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Scale for Assessing Care Needs in Dependent Persons Based on Virginia Henderson's Theory

Escala para Valorar las Necesidades de Cuidados en Personas Dependientes basada en la Teoría de Virginia Henderson

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ABSTRACT

Introduction: nursing care has evolved into a scientific discipline that requires the application of theoretical frameworks to guide professional practice. Virginia Henderson's theory of the 14 basic human needs stands out for offering a comprehensive and humanized approach to care. However, its application in clinical training poses challenges due to the lack of objective evaluation tools. In this context, a scale was developed to assess nursing students' competence in applying Henderson's model to dependent patients.

Objective: to design and validate an instrument that evaluates nursing students' competence in identifying, assessing, and addressing the 14 fundamental human needs in dependent individuals, according to Virginia Henderson's theoretical model.

Method: a quantitative, descriptive, and instrumental study. The instrument was validated in two phases: expert judgment (three PhD nurses) to assess content validity, and a pilot application with 72 sixth-semester nursing students to evaluate internal consistency using Cronbach's alpha coefficient. A Likert-type scale was used to measure perceived competence in each of Henderson's 14 needs. (ENCH-56: Henderson Care Needs Scale)

Results: the scale showed excellent reliability ($\alpha = 0,97$), indicating high internal consistency. Item means ranged from 2,54 to 3,38, with generally low standard deviations, reflecting a medium-to-high perceived competence among students. Items related to the use of dependency scales and clinical documentation showed higher dispersion, indicating areas for improvement in training.

Discussion: the validated instrument is psychometrically robust and conceptually aligned with Henderson's theory. Its application enables the identification of strengths and weaknesses in clinical training, promotes critical thinking, and strengthens the theory-practice link. Additionally, it suggests pedagogical opportunities to improve nursing education.

Conclusions: the scale is a useful tool for formative evaluation of clinical competencies based on the Henderson model. Its implementation will help strengthen educational quality and person-centered nursing care, grounded in ethical and scientific principles.

Keywords: Virginia Henderson; Human Needs; Nursing Care; Nursing Education; Competency Assessment; Instrument Validation.

RESUMEN

Introducción: el cuidado de enfermería ha evolucionado hacia una disciplina científica que exige la aplicación de teorías que orienten la práctica profesional. La teoría de las 14 necesidades básicas de Virginia Henderson se destaca por ofrecer un enfoque integral y humanizado del cuidado. Sin embargo, su aplicación en la formación clínica de los estudiantes presenta desafíos por la falta de herramientas objetivas de evaluación. En este contexto, se desarrolló una escala para valorar la competencia de los estudiantes en la aplicación del modelo de Henderson en pacientes dependientes.

Objetivo: diseñar y validar un instrumento que permita evaluar la competencia de los estudiantes de enfermería en la identificación, valoración e intervención de las 14 necesidades humanas fundamentales en personas dependientes, conforme a la teoría de Virginia Henderson.

Método: estudio cuantitativo, descriptivo e instrumental. El instrumento fue validado en dos fases: juicio de expertos (tres doctores en enfermería) para la validez de contenido, y aplicación piloto en 72 estudiantes de sexto semestre para evaluar la confiabilidad interna mediante el coeficiente alfa de Cronbach. Se empleó una escala tipo Likert para medir la competencia percibida en cada una de las 14 necesidades de Henderson (ENCH-56: Escala de Necesidades de Cuidados en Henderson).

Resultados: la escala demostró una excelente confiabilidad ($\alpha = 0,97$), indicando alta consistencia interna. Los ítems presentaron medias entre 2,54 y 3,38, con desviaciones estándar generalmente bajas, reflejando percepción media-alta de competencia en los estudiantes. Los ítems relacionados con la aplicación de escalas de dependencia y registro en historia clínica mostraron mayor dispersión, indicando áreas de mejora en la formación.

