Differences in beliefs between patients and pharmaceutical specialists regarding medications

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Abstract

Objective: To investigate beliefs concerning medication among patients and pharmaceutical specialists (3 or 5 years of higher education).

Method: The Beliefs about Medicines Questionnaire (BMQ)-General, which assesses beliefs about medicines in general, was used.

Results: For the analyses, 141 (response rate 82%) and 136 (response rate 79%) questionnaires from the patients and pharmaceutical specialists, respectively, were included. The results showed a statistical significant difference between patients and pharmaceutical specialists in beliefs about medicines. Whereas the patients expressed a more negative attitude about medicines (stronger beliefs about medicines as being harmful and less favourable) the pharmaceutical specialists expressed the contrary. However, the pharmaceutical specialists had stronger concerns regarding over-use of medicines as compared to the patients.

Conclusion: Patients and pharmaceutical specialists expressed different views regarding medications. To achieve concordance in the pharmaceutical care process, pharmaceutical specialists need to exchange information about patients’ experiences and not take for granted that they share their views regarding medications.

Practice implications: The pharmaceutical specialists should elicit the patient’s concerns about the prescribed medications and be aware of that non-adherence is often the result of the patients making rational decisions about their treatment.

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1. Introduction

One of the most common treatment interventions involves the prescription of medication. However, drug-related problems including non-adherence have been associated with emergency department visits and even hospitalisations [1,2]. It has been calculated that for every dollar spent on drugs, an approximately corresponding amount is used in the treatment of drug-related problems [3].

Typical adherence rates to long-term therapies for chronic diseases vary with an estimated average adherence of 50% [4]. Poor adherence may have a major impact on clinical outcome and can result in excess costs to the health care system [4]. Failure to adhere to the treatment for chronic illnesses, e.g., asthma, hypertension and diabetes mellitus, results in suffering for the patients, including reduced quality of life and waste of health care resources [4]. Many different interventions and complex strategies have been tested to improve adherence, but even the most effective interventions have not led to substantial improvements [5]. One explanation could be that the interventions have focused more on unintentional rather than intentional non-adherence [6]. Patients have their own beliefs regarding medications and make their own choice about whether or not to take a drug [7,8].

The patients’ views about treatment options may differ from those of their doctors and they are rarely involved in the decision making process regarding their treatment [9–11]. In order to increasingly take into account the patients’ perspective of their treatment, and to allow patients to play a more active role, the term concordance was introduced [12]. Concordance is an agreement between patients and
health care professionals concerning treatment choice [8,13]. Medical decisions made in partnership are likely to improve adherence and health outcomes [8,13]. One of the concordance tasks is to elicit the patient’s views on the possibility of adherence to medication [8]. The personnel at the pharmacies may serve a particularly important role in the process since they are often the last health care professional with whom the patient has contact before making decisions about medicine taking [14]. Thus, the pharmacies are unique forums for the discussions about, e.g., the patients’ concerns about side effects. Concordance in the pharmaceutical care process when dispensing prescription drugs at pharmacies could contribute to adherence and a better use of these drugs. Two-way communication is crucial in order for concordance to be achieved and for the health care professional to engage with patients’ priorities. Thus, to enlighten the communication process between patients and pharmaceutical specialists at pharmacies, the present study was performed. The aim of this study was to investigate the attitudes about medications among patients and pharmaceutical specialists. The hypothesis underlying the research was that the pharmaceutical specialists have more positive perceptions of medications than the patients.

2. Method

2.1. Recruitment of participants

The study was performed at pharmacies in the southern region of Stockholm including the island of Gotland. The pharmacies in Sweden are organised in Apoteket AB, a state-owned limited company. The smallest and the largest pharmacies were excluded which resulted in 16 pharmacies with between seven and 17 pharmaceutical specialists employed. Pharmaceutical specialists include prescriptionists who have had 3 years of higher education and pharmacists who have had 5 years of higher education. The patients for the study were recruited at the same pharmacies as recruited pharmaceutical specialists. The inclusion criteria were ages between 22 and 65 years, Swedish language skills and for customers bringing a prescription for their own use. For every 10th customer coming to the pharmacy with a prescription, it was determined whether the patient was eligible to participate in the study. Participants meeting the inclusion criteria were given both oral and written information about the study. It was emphasised that participation was voluntary and anonymity guaranteed. The ethics committee in Stockholm judged the research not to be encompassed by the regulations in the law on ethical review.

