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Osteoarthritis Literacy and Equity Issues: a Post COVID-19 Analysis and Update

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Abstract

Background: Osteoarthritis, the most common joint disease and one affecting a large number of older adults is not always amenable to the use of passive interventions such as surgery or pharmacologic interventions, but even then, to maximize any desirable intervention approaches, a trustworthy and supportive partnership with the sufferer is strongly indicated. Complicating this process are emerging equity and persistent health literacy issues, as well as post COVID-19 service associated ramifications and persistent disease risks.

Aim: This mini review was designed to examine what current data reveal as regards the presentation of osteoarthritis and its pathology among the older adult as of the current post COVID-19 pandemic period in 2022, and how health literacy and equity issues are likely implicated in some degree with the disease presentation and its outcomes and will be likely to continue, unless remediated.

Methods: Peer reviewed published articles on this topic were sought from multiple data bases using the key words- osteoarthritis, health equity, health literacy, prevention, and intervention.

Results: As in prior years, osteoarthritis continues to induce considerable physical disability and consistently impedes the attainment of a high life quality for many older adults. Although not studied to any degree, attention to health equity

and literacy issues appear to pose additional osteoarthritis intervention challenges, especially among the long COVID affected older adults and those with low income and educational levels.

Conclusions: Many behaviourally oriented and necessary osteoarthritis management approaches and interventions may fail to reduce the functional disability and pain experienced by older people with any form of osteoarthritis to any meaningful degree if a) the provider does not tailor their recommendations in light of possible prevailing health literacy, economic, and educational challenges; b) the patient does not understand how their health behaviours impact joint disease as well as COVID-19 risk status, and are not empowered to undertake these.

Introduction

As recounted in many past as well as current reports, osteoarthritis, the most common rheumatic disease, and one that is increasing in prevalence, remains highly impervious to amelioration. Affecting a high percentage of older adults, incrementally and adversely, the disease persists in affecting the ability of the affected individual to participate in multiple desired activities, as well as having immense associated social, public health, and economic ramifications [1-3]. Principally due to varying degrees of localized joint tissue disruptions that may induce episodes of unrelenting pain, the disease can not only severely impair an individual's ability to function physically, but mentally and emotionally as well [2,3]. Unfortunately, even where osteoarthritis is amenable to artificial joint-replacement surgery, and various forms of medication, it has become clear that the ability to minimize osteoarthritis pain may prove ineffective if the individual continues to undertake harmful behaviours that are injurious to the joint and fails to implement those that are protective in multiple ways [2].

Thus in seeking to assist people with osteoarthritis, who are frequently 60 years or older often with multiple health challenges, including those associated with COVID-19, service cut backs and access inequalities [4] what can be done to help the older adults overcome the current multiple challenges of daily life as optimally and safely as possible in 2022 and beyond if they have been diagnosed as having osteoarthritis and want to reside in the community, not the nursing home. Indeed, this personal goal may be unattainable given that many older adults have been left to self manage their condition due to COVID-19 restrictions, and may not feel they are sufficiently educated about their disease and its treatment options, and prognosis, and are very fearful of COVID-19 infections and their consequences [4]. They may also have received education that is too complex or not provided in a way that enables them to employ the recommendations, such as internet instructional programs that stress optimizing selected conservative approaches and others, but do not tailor this sufficiently for the individual, especially the older adult who may have limited literacy as well as technology skills and access [5, 6].

A further probable cross cutting and vitally important health outcome mediator or moderator in this regard may be an offshoot of the concept of literacy, known as health literacy. This attribute refers to the ability of an individual to both understand, as well as to act on pertinent health information in multiple situations and environments. Implying an ability to perform basic reading and numerical tasks, the concept also implicates the ability to seek out knowledge and resources that may apply to mitigating their health condition and to successfully navigating the health care environment, as required, and is a differentiating variable when considering modes of health delivery and the background educational levels of the osteoarthritis recipients [7].

