking to someone in a support group or something like that’. So I’m going to presume because I’m in a rural community” (Man, 71).

Long wait times and slow process

About half of participants, 46% (6 out of 13) of respondents, discussed that long wait times to receive services and/or referrals or undergo surgical procedures have negatively affected their health.

“Even in the afternoons, that’s busier. The last time I was in there, it was three hours and a half I waited for my appointment, but I do find that the better doctors they’re more busy. Because they don’t give them enough time to have the conversation, they’re booking two patients at a time. They’re trying to jam as many patients in as they can, and I get that. I mean, I waited a long time for my appointment. I got a piece of paper mailed to me ‘Here’s when your appointment is’. That’s how long these things take, right? So I get it you know the whole system, but it puts the doctor, any good doctor behind” (Woman, 70).

In addition, participant’s mental health was also affected, resulting in confusion, frustration, and uncertainty.

“So, I really don’t know what to expect. I guess I’ve had this shoulder problem for probably 25 years already and just been taking Tylenol for arthritis and pain meds. And it just keeps gradually getting worse and worse and worse” (Woman, 68).

Distance

Forty-six percent of participants (6 out of 13 participants) emphasized the value of having healthcare programmes and services in their local communities. When asked, “If there is a new arthritis health information programme, do you prefer it to be at the hospital or your hometown?” Forty-six percent of participants said that having such a program close to their hometown is significant. Participants indicated that commuting to bigger cities can be challenging due to parking, weather, time, and other factors.

“If it was anywhere closer it would be beneficial just because it is a bit of you know, one-hour drive to London and an hour drive back. So if it was any closer it would certainly help” (woman, 70).

“I: If there is a new arthritis information program, where do you think this should be delivered at the hospital or elsewhere in your hometown?”

M: It is helpful elsewhere. Just gonna find a hospital is hard to get into, and hospital parking” (Man, 50).

Age discrimination and societal stigmatization

Some participants, 31% (4 out of 13), felt discriminated against because of their young age, especially women in their early 50s. Participants said that specialists did not take their concerns seriously, almost not believing them.

“... a lot of stigma over my age. Stigma because I was diagnosed with arthritis at 50 and I felt that I was discriminated, you know, she’s only 50 instead of 60 or 70.” (Woman, 59).

“Just with the surgeons, you know, because of my age and while you’re only 50, blah blah, that sort of thing. But once they realized how extensive it was, then the tone kind of changed” (Woman, 61).

Participants also felt that there was a societal stigmatization because they were diagnosed with arthritis at a young age. Society believes that arthritis is exclusively an older adult’s problem.

“I said I was having hip surgery and she said ‘you know you’re one of the fittest people I know for you to be having hip surgery.’ I’m not sure if I said arthritis at the time” (Woman, 58).

Lack of resources and funding

The majority of participants, 61% (8 out of 13 participants) of respondents, pointed out the lack of arthritis resources available to them. Resources were lacking for gender-diverse people (LGBTQ+ community), young people with arthritis, and arthritis patients in general. Participants said they did not find enough resources to support them or answer their arthritis-related concerns.

“...that you know have sort of landed on my own. I’ve done my own investigation and like I said, you put language to something that I recognized a year ago. And so when I recognized that, I went

looking for what are the things that I can do to help alleviate some of the pain that I’m experiencing” (Woman, 61)

“I guess the support is a little bit lacking in some ways because it seems like my surgery is happening very quickly” (Woman, 68).

“Are we gonna be in pain for a very long time before anybody would do anything? I waited a long time. That’s a really hard thing” (Woman, 70).

Patients’ health information needs

We found that participants were mostly looking for the following arthritis information: pain management (4 out of 13 participants), conservative management from online resources (4 out of 13 participants), treatment options (3 out of 13 participants), advancement of disease (1 out of 13 participants), lifestyle choices (1 out of 13 participants), and additional support programs (2 out of 13 participants).

“Well, I’m trying to find things to ease the pain. Everybody wants to push drugs and I’m having hard time with that. So that’s my main goal is to keep doing research on a natural basis of how to cope with the pain and how to deal with the arthritis if I actually really do have” (Woman, 68).