2.2. Study measures

The participants were asked to provide information about their gender and age. Permission to use the validated Beliefs about Medicines Questionnaire (BMQ) was received from the originator (Prof. Robert Horne, University of Brighton, UK). The translation procedure of BMQ to Swedish was performed by the group of Tove Jørgensen (Department of Social Medicine, Göteborg University, Sweden). The questionnaire is composed of two parts, one part investigating beliefs about, e.g., specific medication for a particular illness and one part assessing participants’ views about medicines in general [15–17]. The latter was used in this study. The original BMQ-general scale is composed of three four-item sub-scales [16]. The General-Overuse scale includes the items: “Doctors use too many medicines”, “Doctors place too much trust on medicines”; “Natural remedies are safer than medicines”; “If doctors had more time with patients they would prescribe fewer medicines”. The General-Harm scale includes the items: “People who take medicines should stop their treatment for a while every now and again”; “Most medicines are addictive”; “Medicines can do more harm than good”; “All medicines are poisons”. The General-Benefit scale includes the items: “Without medicines doctors would be less able to cure people”; “Medicines help many people to live better lives”; “Medicines help many people to live longer”; “In most cases the benefits of medicines outweigh the risks”. Cronbach’s alpha was used to measure the internal consistency and the following values were obtained for the original BMQ-General: Harm: $\alpha = 0.60$, Overuse: $\alpha = 0.54$ and Benefit $\alpha = 0.66$. The same changes as performed by Horne et al. [16] were carried out, i.e., the item “Natural remedies are safer than medicines” was instead included in the Harm scale and “All medicines are poisons” was excluded. The alpha values for the modified instrument were Harm: $\alpha = 0.70$ and Overuse: $\alpha = 0.65$. The items constituted the different scales were found to have acceptable internal reliability.

The BMQ uses a five-point Likert scale, where $1 =$ strongly disagree, $2 =$ disagree, $3 =$ uncertain, $4 =$ agree and $5 =$ strongly agree, to investigate the participants opinion for each item. Only completed questionnaires were included in the analyses. The scores for each item in a sub-scale are summed to give a total score which ranges from 4 to 20 for the Harm and Benefit scale and from 3 to 15 for the Overuse scale. The total score for each sub-scale was then divided by the number of items in the scale. Higher scores indicate stronger beliefs in the concepts represented by the scale.

2.3. Statistical considerations and analyses

The hypothesis was that there is a difference in beliefs about medicines between pharmaceutical specialists and patients. It was assumed that the difference between the groups could be one in total score for a sub-scale, i.e., Harm, Benefit and Overuse scale. With 80% power and 5% significant level the sample size was determined to be 142 subjects in each group with pharmaceutical specialists and
patients, respectively. The number was then increased by 20% to account for external loss and incomplete questionnaires, i.e., 170 subjects in each group. However, since the total number of pharmaceutical specialists at the 16 pharmacies was 172, that number of subjects was included in each group with pharmaceutical specialists and patients, respectively. The number of patients to be asked at each pharmacy corresponded to the number of pharmaceutical specialists employed at that particular pharmacy. No replacement for external loss was used.

Data were collected and analyses performed using the SPSS Version 12.0 for Windows statistical software package. Descriptive statistics were used to describe the participants’ characteristics. Statistical analyses were performed using the non-parametric method, Mann–Whitney U-test, for comparing the two groups, pharmaceutical specialists and patients, with respect to total scores for the different sub-scales, i.e., General-Overuse, General-Harm and General-Benefit. P-values of 0.05 or less were considered statistically significant.

3. Results

Of the 344 questionnaires, 277 (patients n = 141 and pharmaceutical specialists n = 136) were used in the analyses, excluding incomplete questionnaires and for external loss (response rate 81%). The number of incomplete questionnaires was 34. The median age of the patients was 48 years and that of the pharmaceutical specialists was 51 years. Approximately 30% of the patients were male whereas only 6% of the pharmaceutical specialists were male. In the former case, the expected number is 40% with regard to the distribution of gender among patients treated with drugs on prescription. The latter case reflects the distribution in terms of sex breakdown by sex of the employees at the Swedish pharmacies. Apoteket AB has approximately 11,500 employees, of whom only 8.5% are men.

A significant difference in beliefs between patients and pharmaceutical specialists was observed for all three sub-scales of BMQ-General, i.e., General-Harm, General-Overuse and General-Benefit (Table 1). In general, the patients believed more strongly than the pharmaceutical specialists that medicines are overused and over-prescribed by the doctors. Furthermore, the pharmaceutical specialists expressed stronger beliefs in the potential benefits of medicines than the patients.

The number of patients who received scale scores above mid-point for General-Harm, i.e., believed that medicines are harmful, were 56 (40%) and all of them, except one, also received scale scores above mid-point for General-Benefit, i.e., believed in the general benefits of medication. Thus, these patients believe in the benefits of the medication and at the same time have concerns about the medication as being harmful. The corresponding number of pharmaceutical specialists was five and four, respectively.

