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Instituto Nacional de Neurología y Revista de Neurocirugía Manuel Velasco Suárez Enfermería Neurológica

Editorial



Educación y Enfermería: Proyecciones y perspectivas

Education and Nursing: Projections and Perspectives

The COVID-19 pandemic significantly modified healthcare in every specialized medical area, including the care of neurological diseases. The research of the consequences for the nervous system increased. In this sense, Matías and contributors pointed out:

- a. The pandemic would make related specialties increase considerably.
- b. The pandemic brought long term neurological consequences.
- c. There were no major investments for neurological research.
- d. There has been a change in the way neurological specialists work¹.

According to the factors above, people's health is influenced directly by their social and economic conditions. These conditions are named as "*Commercial and Social Determinants*."With the advent of the pandemic, it became evident that knowledge of these determinants are basic requirements in nursing education. This will lead to taking these factors more into account for further research.

Research on neurological issues remains to be established as a priority among health professionals. It is undoubtedly necessary in order to continue promoting primary care.

Nursing education is undergoing major changes, both politically and economically. Firstly, it is guided to production's public policies, such as "*healthcare marketing*", and satisfying Social Determinants demands. These transformations and changes in policies are shown in the Institutional Development Plan of each university; therefore, it is necessary to have quality plans and programs that meet the social demand for the right to health.

It is essential to reinforce focus on the evaluation of clinical education and research, especially on postgraduate nursing courses to aim for a future in which the professional profile covers more than a graduate level. Moreover, it is vital to have the ability to adapt to different employment options in the market, as well as having self-education, versatility, creativity and communication skills.

The political changes that are emerging in the country will lead to a position where education will be promoted by the inauguration of new universities that strengthen postgraduate programs. Nursing is a profession with a promising future since care is fundamental for social welfare. That being the case, the expertise of employees for meeting increasingly specific social demands and clinical research focused on neurological diseases will allow greater control of resources, developing the practice of political, social and economic skills. This will allow nursing to lead important changes from primary care to transforming tertiary care by facilitating the embrace of healthy lifestyle by communities^{2,3,4.}

Referencias

- Matías J, Matías JA, Álvarez J, et al. ¿Va a cambiar la neurología tras la pandemia Covid-19 en los próximos 5 años? Estudio de enfoque mediante informadore clave. Neurología [internet]. 2020 [citado 03 jun 2024]; 35(4): 252-257. Disponible en: <u>https://doi.org/10.1016/j.nrl.2020.04.006</u>
- Acevedo M, Guillén D, García E. Políticas educativas que influyen en la formación de las enfermeras de la Universidad Nacional Autónoma de México. RP. 2010 [citado 03 jun 2024]; 15(73): 1-10. Disponible en: <u>https://bit.ly/2CgdfEn</u>
- Marcén VA. Enfermería, profesión de futuro [Internet]. Enfermería en Desarrollo. 2015 [citado el 12 de junio de 2024]. Disponible en: <u>https://cutt.ly/teoH92oS</u>
- Bartolomé-Moreno C, Córdoba R, Melús-Palazón E. Determinantes sociales, comerciales y ambientales de la salud: el reto de la promoción y la prevención. Aten Primaria [Internet]. 2024;56(2):102852. Disponible en: <u>http://dx.doi.org/10.1016/j.aprim.2023.102852</u>

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Education and Nursing: Projections and Perspectives Educación y Enfermería: Proyecciones y perspectivas

La pandemia de 2019 modificó de manera significativa la atención de la salud en todas las áreas de especialización médica, incluida la atención que tiene que ver con las enfermedades neurológicas. Las consecuencias para el sistema nervioso fueron cada vez más investigadas. En este sentido, Matías y colaboradores señalaron que:

a. la pandemia incrementaría notablemente las especialidades relacionadas.

- b. la pandemia trajo consecuencias neurológicas a largo plazo.
- c. no se destinaron mayores recursos a la investigación neurológica.
- d. hubo un cambio en la forma de trabajo del especialista en neurología.¹

Por lo anterior, la salud de las personas está directamente influenciada por las condiciones sociales y económicas en las que viven, estas condiciones se denominan *"determinantes sociales y comerciales de la salud"*. Con la llegada de la pandemia, se evidenció que conocer estos determinantes son requisitos básicos en la formación de enfermería, lo que llevará a que las investigaciones tomen más en cuenta estos elementos.

La investigación dirigida hacia temas de carácter neurológico aún no se establece como un tema prioritario entre los profesionales de la salud, pero que, sin duda, es necesario para continuar promoviendo el primer nivel de atención.

La educación en enfermería está experimentando cambios importantes, tanto a nivel político como económico. En primera instancia, se dirige hacia políticas públicas fundamentadas en aspectos de producción, como "*la venta de la salud*", y satisfacer demandas de los determinantes sociales. Estas transformaciones y cambios en las políticas se reflejan en el Plan Nacional de Desarrollo Institucional de cada universidad, por ello, se requiere contar con planes y programas de calidad que atiendan la demanda social del derecho a la salud.

Es necesario enfocar la evaluación de la educación y la investigación clínica, especialmente en los posgrados de enfermería, para apuntar a un futuro en el que el perfil profesional vaya más allá del nivel licenciatura, incluyendo la capacidad de adaptación a las diversas opciones del mercado laboral y complementándose con la autoformación, la polivalencia, la creatividad y las habilidades comunicativas.

Los cambios políticos que surgen en el país se dirigirán hacia un eje que impulsará la educación con la creación de nuevas universidades que fortalezcan los posgrados. Enfermería es una profesión con futuro, ya que el cuidado es fundamental para el bienestar social. En este contexto, la especialización de personal que atienda demandas sociales cada vez más específicas y la investigación clínica con enfoque en enfermedades neurológicas, permitirán un mayor control de los recursos, incrementando la puesta en práctica de las capacidades políticas, sociales y económicas. Esto permitirá a la enfermería protagonizar cambios importantes desde el primer nivel de atención, facilitando a las comunidades la adopción de estilos de vida saludables y transformando el tercer nivel de atención.^{23,4}

References

- Matías J, Matías JA, Álvarez J, et al. ¿Va a cambiar la neurología tras la pandemia Covid-19 en los próximos 5 años? Estudio de enfoque mediante informadore clave. Neurología [internet]. 2020 [cited June 03 2024]; 35(4): 252-257. Available in: <u>https://doi.org/10.1016/j.nrl.2020.04.006</u>
- Acevedo M, Guillén D, García E. Políticas educativas que influyen en la formación de las enfermeras de la Universidad Nacional Autónoma de México. RP. 2010 [cited June 03 2024]; 15(73): 1-10. Available in: <u>https://bit.ly/2CgdfEn</u>
- Marcén VA. Enfermería, profesión de futuro [Internet]. Enfermería en Desarrollo. 2015 [cited June 03 2024]. Available in: <u>https://cutt.ly/teoH92oS</u>
- Bartolomé-Moreno C, Córdoba R, Melús-Palazón E. Determinantes sociales, comerciales y ambientales de la salud: el reto de la promoción y la prevención. Aten Primaria [Internet]. 2024;56(2):102852. Available in: <u>http://dx.doi.org/10.1016/j.aprim.2023.102852</u>

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Original article

Salutogenesis in urban communities and health promotion

La salutogénesis en comunidades urbanas y la promoción de la salud

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Resumen

Introducción: el modelo salutogénico revitaliza la promoción de la salud al considerar los activos para la salud en las personas, su familia y la sociedad. La teoría de salud positiva de Antonovsky denominada autogénesis se encarga de que la persona desde la familia recupere la intimidad necesaria y promueva su salud.

Objetivo: identificar los activos para la salud (factor o recurso para promover la salud) como indicadores del modelo salutogénico en comunidades urbanas.

Material y métodos: se realizó un estudio etnográfico, muestra cuatro informantes claves residentes de la Ciudad de México. Se utilizó una entrevista abierta no estructurada partiendo de preguntas detonantes: ¿Qué hace usted? ¿Para sentirse bien? considerando los activos del modelo salutogénico. Resultados: *Isa:* optimista, disfruta su actividad laboral y reconoce los beneficios sociales. Disfruta de su casa en tiempo libre. *Estrella:* en general la familia se ha integrado con el propósito de tener una adecuada convivencia. *Silvia:* mantiene contacto permanente con su red social y trata de convivir periódicamente. *Franc:* se hace acompañar de diversas aves, es una persona sola que prefiere su condición a la convivencia.

Discusión: los datos concuerdan con estudios de España destacan la consistencia de los factores salutogénicos como punto de partida para la promoción de la salud.

Conclusión: la salutogénesis propuesta por Antonovsky provee una visión distinta de la salud y su promoción desde la intimidad de los actores y sus familias. Los activos para la salud encontrados incluyen: optimismo, motivación laboral, integración familiar y disposición al cambio.

Palabras clave: promoción de la salud, salutogénesis, salud comunitaria, familia.

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Abstract

Introduction: The salutogenic model revitalizes health promotion by considering health assets in individuals, their families, and society. Antonovsky's positive health theory called salutogenesis emphasizes the importance of regaining intimacy and promoting health through family connections. **Objective:** To identify health assets (factors or resources to promote health) as indicators of the salutogenic model in urban communities.

Material and methods: An ethnographic study was conducted with four key informants residing in Mexico City. Unstructured, open-ended interviews were used, starting with trigger questions such as: What do you do to feel good? The interviews focused on identifying health assets within the framework of the salutogenic model.

Results: Isa: Optimistic, enjoys her work activities, and recognizes their social benefits. She spends her free time enjoying her home. Estrella: The family, in general, has worked towards integration with the aim of fostering harmonious coexistence.. Silvia: Maintains consistent contact with her social network and makes an effort to socialize periodically. Franc: Enjoys the company of various birds and, as a single individual, prefers solitude over cohabitation.

Discussion: The findings align with studies conducted in Spain, which emphasize the consistency of salutogenic factors as a foundation for health promotion.

Conclusion: Antonovsky's salutogenesis provides a different perspective on health and its promotion, focusing on the intimacy of individuals and their families. The health assets identified include optimism, work motivation, family integration, and openness to change.

Keywords: health promotion, salutogenesis, community health, family.

Introdution

Aaron Antonovsky called attention to the concept of positive health in the 1970s and named it salutogenesis. This is an alternative to the approach focused on disease or risk, with a positivist approach that promotes identifying the necessary resources to improve health and quality of life. He asserts that we should look at what creates health rather than the causes and complications of disease. An antecedent before Antonovsky is the general systems theory of Ludwig Von Bertanlanffy (1969), which at the time offered a possible unification model of health based on understanding the complexity of people and their interaction with the world.¹ This systems theory is oriented towards the multidisciplinary study of health, offering a unifying model in analyzing people from the point of view of their complexity and interaction.

