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Patients address more with their pharmacist than medication related problems

A video observation study of clinical medication reviews

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Chapter 05

ABSTRACT

Aims. The goal of clinical medication reviews (CMRs) is to optimize medication use. Patients with diabetes are likely to benefit from a CMR as they often have complex medication regimens. The contributions patients make during a CMR remain largely unknown. This study aims to describe the problems addressed by patients during CMRs and the pharmacists' response behaviour to these problems.

Methods. We conducted a cross-sectional video observation study of CMRs between patients with diabetes and pharmacists. We developed a coding scheme to analyse problems presented by patients as well as for the pharmacists' responses to it. Analysis was independently performed by two researchers. Disagreements were discussed to reach consensus.

Results. 1,299 problems were categorized in 68 CMRs conducted by 40 pharmacists. We identified five main themes; physical complaints (n = 550), medication-related problems (n = 373), psychological complaints (n = 293), experiences with healthcare (n = 52) and lifestyle (n = 31). The responses of pharmacists were mainly non-explicitly providing space for patients to further disclose their problems. Our results suggest that pharmacists more often provide information and advice to patients in reply to medication related problems compared to physical or psychological complaints.

Conclusion. Patients share a variety of topics with their pharmacist during a patient interview. Although pharmacists' responses are mainly non-explicit, these results show pharmacists are acknowledged by patients as trusted healthcare providers. Future research should focus on enabling pharmacists to better respond to topics indirectly related to medication to make patient interviews more efficient.

INTRODUCTION

The goal of a clinical medication review (CMR) is to evaluate the appropriateness of medication therapy and patients' experiences with medication therapy to optimize medication use.[1,2] Patients with complex medication schemes, polypharmacy and multimorbidity are likely to benefit the most from CMRs.[3–8] Therefore, patients with diabetes are often eligible for a CMR as the aforementioned characteristics are common among this patient population and adequate treatment of diabetes decreases the risk of complications, mortality and lower quality of life. [7–17] Also glucose metabolism changes over the course of a patient's life, requiring adaptations in the medication regimen of patients with diabetes.[18] Making a CMR even more valuable for patients with diabetes in addition to their regular diabetes care.

A CMR is a multidisciplinary effort between patient, pharmacist and physician.[1,19] The process of a CMR can be divided into three stages; (1) data gathering, (2) evaluation of the data and (3) implementation of agreed interventions.[19] The core of a CMR is the data gathering stage, data from both the patient's medical record and personal patient data are collected. Especially personal patient data is important, as the success of a therapy strongly depends on patient's behaviour. [20] Patient information is obtained through a patient interview, which is often conducted by the pharmacist for its acknowledged added value to explore medication related problems.[19,21] During this patient interview, patients can share their experiences with their medication therapy and address their problems. However, previous research has shown that patients are often vague and not using clear verbalisation when expressing problems.[22] These vague expressions need to be further explored by the pharmacist to capture the underlying problem, though the majority of pharmacists' responses are non-explicitly referring to the patient's problem.[22] This response behaviour of pharmacists might influence the level of understanding of patients' problems and the amount of information shared by patients during the data gathering stage of a CMR.

Studies focusing on the role of patients during a CMR are limited and mainly address patients' experiences with a CMR and their level of active participation in a CMR.[23–27] Active patient participation is important for identifying medication related problems. Due to the complex nature of diabetes treatment, it is to be expected that patients with diabetes may have many problems and concerns beyond their diabetes medication. But so far, little is known about the kind of problems – medication related or not – addressed by patients and the responses of pharmacists. [26,27] Therefore the aims of our study are: (1) to describe the problems addressed by patients with diabetes during a CMR and (2) the pharmacists' response to these problems.

METHODS

Study design and data source

This study is part of a larger cross-sectional video observation study exploring patient-pharmacist communication in diabetes care. Video observations of the communication between patient and pharmacist were made during a patient interview as part of a clinical medication review (CMR). Interviews took place either in a private consultation area in the pharmacy or at the patient's home. In the first study we focused on the communication style of pharmacists and their responses to patients' problems.[22] In the current study we focus on describing the kind of problems addressed by patients – are they related to medication or to something else – and the response behaviour of the pharmacists to different kind of problems. Data collection took place between June-October 2018.

