

Editor's Spotlight/Take 5: Misconceptions and the Acceptance of Evidence-based Nonsurgical Interventions for Knee Osteoarthritis. A Qualitative Study

Seth S. Leopold MD

Many surgeons dislike or distrust methods-intensive research approaches like meta-analyses [14], and even experienced readers—including seasoned peer reviewers—head for the hills when it takes heavy computing power to grind

data into answers [15], as is the case for studies using machine learning.

So, let's take a break this month from all that math, and luxuriate in the glow of some great qualitative research in this month's Spotlight. Nary a decimal point or p value in sight.

Did I hear someone say, "What's qualitative research?"

I'm not surprised. As far as I can recall, we've published only two papers [10, 12] in *Clinical Orthopaedics and Related Research*® using qualitative or interview-based methods in the 7 years since I joined the team, and I've seen similarly sporadic deployment of these approaches in other leading general-interest journals of our specialty [6, 8].

That's too bad. The kinds of quantitative approaches that clinicians (and readers of clinical research) are most familiar with—case series, historically controlled studies, and even randomized trials—can tell us the what and the when, but they fall short on the why and the how. Specifically, they provide little or no insight into why our patients make the decisions they make, and how those patients perceive (and sometimes misunderstand) important facts about their own bodies. Facts that,

in principle, their doctors have tried to explain.

For these reasons, I'm excited to share a wonderful example of the genre in this month's *CORR*® from Dr. Jo-Anne Manski-Nankervis's study group in Melbourne, Australia, which offers a number of penetrating insights into common misperceptions patients have about knee arthritis [2]. The authors, including first author, Samantha Bunzli PhD, performed in-depth interviews with more than two dozen patients who were on a surgical waiting list to ascertain patients' beliefs about what osteoarthritis is, what causes it, what may happen to it if left untreated, and how the condition can best be controlled or managed. The sample size—a question, no doubt, on every reader's mind who is accustomed to seeing a larger number there—was determined by an a priori analytic approach that resulted in recruitment until no new themes emerged during these conversations.

Some of the misunderstandings were staggering. Many patients' (mis)understandings about the causes of their arthritis, their anticipation of worsening pain with time, and their beliefs about potential harms associated with choosing a non-surgical course, in particular, cannot be substantiated by any interpretation of the evidence on the topic of which I am aware. More importantly, those serious misapprehensions seem

A note from the Editor-In-Chief: In "Editor's Spotlight," one of our editors provides brief commentary on a paper we believe is especially important and worthy of general interest. Following the explanation of our choice, we present "Take 5," in which the editor goes behind the discovery with a one-on-one interview with an author of the article featured in "Editor's Spotlight."

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almost certain to have influenced patients' decisions to undergo surgery.

Like other kinds of research, qualitative research must be done to a high standard in order to be trustworthy; such standards do exist [16]. They emphasize some elements all readers of clinical research are familiar with (such as ensuring the study states clear objectives or questions), as well as a host of other parameters that will seem new, like the guiding theories and research paradigms that were employed, the degree to which the researchers' own personal attributes might influence the findings, and the instruments used (interview guides, questionnaires) to gather the data as well as the processes through which the themes were extracted from those data. It's my impression that Dr. Bunzli's work here did not merely meet these standards; it exceeded them.

No doubt, you have questions about this fascinating approach to learning more about the patients we treat. Join me in the *Take 5* interview that follows with Dr. Bunzli to get those questions answered. Because qualitative research can and should be done all across our specialty, we've kept most of our conversation away from subspecialized topics like knee arthritis (though Dr. Bunzli offers a couple of great suggestions for knee surgeons, too), so I hope you will stick with us for the interview whether or not you perform knee replacements.

Take Five Interview with Samantha Bunzli PhD, first author of "Misconceptions and the Acceptance of Evidence-based Nonsurgical Interventions for Knee Osteoarthritis. A Qualitative Study"

Seth S. Leopold MD: *Congratulations on this fascinating work. To the unfamiliar reader—which I*

think will be most readers—a study like yours may look like a mere bunch of stories, and may not seem very "scientific" at all. Why should readers spend time on a bunch of patients' stories, or is there something more here?

