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RESEARCH ARTICLE (ORIGINAL)

Learning to care for the family in the community: Usability of the Dynamic Model of Family Assessment and Intervention

Aprendizagem do cuidar a família na comunidade: Usabilidade do Modelo Dinâmico de Avaliação e Intervenção Familiar

Aprendizaje del cuidado a la familia en la comunidad: Usabilidad del Modelo Dinámico de Evaluación e Intervención Familiar

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Abstract
Background: The Dynamic Model of Family Assessment and Intervention is used in the teaching-learning process of undergraduate nursing students to guide the process of caring for families in the community.
Objective: To analyze the dimensions valued by undergraduate nursing students in the development of family assessment and intervention skills.
Methodology: An exploratory-descriptive study was conducted with 350 undergraduate nursing students. A form was used to identify aspects valued in using the theoretical and operational model in clinical teaching. Data were subjected to content analysis, with a priori and a posteriori categorization. All ethical assumptions were met.
Results: Five dimensions were identified: Clarity (most valued); Simplicity; Generality; Derivable consequences (intermediate frequency), and Empirical precision (least valued). Interconnection emerges between stages of the care process and the model as an instrument of change and reference in decision-making in clinical settings.
Conclusion: The dimensions confirm the importance attributed by students to the structure and meaning in learning about family care and are predictors of integrated learning between nursing theory and practice.

Keywords: nursing model; nursing students; learning; clinical skills

Resumo
Enquadramento: O Modelo Dinâmico de Avaliação e Intervenção Familiar é mobilizado no processo de ensino aprendizagem dos estudantes da licenciatura em enfermagem, como orientador no processo de cuidados às famílias na comunidade.
Objetivo: Analisar as dimensões valorizadas pelos estudantes do curso de licenciatura em enfermagem, no desenvolvimento de competências na avaliação e intervenção familiar.
Metodologia: Estudo exploratório-descritivo com 350 estudantes da licenciatura em Enfermagem. Uso de formulário para identificar aspetos valorizados na utilização do modelo referencial teórico e operativo em ensino clínico. Análise de conteúdo com categorização a priori e a posteriori. Cumpridos os pressupostos éticos.
Resultados: Identificam-se cinco dimensões: Clareza (mais valorizada); Simplicidade; Generalidade; Consequências deriváveis (frequência de nomeação intermédia) e Precisão empírica (menos valorizada). Emerge interligação entre etapas do processo de cuidados e modelo como instrumento de mudança e referencial na tomada de decisão no contexto clínico.
Conclusão: As dimensões confirmam a importância atribuída pelos estudantes à estrutura e sentido na aprendizagem dos cuidados à família sendo preditivas da aprendizagem integrada, entre teoria e prática em enfermagem.

Palavras-chave: modelo de enfermagem; estudantes de enfermagem; aprendizagem; competências clínicas

Resumen
Marco contextual: El Modelo Dinámico de Evaluación e Intervención Familiar se articula en el proceso de enseñanza-aprendizaje de los estudiantes del grado en Enfermería, como guía en el proceso de cuidados a las familias en la comunidad.
Objetivo: Analizar las dimensiones valoradas por los estudiantes del grado en Enfermería en el desarrollo de competencias en la evaluación e intervención familiar.
Metodología: Estudio exploratorio-descriptivo con 350 estudiantes del grado en Enfermería. Se utilizó un formulario para identificar los aspectos valorados en el uso del modelo referencial teórico y operativo en la enseñanza clínica. Análisis de contenido con categorización a priori y a posteriori. Se cumplieron todos los supuestos éticos.
Resultados: Se identifican cinco dimensiones, Clareza (más valorada); Simplicidad; Generalidad; Consecuencias derivables (frecuencia intermedia) y Precisión empírica (menos valorada). Surge interconexión entre etapas del proceso de cuidados y modelo como instrumento de cambio y referencia para la toma de decisiones en el contexto clínico.
Conclusión: Las dimensiones confirman la importancia atribuida por los estudiantes a la estructura y el significado en el aprendizaje de los cuidados a la familia, y son predictivas del aprendizaje integrado entre la teoría y la práctica en enfermería.

