

**Beliefs about medicines
among community-dwelling elderly
in general practice**

a quantitative survey

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INTRODUCTION

Elderly, here defined as persons at the age of 65 years and over¹, are frequent medication users. Almost all elderly receive medication². In the Netherlands, elderly consume more than three times as many medication as the average Dutch resident does³. The number of medications vary from one to more medications a day. The simultaneously use of two or more several medicines is defined as 'polypharmacy'⁴.

In the Netherlands, medication is prescribed by the physician, and provided and delivered to the patient by the pharmacist. This process is well organized, but behind closed doors, often several problems with the use of medication are reported. Among community-dwelling elderly, 66% reported at least one user-related problem with medication, and usually had more than one user-related problem⁵. A systematic review⁶ showed that approximately 5.3% of the hospital admissions worldwide were associated with medication problems. In the Netherlands, approximately 5.6% of all acute hospital admissions are related to medication. Almost half (46.5%) of these admissions are potentially preventable⁷.

To prevent these unnecessary, costly hospitalizations, nursing interventions that assist elderly in managing their medicines, can help⁸. In a project in primary care about medication problems among elderly, in the middle of the Netherlands, a nursing intervention will be developed to assist nurses to recognize and prevent medication-related problems in an early phase. This is an aspect of which they experience insufficient knowledge and possibilities.

For the development of such an intervention, an essential part is the "needs analysis", in which the patient's perspective on a problem is examined, from which the needs and requests for care will flow naturally⁹. Insight in the patient's perspective is also important, to develop a more individualized intervention⁹. To gain more information about the patient's perspective, someone's beliefs have to be determined, which are part of a perspective and represent the information a person has about an object¹⁰. The concept "belief" can be divided into four components: necessity, concerns, overuse and harm¹¹.

Although a lot of attention is paid to medication problems, the number of published studies about elderly's beliefs about medicines is relatively small. The available literature shows both positive and negative beliefs. On the one hand, elderly are mainly positive or accepting about the need to take medication¹²⁻¹⁴ and the benefits of medication¹². On the other hand, elderly have negative beliefs, like medicines being expensive¹⁵ and confusing^{12,16}. Furthermore, elderly are concerned about long-term effects and dependency¹², about interactions, whether

medicines are 'good' for the body, and adverse effects^{13,16}. Negative attitudes also referred to the negative impact of medication on quality of life¹⁷.

However, the results of these studies cannot be generalized to all elderly, because of differences in focus regarding the minimum age of the participants, varying from 60 years¹⁵, to 65 years^{12,13,16,17}, to 85 years¹⁴. Additionally, none of these studies were conducted in the Netherlands. Because cultural background is associated with beliefs about medicines¹⁸, it may be possible that beliefs about medicines in the Netherlands, compared to other countries, are different.

Furthermore, previous research has shown that demographic variables may influence beliefs about medicines. In a study from Sweden¹⁹, associations were found between attitudes towards medicines and respectively age, gender, educational level, and types of medicines. However, the study did not focus specifically on elderly, and associations were made between patient demographics and attitudes, instead of beliefs. In another study about elderly's beliefs about medicines in Sweden¹², no associations between beliefs and differences in gender, educational level and number of medicines were found. Therefore, it is still unclear whether associations exist between elderly's beliefs about medicines and respectively age, gender, educational level, number and therapeutic indication of medicines, and what these associations are for elderly in the Netherlands. This information is important, because it could contribute to a better tailored intervention for nurses working with elderly.

PROBLEM STATEMENT

Although elderly use multiple medications, it seems peculiar that the published knowledge about their beliefs about medicines is not very extensive. Knowledge about the beliefs about medicines of elderly in the Netherlands is important to perform a needs analysis, a part of the development of an intervention for nurses working with elderly. The present study was conducted to enhance this knowledge.

