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ORIGINAL ARTICLE

## How do general practitioners recognize the definition of multimorbidity? A European qualitative study

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### KEY MESSAGES

- European general practitioners recognize the EGPRN enhanced, comprehensive concept of multimorbidity.
- They add the use of Wonca's core competencies and the patient–doctor relationship dynamics for detecting and managing multimorbidity.
- The EGPRN concept of multimorbidity leads to new perspectives for the management of complexity.

### ABSTRACT

**Background:** Multimorbidity is a challenging concept for general practice. An EGPRN working group has published a comprehensive definition of the concept of multimorbidity. As multimorbidity could be a way to explore complexity in general practice, it was of importance to explore whether European general practitioners (GPs) recognize this concept and whether they would change it.

**Objectives:** To investigate whether European GPs recognize the EGPRN concept of multimorbidity and whether they would change it.

**Methods:** Focus group meetings and semi-structured interviews as data collection techniques with a purposive sample of practicing GPs from every country. Data collection continued until saturation was reached in every country. The analysis was undertaken using a grounded theory based method. In each national team, four independent researchers, working blind and pooling data, carried out the analysis. To ensure the internationalization of the data, an international team of 10 researchers pooled the axial and selective coding of all national teams to check the concept and highlight emerging themes.

**Results:** The maximal variation and saturation of the sample were reached in all countries with 211 selected GPs. The EGPRN definition was recognized in all countries. Two additional ideas emerged, the use of Wonca's core competencies of general practice, and the dynamics of the doctor–patient relationship for detecting and managing multimorbidity and patient's complexity.

**Conclusion:** European GPs recognized and enhanced the EGPRN concept of multimorbidity. These results open new perspectives regarding the management of complexity using the concept of multimorbidity in general practice.

### ARTICLE HISTORY

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### KEYWORDS

Multimorbidity; qualitative research; competencies

## Introduction

The concept of multimorbidity was first described in the 1970s.[1] It was an addition to the concept of comorbidity with the intention of looking at all conditions in one individual.[2–4] Nevertheless, the concept remained unclear, especially for research and practical purposes.[5,6] In 2008, the World Health Organization (WHO) tried to clarify the concept with the intention to focus on the individual's global health status. It defined multimorbidity as 'being affected by two or more chronic health conditions'.[7] However, the word 'condition' was not sufficiently clear and could lead to numerous interpretations.

Despite those interpretations, multimorbidity seemed an interesting and challenging concept for general practice and long-term care. It seemed closely related to a global or comprehensive view of the patient, which is a core competency of general practice.[8] It is a global 'functional' view (useful for long-term care) versus a 'disease' centred point of view (useful for acute care).[9]

The European General Practice Research Network (EGPRN) is fully committed to concepts that could advance research in general practice throughout Europe with a research agenda focusing on patient-centred health.[10] Therefore, the EGPRN was specifically interested in the development of an understandable and usable in collaborative research definition of the concept of multimorbidity. It will help researchers in general practice to investigate the complexity of patients and their overall impact on patients' health and their use of health services.[11] It could be an additional tool for general practitioners (GPs), enabling them to identify frail patients and prevent decompensation.[12]

A research group, including nine national groups from EGPRN, has created a research community for the purpose of clarifying the concept of multimorbidity for general practice throughout Europe.[13] An initial review identified more than one hundred definitions.[14] Such a large number of definitions added more confusion than clarification to the discussion and led the group to the production of an enhanced concept of multimorbidity supported by a systematic review of literature.[15] This concept is as follows:

... multimorbidity is defined as any combination of chronic disease with at least one other disease (acute or chronic) or bio-psychosocial factor (associated or not) or somatic risk factor. Any bio-psychosocial factor, any somatic risk factor, the social network, the burden of diseases, the health care consumption and the patient's coping strategies may function as modifiers (of the effects of multimorbidity). Multimorbidity may

modify the health outcomes and lead to an increased disability or a decreased quality of life or frailty.

