

Postprint Version	1.0
Journal website	<a href="http://dx.doi.org/10.1016/j.pec.2011.04.004">http://dx.doi.org/10.1016/j.pec.2011.04.004</a>
Pubmed link	<a href="http://www.ncbi.nlm.nih.gov/pubmed/21550196">http://www.ncbi.nlm.nih.gov/pubmed/21550196</a>
DOI	10.1016/j.pec.2011.04.004

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## Patients' satisfaction with information and experiences with counseling on cardiovascular medication received at the pharmacy

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### ABSTRACT

**Objective:** To assess the extent to which patients feel they have received enough information on cardiovascular drugs and experienced counseling at the pharmacy. In addition, to identify factors that are predictors for patient satisfaction with the information received.

**Methods:** Fifteen community pharmacies participated. New and chronic users of cardiovascular medication received a questionnaire containing sociodemographic and health questions, a measure of satisfaction with information received (SIMS), beliefs about medication (BMQ), and frequency of pharmacy counseling.

**Results:** Of the 578 respondents, 335 (58%) indicated to be unsatisfied with the information received on 3 or more SIMS items. Patients' age, beliefs about medication, duration of cardiovascular treatment and use of antithrombotics predicted patients' satisfaction with information received. Two-thirds of patients reported 'never' to have experienced 5 of 8 counseling activities at the pharmacy.

**Conclusions:** A considerable proportion of patients are unsatisfied with the information received on cardiovascular medication. The majority of patients have only received a limited scope of medication counseling at the pharmacy.

**Practice implications:** Information and counseling should be tailored to patients' needs and concerns about cardiovascular medication and the experience patients already have with treatment. Pharmacists could enhance their role in supporting patients using cardiovascular medication.

## 1. INTRODUCTION

Guidelines for cardiovascular risk management recommend pharmacological treatment for patients who are at increased risk of fatal cardiovascular disease [1]. Thus patients with multiple risk factors face a lifetime of taking several concurrent medications to reduce their risk of a cardiovascular event.

In practice, patients appear to have difficulty adhering to drug treatment [2,3]. Patients are often reluctant to take medication because of doubts regarding the need for drug therapy or concerns about possible adverse effects of their cardiovascular medications.

[4–7]. Also, complex drug regimens may cause confusion, and multiple dosing can be difficult to organize [2,3,6].

Health care providers need to address patients' concerns and problems and motivate patients to continue treatment. Studies suggest that interventions such as giving verbal and written information can improve adherence to cardiovascular drugs [8,9].

However, patients' information needs might not always be met, due to differing perspectives between health care provider and patient as to the type of information that is needed [2]. It has been shown that information given during general practitioner (GP) consultation is brief, and patients may require further information, misunderstand information, or fail to recall important details [2,10]. Furthermore, patients' needs and quest for information will continue and change over time in response to their personal experiences with the medication [2,6,11]. Therefore it is possible that the needs of new medication users differ from those of chronic users, i.e. patients who have been taking this medication for a period of time.

Community pharmacists may play an important role in the patient-centered management of medication issues by informing and counseling patients [12]. They generally see patients more frequently and are more accessible than other health care providers, and are the last to see the patient before drug treatment is initiated.

Thus, they have the opportunity to reiterate important points and address problems and questions, at the moment of dispensing [6,12].

The extent to which pharmacists currently provide information and counseling on cardiovascular medication in The Netherlands is unknown. Therefore, we examined the extent to which patients feel they have received enough information on cardiovascular medication as well as the extent to which patients experienced counseling at the pharmacy. In addition, we aimed to identify predictors for patient satisfaction with information received.

## 2. METHODS

In this study we conducted a cross sectional postal survey of patients taking cardiovascular medicines identified from community pharmacy dispensing records.

### 2.1. Setting

Community pharmacists belonging to the Utrecht pharmacy practice network for education and research (UPPER) of the department of Pharmaceutical Sciences of Utrecht University were invited to participate in this study. This network consists of approximately 900 community pharmacies who regularly participate in research and traineeships for pharmacy students of this department. Of the pharmacies, 58 responded positively within two weeks. Of these, 15 pharmacies were selected. In this selection, we tried to achieve diversity in terms of the degree of urbanisation, percentage of second generation immigrants and percentage of patients aged over 65 years. Data were obtained from Statistics Netherlands ([www.cbs.nl](http://www.cbs.nl)). Of the participating pharmacies, three were located in an 'extremely urbanised' setting (second generation immigrants ranging from 24.3 to 62.0%, age over 65 ranging from 5.7 to 8.5%), four in a 'strongly urbanised' setting (second generation immigrants ranging from 6.3 to 16.9%, age over 65 ranging from 7.2 to 20.1%), two in a 'moderately urbanised' setting (second generation immigrants 5.4% and 7.3%, age over 65

5.9 and 9.2%), four in a 'hardly urbanised' setting (second generation immigrants ranging from 1.1 to 3.9%, age over 65 ranging from 14.8 to 16.8%), and two were located in a 'non urbanised' setting (second generation immigrants 1.1 and 1.3%, age over 65 9.4 and 14.7%).