AIM

The aim of this study was to assess the beliefs of community-dwelling elderly, regarding to medication, in the Netherlands. The gained knowledge can contribute to the intervention development for nurses involved in the care for elderly, in the middle of the Netherlands. The results of this study may also be useful for nursing practice in general. Knowledge about elderly's beliefs, regarding to medication, can help nurses to improve their support to these people on medication-taking.

RESEARCH QUESTIONS

The primary research question was: “What are the beliefs of community-dwelling elderly, regarding to necessity, concerns, overuse and harm of medication, in the Netherlands?”.

The secondary research question was: “What are the beliefs about medicines for participants with differences in age, gender, educational level, number of medicines a day and therapeutic indications of medicines?”.

METHOD

Design

For this study, a quantitative cross-sectional survey design was used. A quantitative design was preferred over a qualitative design, because the intention was to generalize the results of this study to all elderly. Further, with a quantitative design, a large population can be reached, and a lot of information can be gained from many different participants²⁰. Finally, the study design was cross-sectional, because the aim was not to determine causal relationships between variables, for which a longitudinal design is more appropriate²¹.

Setting

This study was conducted in five general practices in the East of the Netherlands, which are part of a larger group of nine general practices in one area, connected to each other by one database. Because one of the researchers has worked as a nurse in four of the practices, participants were recruited from the other five practices. This was performed to optimize the patients' freedom to decide whether or not to participate in the study, which may be jeopardized when the patient has a treatment relationship with the researcher.

Participants

The target population consisted of community-dwelling elderly who are using medication. The study population consisted of community-dwelling elderly who are using two or more different prescribed medicines a day, in the five general practices in the East of The Netherlands.

Due to insufficient information in the literature, it was not possible to compute the required sample size. Polit and Beck²⁰ recommend that in this case, a sample size which is as large

as possible, should be used. In this study, a number of 100 participants should be the largest possible sample size, because of practical considerations.

The inclusion criteria were that participants had a minimum age of 65 years, used two or more different prescribed medicines a day, and lived independently at home, at the start of the study. Exclusion criteria were not being able to understand or answer questions (dementia or mental deficiency), being terminally ill, and not understanding and speaking Dutch.

The list of patient numbers of all persons of 65 years and over from the database of the five general practices was imported in the statistical computer program PASW, version 18.0. Then, participants were selected at random with the randomization function of this program. This type of selection could increase the representativeness of the sample, and therefore, its key characteristics would more closely approximate those of the population²⁰. It was technically not possible to select patients according to all eligibility criteria first, and then conduct the randomization. Subsequently, the patient files were screened and each eligible patient received an information letter from the general practitioner. In the information letter, patients were asked to contact the researcher when wishing to participate, and then a home visit was planned. This process continued until the required sample size was reached.

Measurements

To answer the research question about what elderly's beliefs about medicines are, the Beliefs about Medicines Questionnaire (BMQ)^{11,22} was used. The BMQ consist of two sections: the *BMQ-Specific* and the *BMQ-General*, with a total of 18 items focusing on specific beliefs about medicines. Both sections consist of two subscales. For the *BMQ-Specific* section, the *Specific-Necessity* scale (5 items) assesses beliefs about the necessity of medicines, and the *Specific-Concerns* scale (5 items) assesses concerns about potential adverse effects of medicines²². For the *BMQ-General* section, the *General-Harm* scale (4 items) assesses beliefs about addiction, poison, harm, and long term use. The *General-Overuse* scale (4 items) can be used to assess beliefs about how medicines are used by doctors¹¹. The answers to each item are scored on a 5-point Likert scale (1 means "Strongly disagree", and 5 means "Strongly agree"). Scores for the individual items within each subscale are summed to give a scale score. Total scores for the *Specific-Necessity* and *Specific-Concerns* scales range from 5 to 25, scores of the *General-Harm* and *General-Overuse* scales range from 4 to 20. Higher scores indicate stronger beliefs in the concepts represented by the scale, and each scale can be dichotomized at the scale midpoint, to divide the scores in strong and less strong beliefs²².