There are three distinctive parts in this definition. The first sentence describes what multimorbidity is, the second which factors could modify multimorbidity, and the third what the outcomes of multimorbidity are.

This raised the question whether practicing GPs recognize this concept as developed from medical research, and use the same or different criteria for their complex patients.[16] It would be plausible to assume that they have different criteria of definition from researchers, because GPs seem more in line with patient expectations than other specialists.[17] To assess this for GPs in different European countries, the enhanced definition of multimorbidity was carefully translated into 10 European languages using a Delphi consensus methodology from a previous work.[18] It was then necessary to present the translated definitions to practicing GPs to check if they recognize the developed concept of multimorbidity. The current survey was designed to answer the following question: Do European GPs recognize the enhanced concept of multimorbidity, and would they want to change it?

## Methods

### Study design

The study consisted of a set of 13 studies, involving seven European countries (Bulgaria, Croatia, France, Germany, Greece, Italy and Poland). France, as the pilot team, carried out six studies, Germany two and the other countries one. Each national team approached GPs selected from a local panel by phone. Some of them declined the invitation and the following GP in the panel list was subsequently approached. Reasons for declining were prior engagements, illness, and heavy workload. None of them declined because of lack of interest in the study. The samples for each country and each study were carefully constructed to achieve maximum variation in age, gender, experience, practice type and practice setting.

### Ethics

Ethical approval was given by the ethical committee of the Université de Bretagne Occidentale (UBO), in Brest, France.

### Data collection

The translated definitions were presented to all participating GPs. Individual and focus group interviews were

used as data collection techniques. Interviews were used to find a more personal, in-depth, the perspective of GPs as individuals and to balance the group perspective provided by focus groups of GPs as a social group.[19–21] As the objective was the same, the interview guide for focus groups and individual interviews was similar and was translated into the national language of each country (Table 1). Using the same interview guide gave the opportunity to use a comparable framework for analysis even if it was expected that results could differ from a personal or a social group perspective.

### Data analysis

As the research group was looking at what GPs might think about the enhanced concept of multimorbidity, a critical theory paradigm appeared to be the best possible research perspective.[22] The data analysis technique was based on grounded theory with an open coding followed by an axial coding and a selective coding.[23] For each study, a pair of national researchers working blind, coded the transcripts independently and compared the results after the open coding and after the axial coding. When all the countries had completed the axial coding, they had to translate between one and three verbatim accounts for each axial code to provide clear examples. Those translations were used to establish the international codebook during the EGPRN meeting in Malta (October 2013). The international codebook was designed using a comparison between the axial coding and the criteria of the enhanced concept of multimorbidity. Any axial code that was not comparable to the criteria of the concept of multimorbidity would define the definition's enhancement for GPs. Then each national team applied the international codebook to the whole coding process, using two pairs of two researchers (one pair from the pilot team and one pair from the national team) working blind and pooling data at each step. This was undertaken to ensure the completeness and the consistency of the coding process. A selective coding was subsequently proposed. That selective

coding was finalized with a physical meeting during the EGPRN meeting in Barcelona (May 2014). Before and during this meeting the whole team used an interactive process of data pooling, summarizations and explanations to finalize the process between researchers, pairs of researchers and team. That iterative and interactive process was conducted with the help of team meetings in each country and interaction between the national researchers and the international ones by mail and skype meetings. In addition, the quality of the data was checked to verify the coherence between the native verbatim and the open coding by another team of two researchers for each country's coding.

### Result's internationalization check

A final step was undertaken to ensure the internationalisation of the coding. Six physical international workshops were conducted during the EGPRN meetings from 2012 to 2014 with all team leaders (10 international researchers) to ensure the internationalization of the coding and the analysis. The final agreement was that an axial code identified by at least five countries out of seven would be considered international. An axial code identified by four countries or fewer would be considered nationally specific. An upgraded definition would be issued if new international codes appeared.

## Results

### Participants

Two hundred and eleven GPs were interviewed within Europe. The maximal variation in age, gender, experience, practice type and practice setting was ensured for each study and is shown in Table 2.