Palabras clave: modelo de enfermería; estudiantes de enfermería; aprendizaje; habilidades clínicas

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Introduction

Practice, research, and theory are the pillars of nursing as a profession, coexisting in a cyclical and reciprocal relationship. Clinical practice, research questions, and knowledge contribute to theory, and research guides practice and builds knowledge through theory, that is, theory guides research and improves practice (Saleh, 2018; Xu, 2017; Neto et al., 2016). In this regard, Saleh (2018) recommends that nurses should practice, research, theorize, and discuss the theory-practice gap as an impediment to theory-based practice. The need to integrate theoretical conceptions and assumptions into clinical practice is emphasized. Thus, the application of theoretical nursing models and the rationale for clinical decisions are based on scientific evidence for the development of nursing in everyday life. These challenges are posed in nursing education processes.

Considering these assumptions, the Dynamic Model of Family Assessment and Intervention (*Modelo Dinâmico de Avaliação e Intervenção Familiar*, MDAIF; Figueiredo, 2012) is used in the teaching-learning process of undergraduate nursing students to guide the assessment and planning of the intervention in the process of caring for families integrated into the community, both in theoretical and clinical teaching.

This study aimed to analyze the MDAIF dimensions valued by undergraduate nursing students in the development of family assessment and intervention skills.

Background

The literature shows that theoretical frameworks guide the design of nursing care and, consequently, its quality. Although well-developed, evidence-based models should guide nursing education, there are few studies providing models and structures to guide the development of clinical practice (Salah et al., 2018).

Teachers face the challenge of sharing the values and beliefs that give meaning to nursing phenomena with their students. For the advancement of nursing science, students must have a comprehensive understanding of the philosophy and theoretical foundations of the discipline (Madeira, 2015). Nursing education, grounded in theories and models of nursing, health, and policies, ensures that future nurses develop meaningful perceptions and experiences that translate into better nursing care for patients (Ozdemir, 2019). According to Salah et al. (2018), there is a gap between the way nursing theories and models are taught and their practical application by students, so theory and practice must be harmonized. This requires a more operative teaching of theoretical models and theories and the creation of a more participatory, creative, and meaningful clinical learning environment that enhances nursing professional knowledge. The Portuguese health policy embodied in the National Health Plan 2012-2016, extended to 2020 (Direção-Geral da Saúde, 2015), states that the social context of the community where people are born, grow, live, and die should be considered. At the same time, the reconfiguration of primary health care (PHC) and the national network of integrated long-term care pose new challenges in the definition of intervention models in this area (Decreto-Lei n.º 28/2008, do Ministério da Saúde, 2011). Within the scope of the Nursing training process, the valorization of theoretical knowledge and its conceptualization in the way students provide care - the care process - allow for a progressive awareness through reflective practice in the acquisition of skills, as referred by Madeira (2015), which is reflected in the consistent development of the instrumental, interpersonal, and systemic dimensions to provide care in family and community settings. A systematic literature review (Kokorelias et al., 2019), using the Systemic Model, the Calgary Model of Family Assessment, and the Calgary Model of Family Intervention as references, identified a small number of studies on the impact of the various models on patient, family as client, or health system outcomes. The results point to a movement toward a universal model of family-centered care for all populations and care contexts with the potential to optimize family outcomes. Family members feel that the nursing intervention enabled/facilitated greater relational sharing and meaningful conversations, as well as changes in family functioning and family members' emotional well-being (Dorell et al., 2017; Östlund, et al., 2016).