Originally, the BMQ was developed and validated in the United Kingdom for chronically ill patients^{11,22}. The reliability (Cronbach's alpha) was estimated for six different groups (asthma, diabetes, renal-, psychiatric-, and cardiac diseases, and general medical), and varied for these six groups from 0.55-0.86 (Specific-Necessity subscale), 0.63-0.80 (Specific-Concerns subscale), 0.60-0.80 (General-Overuse subscale), and 0.47-0.83 (General-Harm subscale). The criterion-related validity varied from P=0.23 to P=0.50. Although small in magnitude, the correlation was statistically significant¹¹. Therefore, the BMQ seems suitable, regarding its psychometric properties, to assess beliefs about medicines.

Since the development, the BMQ was used worldwide to assess beliefs about medicines, also specifically for elderly patients, for example, in a study for elderly with hypertension in the United States²³. In an earlier described study¹², the BMQ was used for frail elderly in general practice, in Sweden. In the Netherlands, the BMQ was applied to measure the beliefs about medicines for several diseases²⁴⁻²⁹, but not specifically for elderly.

Although the BMQ was used in the Netherlands, attempts to obtain the Dutch version of the BMQ, did not succeed. Therefore, the original version of the BMQ was translated into Dutch using the Back Translation Method of Brislin (as cited in Polit & Beck²⁰). Then, the face validity of the translated BMQ was assessed by ten experts by rating it on a five-point scale (1=Unsuitable to 5=Extremely Suitable)³⁰, where the face validity was judged as "very suitable".

To study relations between beliefs about medicines and patient characteristics (at the time of inclusion), the age, gender, country of origin, living situation (living alone and living with a partner) and educational level (elementary school, lower education, middle education, and higher education) of each patient were recorded. Further, the number of medicines a patient used, was recorded, including the therapeutic groups of these medicines, following the Anatomical Therapeutic Chemical classification system of the World Health Organization (WHO ATC classification)³¹.

Procedures

This study was conducted between December 2011 and May 2012. After the selection and recruitment of participants in March 2012, the included participants were asked to vocally respond to the questions of the BMQ, in a single interview in their homes (March and April 2012). During this visit, baseline characteristics and used medicines were also recorded by

the interviewer. These interviews were conducted by the executive researcher and two trained research assistants. Interviews were chosen as the data collection method, because they form the most respected method to collect survey data, because of the quality of information they yield²⁰. Further, self-administered questionnaires are not appropriate for certain populations, for example elderly²⁰.

Ethical considerations

Ethical approval for the study was obtained from the institutional review board of the University Medical Centre Utrecht. Informed consent was obtained prior to each interview, by signing an informed consent form.

Data analysis

First, the normality of the data was assessed. Because the data were not distributed normally, non-parametric tests were used. Data were summarized using descriptive statistics, where beliefs about medicines were summarized using the BMQ subscale scores (interval measurement level). Then, the relation between beliefs about medicines (BMQ subscale scores) and educational level (ordinal measurement level) was analyzed using the Kruskal-Wallis test. Differences in BMQ subscale scores between men and women (nominal measurement level), and between users and non-users of each ATC category (nominal measurement level), were analyzed using the Mann-Whitney U test. The correlation between the BMQ subscales and respectively age and number of medicines (both ratio measurement level), was analyzed using the Spearman correlation coefficient.

The data analysis was conducted using PASW, version 18.0. The level of significance was 0.05, and testing was two-tailed.

RESULTS

Sample

Of the 379 eligible patients who received an information letter, 73 patients (19.3%) wanted to participate in the study. Patients who did not respond to the information letter were contacted by telephone, and thus an additionally 12 patients were recruited. The response rate was therefore 22.4%. Further, 6 spouses of interviewees wanted to participate on their own initiative, although they were at first not selected. Because they were eligible, they were also included. Finally, a total of 91 elderly gave their consent to participate in the study during the recruitment period in March 2012 (figure 1). No participants were lost or withdrawn from the

study. The predetermined sample size of 100 participants could not be realized, because of practical reasons. Therefore, the sample consisted of 91 participants.