One German GP refused to report his 'years in practice' but, since he gave his informed consent, his data was kept. Some Italian GPs had mixed activities (others had various types of practice) as they were working in different settings (single on some days and in a group on other days).

**Table 1.** Interview guide.

Interview guide	
Question 1	We have defined multimorbidity. Could you describe one case of a multimorbid patient that has arisen in your practice?
Question 2	Do these patients need managing in a particular/specific way?
Question 3	How do you identify these patients?
Question 4	What is your perception of these patients?
Question 5	These patients are difficult to spot or locate. Which additional means could help you to do so?

### Data extraction and analysis

A total of 10 999 codes were extracted from the data highlighting the implication, comprehension, and diversity of the GPs experience throughout Europe. The use of an international codebook with its iterative and interactive process of coding and recoding within all teams permitted the aggregation of this massive

**Table 2.** Participants' data.

		Germany	Bulgaria	Croatia	Greece	Italy	France	Poland	Total
Total sample		32	30	19	19	17	83	11	211
Setting type	Rural	3	3	3	4	3	23	1	40
	S rural	9	3	2	7	3	20	3	47
	Urban	20	24	14	8	11	40	7	124
Gender	Male	16	11	3	10	9	51	3	103
	Female	16	19	16	9	8	32	8	108
Years in practice	<20 years	22	10	11	19	6	33	11	111
	> 20 years	9	20	8	0	11	50	0	98
	Unknown	1	0	0	0	0	0	0	1
Practice type	Single	12	23	17	8	2	21	3	86
	Group	20	7	2	11	11	62	8	121
Others	0	0	0	0	4	0	0	4	

amount of codes into 61 sub-themes and consecutively 13 themes. Those sub-themes and themes were compared to those of the enhanced concept of multimorbidity as detailed in Table 3 below to understand whether they were covering the same meanings or new ones appeared.

All sub-themes and themes of the enhanced concept of multimorbidity were identified by GPs.

### GPs additions and simplifications

GPs felt necessary to add one sub-theme: the patient's basic compliance in addition to the theme coping strategies. This theme was mainly focused on acceptance or denial of illness and not on compliance, which was of importance for them.

They simplified, however, by classifying six sub-themes into previously known categories as the verbatim extracts all fitted into that categorization. Those reclassified sub-themes appeared repetitious and unsuitable for the final definition of multimorbidity. They were as follows:

- Psychological distress was reclassified under coping strategies or psychological risk factors as GPs described them as inefficient coping strategies and psychological risk factors.
- Aging was reclassified under demographic risk factors or socio-demographic characteristics.
- Physiology, which GPs obviously perceived as a repetition of physiopathology, was reclassified in that category.
- Family history (a part of the healthcare consumption theme) was reclassified within several healthcare consumption criteria (medical history, management, and disease management) as these criteria were clearer for GPs.
- Assessment in healthcare consumption was reclassified under medical procedure or healthcare policy.
- Indicator had obviously to be reclassified under health outcomes for GPs.

### Description of sub-themes and themes

As it was impossible to describe all the qualitative data the most innovative themes and sub-themes are described in detail while the more common ones are briefly described. Where the themes and sub-themes that emerged have been described in detail, they are illustrated by selected verbatim accounts drawn from all the countries involved. The countries are described at the beginning of each verbatim account with the method of data collection (I for individual interviews and F for focus group interviews).

The core of the enhanced concept of multimorbidity is represented by its first sentence showing interaction between chronic diseases, acute diseases, bio-psychosocial and somatic risk factors. It was of importance that GPs recognize those themes and their interaction and they did:

The chronic diseases were precisely and comprehensively described. Most of the chronic diseases from the ICD 10 could be retrieved in the verbatim accounts describing the completeness of selected GPs clinical experience. The GPs described chronic conditions as addictions, overweight, atopy. The psychosomatic diseases/physical implications were also of importance especially with somatizations of psychological distress; 'a patient who was developing more and more depressive symptoms, which were mostly somatized' (F, Greece). Finally, the complex characteristics of chronic diseases were accurately described especially with the accumulation of diseases or the follow-up complexity and complications 'the balance is very delicate when compensating, maintaining the circulatory compensation, the renal problem, also maintaining the haemoglobin level, the weight' (F, Italy); or with the sudden appearance or rapid succession of problems; 'we managed to resolve a problem due to smoking and then another one shows up' (I, France).