Participants

Pharmacists enrolled in the post-graduated education program (ApIOS program) to become a registered community pharmacist participated in this study as part of the program curriculum.[28] Pharmacists invited patients eligible for a CMR according to the guidelines set by the Royal Dutch Pharmacists Association.[29] The patient selection was made in collaboration with the general practitioner (GP) and the patient interview was conducted by the pharmacist. We investigated the patient interview step of the CMR, and not the other steps of the CMR. Patients received a patient information sheet with all the necessary information regarding the study and were given the opportunity to ask for further information from either their pharmacist or one of the researchers (LVE). For this study we have selected CMRs with patients with diabetes.

Data collection

Patients' problems were defined as expressions of negative emotions. Negative emotions addressed by patients and pharmacists' responses during the CMR were coded according to the Verona Coding Definitions of Emotional Sequences (VR-CoDES) and the Verona Coding Definitions of Emotional Sequences – Provider Responses (VR-CoDES-P).[30] The full description of coding negative emotions and pharmacists' responses in our patient interviews has been published elsewhere.[22] We referred to a concern if the negative emotion was clearly and unambiguously expressed as unpleasant, whereas a cue was referred to if the negative emotion was a verbal or non-verbal hint suggesting an unpleasant emotion which needs clarification from the healthcare provider.[30,31] The pharmacists' responses were coded according to the VR-CoDES-P for explicitness and whether or not they provided space for the patient for further disclosure of their

negative emotion. A response was considered explicit if the pharmacist included specific words or elements the negative emotions referred to. The four main types of pharmacist responses were; (1) explicit providing space, (2) explicit reducing space, (3) non-explicit providing space and (4) non-explicit reducing space.[30,32]

Information on demographic data – both patients and pharmacists – were collected through surveys. In addition, pharmacists received a questionnaire about the interviewed patients to provide information on inclusion reason, medication and morbidities. Also, pharmacists were asked to provide information about the number of patients invited and reasons for patients to decline participation.

Analyses

A coding scheme to analyse patients' problems addressed while expressing negative emotions was developed based on previous studies describing the topics of patient-pharmacist communication and complemented with themes emerging from the interviews.[33,34] We developed an approach using main- and sub-themes to categorize the problems. The coding scheme was developed by LvE, NB and MM and discussed with KT and LvD. All problems were transcribed verbatim and independently categorized by LvE and NB. LvE and NB assessed each other's categorization and any disagreements were discussed to reach consensus.

Data from both patients' and pharmacists' surveys were processed with Stata SE 15.0. Calculating the number of chronic comorbidities was based on the list of 109 chronic comorbidities provided by the Dutch Government (Appendix, Table 1).[35] Number of chronic medications used was calculated based on the ATC/DDD Index and the assumption of chronic use (Appendix, Table 2).[36]

Ethical statement and privacy

This study has been registered in the University Medical Centre Groningen Research Register with study number 201800271. The study was not subject to the Medical Research Involving Human Subjects Act and was assessed as such by the medical ethical committee of the University Medical Centre Groningen in Groningen, The Netherlands. All patients received information about the study and were given the opportunity to request additional information. Patients signed informed consent on the day of the interview and remained the rights to withdraw from the study at any moment in time by completing a withdrawal form. All research material was provided with a study ID and stored on a secured server of the University of Groningen. Study data were only available to the primary researchers.

RESULTS

Overall, 68 CMR interviews were performed with patients with diabetes. 66 patients were diagnosed with diabetes type 2 and two were diagnosed with diabetes type 1. These interviews were conducted by 40 pharmacists with an average age of 30.2 (SD 5.5) years and a working experience of 2.2 (SD 1.3) years (Table 1). The included patients had an average age of 74.0 (SD 8.9) years and 60% was female. Patients had on average 3.0 (SD 1.2) chronic comorbidities besides diabetes, with hypertension (75%) being the most common. They used on average 9.5 (SD 3.3) different chronic medications. (Table 1) Patient interviews took on average 34.2 (SD 14.3) minutes. During the patient interviews an average number of 19.1 (SD 13.9) problems were presented by patients.