The median age of the participants was 71.0 years (table 1), ranging from 65 to 91 years. The sample was predominantly male (58.2%), and the country of origin of the participants, and both parents was in 85.7% of the cases the Netherlands. The median number of all medicines in the sample was 6.0 (Interquartile Range (IQR) 4.0) (table 1), and the medicines that were used most, were medicines for cardiovascular diseases (ATC category C) (table 2). In 2010, medicines for blood and blood forming organs (ATC category B) were the most prescribed medicines for Dutch residents of 65 years and over, followed by medicines from ATC category C³.

Elderly's beliefs about medicines

Elderly have especially strong beliefs in the necessity of their medicines, and less strong beliefs about concerns, overuse and harm. The scores for each of the four BMQ-subcales are presented in table 3.

Beliefs versus patient demographics

Table 3 shows the relation between each of the BMQ subscales and respectively the variables age, gender and education. Beliefs about medicines did not correlate with age. Men and women differed only significantly in beliefs about the necessity of their medicines, where women had stronger beliefs in the necessity (median 19.0; N=38) than men (median 17.0; N=53). Further, only beliefs about the necessity of medicines were associated with education (P=0.016). Post hoc analysis using the Mann-Whitney U test, showed significantly stronger necessity beliefs (P=0.007) among participants with elementary school (median 19.0, N=18), compared to participants with high education (median 17.0, N=19).

Beliefs versus number and therapeutic indication of medicines

Table 2 shows that users of medicines for alimentary tract and metabolism (ATC category A) had significantly stronger beliefs in the necessity of their medicines, compared to non-users (users: median 19.0; N=59, non-users: median 17.0; N=32), as well as users of dermatologicals (ATC category D) (users: median 21.5; N=10, non-users: median 18.0; N=81), and users of medicines for sensory organs (ATC category S) (users: median 23.5; N=2, non-users: median 18.0; N=89).

Regarding the beliefs about overuse of medicines, users of general anti-infectives for systemic use (ATC category J) had less stronger beliefs than non-users (users: median 9.0;

N=6, non-users: median 12.0; N=85). For the number of medicines, a small positive correlation was found between the score for the Specific-Necessity scale and respectively the number of prescribed medicines ($r=0.501$; $r^2=0.25$; $N=91$; $P=0.000$), and the total number of all medicines ($r=0.469$; $r^2=0.22$; $N=91$; $P=0.000$), where high numbers of medicines were associated with higher scores on the Specific-Necessity subscale.

DISCUSSION

The results of this study showed that the elderly in the sample had strong beliefs in the necessity of their medicines, while beliefs in concerns, overuse and harm were less strong. Associations were found between beliefs and gender, educational level, therapeutic indication of medicines, and number of medicines.

Previous studies from Sweden^{12,14} and New Zealand¹³, of which in one study¹² the BMQ was used, reported strong beliefs about the necessity, and less strong beliefs about concerns, overuse and harm of medicines, as well as in the present study. In another study, from Germany³², in which the BMQ was used in general practice, also positive beliefs concerning the necessity of medicines were found, however also participants with ages lower than 65 years were included. It seems remarkable that the present Dutch study and the studies from the other countries have corresponding findings, whereas beliefs about medicines are associated with cultural background¹⁸. An explanation may be that the cultures of these countries do not differ much from each other.

In contrast to the present study, a relation between attitudes towards medicines and age was found in one earlier study¹⁹, however that study did not focus specifically on elderly.

Therefore, it could be possible that beliefs about medicines vary between people younger than 65 years, and people older than 65 years, but that these beliefs do not change much anymore when people have reached the age of 65 years and over.

The association between gender and views about medicines was also subject in a previous study¹⁹. However, in that study, an association between gender and attitudes, instead of beliefs, was found. In another study, where the BMQ was used¹², no association was found. This could be due to differences in sample size, and differences in age of the included participants (20 years and over¹⁹ against 65 years and over¹²).