Samantha Bunzli PhD: Both quantitative and qualitative methods are important scientific "tools" that can be used to answer different research questions. Some research questions are best answered by quantitative methods; these tend to be studies which focus on estimates of prevalence and strength of associations between variables to test a priori hypotheses such as randomized controlled trials. Other research questions are best answered by qualitative methods; these tend to focus on "why" and "how" questions without prior assumptions about the answers to these questions. Let's imagine that your research group has a promising intervention that is not working in the real world and you want to find out why. You could make an informed guess about potential reasons why it is not working and survey your population to confirm your suspicions. Alternatively, you could select a smaller sample of key informants who were exposed to your intervention and employ your qualitative research colleagues to interview them about their experiences. This bunch of carefully elicited stories may yield new insights that you and your colleagues had never considered. There is a growing view that such knowledge generated from the ground up (asking people) rather than the top down (confirming researcher's suspicions), has strong scientific validity.

The patient voice is critical in the delivery of patient-centered care, which is at the cornerstone of a high quality healthcare system. Qualitative research prioritizes the patients' voice;

it shifts power to the patient as an expert in their own experience. Evolving from a long tradition in the social sciences, we have the tools we need to conduct robust qualitative health research. The scientific and clinical community are just beginning to acknowledge the central role that qualitative research can play in improving patient-centered care, shedding light on aspects of the patients' experience which can't be reached by quantitative approaches.

Dr. Leopold: *One evaluator of your work here—whose opinion, happily, did not carry the day—said that this paper looked like a survey study, but instead of hundreds or thousands of respondents, there were only 27. If an experienced reader of science (though not of qualitative research) can make that mistake, perhaps other readers will, too. In what important ways does qualitative research like yours differ from a detailed survey that a patient might fill out?*

Dr. Bunzli: Qualitative research is far from a lazy attempt at a survey. To really understand how qualitative research differs from a survey, I think it is important to have an understanding of what qualitative research involves. Qualitative researchers set out to recruit a sample of key informants who have experienced the phenomenon under study and can provide us with a rich description of their experiences. We are interested in diversity and capturing a range of experiences, rather than (only) capturing the experience of "average Joes." Through rigorous analytic techniques, we compare and contrast the experiences of individuals in the sample in search of patterns. While the experiences and perspectives of each participant will be inherently unique, we are trying to identify common underlying processes that can help us to understand these

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experiences. The size of the sample needed to identify patterns will differ from study to study and we continue recruiting and interviewing participants until our research group decides that the patterns we have identified (called themes) can answer our research question.

The findings of a qualitative study can tell us about the experiences of our sample and the experiences of other people with similar experiences. For this reason, it is important that qualitative researchers describe their sample with enough detail for readers to judge how similar or different the sample is to their own context. If we want to know how generalizable the findings of a qualitative study are, we need to adopt a quantitative approach such as a survey of the wider population. Taking our study published here as an example [2], we could construct survey items corresponding to the misconceptions we identified and phrase each item using the words our patients used. The resulting survey will likely have strong content validity and high acceptability to respondents.

Dr. Leopold: *I'll continue to channel the skeptic here: "Fine. But qualitative research shares at least this much with survey studies [9]: The group evaluated must represent some larger universe of patients we are interested in; with such small numbers, how can we be sure that it does? And as importantly, since not all patients invited here even participated, how do we know that the group who responded even represents the local group being studied?"*

Dr. Bunzli: I think it is important to note that qualitative research is resource intensive. Interviewing people, transcribing audio recordings, and analyzing large quantities of text requires considerable time and expertise (and therefore, funds!). In most cases, it is

not feasible to conduct qualitative research with large, representative samples. But nor do we want to. Again, the aim of qualitative research is not to yield averages or frequencies but to shed light on the processes underlying an experience. If we did set out to interview a large representative sample, we would no doubt find that after we had interviewed proportion of our target (commonly between 15 to 30) we had identified the patterns we were looking for, making our remaining interviews redundant.

It is important to remember that a study like ours is hypothesis-generating rather than hypothesis testing. While the misconceptions we identified among the patients in our sample may be dependent on the surgeons at our hospital, we note that similar misconceptions have been observed in qualitative research involving patients with knee osteoarthritis in other settings. The observation of patterns between diverse samples strengthens our hypotheses. Again, to determine how generalizable our findings are, we would need to employ quantitative approaches to test our hypotheses in a large, representative sample.