In total, we categorized 1,299 problems into five main themes and 32 sub-themes. (Figure 1) The main themes were physical complaints (n = 550), medication-related problems (n = 373), psychological complaints (n = 293), experience with healthcare (n = 52), and lifestyle (n = 31). Definitions of each category are listed in Appendix Table 3. Three-quarters of all problems were elicited by the patients during the patient interview. (Table 2)

Physical complaints

Physical complaints were most commonly addressed (42% of all problems). All but three patients made at least one physical complaint during the interview. The major subthemes were movement and balance (n = 126), pain (n = 82), sleep and fatigue (n = 62), and problems related to the cardiovascular system (n = 52). Many patients (65%) reported having difficulty to walk on a daily basis, stiffness of joints, being afraid to fall and losing balance and losing muscle strength. Pain was mentioned by 59% of the patients and could be related to any kind of pain a patient experienced. Sleep and fatigue were only a little less common (50%) and included complaints about both having difficulty to fall asleep, waking up too early and having the feeling to wake up tired. Almost half (46%) of the patients made at least one complaint related to cardiovascular problems, including shortness of breath, chest pain and orthostatic hypotension.

Table 1: Characteristics pharmacists and patients

Characteristic	
Pharmacists	
N	40
Female	73%
Age	30.2 yrs SD 5.5
Work experience	2.2 yrs SD 1.3
Patients	
N	68
Female	62%
Age	74.0 SD 8.9
Education(48)	
Low	60%
Middle	16%
High	16%
Missing	7%
Reason CMR*	
Criteria guideline/healthcare insurer	62%
Medication related	29%
Patient characteristics	26%
Other (diabetes, request patient, request doctor)	31%
Chronic comorbidities per patient	3.0 SD 1.2
Top 5 Comorbidities	
Hypertension	75%
Ischemic heart disease	18%
Angina pectoris	13%
COPD	12%
Gout	10%
Chronic medications per patient	9.5 SD 3.3
Total number of chronic prescriptions	643
Top 5 ATC groups**	
C10 Lipid modifying agents	81%
A10B Blood glucose lowering drugs excl. insulins	76%
B01A Antithrombotic agents	71%
C09 Agents acting on the renin-angiotensin system	71%
A02BC Proton pump inhibitors	65%
Duration patient interview (min)	34.2 SD 14.3
Number of problems per CMR	19.1 SD 13.9
% problems directly related to medication	29% (0-92%)

*More than one reason could be reported for patients to be invited for a CMR, **% of patients receiving a prescription from a particular ATC group

