Core Content Classification in General Practice/Family Medicine (3CGP/FM): a proposal for a complementary classification system in GP/FM.

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Abstract

To accompany the International Classification of Primary Care (ICPC), a new classification called Core Content Classification in General Practice Family Medicine (3CGP/FM) is proposed in order to index documents pertaining to the domain of expertise of GP/GM. The tool and its construction are described and their purpose discussed. 3CGP/FM, which is also complementary to Medline, permits the indexing of Wonca congress presentations and allows a quick view of the main axes of research of GP/FM. A desk copy of 3CGP/FM is available on the Wonca abstracts repository project web site and in attached file.

Introduction

What are the key concepts at the basis of General Practice/Family Medicine (GP/FM)? Are they twins, of which the first: "General Practice" is focused on the process of care while the second:" Family Medicine" is focused on personal care[1]? As far back as 1936 the profession faced a dispute between health driven and pathology driven activities[2]

This particular profession of GP/FM is defined by its processes (general) and deals with personal relationships (family) for healthy and sick people (personal) developing knowledge in at least four scientific domains; biology, psychology, epidemiology and anthropology[3], and all that on the time line. Indeed time is the central issue in continuity of care.

From a non-clinical point of view, the basic concepts defining the job of GP/FM are evolving rapidly. The last decade has seen the publication of a Wonca Europe definition of Family medicine with a well documented basic job description[4]. This, as several authors[5,6] have pointed out, places General Practice at the interface between biomathematics and anthropology and between private and public health. Considering this whole range of concepts, only one word comes to mind: complexity. From simple clinical problems to chaotic ones, the GP is dealing with decision-making in a complex systems environment[7]

What kind of classification system would be able to describe this complexity in the simplest way? The International Classification of Primary Care (ICPC) [8, 9] succeeds very well in describing the core content of clinical care. ICPC has been developed over 30 years to address the necessity to retrieve specific GP/FM data complementary to International Classification of Diseases (ICD). ICPC use is growing in all domains of GP/FM. Widely accepted as clinical tool and as a member of the WHO Family of Classifications, it is also used in various ways in practice management such as immunization targeting[10], hospital referral indexing[11], guidelines indexing or clinical messaging. Its components, the Reason For Encounter, Process & Episode labels allow a quite interesting conceptual representation of GP/FM clinical activities. ICPC short list, also called pager[12], allows the quick indexing of GP/FM documents with 700 concepts, enough to describe the main fields of clinical work in Primary Care.

Unfortunately, no simple tool exists to gather the non-clinical activities forming the complex domain of GP/FM. And the huge range of concepts is not always easily accessible in general medical terminologies, either. As early as 1987, Henk Lamberts developed a classification named Q-Codes[13] for bibliographic indexing of medical journals in the Amsterdam (UVA) department of general practice. This tool was developed to be complementary to ICPC, using the Q letter, not used elsewhere in ICPC, to identify the main elements of non-clinical practice in GP/FM. The Table 1 gives the 7 main levels of the 1987 Q-Codes.

| Q0 Care process (patient linked) |
| Q1 Care process (not patient linked) |
| Q3 Support task |
| Q4 Personal functioning |
| Q5 Patient's categories |
| Q6 Research |
| Q7 Teaching |

Table 1 Q-CODES for literature retrieval, main categories
(Lamberts - 1987)

In the field of document retrieval and organisation in GP/FM, the key questions are to know which kind of index and what kind of publishing are needed for GP/FM and for which purposes. Medline descriptors are the principal indexing system for all medical documents, including GP/FM. All medical journal databases are using Unified Medical Language System (UMLS) descriptors.

On one hand, the GP is not keen to publish in those well-controlled medical journals, be they commercial or open access. Publishing is a time-consuming process and a huge amount of work falls by the wayside due to lack of energy or dedicated time. A German study shows that less than 50% of presentations presented during Wonca congress between 2001 and 2005 are ever published[14]. On the other hand, although GP/FM boasts several well known and professionally edited journals, the indexation system is generally speciality-oriented and the core concepts of medical terminologies like UMLS are not GP/FM friendly[15], but rather are oriented towards specialty care. No bibliographic classification or terminology is dedicated specifically to GP/FM. GPs are very productive and research in GP/FM is developing[16] albeit in diverse ways in various countries[17]. The case has been made that more research are required[18]. Nevertheless there is no way to identify, retrieve and gather the thousands of communications done by GPs during general or research meetings in a quick and easy way.

