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ORIGINAL ARTICLE

Psychological and social problems in primary care patients - general practitioners' assessment and classification

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Abstract

Objective. To estimate the frequency of psychological and social classification codes employed by general practitioners (GPs) and to explore the extent to which GPs ascribed health problems to biomedical, psychological, or social factors. **Design.** A cross-sectional survey based on questionnaire data from GPs. **Setting.** Danish primary care. **Subjects.** 387 GPs and their face-to-face contacts with 5543 patients. **Main outcome measures.** GPs registered consecutive patients on registration forms including reason for encounter, diagnostic classification of main problem, and a GP assessment of biomedical, psychological, and social factors' influence on the contact. **Results.** The GP-stated reasons for encounter largely overlapped with their classification of the managed problem. Using the International Classification of Primary Care (ICPC-2-R), GPs classified 600 (11%) patients with psychological problems and 30 (0.5%) with social problems. Both codes for problems/complaints and specific disorders were used as the GP's diagnostic classification of the main problem. Two problems (depression and acute stress reaction/adjustment disorder) accounted for 51% of all psychological classifications made. GPs generally emphasized biomedical aspects of the contacts. Psychological aspects were given greater importance in follow-up consultations than in first-episode consultations, whereas social factors were rarely seen as essential to the consultation. **Conclusion.** Psychological problems are frequently seen and managed in primary care and most are classified within a few diagnostic categories. Social matters are rarely considered or classified.

Key Words: *Classification, Denmark, diagnosis, general practice, ICPC, mental disorders, primary health care, social problems*

Introduction

Our knowledge concerning general practitioners' (GPs') classification of psychological and social problems in routine care is limited and there is a need for empirical studies of classification in primary care to guide quality improvement in clinical practice and the ongoing revisions of the international classification systems of mental disorders [1–4].

Classification of problems and disorders differs significantly between primary and secondary care. Primary care manages starting-point problems and sub-threshold disorders as well as specific diseases, whereas secondary care classifications deal with end-point diagnoses [5,6].

The International Classification of Primary Care (ICPC) included in the WHO family of international classifications has been widely implemented in

primary care [7,8]. In order to be inclusive and to make classification categories applicable to all primary care settings, the ICPC minimizes the number of categories (currently 686 rubrics) and gives the same emphasis to classification of problems/complaints as to specific disorders [6,9]. According to the principles of the ICPC, a rubric is assigned when a disorder has a prevalence of at least one per thousand.

However, classification systems also need to be sufficiently specific to guide optimal treatment and quality improvement initiatives. Furthermore, patient care may involve specialized care, and precise communication of diagnoses across sectorial interfaces is essential. These issues raise an important question of the prevalence and clinical importance of classification categories applied in primary and secondary care.

Knowledge about general practitioners' (GPs') assessment and classification of psychological and social problems in routine care is limited.

- GPs managed psychological problems as the main problem in 11% of their patient contacts; depression and acute stress reaction/adjustment disorder accounted for half of these.
- Only 18 of 43 psychological codes in the mental health chapter of the International Classification of Primary Care were applied in more than one per one thousand patients.
- Social problems were classified in only 0.5% of the patients and social matters were rarely seen as important according to the GPs' assessments of contributing factors.

Aims of the study

The study aimed to estimate the frequency of psychosocial problems as the patient's reason for encounter and as the concluding diagnostic categories employed by GPs. Furthermore, the study explored the extent to which GPs ascribed health problems to biomedical, psychological, or social factors.

Material and methods

The present cross-sectional study draws its data from a survey of the activity in Danish general practice conducted from December 2008 to December 2009 [10]. All 871 GPs in the Central Denmark Region (covering approximately 20% of the entire Danish population) were invited to participate. Participants registered all patient contacts during one randomly assigned day. The GPs received payment for their participation (€32) and for each registered contact (€3 per contact). Information about GPs and listed patients was obtained from the Danish National Health Service Register [11].

Each contact was registered on a one-page registration form by the GP. The form encompassed a range of questions including: the personal registration number, gender and age, the type of contact, the main reason for encounter, the diagnostic classification of the main problem, and "As a GP, to what extent do you think the following factors influenced the present contact with the patient? Biomedical __%, psychological __%, social __% or don't know". The GPs' answers to each of these dimensions were later dichotomized into major issue (> 50%) or not major issue (<= 50%).