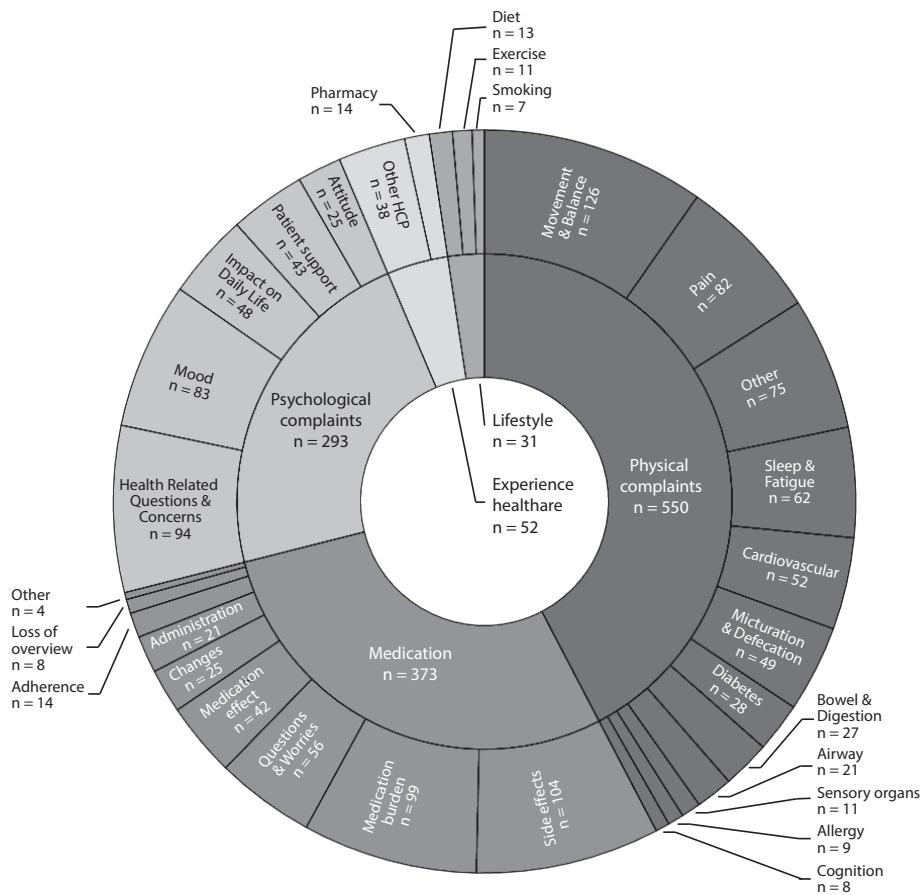


Figure 1: Classification of problems

Table 2: Elicitation of problems

	Physical complaints, n=550	Medication, n=373	Lifestyle, n=31	Psychological complaints, n=293	Experiences in healthcare, n=52	Overall, n=1,299
Pharmacist	33%	20%	29%	22%	2%	26%
Patient	67%	80%	71%	78%	98%	74%

Medication

In total 373 problems directly addressed medication, reflecting on average 29% of all problems expressed. During 90% of all patient interviews at least one medication-related problem was presented. The largest sub-theme was side effects with 104 problems expressed by 57% of the patients. Second was medication burden, which was expressed 99 times as a problem (65% of the patients). This included patients' having the feeling life depended on medication or their life was being controlled by medication. Also, patients had worries regarding their medication (n = 56) and had questions about the effects of medication (n = 42). Only a minority of the medication-related problems were about medication adherence (n = 21).

Psychological complaints

Patients often addressed psychological complaints (n = 293). 88% of the patients made at least one psychological complaint. Most of these complaints were related to questions and worries about their health in general (n = 94) and about their mood (n = 83). Patients also addressed the impact of disease and medication use on their daily life, how they had to fit it in or still have problems with. The category patient support included all problems addressing support from the patients' environment. Patients addressed the feeling of dependence towards others and the burden they sometimes felt when having to ask for help. Patients' attitude towards medication and medical therapy in general was considered in a minority of problems (n = 25).

Experience in healthcare

52 problems were about patients' experiences with healthcare, either in the GP practice or at the pharmacy. Almost all of these problems were initiated by the patient, only 2% was initiated by the pharmacist. (Table 2) 40% of the patients shared a negative experience in either the pharmacy (n = 14) or with another healthcare provider (n = 38).

Lifestyle

Lifestyle was the least discussed during patient interviews (n = 31). Only 29% of patients addressed a lifestyle problem at least once. Patients expressed problems related to diet (n = 13), exercise (n = 11) and smoking (n = 7).

Pharmacists' responses to patients' problems

Overall, the main response of pharmacists was providing space to the patient for further disclosure of their problem, either in a non-explicit (56%) or an explicit (18%) way. (Table 3) A minority of the responses was reducing space for the patient for further disclosure. When looking at the

different problems one can see that reducing space responses were more common if patients discussed medication-related problems. The category of reducing space responses also included information and advice giving. 47% of the reducing space answers to medication-related problems were related to information and advice giving, this was 35% and 30% for physiological complaints and psychological complaints, respectively. Overall, 39% of the reducing space responses were related to information and advice giving.

Table 3: Pharmacists' responses to patients' problems

	Physical complaints, n=550	Medication, n=373	Lifestyle, n=31	Psychological complaints, n=293	Experiences in healthcare, n=52	Overall, n=1,299
Explicit providing	22%	17%	26%	14%	6%	18%
Explicit reducing	6%	10%	6%	7%	6%	7%
Non-explicit providing	57%	51%	53%	59%	68%	56%
Non-explicit reducing	15%	23%	15%	20%	21%	18%

DISCUSSION

Summary

Only 28% of the problems presented by patients during a CMR related patient interview are medication-related. The majority of problems are related to physical- and psychological complaints, presenting a broader scope of patients' general well-being and health. The responses of the pharmacists are mainly providing space for patients to further disclose their problems. Our results also suggest that pharmacists provide information or advice to patients more often in reply to medication-related problems compared to responses to physical- and psychological problems.

Although no previous studies were conducted to assess problems discussed during a CMR related patient interview, a comparable pattern of problems addressed by patients was seen during private consultations with pharmacist prescribers. In a study by Riley et al, 23% of the addressed problems was about medication and the majority was about physical complaints (46%).[37] This indicates that patients feel comfortable sharing all kinds of health related information with their pharmacist. This also reflects the fact that patients initiated the majority of the discussed

problems, in contrast to previous post-discharge pharmacists home visit observations where pharmacists had to take the lead in starting the discussion.[33] However, recently hospitalized patients might be more vulnerable and less assertive in a pharmacist consultation.