## 2.2. Population

Antihypertensive drugs and statins are the key therapies for modifying overall cardiovascular risk and are advised for patients with a 10-year mortality risk for cardiovascular disease of over 10% [1]. In April 2010, the participating pharmacists selected patients aged over 18, who had presented a prescription for cardiovascular medication, either an antihypertensive drug (ATC C02, C03, C07, C08, C09) or a statin (C10), within the previous 3 months. The pharmacies use automated dispensing records that provide detailed drug utilization information. Since the majority of Dutch patients are registered with a single community pharmacy, pharmacy records are virtually complete with regard to prescription drugs [13]. The pharmacists sent the anonymous dispensing records to the investigators who identified new and chronic users of cardiovascular medication. New users of cardiovascular drugs were defined as patients who had not used any cardiovascular medicines (either ATC C02, C03, C07, C08, C09 or C10) in the two years before the first prescription of the cardiovascular medicine in the selection period.

Chronic users were defined as patients who had filled more than 40 prescriptions of cardiovascular medicines in the previous three years, which was considered to be a substantial amount of visits of the patient to the pharmacy; in The Netherlands it is usual practice to dispense a 14 day supply for new prescriptions, and subsequent prescriptions are usually for a 90 day supply. We aimed to invite 1500 patients, divided into two groups of approximately equal size.

Because of an anticipated lower response rate in the group of new users compared to the chronic users, we decided to invite all new users and to invite a random sample of the chronic users. Fig. 1 shows the selection of the study participants. The selected patients were sent a mailed questionnaire and after three weeks a reminder card was sent. The study was approved by the Institutional Review Board of the Pharmacoepidemiology and Clinical Pharmacology division of Utrecht University.

## 2.3. Measures

Patients received a questionnaire that contained sociodemographic and health questions, a measure of satisfaction with information received about medication, a measure of beliefs on medication, and questions on the frequency of counseling at the pharmacy. Information on medication use was extracted from the pharmacy dispensing records.

### 2.3.1. Satisfaction with information about cardiovascular medication

The extent to which patients feel they have received enough information about cardiovascular medication was assessed using the Satisfaction with Information about Medicines Scale (SIMS) [14]. The SIMS consists of 17 items, each referring to a particular aspect of medicine use. Of these, two items ('what your medicine is called' and 'whether the medication will affect your sex life') were excluded because of expected difficulty for patients taking multiple cardiovascular medicines to rate these items. For each of the 15 items, patients were asked to rate the amount of information they have received about their cardiovascular medication as a whole. Those reporting that the information was "about right" or indicating "none needed" were classified as satisfied (scored 1). Those reporting that the information was "too much", "too little" or indicating "none received" were classified as dissatisfied (scored 0). The responses can be analyzed at different levels [14]. The ratings for each individual item were examined to identify specific types of information that patients feel they are lacking. In addition, a total satisfaction rating was obtained by summing the scores for all 15 items. The total scale scores showed good internal reliability: the Cronbach's alpha coefficient was 0.94.

Scores range from 0 to 15 with high scores indicating a high degree of overall satisfaction with the amount of medication information received. We chose a total score of 12 or less to define the patients being unsatisfied with the information on cardiovascular medication received because the median score of all patients was 12, and we considered three or more items where information was lacking a reasonable definition of overall dissatisfaction.

### *2.3.2. Sociodemographic, health and medication characteristics*

Sociodemographic characteristics included age, gender, ethnic origin and level of education. Age and gender were retrieved from the automated dispensing records. Educational level was divided into three categories: none/primary school, secondary school and higher professional education/university. Health characteristics included Body mass index and smoking behavior. Body mass index was calculated by the investigators from weight and height as provided by the patient. Patients were also asked to indicate whether they suffered from either hypertension, high cholesterol, obesity or diabetes. Medication characteristics were extracted from the pharmacy dispensing record, and included any use (2 or more prescriptions) of antithrombotics, antihypertensives, statins, antidiabetics, benzodiazepines and antidepressants in the six months before the selection date. Patients on antithrombotic treatment were considered to have an increased risk for a cardiovascular event either because of a previous cardiovascular event, angina pectoris or cardiac arrhythmias. Depression and anxiety frequently coexist with cardiovascular disease and therefore antidepressant and benzodiazepine use was taken into account.