For the purpose of the present paper, we only included GP face-to-face contacts (consultations and

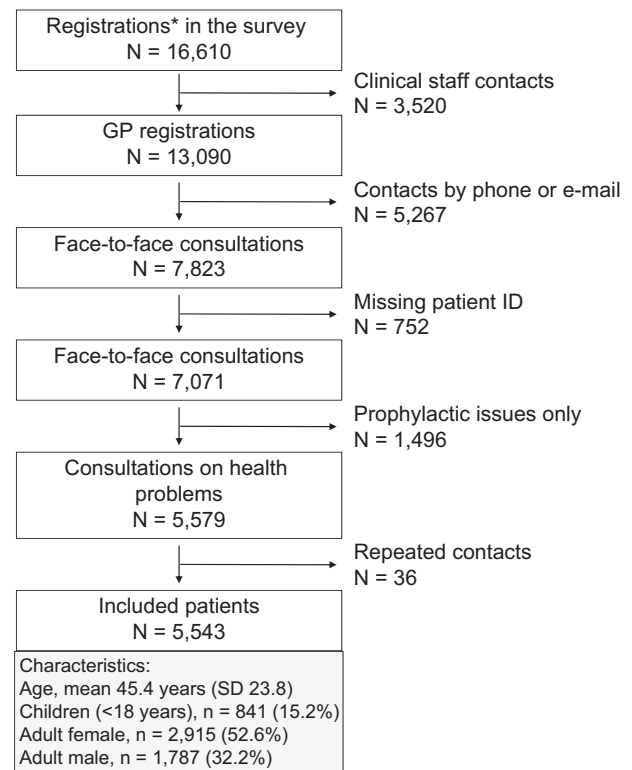
home visits) with identifiable patients. We excluded contacts with missing information on type of contact and consultations stated on the registration form as prophylactic only. If patients appeared more than once in the study only their first contact was included (Figure 1).

When reasons for encounter and diagnoses were only stated in text by the GPs they were translated into ICPC-2 codes by an ICPC-trained medical student using an electronic standard terminology (<http://www.dak-e.dk/icpc>). All ICPC codes were reviewed by one of the authors (GM).

Although the GPs were asked only to classify the main problem raised in the consultation, some of them stated more than one problem (207 contacts; 3.7%). In these cases, we selected for analysis the first problem entered on the registration form. In 741 cases (13.4%), the main problem was missing and the stated reasons for encounter were extrapolated to replace the missing codes. If the reason for encounter was described as a process (e.g. blood test), the ICPC-2 process codes were applied.

Data management and analysis

Using chi-square, we examined the participating GPs' representativeness with respect to gender,



* Doctors and clinical staff in participating practices registered all patient contacts during one randomly assigned day. Each patient contact was registered on a one-page registration form (registrations).

Figure 1. Flow diagram of the inclusion of patients.

seniority, type of practice (single-handed or partnership), and listed patients. Reasons for encounters and diagnoses were categorized into symptoms, diseases, and processes according to the ICPC-2-R classification. We used generalized linear models (GLM) with log link and the Bernoulli family [20] to estimate associations between classification (symptom vs. disease codes) and first-episode and follow-up consultations. Likewise, we used GLM to compare first-episode and follow-up consultations for ratios of $\leq 50\%$ vs. $> 50\%$ of the biomedical, psychological, and social factors of the contacts. Multilevel models were applied in order to adjust for patient gender, age, and clustering of patients at the GP level (robust variance estimates).

Each contact registration form was optically scanned using Teleform 8.0. Stata 11.1 was used to perform the statistical analyses.

Ethics

The project was approved by the Danish Data Protection Agency (J.no. 2008-41-2195) and by the National Board of Health (J.no. 7-604-04-2/49/EHE). According to Danish law, approval from the ethical committee was not needed.