Discusión: el instrumento validado es psicométricamente robusto y conceptualmente alineado con la teoría de Henderson. Su aplicación permite identificar fortalezas y debilidades en la formación clínica, promover el pensamiento crítico y reforzar el vínculo teoría-práctica. Además, sugiere oportunidades pedagógicas para mejorar la formación de futuros profesionales de enfermería.

Conclusiones: la escala representa una herramienta útil para la evaluación formativa de competencias clínicas basadas en el modelo de Henderson. Su implementación contribuirá a fortalecer la calidad educativa y el cuidado enfermero centrado en la persona, en base a principios éticos y científicos.

Palabras clave: Virginia Henderson; Necesidades Humanas; Cuidados de Enfermería; Educación en Enfermería; Evaluación de Competencias; Validación de Instrumento.

INTRODUCTION

Nursing care has evolved into a scientific and professional discipline that requires, in addition to technical knowledge, the application of theoretical frameworks that guide practice toward a holistic, human, and evidence-based approach. In this sense, assessing care needs has become one of the fundamental competencies of professional practice, especially in clinical settings where the person being cared for has some degree of dependency. To address this complexity, nursing theories offer conceptual models that facilitate the systematization of critical thinking, the structuring of interventions, and the guidance of decision-making in direct patient care.^(1,2)

Among the most influential theoretical models is Virginia Henderson's Theory of 14 Basic Needs, which proposes a comprehensive view of the human being and a clear conceptualization of the nurse's role as a facilitator of autonomy. Henderson defined nursing as assisting the healthy or sick individual in performing activities that contribute to their health, recovery, or peaceful death, activities that they would conduct themselves if they had the strength, knowledge, or will to do so.⁽³⁾ This definition transcends the traditional biomedical approach by incorporating the social, emotional, and spiritual dimensions of care, positioning the person as the center of the care process.

The theory posits that 14 fundamental needs must be met to maintain health and well-being, including: breathing normally, eating and drinking adequately, eliminating bodily waste, moving and maintaining proper posture, sleeping and resting, dressing and undressing, maintaining body temperature, maintaining hygiene and skin integrity, avoiding environmental hazards, communicating, acting by values and beliefs, engaging in meaningful activities, participating in recreational activities, and learning to use health resources.⁽⁴⁾ The role of the nursing professional in this framework is temporary and seeks to progressively promote the patient's independence in meeting these needs.^(5,6)

In the field of nursing education, the application of theories such as Henderson's not only guides clinical care but also structures the teaching and assessment of competencies. In particular, during clinical practice, students face the challenge of applying theoretical knowledge to the real-life context of patient care. The use

of structured tools that operationalize these theories facilitates not only the application of the model but also the development of decision-making, critical thinking, and comprehensive care planning skills. Henderson's theory is instrumental in this regard because, by focusing on the identification of basic needs, it allows students to systematically observe, assess, and record the patient's health status and level of dependence.⁽⁷⁾

However, despite the recognition of this model in education and clinical practice, the systematic measurement of its application remains a challenge. Many training processes lack specific tools to objectively assess students' level of competence in identifying and addressing these needs. As a result, the evaluation of clinical practice is often limited to general observations or subjective judgments, which limits learning monitoring, formative feedback, and continuous improvement of teaching processes.⁽⁸⁾

In response to this need, the *Scale for Assessing Care Needs in Dependent Persons* was developed based on *Virginia Henderson's Theory*. This tool seeks to measure the level of competence of nursing students in applying this theory in real clinical settings.⁽⁹⁾

The instrument was designed based on the 14 components of the model, considering specific indicators for each need and using a Likert scale that allows students to record their perception of their ability to perform clinical assessments independently or with supervision. This scale also promotes critical reflection by students on their skills, identifying areas for improvement and reinforcing the systematic application of the theory.⁽¹⁰⁾

To ensure the scientific validity of the instrument, a content validation process was carried out by experts, who evaluated each item in terms of clarity, relevance, and theoretical consistency. A pilot test was also administered to sixth-semester nursing students to analyze its internal reliability using Cronbach's alpha coefficient, which verified the statistical consistency of the scale and allowed for necessary adjustments to be made for its final implementation.^(11,12)

The use of this instrument represents a significant advance in the measurement of clinical competencies from a theoretical perspective. It enables the rigorous academic and methodological evaluation of the degree to which the Henderson model is applied in the educational context, promoting the integration of theory and practice and strengthening the training of reflective, competent professionals committed to humanized care.