Salutogenesis ensures that people learn to promote their health by drawing on their resources and increasing their sense of coherence according to the SOC scale. Antonovsky's work is similar to the main objective of the Ottawa Charter (1986), health promotion,² and its five functions: 1. to develop personal aptitudes for health, 2. to develop favorable environments, 3. to strengthen community action, 4. to reorient health services, and 5. to promote healthy public policies. The health promotion strategy is peace, education, housing, food, income, a stable ecosystem, and conservation of resources.

Positive health orientation rather than focusing on identifying, promoting, and utilizing habits and lifestyles, the available resources that constitute health assets are essential.

Antonovsky reflects on the human inability to control life and the need to live with the unpredictable; which makes it essential for him to believe in life and trust it to face chaos and uncertainty. He states that we put ourselves under stress under stressors and sometimes succumb and become ill or move toward salutogenesis. Therefore, it is represented as a wellness-illness continuum placing the person at some point where it is desirable to transition to positive health becoming a multifaceted state for health promotion based on the person's resources, wellness, and quality of life.

From this ontological perspective, health includes corporeality, emotionality, and people's spirituality, which is envisioned as a strategy for changing lifestyles and fostering healthy policies in the environments of cities, communities, and individuals; that is, from the perspective of quality of life. This aligns with UNESCO and the "*Delors*" report, which highlights education as a global process.³

The theory integrates and revitalizes assets for health, in other words, any factor or potential resource of communities or groups to maintain health and well-being. Positive health promotion begins by understanding the key assets at each stage of life; focusing on the needs of youth, adults, women, and children, and emerging alternatives such as dance groups, meetings, and community action. In each case, the life habits, factors, and resources present in each context constitute the available health assets, such as nutrition, food habits, or cultural or social expressions.

Health assets are identified as salutogenic factors of promotion, protection, and source of physical, emotional, and social health promotion actions,⁴ which contribute to the generation of effective actions for skills, capacities, and abilities among the members and the communities themselves.

Salutogenesis and otherness

The phrase "a healthy mind in a healthy body" was written by Decimus Junius Juvenalis between the first and second centuries A.D. as part of a prayer or invocation involving the body, mind, and spirit. In the 19th century, this phrase shifted its focus more toward the cultivation of the body,⁵ such as practicing disciplines that benefit both cognitive and cerebral levels. Consequently, European society and religious institutions embraced the humanist philosophy of the prevailing bourgeoisie, which promoted the educational and pedagogical ideas of the 16th and 17th centuries. Another antecedent is Book IV of the Republic written by Plato, where a relationship between justice and health is assigned. With the purpose that the body does not maintain economic differences between rich and poor.⁶

Furthermore, Michel Foucault in his book "The Subject and Power" highlights the relevance of healthy politics in the environments of cities, communities, and individuals. Hence, the subject addresses the problem of power and establishes a dependence based on the social context in which individuals and societies - patriarchal, Christian are situated, which impose a certain identity, the concept that each individual has of themselves and the discourse generated as a product of the identity itself.

This attitude, Foucault places under the term "I" technologies, where "it allows individuals to perform, on their own or with the help of others, a certain number of operations on their body and soul, thoughts, behavior, or any form of being, thus obtaining a transformation of themselves", is called self-care, a central point of humanistic psychology that points out the traits of healthy personality and even more of fullness. Allport's excellence in adulthood is the expansion of the "I", its affectionate relationship with others, emotional security, an accurate perception of reality, aptitude for tasks, self-knowledge, and a unifying vision of life. It is not very different from Maslow's characterization of "self-actualized" people: with effective and comfortable perception of reality, accepting of themselves, others, and nature, spontaneous, problem-focused, autonomous, with good personal relationships and a sense of humor. It resembles what Rogers proposes as the goal of the desirable "process of becoming a person" and what he invites in Pindar's echo: to become "who one is", consisting of selfdirection, desire for progress, openness to experience, self-confidence, the feeling of freedom and spontaneity.7

Hence the relevance of knowing yourself, thus raising the question: *Who is the self I must care for?* This allows the person to reflect: Who i am? In this way, they come to understand the identity from which the care of oneself emerges as an ethical-political problem. A set of orders, signs, and meanings present in the social discourse is established, including that of health. In this framework, salutogenesis appears as an alternative to the prevailing discourse.⁷ The recognition of health assets and coherence in their promotion of health and wellbeing is fundamental.

Salutogenesis, when assumed from the assets for health, constitutes the change towards the private sphere of life. It is a broadening of the horizon of humanism, which in its coming of age breaks with the exercise of power and returns to the direct roots of history within the framework of the family and community.⁸

Urban communities and salutogenesis

Urban centers, far from being simple products of development, respond to organized social emergence for production and coexistence.

The community is a symbolic unit of sharing a common life; a dynamic intersubjective space for the exchange of identity, interrelation, and belonging whose central purpose is to respond to needs in close relation to the environment and the historical evolution. Scenario of individual and collective affective links, place of search for pleasure and displeasure; as well as well-being.⁹ It maintains its origin in the conformation of the private and public in the development and evolution of societies; likewise, the permanent institution called family.

It is important to point out that despite globalization and the destructive crisis, Mexican families in general maintain their adaptive and transforming validity based on the love of their members and on the conventional utilitarian sense, where the woman transitions to the public sphere and the man enters the private and shared sphere. The family sacralizes its values in the evolutionary transition.

The loss of meanings, such as collective,

homeland, community, economic, and political power groups have impacted the mutation of the family where it tries to maintain and strengthen traditional values. In its immediacy and closeness, family members share love in upbringing, education, and welfare. It is in this reality where salutogenesis must be propitiated, enrolling the family members in a process leading to well-being and quality of life, an opportunity offered by scientific and economic progress.

Undoubtedly, the search for desirable freedom against the mechanisms of power is present in the family. Equity, respect, tolerance, and acceptance of others in vulnerable situations -children, the elderly, etc.- begins in the family, continues, and is maintained in the family. Public health as a social control of economic interests is left behind in the history of man to truly enter into altruism and ecumenism among humans.

The family can make this paradigm shift, where it demands a different contact with reality, with its protagonists who are called to know and act in favor of health in a horizon of otherness-solidarity.¹⁰

In the urban environment of the cities, there is competition for the flow of economic, productive, and cultural inputs, and the effects of globalization and its demand for human capital are felt, where there is a different perception of the quality of life and development, which have an impact on political decision making to material and personal fulfillment. In rural areas, poverty prevails and there is a lack of public services, employment, education, and health, to mention just a few of the components of quality of life and its perception. As a general rule, achieving a higher quality of life implies a collective vision; likewise, the value in the individual perception closer to daily life and family. Salutogenesis thus involves the family and individual intimacy of citizens.

Beltrán, *et a*1.,¹¹ conducted a descriptive investigation of health assets in the city of Madrid and identified among other physical assets (green areas), educational centers, and centers of coexistence. In the salutogenic theory, the identification of assets for health is shown as one of the previous activities of importance for health agents and professionals.

For her part, Vaca, in her study on health assets in the face of loneliness in the area, recognizes the value of friends and relatives in the neighborhood, especially in the case of older adults. At the same time, the value of the uniqueness of each person and the value of the opportunities to face loneliness and its effect stand out.¹²

Cura and Sandin (2021) conducted an analysis of health assets and quality of life in people diagnosed with severe mental illness. They identified that their health assets are similar to those of healthy people; however, the needs and barriers are different and it is essential to facilitate access to economic and social satisfiers.

It is therefore necessary to identify health assets as indicators of the salutogenic model.

Material and methods

An ethnographic study was carried out to narrate the daily experiences of individuals to understand existing social practices. The key informants were four residents of Mexico City. The participants were invited, mentioning the purpose of the research, and an intimate dialogue was maintained in terms of space and environment. The study was carried out following the ethical principles of research and adhered to the Belmont report on research ethics, respecting data anonymity. Informed consent was obtained and the purpose of the research was explained, as well as the benefits and risks. The work was considered low risk under the research regulations of the General Health Law.

The setting was the physical premises of the FENO, UNAM, and the four informants are part of the university community. The interviews were conducted during the morning shift in the workspaces.

The face-to-face meeting in the interview is intended to acknowledge the shared perspective. Always keep in mind that this is not the discourse of a specialist. The important thing is to share a linguistic corpus that serves as a basis for the research. The information was collected using an unstructured open interview, based on the following triggering questions referring to the health assets of the salutogenic model: *What do you do to feel well? What daily activities do you carry out for your health?* The information shared was coded openly and axially based on Antonovsky's salutogenic theory and interpreted by comparing the texts. Similarly, the discourses were noted through a field diary.

Results

The four interviews were conducted with informants who are part of the FENO-UNAM community, in the morning shift. Through their discourses recorded in the field diary, a draft was integrated, which was submitted to the consideration of each interviewee. The reading of this constituted the open coding and the consideration of the health assets constituted the axial coding.

Health assets

Isa. Secretary. She considers herself optimistic, enjoys her work, and recognizes its social benefits. In her free time, she enjoys her home even though she keeps in permanent contact with family and friends. She enjoys movies in her free time, but she also likes dancing and dancing practice. She considers herself an accomplished person. She tries to select and eat good things even when she does not exercise daily. She sleeps without worries and tries to rest whenever possible. The health assets included are life habits, factors, and resources present in each context, in this first case, those referring to optimism, enjoyment of work activity, free time, recreational practice, eating habits, and sleep hygiene.

Estrella. Career Coordinator. In the last few days, she has been active due to the demand for the position she now holds. In general, the family has integrated to make the coexistence more adequate, everyone cooperates in the feeding and maintenance tasks of the house. The father of the family has maintained a supportive and encouraging relationship with the new role. They try to live together on Sundays given the workload of the week and the weekend master's studies. At work there is an exhausting and demanding rhythm that starts very early; nevertheless, she refers to her energy and willingness for the tasks. Communication with family and friends has not stopped. The shared text highlights family integration, sharing roles and tasks, taking advantage of free time, as well as communication, aspects that are congruent with the salutogenic vision.

Silvia. Pedagogical advisor. She is permanently active in her work, which she enjoys. She makes a relaxed use of her time, likes reading, and does not exercise. She maintains continuous contact with her social network and tries to socialize frequently. She preserves her spiritual health by practicing prayer and recollection. Now, she does not follow a diet, but tries to eat healthy things and on a schedule. She lives alone and maintains an optimistic state of mind. In this interview, she highlights socializing, the social network, and aspects related to spiritual health.