Beliefs about medicines were already associated with educational level in a previous study¹⁹ about attitudes towards medicines. In this previous study, participants with high education were more positive to medicines than participants with lower education. They also had a more definite opinion about medicines being both a help and a danger¹⁹. Because it is not

clear what the beliefs about the necessity of medicines were of the participants in the previous study, they cannot be compared to the beliefs in the present study.

The results of the present study indicate that for certain therapeutic indications of medicines, differences in beliefs exist between users and non-users. A possible reason for these findings could be the purpose of the medicines. For example, some medicines are prescribed for diseases that can give complaints when not treated, like diabetes mellitus. Hence, patients possibly are more aware of the need for these medicines, rather than, for example, treatment with medicines for cardiovascular diseases, which are often prescribed preventive. However, then the expectation would be that, for example, users of medicines for respiratory diseases also have other beliefs than non-users of these medicines. This result was not found in the present study, possibly due to the large differences in numbers of users for each ATC category.

The results of this study must be interpreted with caution because of the fact that, although patients were selected at random, they were included by convenience, because they had to respond to an invitation letter. Therefore, the results cannot be generalized to all elderly. Further, the response was small, which may have caused bias in the results, and it may have undermined the representativeness of the sample, which is also a reason that the results cannot be generalized to all elderly.

Although the BMQ is a valid instrument^{11,22}, and the face validity of the translated BMQ was estimated very suitable by the experts, it can be discussed whether the BMQ is an appropriate instrument for assessing the views of people about their medicines. The results of the BMQ give a good impression of elderly's beliefs about medicines, but maybe some aspects are not covered, like more attention for adherence to medication.

CONCLUSION

Despite of the limitations of this study, the results give an impression of what elderly's beliefs are about their medicines. Elderly have strong beliefs in the necessity of their medicines, with less strong beliefs in aspects like concerns, harm, and overuse. The results indicate that beliefs differ regarding the necessity of medicines, between men and women, different educational levels, therapeutic indications of medicines, and numbers of medicines.

Therefore, the results form an important source for the development of nursing interventions in the care for elderly.

RECOMMENDATIONS

The fact that elderly have different beliefs about medicines, indicates that different, individualized approaches are required in the care for elderly. Therefore, more attention should be paid to elderly's individual beliefs about their medicines, to generate better tailored care. Further, because the BMQ gives limited information about someone's beliefs about medicines, future research using a qualitative design is needed, to gain a better understanding of this phenomenon. This could also contribute to tailored interventions and care for elderly.

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TABLES AND FIGURES

Table 1: Demographical characteristics

Variable	Outcome (N=91)
Age: median (IQR)	71.0 (10.0)
Gender: N (%)	
- Male	53 (58.2%)
Country of origin: N (%)	
- The Netherlands	78 (85.7%)
- Germany	2 (2.2%)
- The Netherlands/Germany	8 (8.8%)
- Other (Belgium, the Netherlands/Hungary, Germany/France)	3 (3.3%)
Living situation: N (%)	
- Living alone	18 (19.8%)
- Living together	73 (80.2%)
Education: N (%)	
- Elementary school	18 (19.8%)
- Lower education	30 (33.0%)
- Middle education	24 (26.4%)
- Higher education	19 (20.9%)
Number of medicines: median (IQR)	
- Prescribed medicines	6.0 (4.0)
- Non-prescribed medicines (OTC)	.0 (1.0)
- Total (prescribed + OTC)	6.0 (4.0)