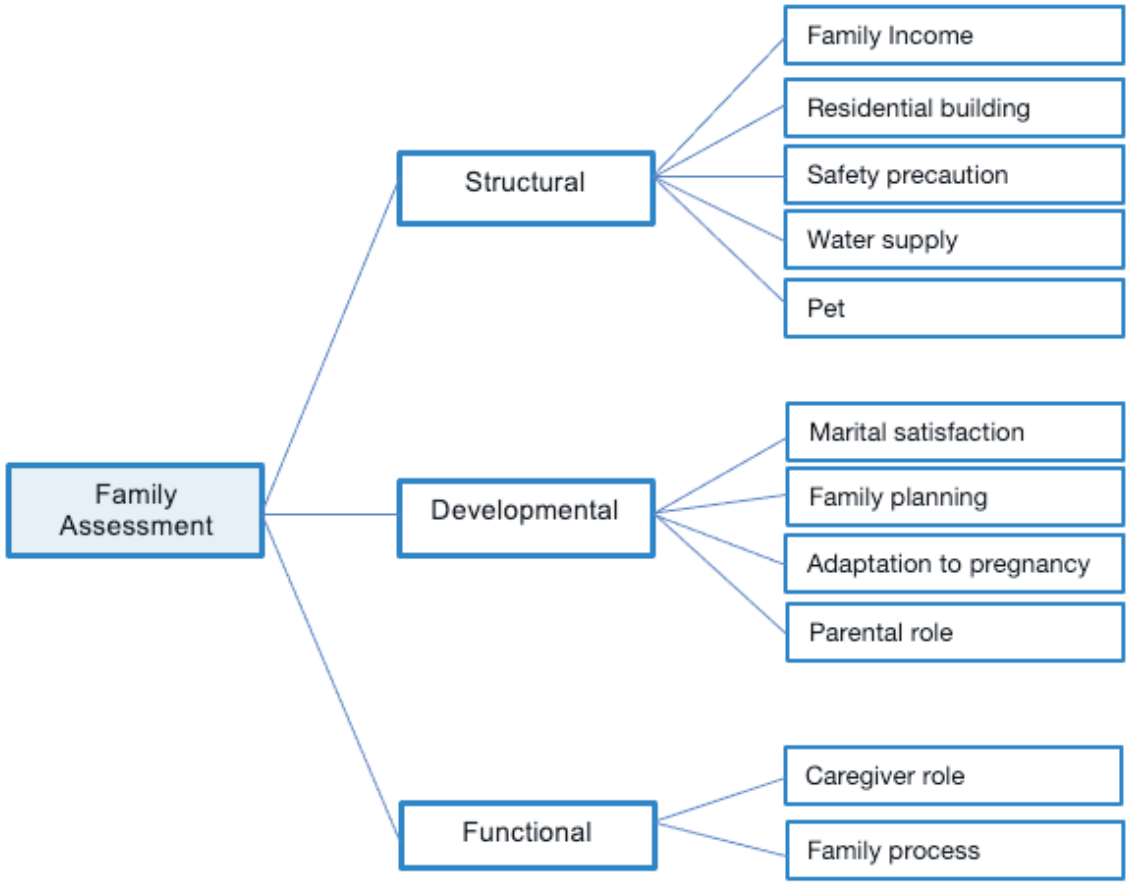
The MDAIF was adopted by the *Ordem dos Enfermeiros* (Portuguese nursing regulator) as a framework for Family Health Nursing. Its principle is that nursing care is centered on the family as the unit of intervention and client of care. With a systemic and collaborative approach, care enhances the strengths, resources, and skills of the family and its individual members (Figueiredo, 2012). It is within this scope that nursing education has developed itself by focusing on the knowledge and skills to be developed, based on the existence of a specific body of knowledge that distinguishes itself gradually by the research produced. Here fits the analysis of the care process developed in clinical practice, through the development of family assessment and intervention skills by undergraduate nursing students. This process is defined by Madeira (2015) as the interaction where the center of interest is the person, and the student is learning to use specific knowledge to make the diagnosis and plan the care for subsequent execution and control. For this process to occur, it is necessary to consider the interaction in the nursing care developed by the student in meaningful moments. The characteristics of these moments and the different actors involved (teachers, students, nurses) contribute to students' learning process. According to Madeira (2015), it is important to analyze students' life experiences and reflect on their self-representations, which are associated with their social and cultural background. The MDAIF relies on systemic thinking as an epistemological framework, integrating the concepts that classify the core phenomena of the theoretical system: family, family health, family environment, and family nursing care. It is also based on a set of assumptions and postulates (principles) that guide the nursing process, considering PHC as a context of excellence to care for the family as a unit and target

of care within its community. The assumptions recognize the complexity of the family system, considering its properties of globality, equifinality, and self-organization characterized by a procedural coevolution, where nursing care is governed by a multifocal and collaborative thinking that enhances the family's strengths, resources, and skills (Figueiredo, 2012).

