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# Aspects influencing patients' preferences for the management of drug-drug interactions: A focus group study

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#### ABSTRACT

*Objective:* The management of drug-drug interactions (DDIs) involves a complex risk-benefit assessment, in which patients' preferences should be taken into account. The aim of this study was to examine the aspects influencing patients' preferences with regard to DDI management options.

Methods: A qualitative study consisting of five focus groups with patients chronically using cardiovascular drugs was conducted. Key questions concerned preferences regarding DDI management options for a provided fictitious DDI. Thematic analysis of the verbatim transcripts was performed.

Results: Despite their limited knowledge with respect to DDIs, patients easily chose a management option for the presented DDI. When additional information was provided, preferences showed to be fluid. Ten interdependent aspects influencing preferences were derived from patients' argumentations: risk perception, fear, acceptance of uncertainty, openness to change, willingness to take risk, trust in health care professional, financial & practical burdens, health condition, experience, and knowledge & assumptions.

*Conclusion:* Patients' preferences regarding DDI management options were often determined by provided information. Preferences were dependent on an interplay of diverse aspects.

Practice implications: Tailored provision of information and individualized counseling is needed for active patient involvement in DDI decision making.

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#### 1. Introduction

Clinical decision making on drug-drug interactions (DDIs) is complex. Health care professionals use DDI management guidelines which recommend one or more management options for every DDI. These options can include, for example, additional monitoring, switch to an alternative drug or dose adjustment. In daily practice, the choice between DDI management options is usually made by health care professionals with limited patient involvement.

DDI management recommendations are generally developed in the tradition of evidence based medicine, with a focus on riskbenefit assessments [1]. Although it has been acknowledged that

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https://doi.org/10.1016/j.pec.2017.11.010 0738-3991/© 2017 Elsevier B.V. All rights reserved. in essence evidence based medicine should also include the patient's perspective, in DDIs this is not often the case, yet [2–4]. Frameworks like Grading of Recommendations Assessment, Development and Evaluation (GRADE) can guide the development and presentation of clinical guidelines [5,6], including DDI management recommendations [7,8]. The assessment in the GRADE framework includes not only a weighing of clinical risks and benefits, but also the acceptability and feasibility of the intervention for the patient. These last two criteria may influence the strength of a recommendation, which in the GRADE framework is classified as weak (conditional) or strong.

In case of weak recommendations, the importance of shared decision making (SDM) is emphasized, as patient preferences may become a decisive factor [9]. Weak recommendations are not unusual in case of DDIs. Whereas this suggests that patients should be involved in decision making, patients seem to be rarely involved in DDI management in daily practice, neither by the physician nor by the pharmacist [10]. A potential explanation could be the complexity of DDI management, with at least two involved

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therapies and several management options with all their advantages and disadvantages. A second explanation could be found in the clinical decision support systems, which support health care professionals in the detection and clinical management of DDIs, but in which the patient perspective is barely represented [11,12].

For incorporating the patient's perspective in decision making on the individual level, awareness of potential preferences is needed [13,14]. Having insight in the reasoning and values behind the preferences could be helpful for health care professionals to understand and interpret them. Knowledge in this field is conspicuously absent. Therefore, the aim of this study is to examine the aspects influencing patients' preferences regarding DDI management options.

#### 2. Methods

#### 2.1. Study type

A qualitative study design was chosen for this explorative study. We used focus groups to stimulate patients to share their thoughts on the management of drug-drug interactions, as they might not be used to talking about that topic.

#### 2.2. Patient selection and recruitment

Focus groups were conducted in five community pharmacies on different locations in the Netherlands.