The results of our study show that patients with diabetes want to discuss many different issues outside medication related issues during a patient interview with their pharmacist. This might have been a result of the non-explicit, providing space responses of the pharmacist, encouraging patients to continue sharing problems. The variety of problems introduced by patients can make it more difficult for pharmacists to structure the consultation. Structuring consultations has been proven not to be a pharmacist's strongest asset.[38] Also the impact of communication behaviour between patients and pharmacists on the quality of the consultation and on the patient-provider relationship is unknown.[39]

Two topics that were hardly discussed during the patient interviews were medication adherence and lifestyle. Both of these health behaviours are important for diabetes control.[8,40,41] However, adherence and adapting a healthy lifestyle are often perceived challenging by patients.[42,43] Patients might not introduce these topics themselves because they might feel like failing as they cannot adopt a particular behaviour. This knowledge should serve as a trigger for pharmacists to discuss adherence and lifestyle on their initiative. Pharmacists have already proven their added value in intervention supporting both adherence and lifestyle changes in this particular patient population.[44–46]

Patients willing to share such a variety of problems with their pharmacist shows that pharmacists have picked up the role of trusted healthcare provider in primary care. The information indirectly related to medication can help pharmacists to put patients' medication related problems into a broader perspective. This could be beneficial for developing adequate adjustments to the medication therapy. However, the balance between problems directly and indirectly related to medication use should not be distorted to ensure effective and sufficient CMR related patient interviews. A way for pharmacists to deal with the many problems shared by patients is to use goal setting in collaboration with the patient. Goal setting is an easy way to determine what the most important problems are for patients for which action is needed.[47]

Strengths & limitations

This is the first study to examine what kind of problems patients with diabetes address during a CMR related patient interview with the pharmacist. We have used video recordings to describe the problems and were therefore able to adequately categorize all problems.

However, this study does not come without its limitations. We have categorized all problems addressed by patients during a patient interview. We have not looked at unique problems, so

some patients might have repeatedly addressed the same problem. This could either be because it was very important to the patient or because the patient had the feeling the pharmacist did not adequately respond and tried to draw his attention by reintroducing the same problem. This may have led to an over estimation of some kind of problems. But, this is the first study to describe problems patients with diabetes actually discuss with their pharmacist during a CMR related patient interview making this a minor limitation of the study. We only investigated the pharmacist-patient interview and not the other steps of the CMR. Therefore, we do not know for which presented problems interventions were suggested, how many interventions were suggested and the kind the problems that were solved eventually.

Implications for practice

Our study shows that patients share more than just medication-related problems during a CMR related patient interview showing pharmacists are acknowledged by patients as trusted healthcare providers. Pharmacists often respond non-explicitly to patients' problems, giving patients a lot of space for further disclosure and to address other problems. This might lead to less effective and less efficient patient interviews. It also addresses the fact pharmacists have to familiarize themselves more with problems indirectly related to medication. Pharmacists should also take upon a more active role in patient interviews by explicitly asking about health behaviour such as adherence and lifestyle, as these subjects are important for diabetes control and currently underserved in patient interviews.

Further research should focus on equipping pharmacists with better communication skills and guidance for how to deal with problems indirectly related to medications to make CMR related patient interviews more efficient and to further optimize patients' medication use.

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APPENDIX

Appendix Table 1: ATC groups chronic medication[1]

ATC	Description
A02A	Antacids
A02BA	H2-receptor antagonists
A02BC	Proton pump inhibitors
A06A	Drugs for constipation
A09A	Digestives incl. enzymes
A10A	Insulins and analogues
A10B	Blood glucose lowering drugs, excl. insulins
A11	Vitamins
A12	Mineral supplements
B01A	Antithrombotic agents
C01	Cardiac therapy
C02	Antihypertensives
C03	Diuretics
C04	Peripheral vasodilators
C07	Beta-blocking agents
C08	Calcium channel blockers
C09	Agents acting on the renin-angiotensin system
C10	Lipid modifying agents
G04	Urologicals
H03	Thyroid therapy
M01	Anti-inflammatory and antirheumatic products
M05	Drugs for treatment of bone disease
N02A	Opioids
N02B	Other analgesics and antipyretics
N03A	Antiepileptics
N04	Antiparkinson
N05A	Antipsychotics
N05B	Anxiolytics
N05C	Hypnotics and sedatives
N06A	Antidepressants
R01	Nasal preparations
R03	Drugs for obstructive airway diseases

