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Title: Patients' preferences for osteoarthritis treatment: the value of stated-preference studies

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Conflict of interest

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Editorial

In recent years, there has been a growing interest in obtaining patients' preferences for healthcare treatments that are deemed 'preference sensitive'. In particular, the use of stated-preference studies (including discrete-choice experiments (DCE), conjoint analysis, and best-worst scaling) has markedly increased [1]. Preference sensitive treatments are those in which there are trade-offs between health benefits and risks and the patient's consideration of these factors is of utmost importance in the eventual utilization of such services.

Stated-preference studies originated in marketing as a means of better understanding the wants and needs of the consumer. A main assumption of DCE is that a treatment can be broken down into its attributes (such as effectiveness, side-effects and mode of administration) and that the utility a person receives from the treatment is a combination of these attributes. In such studies, respondents (generally patients) are asked to repeatedly choose between two or more hypothetical treatments that differ according to attributes of interest. DCEs can quantify the relative importance of the various attributes that characterize a treatment by quantifying the trade-offs that respondents make from their choices.

Given the significant challenges and lack of therapeutic options for osteoarthritis (OA), it is not surprising that several stated-preference studies have been conducted to elicit preferences for OA treatment. Preference-sensitive decisions are mainly adapted for non-urgent, non-fatal diseases and therefore particularly adapted to OA. OA is the most common form of arthritis and most frequently affects the knee, hand, and/or hip. OA is predominantly characterized by pain and has been shown to substantially reduce the patient's mobility and quality of life and to represent a significant contributor to disability in the elderly. Currently OA treatments aims primarily to reduce joint pain, maintain and improve joint mobility and enhance quality of life. Treatment options (including surgery, pharmacological and non-pharmacological treatment) may however differ in benefits and risks, emphasizing the need to assess patients' preferences for the different aspects of OA treatment.

In the OA field, stated-preference studies have primarily been conducted to assess the preferences for the characteristics of OA drug treatment. Most of these studies were DCEs, reflecting that the structure of DCEs seems appropriate to the target decision-making situation. Potential benefits and risk of adverse events have to date been shown to be the most influential characteristics for both patients and physicians. In some studies [2-4], benefits attributes (such as improvement in function or reduction in pain) were the most important attributes while other studies reported that patients were more concerned by the risk of side-effects [5-7]. Costs and

mode of administration have also been shown to be significant predictors of preferences in some studies.

Several other applications of stated-preference study have been observed in the field of OA. The study of Coxon et al. [8] investigated the decision to consult a primary care physician for painful OA and assessed the relative importance of perceived service-related and clinical need attributes in this decision. Another DCE [9] assessed the relative importance of attributes for physical activity treatment to improve knee osteoarthritis. DCEs have also been conducted to reveal patients' preferences for surgical treatment for knee OA [10, 11]. Studies were also identified that reported on patients' experiences [12, 13] for the use of attributes-based preference methods as a decision aid in total knee arthroplasty and a protocol study for a randomized controlled trial has been published [14]. It should be noted that alternatives beside stated-preference studies exist for, assessing patient preferences for an aspect of their care, such as the McMaster-Toronto Arthritis Patient Preference Disability Questionnaire. The MACTAR questionnaire assesses priorities in disability and restriction in participation among patients with knee OA [15]. Unlike stated choice experiments, patient reported outcomes do not have the same theoretical origin and do not collapse a respondent's profile into a single utility number representing overall value. Although useful, patient reported outcomes capture patient reports of outcomes in individuals domains and thus do not provide information about patients preferences across domains [16].

The patient's perspective is becoming increasingly important in clinical and policy decisions. Information about what patients need and prefer, and how they value various aspects of a health intervention can be useful when designing and evaluating healthcare programs [17]. Such insights can further help when establishing treatment guidelines and should be taken under consideration when developing new drugs or other interventions. Furthermore, regulatory agencies such as the European Medicines Agency and the US Food & Drug Administration are already evaluating quantitative approaches to inform benefit/risk assessment, and preferences could be important when making decisions about the reimbursement of new therapies. A better understanding of patients' preferences for treatment can also help health professionals to improve disease management. Addressing patients' concerns with treatment and involving them in clinical decision-making may improve treatment adherence [18]. Patients increasingly want to be kept informed by their doctors, and to be active in clinical decision-making. Therefore the next step is to include their thoughts and preferences in the design, objectives and assessed parameters of clinical research studies.

In conclusion, the use of stated-preference studies has been shown to be feasible in OA and provides relevant information regarding preferences for OA treatment. Previous studies have suggested that OA patients are most concerned about efficacy and risks of OA treatment. Insights into the preferences of patients will be useful to optimize policy and clinical decision making through healthcare decision making that better reflects patients' preferences.

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