IQR=Interquartile Range

Table 2: Medicines versus BMQ-scores

ATC category	Users <i>N (%)</i>	Specific-Necessity		Specific-Concerns		General-Overuse		General-Harm	
		<i>P</i> *	<i>P</i> *	<i>P</i> *	<i>P</i> *	<i>P</i> *	<i>P</i> *		
A Alimentary tract and metabolism	59 (64.8%)	.018 ^a		.058		.120		.061	
B Blood and blood forming organs	63 (69.2%)	.257		.524		.610		.979	
C Cardiovascular system	85 (93.4%)	.371		.797		.735		.759	
D Dermatologicals	10 (11.0%)	.033 ^a		.263		.924		.763	
G Genito-urinary and sex hormones	9 (9.9%)	.332		.426		.329		.727	
H Systemic hormonal prep, excluding sex hormones	14 (15.4%)	.330		.825		.056		.235	
J General anti-infectives for systemic use	6 (6.6%)	.898		.968		.008 ^b		.226	
L Antineoplastic and immunomodulating agents	4 (4.4%)	.169		.718		.502		.883	
M Musculo-skeletal system	20 (22.0%)	.271		.104		.596		.581	
N Nervous system	45 (49.5%)	.204		.167		.789		.100	
R Respiratory system	28 (30.8%)	.205		.539		.662		.728	
S Sensory organs	2 (2.2%)	.034 ^a		.056		.549		.147	
Number of medicines	Users <i>N (%)</i>	Specific-Necessity		Specific-Concerns		General-Overuse		General-Harm	
		<i>ρ</i>	<i>P</i> **	<i>ρ</i>	<i>P</i> **	<i>ρ</i>	<i>P</i> **	<i>ρ</i>	<i>P</i> **
Prescribed medicines	91 (100.0%)	.501	.000 ^b	.204	.052	-.038	.721	.080	.449
Non-prescribed medicines (OTC)	43 (47.2%)	-.089	.402	-.037	.727	-.028	.792	-.020	.849
Total (prescribed + OTC)	91 (100.0%)	.469	.000 ^b	.189	.073	-.067	.529	.065	.540

*Mann-Whitney U test; **Spearman's rank correlation

ATC category = therapeutic groups of medicines, following the WHO ATC classification³¹.

N=number of participants that used medicines for each category.

%=percentage; *ρ*=Spearman's rho; *P*=p-value, with level of significance 0.05.

A=*P*<0.05; *b*=*P*<0.01.

Table 3: BMQ scores versus age, gender, and educational level

	BMQ subscales							
	Specific-Necessity		Specific-Concerns		General-Overuse		General-Harm	
Score for N=91; median (IQR)	19.0 (4.0)		10.0 (4.0)		12.0 (4.0)		10.0 (3.0)	
Age; ρ (P)*	.028 (.790)		-.182 (.085)		-.004 (.966)		.051 (.634)	
Gender								
Male (N=53); median (IQR)	17.0 (5.0)	P**=.014 ^a	10.0 (3.0)	P**=.923	12.0 (5.0)	P**=.633	10.0 (3.0)	P**=.208
Female (N=38); median (IQR)	19.0 (4.0)		10.0 (4.0)		12.0 (4.0)		10.0 (3.0)	
Education								
Elementary school (N=18); median (IQR)	19.0 (4.0)		9.5 (4.0)		13.0 (4.0)		10.0 (2.0)	
Lower education (N=30); median (IQR)	19.0 (4.0)	P***=.016 ^a	10.0 (3.0)	P***=.994	11.0 (3.0)	P***=.449	10.0 (3.0)	P***=.755
Middle education (N=24); median (IQR)	19.0 (3.5)		10.0 (3.5)		12.5 (5.0)		10.0 (2.5)	
Higher education (N=19); median (IQR)	17.0 (5.0)		10.0 (4.0)		10.0 (6.0)		9.0 (3.0)	

The scores for the Specific-Necessity scale and the Specific-Concerns scale range from 5-25; the scores for the General-Overuse and General-Harm scales range from 4-20.

The cut-off point for the Specific-Necessity scale and the Specific-Concerns scale is 15, the cut-off point for the General-Overuse scale and the General-Harm scale is 12.

These cut-off points differentiate between strong and less strong beliefs in the concept that is measured by each subscale²².