Appendix Table 2: ICPC chronic diseases.[2]

ICPC (International Classification of Primary Care)	Description
A28	Limited function/ disability NOS
A79	Malignancy NOS
A90	Congenital anomaly NOS/multiple
B28	Limited function/disability blood/lymph
B72	Hodgkin's disease/lymphomas
B73	Leukaemia
B74	Malignant neoplasm blood, other
B78	Hereditary haemolytic anaemias
B79	Congenital anomaly blood/lymph, other
B83	Purpura/coagulation defects
B90	HIV-infection, AIDS
D28	Limited function/disability digestive
D74	Malignant neoplasm stomach
D75	Malignant neoplasm colon/rectum
D76	Malignant neoplasm pancreas
D77	Malignant neoplasm digestive, other/NOS
D81	Congenital anomaly digestive
D92	Diverticular disease
D94	Chronic enteritis/ulcerative colitis
D97	Liver disease NOS
F28	Limited function/disability eye
F81	Congenital anomaly eye, other
F83	Retinopathy
F84	Macular degeneration
F91	Refractive error
F93	Glaucoma
F94	Blindness
H28	Limited function/disability ear
H80	Congenital anomaly of ear
H83	Otosclerosis
H84	Presbycusis
H85	Acoustic trauma
H86	Deafness
K28	Limited function/disability cardiovascular

Appendix Table 2: Continued.

ICPC (International Classification of Primary Care)	Description
K73	Congenital anomaly, cardiovascular
K74	Ischaemic heart disease with angina
K76	Ischaemic heart disease without angina
K77	Heart failure
K82	Pulmonary heart disease
K86	Hypertension, uncomplicated
K87	Hypertension, complicated
K90	Stroke/cerebrovascular accident
K91	Cerebrovascular disease
K92	Atherosclerosis/peripheral vascular disease
L28	Limited function/disability musculoskeletal
L82	Congenital anomaly musculoskeletal
L84	Back syndrome without radiating pain
L85	Acquired deformity of spine
L88	Rheumatoid arthritis
L89	Osteoarthritis of hip
L90	Osteoarthritis of knee
L91	Osteoarthritis, other
L95	Osteoporosis
L98	Acquired deformity of limb
N28	Limited function/disability neurological
N70	Poliomyelitis
N74	Malignant neoplasm nervous system
N85	Congenital anomaly neurological
N86	Multiple sclerosis
N87	Parkinsonism
N88	Epilepsy
P28	Limited function/disability psychological
P70	Dementia
P72	Schizophrenia
R79	Chronic bronchitis
P80	Personality disorder
P85	Mental retardation
R28	Limited function/disability respiratory

Appendix Table 2: Continued.

ICPC (International Classification of Primary Care)	Description
R84	Malignant neoplasm bronchus, lung
R85	Malignant neoplasm respiratory, other
R89	Congenital anomaly, respiratory
R95	Chronic obstructive pulmonary disease
R96	Asthma
S28	Limited function/disability skin
S77	Malignant neoplasm of skin
S81	Haemangioma/lymphangioma
S83	Congenital anomaly skin, other
S87	Dermatitis, atopic eczema
S91	Psoriasis
T28	Limited function/disability endocrine/metabolic
T71	Malignant neoplasm thyroid
T78	Thyroglossal duct/cyst
T80	Congenital anomaly endocrine/metabolic
T81	Goitre
T86	Hypothyroidism/myxoedema
T90	Diabetes mellitus
T92	Gout
T93	Lipid disorder
U28	Limited function/disability urinary
U75	Malignant neoplasm kidney
U76	Malignant neoplasm bladder
U77	Malignant neoplasm, urinary, other
U85	Congenital anomaly urinary tract
U88	Glomerulonephritis/nephrosis
W28	Limited function/disability pregnancy
W72	Malignant neoplasm related to pregnancy
W76	Congenital anomaly complicating pregnancy
X28	Limited function/disability genital, female
X75	Malignant neoplasm cervix
X76	Malignant neoplasm breast
X77	Malignant neoplasm genital, other
X83	Congenital anomaly genital female

Appendix Table 2: Continued.