It also provides teachers with a valuable tool for identifying strengths and weaknesses in the teaching process and generating pedagogical strategies that foster autonomy, critical thinking, and clinical judgment in their students.^(13,14)

The research is part of the need to link theory with practice in the field of nursing, using valid, reliable, and pedagogically useful tools. The scale developed is designed as a training and assessment resource that not only measures clinical performance but also promotes a person-centered culture of care based on ethical, scientific, and human principles. Its application will contribute to raising the quality of nursing education and strengthening professional practice based on solid and proven theoretical models.

The overall objective for the creation of the *Scale for Assessing the Care Needs of Dependent Persons based on Virginia Henderson's Theory* is to design and validate an instrument that allows for the assessment of nursing students' competence in identifying, assessing, and intervening in the 14 fundamental human needs of dependent persons, by the theoretical model proposed by Virginia Henderson.

METHOD

A quantitative study was conducted using a descriptive design and an instrumental methodological approach, aimed at validating the content and internal reliability of the *Scale for Assessing Care Needs in Dependent Persons, based on Virginia Henderson's Theory*. The study was carried out in two phases: validation by expert judgment and statistical analysis of internal reliability through the pilot application of the instrument to nursing students.

Stages of the validation process

1. Construction of the instrument

The instrument was developed based on the 14 components proposed by Virginia Henderson, adapting each fundamental need to a clinical situation that students could assess during their practical training. Fourteen items were formulated, one for each need, using a 5-point Likert scale that assesses the level of competence perceived by the student, from 0 (I do not feel capable of applying this part of the instrument) to 4 (I feel capable of using it independently).

2. Content validity of the instrument

To ensure the content validity of the instrument, the "Scale for Assessing Care Needs in Dependent Persons Based on Virginia Henderson's Theory," specifically the ENCH-56: Henderson Care Needs Scale, an expert judgment evaluation process was conducted. Three professionals with specific experience in applying Virginia Henderson's theory of 14 fundamental needs participated.

Each expert evaluated the items in the instrument considering three fundamental criteria: clarity, relevance,

and theoretical consistency, using a four-point Likert scale (1 = very inadequate, 4 = very adequate). The results showed a high level of consensus among the evaluators, who assigned maximum scores (4) to most items, indicating a generally positive assessment of the instrument's structure and content.

Based on the qualitative comments provided by the experts, specific adjustments were made. Among the suggestions implemented, we highlight the reformulation of the item related to the need to "move and maintain appropriate postures," which was adjusted to "assessment of mobility and appropriate postures," in response to the recommendation to emphasize the importance of healthy postural habits.

Comments on the need to strengthen the nurse-patient communication component, as well as to include dimensions related to spiritual care and self-care, were also taken into account.

The experts agreed that the instrument is valid for assessing the care needs of dependent people from the perspective proposed by Virginia Henderson's theory. They confirmed that there are no redundancies or irrelevant elements in its composition. This validation is a fundamental step in ensuring the scientific quality and clinical applicability of the instrument in nursing care assessment contexts.

3. Reliability of the Instrument

Following content validation by expert judgment, the reliability of the instrument was evaluated by analyzing its internal consistency using Cronbach's alpha coefficient. This coefficient is widely recognized in psychometric research as an indicator of the degree of homogeneity among the items on a scale.

Ethical considerations

This research is governed by the principles established in the World Medical Association's Declaration of Helsinki (WMA)⁽¹⁵⁾ on medical research involving human subjects, with particular regard to Articles 4, 8, 9, and 12, relating to the protection of the life, health, dignity, integrity, self-determination, privacy, and confidentiality of information of participants.⁽¹⁶⁾

The primary objective of this study is to validate an instrument that enables the evaluation of nursing students' clinical competencies in applying Virginia Henderson's theory. Participation will be entirely voluntary, confidential, and will not involve any physical, psychological, or social risk to those involved.