The percentage of participants answering below and above the mid-point scale for each item is shown in Table 2. For the General-Overuse items, slightly less than one third of the patients thought, “Doctors use too many medicines”. On the contrary, twice as many patients than pharmaceutical specialists disagreed/strongly disagreed in that item. Of the pharmaceutical specialists who believed “Doctors use too many medicines” (51%), the majority were also of the opinion that “If doctors had more time with patients they would prescribe fewer medicines”. A considerable number of the participants were uncertain about their opinion in the different items in the General-Overuse scale.

For General-Harm scale, the majority (91%) of the pharmaceutical specialists disagreed/strongly disagreed in the statement “Natural remedies are safer than medicines” but only half of the patients thought the same. A considerable number (43%) of the patients were uncertain in their opinion. Approximately 50% of the patients disagreed/strongly disagreed in the item “Most medicines are addictive”. Slightly less than one fifth agreed in the statement and approximately one third of the patients did not take a position on that issue. If slightly less than 30% of the patients agreed in the statement “People who take medicines should stop their treatment for a while every now and again” a considerable number (41% of the patients and 22% of the pharmaceutical specialists) of participants were uncertain.

In general, most of the pharmaceutical specialists expressed a positive view about the benefits of medicines. While the majority (92%) of the pharmaceutical specialists believed that “In most cases the benefits of medicines outweigh the risks” only 74% of the patients agreed in that item. Slightly more than one fifth of the patients were uncertain in their opinion. An uncertainty was also expressed among a smaller number (10%) of the patients about the statement “Medicines help many people to live longer”.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Patients (n = 141)</th>
<th>Pharmaceutical specialists (n = 136)</th>
<th>Mann–Whitney U-test Z-value</th>
<th>P (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General-Overuse</td>
<td>3.33 (1.00)</td>
<td>3.67 (1.00)</td>
<td>-3.093</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>General-Harm</td>
<td>2.50 (0.88)</td>
<td>1.75 (0.75)</td>
<td>-8.275</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>General-Benefit</td>
<td>4.25 (0.50)</td>
<td>4.50 (0.50)</td>
<td>-3.088</td>
<td>&lt;0.005</td>
</tr>
</tbody>
</table>
4. Discussion and conclusion

4.1. Discussion

This study indicates differences between patients and pharmaceutical specialists in beliefs about medicines. Whereas the patients expressed a more negative attitude about medicines (higher scores for General-Harm and lower scores for General-Benefit) the contrary was observed for the pharmaceutical specialists. A dislike of medicines to some extent is a common attitude among patients [18]. A stronger belief in the beneficial rather than the negative effects of medication given by the pharmaceutical specialists is supported by the results from another study including prospective and current pharmaceutical employees [19]. Even though BMQ-General seems to have less influence on adherence, approximately one third of the patients believed that “People who take medicines should stop their treatment for a while every now and again” suggests doubts about adherence to their medication [17]. A consequence of the group of patients, who believed in the benefits and at the same time had concerns about the medication, may be that the patients decide periodically to stop their treatment. However, BMQ-General may be relevant when the patients are prescribed a new, unfamiliar medicine and have not yet formed their own view on that specific drug [17]. The belief among a considerable number of pharmaceutical specialists that, “Doctors use too many medicines” could be a barrier in the communication with patients. The most striking explanation for that common opinion among pharmaceutical specialists may be due to the experience from the dispensing situation of patients where several prescriptions are prescribed by different doctors. The fact that only about half of the patients disagreed in the item that “Natural remedies are safer than medicines” may indicate that the rest of the patients can have a preference to alternative medicines. In congruence with this finding, Harnack et al. found that 42% disagreed when asked adults whether herbal products tend to be safer than over-the-counter (OTC) medications or medications prescribed by a physician [20]. In that study, 44% agreed (no choice “uncertain”) in the statement [20]. Higher scores for the sub-scales, General-Overuse and General-Harm, were obtained for patients attending a complementary clinic compared to those getting traditional medicines [15]. A considerable number of patients were uncertain about their opinion in the different items in the General-Harm scale and a smaller number as well in the different items in the General-Benefit scale. These are important findings where the pharmaceutical specialists could provide a useful resource for the patients.