Franc. Vigilant. He starts his work day very early every day, enjoys the work, but stays away from establishing relationships. In his free time, he likes to grow crops in the fields inherited from his parents. At home, he is accompanied by various birds (canaries, huitlacoche, sparrows, etc.). He is a single person who prefers his condition to socializing. He enjoys watching television, he likes to watch Mexican movies. He has a bad opinion of his companions and for this reason, avoids them. The attitude towards the working day, optimism, the choice of living together, and the use of free time are new personal examples of salutogenic factors.

Discussion

The health assets present in the interviewees correspond to the salutogenic model, in various social and emotional categories. Within the dynamics of urban societies, the value of work occupies an important position because it is a source of self-realization and economic income. Respondents generally recognize its social value without losing sight of its economic impact on their daily lives. The optimism with which daily life is rated shows several examples of the value of life even with the restriction of space; none of the interviewees reported risks.

Ethnography seeks to provide a written description of the organization, symbolic and material resources; as well as their culture, customs, food, clothing, knowledge, practices, and interests. On the other hand, it depends on the linguistic competence of the speaker; communication, and the point of contact per se with the researcher, who has the field diary as an instrument to attest to the discourse of the informants.

The findings are consistent with those presented by Vaca,¹³ referring to loneliness in the neighborhood, since they indicate the relevance of the social network and the family as assets for health present in the events or circumstances that alter them.

In support of the importance of the salutogenic factors, the data reported by informants coincide with the healthy and affected communities as described by Cura.¹⁵

It is essential to point out that the family continues to be an asset for health, where it provides its members with flexibility of roles, and solidarity adaptation in household chores, among others. As mentioned in one of the interviews, the role played by pets is companionship and distraction. The resources in the urban environment show movies and television programs as a recreational possibility. Privacy is marked as a positive possibility, which is chosen by informants as an asset for health in a positive way.¹³

Conclusions

The salutogenesis proposed by Aaron Antonovsky contains a different vision of health and its promotion from the intimacy of the actors and their families; rather than risk prevention in vulnerable or frankly sick populations, it indicates promoting from the family the salutogenic activity that includes the resources of generalized resistance by increasing their sense of coherence.

It is essential to point out that the modern state is fragmented due to its inability to continue its work of managing and solving problems relativized by economic development; therefore, it is essential to turn the screw, which means returning to the intimacy of the family, where the inclusive project of quality of life and the achievement of health promotion must be concretize. Now, it is necessary to maintain the congruence between the collective community efforts for health promotion and the permanent call for people to actively participate in it, based on the recognition of health assets. In this task, the programs and actions undertaken by nurses are essential to promote actions anchoring their work and coparticipation with health institutions, as well as in health assets.

References

- Rivera E. Camino salutogénico: estilos de vida saludable. Rev Digit Postgrado. 2019; 8(1):e159
- Mantas JS. Sentido de coherencia, resiliencia y salud mental positiva en los profesionales del Sistema de Emergencias Médicas [Ph.D. Thesis]. TDX (Tesis Doctorals en Xarxa). Universitat de Girona; 2017 [citado: 25 enero 2024]. Disponible en: <u>http://hdl.handle.</u> <u>net/10803/406045</u>
- Vivas GM. La educación emocional conceptos fundamentales. Sapiens. Rev Univer Invest 2003;4(2):1-22.
- Guzmán EKJ. Sense of coherence and social determinants of health of the salutogenic model influencing the promotion of healthy lifestyles at the Cafam University Foundation. Bogotá. 2019:1-205 Available at: <u>https:// cutt.ly/GeyLE12E</u>
- Mens sana in corpore sano. On the education of the body in the Spanish Counter-Reformation, siglos xvi y xvii Franciscanum. Rev Cien Espíritu. 2018;60(170):273-328.

- Maruy Van Den Broek R. Dialectics of justice. An apologia for Plato as social critic. Studies in Philosophy. 2020:18:112-136. Available at: <u>https://doi.org/10.18800/</u> estudiosdefilosofia.202001.005
- 7. Foucault M. The subject and power. Rev Mex Sociol.1998;50(3):3-20
- Rosales MNW. Self-care and the institution of morality: a reflection on ethics in psychology and psychoanalysis. October, 2019 [cited: 25 January 2024]; Available from: <u>http://hdl.</u> handle.net/20.500.12749/11692
- Rivas GRM. The crisis of humanism: a review and rehabilitation of the assumptions of Christian humanism in the face of the challenges of contemporary antihumanism. Franciscanum. Rev Cien Espiritu.2019;61(172):1-2. Available at: https://cutt.ly/aeyLTDR0
- Cueto RM, Espinosa A, Guillén H, Seminario M. Sense of community as a source of well-being in socially vulnerable populations in Lima, Peru Psykhe.2016;25(1):1-18. Available at: https://doi.org/10.7764/psykhe.25.1.814
- 11. Rodriguez T, Casas PD, Contreras LG, Ruano CL. From enfermology to salutogenesis: theoretical concepts in the search for health as a universal right. Rev Méd Univ Costa Rica 2015;9(2):18 Available at: <u>https://revistas.ucr.ac.cr/index.php/medica/</u> <u>article/view/21988</u>
- 12. Beltrán PB, Provencio HV, Santa-María MA, Martínez BT, Iscar ER. Descriptive study of health assets identified by the population of the city of Madrid. Rev Comunidad.2021;23(3):3. Available at: https://cutt.ly/XeyLU3WT
- 13. Vaca Cabrero A. Mapping of assets against loneliness in the basic health area of Abrantes.

Universidad Complutense de Madrid; 2022 Available at: https://hdl.handle.net/20.500.14352/3165

- 14. Garipe LY, Pace N, Cane L, García MH, Fernández RC, Perman G. Community asset mapping strategy for health and well-being in the city of Buenos Aires. Rev Fac Cienc Méd Univ Nac Cordoba 2022;79(2):156-6. Available at: <u>https://doi.org/10.31053/1853.0605.v79.n2.30899</u>
- 15. Cura BA, Sandin VM. Health assets and quality of life in people diagnosed with severe mental illness. Gac Sanit 2021:35(5):473-47.





Nivel de adaptación y el estrés percibido en los adultos mayores ante la pandemia de COVID-19 en tres municipios del Estado de Hidalgo

Level of adaptation and perceived stress in older adults to the COVID-19 pandemic in three municipalities of the State of Hidalgo

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Resumen

Introducción: Identificar el nivel de adaptación da las pautas del efecto que tuvo la pandemia de COVID-19 en los adultos mayores, así como determinar si hubo relación con el estrés.

Objetivo: Analizar la relación del nivel de adaptación y el estrés percibido en adultos mayores ante la pandemia de COVID-19 en tres municipios del Estado de Hidalgo.

Material y métodos: Estudio transversal y de alcance correlacional realizado en una muestra no probabilística por conveniencia de 375 adultos mayores. El estudio contó con la aprobación del comité de ética y los participantes firmaron carta de consentimiento informado previo a su participación. Se empleó la Escala de Estrés Percibido para medir el grado de estrés de los participantes. Se utilizó el instrumento de Adaptación del Adulto Mayor Activo, que evalúa los modos adaptativos fisiológico, autoconcepto, interdependencia y función del rol.

Resultados: La media de edad de los participantes fue de 68.7 años con una desviación estándar de \pm 7.8 años, 53. 3% de los participantes fueron mujeres. Se observó una correlación baja entre el nivel de adaptación y el estrés percibido.

Discusión: El 58% de adultos mayores reportan estrés, además, se observa alta adaptación fisiológica e integración en roles, pero diferencias en autoconcepto e interdependencia, posiblemente impactadas por el COVID-19.

Conclusión: Existe una relación entre el nivel de adaptación y el estrés en los adultos mayores ante la pandemia de COVID-19 en tres municipios del Estado de Hidalgo.

Palabras clave: adulto mayor, estrés psicológico, nivel de adaptación.

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Abstract

Introduction: Identifying the level of adaptation gives patterns of the effect that the COVID-19 pandemic had on older adults, as well as determining if there was a relationship with stress.

Objective: To analyze the relationship between the level of adaptation and perceived stress in older adults during the COVID-19 pandemic in three municipalities of the State of Hidalgo.

Material and methods: Cross-sectional and correlational study conducted in a non-probabilistic convenience sample of 375 older adults. The study was approved by the ethics committee and participants signed a letter of informed consent before participation. The Perceived Stress Scale was used to measure the degree of stress of the participants. The Adaptation of the Active Older Adult instrument was used, which assesses physiological adaptive modes, self-concept, interdependence, and role function.

Results: The mean age of the participants was 68.7 years with a standard deviation of ± 7.8 years, 53.3% of the participants were female. A low correlation was observed between the level of adaptation and perceived stress.

Discussion: 58% of older adults report stress; in addition, high physiological adaptation and role integration are observed, but with differences in self-concept and interdependence, possibly impacted by COVID-19.

Conclusion: There is a relationship between the level of adaptation and stress in older adults during the COVID-19 pandemic in three municipalities of the State of Hidalgo.

Keywords: older adult, psychological stress, adaptation level.

Introduction

Older adults constitute a population that will increase considerably in the coming years according to the World Health Organization (WHO), which mentions that between 2015 and 2050 the percentage of older adults will almost double, from 12% to 22%.¹ It is known that this population is less tolerant of stress, and also tends to remain in a state of alertness. Physical symptoms increase, as well as worry and discomfort, making it difficult to differentiate between the signs of aging and a possible aggravation of depression.² Therefore, investigating the situation affecting this population will allow us to create the basis for improving its care.

For its part, COVID-19 was a significant obstacle to health in general, since the population had to be confined at home to the detriment of mental health.³ Older adults were no exception, as this event caused constant exposure to multiple stressors; such as financial changes,^{4,5} the exclusion they suffered,⁶ the reception of news associated with COVID-19,⁷ uncertainty about the duration

of quarantine, boredom, fear of contagion and death, misinformation about the disease and risk pathologies in case of contagion. All these stressors, together with isolation, cause irritability, loneliness, and disconnection from society in older adults, which alters stress levels.^{8,9} This can be defined as "a set of physiological and psychological reactions experienced by the organism when subjected to strong demands".¹⁰ Stress, if not regulated on time, results in various situations, including a higher incidence of functional disability,¹¹ as well as difficulty in detecting symptoms¹² that put the life of the elderly at risk and even lead to the onset of depressive symptoms.¹³ Although several authors state that the effects of stress in older adults are not as harmful as in young people, it cannot be denied that the older adult has characteristics that can enhance the negative effects of the pandemic, such as the reduction of social contact and even the presence of negative relationships.14

The conception of the older adult as a biopsychosocial being allows us to have an overview of the areas of life that were mostly damaged by the presence of high levels of stress, because from the perspective of Callista Roy's model; *"human beings are integral and adaptable systems"*.¹⁵ The perception of the elderly has changed. Now, they are not only biopsychosocial beings, but also the way they resolve conflicts must be taken into account. Similarly, identifying the level of adaptation allows describing the condition of life processes in three levels classified as integrated, compensatory, and compromised.¹⁶

In other words, older adults were immersed in a changing environment during the pandemic, resulting in higher stress levels. So far, there is no scientific evidence of the relationship between adaptation and stress in older adults, and the impact of stress on the level of adaptation is also unknown. However, it is believed that it could have repercussions on the adaptive mechanisms of the older adult, generating failures and finally emotional and physical discomfort. Due to the above, the purpose of this study was to analyze the relationship between the level of adaptation and perceived stress in older adults in the face of the COVID-19 pandemic.