## **[FIGURE 1]**

### *2.3.3. Beliefs about cardiovascular medicines*

Patients' beliefs about cardiovascular medicines were assessed using the validated beliefs about medicines questionnaire (BMQ-specific) [15]. The BMQ-specific comprises two scales: the necessity scale assessing beliefs about the necessity of prescribed medications and the concerns scale assessing concerns about prescribed medications. Each item of the BMQ is scored using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly agree). Individual item scores were summed to generate the necessity and concerns scale score, ranging from 5 to 25. Higher scores on the scales indicate stronger beliefs in the concepts represented by the scale. The separate necessity and concerns scales were split at the median to generate four attitudinal groups: accepting (high necessity, low concerns), ambivalent (high necessity, high concerns), skeptical (low necessity, high concerns), indifferent (low necessity, low concerns) [16].

### **2.3.4. Frequency of counseling on cardiovascular medication at the pharmacy**

The subscale on counseling of the validated consumer quality index pharmaceutical care was used to measure patients' experiences with counseling at the pharmacy about their cardiovascular medication [17]. The subscale consists of eight items, each referring to a specific counseling activity. For each item, patients were asked to indicate how often they experienced the activity with regard to their cardiovascular medication, on a 4-point Likert scale ("never", "sometimes", "often", "always"). A total pharmacy counseling score was obtained by summing the scores for each item. Patients reporting that they "never" experienced the particular counseling activity were scored "0", those reporting "sometimes", "often" or "always" were scored "1". Total scores range from 0 to 8. The total pharmacy counseling score showed good internal reliability with a Cronbach's alpha coefficient of 0.84.

### *2.3.5. Primary source of information*

Patients were asked two further questions: “Which health care professional was the most important source of information on your cardiovascular medication?” and “Which health care professional would you contact first if you have questions or problems with your cardiovascular medication?”. Patients could choose between the answer categories ‘GP’, ‘GP nurse practitioner’, ‘pharmacist or pharmacy assistant’, ‘cardiologist’, ‘specialist’, ‘hospital nurse’ or ‘other’.

#### **2.4. Data analysis**

Sociodemographic characteristics, medication use and beliefs groups were compared among patients who were unsatisfied with the information received about cardiovascular medication (SIMS score  $\leq 12$ ) and patients who indicated that they were satisfied with the information received about cardiovascular medication (SIMS  $> 12$ ). To identify patients' characteristics that predicted being unsatisfied with the information received on cardiovascular medication, univariate and multivariate logistic regression models were examined. Characteristics with p-values  $\leq 0.10$  in the univariate models were considered for inclusion in the full multivariate logistic regression.

Descriptive analyses were used to describe patients' perceptions of pharmacy counseling. To explore differences in the health care professional most important to patients the Chi-square test was used. The total pharmacy counseling scores were compared between new and chronic users of cardiovascular medication, antithrombotic and non-antithrombotic users and the four beliefs groups using the one-way analysis of variance (ANOVA).

Data from the automated dispensing records were used to explore possible bias in the selection of participants. Respondents and non-respondents were compared by age, sex and medication use using the Chi-square test.

Data were analyzed using SPSS for Windows, version 16.0.

### **3. RESULTS**

#### **3.1. Selection and response**

Fig. 1 shows the selection and response of the study participants, i.e. new users and chronic users of cardiovascular medication. The questionnaire was received from 40.7% ( $n = 362$ ) of the new users and 43.5% ( $n = 286$ ) of the chronic users. Thirty new users and forty chronic users had to be excluded because they had not completed the key items, leaving 332 new users and 246 chronic users who were included in the analysis. Table 1 shows the basic characteristics of these respondents.

Comparing respondents ( $n = 648$ ) and non-respondents ( $n = 898$ ), respondents were older (mean age 64.1 vs. 61.4;  $p < 0.001$ ); especially patients aged 18–50 years old were underrepresented among respondents. Furthermore, respondents less frequently used benzodiazepines (9.9% vs. 15.8%;  $p = 0.001$ ) and antidepressants (8.5% vs. 13.5%;  $p = 0.002$ ) as concomitant medication. There were no significant differences between respondents and non-respondents with regard to the use of cardiovascular medication (antithrombotics, statins, antihypertensives) or antidiabetics.