“Mostly discussions on you know treatment, any ways to lessen this to make it easier to live with, options like surgeries or call it pain management” (Man, 62).

On the other hand, 46% of participants (6 out 13 participants) indicated that their primary source of information is their physician.

“Well, I just don’t know, they went to school for it, they’re the professionals. They know what they’re doing. So if I’m going to talk, if there’s some situation that I have to deal with, I’m going to talk to professionals about it and not make any assumptions on my own” (Woman, 70).

In comparison, 54% of participants (7 out of 13 participants) reported that they rely on online sources for information and that they trust them.

“First time it would be Internet; second step would be my general physician. She is good, have to give her a chance to do her work. Sometimes if you just go to diagnose, your doctor is not very helpful. It’s easy to do so when you’re not wanting to go out in the winter” (Woman, 58).

Perceived facilitators

Participants have suggested a few things that might help or have helped in improving health information access. These recommendations included: the availability of doctors in big cities, multiple ways of information delivery, particularly for those living in rural communities, and allowing patients to provide feedback on programs.

"I don't know for sure if rural, we don't get as much information as the urban areas. Like I mentioned, send it to the hospitals, send it to all the doctors first, if they got together and say, 'Well, how many patients do you have with arthritis and so on'. And so do you think it would be beneficial if there's a number of us that could get together and have a meeting with the Arthritis Society? And help these people learn more about their disease" (woman, 70).

"So perhaps multiple ways of delivery is the most helpful to retain it. Certainly, to highlight the most important things" (Female participant)

Sometimes I think if there was a way people could input what they're feeling about the healthcare system. Feedback, yes" (Man, 62).

Level of satisfaction with the information or services provided by physicians

Almost all participants, 76% (10 out of 13) of respondents, said they were dissatisfied with the information or health services they received from their physicians. Participants felt that their needs were not addressed because physicians sometimes provide too much information without further explanation or do not give their patients sufficient time to ask questions.

"...he didn't like answering questions. He was the best word I can use is aloof. Couldn't feel like you talked to him, he just sat at the computer all the time and just looked it up there and then, send you off to some other doctor or specialist or whatever. I didn't have him very long, I wasn't the only one that talked that way, I know somebody else with him, he was just the way he was" (Man, 50).

"I would think just simply because when you go to see the surgeon, it's, you know, a lot of information too. So I don't know, I guess I try to get the information I need and not really be kind of overwhelmed, I guess overwhelmed would be the best way to describe it. With all of this lingo and jargon that the doctors use. I prefer to be, I guess kind of streets spoken as possible." (Man, 58).

"I tend to go out and find it myself and put it all, try and put it together. Do they provide me with enough information? No, not none of them do" (Man, 55).

In Contrast, 30% of participants (3 out of 10 participants) said that they were satisfied with the information they were receiving.

"Yeah, they'll discuss it with you. They also give you a pamphlet of pre-op and post-op information, so you know how to prepare yourself and what to expect after" (Man, 71).

Gender is not a priority in establishing therapeutic experience

Only 38% of women (5 out of 13 participants) said they prefer women physicians because they are more empathetic, understanding, and sincere. On the other side, men physicians

were seen as rigid and quick in their answers. Additionally, they added that they feel more comfortable around women physicians in general.

"No not at all. Sometimes I find that females are a little bit more empathetic, they spend more time. Males I find a little more rigid, but I don't mind that approach at all++ I like both" (woman, 68).

"I think a male doctor will just say quick answers compared to a female doctor because female doctors will get arthritis more than a male doctor would. Females get arthritis more than males" (Women, 59).

In comparison, 61% of participants (8 out of 13 participants) had no preference for the gender of their physicians. This is due to a lack of physicians; as a result, patients have learned to be adaptive.

"I do feel more comfortable with a female doctor, but you know doctors are in shortage. So a doctor is a doctor" (Woman, 61).

"I: Do you have a preference for a male doctor over a female doctor, or vice versa?"

M: No, no, it's just kind of like what was available sort of thing" (Man, 70).