Material and methods

A quantitative and cross-sectional study of correlational scope was carried out on a nonprobabilistic sample of 375 adults over 60 years of age, meeting the inclusion criteria. The sample consisted of residents of the municipalities of Atitalaquia, Tetepango, and Tepeji del Rio Ocampo, including both men and women who were able to answer the questionnaire, that is, who were within their mental faculties, from November 2021 to March 2022. The study was conducted under the conditions established in the general health law, as well as in the Helsinki Declaration,^{17,18} and Google questionnaires were carried out. In addition, visits were made to places where older adults gathered and even home visits were made to invite them to participate in the study. After obtaining the signature of the informed consent, a sociodemographic and health data form was applied.

To identify the level of adaptation, the Adaptation Level of the Active Older Adult Scale was applied, which consists of 112 dichotomous items and is divided into four dimensions or adaptive modes (physiological mode, self-concept mode, role function mode, interdependence mode). This scale has acceptable levels of reliability (KR-20 > 0.70),16 and for each of its dimensions it classifies the level of adaptation as integrated, compensatory, or compromised, as follows:

- Physiological mode: less than 15 points = integrated, 15-18 points = compensatory, 19-42 = compromised.
- Self-concept mode: less than 12 points = integrated, 12-23 = compensatory, 24-35 = compromised.
- Interdependence mode: less than 7 = integrated, 7-12 = compensatory, 13-18 = compromised.
- Role-based mode: less than 7 points = integrated, 7-12 = compensatory, 13-18 = compromised.

The Perceived Stress Scale (PSS-14), which has been validated in the Mexican population with a Cronbach's alpha of 0.82, was also used to measure the level of stress. This scale has 14 Likert-type questions, its global score is 56 points and is interpreted as follows: 0-14 indicates that you are rarely or never stressed, 15-28 that you are occasionally stressed, 29-42 that you are often stressed, and 43-56 that you are very often stressed.¹⁹

The sociodemographic variables, as well

as the level of adaptation and stress, were described with frequencies and percentages. Spearman's correlation test was used to examine the relationship between perceived stress and level of adaptation. This nonparametric test was chosen because, according to the Shapiro-Wilk test, the distribution of the scores of the variables of interest was not normal. SPSS version 22 was used for the statistical analysis.

Results

A total of 375 older adults participated with a mean age of 68.7 years and a standard deviation of \pm 7.8 years. More than half of the participants were women (53.3%), and only 38.1% of the participants reported not suffering from any chronic disease. Only 86.4% of the participants performed their activities on their own. Of the sample, 43.2%were married, 75.5% reported having basic education, i.e., primary and secondary school, and 40.4% reported not having a paid job. Almost the entire study population professed some type of religion, with the Catholic religion being the predominant one (89.1%). It should also be noted that 10.9% lived alone (see Table 1).

General cha	racteristics	ſ	0%
Mean age (in years)	68.73 ± 7.8 years	J	70
Sou	Female	200	53.3
Sex	Male	175	46.7
	Married	162	43.2
	Free union	75	20
Marital status	Single	43	11.5
	Divorced	6	1.6
	Widower	89	23.7

Table 1. General characteristics of the study population.

C 11			
General ch	paracteristics	f	%
Mean age (in year	s) 68.73 ± 7.8 years		
	None	65	17.3
	Primary	190	50.7
Schooling	Secondary	93	24.8
	High School	10	2.7
	University	17	4.5
	Housewife	141	37.6
	Unemployed	11	2.9
	Worker	17	4.5
	Merchant	49	13.1
Occupation	Farmer	59	15.7
	Professional	11	2.9
	Retired	63	16.8
	Driver	3	0.8
	Another	21	5.6
	Catholic	334	89.1
	Christian	9	2.4
D 1' '	Jehovah's Witness	4	1.1
Keligion	Evangelical	20	5.3
	Does not profess	3	0.8
	Another	5	1.3
Cl : 1:	Yes	232	61.9
Chronic disease	No	143	38.1
Autonomy in	Autonomous	324	86.4
activities	Requires support	51	13.6
C	Lives alone	41	10.9
Company	Lives in company	334	89.1
Source: Soc	iodemographic data quest	ionnaire	n= 375

Stress in older adults

The information found on stress was as follows: more than half of the population (59.2%) reported being stressed from time to time (see Table 2).

Table 2.	Frequency	v of stress	in	the	samp	ole

Stress level	f	%
Rarely stressed	85	22.7
Occasionally stressed	222	59.2
Often stressed	63	16.8
Very often stressed	5	1.3
f: frecuencia		n=375

Source: Perceived Stress Scale (PSS-14)

Level of adaptation of older adults

On the other hand, in the adaptation level, 33.3% of the population was in the compromised physiological mode, and in the self-concept mode, 96.8% was at a compensatory level. In addition, less than half of the study population possessed a compensatory level of adaptation in the interdependence and role function modes, with 37.1% and 45.6% respectively (see Table 3).

Pbysiological mode	f	%
Integrated	188	50.1
Compensatory	61	16.5
Compromised	125	33.3
Self-concept mode	f	%
Integrated	9	2.4
Compensatory	363	96.8
Compromised	3	0.8
Interdependence mode	f	%
Integrated	229	61.9
Compensatory	139	37.1
Compromised	7	1.9
Role function mode	f	%
Integrated	194	51.7
Compensatory	171	45.6
Compromised	10	2.7
f: frequency		n=375

Table 3 Frequency and percentage of the level of adaptation in adaptive modes

Source: Adaptation Level Scale in the Active Older Adult.

Correlation between perceived stress and the level of adaptation

When correlating the different adaptive modes with perceived stress, it was observed that the higher the frequency of stress, the greater the compromise in the level of adaptation; however, a low but significant relationship was found (see Table 4).

Table 4	. Correlation	1 between	perceived	stress	and	level	of ac	laptation
			P	000000				

Modes	Correlation coefficient	p ^a value		
Physiological mode	0.205	< 0.001		
Self-concept mode	0.203	< 0.001		
Interdependence mode	0.205	< 0.001		
Role function mode	0.178	< 0.001		
^a Spearman>s correlation				

Source: Own elaboration

Discussion

In this study, a high percentage of older adults reported being stressed from time to time, representing 58%. These data are similar to those reported by Naranjo Hernández *et al*, who in 2021 found that 47% of older adults were stressed, which could be a consequence of sociodemographic differences. On the other hand, in that research 36% of the older adults studied lived alone,⁹ while only 10.9% of our sample met this characteristic. The use of different instruments to assess stress should also be emphasized.

Regarding the level of adaptation, in the present study, a high integrated level was observed in the population in the physiological mode. Consequently, in the self-concept mode, a high frequency was observed in the compensatory level, whereas, in the interdependence mode and the role function mode, a higher prevalence was observed in the integrated level. These data present differences with the results of Chávez Pérez, et al,16 who reported in 2019 that 80% of older adults were in an integrated level in the physiological mode, in addition to 20% being in a compensatory level; in contrast, in the present study, a prevalence of 33.3% was found in a compromised level. Regarding the self-concept mode, these same authors reported a notable compromised level in their study population (70%), whereas in our sample less than 1% were at the same level. Furthermore, it has been observed that, in the results of the present study, there is a slight similarity in the considerable prevalence of the integrated level for the interdependence and role function modes. Most likely, these differences are because the Chavez-Perez study was conducted before the COVID-19 pandemic, as the subsequent implications on older adults

due to confinement could have impacted the stress of the population. However, it is important to mention that the Chavez-Perez study had a sample size of n=35.

Conclusion

Based on the results obtained, it can be affirmed that there is a relationship between the level of adaptation and stress in older adults during the COVID-19 pandemic in the municipalities of Atitalaquia, Tetepango, and Tepeji del Río Ocampo in Hidalgo, Mexico. Likewise, it was observed that the greater the frequency of stress, the greater the compromise in the level of adaptation; however, due to the crosssectional nature of the study, it was not possible to determine the temporality of the results or the causality between the variables of stress and adaptation, thus fulfilling the research objective.

Stress is a situation that has repercussions in the different spheres of life of the older adult, so the physical, mental, emotional, and social wear and tear that this group experienced during the COVID-19 pandemic should not be minimized. In addition, it is important to implement comprehensive nursing care with an emphasis on the mental and physical health of older adults. It is also recommended to create new evidence that allows monitoring of the level of post-confinement adaptation, to observe the transformation of this process in the short, medium, and long term.

