

## Strategy for Categorizing Clinical Complexity in Community Care

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### Abstract

**Introduction:** The Family and Community Nurse works with multiples clinical cases. This means that there are different levels of difficulty. The variables which occur in a case, how to relationship to each one and the tipology makes that the nurse found a degree of difficulty therapeutic as well as diagnostic. This is called "complexity". The relationship between the explicit terms of a case and the implicit logical consequence, make the case advances the implementation and its value in training. It is important to note the type of data that make up the clinical course. These data are classified in three groups.

**Aim of the Study:** The aim of this work is to establish a system for classifying clinical cases in chronic health processes based on their complexity of care.

**Methodology:** Delphi method to "n" turns to achieve unanimous consensus of the experts involved.

**Results:** The system makes distinction between the difficulty level of a clinical course and the number of normalized variables. In case of variables number which give greater or lesser complexity to a course is because it is not known if more or less information helps the course is more or less complex, as it depends on the quality of information be given.

**Conclusion:** People with chronic processes require care from the health system, but the amount and quality of care must be provided based on its complexity. For this reason, this study is presented that allows to know the level of complexity of a clinical case before these processes. With this classification system, the provision of services and resources can be better targeted. As future lines, the study of the correlation of the complexity with the index of care severity of a case of people with chronic health processes is proposed.

**Keywords:** Primary Care Nursing; Chronic Disease; Needs Assessment; Clinical Competence

### Abbreviations

CA: Clinical Assumption; SIAP: Sistema de Información de Atención Primaria (Primary Care Information System); BCV: Basic Care Variables; CMC: Clinical Manifestations of Care; VP: Vital Processes

### Introduction

In practice, the Family and Community Nurse Specialist faces multiple clinical cases, each one different from the other [1,2]. This variability is not just a question of form; in it lies a cause of the differentiation of practical difficulty [3]. Thus, the multitude of variables that interact in a case [4], their typology and the way they are combined, make a certain clinical situation present, for the nurse, a greater or lesser problem of both diagnosis and therapy [5,6]. This difficulty or problem is called “complexity” [7]. The entry into force of the Nursing specializations in Spain raises the fact [8] that a specialist nurse, and therefore a resident nurse, must demonstrate sufficient competencies to be able to understand the different clinical cases and undertake the strategies of resolution adapted to each situation [9]. This competence achievement can be achieved through practice, but the idea is also raised that there is a “training” plan (or “training”) through which the future specialist can analyze clinical assumptions and propose her resolution strategy before facing a real environment.

This idea, developed within the research group Management about Information and Standard Knowledge of Care, Standardized Nursing Knowledge that raised the need to generate a distinctive typology of clinical assumptions that simulate the existence of different situations through their specific “level of complexity”.

In this theoretical environment, the differentiation between “clinical case” and “clinical case” must be understood. A “clinical case” is called that which refers to or describes a real situation, reserving the concept of “clinical assumption” to one that serves to describe a fictitious situation constructed for nursing training [10,11]. In an argumentative way, it must be indicated, about the conceptualization of the “clinical assumption”, where “assumption” is defined as “Object and matter that is not expressed in the proposition, but is what it depends on, or on which it consists or is based, the truth of it” [10,11].

Adapting this definition to the present work, the definition of “clinical assumption” (CA) would be: “element that provides a person with sufficient information about a situation so that said person can make decisions, and act accordingly, as if it was a real clinical situation” [10,11]. In the context at hand, that of training in the field of Family and Community Nursing, the idea of “sufficient information” from a CA is that about the care situation of a person, family group or community that allows analyzing the state of these elements in order to make decisions about the care services they require (Service Portfolio including vaccination coverage) and the consequent nursing diagnosis [4,12].

Thus, taking as a reference definition “the object and matter that is not expressed” in a case, it is the clinical decision that must be ascertained (the care services they require and the nursing diagnosis) based on “that it depends on” (the data provided in the CA) called “the necessary and sufficient information” [10,11].

In other words, the information that is given in a clinical case hides the truth of it, which is its solution in itself: the care services and the diagnosis of care [13].

The relationship between the implicit and the explicit is what conceptualizes the value of the assumption as a catalyst for training in the field of care [14].

Once the clinical assumption has been conceptualized, it is convenient to briefly stop at the type of data that constitute it [15].

These data are classified into three groups: Basic Care Variables (BCV), Clinical manifestations of care (CMC) and Vital Processes (VP) [16].

In the present study, the number of data of each type was normalized in order to systematize the total information available, thus facilitating the clinical training process.

The data normalization is as follows:

- **BCV:** It corresponds to the 10 FCB defined by D. Orem's theory in his model [16]. Some FCBs have been necessary to unfold it, giving FCB 14 as "n1". These data will characterize the person through the inference by the clinician of their demand for therapeutic self-care and their self-care agency [10,11].
- **CMC:** Based on clinical history analysis studies, this data typology was normalized for an "n2" of CV 6. These data correspond to Key Field Type Determining Values [13] and provide information that allows inferring which diagnoses are possible or impossible in a given case.
- **VP:** As in VC, after a study a normalized "n3" of 3. Vital processes corresponds to health processes and contextualize the previous values and allow to infer unequivocally the assistance services required in a given case [10,11].

Returning to the subject of this research work and describing the theoretical and structural foundation of a "clinical assumption", it is clear that the level of complexity of a CS, in this study, does not depend on the number of variables in each case, as said number has been normalized: thus any assumption consists of n variables that are equivalent to a set of {n1 BCV, n2 CMC, n3 VP}.