The acute diseases were exhaustively described with a comprehensive description according to ICD 10. The GPs were also careful with the acute condition. They could be symptoms for: 'chest pain' (F, Greece); or

**Table 3.** Comparison between academic criteria for multimorbidity based on the literature review and the criteria defined as main codes from the interviews—ranked in the different themes. Themes are the themes developed in the concept of multimorbidity and/or by the GPs. Academic criteria are those used in the EGPRN concept of multimorbidity. GPs' criteria are the criteria described by GPs. International criteria means that those criteria have been described in at least five out of seven countries.

Themes	Academic criteria	GPs' criteria	International criteria
Chronic disease	Chronic condition	Chronic condition/complaints symptoms signs	✓
Chronic disease	Chronic disease	Chronic disease	✓
Chronic disease	Psychosomatic diseases/physical implications	Psychosomatic disease	✓
Chronic disease	Complexity characteristics of chronic disease	Complexity characteristics of chronic disease	✓
Acute disease	Acute condition	Acute condition/complaints symptoms signs	✓
Acute disease	Acute disease	Acute disease	✓
Acute disease	Reaction to severe stress and acute disorders	Reaction to severe stress and acute disorders	✓
Acute disease	Complexity characteristics of acute disease	Complexity characteristics of acute disease	✓
Biopsychosocial factors and somatic risk factors	Somatic risk factors	Somatic risk factors	✓
Biopsychosocial factors and somatic risk factors	Psychological risk factors	Psychological risk factors	✓
Biopsychosocial factors and somatic risk factors	Psychosocial risk factors	Psychosocial risk factors	✓
Biopsychosocial factors and somatic risk factors	Lifestyle	Lifestyle	✓
Biopsychosocial factors and somatic risk factors	Demographic risk factor	Demographic risk factor	✓
Biopsychosocial factors and somatic risk factors	Deleted: Psychological distress	Classified in psychological risk factors and coping strategies	Deleted
Biopsychosocial factors and somatic risk factors	Socio-demographic characteristics	Socio-demographic characteristics	✓
Biopsychosocial factors and somatic risk factors	Deleted: Aging	Classified in demographic risk factor and socio-demographic characteristics	Deleted
Biopsychosocial factors and somatic risk factors	Patients' beliefs/expectations	Patients' beliefs/expectations/culture	✓
Biopsychosocial factors and somatic risk factors	Deleted: Physiology	Classified in physiopathology	Deleted
Biopsychosocial factors and somatic risk factors	Physiopathology	Physiopathology	✓
Coping	Patients' coping strategies	(Behavioural and psychological) coping strategies	✓
Coping	Not described	Patients' basic compliance	✓
Burden of diseases	Disease complication	Disease complication	✓
Burden of diseases	Disease morbidity	Disease comorbidity/patient perception about his own multimorbidity level	✓
Healthcare consumption	Use of caregivers	Use of caregivers	✓
Healthcare consumption	Treatment or medication	Treatment	✓
Healthcare consumption	Management	Management	✓
Healthcare consumption	Disease management	(Multidisciplinary) disease management	✓
Healthcare consumption	Medical procedure	Medical procedure	✓
Healthcare consumption	Malpractice	Malpractice	✓
Healthcare consumption	Healthcare services	Healthcare services	✓
Healthcare consumption	Healthcare	Healthcare	✓
Healthcare consumption	Healthcare policy	Healthcare policy	✓
Healthcare consumption	Medical history	Medical history	✓
Healthcare consumption	Deleted: Family history	Classified into others consumption codes	Deleted
Healthcare consumption	Deleted: Assessment	Classified medical procedure or healthcare policy	Deleted
Healthcare consumption	Prevention	Prevention/education/detection	✓
Healthcare consumption	Pain	Pain	✓
Healthcare consumption	Health services/setting/treatment	Health services/setting/treatment	✓
Healthcare consumption	Symptoms/signs/complaints	Symptoms/signs/complaints (not pain)	✓
Healthcare consumption	Cost of care	Cost of care	✓
Healthcare consumption	Polypharmacy	Polypharmacy (including polymedication)	✓
Disability	Handicap	Handicap	✓
Disability	Functional impairments	Impairments	✓
Quality of life	Quality of life	Quality of life	✓