References

 World Health Organization. Aging and health [Internet]. Geneva: World Health Organization; 2022. Available from: https://cutt.ly/dwVj8O6s

- 2. Esmeraldas Vélez EE, Falcones Centeno MR, Vásquez Zevallos MG, Solórzano Vélez JA. The aging of the older adult and its main characteristics. Recimundo 2019;3(1):58-74.
- Gloster AT, Lamnisos D, Lubenko J, Presti G, Squatrito V, Constantinou M, et al. Impact of COVID-19 pandemic on mental health: An international study. PLoS One [Internet]. 2020;15(12). Available at: <u>https://doi.org/10.1371/journal.pone.0244809</u>
- Samuel LJ, Dwivedi P, Hladek M, Cudjoe TKM, Drazich BF, Li Q, et al. The effect of COVID-19 pandemic-related financial challenges on mental health and well-being among US older adults. J Am Geriatr Soc [Internet]. 2022;70(6):1629–41. Doi: <u>10.1111/jgs.17808</u>
- Odani S, Shinozaki T, Shibuya K, Tabuchi T. Economic hardships and self-reported deterioration of physical and mental health under the COVID-19 pandemic: A cross-sectional study, 2020, Japan. J Epidemiol [Internet]. 2022;32(4):195-203. Doi: <u>10.2188/jea.JE20210268</u>
- D'cruz M, Banerjee D. 'An invisible human rights crisis': The marginalization of older adults during the COVID-19 pandemic – An advocacy review. Psychiatry Res. 2020; núm. 292. Available at: <u>https:// doi.org/10.1016/j.psychres.2020.113369</u>
- Srifuengfung M, Thana-Udom K, Ratta-Apha W, Chulakadabba S, Sanguanpanich N, Viravan N. Impact of the COVID-19 pandemic on older adults living in long-term care centers in Thailand, and risk factors for post-traumatic stress, depression, and anxiety. J Affect Disord [Internet]. 2021 [cited 2022 Sep 12, 2022]; núm. 295:353-65. Available at: <u>https://doi.org/10.1016/j.jad.2021.08.044</u>
- Sánchez-Ordóñez R, Sánchez-Vázquez JF. Older adult isolation by COVID-19: consequences and psychosocial interventions during quarantine. Studia Zamorensia. 2020; no. 19: 33-41. Available at: <u>https://dialnet.unirioja.es/descarga/articulo/7718175.pdf</u>
- 9. Naranjo Hernández Y, Mayor Walton S, Rivera García O de la, González Bernal R. Emotional states of older adults in social isolation during COVID-19. Rev Inf Cient. 2021;100(2).
- García-Pulido E, Mercado-Rivas M. Respuestas de afrontamiento a estrés en adultos en proceso de jubilación. Revista Iberoamericana de Ciencias [Internet]. 2018;5(1). Disponible en: <u>https://cutt.ly/swVkw6Gr</u>
- 11. Takashima N, Nakamura Y, Miyagawa N, Kadota A, Tanaka-Mizuno S, Matsui K, et al. Association between stress-coping strategy and functional disability in the general older adult population: The Takashima study. Gerontology [Internet]. 2022 [cited 2022 Sep 12, 2022];68(6):699-706. Available from: <u>https://doi.org/10.1159/000519194</u>
- 12. Sheffler JL, Joiner TE, Sachs-Ericsson NJ. The Interpersonal and Psychological Impacts of COVID-19 on Risk for Late-Life Suicide. Gerontologist. 2021;61(1):23-9.
- Cristóbal-Narváez P, Haro JM, Koyanagi A. Longitudinal association between perceived stress and depression among community-dwelling older adults: Findings from the Irish Longitudinal Study on Ageing. J Affect Disord [Internet]. 2022; núm. 299:457-62. Doi: <u>10.1016/j.jad.2021.12.041</u>
- Birditt KS, Turkelson A, Fingerman KL, Polenick CA, Oya A. Age differences in stress, life changes, and social ties during the COVID-19 pandemic: Implications for psychological well-being. Gerontologist [Internet]. 2021 [cited 2022 Sep 21];61(2):205-16. Available from: <u>https://doi.org/10.1093/geront/gnaa204</u>
- 15. Raile Alligood M. Models and theories in nursing. Barcelona: Elsevier; 2018.
- 16. Chávez Pérez PM, Soto Pérez YY, Trejo Mendoza NB. Adaptation level of the older adult of the Casa

de Día del Adulto Mayor de Apaxco, Estado de México. Geriatría Clínica [Internet]. 2019;13(2):38-47. Available at: <u>https://cutt.ly/dwVQUh7a</u>

- 17. Asociación Médica Mundial. Declaration of Helsinki Ethical principles for medical research involving human subjects. Ferney-Voltaire: World Medical Association; 2017. Available at: <u>https://cutt.ly/9wVQItsr</u>
- México. Reglamento de la Ley General de Salud en Materia de Investigación para la Salud. Ciudad de México: Cámara de Diputados del H. Congreso de la Unión; 2014. Available at: <u>https://cutt.ly/ pwVQIMa5</u>
- Torres Lagunas MA, Vega Morales EG, Vinalay Carrillo I. Psychometric validation of PSS-14, AFA-R, HDRS, CES-D, EV scales in Mexican puerperal women with and without preeclamsia. Enferm univ. 2015;12(3):122-33. Available at: <u>https://doi.org/10.1016/j.reu.2015.08.001</u>



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Original article

Evaluación de la pronación consciente en el paciente oncológico con SARS-CoV-2

Evaluation of conscious pronation in cancer patients with SARS-CoV-2

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Resumen

Introducción: El incremento de casos COVID con problemas respiratorios de complejidad variable y la inclusión actual de tratamientos farmacológicos y terapéuticos en la población oncológica son motivos de estudio para verificar los efectos de la posición prono en paciente consciente.

Material y métodos: Estudio cuantitativo de diseño retrospectivo, en el que se realizó una revisión de los expedientes clínicos. La muestra estuvo constituida de 100 expedientes que cumplieron con los criterios de inclusión. El análisis de datos descriptivo incluyó frecuencias y porcentajes, mientras que la hipótesis se realizó a través de la prueba T de Student para muestras relacionadas.

Resultados: El sexo femenino se representó en un 52%, donde predominó como tipo de cáncer el hematooncológico. De acuerdo con la capacidad de las personas con cáncer para realizar actividades, se mostró que 54% de la población podía vivir en casa y auto cuidarse.

Limitaciones del estudio: Falta de un grupo control, inclusión de algunas variables de estudio que podrían haber intervenido en los resultados.

Originalidad: Este articulo posee valor debido a la falta de información sobre el paciente con cáncer y COVID-19.

Conclusiones: La pronación es una opción de manejo en pacientes oncológicos que puede prevenir mayor daño o complicaciones, considerando que es una intervención que requiere una evaluación previa para determinar si las condiciones son favorables para aplicarla.

Palabras clave: Paciente oncológico, SARS-CoV-2, pronación.

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Abstract

Introduction: The increase of COVID cases with respiratory problems of variable complexity and the current inclusion of pharmacological and therapeutic treatments in the oncologic population are reasons to study the effects of prone position in conscious patients.

Material and methods: A quantitative study of retrospective design, in which a review of clinical records was performed. The sample consisted of 100 files that met the inclusion criteria. The descriptive data analysis included frequencies and percentages, while the hypothesis was performed through Student's t-test for related samples.

Results: The female sex was represented in 52%, where hemato-oncologic cancer predominated as the type of cancer. According to the capacity of people with cancer to carry out activities, 54% of the population was able to live at home and take care of themselves.

Limitations of the study: Lack of a control group, and inclusion of some study variables that could have intervened in the results. Originality: This article has value due to the lack of information on the cancer patient and COVID-19.

Conclusions: Pronation is a management option in cancer patients that can prevent further damage or complications, considering that it is an intervention that requires a previous evaluation to determine if the conditions are favorable for its application.

Keywords: Cancer patient, SARS-CoV-2, pronation.

Introduction

In people who develop severe disease, the complications of SARS-CoV-2 imply an increase in the costs of care, longer hospital stay, and increased risk of mortality, especially in patients with vulnerability, comorbidities, or some type of immunosuppression caused by neoplastic disease or pharmacological treatments. Therefore, there is a need to improve the condition of cancer patients with COVID-19 to reduce their severity. To this end, specialized oncology institutions develop strategies to prevent complications and ensure that specific treatments for neoplastic diseases are not delayed.

On the other hand, the World Health

Organization (WHO) classified 55,924 cases of COVID-19, among which severe patients suffered dyspnea, respiratory frequency greater than 30 breaths per minute (rpm), and SPO2 < 93%, as well as PaO2/FiO2 < 300 mmHg, with an increase of pulmonary infiltrates greater than 50%, which was detected in radiographs taken in a period of 24 to 48 hours.¹

Accordingly, an early review in China found a higher prevalence of COVID-19 in people with cancer. Similarly, the mortality rate of 5.6% in people with carcinomas suggests that they had a 3.5-fold increased risk of SARS-CoV-2 infection. Also, lung cancer and COVID-19 were more common. Consequently, these patients were at higher risk of severe events such as death compared to non-oncology patients (39%), as they deteriorated more rapidly with a median time to severe events of 13 days.²

For this reason, the use of supplemental oxygen therapies and the application of evidence-based interventions are indispensable to avoid further complications. It should be recognized that mortality in those who come to require invasive mechanical ventilation (IMV) support is greater than 50%.³ However, recommendations for initiation of oxygen therapy in cancer patients should be made when they present with hypoxemia plus dyspnea, as they will not benefit from supplemental therapy.⁴

Given this situation, the WHO proposed the prone position during invasive mechanical ventilation as a treatment for acute respiratory distress syndrome (ARDS) by COVID-19, with results of improved oxygenation and lower mortality. Oxygenation increases in this way since it is not compromised by the weight of the abdominal cavity and in the mediastinum, the alveoli are reopened and it leads to the recruitment of more efficient regions in gas exchange.⁵

Thus, American and European guidelines document the prone position as a treatment for patients with ARDS due to COVID-19. Of course, they recommend a variable duration time ranging from 12 to 16 hours in the prone position for subjects with a PAFI < 150 mmHg, according to the Berlin scale.⁶

Material and methods

A quantitative retrospective-documentary descriptive study of cross-sectional design, with analysis of clinical records of patients who were hospitalized from March 2020 to May 2021, to whom a measurement and control strategy was applied to evaluate or limit the complications of COVID-19 pneumonia.

The study was conducted in a tertiary-level hospital in Mexico City with care for patients infected with COVID-19. The sample consisted of a total of 100 files, selected by convenience and the inclusion criteria were cases of patients with cancer and positive SARS-CoV-2 test by PCR, in a conscious neurological state and with the presence of ARDS due to COVID-19. The main variables of this research are physiological and chemical measurements, such as PaO_2/FiO_2 , $PaCO_2$, SpO_2 , heart rate, and respiratory rate in pre and post-pronation and prone time measured in hours.

Likewise, intervening variables such as age, cancer stage, oxygen device, degree of dyspnea, Karnofsky scale, and advanced airway management were included. As for validation, the data collection instrument was specifically created and submitted to the judgment of experts with experience in the care and management of critically ill patients and COVID-19. In addition, it was developed using a critical review of the literature in scientific databases. The instrument was initially composed of 17 items, indicating the wording, relevance, and congruence according to the objective of the study. The statistical software SPSS version 25 was used to organize and analyze the information (nonparametric statistical tests). The description of the population was carried out using frequency tables and percentages. At the same time, the inferential statistics were performed through normality measures in the scalar variables and Student's t-test for related samples.
Results

Conscious patients were observed in prone position, among which the female sex predominated with 51% (see Table 1). The mean age was 56.4 ± 15.6 years, and the predominant diagnosis was hemato-oncologic cancer, in

addition to leukemias and lymphomas with 24%. One variable studied was the stage of the cancer, with a higher incidence of I and IV at 27% (see Table 1). Likewise, the Karnofsky functionality scale was evaluated, in which people performed self-care and showed a 23.5% capacity to perform self-pronation (see Table 2).