#### **3.2. Patients' satisfaction with information on cardiovascular medication**

Of all respondents, 30.8% ( $n = 178$ ) were completely satisfied with all items of the SIMS. Satisfaction mainly resulted from patients having received ‘about right’ information; between 3.3% and 8.6% of all respondents reported that information on the particular aspect of medicine use was not needed.

In almost all cases, dissatisfaction resulted from patients reporting having received too little or no information; for each item less than 1% of all respondents reported to have received too much information. Patients were particularly dissatisfied with information on how long the medicine would take to act (43.8% of all respondents indicated to be unsatisfied), how you could tell if it is working (46.4% of all respondents), whether the medicine has any side effects (44.3% of all respondents), what the risks are of getting side effects (49.7% of all

respondents), what you should do if you experience unwanted side effects (49.8% of all respondents), whether the medicine interferes with other medicines (43.3% of all respondents) and what you should do if you forget to take a dose (44.5% of all respondents).

**[TABLE 1]**

Table 2 shows the patient characteristics associated with patients' satisfaction with the information received on cardiovascular medication. Patients aged 51–60 (OR 1.21, 95% CI 0.67–2.20) and 61–70 (OR 2.07, 95% CI 1.27–3.36) were more likely to be unsatisfied with the information received on cardiovascular medication compared to patients aged over 70. Patients with an ambivalent (OR 1.69, 95% CI 1.02–2.81), skeptical (OR 2.86, 95% CI 1.60–2.78) and indifferent (OR 1.67, 95% CI 1.00–2.78) attitude towards cardiovascular medication were more likely to be unsatisfied with the information received compared to patients with an accepting attitude. In addition, new users of cardiovascular medication (OR 1.53, 95% CI 1.02–2.28) were more likely to be unsatisfied with the information received on cardiovascular medication than chronic users. Also, antithrombotic users (OR 1.81, 95% CI 1.21–2.71) appeared to be unsatisfied with information received on cardiovascular medication more often, compared to patients who did not use antithrombotics.

**3.3. Frequency of counseling on cardiovascular medication at the pharmacy**

Table 3 shows patients' experiences with the frequency of pharmacy counseling. Two-thirds of patients reported 'never' to have experienced 5 of 8 counseling activities.

**[TABLE 2]**

There was a significant difference between new and chronic users of cardiovascular medication (mean scores  $\pm$  SD:  $3.77 \pm 2.17$  vs.  $4.33 \pm 2.25$ ;  $p = 0.007$ ). In addition, the counseling scores differed between the four beliefs groups: mean scores  $\pm$  SD of the accepting, ambivalent, indifferent and skeptical patients were  $4.44 \pm 2.08$ ,  $4.39 \pm 2.2$ ,  $3.77 \pm 2.17$  and  $3.48 \pm 2.35$ , respectively ( $p = 0.002$ ).

There was no significant difference between patients using antithrombotic medication and patients not using antithrombotics.

**[TABLE 3]**

**3.4. Primary source of information**

Of all patients, 44.5% (257) reported that the GP was the most important source of information about cardiovascular medication, followed by the pharmacist or pharmacy assistant (24.7%,  $n = 143$ ), cardiologist (10.7%,  $n = 62$ ), GP nurse practitioner (6.6%,  $n = 38$ ) and specialist (6.4%,  $n = 37$ ). The pharmacy and the cardiologist were considered as more important by patients who use antithrombotic medication compared to patients not using antithrombotic medication (29.1% vs. 22.5%;  $p < 0.001$  and 21.4% vs. 5.2%;  $p < 0.001$ , respectively). In case of questions or problems with medication, 63.8% ( $n = 369$ ) of all patients reported that they would contact the GP, followed by the pharmacist or pharmacy assistant (16.6%,  $n = 96$ ), cardiologist (7.4%,  $n = 43$ ), GP nurse practitioner (3.3%,  $n = 19$ ) and specialist (3.6%,  $n = 21$ ). Again, there was a difference between patients using antithrombotic medication and patients not using antithrombotics: the pharmacy and cardiologist were considered as more important by patients using antithrombotics (20.9% vs. 14.4%;  $p < 0.001$  and 14.8% vs. 3.7%;  $p < 0.001$ , respectively). There were no significant differences between new users and chronic users of cardiovascular medication for both the primary source of information and the health care professional they would contact in case of questions or concerns with their cardiovascular medication.