ICPC (International Classification of Primary Care)	Description
X88	Fibrocystic disease breast
Y28	Limited function/disability genital, male
Y77	Malignant neoplasm prostate
Y78	Malignant neoplasm genital, other, male
Y82	Hypospadias
Y84	Congenital anomaly male genital, other
Z28	Social handicap

Table 3: Classification topics in negative emotions.

	Category	Definition
1.	Physical complaints	
1.1	Diabetes	Complaints and questions directly related to the physical aspects of diabetes, including; uncontrolled diabetes, general complaints about diabetes.
1.2	Pain	Complaints regarding any type of pain.
1.3	Micturation & defecation	Complaints and questions related to micturation and defecation. Including urinary infections, diarrhoea and obstipation.
1.4	Movement & balance	Complaints and questions related to movement and balance, including problems related to rheumatoid arthritis, falling, difficulty with walking, muscle related problems, cramps.
1.5	Cognitive problems	Complaints and questions regarding patient's cognitive functioning.
1.6	Airway problems	Complaints and questions related to airway and lungs, including COPD, asthma, shortness of breath without cardiovascular background. Does not include dry mouth and tickling cough.
1.8	Cardiovascular problems	Complaints and questions related to cardiovascular system, including shortness of breath during physical exercise, hypertension, hypotension, oedema and palpitations.
1.9	Allergies	Complaints and questions related to allergy, including hay fever, food allergies, contact allergies. Does not include allergies to medication, these are coded in "2.1 side effects".
1.11	Bowel & digestion problems	Complaints and questions related to nausea, stomach problems, problems with appetite. Does not include diarrhoea and obstipation.
1.12	Sleep & fatigue	Complaints and questions related to sleep and fatigue, including falling asleep, frequently waking up, sleeplessness, feeling tired in the morning.
1.13	Sensory organs	Complaints and questions related to sensory organs; eyes, nose, ears, skin, tongue.
1.99	Other	All other physical complaints and questions not listed in the above categories, including; hair loss, weight problems, bruises, etc.
2.	Medication	
2.1	Side effects	Side effects reported as such by patients.
2.2	Administration problems	Complaints related to the administration of medications.
2.3	Medication changes	Complaints related to changes in medication, including switches between brands of medications, switching to generics, starting/stopping medication without prior notification.
2.4	Loss of overview	Complaints related to loss of overview of medication.
2.5	Medication effects	Complaints related to the effect of medication and necessity of medication as experienced by patients.

Table 3: Continued.

	Category	Definition
2.6	Medication burden	Complaints related to the burden of medication experienced by patients. Including the feeling of dependence on the medication therapy.
2.7	Medication related questions and worries	Medication related questions and worries.
2.8	Medication adherence	Complaints and problems with medication adherence.
2.9	Medication logistics	Complaints related to the logistics of medication, including ordering and picking up refill prescriptions and stock and delivery problems of medications.
2.99	Other	All other complaints related to medication not listed in the above categories.
3.	Lifestyle	
3.1	Exercise	Complaints and questions related to exercise without a clear physical cause. Including, dislike of exercise in general, patient's feeling of exercising to little, necessity of exercise for healthy lifestyle.
3.2	Diet	Complaints and questions related to diet, including alcohol.
3.3	Smoking	Complaints and questions about smoking.
4.	Psychological complaints	
4.1	Health related questions and concerns	General worries and questions related to patient's health and therapy, including feeling of despair "I don't know what to do with...".
4.2	Patient support	Complaints and questions related to patient's support from environment affecting how patients deal with their morbidities and therapy. Including, social isolation, disease and death loved ones, dependence, loneliness, worries about loved ones.
4.3	Mood	Complaints and expressions of mood in a negative way, including depression, feeling down, sad, anxious, insecure, etc.
4.4	Impact disease on daily life	Complaints and expression related to the negative impact of disease/ morbidities/ therapy on daily life. Including learning how to cope with situation.
4.5	Attitude	Complaints and expressions of patient's attitude towards disease and its therapy.
5.	Experiences in healthcare	
5.1	Negative experience pharmacy	Complaints and expressions of negative experiences in the pharmacy.
5.2	Negative experience other HCP	Complaints and expressions of negative experiences with health care providers other than in the pharmacy.

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