Results

A total of 404 GPs (46.4%) consented to participate in the survey. Seventeen (4%) were excluded as they did not state the personal registration number of any of their patients. The 387 participating GPs and the non-participating GPs within the catchment area did not differ with regard to type of practice ($p = 0.933$), but we found higher representation of female GPs (44.4% vs. 38.9% in the region, $p = 0.003$) and lower representation of GPs working more than 20 years in practice (20.4 vs. 25.5, $p = 0.017$). Patients listed with participating

GPs were comparable to those listed with non-participating GPs with regard to age and gender distribution ($p = 0.354$ and 0.389 , respectively).

A total of 5543 patients with face-to-face contacts (5357 consultations and 186 home visits) formed the population of the present study (see Figure 1).

Reasons for encounter

Table I shows the GP-reported reasons for encounter divided into psychosocial and physical reasons. Overall, 553 patients (10.0%) visited for psychological and 38 patients (0.7%) for social problems. Overlap between reasons for encounter and GPs' diagnostic classification of main problems was substantial; 518 of 553 patients (93.7%) with psychological reasons for encounter were classified in the psychological chapter, whereas only 82 of 4990 patients (1.6%) with other reasons for encounter were classified by the GP as psychological.

Diagnostic classification of main problem

GPs classified 600 patients (10.8%) in the psychological chapter; 392 (65.3%) came for follow-up consultations (Table II). Stratification revealed that psychological codes were applied to 33 children < 18 years (3.9% of the children), to 364 female adults (12.5% of the women), and to 203 male adults (11.4% of the men). Both symptom codes and specific codes were used widely as diagnostic classification for psychological problems, although symptom codes were fewer at follow-up consultations than in first-episode consultations ($p < 0.001$).

Two rubrics accounted for 51.3% of all psychological codes (P76 Depression (39.8%) and P02 Acute stress reaction/adjustment disorder (11.5%)) (Table III). The distribution of these codes did not differ between men and women ($p = 0.475$). Children had a different pattern; three rubrics comprised 54.6% of all psychological codes: bedwetting/enuresis

Table I. Reasons for encounter and classification of patients with face-to-face contacts ($n = 5543$) reported by general practitioners.

Diagnostic classification	Psychosocial reasons for encounter ICPC Chapters P and Z				Physical reasons for encounter			
	First-episode n (%)	Follow-up n (%)	Missing n (%)	All n (%)	First-episode n (%)	Follow-up n (%)	Missing n (%)	All n (%)
Symptom (ICPC 01–29)*	119 (73.3)	165 (41.8)	26 (68.4)	310 (52.4)	2108 (74.0)	629 (35.7)	193 (56.6)	2930 (59.2)
Disease (ICPC 70–99)	29 (17.7)	156 (39.5)	9 (23.7)	194 (32.7)	608 (21.4)	826 (46.6)	79 (23.3)	1513 (30.5)
Process (ICPC 30–69)	11 (7.0)	73 (18.7)	3 (7.9)	87 (14.9)	131 (4.6)	313 (17.7)	68 (20.1)	512 (10.3)
All	158 (100)	395 (100)	38 (100)	591 (100)	2847 (100)	1765 (100)	340 (100)	4952 (100)

ICPC Chapter P contains codes for psychological problems and disorders; Chapter Z contains codes for social problems. *The chapter on skin contains some inconsistencies in rubric coding and codes below 29 concerning diseases have been moved to the group of diseases.

Table II. Distribution of psychological problems and diagnoses (ICPC Chapter P).