This research poses no risks to participants. The only activity required is to complete a self-administered questionnaire. No sensitive information will be manipulated, and there will be no intervention in the physical or emotional health of the students. The benefits are academic and educational, strengthening assessment based on theoretical models (Article 18). Article 20 states that the participants in this study will be sixth-semester nursing students who are not considered a vulnerable group. However, their right to self-determination and their willingness to participate or withdraw from the study without negative consequences will be respected at all times.⁽¹⁷⁾

Ethical approval (Article 23) of the research protocol will be submitted to the Ethics Committee of the Technical University of Ambato (CEISH-UTA)⁽¹⁸⁾ for review and formal approval. Only once approval has been obtained will the instrument be applied.

The information collected will be treated anonymously and will be used solely for academic and scientific purposes. The questionnaires will not include names or personal data that could identify the participants. The results will be presented in aggregate form, and no individual data will be disclosed.⁽¹⁵⁾

All participants will be included in the study only after signing an informed consent form that explains the study's objectives, procedures, participant rights, and the voluntary nature of their participation. It is emphasized that they may withdraw from the study at any time without justification.⁽¹⁵⁾

The results of this research will be disseminated through scientific and academic media, by the standards of indexed publications. Transparency and integrity in the presentation of findings are guaranteed, without manipulation or omission of information. (Article 26). The researchers declare that they have no conflicts of interest about the design, execution, or publication of the results of this study.⁽¹⁵⁾

RESULTS

The instrument was applied in a pilot test to a sample of 72 nursing students, who completed a total of 56 items distributed according to the 14 fundamental needs of Virginia Henderson's Theory.⁽¹⁹⁾ Cronbach's alpha was calculated.⁽²⁰⁾

Where:

- k: total number of items
- $\sum \sigma^2_i$: sum of the individual variances of the items
- σ^2_t : total variance of the sum of the items

Substitution with the data obtained:

k = 56

$$\Sigma\sigma^2_i = 25,125$$

$$\sigma^2_t = 650,17$$

$$\alpha = (56 / (56 - 1)) * (1 - (25,125 / 650,17)) = 0,97$$

This result indicates excellent reliability of the instrument, as it exceeds the accepted threshold of 0,90. The high internal consistency suggests that the items are highly correlated with each other and consistently measure the care needs of dependent persons from the perspective of Virginia Henderson's Theory. Consequently, the instrument is statistically reliable for use in clinical, academic, and research settings.⁽²⁰⁾