Patients were eligible when they were 18-85 years old, Dutch speaking, and healthy enough to participate in a focus group meeting in the pharmacy (according to the clinical judgement of the pharmacist). Moreover, patients had to be experienced drug users, who had used cardiovascular drugs for over one year. In this patient group the occurrence of DDIs is frequent [15]. In each pharmacy patients with a specific profile of cardiovascular medication were selected to increase group homogeneity in order to enhance interaction among participants. Selections were made based on the pharmacy electronic patient records, including drug dispensing history and coded chronic conditions. The five selected groups were: 1) patients with heart failure, using a loop diuretic; 2) patients with diabetes, using a renin-angiotensin system inhibitor; 3) patients using a platelet aggregation inhibitor, without heart failure or diabetes; 4) patients using lipid lowering drugs, without heart failure, diabetes, or use of antithrombotic drugs; 5) patients with hypertension using antihypertensive drugs, without heart failure, diabetes, or use of antithrombotic drugs.

Per pharmacy, 60 randomly selected patients meeting the inclusion criteria were invited by letter. After one week patients were contacted by phone until at least eight patients had agreed to participate (additional patients who signed up afterwards were accepted until a maximum of ten per focus group). These patients received a confirmation letter, a short questionnaire on demographics, and an informed consent form. Patients received a reminder phone call one day before the meeting. After participating, patients received a 20 euro gift voucher.

#### 2.3. Topic guide development

A topic guide was developed based on the research question. The first focus group meeting was used as pilot, leading to the final topic guide (Fig. 1). In the topic guide, several questions related to a fictitious DDI example with realistic DDI management options which covered all common aspects of DDI management in one example [16,17]. The options included risks, benefits and practical implications [5,6]. A DDI example was used to concretize the topic: because the occurrence of drug-drug interactions is generally

acute, there was no possibility to have a discussion based on the patients' current DDI experience and patients are often not aware of the occurrence of a DDI.

#### 2.4. Conduction of focus groups

The focus groups (one in the morning, four after working hours) were conducted in the community pharmacies and lasted two hours. The focus groups were run by three researchers/pharmacists: a moderator who had a training on focus group moderation (MH), an observer (making field notes), and a technical leader (at least one of the latter two was experienced in focus groups, being AF or MB). The participants did not know the moderator; she was introduced as a researcher in drug–drug interactions, interested in patients' opinions on DDI management in the context of patient centered care. The questions were asked following the topic guide. The case description (Fig. 1) was provided in writing to the participants, with oral explanation. The additional information was provided orally, supported by flip chart notes.

#### 2.5. Data analysis

After every focus group the attending researchers discussed the results. Focus groups were audiotaped and transcribed ad verbatim. The analysis was performed in NVivo qualitative data analysis software (QSR International Pty Ltd. Version 11, 2015). Inductive thematic analysis with open codes was applied [18,19]. Thus a rich thematic description of the data was reached. This approach is suitable for situations where the participants' views of the topic are unknown. The method consists of six phases: familiarizing with the data; generating initial codes; searching for themes; reviewing themes; defining and naming themes; producing the report [18].

One focus group was independently coded by MH and AF, and consensus on the coding scheme was reached. The other focus groups were coded by MH, and in case of doubt discussed with AF. Codes were thematically clustered into aspects influencing preferences. Applicability of these aspects to the coded fragments was continuously verified. Determined aspects and interpretation of findings were repeatedly discussed in the research team and verified with the data until consensus was reached. Reporting was conducted taking into account the Consolidated criteria for reporting qualitative research (COREQ) [20].

#### 3. Results

#### 3.1. Participants and focus groups

Five focus groups with 5, 8, 10, 7 and 8 participants were conducted. Because after the first pilot focus group no substantial changes in the topic guide were needed, this focus group was included in the analysis. Data saturation was likely to be reached as no new aspects were derived from the last focus group. Sixteen participants were male and 22 female, their age ranged from 49 to 84. The educational level was diverse: 25 participants were low educated, 8 medium, and 5 high. Thirty seven of 38 participants were native Dutch. For patient and pharmacy characteristics, see Appendix A in supplementary material. All participants expressed their opinion on the key questions from the topic guide.

#### 3.2. Patients' preferences and decision making

The participants had little knowledge about the subject of DDIs. When confronted with the example, patients intuitively decided on their preference for a management option. They expressed hardly any need for additional information preceding their

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