Objectives

Considering the need for a conceptual description of non-clinical activity complementary to ICPC, a new classification has to be developed in order to implement a simple indexing system for GP/FM documents and database feeding. A global description of activity, skills and knowledge, specific to Primary Care and beyond the description of health problems, procedures and diseases (which are already addressed in ICPC), would be useful to identify the main axes of documents as well to describe their content. In addition, the classification would be useful to describe the main axes undergraduate and postgraduate training or teaching programs in GP/FM. The proposed classification has to be complementary to ICPC, which can be accomplished by expanding the seminal idea of Q-Codes.

Methods

A classification of the main concepts used in GP/FM has been designed. All chosen items aim to describe the non-clinical content of GP/FM. They constitute meta-information on the way the clinics function and the patient-doctor relationship. In a first project, the name 'meta-clinical classification' was chosen to describe this tool. This work has been presented at the annual working meeting of the Wonca International Classification Committee in Heidelberg in 2006. The name has subsequently evolved to be Core Content Classification in General Practice/Family Medicine (3CGP/FM).

The Q codes form the first building blocks of the classification. The Q letter has been chosen because it is not used in ICPC. This first approach was filled up with the author's personal experience during 30 years of practice, research and teaching. From this as an empirical document, one will try to develop, fill in the gaps and modify the content using GP/FM publications, peer review and criticism and translation into practice.   With regards to safety and errors, it is proposed to distribute the concept broadly all over the classification when adequate, rather than over a specially tailored category. The whole classification is available in attached file.

1. **Structure and hierarchy of the projected classification**

The codes are alphanumeric. The first two letters are for domain specification. The letters P, D, S, C, H, E, T, and R are added to Q to specify the domain name. T represents Teaching and Training, a concept which is broadened to Knowledge management. The subsequent two digits are numerical, the first one designating the category and the second one a subcategory. Developing a mnemonic trick was not possible at this level.

1. QP	Patient
2. QD	Doctor
3. QS	Structure
4. QC	Categories
5. QH	Hazard
6. QE	Ethics
7. QT	Knowledge
8. QR	Research

Table 2 Core Content Classification in GP/FM
8 top domains

Domain, categories and subcategories are characterized by subtype/supertype relationships, also called parent-child relationships. (See tables 2 & 3 and figure 1)
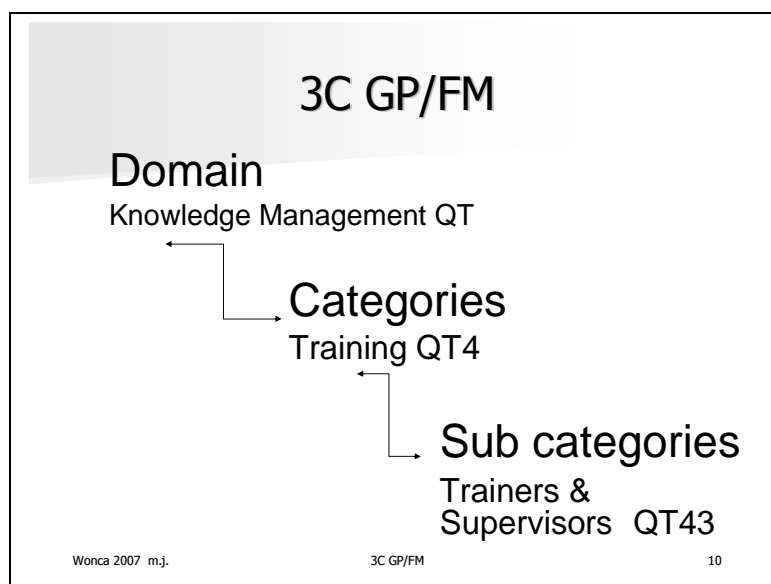
Figure 1 Hierarchy in 3CGPFM

o	Undergraduate	QT41
o	Vocational training	QT42
o	Continuous medical educ.	QT43
o	Supervision	QT44
o	Trainers	QT45
o	Academics	QT46