However, with few definitive longitudinal studies designed to examine to what degree older adults receive understandable and actionable instructions that are found to ably foster a comprehension of what they may need to do and why their participation and behaviours are likely to affect their health status and outcomes, providers themselves may not be aware of all the possible salient impacts of poor health literacy and its importance in securing the potential utility of a host of possible essential osteoarthritis self-management strategies [8]. By contrast, those providers sensitized to the probable impacts of low health literacy in developing their recommendations, and which groups this may be most likely to apply to, may yet be able to render those cases who could otherwise be challenged and confused about the disease and their personal behavioural responsibilities and actions in this regard, as well as their treatment options quite suitably.

Since there is increasing evidence that the rates of disability produced by osteoarthritis are not inevitable, but that lifestyles and behaviours are highly influential as well, the objective of this brief was to review the concept of health literacy that might be implicated and considered in efforts to tailor educational approaches and others designed to mitigate or moderate pain and functional disability, as well as prevent future excess impairments [8]. It was believed that insightful efforts to help the older adult meet the challenges of late life osteoarthritis and that may help needy adults to understand and disentangle oftentimes highly technical terms and osteoarthritis intervention associated instructions and approaches, along with efforts to appreciate possible educational limitations, as well as diminished feelings of confidence and empowerment due to a history of discrimination and structural inequities may surely help to reduce the burgeoning health costs of failing to do so [8, 9].

Methods

To explore this issue further, the PUBMED, Google Scholar, and PubMed Central data bases housing articles deemed to be related to osteoarthritis and health literacy specifically in 2022 or the post COVID-19 realm were examined accordingly using the key words, health literacy, osteoarthritis, intervention, prevention. Specifically sought were articles that have discussed or examined the role of health literacy in an osteoarthritis context, regardless of any possible flaws or limitations in 2022. The data extracted were then those categorized according to the disease itself, and those research data that could possibly highlight a role for improved efforts to educate and support the older osteoarthritis adult who may want to live in the community where some may have suffered inequities in the past that persist, and fewer direct services may currently be forthcoming.

Results

As of 2022, it is safe to say, that while the numbers of scientific reports on this topic are promising, the disease is often neglected as a serious health condition, for example, it was not considered relevant to a high degree in the face of multiple COVID-19 restrictions and service cuts in 2019 and for extended periods thereafter, even though COVID-19 was observed to impact aging adults in particular, along with those who are obese and often suffer from osteoarthritis, quite markedly and significantly [1]. As a result, predicting that the multiple COVID pandemic restrictions would largely protect against this infectious disease, but failing to consider the fact that these public health strategies could worsen chronic health conditions such as osteoarthritis and its burden and costs at all disease stages quite adversely, which was indeed apparent on later reflection, this oversight has clearly placed many older adults at risk for excess osteoarthritis disability, as well as a probable heightened COVID-19 infection risk [10] and possible increases in pain, muscle weakness, wasting, and frailty [10]. In addition to the multiple needs of the community dwelling older adult under such circumstances, those suffering from osteoarthritis may have had concerns about what to do as a whole, and were expected to be digitally literate, and receive information via remote mechanisms that may have provoked confusion, or fear of undertaking recommended steps because they did not understand the instructions provided [11].

This possible lack of understanding as to how to manage their disease in the absence of their usual face to face services and that occurred widely in 2019 and for extended periods thereafter, may well have exacerbated both the structural features of the disease, as well as probable ongoing or reactive emergent consequences, such as anxiety and fear, while rendering the ability to comprehend complex self-care messages more challenging than ever, even among the literate [12]. These include problems in their ability to control their weight, sleep deficits, fatigue, and high levels of distress and widespread pain. In addition, a role for worsening socioeconomic circumstances since 2019 as far as fostering their disease progression goes cannot be ruled out [4]. In addition, the impact of poor past educational opportunities may have compounded this series of events, especially in the face of confusing media and public health messages [13-15].

To reverse any untoward disease repercussions enumerated above, it appears that providers and clinicians themselves now have added obligations to not only consider the currently diverse pathological

manifestations of the disease that may prevail, and what treatments are indicated, but must carefully weight the past and recent experiences of the patient, including their ability to comprehend any recommended treatment paradigm. Moreover, in the face of unremitting osteoarthritis disability and accompanying extended periods of immobility due to pain, which is reactive and intractable, providers need to try and encourage their older clients to be partners in averting a probable downward spiral of overall well-being, along with a heightened need for costly health services through their attention to carrying out favorable rather than unfavorable health behaviors.