#### **4. DISCUSSION AND CONCLUSION**

##### **4.1. Discussion**

This study showed that patients require more information on their cardiovascular medication than they currently receive.

Patients were especially dissatisfied with the amount of information received on the risks of side effects, what to do when experiencing side effects, and how to judge the effectiveness of medication.

Patients' needs for and satisfaction with information is likely to fluctuate over time and with their experience of treatment [18,19].

In our study, new users of cardiovascular treatment indicated that they were less satisfied with the information received than chronic users. It could be that new users simply have had less opportunities to receive the required information. In addition, the new users have only recently been confronted with the fact that they are at risk of developing cardiovascular disease and consequently may have unanswered questions and concerns about the necessity of medicine use and its side effects. Furthermore, patients using antithrombotic medication were less satisfied with the information received compared to those who did not use this medication.

Antithrombotic users have most likely experienced a cardiovascular event, which is likely to influence patients' illness perceptions thus influencing the amount of information they require. A qualitative study in patients who had recently experienced a myocardial infarction showed that patients' information needs change during their recovery process and thus require periodic assessment and education updates [20].

Grouping patients based on medication beliefs could help to identify those patients who will benefit most from additional information and counseling. This study showed that patients' beliefs are important to consider when trying to understand patients' needs for information and counseling. Patients with an ambivalent or skeptical attitude towards their cardiovascular medication were unsatisfied with the information received more often compared to patients with an accepting attitude. Other studies also showed that patients who held stronger concerns about treatment were less satisfied with the information they had received [14,21], and would benefit most from additional counseling [8]. Furthermore, patients who receive specific information on medication are more knowledgeable, have more positive beliefs about medication and are more likely to adhere to treatment [22,23]. Although there appears to be a relationship between patients' beliefs and their satisfaction with information, we cannot infer causality. It is unclear whether patients' beliefs and attitude towards medication determine their information needs or vice versa. Patients who have a more skeptical attitude towards medication may have greater information needs, but on the other hand patients who feel that they lack information may also develop a more skeptical attitude towards treatment. Yet, this does not undermine our recommendation to elicit the patient's views on medication and address any questions, misconceptions or concerns that the patient may have.

More than two-thirds of patients indicated that they have never experienced five out of eight specific counseling activities at the pharmacy. Two-thirds of the patients considered the prescribing physician to be the primary provider of information and the first to contact if they had questions or problems with their cardiovascular medication. Only one in four patients indicated the pharmacist to be the primary source of information and for one in six patients the pharmacist was the first to contact in case of problems.

Although pharmacists in The Netherlands currently adopt a crucial role in the management of chronic illness by educating and counseling, apparently most patients still seem to be unfamiliar with this role. Similar to our study, other studies have shown that patients are generally unfamiliar with the pharmacist's task as information provider and caregiver [24–26]. A review of counseling practices of Puspitasari et al. showed that the rates of counseling provided in pharmacies reported by consumers ranged from 8% to 56% [27]. Counseling

mostly focused on providing information on medicine administration, while information on the safety aspects, such as side effects, interactions and contraindications, was less likely to be given [27,28]. This is unfortunate as counseling on these aspects may enable pharmacists to detect and address the problems that patients experience with their medication. Pharmacists are equipped to educate and counsel patients on the importance of medication adherence and potential adverse effects. Interventions delivered by pharmacists have shown to improve cardiovascular outcomes, like the control of blood pressure, heart failure and glycated haemoglobin [29–31].

Furthermore, pharmacists have been shown to uncover problems with medication, that for various reasons remained undetected by the GP [32]. Clifford et al. showed benefits from pharmacists meeting patients' needs for information and advice soon after starting chronic treatment: patients reported fewer medication-related problems, had more positive beliefs about their medication and were more adherent than patients who had not received additional information and advice from the pharmacist at that time [23].

#### *4.1.1. Limitations and strengths*

Although a response rate of over 40% could be considered reasonable, it may have introduced some selection bias. Comparing respondents and non-respondents, there were some differences: non-respondents were younger and more frequently used benzodiazepines and antidepressants. Therefore, we cannot exclude that non-respondents would have rated the amount of information received and the frequency of counseling at the pharmacy differently from the respondents. A possible second limitation is that there could be a bias in the selection of pharmacies. The pharmacies that were invited to participate are part of a large research and education network, consisting of about 900 community pharmacies, which is half of all pharmacies in The Netherlands. Therefore we do not expect the pharmacies in the network to be different from other pharmacies with regard to their level of counseling. A further limitation is that the questionnaire asks patients to rate the information and counseling about cardiovascular drugs as a whole, not specifically about the types of medication, such as antihypertensives, statins or antithrombotics.