Table 3 3CGPFM ; Opening of QT4 sub-category Training

2. Pre test: to compare content of Medline abstract related to GP/FM with the concepts of meta-clinical classification

To test the ability to index an abstract I first to chose to sample abstracts listed in Medline: One descriptor with several defined delimiters retrieved a small number of abstracts for easy analysis: *"family practice"[MeSH Terms]Limits: only items with links to full text, only items with abstracts, English, published in the last 3 years, Humans, Core clinical journals. Review.* This search gave 39 publications. Each abstract was compared to the meta-clinical classification and correspondences were identified. Indexing the abstracts of those 39 publications gave the surprising result of 29 abstracts dealing with the same category QD39, disease management. No concept fell out of the range of the meta-clinical classification. This first test has been published on Internet[19] on April 15th, 2007.

3. Field test: Indexing the 2007 Wonca European Congress in Paris.

Considering the difficulty in identifying an accurate expression of GP/FM concepts through Medline, I chose to index the abstracts of the Wonca 2007 (Paris) meeting. Direct access to the Internet URLs of the reviewers enabled me to access the numbers and titles and to read and to index the 998 abstracts presented at the annual Wonca conference. Abstract number, title, type of presentation (oral, workshop, poster) entered in an Excel® spreadsheet and indexed with ICPC-2 and the meta-clinical classification, with a maximum of 3 codes for each abstract.

A great number of concepts were not present in the first draft of the meta-clinical classification and new concepts were added, as they were the focus of the attention of the presenting GPs (see examples table 4)

■	Patient views	QP4
o	Patient appraisal	QP41
o	Patient satisfaction	QP42
o	Patient knowledge	QP43
o	Patient autonomy/dependency	QP44
o	Patient cultural background	QP45
o	Patient expenses	QP46
■	Patient health habits	QP5
o	Nutrition	QP51
o	Sexuality	QP52
o	Self care & hygiene	QP53

Table 4 Some new concepts added to 3CGP/FM during the indexing process

4. **Editing the result in an interactive web based database**

To make it possible for colleagues to contribute to this process I developed an interactive web-based database[20].   Support from computer minded colleagues has allowed the elaboration of an interactive editing site allowing not only the display of the results of the indexing but also to admit new indexers and new additions to the database. This tool follows the principle of a circular information cycle. The indexing of documents through specific and dedicated tools as ICPC and 3CGP/FM allows their use in final products such as publications, guidelines, training or research. The knowledge produced and transformed by application and research is then used again in new publications which are indexed creating an information cycle. Due to the internal design of the database, the content can be made available in any language and any font. At this time, English and French are available.

Results

1. **A proposal of a formal classification ; the Core Content Classification in GP/FM**

At the end of the indexing process, the 'meta-clinical classification' has evolved into the Core Content Classification of GP/FM (3CGP/FM). 3CGP/FM contains 153 rubrics from 9 domains, the first eight of which are described above and one more "QO" for others not elsewhere classified. Each domain opens into categories and subcategories. The tool is made available in the .pdf format file on the website of the repository project (see below).

This tool has to be considered as in its infancy. It has to grow and is dependent on the expertise of others to become a real tool at the service of GP/FM. 3CGP/FM is not a finished product and several projects are in development around it like indexing of next Wonca Europe congress or field test about inter-observer correlations.