Alternately, although not usually fatal, poorly treated osteoarthritis as a result of a lack of disease insights on behalf of the sufferer, may well lessen both their motivation as well as their ability to undertake desired and essential activities of daily living independently and without undue distress. In particular, the older adult suffering from disabling osteoarthritis and who has experienced and continues to experience any form of discrimination or perceptions thereof, and that impacts their ability to access needed resources and services may undoubtedly be worse off than those who have received quality services and continue to have access to these. As well, a host of other overlooked epigenetic factors that may impact treatment understandings, including, but not limited to poor past educational opportunities, educational access, and modes of employment that yield low health provider access opportunities rather than optimal provider access may prove collectively harmful. In addition, those osteoarthritis sufferers who fall into the higher age ranges and who are already a group likely to be more intently affected by health illiteracy in general may be especially negatively impacted if they are poorly informed about their role in fostering their well being and avoiding health risks. The quality of available education programs when currently reviewed, even if accessible, also appears to have multiple shortcomings that may well deter those with limited literacy in adverse, rather than favorable ways [16-20].

Features of osteoarthritis that may be especially important to possibly mitigate are those of joint inflammation, excess weight gain or loss, muscle and bone attrition, nerve damage and impairments of those sensory mechanisms designed to foster joint protection and avert injury, common in vulnerable older adult osteoarthritis populations [23-32]. As put forth by Hunter et al. [33], the appropriate selection and use of evidence-based management options is critical in this regard, but for helping the osteoarthritis client to obtain the full benefits from their treatment recommendations, they have to understand what is needed, and be able to act on these imperatives.

In short, without a salient osteoarthritis disease understanding and knowledge about best choices in the self-care realm, unsafe behaviours, as well as uncontrollable eating behaviours, and a failure to appreciate the importance of sleep and stress reduction along with a failure to contain the pain associated with osteoarthritis and its disease progression disease are likely to heighten the need for high levels of dangerous narcotics as well as medications to counter reactive depression. As well, multiple additional self-management challenges may arise including fears of moving, as well as limitations in health seeking behaviours, poor adherence to recommendations, and an inability to function physically without undue fatigue, pain and immense distress [34].

As such, even if research is limited, an older adult with osteoarthritis may arguably suffer unduly because they are challenged in understanding what they need to do or why in order to remain in the community, rather than residing in a nursing home where their self-care role will be of less importance. As such, it appears reasonable to assert that if providers fail to appreciate COVID-19 implications, as well as the past social histories and ability to comprehend health messages of their older osteoarthritis clients, the capacity of the client for carrying out home based remedial approaches effectively and safely may be jeopardized [33, 34, 42]. Moreover, the combined impacts of possible impaired cognitive processes, as well as having excess muscle weakness and pain if they have long COVID are likely to severely curtail the motivation for self-care especially if the older adult is too challenged to decipher their health recommendations, or to contact their providers and seek advice, for example if they have limited feelings of confidence, or limited English language skills [36]. It appears therefore that a fair

number of older adults with osteoarthritis may consequently fail to flourish even if they receive needed care if they fail to fully appreciate the importance of their lifestyle actions that are proven disease and disability predictors. As well, while laudable efforts have been put forth to bridge the service gap since 2019, following remotely staged exercise regimens or others-not designed for the particular client, as well exposure to media messages advocating technological appliances that may do little to stem the disease progression, may do more harm than good if the individual is unable to separate fact from fiction. In addition needed possible home based safety modifications, medication checks, and the purchase of assistive devices may be very challenging to undertake for many in the higher age ranges who not only have multiple affected joint sites and medical conditions, but are unable to articulate or access the help needed without appropriate assistance and guidance and discussions with the key provider [37].