(continued)



**Table 3.** Continued

Themes	Academic criteria	GPs' criteria	International criteria
Quality of life	Health status	Health status	✓
Quality of life	Impairment implication	Impairment/morbidity implications	✓
Frailty	Frailty	Frailty	✓
Social network	Social network	Social isolation	✓
Social network	Social network	Support from the network	✓
Social network	Social network	Dependence on the network	✓
Social network	Social network	Family's coping strategies	✓
Social network	Social network	Carers' protection	✓
Health outcomes	Mortality	Mortality	✓
Health outcomes	Deleted: Indicator	Classified in health outcomes	Deleted
Health outcomes	Outcome	Health outcome	✓
Health outcomes	Medical research/epidemiology/instruments/level of multimorbidity	Medical research, epidemiology	✓
Health outcomes	Classification of morbidity statistics	Classification of morbidity statistics	✓
FP's expertise	Not described	Holistic approach	✓
FP's expertise	Not described	Primary care management	✓
FP's expertise	Not described	Person centred care	✓
FP's expertise	Not described	Comprehensive approach	✓
FP's expertise	Not described	Specific problem-solving skills	✓
FP's expertise	Not described	Intuition/gut feeling	✓
Doctor–patient relationship dynamics	Not described	Communication challenge	✓
Doctor–patient relationship dynamics	Not described	GP's and patient's experience	✓

complaints, 'It is true that he's always turning up, as soon as he starts coughing you see him' (I, France); or acute medical conditions with no diagnosis, 'blood in the urine' (F, Germany). GPs also described reaction to severe stress and acute disorders with reactional anxiety: 'sometimes he starts crying: 'I've had it, doctor' (I, France). Then the complexity characteristics of acute disease were frequent recurrence and their complications: 'she had an acute heart attack last month and coronary stent had been put in' (F, Bulgaria); Croatia: 'with some ugly haemoptysis' (F, Croatia).

The bio-psychosocial factors and the somatic risk factors were underlined by somatic risk factors. Psychological risk factors were also mentioned as psychological frailty. The psychosocial risk factors were shown as professional, familial or as financial difficulties. Lifestyle was of importance. Demographic risk factors were described as both ends of life. In addition socio-demographic characteristics like professional status: 'a priest' (I, Poland) and familial or couple status were described. The patient's beliefs/expectations like optimism: 'they were not worried' (F, Greece); faith: 'this patient doesn't believe' (I, Poland); expectations. Finally physiopathology such as physiological frailty: 'it makes me think of the morphology, someone who is a weakening, all shrunken' (I, France).

The modifiers of multimorbidity were described as bio-psychosocial factor, somatic risk factor (already described), social network, burden of diseases, health-care consumption and patient's coping strategies enhanced with the patient's basic compliance which was added to coping strategies: 'it depends on whether he is coping well with his disease or not' (F, Croatia) 'you've mentioned frustration ... but we still have patients with multimorbidity, coping well' (F,

Croatia) and adherence: 'adherence to treatment' (F, Greece) (see additional file).

The outcomes of multimorbidity were the third part of the definition and were important for the comprehension of the consequences of multimorbidity. They were described as health outcomes, disability, quality of life and frailty (see additional file).

Two additional themes were identified. They are of help to detect and manage multimorbidity. The international team decided to classify them as modifiers.