2. **An interactive web-based database**

This process has produced a Wonca repository project, containing the Wonca 2007 congress conference abstracts. An advanced search process permits one to find an abstract following ICPC and/or 3CGP/FM rubrics. New indexers can be identified and access to the database be provided through secure access. The pilot database was launched in September 2007, one month before the Wonca conference on a new web address under the title 'Wonca abstracts repository project'. The whole process was presented in a workshop at the 2007 Wonca conference. The database allows retrieving of number and title of abstracts presented by the participants, following search criteria chosen in the two indexing tools, ICPC-2 and 3CGP/FM. This is really practical, allowing users to find publications in a certain field of interest. For instance, combining ICPC code P17 (tobacco abuse) and 3CGP/FM code QC13 (category of patients; adolescents) gives 8 presentations about those research
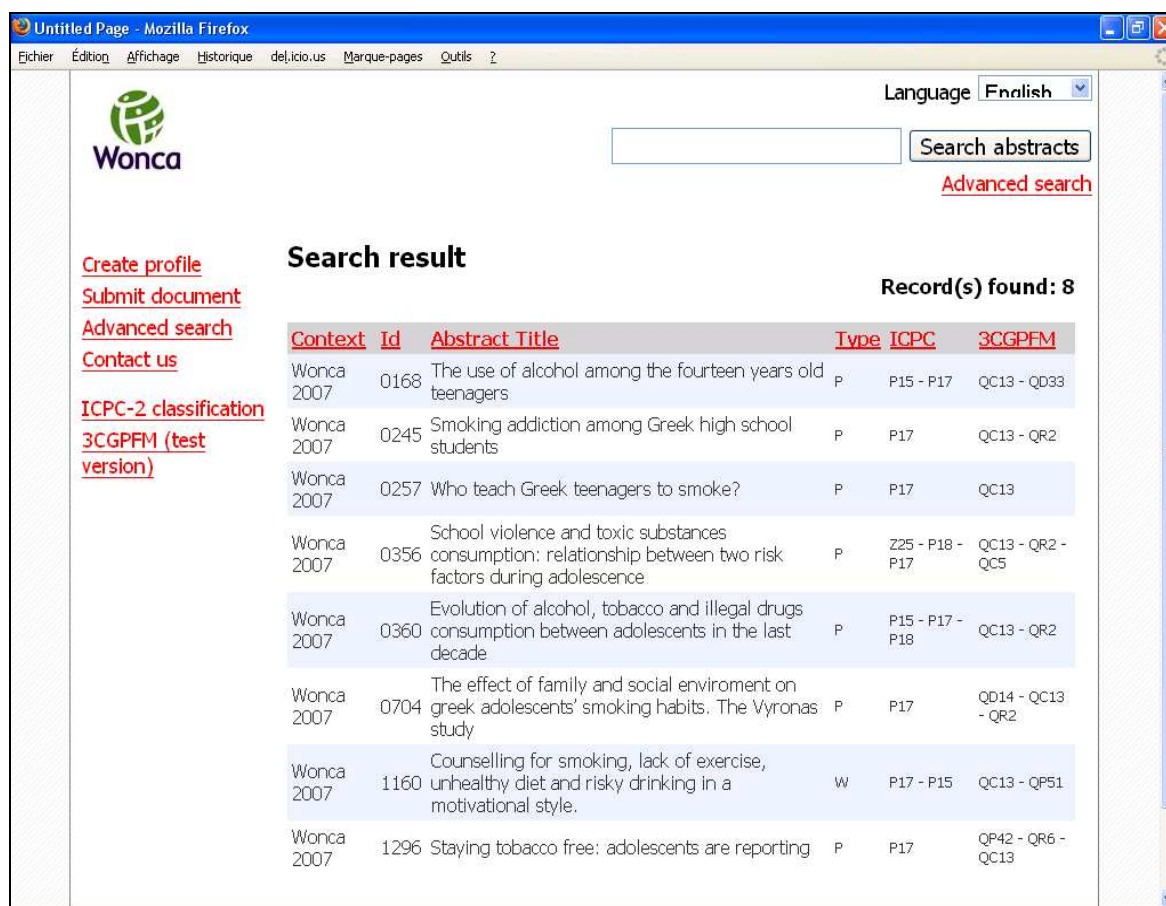

Figure 2 Wonca 2007, Paris www.familydoctor-doc.net
Abstracts crossing P17 (tobacco) and QC13 (ados)

3. An analysis of 998 abstracts of Wonca Paris 2007 as a meta research in GP/FM

The main results of the analysis of the 998 abstracts of the Wonca Europe Congress demonstrate the utility of the two indexing methods.