In this regard, a one size fits all approach may fail unless if the older adult is guided thoughtfully by the provider in light of their prevailing health status, as well as any mediating or possibly moderating epigenetic factors [37, 38]. These understandings might include explanations about the specific importance of energy conservation and desirable sleep hygiene practices including physical activity participation in efforts to relieve pain, fatigue, and stiffness, and lessening reliance on medications, particularly during the early disease stages [34]. As well, heightened attention is currently indicated as far as creating personalized culturally relevant infection protection strategies, as well as nutritional and exercise approaches that respect affordability and access issues, along with their ability to act on these recommendations [37]. That is, the clinician or team of providers must currently be in a position, as well as motivated to conduct and undertake a thorough medical history, a comprehensive physical examination, plus a detailed environmental assessment of the older adults' key needs before ascertaining the precise intervention aims and design. Goals set must then be attainable, and actionable by an older adult who is in pain, who may be very anxious and fearful, and functionally, technologically, and socially as well as economically challenged, especially since the onset of COVID-19 [39]. They can also conduct a specific mental health screening test to examine whether depression, anxiety, or stress are likely to be factors requiring additional intervention attention, especially if any mental health challenges impact cognitive functions adversely. Ascertaining the disease magnitude and related prognostic factors, as well as examining the client's general health status, along with their health beliefs, disease understandings, and self-efficacy perceptions may also help to assess lifestyle and behavioural factors that can contribute markedly to the osteoarthritis health burden [40, 41].

To specifically reduce potential feelings of helplessness, especially in cases where the osteoarthritis symptoms are possibly exacerbated by exposure to COVID-19 disease and long COVID infections [42-45], education directed towards fostering a clear understanding of their osteoarthritis condition and its potential both for worsening as well as for mitigation over time, especially among those adults with multiple morbidities, and breaking down what is needed to foster favourable outcomes into small doable steps is recommended. The provision of personalized levels of information and that is developed in conjunction with input from the older adult in question, as well as in consideration of their health literacy level, and degree of social support can also help to foster, rather than impede intervention adherence, while building a sense of control and a strong commitment to do all that is possible to minimize any further joint attrition or be placed at risk for a COVID infection.

To this end, written exercise and/or nutrition instructions and others with diagrams understandable by both the older adult and their significant others that are culturally and/or linguistically tailored as well as empathetic supportive therapeutic approaches appear desirable, especially if the older adult is not conversant with technology or has no access or skill or motivation for this approach in this regard. Finally, to mitigate the impact of depression due to the disease chronicity, helping to build the patient's confidence, plus emotional support for both patients and caregivers, and efforts to offset obesity and joint injury, as well as possible excess frailty, are strongly recommended.

In short, a significant proportion of those older adults who wish to continue live independently in the community rather than the nursing home and who may suffer many challenges due to their osteoarthritis may yet tend to be better off in response to active efforts to optimize joint biomechanics and life quality and self-efficacy than not. However, they may be worse off if they cannot comprehend what they need to do and why, and have multiple associated social challenges as well as economic challenges, even if surgery is forthcoming [37, 38]. A role for prior educational inequities that may heighten the disease burden should also be borne in mind by the provider in this respect. Past research further indicates that providers commonly have many issues to deal with, and limited time frames for doing this, and may not truly consider the impact of their patient's ability to understand or act on their well meaning instructions without due consideration as regards instructional material readability and other issues. Moreover, more commonly than not, they may assume their patients have the competency to make sound health affirming decisions and will duly carry out their recommendations, even though this expectation is often unrealistic. In addition, health literacy in medical settings is often diminished in the face of illness and complex health instructions, and can be expected to be greatly compounded by COVID-19 issues, but the forms and paperwork that must be completed to receive services in some instances, and divergent modes of advice and misinformation, may be overwhelming at the outset for the older adult. Older individuals may also have cognitive challenges that require carefully construed instructions as well as empathetic support regarding their health recommendations, along with fostering access to needed resources, and an educational approach that takes both health literacy as well as memory issues into account [46-51].

However, even if this topic is not well studied or highlighted in the mainstream literature, it is clear that more dedicated research as well as educational efforts by providers serving aging societies and others may be instrumental in securing those health opportunities that underpin independent living and that are desired by many older adults with disabling osteoarthritis. Since many health service restrictions in the community remain consequent to COVID-19 and home based living appears to be advocated for fostering a higher life quality than a long term care facility, helping to simplify and clarify oftentimes very complex health recommendations, personal misunderstandings about the disease, and the key importance of optimal self-care or assisted care, along with the ability to make sound decisions may prove to reduce both the individual disease burden as well as burgeoning health care costs. As well, if the client understands what is needed and is helped through policy makers and others to access needed resources, outcomes will predictably be optimal at best on many levels.