	Classification of the contact (%)			
	New episode n (%)	Follow-up n (%)	Missing n (%)	All n (%)
All patients				
Symptoms (ICPC 1-29)	88 (53.0)	121 (30.9)	21 (50.0)	230 (38.3)
Diseases (ICPC 70-99)	75 (45.2)	259 (66.1)	20 (47.6)	354 (59.0)
Processes (ICPC 30-69)	3 (1.8)	12 (3.1)	1 (2.4)	16 (2.7)
Total	166 (100)	392 (100)	42 (100)	600 (100)
Children (< 18 years)				
Symptoms (ICPC 1-29)	11 (91.7)	7 (38.9)	3 (100)	21 (63.7)
Diseases (ICPC 70-99)	1 (8.3)	10 (55.5)	0 (0.0)	11 (33.3)
Processes (ICPC 30-69)	0 (0.0)	1 (5.6)	0 (0.0)	1 (3.0)
Total	12 (100)	18 (100)	3 (100)	33 (100)
Female adults				
Symptoms (ICPC 1-29)	46 (47.9)	79 (32.1)	11 (50.0)	136 (37.4)
Diseases (ICPC 70-99)	47 (49.0)	161 (65.5)	10 (45.4)	218 (59.9)
Processes (ICPC 30-69)	3 (3.1)	6 (2.4)	1 (4.6)	10 (2.7)
Total	96 (100)	246 (100)	22 (100)	364 (100)
Male adults				
Symptoms (ICPC 1-29)	31 (54.4)	36 (27.9)	7 (41.2)	74 (36.4)
Diseases (ICPC 70-99)	26 (45.6)	88 (68.2)	10 (58.8)	124 (61.1)
Processes (ICPC 30-69)	0 (0.0)	5 (3.9)	0 (0.0)	5 (2.5)
Total	57 (100)	129 (100)	17 (100)	203 (100)

Rubrics for symptoms and diseases differed significantly with regard to first-episode and follow-up consultations for all patients ($p < 0.001$, general linear modelling adjusting for gender, age, and GP clusters).

(21.2%), hyperkinetic disorder (18.2%), and acute stress reaction/adjustment disorder (15.2%). Ten rubrics were not used at all.

Only 30 patients (0.5%) were classified in the social chapter: three children (0.4%), 21 female adults (0.7%), and six male adults (0.3%). Five codes covered 70% of these patients: Work problem (6), Social problem NOS (5), Social cultural problem (4), Loss/death of partner problem (3), and Relationship problem parent/family (3).

GPs' emphasis on psychosocial aspects

The GPs' assessments of biomedical, psychological, and social factors independent of their diagnostic classification were analysed for each factor separately. GPs weighted biomedical aspects higher than psychosocial aspects. In 2798 patients (52.0%), biomedical factors were seen as the sole contributors, whereas only 304 patient contacts (5.6%) had no biomedical aspect according to the GP. The mean values for the three factors were as follows: biomedical 78.0% (95% CI 77.2–78.9), psychological 17.1% (95% CI 16.3–17.8), and social 4.7% (95% CI 4.4–5.0).

Among the 304 patients in whom the GPs found that no biomedical aspects were involved, 227 (74.7%) were classified in the psychological chapter and 22 (7.2%) in the social chapter of ICPC.

Table IV shows the dichotomized assessments by type of episode. Excluding missing items from

this table in statistical analyses showed that GPs gave more emphasis to biomedical aspects in first-episode consultations than in follow-up consultations (factor $> 50\%$ in 82.6 vs. 67.8% of cases, $p < 0.001$), whereas more emphasis was ascribed to psychological aspects in follow-up consultations than in first-episode consultations (factor $> 50\%$ in 6.0 vs. 13.6% of cases, $p < 0.001$). We found no statistically significant difference for social factors ($p = 0.348$).

Discussion

Statement of principal findings

The GP-reported reasons for encounter and their diagnostic classification of main problems were largely overlapping with regard to psychological problems. GPs classified psychological problems in 11% of their patient contacts. Of 43 ICPC rubrics from the psychological chapter, only 18 occurred in more than one per one thousand patients and two rubrics (depression and acute stress reaction/adjustment disorder) accounted for half of all the psychological codes employed.

GPs focused primarily on biomedical aspects in all contacts, but even more so in first-episode consultations. With regard to psychological contributions, more emphasis was given in follow-up consultations compared with first episodes.

Table III. Frequency of applied rubrics for GP classification of psychological problems.