Asking patients about specific medicines might have enriched the findings. However, whether patients would be able to separate the information received regarding individual drugs is uncertain. A final limitation is the subjective nature of patients' own views about the medication information they have received. We did not measure the absolute quantity or quality of the information given, so a dissatisfaction does not necessarily imply that health care professionals did not provide the information rated by the patient.

Indeed, previous studies showed that patients forget substantial amounts of the provided information [33,34]. However, this does not detract from our conclusion that patients are dissatisfied with the information given, and that needs to be addressed.

The strength of our study is the linking of data directly obtained from patients through questionnaires with the pharmacy dispensing data. This enabled the selection of the two groups of patients, i.e. new users and chronic users, and enriched the information we had on the patients. Furthermore, due to the availability of the pharmacy dispensing data, it was possible to compare some demographic and medication characteristics of respondents and non-respondents.

#### **4.2. Conclusion**

The findings point to a considerable degree of dissatisfaction with the information received by patients taking cardiovascular medications. Moreover, a majority of patients have only received a limited scope of medication counseling in the pharmacy.



#### **4.3. Practice implications**

Information and counseling should be tailored to patients' needs and concerns about cardiovascular medication and the experience patients already have with the treatment of cardiovascular conditions.

Pharmacists could enhance their role in supporting patients using cardiovascular medication.

#### **CONFLICTS OF INTEREST**

We have no conflicts of interest to declare.

#### **FUNDING**

This study was funded by the Netherlands Heart Foundation.

The funding source was involved in the study design and the development of the questionnaire, and in the writing of the report.

#### **ACKNOWLEDGEMENTS**

We thank all patients and community pharmacists who participated in this study. Special thanks to Joeri Arkink, Widiene Harrou, Suzanne Schavemaker and Lisette Vereijken for their help with collecting the data. We also thank the steering committee members for their advice and support.