The MDAIF is both a theoretical and an operational nursing framework. With regard to the model's operational structure, family assessment focuses on areas of attention divided into three dimensions: structural, developmental, and functional (Figure 1). The structural dimension focuses on the family structure to identify its composition and the links between the family and other subsystems such as the extended family and broader systems (Figueiredo, 2012). Understanding the developmental context in the family system implies recognizing the life cycle as a conjectural process, consisting of stages for all families and, simultaneously, identifying the evolutionary processes associated with the evolution in the specific transitions of each family (Figueiredo, 2012). The functional dimension refers to the family interaction patterns that allow for the development of family functions and tasks in a continuous, evolving, and dynamic way, promoting the sustainability of the family system as a coevolving whole (Figueiredo, 2012).

Figure 1

Diagram of the areas of family attention by assessment dimension



*Note***.** Adapted from "*Modelo dinâmico de avaliação e intervenção familiar: Uma abordagem colaborativa em enfermagem de família*" of Figueiredo, 2012, p. 104.

This framework identifies nursing diagnoses, interventions, and outcomes, supported by their definitions and designed to maximize the family's health potential. They are organized according to the operational matrix that integrates the dimensions and their areas of attention. The design and development of the MDAIF may allow students and nurses to better understand and implement it in clinical practice. The implementation of the MDAIF has required a training device adjusted to the nurses' needs, which has allowed translating knowledge into action and innovation through learning processes based on integrative approaches and methodologies.

On the other hand, this study is in line with the recommendation that future research on nursing education should go beyond the study of the experiences of clinical practice to include the implementation of practice models and the preparation of students to become active learners in clinical practice (Vivas et al., 2015). This study aimed

to analyze the dimensions valued by undergraduate nursing students in the development of family assessment and intervention skills.

Research question

Which dimensions are valued by undergraduate nursing students in using the MDAIF as a framework for clinical decision-making during their clinical teaching?

Methodology

A qualitative exploratory-descriptive study was conducted due to the interest in understanding and interpreting the meaning of students' lived experiences, the strategic behaviors, and the mobilization of resources that allowed them to act and interact in specific health care settings (Gauthier, 2016). The following criteria were used for participant selection: being students of a higher education institution with an undergraduate nursing program who had used the MDAIF as a theoretical framework during their program and implemented it in PHC clinical settings during their clinical teaching, namely in Family Health Units (*Unidades de Saúde Familiar*, USF) and Personalized Health Care Units (*Unidades de Cuidados de Saúde Personalizados*, UCSP). A total of 350 students participated in this study. Before data collection, the students were informed about the study's objective and the confidentiality, anonymity, and security of their personal data. They were also informed of their right not to participate in the study or withdraw from it at any time. A form with a single question was used for data collection: Which dimensions are valued by undergraduate nursing students in using the MDAIF as a framework for clinical decision-making during their clinical teaching? Students placed the completed forms in a sealed box in the educational institution for their convenience and anonymity. Data were collected from April to May 2021. Bearing in mind the ethical principles inherent to the fieldwork, this study was approved by the Ethics Committee of a higher education institution (Minute No. 4/2021). Data were processed using Bardin's content analysis technique (2018). The different stages are described below based on Bardin's perspective. Pre-analysis led to the organization of data to build the corpus of analysis. After skimming all answers, the authors obtained the first impressions and insights about the students' descriptions and identified the emerging characteristics. The recording unit was defined as the semantic unit with meaning: the sentence. This was the basis of meaning that guided the data categorization and quantification plan in terms of significant frequency. Data exploration was guided by the above-mentioned theoretical framework and objective of the study. A system of categories was created with both a priori categories, reflecting the study's objectives and theoretical frameworks, and a posteriori categories, derived from the material constituting the corpus of analysis. Exclusivity was ensured by confirming that each recording unit was only part of a single category, and exhaustiveness was achieved because all recording units were integrated into a category.