ICPC-2 (ICD-10) Frequency > 1%	ICPC-2 (ICD-10) Frequency 0.1–1%	ICPC-2 (ICD-10) Frequency < 0.1%	ICPC-2 (ICD-10) Codes not used by GPs
P76 Depressive disorder (F32/33/34/38/39/41/53) 4.3%	P74 Anxiety disorder/anxiety state (F41)	P19 Drug abuse (F11/12/14/15/16/18/19)	P05 Senility, feeling/behaving old (R54)
P02 Acute stress reaction (F43) 1.2%	P01 Feeling anxious/nervous/ tense (R45)	P20 Memory disturbance (R41)	P08 Sexual fulfilment reduced (F52/N50)
	P06 Sleep disturbance (F51/G47)	P99 Psychological disorders NOS (F48/53/84/88/89/99)	P09 Sexual preference concern (F64/65/66)
	P15 Chronic alcohol abuse (F10/G31)	<i>Therapeutic Counselling/Listening*</i>	P10 Stammering/stuttering/tic (F95/98)
	P29 Psychological symptom/ complaint other (F50/63/R44/45/46/Z64/73)	P73 Affective psychosis (F30/31/34)	P13 Encopresis/bowel training problem (F98)
	P03 Feeling depressed (R45)	P16 Acute alcohol abuse (F10)	P27 Fear of mental disorder (Z71)
	P70 Dementia (F00/01/02/03/ G30)	P04 Feeling/behaving irritable/ angry (R45)	P28 Limited function/ability (Z73)
	<i>Medicat-Script/Reqst/ Renew/Inject*</i>	P07 Sexual desire reduced (F52)	P78 Neurasthenia/surmenage (F78)
	P81 Hyperkinetic disorder (F90)	P11 Eating problem in child (F98)	P85 Mental retardation (F70/71/72/73/78/79)
	P72 Schizophrenia (F20/21/22/24/25/28)	P22 Child behaviour symptom/ complaint (F91/92/93/94/98/ R62)	P98 Psychosis NOS (F23/29/53)
	P18 Medication abuse (F13/55)	<i>Preventive Immunisations/ Medications* Refer to Other Provider (EXCL. M.D.)*</i>	
	P82 Post-traumatic stress disorder (F43)	P23 Adolescent behaviour symptom/complaint (F91/92/94/98)	
	P75 Somatization disorder (F44/45)	P24 Specific learning problem (F80/81/82/83/R48)	
	P12 Bedwetting/enuresis (F98)	P25 Phase of life problem adult (Z60)	
	P17 Tobacco abuse (F17)	P71 Organic psychosis other (F04/05/06/07/09)	
	P79 Phobia/compulsive disorder (F40/42)	P77 Suicide/suicide attempt (Z91)	
	P80 Personality disorder (F60/61/62/63/68/69)	P86 Anorexia nervosa/bulimia (F50)	

Rubrics are stated in the order of frequency, the most frequently applied at the top. The corresponding ICD-10 chapters are stated in parenthesis using an internationally agreed mapping tool (http://www.kith.no/templates/kith_WebPage___1111.aspx). *Process codes.

Social problems were hardly classified at all and were rarely considered a contributing factor.

Strengths and weaknesses of the study

The study was based on the largest and most extensive survey of primary health care encounters in Denmark, on the whole representative of the Danish primary care setting. However, the setting itself is selected as it consists of highly educated GPs who are familiar with the application of diagnostic criteria. We do not know the extent to which the results will apply to other, e.g. non-Western, primary care settings.

GPs were allowed to state only one reason for encounter and one diagnostic label for each patient, but patients in primary care often present several problems in the same consultation. While this should not affect the distribution of rubrics, our prevalence values of psychological and social problems and diagnoses may therefore in general be

underestimated. On the other hand, our approach allowed analyses to be based on patient numbers as the denominator and made sure that the problem or diagnosis stated was, in fact, managed by the GP.

The classification itself may also be a limitation. The GPs' diagnostic labelling by the use of ICPC codes or text was not validated and the GP inter-rater variability is known to be substantial at rubric level [12]. Furthermore, the after-coding of the GPs' classification text may have introduced some degree of bias as the GPs' text entries were not always unambiguous. This bias would mainly affect the rubrics within the ICPC chapters and not between the chapters.

Finally, we were not surprised to find much overlap between reasons for encounter and diagnostic classification of main problem as both were stated by the GPs. The results might have been different if analyses had been based on patient statements.

Table IV. Distribution of biomedical, psychological, and social factors contributing to the main problem of patient contacts according to the general practitioner.