N=number of participants; IQR= Interquartile Range; P=p-value, with level of significance 0.05; ρ =Spearman's rho

*Spearman's rank correlation coefficient; **Mann-Whitney U test; ***Kruskal-Wallis test

^a=P<0.05

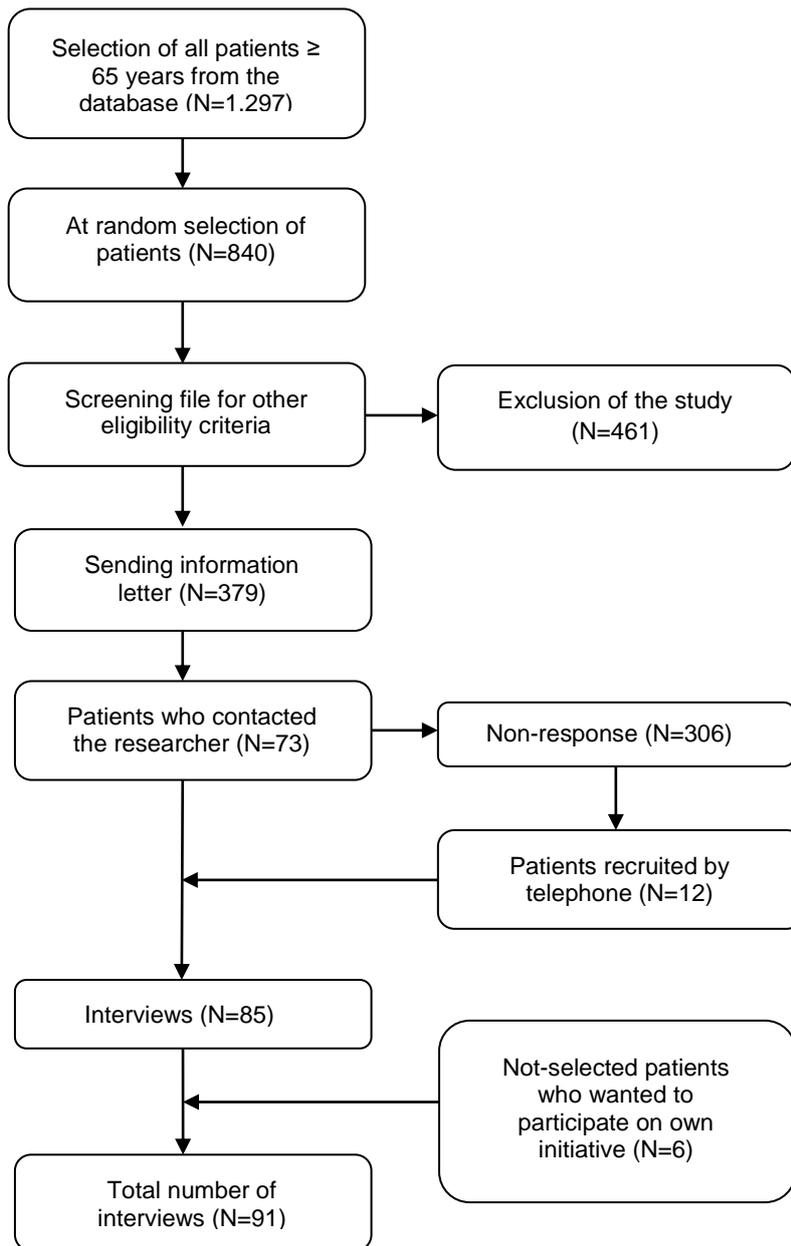


Figure 1: Study flowchart

DUTCH SUMMARY

Titel: Beliefs about medicines among community-dwelling elderly in general practice, a quantitative survey.

Inleiding: Hoewel ouderen frequent medicijnen gebruiken, is de gepubliceerde kennis over opvattingen over medicijnen van ouderen niet zo uitgebreid. Deze opvattingen zijn cruciaal voor de ontwikkeling van een verpleegkundige interventie voor verpleegkundigen werkzaam met thuiswonende ouderen, in het midden van Nederland.