Through ICPC-2 indexing, (from a clinical perspective) it is evident that European researchers in GP/FM are confronted with and addressing a large amount of psychosocial problems, mainly depression and addiction (nicotine and alcohol), migrant issues and violence (see fig 3). Through 3CGP/FM indexing, one can see that pensioners and teenagers attract them more

than infants and children. The second most frequent issue is a metabolic one, with diabetes, overweight and hyperlipidemia. One suspects that this interest is driven by availability and promotion of drugs; which is also the case for depression (P76), hyperlipidemia (T93) and metabolic syndrome (T99).
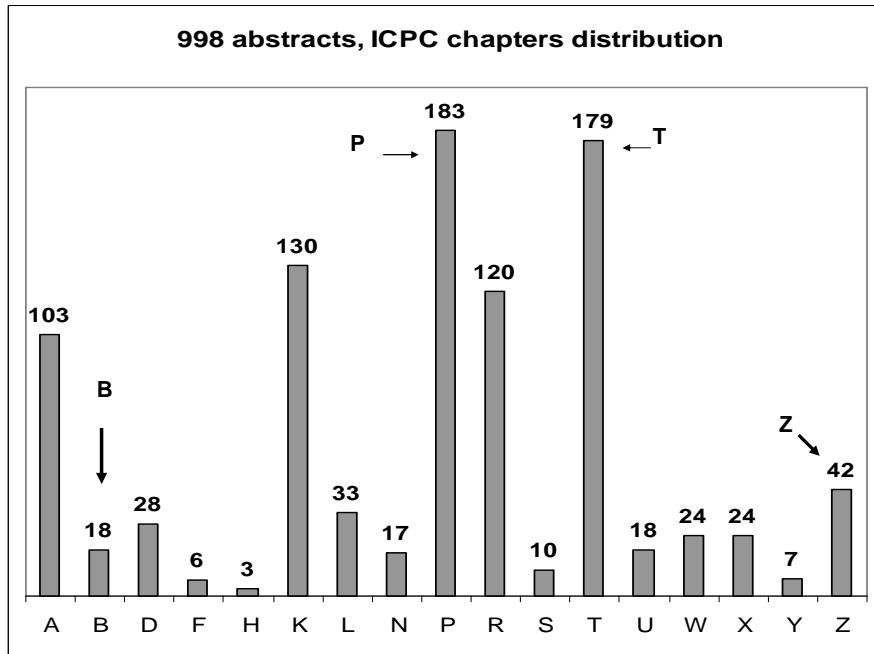
998 abstracts, ICPC chapters distribution

Letter	Value
A	103
B	18
D	28
F	6
H	3
K	130
L	33
N	17
P	183
R	120
S	10
T	179
U	18
W	24
X	24
Y	7
Z	42

Figure 3 Wonca Paris 2007. Pre-eminence of P&Z and T chapters in the communications presented at Wonca Europe 2007

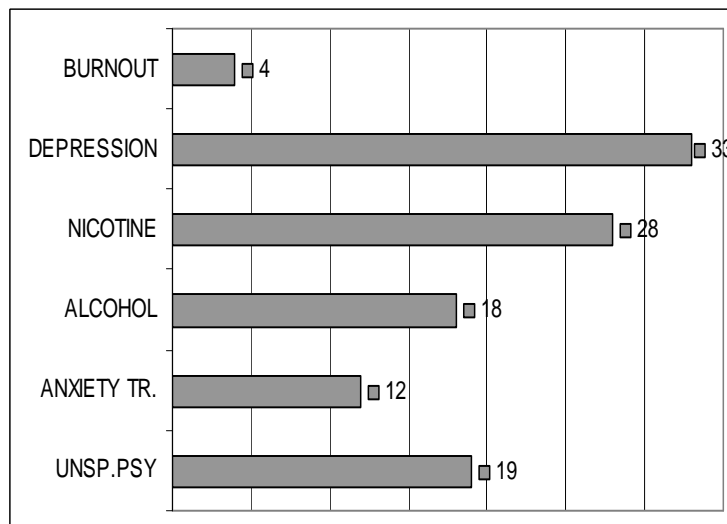| Rubric	Value
BURNOUT	4
DEPRESSION	33
NICOTINE	28
ALCOHOL	18
ANXIETY TR.	12
UNSP.PSY	19

Figure 4 Wonca Paris 2007. Opening of P chapter. Number of communications in each rubrics

Using 3CGP/FM indexing (from a core content perspective), researchers are more oriented towards doctor issues and disease descriptions (QD) than towards patient issues (QC and QP). (see fig 5) Teaching is quite popular (QK). There are only ten presentations on ethics, only one about genetics and only two about environmental problems. The number of studies in research networks is quite interesting.