Results

The study sample consisted of 350 3rd- and 4th-year undergraduate nursing: 87 (25%) men and 263 (75%) women aged 20 to 33 years. The analysis was systematized in Table 1, listing each category and the corresponding subcategories and enumeration units (EUs).

Table 1

Coding - category system

Category	Subcategory	Enumeration Units	%
Clarity	Organization	72	33.5
	Systematization	62	28.8
	Structure	27	12.6
	Concepts/Explanation	26	12.1
	Objectivity	28	13.0
		215	**100.0**
Derivable consequences	Easiness	21	19.6
	Organization	10	9.3
	Assessment	25	23.4
	Guiding	29	27.1
	Concepts/Rationale	22	20.6
		107	**100.0**
Generality	Comprehensive	57	61.3
	Holistic	14	15.1
	Adaptability	6	6.5
	Family/individual assessment	16	17.2
		93	**100.0**
Simplicity	Easiness	49	56.3
	Adaptability	6	6.9
	Clear	25	28.7
	Applicability	7	8.0
		87	**100.0**
Empirical precision	Relevance	4	5.3
	Specificity	10	13.2
	Applicability in clinical setting	24	31.6
	Assessment	13	17.4
	Concepts/Rationale	25	32.9
		76	100.0

Clarity was the most valued of the five categories (215 EUs), integrating five subcategories. The highest frequency was found in Organization and Systematization, and a very homogenous frequency was found in the subcategories of Objectivity, Structure, and Concepts/Explanation. Empirical precision was the least valued category (76 EUs). However, of its five subcategories, the highest frequency was found in Concepts/Rationale and Applicability in clinical setting, while the lowest frequency was found in Assessment, Specificity, and Relevance. The categories below had an intermediate frequency. In Derivable Consequences (107 EUs), the subcategories Guiding and Assessment had the highest frequency, and the subcategories Concepts/Rationale, Easiness, and Organization had a very similar frequency. In Generality (93 EUs), Comprehensive had the highest frequency, followed by Family/individual assessment, Holistic, and Adaptability. In Simplicity (87 EUs), the category Easiness and Clear had the highest frequencies, while Adaptability and Applicability had the lowest frequencies.

Discussion

The categories of analysis reflect the value assigned by the students to the model and are consistent with its operational and conceptual matrix (Figueiredo, 2012), particularly due to the systemic nature of the approach to the family in the community, making it easy to assess and intervene in this area. In this regard, Frade et al. (2021) identified the need for this evaluation among the students so that, later on, as nurses, they are able to develop training programs in this specific area of care based on the partnership with the families.

The category Clarity includes aspects such as the consistency and the relationship between concepts, comprehensibility, and specification. The subcategories reflect

students' perceptions of their personal experiences using the MDAIF. With regard to Organization, the recording units focus on several aspects, as illustrated in the students' statements, "allows structuring/organizing the different contents" (S87), emphasizing the consistency of the information and the perceptibility of the model in clinical contexts. It is assumed that the model's components are clearly and accurately organized. The thinking process that guides the model's implementation, semantics, and conceptual definition allows for its use in different contexts. In the subcategory Systematization, the students reported that the schematic structure of the recording units allowed for a "more specific guidance to collect the intended data" (S34), that is, the common thread that guides family assessment and intervention. In the subcategory Structure, the results show that the model is adequate and makes it easier to assess the families, as seen in this statement, "the assessment structure makes it easy to assess all families" (S105). In the subcategory Concept/Explanation, which had the lowest frequency, the clarification of concepts is highlighted, allowing for a better understanding of the model as it "facilitates its interpretation and consequent integration" (S98). Objectivity, the last subcategory, emphasizes the model's precision to provide a clearer and more objective assessment of the family, as seen in this statement "objectivity of the various areas to be assessed" (S24). The results highlight the value assigned by the students to the model, which is in line with the study of Salah et al. (2018), who value the way nursing theories and models are taught to and implemented in clinical practice by the students.