Discussion

This current mini review, which was restricted to examining literacy issues and their underpinnings and implications for older adult osteoarthritis care was premised on the basis that osteoarthritis, a common painful disabling disease affecting older populations, while not usually life threatening, remains highly challenging and costly to treat effectively without the partnership of the patient. A disease demanding considerable self management by the sufferer, especially if they wish to continue to reside in the community, is fraught with challenges, in general, as well as the emergent fallout and exposure to multiple COVID-19 associated health provision changes and infection risks that persist in 2022

In this regard, those with poor health literacy skills, as well as possible past and persistent exposures to multiple health inequities, especially those impacting educational attainment are likely to be more negatively impacted than not. However, it is apparent that careful and insightful patient specific assessments and treatment plans may permit those older vulnerable adults to continue to reside in their own homes if they desire, rather than in a nursing homes, despite any possible deficits in their educational and literacy skills. That is, sufficient research indicates that tailored and personalized intervention approaches delivered and designed and carefully communicated in light of the extent of prevailing joint and cognitive status, as well as the patient's ability to act on any desirable health

recommendations will be more successful in multiple spheres than not- in all likelihood.

In particular, despite a lack of sound data, educating the patient in accord with their overall disease presentation and socioeconomic status, may be paramount in helping them to assert some degree of control over their disease, plus the adoption of realistic treatment goals and expectations and ability to make careful decisions. This approach in turn, may not only help to empower them, but to minimize the degree of any excess preventable joint destruction and associated pain provoking inflammatory processes they might encounter inadvertently, as well as fostering more desirable overall long term outcomes, while improving life quality, even if surgery is eventually indicated. As well, narcotic use may be averted, along with the high risks of the side-effects of antidepressants, weight issues may be mitigated, with more favourable long-term overall health outcomes, and lower health service requirements and monetary costs.

It is also the author's view that even if such an approach does not prevent the progression of the disease or reverse it, health status as a whole is likely to be more positively impacted than not by employing a carefully construed set of tailored self-management directives that account for differing starting points and life events that each individual brings to the clinic. As outlined in the literature, the ability to function physically and socially in meaningful activities not only promises to be life affirming in its own right as well as mitigating preventable degrees of disability and despair, but to allay multiple health costs and immense intervention needs. While it may also be vital for providers to encourage more resources to eliminate literacy discrepancies that impact health understandings in the future, and develop their expertise in this realm despite a lack of any strong evidence based contemporary studies, targeted in the interim should be those who are most vulnerable and that are likely to encounter multiple hurdles to managing their osteoarthritis condition. These cases may be expected to include, but are not limited to: those in the highest age groups, those living in low income areas, those who cannot readily decode misinformation, and those with limited education, language and numeracy skills, especially if they are not speakers or readers of the mainstream language. This added time commitment to carefully design informational messages that are understandable and accessible and do not rely on memory may yet provide a sound long term investment, even among those who are highly challenged to effectively translate complex messages and others, especially those at high risk for joint damage that could be averted by adopting sound joint protection techniques [52-60].

Conclusions

To advance this current line of inquiry it is concluded that more research linking the attributes of assessing a patient's disease understandings and the efficacy of carefully designed treatment approaches to foster comprehension and action ability among older adults with varying degrees of osteoarthritis who wish to live independently may prove very helpful in the future. As well, what providers should advocate for at a minimum and in light of possible memory deficits among older adults, plus a lack of science based comprehension of the disease and their essential role in the management of this disease in the face of accessibility and economic challenges deserves attention.

In the meantime, the high importance of self-management practices in securing health for the older adult in the post COVID-19 period should be stressed, especially among those older adults with poor health literacy who may arguably be severely comprised by an inadvertent failure to appreciate and address their needs, including access and equity challenges, in a timely and personalized manner.

On the other hand, customized in light of literacy factors and other social determinants, efforts to achieve the health goals advocated by the practitioner for their older osteoarthritis clients will likely be successfully evidenced and are strongly recommended.

Moreover, it seems likely the costs of living in the community with or without assistance, versus long term care may decline if the provider consistently and empathetically examine: 1) the many behavioral factors that may impact the extent of the patient's prevailing disease over time, including their health literacy level; 2) what may needed to help the individual to live independently and safely for years to come.

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