Table 1. Descriptive statistics of oncology population with SARS-CoV-2.

n=100			
Variable	RF (%)	Mean SD	
Sex			
Female	50 (51)		
Male	48 (49)		
Age	18-86 *	56.9 ± 15.7	
Type of cancer			
Hematooncology	24 (24)		
Cervical uterine	13 (14)		
Breast cancer	16(17)		
Gastric	12 (12)		
Prostate cancer	12 (12)		
Germinal tumors	4 (4)		
Renal	1(1)		
C&C Cancer	2 (2)		
Sarcomas	5 (5)		
Central Nervous System Cancer	2 (2)		
Lung Cancer	4 (4)		
Melanoma	1(1)		
Cancer stage	I*		
0	5 (5.1)		
I	18 (18.4)		
II	26 (26.5)		
III	23 (23.5)		
IV	26 (26.5)		
Karnofsky Scale			
Seriously ill	1(1)		
Severely disabled	2 (2)		
Disabled	6 (6.1)		
Requires considerable assistance	10 (10.2)		
Needs occasional help	18 (18.4)		
Cares for itself	23 (23.5)		
Normal activity with effort	1/(1/.3)		
Normal activity	15 (15.3)		
Asymptomatic	6 (6.1)		

*Note: trend

Table 2. Karnofsky scale grouped according to ability to perform activities.

<i>n</i> = 100		
Variable	RF (%)	
Incapable of self-care, requires special care.	8 (8)	
Unable to work, can live at home and self-care	54 (54)	
Able to perform activities, requires no special care	38 (38)	

Regarding the onset of COVID-19 symptoms, a range of 2 to 17 days was detected, with a mean of 6.8 ± 3.3 days. On the other hand, the use of anxiolytic

drugs in patients was minimal, in which there were 5% of cases of haloperidol use, and 4% of others such as morphine or dexmedetomidine (see Table 3).

Table 3. Descriptive statistics of drugs and symptomatology in the oncology population with SARS-CoV-2.

<i>n</i> = 100		
Variable	RF (%)	Mean SD
Dyspnea	Scale (NYHA)	
Ι	21 (21.4)	
II	39 (39.8)	
III	25 (25.5)	
IV	13 (13.3)	
Types of a	nxiolytic drugs	
None	89(89)	
Haloperidol	5 (5)	
Midazolam	2 (2)	
Other	4. (4)	
Days of symptom onset	2-17 *	6.8±3.3

The oxygen therapy inherent to the treatment during the hospitalization of the patient and before conscious pronation was carried out by means of nasal prongs in the first place (43%), and reservoir mask in the second. After the use of the prone position, it was observed that the number of people without some type of oxygen device increased by up to 21%, and the reservoir mask decreased by 17%, which would indicate that the oxygen requirement after the prone position decreased. The estimated duration of the prone position ranged from 2 to 16 hours, with a mean of 8.6 ± 3.45 hours (see Table 4).

Table 4. Pre- and post-pronation oxygen therapy data of the conscious oncology patient.

n = 100				
Variable	Pre-pronation RF (%)	Post-pronation RF (%)		
	O ₂ -Device			
None	16 (16)	21(21)		
Nasal prongs	43 (43)	46(46)		
Reservoir mask	40(40)	17(17)		
PNAF	1(1)	3 (3)		
Hemlett (cephalic helmet)		6(6)		
NIV		7(7)		
Duration	of prone position (I	Hrs.)		
2	2 (2)			
3	10(10)			
4	7(7)			
5	2(2)			
6	10(10)			
7	1(1)	8.6 ± 3.45		
8	21(21)			
10	6(6)			
12	40(40)			
16	1(1)			
Advanced airway management				
No	74(75.5)			
Yes	24(24.5)			

With the estimated time in the prone position, together with the different oxygen therapy devices, of the total population with cancer and COVID-19, the mean number of advanced airway management events was only 24.5%, i.e., the rate of serious events decreased and, consequently, so did the possible complications associated with mechanical ventilation, such as infections, increased mortality, etc. (see Table 4).

According to the clinical descriptive data, a significant increase in SpO₂ was observed with

a mean pre-measurement of 86 7 % and postmeasurement of 90 \pm 8 %. Similarly, clinical significance was observed with decreased HR in pre-pronation and post-pronation, with 98 \pm 15 and 83 \pm 18 beats per minute (bpm) respectively. Consequently, HR had clinical significance with a pre-strategy decrease of 22 \pm 5 breaths per minute (bpm), compared to post-strategy which registered 21 \pm 6 bpm. This indicates a good response to the prone position with a decrease in symptomatology (see Table 5).

Table 5. Pre- and post-pronation clinical values of the conscious oncologic person.

	n=100	
Variable	Pre-pronation Mean SD	Post-pronation Mean SD
PaFiO ₂	174.5 ± 93.48	218.81 ± 113.98
SpO ₂	86 ± 7	90 ± 8
FiO ₂	48 ± 25	44 ± 27
PaCO ₂	28.31 ± 5	30.40 ± 6.5
PaO ₂	64.5 ± 16.02	72.73 ± 14.90
HR	98 ± 15	83 ± 18
RR	22 ± 5	21 ± 6

Note: heart rate (HR), respiratory rate (RR), oxygen saturation (SpO₂), arterial oxygen pressure (PaO₂), arterial carbon dioxide pressure (PaCO₂).

Thus, among the biochemical values measured in arterial gases, $PaCO_2$ pre (28.31 ± 5 mmHg) and post (30.40 ± 6.5 mmHg), and PaO_2 pre (64.5 ± 16.02 mmHg) and post (72.73 ± 14.90

mmHg) were found. As a result, the calculation of $PaFiO_2$ pre (174.5 ± 93.48 mmHg) and post (218.81 ± 113.98 mmHg) was improved following the use of the strategy (see Figure 1 and Figure 2).

Figure 1. PaFiO₂ values pre- and post-pronation in the person with cancer and COVID-19.





Figure 2. FiO, values pre- and post-pronation in the person with cancer and COVID-19.

Note: The mean amount of FiO₂ provided to the patient before and after the prone position is shown, with a slight decrease in the amount required by the oncology patient. Own source.

Analysis of results

Parametric statistical tests were performed using the Student's t-test. According to the statistical analysis, we can observe that clinical and chemical variables such as $PaFiO_2$, SpO_2 , PaO_2 , and HR resulted statistically significant by the applied test, so that each of the clinical results, together with those already mentioned, improves after pronation (see Table 6).

Table 6. Student's t-test for related samples of the use of the conscious pronation strategy in the oncology patient (p< 0.005).

Variable	Inferior	Subsequent	df	Þ
PaFiO2	-12.07	-4.28	99	0.001*
SpO2	-6.5	-2.05	99	0.001*
FiO2	-1.96	7.96	99	0.233
PaCO2	-3.64	61	99	0.006
PaO2	-12.07	-4.28	99	0.001*
Fc	11.51	18.74	99	0.001*
Fr	-3.64	61	99	0.203

Note: 95% CI (confidence interval), df (degrees of freedom), p (level of significance)

Discussion

Through the strategy of conscious pronation, it is estimated to improve the clinical condition of the oncological patient with SARS-CoV-2, as well as the values of the biochemical indicators that indicate or give us an approach to the severity of the person. Thus, it is possible to resolve the ARDS in those who have cancer early and, therefore, avoid severe complications or those resulting in death.

The purpose of the study was to evaluate the strategy of pronation in oncology patients with SARS-CoV-2, an emerging measure during the pandemic and in the face of the critical situation that arose due to COVID-19.

In the exposed results and according to what was observed demographically, age coincides with what was described in the article by Weinkove et al. from 2020,⁶ in which COVID-19, in this severe case, occurs mainly in people over 50 years of age. Similarly, the presentation of cases according to the type of neoplastic disease resulted in higher susceptibility for patients with hematological cancer, according to reviews by Hirsch et al (2013),⁷ Einchenberg et al (2019)⁸ and Herrera et al (2021).9 In turn, respiratory virus infections had a higher incidence in people with this type of oncologic disease, as in the study conducted. Therefore, the nursing professional needs to promote self-care in the hemato-oncological person, emphasizing safety measures such as the use of masks, hand washing, and maintaining a healthy distance of 1.5 meters from other people, among others, to reduce serious events due to respiratory viral infections.

Concerning the population's sex, the study was similar to that described by Fuentes *et al.* in 2014, according to the presentation and description of cases of respiratory infections in oncologic adults, where the prevalence was higher in the female sex.¹⁰ The prevalence of this type of infection was estimated in people with neutropenia in the aforementioned article, a situation that was not measured in the present study and would indicate a limitation for the research.

According to the results found, the functionality of the patients and the capacity to carry out activities influences the presence of serious events and their development, as reported by Martín-Moro et al, who associated them with death in a series of 34 cases of hematological neoplasia in Madrid.¹¹ Although the number of

patients who died is not estimated, it could be considered that the decrease in the severity of clinical values resulted in a lower risk of mortality due to COVID-19 in those who had cancer. The promotion of self-care or education for the care of a person with cancer who can perform daily activities could help to reduce its severity, so it is an important point to deepen in clinical nursing practice, as well as in the field of research and knowledge.

The frequency of intubation in the oncologic population is observed at 24.5%, similar to that described in the study by Perez *et al* with a rate of 23.6%,¹² so that the characteristics of the general and cancer population are similar in terms of the risk of intubation during the implementation of pronation. Since the risk is therefore virtually the same for cancer patients, disease characterization by COVID-19 does not distinguish between these types of populations in terms of severity.

On the other hand, the mean pronation time is similar to the results published in 2022 by Fralick *et al.*, in which the median was six hours, directly reflected in the FiO_2 with a representation of 30%,¹³ that is, less than 15% of the requirement in the population with neoplasms. This contradicts what was previously described regarding the similarity in the different types of populations, although this variable could have been affected by the treatment provided in each hospital center.