Thus, the level of complexity of a CA is not established through the number of available data (since they are normalized), but through what has been called a multi-axis environment of difficulty.

This multi-axis environment, which determines the quality of said CA, will allow an assumption to be categorized based on its complexity and this will be determined, not by "what it depends on" (the data provided) of a CA, but by what "is not expressed in the proposition" and that constitutes its resolution (the diagnosis and services involved in a case) [15,17].

It is worth noting that this is possible given that in Spain there are a series of legislative bases that condition and support clinical decisions [1,3,8].

And there are also a series of legislative bases that determine the competences to be acquired regarding family and community nursing care [1,3,8].

Thus, we find as a basis for competencies in Nursing ORDER CIN/2134/2008, of July 3, which establishes the requirements for the verification of official university degrees that enable the exercise of the profession of Nursing [1,3,8].

For the development of competence in the Family and Community Nursing specialty, we work with Royal Decree Order SAS/1729/2010, of June 17, which approves and publishes the training program for the Family and Community Nursing specialty [1,3,8].

### Appropriate headings

Once the idea of assumption and of knowing how to justify has been introduced, there are different degrees of complexity, the objective of this work is to categorize it in the environment defined in the introduction to be able to classify different types of CA in chronic patients.

This categorization will be carried out through a case classification system based on their complexity.

To do this, a multi-axis chronicity complexity environment will be defined and agreed upon.

For the purpose at hand, the following study is carried out [18]:

- Type of study: Qualitative.
- Study time: October 2018 to March 2019.
- Study method: Delphi at “n” turns until consensus is reached by unanimous consensus of the experts involved:
  - Systematic: Establishment of consensus on the following categories.
  - Establishment of the conceptual reference model.
  - Elements that determine the complexity of a case of chronicity.
  - Grouping of elements in axes.
  - Determination of the axis value.
  - Establishment of final weighting.
- The experts participating in the Delphi study:
  - 1 documentary nurse,
  - 4 Master nurses in E-Learning,
  - 2 university professors of family and community nursing,
  - 3 Nurse specialists,
  - 2 primary care clinical tutors.

To understand the results we must mention the purpose of this publication: the proposed system distinguishes the level of difficulty of a clinical assumption, not through the number of available variables that have been normalized.

If it is not the number of variables that gives more or less complexity to an assumption, it is because it is not known whether more or less information helps the assumption to be more or less complex, since it depends on the quality of the information that campus.

Therefore, it was normalized and it was decided to determine the quality of an assumption through four axes.

These four axes, which qualify an assumption, are what make up the “multi-axis environment” and they are:

- Number of people with chronic processes of the assumption
- Evidence or subtlety of clinical data
- Tipology of the care agency
- Diagnostic differentiation.

Each of these axes has its variable, with two exclusive variables for each axis.

Each axis has a range of less or more difficulty (from 0 to 2 or 3, depending on the parameter).

The union of the different axes results in a certain level of difficulty, which can range from 0 to 10.

The minimum value of an item would be 0 points, the next 2 points and in some axes there will be a third item that will have the value of 3 points.

The jump of value 1 point is not accidental, since it has been considered that the maximum difficulty score is required to be 10 (in order to finally normalize the entire potential typology of CA), and, therefore, the value 1 has to be discarded so that the mixture of the axes allows that gradation.

In such a way, the minimum difficulty score of a course is 0 and the maximum would be 10 points.

The items that give the lowest difficulty value to an assumption and which are the ones that give the highest value are explained below:

- Null value of difficulty per axis:
  - Individual (only one person in the family with chronic disease).
  - Evident symptoms (not silent).
  - It does not necessarily incorporate the dependent care agency.
  - Completely different chronic diagnoses.
- Maximum difficulty value per axis:
  - Group of extended family with chronic diseases.
  - Subtle.
  - It necessarily incorporates the dependent care agency.
  - Differential diagnoses to rule out.

The sum of the scores of the different axes determines the "level of complexity" (consistent with the established difficulty) of each assumption, which can range from 0 to 10.

The system makes distinction between the difficulty level of a clinical course and the number of normalized variables. In case of variables number which give greater or lesser complexity to a course is because it is not known if more or less information helps the course is more or less complex, as it depends on the quality of information be given.

## Discussion

The work presented will facilitate the tutoring of undergraduate and practical nurse students of the Family and Community Nursing specialty, allowing their training and giving them a system for measuring their competence improvement by increasing their resolvability not only numerically but also attending to the complexity of the cases they solve.

Thus, once, having established the construction of a clinical assumption, the apprentice must know the existence of levels of difficulty and incorporate a strategy that allows them to gradually overcome these levels until reaching a certain level of competence.

It is trivial to indicate that, as this study finally shows, the level of complexity of an assumption is directly proportional to its difficulty [19].

This work allows categorizing CS at different levels, following Patricia Benner [15], three levels are proposed according to their level of complexity: basic, medium or advanced.

### Conclusion

This work also makes it possible to adapt the description of complexity by incorporating new axes of difficulty and combining it with other stratifications of chronicity such as the Kaiser pyramid.

People with chronic processes require care from the health system, but the amount and quality of care must be provided based on its complexity. For this reason, this study is presented that allows to know the level of complexity of a clinical case before these processes. With this classification system, the provision of services and resources can be better targeted.

Future lines of research are its implementation in simulation systems of clinical assumptions in chronic patients.

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