The category Derivable consequences refers to the importance of the model in clinical practice, guides research, and distinguishes the target of care, allowing for the transferability of knowledge in this area. In the subcategory Easiness, the ease of applying the model and structuring thinking is highlighted, as seen in the following excerpt "ease of use" (S10). With fewer recording units, the subcategory Organization highlights the possibility of systematic organization in using the model. According to the students' statements, it allows to "better organize the way of thinking about family care" (S210). In the subcategory Assessment, the adequate family assessment helps to establish priorities. The flexibility in assessment was identified as a reference for practice and decision-making, as can be seen in the excerpt "the possibility of establishing priorities helps structure family assessment" (S301). The subcategory Guiding, which had the highest frequency in this category, refers to guidelines for practice, guiding the thinking process. It guides the design of health care, which, according to the meaning emerging from the students' statements, allows "organizing family data in a practical way" (S46). The subcategory Concepts/Rationale refers to the sound foundation (of the model), constituting a validated theoretical framework. A better design and planning of care directed towards the family's actual needs emerged, as illustrated by the following statement "to offer a wide range of items to assess and then assess foci and diagnoses that could arise and require our intervention" (S63). Madeira (2015) also mentioned that the care process developed by students should mobilize specific knowledge to diagnose and plan care for subsequent execution and control.

The category Generality refers to the comprehensiveness and capacity of the model to meet patients' needs, allowing for nursing care from a systemic perspective. Below are the four subcategories that emerged from this category. With the largest number of records, the subcategory Comprehensive is characterized by the fact that the model is seen as a whole, allowing for the approach to the family as a whole and "a generalized view of the family" (S22). The subcategory Holistic refers to a comprehensive view of the family, in line with its systemic view, as according to the following excerpt, "emphasizing the family as a whole but also each family member". Adaptability, the subcategory with fewer recording units, encompasses the adequacy to all families, as illustrated by "the model's adaptability to the various aspects that can be assessed in the family" (S33). In the subcategory Family/individual assessment, the students value the possibility to assess several dimensions of the family and all the family members, as "it allows identifying the family's health problems, interaction, and cohesion" (S203). This perspective is aligned with the study of Dorell et al. (2017) regarding the contributions of the nursing intervention (students) to enable changes in family functioning and the emotional well-being of family members. Frade et al. (2021) also highlighted that nursing students see the integration of the family in care as a coping strategy and an essential tool for dialogue in caring for the family unit.

The category Simplicity defines how simple the model is, yet sufficiently extensive and capable of providing guidance in the clinical context, including definitions of concepts necessary for its understanding. Four subcategories emerged in this category that explain how subjects perceive the MDAIF. Easiness refers to the clarity of the model's information that facilitates the identification of interventions and problem-solving processes, being easy to apply as can be seen in the following excerpt "facilitates decision making within the scope of family focuses" (S22). The subcategory Clear reflects the practicality of implementation, particularly with regard to the (practical) assessment of the family, according to the following statement, "easier to identify/solve problems within the family" (S124). The subcategory Adaptability, with lower frequency, focuses on the adjustment to the various family situations/realities and the adaptation to the various types of families, as identified in the following excerpt "adaptable to any family context" (S31). In this regard, Frade, Henriques, and Frade (2021) highlight the importance of the scientific community contributing to increasing the core of data and research in family health nursing and enhancing the teachers' reflective capacity about the students' training process.