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## TABLES AND FIGURES

Figure 1

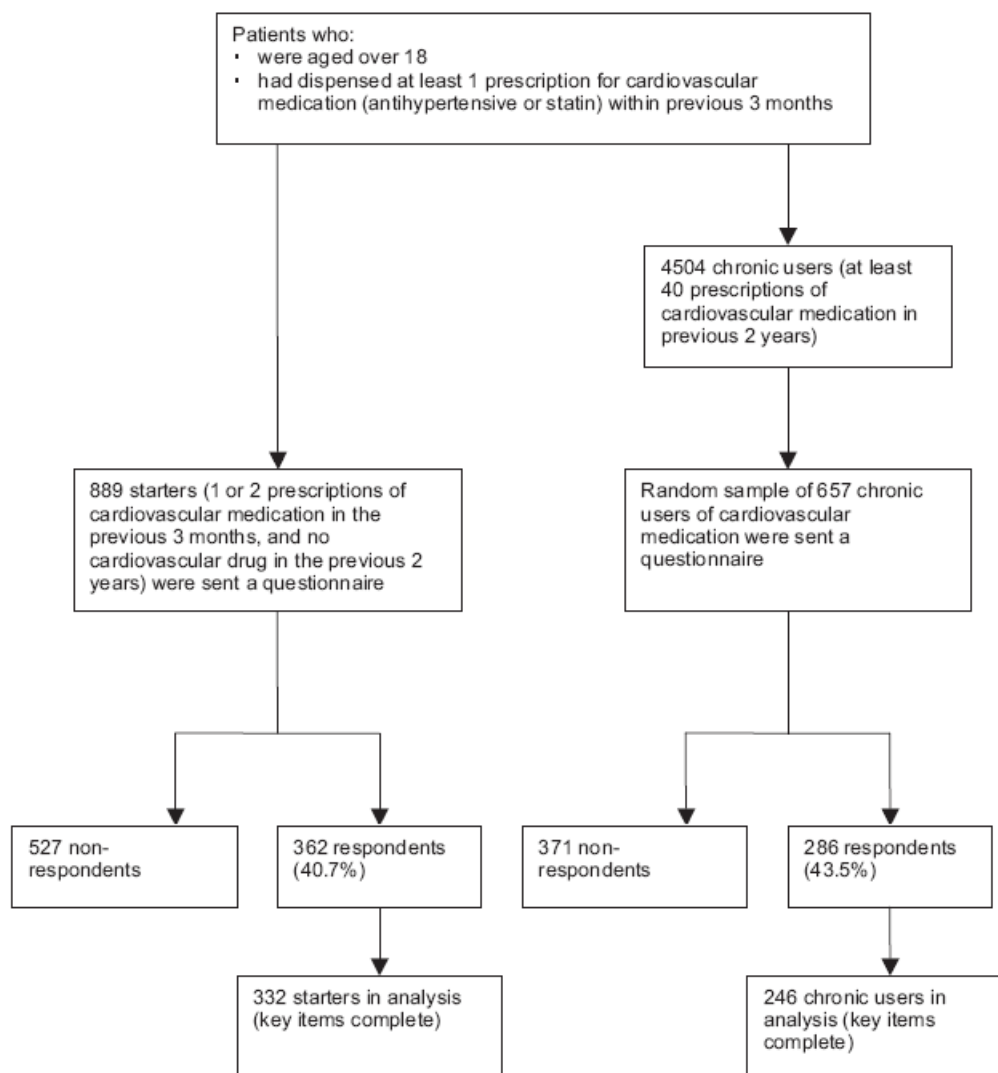


Fig. 1. Flowchart showing selection and response of the study participants: new users and chronic users of cardiovascular medication.

**Table 1**

**Table 1**  
Sociodemographic, health and medication characteristics of responding patients.

	% (n) n = 578
<i>Sociodemographic<sup>a</sup></i>	
Female gender	47.6 (275)
<i>Age</i>	
18–50	15.1 (87)
51–60	27.9 (161)
61–70	32.4 (187)
>71	24.7 (143)
<i>Educational level<sup>c</sup></i>	
None/primary school	38.5 (218)
Secondary school	41.0 (232)
College/university	20.5 (116)
Non-western background	4.9 (28)
<i>Health<sup>a</sup></i>	
<i>Cardiovascular diseases<sup>d</sup></i>	
Hypertension	67.3 (379)
High blood cholesterol	43.5 (245)
Diabetes	23.6 (133)
Obesity	9.9 (56)
None of these	12.4 (70)
<i>Body mass index</i>	
Underweight (<18.5)	0.4 (2)
Normal range (18.5–25)	32.4 (183)
Overweight (25–30)	43.6 (246)
Obese (≥30)	23.6 (133)
<i>Smoking behavior</i>	
Current smoker	16.0 (92)
Ex-smoker	50.2 (289)
Never smoked	33.9 (195)
<i>Medication use<sup>b</sup></i>	
Antihypertensives	84.6 (489)
Statins	50.2 (290)
Antithrombotics	33.9 (196)
Antidiabetics	19.0 (110)
Benzodiazepines	9.3 (54)
Antidepressants	8.8 (51)

<sup>a</sup> Sociodemographic and health characteristics were obtained through the questionnaire.

<sup>b</sup> Medication use variables were extracted from the pharmacy dispensing records.

<sup>c</sup> Numbers do not total 578 for each item, because some patients did not complete all questions.

<sup>d</sup> Numbers exceed 578 as patients could indicate more than one disease.

**Table 2**

Table 2  
Characteristics associated with patients' satisfaction with information received on cardiovascular medication.