The core competencies of a GP (GPs' expertise) including a holistic approach: 'a holistic approach is necessary ... it's impossible to treat any of these diseases (conditions) separately' (I, Poland). The primary care management: 'Coordinate a multidisciplinary assistance' (F, Italy). The person-centred care: 'that's why it is important, that you try as a GP, to find out as much as possible about the patient's overall background and, of necessity, take it into account.' (F, Germany); 'a tailor-made approach' (I, Poland). The need for a comprehensive approach was evaluated: 'both children have asthma, the girl has hyperthyroidism. The whole family is complex. Under the surface are the social circumstances' (F, Croatia). Specific problem-solving skills were of importance: 'summing up problems for patients and viewing the situation objectively makes intervention much more effective...' (Croatia). The Intuition/gut feeling of the FP was recognized as a specific expertise of the FP for multimorbidity detection and described as a kind of non-hypothetical-deductive analysis: 'sixth sense' (F, Greece); 'it can be recognized with intuition' (F, Italy).

The doctor–patient relationship dynamics, including the challenge of clear communication, seemed important in detecting multimorbidity: 'You have to convince

them. We can't force the people' (I, France) and the FP's and patient's experience described as positive or negative feelings about their relationship: 'I have to say that I feel good with most of those patients' (F, Germany); or 'sometimes we feel compassion for them, but then they become a source of frustration for us' (F, Croatia) that could make them less inclined to follow up the patient.

Then, a final enhanced concept of multimorbidity was issued which integrated those two additional themes. This definition is shown in Table 4.

### Internationalisation of the data

No nationally specific codes were found. All codes or criteria were identified as international. More details are described in a supplemental web-only file.

## Discussion

### Main findings

European GPs recognized the 11 themes of the EGPRN enhanced concept of multimorbidity. They removed six sub-themes (psychological distress, aging, physiology, family history, assessment, indicator) as it became obvious that they duplicated existing criteria. One sub-theme was added (patient's basic compliance) to enhance the coping strategies of the patient. Two new themes emerged as modulating factors of multimorbidity: the GPs' expertise (including the GPs' gut feeling) and the dynamic of the doctor-patient relationship.

### Strengths and limitations

The main strength of this study is the fact that a set of 13 homogeneous studies were conducted throughout Europe with an international collaborative team. A total of 211 GPs were interviewed. They were drawn from a broad geographic area of Europe, from the full range of European health systems (primary care centred, secondary care centred or hospital centred), from a

spectrum of European cultures (former communist countries, Catholic, Protestant, Muslim) and most European linguistic groups (Latin Germanic, Slavic and Greek).

There was no information bias as exactly the same care was taken to provide all the necessary information to all participants. The data was recorded, and all records and verbatim accounts were collected by the pilot team for quality control. There was little selection bias as all the studies followed the protocol for maximum variation sampling with precision. Nevertheless, for Poland and Greece, it was impossible to select GPs who had had more than 20 years of practice experience as the specialty had only been created in the late 1990s. Subsequently, it was impossible to avoid this bias in those countries. One of the pitfalls of qualitative research can be confusion and bias due to researchers' personal interpretations. However, this was highly unlikely in this case, as two pairs of two independent researchers working independently were involved at each step of the coding process and group consensus meetings took place which included all the teams. The researchers' personal interpretations were always discussed, at each coding step, with three other researchers and then in a group consensus meeting. The sample's characteristics are always debatable. Those were age, gender, experience, setting type and practice type. The research team assumed that there was sufficient diversity because the sample included the broadest possible range of GPs.

### Discussion of the literature

The two new themes that emerged as modulating factors of multimorbidity are of importance for GPs. The first one is the GPs' expertise. It is based on the Wonca core competencies of GPs [8] including the GP's gut feeling (24). The Wonca core competencies enhance the GPs' detection and management of multimorbidity. The second theme is the dynamic of the doctor-patient relationship in terms of quality of communication and mutual experience. This is important, as this