Likewise, variables of interest such as $PaFiO_2$ increased, in agreement with Cherian *et al.*¹⁴ After an average of four hours of conscious pronation, the ratio of oxygen saturation and arterial oxygen pressure (SpO /PaO₂) increased, with statistical significance (p=<0.001) and an approximate increase of up to 100 mmHg, taking into account that SpO₂/Fio₂ of 235 corresponds to PaO2/FiO₂ of 200.¹⁴ In comparison with Elharrar, who did not obtain improvement of these values and of $PaCO_2$ without statistical significance,⁵ this can be related to time, in which the mean was one hour, which would suggest that the pronation time determines the improvement of the gasometric values.₇

Similarly, like Sartrini et al., the mean respiratory frequency decreased with statistical significance. It is established that this study was only performed with invasive mechanical ventilation devices in a non-oncologic population, carrying out a comparison in the control and intervention group, in which the number of patients resulted in low respirations. It is worth noting that the control group, not considered in the present study, may have added data with greater statistical weight and may have integrated greater findings in the person with cancer.

To date, the effects of COVID-19 have been based on several epidemiological and clinical measures, which have shaped the recommended protective measures. However, this study is not free of limitations, since only two measurements were made and a control group was not established. In addition, some other variables that may intervene in the analysis, such as BMI, weight, height, and comorbidity, were not included, since they may or may not affect the patient>s improvement. It should be taken into account that this study was only carried out in patients with cancer, which gives us a gap in its treatment.

References

 Phua J, Weng L, Ling L, Egi M, Lim C-M, Vasistha J, et al. Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. Lancet Respir Med [Internet]. 2020 [cited 2022 Apr 22]; 8(5):506-17. Doi: 10.1016/S2213-2600(20)30161-2.

- Liang W, Guan W, Chen R, Wang W, Li J, Xu K, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. Lancet Oncol [Internet]. 2020 [cited April 22, 2022]; 21(3):335-7. Doi: 10.1016/ S1470-2045(20)30096-6.
- Martínez O, Nin N, Esteban A. Evidence for the prone position in the treatment of acute respiratory distress syndrome: an update. Arch Bronchopneumol [Internet]. 2019 [cited 2022 Apr 22, 2022]; 45(6): 291-6. Doi: 10.1016/j.arbres.2008.05.010
- Yamaguchi T, Goya S, Kohara H, Watanabe H, Mori M, Matsuda Y, et al. Treatment Recommendations for Respiratory Symptoms in Cancer Patients: Clinical Guidelines from the Japanese Society for Palliative Medicine. J Palliat Med. 2016; 19(9):925-35. Doi: 10.1089/jpm.2016.0145.
- Sartini C, Tresoldi M, Scarpellini P, Tettamanti A, Carcó F, Landoni G, et al. Respiratory Parameters in Patients With COVID-19 After Using Noninvasive Ventilation in the Prone Position Outside the Intensive Care Unit. JAMA [Internet]. 2020; [cited 2022 Apr 22, 2022]; 323(22):2338-40. Doi: 10.1001/jama.2020.7861.
- Weinkove R, McQuilten Z, Adler J, Agar M, Blyth E, Cheng A, et al. Managing haematology and oncology patients during the COVID-19 pandemic: interim consensus guidance. Med J Aust [Internet]. 2020 [cited 2022 May, 2022]; 212(10):481-9. Doi: 10.5694/mja2.50607
- 7. Hirsch H, Martino R, Ward KN, Boeckh M, Einsele H, Ljungman P. Fourth European Conference on Infections in Leukaemia (ECIL-4): guidelines for diagnosis and treatment of human respiratory syncytial virus, parainfluenza virus, metapneumovirus,

rhinovirus, and coronavirus. Clin Infect Dis [Internet]. 2013 [cited November 2022]; 56(2):258-266. Available from: https://doi.org/10.1093/cid/cis844

- Eichenberger E, Soave R, Zappetti D, Small CB, Shore T et al. Incidence, significance and persistence of human coronavirus infection in hematopoietic stem cell transplant recipients. Bone Marrow Transplant [Internet]. 2019 [cited November 2022]; 54(7):1058-66. Doi: 10.1038/ s41409-018-0386-z
- Herrera F, Bues F, Rojas R, Temporiti E, Videla C, Dupont J, et al. ISARS-COV-2 infection in patients with hematologic malignancies and transplants. Medicine (B. Aires) [Internet]. 2021 [cited November 2022]; 81(3):396-400. Available from: https://cutt.ly/UwLWh55c.
- Fuentes G, Venegas C, Ortega M, Briceño C, Dreyse J, Rabagliati R, et al. Characterization of respiratory infections in adult oncologic patients. Rev. Chil. Chil. Respir [Internet]. 2014 [cited November 2022]; 30(2):75-80. Available from: http://dx.doi.org/10.4067/S0717-73482014000200003.
- 11. Martín-Moro F, Marquet J, Piris M, Michael B, Sáez A, Corona M, et al. Survival study of hospitalized patients with concurrent Covid-19 and haematological malignancies. Br J Haematol. [internet] 2020 [cited November 2022]; 190(1). Doi: 10.1111/bjh.16801.
- Pérez O, Escarraman D, Guerrero M, Zamarron E, Mancilla J, Kammar A, et al. Awake prone positioning and oxygen therapy in patients with COVID-19: the APRONOX study. Eur Respir J [Internet]. 2022 [cited November 2022]; 59(2). Doi: 10.1183/13993003.00265-2021.
- 13. Fralick M, Colacci M, Munshi L, Venus K, Fidler L, Hussein H, et al. Prone positioning of patients with moderate hypoxaemia due to covid-19: multicentre pragmatic randomised trial (COVID-PRONE). BMJ. 2022; núm. 376. Doi:10.1136/bmj-2021-068585
- 14. Cherian S, Li C, Roche B, Reyes S, Karanth S, Lal A, et al. Predictive factors for success of awake proning in hypoxemic respiratory failure secondary to COVID-19: A retrospective cohort study. Respir Med [Internet]. 2021 [cited November 2022]; núm. 181. Doi: 10.1016/j. rmed.2021.106379.



Original article

Enfermería neurológica: opinión y perspectivas sobre las habilidades y destrezas para ejercer la autonomía de práctica en un instituto de alta especialidad

Neurological nursing: opinion and perspectives on the skills and abilities to exercise autonomy of practice in a highly specialized institute

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Resumen

Introducción: la historia de la enfermería nos muestra un avance muy importante en cuanto al ejercicio de la profesión. Lo precedente, ha permitido la incorporación de conceptos que cobran relevancia, entre ellos, la autonomía.

Objetivo: identificar la opinión y perspectivas de los profesionales de la enfermería sobre sus habilidades y destrezas para ejercer la autonomía de práctica dentro de una institución de alta especialidad.

Material y métodos: estudio cuantitativo, descriptivo, observacional, de corte transversal. La finalidad es describir la frecuencia y las características más importantes de un fenómeno particular en una población (profesionales de enfermería).

Resultados: los resultados han identificado diferentes dimensiones que tienen que ver con la autonomía profesional de enfermería, en donde en la mayoría de los ítems evaluados en el instrumento destacan con porcentajes que van desde el 60 % hasta el 80 % en rubros como la libertad en la planificación de cuidados que tienen los enfermeros dentro de su centro de trabajo o en que toman decisiones independientes dentro del mismo.

Discusión: en un estudio chileno reportado por Triviño Vargas la población estudiada se concentró bajo los 30 años de edad, en este rango es de esperarse que el profesional de enfermería viva y actúe en la sociedad según su propia responsabilidad y no bajo la tutela de otros, como reporta el presente estudio. **Conclusiones:** este estudio permitió identificar el nivel de autonomía que ejercen y perciben los profesionales de enfermería en el cuidado de las personas, esto con el fin de develar, conocer y explorar la forma en cómo el enfermero percibe la autonomía en su práctica clínica. En el ejercicio cotidiano y el quehacer diario los profesionales aún tienen limitaciones en el ejercicio de la autonomía.

Palabras clave: cuidado de enfermería, autonomía, autonomía profesional, enfermería.

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Abstract

Introduction: the history of nursing shows us a very important growth in terms of the practice of the profession. The above has allowed the incorporation of concepts that become relevant, among them, autonomy.

Objective: identify the opinion and perspectives of nursing professionals about their abilities and skills to exercise autonomy of practice within a highly specialized institution. **Material and methods:** this is a quantitative, descriptive, observational, cross-sectional study. The purpose of the study will be to describe the frequency and the most important characteristics of a particular phenomenon in a population (nursing professionals).

Results: The results have identified different dimensions that have to do with nursing professional autonomy, where in most of the items evaluated in the instrument they stand out with percentages ranging from 60% to 80% in areas such as freedom in the care planning that nurses have within their workplace or in how they make independent decisions within it.

Discussion: in a Chilean study reported by Triviño Vargas, the population studied was concentrated under 30 years of age. In this range, it is expected that the nursing professional lives and acts in society according to his own responsibility and not under the tutelage of others, as reported in the present study.

Conclusions: this study made it possible to identify the level of autonomy that nursing professionals exercise and perceive in caring for people, in order to reveal, understand and explore the way in which nurses perceive autonomy in their clinical practice. In daily practice and daily tasks, professionals still have limitations in the exercise of autonomy.

Keywords: nursing care, autonomy, professional autonomy, nursing.

Introducción

This paper reflects the importance of the phenomenon of autonomy as an important element in the daily work of the people who practice nursing in health institutions; it analyzes the fundamental role of autonomy as a tool to improve the quality of care, as well as some of the most relevant characteristics that revolve around this important concept.

In this context, and for the current analysis, autonomy in nursing will be understood as decision-making and the execution of acts of care, in which without requiring for supervision from a professional of the interdisciplinary team. To this end, the professional will base his/her actions on the knowledge of their discipline and draw upon other fields that allow a comprehensive approach to the person, family, group, or community receiving such care.¹

Autonomy facilitates the application of knowledge generated through research, further enhancing the value of nursing as a profession and enabling it to develop its own body of knowledge to deliver health care to individuals, families, groups, and communities.