Recent research has found that students with experience of taking prescribed medications had stronger beliefs in the beneficial rather than the harmful effects of medicines compared to people without such experience [16]. In the present study, no distinction was made between patients with and without experience of taking prescribed medication. Thus, it could have been the first time a patient was ever prescribed medication even though the probability is less likely when compared to a study including only young students. Another potential limitation is that the patients were not matched with their pharmaceutical provider, i.e., it cannot be ruled out that individual patient-pharmaceutical specialist pairs attitudes might not have been substantially different. In addition, all of the participants were from the southern region of Stockholm including the island of Gotland and the extent to which their opinions reflect those of patients and pharmaceutical specialists in other areas of the country is unclear.

The differences in beliefs mean that the pharmaceutical specialists cannot take for granted that the patients share

<table>
<thead>
<tr>
<th>Item</th>
<th>Patients (%)</th>
<th>Pharmacist (%)</th>
<th>Uncert (%)</th>
<th>Patients (%)</th>
<th>Pharmacist (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors use too many medicines</td>
<td>37</td>
<td>19</td>
<td>35</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>Doctors place too much trust on medicines</td>
<td>18</td>
<td>19</td>
<td>43</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>If doctors had more time with patients they would prescribe fewer medicines</td>
<td>10</td>
<td>5</td>
<td>35</td>
<td>30</td>
<td>55</td>
</tr>
<tr>
<td>Natural remedies are safer than medicines</td>
<td>51</td>
<td>91</td>
<td>43</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Most medicines are addictive</td>
<td>49</td>
<td>92</td>
<td>34</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Medicines can do more harm than good</td>
<td>85</td>
<td>93</td>
<td>12</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>People who take medicines should stop their treatment for a while every now and again</td>
<td>30</td>
<td>74</td>
<td>41</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>Medicines help many people to live better lives</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>93</td>
</tr>
<tr>
<td>In most cases the benefits of medicines outweigh the risks</td>
<td>4</td>
<td>0</td>
<td>22</td>
<td>8</td>
<td>74</td>
</tr>
<tr>
<td>Without medicines doctors would be less able to cure people</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>93</td>
</tr>
<tr>
<td>Medicines help many people to live longer</td>
<td>4</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td>86</td>
</tr>
</tbody>
</table>
their view about medicines. However, in the communication process at pharmacies between patients and pharmacists, the latter seem to dominate the conversation [10,21]. In addition, the pharmacy staff and the patients may also have different focus when communicating about medicines [22]. Misunderstandings due to inaccurate guesses and assumptions in the dialogue between patients and professionals have been associated with potential or actual adverse outcomes including non-adherence [23]. Most patients have unvoiced agenda items in consultation and many of them are related to medication treatment [24]. An unvoiced item could be that the patient does not want to be prescribed a medication but nonetheless obtains a prescription at the consultation with the doctor [24].

Thus, to reach concordance a more patient-centred approach is needed for the communication process [25]. Both health-care professionals and patients need to change their attitude and behaviour, and in particular, the patients need to play a more active role in the communication [10,24–27]. The health care professionals need to ask questions, e.g., concerning the patient’s attitudes about medicines, to avoid inaccurate assumptions and guesses [23]. The health care professionals need to engage with the patients’ experiences and use of drugs since the individuals’ attitudes or set of beliefs are considered to predispose the patients to behave in a certain way [28]. Since concordance is a dynamic process, the concept needs to be continually explored [8]. The quality of interaction between health care professionals and patients in the communication process can affect patient outcome [25,28]. A more patient active approach, where the patient actively takes some control, has been more consistently targeted at the pharmacists directly, rather than the patients, have been more successfully in their outcomes [29]. We think that interventions focus on the pharmaceutical specialists’ communication skills as well as on more active and empathetic listening are needed to facilitate the development of concordance in practice. In addition, improvements in the information-sharing between consumers, physicians and pharmacists are perceived as being crucial for the future of health care and the concept of concordance [30]. The pharmaceutical specialists may play a particularly important role in the medication use process since they are the final contact with healthcare professionals before the patient leaves with the drug. At the end, the patient balances overall the experience, reservations about drugs and reasons to take them including positive and negative experiences when in contact with the pharmaceutical specialists, to decide whether or not to take the medication.

4.2. Conclusion

Patients and pharmaceutical specialists expressed different views about medicines. To achieve concordance in the pharmaceutical care process, the professionals need to exchange information about patients’ experiences and not take for granted that they share their view about medicines.

4.3. Practice implications

The pharmaceutical specialists should elicit the patient’s concerns about the prescribed medications, e.g., about side effects. In addition, the pharmaceutical specialists should be aware of that non-adherence is often the result of the patients making rational decisions about their treatment. The results of the study could also be an incentive to provide pharmaceutical specialists with formal training in communication for the promotion of a more concordant relationship with the patient.

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References