Dr. Leopold: *We have good tools for readers for clinical research [13] and even for methods-heavy stuff [5, 11]. Without going deep into methods papers on the topic [16], can you offer readers some suggestions about how to be discerning consumers of papers like yours?*

Dr. Bunzli: Five key questions the discerning consumer can ask of a qualitative study are: **(1) Have the researchers disclosed their bias?** Qualitative researchers need to be cognizant that theirs is only one approach to the problem. The researchers' world-view, their lens, will (necessarily) influence the design of a qualitative study and the processes of

data collection, analysis, and interpretation (this also goes for quantitative research). It is important that the researchers describe who they are (Social scientists? Psychologists? Surgeons?), what biases they bring to the study, and how these influenced decisions made throughout the research process. This enables readers to understand how the researchers arrived at their results, through the lens they adopted.

(2) Are the researchers' interpretations grounded in the participants' voices? Using participants' quotes to support study findings also enables readers to understand how interpretations are drawn. Some journals now require studies to place their raw (quantitative) data onto a data repository so that their statistical analysis can be reviewed. Currently, no such repositories exist for qualitative health data. While there are inherent challenges that need to be overcome regarding confidentiality, in my opinion, placing de-identified raw data like transcripts in a data repository would lead to greater transparency in qualitative research by enabling reviewers to understand the context in which participant quotes were extracted.

(3) Did the authors consider diverse cases or minor themes? Qualitative research seeks to gain a contextualized understanding of a range of experiences. Thus, while qualitative research is concerned with identifying commonalities or patterns in experiences, referred to as themes, it is equally concerned with identifying differences in experiences or contradictions to the patterns. Researchers can explore these exceptions by employing sampling techniques that gather the broadest range of views. Describing these exceptions helps to clarify the theme, enabling readers to

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understand what the theme is, as well as what it is not.

(4) Have the researchers disclosed any pre-existing relationship with the participants? As with any study design, there is a risk of social desirability bias in qualitative research. During the research interview, interviewees are more likely to share their personal experiences and perspectives

if they feel trust and rapport with the interviewer. Trust and rapport may be stronger if the two have a pre-existing relationship, however, this also increases the risk of social desirability forces. It is important that researchers state the nature of any pre-existing relationship so that readers can consider if and how this may have influenced the research findings.

(5) Have the researchers described their sample in sufficient detail? As mentioned earlier, it is important that researchers describe their sample in enough detail so that readers can make a judgement regarding how transferrable the findings are to their own context.

Dr. Leopold: *I found it deeply troubling how badly the patients in your study misunderstood both what was happening in their own bodies, as well as how they misperceived risk associated with pursuing a non-surgical course. Many of them appeared to anticipate pain and other harms (such as compensatory damage to other joints) seemingly greater than what seems reasonable to expect based on what we know about arthritis. I'm certain the surgeons caring for them tried hard to help these patients to understand, but the explanations seemed not to "stick". How can we, as surgeons, do better?*

Dr. Bunzli: The beliefs that pain is a sign that (further) joint damage is occurring, and activities associated with the threat of pain or involve loading the joint should be avoided, have been repeatedly documented [3, 4] among people with musculoskeletal pain conditions including knee osteoarthritis, hip pain, and low back pain. Surveys [1, 7] have shown that these beliefs are also common among the non-patient population, and unfortunately, there is evidence that they exist among health professionals, too. This highlights how deep-rooted these beliefs are in society and suggests that in some cases, these beliefs are likely to pre-date the onset of pain. Changing deep-seated beliefs is challenging. In my opinion, health professionals need more communication training in order to address unhelpful beliefs and coping behaviors in their patients. I think a consistent message is a good place to

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start; let's get everyone involved in musculoskeletal care—physiotherapists, general practitioners, and surgeons, on the same page. Let's avoid using terms such as “bone on bone” with our patients as this can lead to unhelpful beliefs and coping responses. Let's explain that while there are changes on a scan, loading the knee will not cause more damage and that hurt does not equal harm. Let's explain that exercise is important for everyone, for all aspects of a person's health, and will reduce pain and disability in most people.

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