Dire need for arthritis information programs

All of the participants agreed that delivering an arthritis information program would be highly beneficial. Respondents believed that having an information program tailored for arthritis is important despite the accessibility of online resources. Forty-six percent of participants (6 out of 13 participants) said they would rather access this information program online (on the hospital's website). The remaining 53% of participants (7 out of 13 participants) chose an in-person, nearby program that they could easily access.

"Well in in the city of (city's name). You mean somewhere like the (Centre's name) or the (Centre's name) or whatever? Oh, yeah that would be helpful. I wouldn't have to drive so far" (Woman, 61).

"It might take away from the time it takes to see the doctor, that if it was clinic or support group or something maybe that you could go" (Woman, 70).

Mixed understanding about the meaning of sex/gender

In response to the question, "In the context of health care, when you hear the word sex or gender, what does it mean for you?" seven participants said that sex and gender are the same thing and they mean female or male, two participants preferred not to answer, three participants found the concept of sex and/or gender confusing, and only one participant had a clear understanding of the concept.

“For society has me confused with all the different variables they have now: male, female, transgender, whatever else lesbian. I don’t think it’s really necessary to get into all that detail, but that’s just my opinion” (Woman, 61).

“I don’t have an issue with gay, they’re entitled to live their lives. I don’t have an issue with it. I don’t like it necessarily being forced on my throat. I do have an issue somewhat not an extreme issue, but an issue with this transgender, maybe because I don’t understand it or whatever, but I think maybe it just slowed down a little bit to let people absorb all the information and stuff that’s out there.” (Man, 71).

“Interesting question, I’m sure for others that are born one way, but feel another would answer that differently, but since I am female and my partner is male, then it’s pretty black and white” (Woman, 48).

“Male and female. Yeah, I mean, I know there’s other stuff out there, but you know, in my faith, I just believe male and female.” (Woman, 70).

Discussion

This study highlighted that men and women struggle to get timely information and that inadequate time or mechanisms for clarification or personalization limit their ability to benefit from the information provided. Sex/gender was one of many factors that influenced information needs, and a therapeutic alliance was achieved through information exchange with their physicians. While there is a growing awareness about sex/gender and information preferences, respondents were often unclear about what was meant by these two terms and prioritized access concerns above gender concerns. At present, we still lack clear guidelines about how to make health information more inclusive and tailored to people of different sexes and genders. To create more tailored gender-transformative health information interventions, it is crucial to understand how sex and gender differ and how they may affect patients’ health information-seeking behaviors. Although arthritis is a health condition that can affect females/women and males/men equally, health information needs can vary greatly. According to study participants, numerous factors can explain these discrepancies, including lengthy wait times, age- and societal-related stigma, a lack of resources, the use of complex technical terms, a drawn-out process, and the effects of COVID-19. The general population is typically aware that many groups face discrimination due to a variety of reasons, such as age, gender, ethnicity, sexual orientation, religion, or disability [12]. However, less widely acknowledged is the fact that persons with certain conditions frequently experience unfair, inequitable treatment based on the health issue they have. One of those ailments is arthritis [12]. Some of the women in this study highlighted age discrimination and societal stigmatization, describing how they

were overlooked, disregarded, and made to struggle to meet their health needs due to their young age. Participants reported that family physicians and specialists were overlooking arthritis, which had an adverse effect on their health. There is a societal stigma, believing that arthritis is an “old person’s disease”. Participants felt this way not only because of their physicians but also because it is widely accepted among the general public that arthritis is associated with old age. Some participants even held this belief and tried to hide their arthritis from others.

Our research identified various areas of the healthcare system that require improvement, particularly in terms of patient access to services and information. Participants discussed the barriers that prevent patients from receiving adequate health information from physicians. One of the primary factors was the limited amount of time allocated for each medical appointment, which led patients to turn to alternative sources of health information, such as online resources. This is due to their ease of use, variety of information, and convenience of access. Some participants noted that, in addition to physicians not providing sufficient time for patients, there are limited opportunities to ask questions and that the language used in healthcare is difficult to understand. Receiving adequate health information was further restricted by lengthy wait times and processes, particularly during COVID-19. Participants also found that the lack of in-person resources in smaller and rural communities led them to rely on online resources. As a result, patients were dissatisfied with the health information provided by physicians.