	Satisfied with information received <sup>a</sup> (SIMS > 12) n = 243 (42.0%)	Unsatisfied with information received <sup>a</sup> (SIMS ≤ 12) n = 335 (58.0%)	Crude OR <sup>b</sup> (95% CI)	Adjusted OR <sup>b,c</sup> (95% CI)
<i>Sociodemographic</i>				
Female gender	50.6% (123)	45.4% (152)	0.81 (0.58–1.13)	
<i>Age</i>				
<50	16.0% (39)	14.3% (48)	1.40 (0.82–2.38)	1.21 (0.67–2.20)
51–60	25.9% (63)	29.3% (98)	1.76 (1.12–2.78)	1.83 (1.11–3.02)
61–70	26.7% (65)	36.4% (122)	2.13 (1.36–3.32)	2.07 (1.27–3.36)
>71	31.3% (76)	20.0% (67)	Ref	Ref
<i>Educational level</i>				
None/primary school	42.8% (101)	35.5% (117)	Ref	
Secondary school	39.0% (92)	42.4% (140)	1.31 (0.90–1.91)	
College/university	18.2% (43)	22.1% (73)	1.47 (0.92–2.32)	
Non-western background	5.0% (12)	4.8% (16)	0.96 (0.45–2.07)	
<i>Health</i>				
<i>Body mass index</i>				
Underweight (<18.5)	3.4% (8)	1.8% (6)	0.50 (0.16–1.49)	
Normal range (18.5–25)	28.7% (68)	31.5% (103)	Ref	
Overweight (25–30)	42.6% (101)	44.3% (145)	0.95 (0.64–1.41)	
Obese (≥30)	25.3% (60)	22.3% (73)	0.80 (0.51–1.27)	
<i>Smoking behavior</i>				
Current smoker	14.4% (35)	17.1% (57)	1.37 (0.82–2.27)	
Ex-smoker	49.0% (119)	51.1% (170)	1.20 (0.83–1.73)	
Never smoked	36.6% (89)	31.8% (106)	Ref	
<i>Medication beliefs</i>				
<i>BMQ-belief groups<sup>d</sup></i>				
Accepting	26.7% (62)	16.2% (52)	Ref	Ref
Ambivalent	28.9% (67)	27.1% (87)	1.55 (0.95–2.52)	1.69 (1.02–2.81)
Sceptical	13.8% (32)	25.9% (83)	3.09 (1.78–5.36)	2.86 (1.60–5.08)
Indifferent	30.6% (71)	30.8% (99)	1.66 (1.03–2.68)	1.67 (1.00–2.78)
<i>Medication use</i>				
New users of cardiovascular medication (vs. chronic users)	51.4% (125)	61.8% (207)	1.53 (1.09–2.13)	1.53 (1.02–2.28)
Antithrombotic users	29.6% (72)	37.0% (124)	1.40 (0.98–1.99)	1.81 (1.21–2.71)
Antihypertensive users	86.8% (211)	83.0% (278)	0.74 (0.46–1.18)	
Statin users	52.7% (128)	48.4% (162)	0.84 (0.60–1.17)	
Antidiabetic users	21.4% (52)	17.3% (58)	0.77 (0.51–1.17)	
Benzodiazepine users	10.3% (25)	8.7% (29)	0.83 (0.47–1.45)	
Antidepressant users	11.9% (29)	6.6% (22)	0.52 (0.29–0.93)	0.53 (0.29–0.97)

<sup>a</sup> SIMS score >12: patients satisfied with information received. SIMS score ≤12: patients unsatisfied with information received.

<sup>b</sup> OR >1: patient group more likely to be unsatisfied with the information received compared to reference group. OR <1: patient group more likely to be satisfied with the information received compared to reference group.

<sup>c</sup> Model included covariates significant in the univariate analysis at a p-value less than 0.1, including gender.

<sup>d</sup> BMQ-belief groups: accepting (high necessity: >16, low concerns: ≤13), ambivalent (high necessity: >16, high concerns: >13), sceptical (low necessity: ≤16, high concerns: >13), indifferent (low necessity: ≤16, low concerns: ≤13).

**Table 3**

Table 3  
Frequency of counseling on cardiovascular medication at the pharmacy (n = 578).<sup>a</sup>

	Never % (n)	Sometimes % (n)	Often % (n)	Always % (n)
Did pharmacy staff ask for your experiences with your cardiovascular medication? (n = 552)	69.2 (382)	19.9 (110)	5.8 (32)	5.1 (28)
Did pharmacy staff ask whether you experienced side effects of your cardiovascular medication? (n = 550)	77.6 (427)	15.1 (83)	4.4 (24)	2.9 (16)
Did pharmacy staff think along with you to find a solution when experiencing side effects? (n = 499)	64.9 (324)	15.4 (77)	8.4 (42)	11.2 (56)
Was pharmacy staff well acquainted with the medicines you were using? (n = 529)	7.8 (41)	11.0 (58)	18.5 (98)	62.8 (332)
Did pharmacy staff ask whether you used over-the-counter medicines along with your prescription medication? (n = 543)	75.1 (408)	12.5 (68)	5.5 (30)	6.8 (37)
Did you receive adequate individual counseling at the pharmacy? (n = 538)	25.5 (137)	28.4 (153)	21.6 (116)	24.5 (132)
Did you have the opportunity to ask all your questions at the pharmacy? (n = 540)	12.8 (69)	16.5 (89)	20.7 (112)	50.0 (270)
Did pharmacy staff ask whether you managed to take your medicines according to prescription? (n = 547)	68.6 (375)	15.7 (86)	6.0 (33)	9.7 (53)

<sup>a</sup> Numbers do not total 578 for each item, because some patients did not complete all questions.