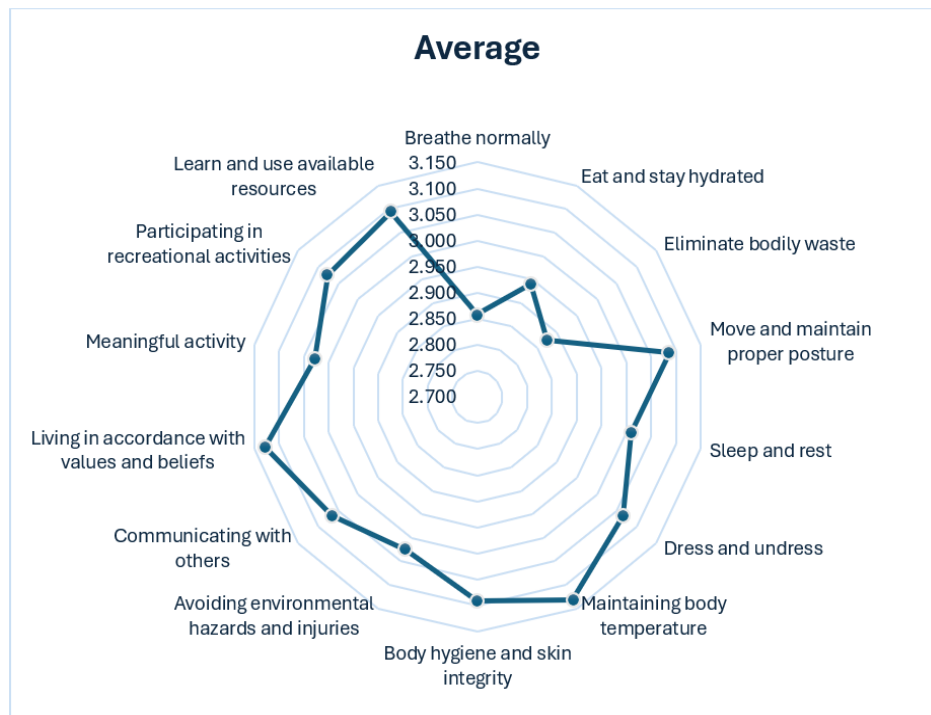


Figure 1. Descriptive analysis of the instrument items

The validation of the instrument using the spider graph, structured according to Virginia Henderson's 14 fundamental needs, provides a comprehensive view of the strengths and weaknesses in the application of nursing care. This type of graphical representation clearly shows the most highly rated dimensions, as well as those that require strengthening.⁽²¹⁾

Among the needs with the highest average scores are "Maintaining body temperature," "Living by values and beliefs," "Body hygiene and skin integrity," and "Moving and maintaining proper posture." These results suggest that, in these areas, nursing staff demonstrate adequate clinical assessment, correct use of dependency scales, and appropriate recording in the assessment form, which indicates good professional performance and proper mastery of the associated competencies.⁽²²⁾

On the other hand, the graph identifies areas with lower scores, such as "Breathing normally," "Eliminating through all body channels," and "Eating and hydrating adequately." These needs have mean values close to the lower limit of the observed range, which indicates possible difficulties in accurately assessing, applying standardized clinical instruments, or documenting relevant findings. Such results may reflect limitations in technical training or the systematic application of care protocols.⁽²¹⁾

In general terms, the distribution of scores shows acceptable consistency, with averages ranging from 2,85 to 3,13. This suggests adequate uniformity of the instrument and good sensitivity in differentiating the level of compliance between different areas of care. The asymmetry in the shape of the graph indicates that the instrument does not homogenize the results, which is desirable for differentiated evaluation purposes.⁽²⁰⁾

DISCUSSION

The results of this study demonstrate that the "Scale for Assessing Care Needs in Dependent Persons Based on Virginia Henderson's Theory" - ENCH-56: Henderson Care Needs Scale - has satisfactory psychometric properties, supporting its use as an assessment tool in educational and clinical settings.

First, content validity, obtained through expert judgment, confirmed that the items in the instrument are relevant, consistent, and understandable. This type of validation is crucial in the initial phase of instrument

development, ensuring that each item accurately represents the domain being measured.^(8,23) Given that the instrument is based on a well-established theoretical framework—Virginia Henderson’s 14 fundamental needs—the participation of experts ensured the theoretical fidelity of the items.^(2,24)

Second, internal reliability analysis revealed a Cronbach’s alpha coefficient of 0,97, indicating excellent internal consistency of the instrument. This result far exceeds the recommended minimum of 0,70 for exploratory studies and the value of 0,90 for clinical and educational contexts.⁽²⁵⁾ The consistency between the items suggests that they all measure the same underlying construct, namely the ability to assess patient needs comprehensively.

Descriptive analysis by item revealed means ranging from 2,54 to 3,38, indicating a favorable perception of competence among nursing students. Likewise, standard deviations were mainly below 1,0, suggesting low dispersion in responses. However, some items, especially those related to clinical recording and the application of scales, showed greater variability, possibly due to differences in practical training or familiarity with these processes.^(25,26)

Several studies agree on the importance of structured instruments based on nursing theories to strengthen clinical practice and professional training. The theory, in particular, has been widely used as a basis for designing interventions and instruments focused on comprehensive human care.^(27,28,29) Additionally, the incorporation of evaluation tools based on theoretical frameworks promotes the standardization of practice and evidence-based clinical decision-making.^(29,30)

Finally, the instrument’s usefulness also lies in its potential as a training tool. By enabling self-assessment and structured feedback in supervised clinical practice settings, it promotes the development of student competencies and strengthens the link between theory and practice.⁽³¹⁾

Taken together, these findings allow us to conclude that the validated instrument is statistically reliable, conceptually sound, and functionally practical for assessing clinical competencies in the context of comprehensive nursing care.