Doel: het vaststellen van opvattingen van thuiswonende ouderen ten aanzien van medicijngebruik, in Nederland.

Onderzoeksvragen: “Wat zijn de opvattingen van thuiswonende ouderen, met betrekking tot noodzaak, zorgen, overmatig gebruik en schade van medicijnen, in Nederland?” (primaire onderzoeksvraag), en: “Wat zijn de opvattingen met betrekking tot medicijnen van participanten met verschillen in leeftijd, geslacht, opleidingsniveau, aantal medicijnen per dag en de therapeutische indicatie van medicijnen?” (secundaire onderzoeksvraag).

Methode: deze kwantitatieve transversale survey onderzoekt de opvattingen met betrekking tot medicijnen van thuiswonende ouderen in vijf huisartsenpraktijken in Nederland, inclusief the relatie tussen opvattingen en respectievelijk leeftijd, geslacht, opleidingsniveau, aantal medicijnen en therapeutische indicatie van medicijnen. Opvattingen zijn gemeten met de Beliefs about Medicines Questionnaire (BMQ), in eenmalige interviews.

Resultaten: de 91 participanten (leeftijd mediaan = 71,0 jaar) hadden sterke opvattingen over de noodzaak van hun medicijnen, terwijl opvattingen over zorgen, overmatig gebruik en schade minder sterk waren. Er zijn associaties gevonden tussen opvattingen en geslacht, opleidingsniveau, therapeutische indicatie van medicijnen, en het aantal medicijnen.

Conclusie: de resultaten van deze studie geven een impressie van de manier waarop ouderen hun medicijnen zien, namelijk als noodzakelijk, met in mindere mate aspecten zoals zorgen, schade en overmatig gebruik.

Aanbevelingen: Meer aandacht is nodig voor de individuele opvattingen van ouderen over hun medicijnen. Verder kwalitatief onderzoek is nodig om een beter begrip van dit fenomeen te verkrijgen. Dit kan bijdragen aan passende interventies en zorg op maat voor ouderen.

Trefwoorden: Thuiswonende ouderen, huisartsenpraktijk, Opvattingen over medicijnen, BMQ.

ENGLISH ABSTRACT

Title: Beliefs about medicines among community-dwelling elderly in general practice, a quantitative survey.

Background: Although elderly are frequent medication users, the published knowledge about elderly's beliefs about medicines is not very extensive. These beliefs are crucial for the development of a nursing intervention for nurses working with community-dwelling elderly, in the middle of the Netherlands.

Aim: to assess the beliefs of community-dwelling elderly, regarding to medication, in the Netherlands.

Research questions: "What are the beliefs of community-dwelling elderly, regarding to necessity, concerns, overuse and harm of medication, in the Netherlands?" (primary research question), and: "What are the beliefs about medicines for participants with differences in age, gender, educational level, number of medicines a day and therapeutic indications of medicines?" (secondary research question).

Method: this quantitative cross-sectional survey examines the beliefs about medicines of community-dwelling elderly in five general practices in the Netherlands, and the relationship between beliefs and respectively age, gender, educational level, number and therapeutic indication of medicines. Beliefs were measured using the Beliefs about Medicines Questionnaire (BMQ), in a single interview.

Results: the 91 study participants (median age = 71.0 years) had strong beliefs in the necessity of their medicines, while beliefs in concerns, overuse and harm were less strong. Associations were found between beliefs and gender, educational level, therapeutic indication of medicines and number of medicines.

Conclusion: the results of this study give an impression of how elderly view their medicines, namely as necessary, with in minority aspects like concerns, harm, and overuse.

Recommendations: More attention should be paid to elderly's individual beliefs about their medicines. Further research, using a qualitative design, is needed to gain a better understanding of this phenomenon. This could contribute to tailored interventions and care for elderly.

Keywords: Community-dwelling elderly, General practice, Beliefs about medicines, BMQ.