



## Diabetes related information seeking a systematic review

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### Abstract

Information-seeking behaviour is necessary to improve knowledge on diabetes therapy and complications. Combined with other self-management skills and autonomous handling of the disease, it is essential for achieving treatment targets. However, a systematic review addressing this topic is lacking. The aims of this systematic review were to identify and analyse existing knowledge of information-seeking behaviour: types information-seeking behaviour, information sources, the content of searched information, and associated variables that may affect information-seeking behavior.

### Keywords

Type 1 diabetes; blood; glucose tolerance; self-management; research care

### Introduction

Self-management is essential in achieving treatment targets, as is indicated by the outcomes of clinical studies regarding the percentage of glycated haemoglobin (HbA1c%) or blood pressure control. An important aspect of self-management is patients' knowledge, including their ability to seek information. Information-seeking behaviour is one component of information behavior along with handling sources and channels and using information. Wilson's 'model of information behavior' describes information seeking and use as direct consequences of information need, and characterizes 'types of information seeking' and its related 'intervening variables' and considers 'activating mechanism' based on several psychological and social theories. Within this context, this review focuses on information-seeking behavior that is defined as 'the purposive seeking for information as a

consequence of a need to satisfy some goal. According to Wilson's model, there are four different types of information-seeking behavior: passive attention, passive or active searching and ongoing search. Passive attention is obtaining information without intending to look for it (e.g. watching television). Passive searching is finding relevant information while searching for other topics of information. This usually leads to active searching, 'the principal mode' in the process of information seeking, where 'an individual actively seeks out information'. The last mode is 'ongoing search', which is performed during active search to update or to expand present information. The intervening variables that are associated with information-seeking behavior are 'psychological', 'demographic', 'role-related or interpersonal', 'environmental' variables and 'source characteristics' (e.g. currency, appropriateness). Research into information-seeking behaviour among people with DM appears to be limited so far, despite the fact that studies have demonstrated that information-seeking behavior is crucial in enabling people to cope with the consequences of their disease. Although there are some publications concerning information-seeking behavior among individuals with DM to the best of our knowledge, no systematic review has yet analyzed knowledge on information-seeking behavior. An overview of the information-seeking behavior of people with DM is needed to develop recommendations for practice and research in order to guarantee the necessary support for handling information on diabetes. The aims of this systematic review were to identify and analyse existing knowledge of information-seeking behavior:

- types of information-seeking behavior,
- information sources
- the content of searched information,
- Associated variables, which may affect the information-seeking behavior of people with all types of DM.

### Methods

A systematic review was performed in line with the Preferred

Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) quality requirements and is registered at the International Prospective Register of Systematic Reviews (PROSPERO)). A systematic review protocol was developed that guided the review process the review included quantitative studies as well as qualitative and mixed-methods studies, also sourced from grey literature such as dissertations. Publications considering people with DM and diabetes-related information-seeking behavior were included that used the following terms in different combinations and their synonyms, e.g. information-seeking behavior and/or information seeking, information search and/or seek for information. Studies published in languages other than English or German were excluded, as well as letters, short reports, editorials, comments and discussion papers. However, they were used to find further studies. There were no exclusion criteria concerning the type of diabetes or the assessment tools used to collect data about information-seeking behavior. None of the studies were excluded because of their low quality.

### **Data synthesis**

Qualitative and quantitative data, including data from mixed-methods studies, were described, analyzed separately and grouped. The characteristics of the studies and important differences between them were described systematically. The results were then tabulated. Relevant topics were highlighted and data transformed into a descriptive format. The results from the content analysis were described by summarizing similar findings regarding information-seeking behavior and associated variables from qualitative, quantitative and mixed-methods studies. Deductive and inductive content analyses were performed. Deductive categories were derived from Wilson's model, including the adjustments, and inductive categories or subcategories from the included publications. Several steps were performed for the inductive approach. The first step was to identify relevant data segments from the included studies. The second step was to develop data matrices including raw data, first codes and memos. The third step was to arrange similar memos together and to find categories into which the corresponding segments fitted. This step was repeated and re-evaluated several times. Quality criteria include factors such as whether the study population is well described and whether it is representative, how explanatory variables were selected, how the confounding factors were identified and controlled, whether the outcome measures were reliable or complete, whether the power was calculated and multiple explanatory variables were considered, whether the precision of the association was provided, and whether the studies were internally or externally valid for quantitative studies. For qualitative studies, quality criteria regarding the methods were, for example, whether the qualitative approach was appropriate, the study aim was clear, the research design and methodology were defensible, how well data collection was performed, whether the researchers' role and the context were clearly described,

whether the methods were reliable, and whether the data analysis was sufficiently rigorous as well as reliable. Additional criteria for appraising the results and conclusions were, for example, whether the data was rich, relevant, the findings convincing and the conclusions adequate.