	Share of factors	First-episode n (%)	Follow-up n (%)	Missing** n (%)	All n (%)
Biomedical factors	≤ 50%	509 (16.9)	679 (31.5)	74 (19.6)	1262 (22.8)
	> 50%	2414 (80.3)	1430 (66.2)	278 (73.5)	4122 (74.3)
	Missing inf.*	83 (2.8)	50 (2.3)	26 (6.9)	159 (2.9)
	Total	3006 (100)	2159 (100)	378 (100)	5543 (100)
Psychological factors	≤ 50%	2749 (91.4)	1821 (84.3)	323 (85.4)	4893 (88.3)
	> 50%	174 (5.8)	287 (13.3)	29 (7.7)	490 (8.8)
	Missing inf.*	83 (2.8)	51 (2.4)	26 (6.9)	160 (2.9)
	Total	3006 (100)	2159 (100)	378 (100)	5543 (100)
Social factors	≤ 50%	2905 (96.7)	2090 (96.8)	349 (92.3)	5344 (96.4)
	> 50%	16 (0.5)	18 (0.8)	3 (0.8)	37 (0.7)
	Missing inf.*	85 (2.8)	51 (2.4)	26 (6.9)	162 (2.9)
	Total	3006 (100)	2159 (100)	378 (100)	5543 (100)

Statistically significant differences were seen between first-episode and follow-up consultations with regard to biomedical factors ($p < 0.001$ general linear modelling adjusting for gender, age, and GP clusters) and psychological factors ($p < 0.001$), whereas no statistically significant differences were found with regard to the social factors ($p = 0.348$). *If the GP answered “don’t know”, the value was set missing. **Missing information about type of consultation (first contact or follow-up).

Comparison with existing literature

Our reported frequency of psychological problems is lower than the 25–50% reported in prevalence studies of mental disorders in primary care [13–16]. However, these studies are of primary care waiting-room populations. Our results are comparable to those found in studies of problems managed by the GP in the consultation. An Australian study reported that 11.5 psychological problems were managed per 100 encounters, the most common with frequencies above 0.01 being: depressive disorder (3.8%), anxiety, sleep disturbance, acute stress reaction (0.6%), drug abuse, schizophrenia, dementia, tobacco abuse, alcohol abuse, and affective psychosis [17]. An international study showed comparable results for Dutch and US primary care diagnoses, whereas prevalence estimates were substantially lower for Japan and Poland [18]. Finally, a Norwegian study from 1994 described frequencies of psychological problems and social problems of 7% and 1%, respectively [19]. In agreement with the low prevalence of social problems, another Norwegian study found that patients rarely disclose social problems to their GP and GPs are often unaware of general social contributors to the patients’ health problems [20,21].

Also in psychiatric care, few diagnoses cover the majority of patients cared for. In a recent Danish study, 16 diagnoses accounted for 50% of all contacts, schizophrenia, alcohol abuse, and adjustment disorder being the most frequent [22]. Compared with psychiatric care [22,23] the classification of schizophrenia and alcohol abuse was less

common in primary care but reached frequencies above 0.01 which is the limit for being assigned a rubric in the ICPC.

Conclusion and perspectives

Psychological problems and mental disorders are frequent in primary care, but are captured using rather few diagnostic categories. Applying 18 diagnostic categories, all with a frequency above one per thousand, would still enable communication with secondary care on diagnoses frequently applied in that setting. However, the development of future primary care classifications would gain from studies that embrace a broader range of primary care settings and the inclusion of primary care terminologies rather than only the categories of existing classification systems.

Surprisingly, GPs rarely stated social factors as being important to the presented problem. This was apparent not only from their classification, but also from their independent statements regarding the biomedical, psychological, and social contributions to the patients’ problems. GPs generally paid much attention to biomedical aspects and when they dealt with psychological issues this happened more frequently in follow-up consultations. Hence, the bio-psycho-social model was deployed in a highly skewed way and seemed to be applied in a sequential manner across consultations rather than within the confines of the individual consultation. This raises a question not only about the contents and quality of the classification of psychological and

social problems, but also about where GPs place their focus in the consultation process and how this affects their classification and management of problems and disorders.

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Declaration of interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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