This analysis was performed using an Excel® spreadsheet, and not all the details can be documented here. Ideally, the Internet database will allow the presentation of on-line histograms and curves with the indexed data.
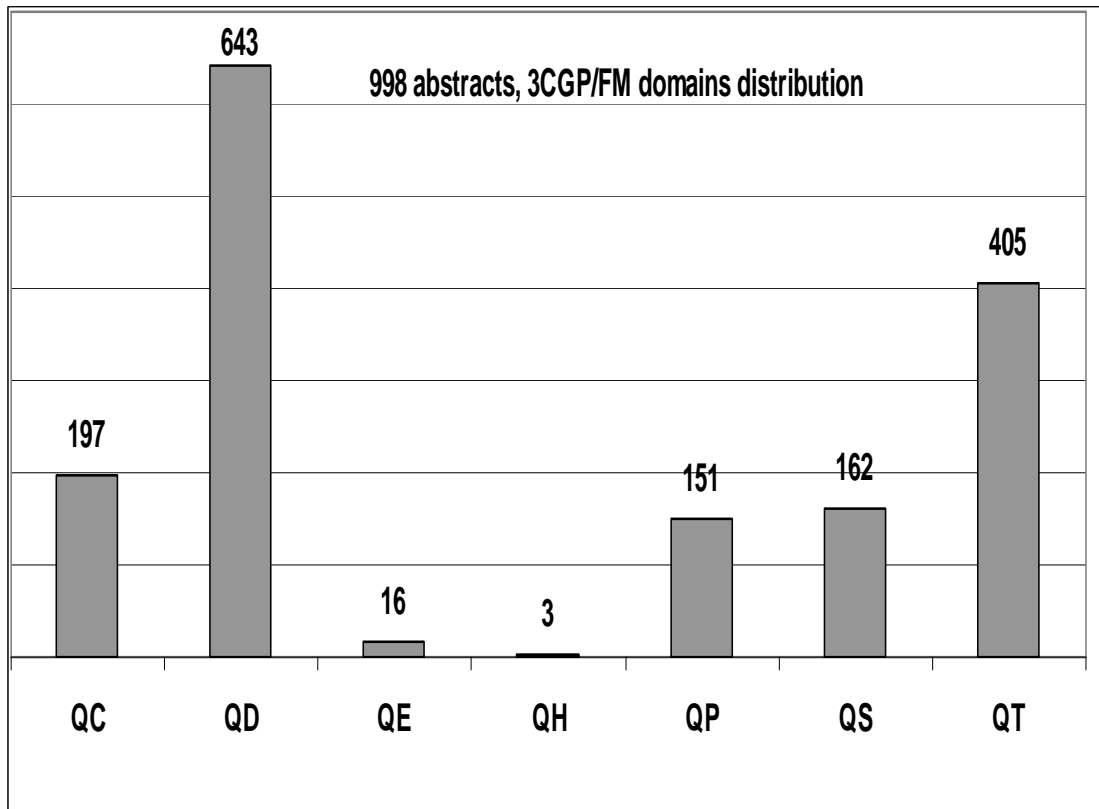
998 abstracts, 3CGP/FM domains distribution