**Table 4.** Comparison between original and final definition of multimorbidity.

Original definition	Final definition
Multimorbidity is defined as any combination of chronic disease with at least one other disease (acute or chronic) or bio-psychosocial factor (associated or not) or somatic risk factor.	Multimorbidity is defined as any combination of chronic disease with at least one other disease (acute or chronic) or bio-psychosocial factor (associated or not) or somatic risk factor.
Any bio-psychosocial factor, any somatic risk factor, the social network, the burden of diseases, the healthcare consumption and the patient's coping strategies may function as modifiers (of the effects of multimorbidity).	Any bio-psychosocial factor, any somatic risk factor, the social network, the burden of diseases, the healthcare consumption, the patient's coping strategies, the GP's expertise and the doctor-patient relationship dynamics may function as modifiers (of the effects of multimorbidity).
Multimorbidity may modify the health outcomes and lead to an increased disability or a decreased quality of life or frailty.	Multimorbidity may modify the health outcomes and lead to an increased disability or a decreased quality of life or frailty.



relationship is seen, by GPs, not only as a mean of developing skills for communication or comprehension of the patient's point of view, but also as a global and mutual experience both for the patient and for themselves.

Those new themes highlight the solutions to known difficulties in the management of patients with multimorbidity. Those difficulties, described in a systematic review in 2013, and including meta-ethnographic syntheses, were as follows[25]:

Lack of organization within healthcare, challenges in delivering patient-centred care and inadequate guidelines. The EGPRN concept of multimorbidity has broken down those difficulties while using the Wonca core competencies.

Barriers to the sharing of decision-making which are broken down by the dynamic of the doctor-patient relationship.

The enhanced concept of multimorbidity has been confirmed and enriched by this study. The term 'condition' defining multimorbidity is now clearer and could be operationalized in research and possibly in practice. Some additions to previous definitions have been developed. For example, acute diseases are important for GPs as in other studies.[26,27] The presence of biopsychosocial factors (including somatic risk factors but adding patients' beliefs and expectations, psychosocial factors ...) is highlighted too, and that is a key point for the exploration of complexity in GP.[11,28,29]

The effects of multimorbidity could be modified to enhance the role of carers, caregivers and patients. The importance of the coping strategies of the patient are well defined by GPs and the link with the therapeutic alliance is important, as in previous publications.[30] The burden of diseases has also been taken into account by GPs well aware of the difficulties of scoring it in an homogeneous way.[31] The role of healthcare consumption in dealing with multimorbidity is important and could lead to new health cost indicators, as was shown in previous studies.[2,32] The importance of the social network of the patient (and of its failures) is highlighted, as has already been demonstrated.[33] Finally, frailty, disability and quality of life are in the balance as it was already demonstrated.[12,34]

These findings and confirmations could lead to new research focused on complexity, which is one of the major tasks of health systems throughout the developed countries. Policy makers need new indicators, synthesis and research about complexity to be able to handle it.[35] The EGPRN enhanced concept of multimorbidity focuses on a conceptual understanding of all the criteria that contributes to multimorbidity. Work of

this kind has never been achieved in such a complete way until now. Most of the expert literature focused on the accumulation of illnesses and attempts to find prevalent patterns of multimorbidity.[36,37] The main pitfall of that approach was that complexity was omitted from research and that primary care physicians would not be able to recognize their complex patients by using such studies.[38,39] This pitfall could lead to less effective care compared with patient-centred approaches to complexity.[40]

## Implications

European GPs recognized the EGPRN enhanced concept of multimorbidity. They added greater significance for complexity. Previous definitions were probably too concise, in a conceptual way, leading to a misunderstanding of the key role of complexity in general practice. Simplification could be helpful for research but could also be a major drawback in the assessment of complexity.[10,41] This concept focuses more on a conceptual understanding of all the criteria that contribute to multimorbidity. It now needs to be operationalized in research. The research team will undertake a European consensus survey to design a research agenda for multimorbidity throughout Europe.

## Conclusion

European GPs recognized the EGPRN enhanced concept of multimorbidity. They did not change it but added greater significance for complexity. It will now be operationalized in research to determine which criteria are effective in detecting, preventing and managing multimorbidity.

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## Declaration of interest

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

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