The category Empirical precision incorporates the definition of concepts based on the context of practice, allowing for the development of knowledge. Five subcategories emerged in this category that reflect subjects' perspectives on the use of the MDAIF. The subcategory Concepts/Rationale had the largest number of recording

units, referring to a model with its own concepts. The concepts make the model more specific and theoretically well-grounded, valuing the cohesion and adaptability of each family member. A better knowledge of the family is achieved, and the role of the family nurse and his/her areas of intervention emerge. The results showed the importance of the distribution into areas of attention/dimensions to provide the subjects with an increased knowledge of different family assessment methods in different parameters, as can be seen in the following excerpt, "the model's own concepts make it more specific" (S94). In the subcategory Applicability in clinical setting, a straightforward interpretation of the model through standardized language is highlighted. The importance of assessing family communication and interaction is identified, with the detailed assessment of the family and the development of the genogram and the ecomap. There is a need for a matrix to guide the assessment and planning of care from an anticipatory perspective of development of capabilities, as illustrated by "it provides a matrix to assess these aspects and also plan our activities not only from a reactive perspective, but also from an anticipatory perspective of development of capabilities" (S19). The subcategory Assessment highlights its standardization and the guidance on what should be assessed in each diagnosis and intervention. It also refers to the inclusion of scales for assessing different parameters to provide guidance on priority areas of attention. It allows assessing the functional dimension of the family, as can be seen in the following excerpt "what should be assessed in each of the possible diagnoses and interventions" (S340). In the subcategory Specificity, it should be noted that the model assesses each specific dimension, being rigorous and allowing for the identification of the stages of the life cycle, which was valued in the students' statements, "very specific assessment of each dimension that we intend to address" (S8). The subcategory Relevance had the lowest number of recording units, highlighting the approach to relevant areas by using assessment scales in specific situations, "the criteria are very relevant" (S1). This category is apparently less valued by the students. However, the students' life and learning background is questioned as a factor to be taken into account. This finding is in line with Madeira (2015) because this characteristic presupposes a gradual awareness through reflective practice. This process implies the development of a high level of maturity and skills and the capacity to adapt and transfer knowledge (Ozdemir, 2019).

In summary, the results demonstrate the relevance of using the MDAIF as a theoretical framework of a clinical practice being developed in nursing that simultaneously accompanies the dimensions of the discipline and the (learning of the) profession. In this line of thought, Alligood (2017) mentions that theory validates and interprets knowledge, predicting phenomena and, simultaneously, allowing for the development of new and better practices. Data analysis confirms that models guide thinking and may be used to structure nursing practice, with predictable outcomes, which is in line with the importance assigned by students to the MDAIF as a tool for learning how to be a nurse and care for families. As a theoretical and operational framework in nursing, namely regarding family care, the MDAIF focuses on assessing and intervening in the structural, developmental, and functional dimensions. As a whole, the categories confirm the importance assigned by students to the MDAIF, a recognized structure that gives meaning to their learning about family care. The dimensions listed by the students are predictors of an integrated learning process based on scientific knowledge that guides clinical nursing practice.

Conclusion

The MDAIF seems to be a strategic tool in two areas of interest: the pedagogical area - the training process from teaching to learning - and the professional area - the development of future nurses' skills to care for the families. An emphasis is placed on the ecosystemic approach, in which the empowerment of individuals integrated into their family systems is crucial for social sustainability. The dimensions valued by the students reflect these premises. In hierarchical order, they range from a category more related to the model's conceptual framework (Clarity), its importance (Derivable consequences), the ability to meet patients' needs from a systemic perspective (Generality), the simple way of guiding clinical practice (Simplicity), to the way it leads to the development of knowledge from a perspective of reflective practice (Empirical precision). However, this study had some limitations related to sample size and the techniques used. The authors recognize the possibility of using other techniques, such as the observation of students' practices while using the MDAIF in clinical settings.

In view of the identified dimensions, their hierarchization and combination, the teaching-learning process reveals that the appropriation of the MDAIF moves from a conceptual perspective to a reflective practice that is integrative and seems to be related to the development of students' maturity. The analysis of the dimensions identified in this study suggests the development of future studies based on the partnership relationship between nurses, families, and their subsystems. Students, as future nurses, will become aware of this relationship throughout their training process in family health nursing.

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