QC	QD	QE	QH	QP	QS	QT
197	643	16	3	151	162	405

Figure 5 Wonca Paris 2007 congress. Number of communication presented at Wonca Europe 2007 in each main category. Pre-eminence of QD (doctor) and QT(know. management) domains
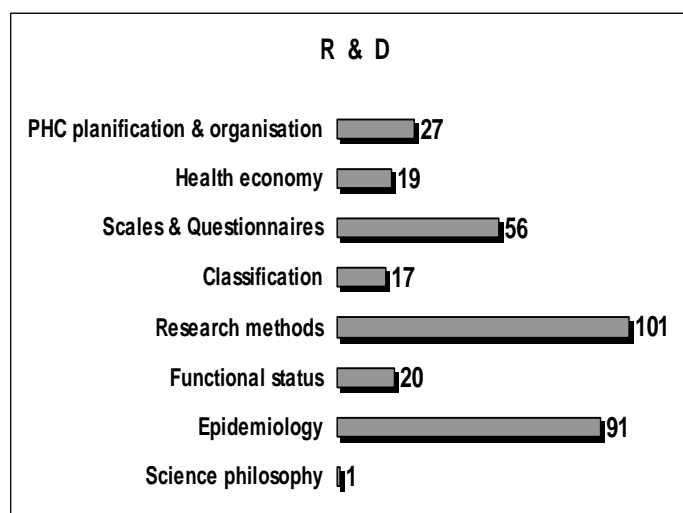
R & D

Category	Value
PHC planification & organisation	27
Health economy	19
Scales & Questionnaires	56
Classification	17
Research methods	101
Functional status	20
Epidemiology	91
Science philosophy	1

Figure 6 Wonca 2007 Paris congress. Number of communication presented at Wonca Europe 2007 in the R&D domain

Discussion

Within of a general framework of complexity, and parallel to the use of ICPC, I have try to describe GP/FM by developing a simple classification system to represent the main concepts forming the core content of our specialty. During the conceptualisation and first stages of the research, the direct indexing of Wonca congress presentations allowed better insight into the main research interests of European GPs. Moreover, indexing abstracts through an interactive web-based database allowed congress participants to retrieve preferred presentation abstracts. One could imagine the whole organisation of a GP/FM congress based on abstract indexing through ICPC and 3CGP/FM.

While exploring the core content of GP/FM is not a new idea, as far as the author could discern, this is the first attempt to systematize those concepts into a classification.

This project has several limitations. First of all, it is the work of one person and although it has demonstrated a certain utility, one could hardly say that it represents a reproducible approach to the core content of GP/FM.

This has to be evaluated by inter-observer trials and extensive practice and research use before being able to consider it a valid construct.

One could argue that Medline indexing is quite sufficient, and that GP/FM does not need such an additional set of descriptors. However, Medline indexing is not easy, the terms and themes are not specifically designed for GP/FM, and its usage is far from simple. Retrieving specific GP/FM publications is quite difficult. Moreover, Medline indexation is a post-hoc task. In this proposal, one can imagine that authors will be asked to choose ICPC & 3CGP/FM items to describe their abstract, and that reviewers would be tasked with verifying the codes.

Analyses of this kind can support discussion on how research in GP/FM should be oriented. This also gives an idea about how diverse and difficult the GP's job is. The use of 3CGP/FM could lead to better organisation of congresses trough the distribution of information along the two classifications. Naturally, 3CGP/FM is complementary to Medline and ICPC indexing, while serving a different purpose.

From a taxonomic point of view, several problems have to be addressed. They are specific classification problems: comprehensiveness (a place for each concept) and exclusivity (only one class by concept) and each have to be studied carefully for each item. The addition of definitions and inclusion and exclusion criteria are also required, and this will require extensive work. However this is necessary in order to avoid as far as possible heterogeneity and overlap of the classes. It will be necessary to develop new categories and subcategories to cover the entire field of knowledge. Thus 3CGP/FM is clearly not a finished product.

3CGP/FM has not been endorsed by the Wonca International Classification Committee, but some members have accepted the idea of launching an international field trial to develop and validate the proposed tool. The development of the on-line data base is a condition to continue this experiment. Such an interactive tool will permit retrieving and editing, but also facilitate statistical analysis of data produced by the indexing process.

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Annexed file

3CGP/FM Deskcopy: adobe file of the Core Content Classification in General Practice Family Medicine version 0.2 Oct. 2007, 59k published also on Wonca abstracts repository project web site : http://www.familydoctor-doc.net/

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