Data showed that sex and/or gender can play a role in shaping patients’ experiences. Men reported more reluctance to seek help from healthcare professionals, even when symptoms were worsened. This reluctance was reported by both men themselves and by women about their partners. As shown in a previous study, “many men reported not talking to their friends about their RA due to a perceived lack of understanding and support” [4]. “Men with RA report being reluctant to discuss emotional issues with their rheumatology team unless explicitly asked with a direct question” [4]. Our knowledge of how men perceive the psychosocial aspects of arthritis, especially rheumatoid arthritis, is currently based on research that either makes no assumptions about gender differences or only concentrates on women [13]. Some women participants believed it was important to have a woman physician because they tend to be compassionate and understanding. Even participants who claimed that gender was not their top concern when selecting a physician, still preferred a woman physician, but the lack of physicians made them more flexible and accommodating. While older women tended to have a gender preference, younger women had no preference. Although most participants valued their interactions with healthcare providers, there was still considerable dissatisfaction with how

those providers delivered and communicated health information. This needs to be addressed because many participants preferred online resources to physicians because they found them more helpful. Patients' health information-seeking behaviors- involve accidentally encountering information, experiencing the need for information, discovering, choosing, and using it, and even rejecting it [14] have changed over the years due to advancements in convenience information sources. Now, patients can access information from sources other than their direct interactions with healthcare providers [14].

Moving forward, it is important to understand patient needs and address them based on sex and/or gender. This study highlighted the need to identifying patients' health information-seeking behaviors, sources of information, and barriers to accessing information. Patients are turning to alternative sources of health information, such as the Internet, due to the rising levels of dissatisfaction with the healthcare system. Although the Internet is easier and faster to access, it still contains false and inaccurate information [15]. To create more effective methods for accessing health information, we need to understand patients' needs, not only in terms of sex and/or gender, but race, socioeconomic status, education, age, ethnicity, and literacy level. First, we need to establish clear communication between patients and healthcare providers by understanding patients' information-seeking behaviors.

Most importantly, we need to acknowledge that patient information needs vary according to sex and gender. Multiple studies have found that women with OA and RA experience more frequent and severe pain than men do [16]. When coping with pain or discomfort on a given day, women more commonly sought emotional support [16]. Due to the intersection of their sex, age, race, and high rates of chronic illnesses such as osteoarthritis (OA), older and middle-aged African American women are at an especially high risk of having pain and consequent pain-related disability [17]. Second, various methods of information delivery are required to accommodate patients' needs, especially those living in rural communities, who lack access to computers, experience technical challenges, prefer print information, etc. Finally, patients must be engaged in designing information systems and programs. Education alone is insufficient; patients need to be active partners in their care and management of arthritis. Collecting feedback from patients can be useful in ensuring the effectiveness and inclusivity of health information. Many participants mentioned that having an information program and a support group available to them, whether virtual or in-person, will be useful. Not all health information found online is believed to be trustworthy. Therefore, to overcome barriers, we must disseminate health information through channels that enable both men and women to voice their concerns safely and comfortably.

Summary and Limitations

Summary

Patients' preferences and needs for health information are influenced by their sex, gender, and other factors. This study revealed some gaps and barriers in accessing and delivering health information. Therefore, not allowing to create more personalized gender-transformative health information. This suggests that patient engagement and co-design with diverse users might be needed to achieve inclusivity, equity, and effectiveness of information.

Limitations

There are several limitations in this study. Despite attempts for inclusive recruitment and a non-white interviewer, only white participants were included. However, two non-white participants were approached but were unwilling to participate in the study. This supports the claim that minorities are less willing to participate in health research [18]. This was also seen in previous research studies. The majority of studies on pain disparities have focused on the following ethnicities: non-Hispanic white, Hispanic/Latino, and black/African American. Asian Americans, Arab Americans, and Native Hawaiians have rarely been included in research studies [19-26].

Future research should focus on investigating patients' health information needs in relation to sex/gender and ethnicity, with a focus on minority groups like Arabs and Asians. Finally, patients recruited in this study have access to physicians, specialists, surgeons, and other resources, thus, their health information needs might differ from those that do not have much support.

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