The objective of this study was to design and validate a tool that enables the objective assessment of nursing students’ competence in identifying and caring for the 14 fundamental human needs, as outlined in Virginia Henderson’s model. This effort is aligned with the growing need to articulate theory and practice in the training of health professionals and responds to a common demand in the scientific literature: the scarcity of instruments that allow nursing care to be quantified from a robust theoretical approach.

The importance of quantifying care stems from several factors. First, as indicated by Martins et al., measuring the quality of care enables the identification of critical areas for performance improvement and promotes safer, patient-centered care. The creation of valid and reliable instruments empowers the transformation of subjective perceptions into valuable data for informed clinical decision-making and the continuous improvement of care.⁽³²⁾

Similarly, Correa et al. emphasize that the validation of structured instruments facilitates the organization of clinical nursing judgment, predominantly when guided by theories such as basic human needs, strengthening the link between theory and practice. This systematization enables greater consistency in patient assessment, particularly in critical areas such as pediatric intensive care.⁽³³⁾

In addition, studies such as that by Guilherme et al. have shown that the use of validated data collection instruments improves the quality of care by reducing subjectivity in the assessment process and promoting evidence-based practice.⁽³⁴⁾

Along the same lines, Orem’s theory emphasizes the usefulness of structuring care around specific theoretical needs, which also facilitates documentation, analysis, and continuity of care. Furthermore, the review suggests that advances in the visibility of scientific knowledge in nursing are linked to the systematization of instruments for evaluating results, particularly in academic and training contexts. The inclusion of theoretical models such as Henderson’s not only improves the quality of care but also enhances the training of future professionals.⁽³⁴⁾

Similarly, research by Albuquerque et al., based on Horta’s model, highlights that systematic needs assessment allows interventions to be structured according to the level of dependency, promoting an ethical, humanized, and person-centered approach.⁽³⁵⁾

Finally, instruments such as the Scale for Assessing Care Needs in Dependent Persons not only facilitate the identification of strengths and weaknesses in clinical training but also support pedagogical processes aimed at fostering critical thinking, professional autonomy, and clinical judgment grounded in nursing theories. The incorporation of these types of tools into the university curriculum is key to consolidating a scientific, reflective, and comprehensive care-centered nursing practice.

CONCLUSIONS

- A structured instrument consistent with Virginia Henderson’s theoretical model was designed and validated, allowing for the assessment of nursing students’ competence in identifying, assessing, and intervening in the 14 fundamental human needs of dependent individuals. The ENCH-56 Scale

demonstrated content validity through expert judgment, which confirmed the clarity, relevance, and theoretical fidelity of the items included.

- In terms of reliability, the instrument obtained a high Cronbach's alpha coefficient (0,97), demonstrating excellent internal consistency and ensuring its statistical stability for use in academic and clinical settings. The pilot application, involving 72 students, showed medium to high performance in most evaluated dimensions. However, critical areas for improvement were also identified, particularly in the use of dependency scales and clinical records, which provide concrete input for formative feedback and curriculum enhancement.

- The instrument not only fulfills its evaluative purpose but also promotes the integration of theory and practice by facilitating a reflective evaluation of student clinical performance using a person-centered approach. In addition, the ENCH-56 is projected as a versatile training tool with research potential that can be incorporated into different levels of the nursing curriculum, contributing to the continuous improvement of educational quality.

- In short, the implementation of this scale contributes to the strengthening of ethical, humanistic training based on international standards, consolidating structured evaluation processes supported by care theories with high professional applicability.

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CONFLICT OF INTEREST

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