This research reveals that autonomy has interrelationships with other factors, which

demonstrates the recognition given to it by people in the same profession and other professions, and which, in turn, reflects that autonomy has been seen as an indicator of the professionalization of the discipline.²

Autonomy not only implies the exercise of independent practice but also the application of critical judgment based on knowledge established throughout the nursing experience.³

The history of nursing shows us a very important growth in terms of the practice of the profession. This has allowed the incorporation of concepts that become relevant, among them autonomy, which will be understood as the application of critical judgment based on knowledge established by nursing personnel in their actions, which was not always considered with the value that perhaps it is now given.⁴

These changes meant the growth of nursing as a profession closer to being autonomous in its practice. For this, studies have been conducted to analyze this variable that could support nursing to continue meeting the needs of care and assuming the responsibility of leading the management of the same in individuals, families, groups and communities, according to their standards. Autonomy corresponds to a necessary concept in nursing because the profession has been challenged by other disciplines within the health care system.⁵

This meant moving from a place of ignorance and lack of professional identity, produced by the lack of a body of nursing knowledge, to positioning itself as a profession whose center of study is care, an act of fundamental responsibility of the nursing discipline.⁶

In this transition, shortly before modern nursing, the characteristics of submission, docility, and lack of questioning of medical work were considered unnecessary in the training of other professionals. Care was performed in a dependent manner, where they were subordinated to medical indications and those of other health professionals.⁷

Even with the current documented progress of modern nursing, the problem of nursing care is partly a product of the perception of nursing as a profession. The opinion that nurses have of themselves as professionals does not always coincide with the definition that other people give to this profession.⁸

Some studies find the lack of autonomy as one of the greatest sources of suffering for nurses since they must face the exercise of power by multiple actors, a matter that can lead to a lack of critical thinking and questioning capacity that evokes dogmatic nursing and alienation that translates into submission and abnegation. Therefore, nursing then responds to institutional purposes and not to the interests of the profession or society.⁹

This work is of significant importance as nurses have become more professionalized, and autonomy in practice and in applying a single body of disciplinary knowledge has been seen as an important indicator that nursing is a growing profession. Autonomy has been related to nurses' quality of life, job satisfaction, positive professional practice environments, and perceptions of quality of care, all of which encompass having the freedom to act on what one knows, how much independence one has in one's work or initiative, or the ability to perform functions independently, without close supervision.¹⁰

However, the interest of this paper is not only in the theoretical or conceptual aspects of nursing autonomy. This paper also focuses on facts related to the exercise of autonomy or the practice of autonomy in professional work. In the complex practice environments dominated by the current healthcare system, professionals are challenged to practice autonomy as members of a group or team, and sometimes the distinctions about the roles that each professional plays within the multidisciplinarity are blurred.¹¹

The new professional profiles of nursing, such as Advanced Practice Nursing require that they must meet, among other characteristics with a high degree of autonomy and that their professional practice is fully independent. They must manage cases by putting into practice recognized advanced clinical competencies for assessment, diagnostic reasoning, and decisionmaking, provide consulting services to the nursing professionals around them, and develop action plans, as well as implement and evaluate educational programs.¹²

Objetive

To identify nursing professionals' selfperception of their skills and abilities to exercise practice autonomy within a high specialty institution.

Specific objectives

- 1. To recognize the level of autonomy of nursing professionals within a high specialty institute.
- To measure the level of autonomy of nursing professionals.
- 3. Recognize the data obtained by identifying the advantages and limitations of the study.

Material and method

This is a quantitative, descriptive, observational, cross-sectional study.

The purpose of the study is to describe the frequency and most important characteristics of a particular phenomenon (autonomy) in a population (nursing professionals) and to provide data on which some conclusions can be drawn.

The universe of the study is considered to be all nursing professionals working in a thirdlevel institution; however, it is suggested that the instrument, among other elements, could be applied to populations of nurses working in second and firstlevel institutions, respectively, since some of their professional and training characteristics are shared by many of them and would help to unify some criteria that would serve to consolidate the growth of the profession.

Subjects should be included in the study depending strictly on the research question and objectives, for the particular case of this study, nursing professionals working in a high specialty institution will be taken into account. The inclusive criteria will be that they have a bachelor's degree or higher and that they have at least 3 years of work experience; both men and women will be taken into account. The exclusion criteria are personnel with only a technical degree and who have less than 3 years of work experience, while the elimination criteria will be people who do not wish to participate in the questionnaire and who do not respond completely to the questionnaire.

The population of professionals was made up of all nurses, both general nurses and specialists of the National Institute of Neurology and Neurosurgery. The selection of the sample did not require calculation since other criteria were used as described in the following section to select the participants. All the services of the Institute were selected.

The Nursing Activity Scale was used, which was developed to measure the level of autonomy in nursing professionals. The scale is a revision of Schutzenhofer's for which it is now named the Schutzenhofer Professional Nursing Autonomy Scale (SPNAS).¹³

The items of this scale are brief descriptions of situations that are not specific to any clinical area in which a nursing professional must take some action, but that do require the exercise of professional nursing judgment. It consists of 30 constructed items, together with a free-response question in which the professional qualifies his/her autonomy in a self-perception exercise.¹⁴

Content validity was assessed through a review by PhD-prepared nursing faculty to ensure a range of autonomous behaviors. The nursing literature base was also reported as a priori evidence of content validity. They were also given the working definition of professional autonomy used in the development of the instrument because previous work had indicated low levels of understanding of professional autonomy. Cronbach's alpha value is 0.92.¹⁵

The data collection and analysis were carried out through the *Google Forms* platform. This platform was chosen because it is free to use, multiple users can access it simultaneously, it is easy to access through a mobile device or from a computer, and allows obtaining data in real-time about the answers given by each of the participants in the questionnaires. In addition to this, the same questionnaire was prepared in a physical format, since some people preferred to respond in this way. The data were transferred to the SPSS program, version 21, to obtain various measures of central tendency and dispersion. The final data were copied to a *Microsoft Excel* file where more detailed graphs were obtained and aggregated in the results of this study.

Results

This section presents the data obtained through the application of the scale in digital format and physical format. The answers obtained from the questionnaires were made through the mobile devices of the participants in a relaxed environment, while the questionnaires applied physically were applied during the professional work within the participant's shift. For a better understanding of the results, they are divided into 2 parts: characterization of the sample, which includes gender, age, academic degree, service, shift, and seniority, while in the second part, an analysis is made using graphs where the 3 variables that are part of the study and which in turn represent the items answered in the questionnaire are visible in an overall score and an analysis is made of the free response question added at the end of the questionnaire.

Gender.- Eighty-four nursing professionals were surveyed, of which 57 participants were women (68%) and 27 were men (32%) (Graph 1).



Source: SPNAS Questionnaire

Graph 1. Gender

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Age.- Concerning age, participants were identified in age groups ranging from 20-25 years (14), 26-30 years (30), 3135 years (9), 36-40 years (8), 41-45 years (8), 46-50 years (8) and over 50 years (7). (Graph 2).

Graph 2. Age



Source: SPNAS Questionnaire

Academic degree.- Regarding the academic degree, one of the inclusion criteria is that the respondents have a bachelor's degree, so 100% of the participants meet this criterion. However, 25 of them have a specialty degree, 6 have a master's degree and only 3 have a doctorate (Figure 3).



Graph 3. Academic degree

Source: SPNAS Questionnaire

Services of the institute.- All the services of the Institute where the questionnaire was applied

were taken into account. The participants from each service are shown (see Graph 4).

Graph 4. Services of the institute



Shift.- Regarding the shift, 31 participants belong to the morning shift, 30 participants

belong to the afternoon shift and 23 participants belong to the night shift (Graph 5).

Graph 5. Shift



Source: SPNAS Questionnaire

Length of service.- The length of service, which also serves as an important inclusion criterion for the resolution of the questionnaire, was classified into the following categories: 3-6 years, 6-9 years, 9-12 years, and more than 12 years (Graph 6).



Graph 6. Length of service

Source: SPNAS Questionnaire

Dimensions.- Three dimensions were identified that play a very important role in the autonomy of nursing practice: self-regulation, education, and leadership. Concerning the instrument, to each of them belong 10 questions regarding the SPNAS instrument. To the first of them (selfregulation) belong questions 1-6, 12-13, 19 and 30, to the second measured variable (education) belong questions 7, 11, 14, 17, 20, 22, 23, 23, 25, 26, 29 and to the last variable (leadership) belong questions 8, 9, 10, 15-16, 18, 21, 24, 27-28. The answers were as follows (Graph 7).

Graph 7. Responses by dimension



Source: SPNAS Questionnaire

In the 3 dimensions, less than 16% of the participants responded that it is not likely that their actions will be carried out according to the *items* answered, however, the response that had the highest value was that it is very likely that the participants will act according to the items answered, with a high percentage.

Level of autonomy.- Derived from the above and according to the evaluation method of the

instrument where the responses are weighted at three levels of autonomy ranging from 1 = low level of autonomy, 2 = medium level of autonomy, and 3 =high level of autonomy, to achieve the weighting, the numerical score of each respondent's *item* is multiplied by the weight of each *item*, either by 3, by 2, or by 1, as appropriate, then the adjusted scores of the items are added together so that the total scores produced can range from 60 to 240. (Graph 8).

Graph 8. Level of autonomy



Source: SPNAS Questionnaire

As can be seen, 54.7% of the participants think that they have a high level of autonomy in the different services where they exercise their professional activity, 25% have a medium level of autonomy, and 20.2% exercise a low level of autonomy.

Free response question.- In addition to the SPNAS instrument, a free-response question

was added in which each participant answered according to his or her perception. The question was as follows: On a scale of 1 to 10, how do you consider your level of autonomy within the service where you work taking into account your professional activity? The results were as follows (Graph 9).



Graph 9. Free response

It is observed that 44% of the participants are located on a scale of 8/10 as autonomous professionals within their professional practice, 19% are located on a scale of 9/10, 21.4% are located on a scale of 10/10, while 15.4% are located on a scale of 7/10, so a high level of autonomy is observed in each of the different services where autonomy of practice is exercised within the institute.

Discussion

The link between autonomy and involvement with activities is also related to the age of the nursing professionals. Thus, it is reported that different levels of involvement are linked to age, highlighting that in professionals younger than 25 and older than 30 years of age the level of work involvement is higher than in nurses between 25 and 30 years of age.¹⁶

This coincides with the findings that the older and more senior the nurse, the higher the level of autonomy in activities inherent to the profession. The relationship between age and work experience with the level of autonomy was also reported in nursing professionals in Iran, finding a higher level of autonomy between 30 and 40 years of age and with more than 10 years of work experience.¹⁷

Continuing with the results of professional autonomy in a second-level institution analyzed by Kramer, he emphasizes three dimensions very similar to those described in this paper: **a**. Control over practice: (this dimension mentions that these items can be linked to a greater extent with the term "*worker independence*" to be able to plan and develop their functions). **b**. Clinical or practical autonomy: highlights the importance of decision-making on the part of professionals concerning the care they provide to the patient and **c**. Institutional autonomy: has to do with decision-making concerning the organization of the institution where the professional works.¹⁸

These three dimensions together form the construct that the researcher wants to measure, autonomy, which is closely related to the degree of independence to plan and develop their work, taking into account the decision-making of the person and the opportunity for the organization or institution where they work to positively impact the level of independence of the nursing professional.¹⁹

A free-response question was added to the instrument presented, which consisted of rating from 1-10 the degree of autonomy that the nursing personnel perceive of themselves, which obtained high levels in terms of its qualification, where the highest perceived was 8, followed by 10, and finally 9, in that order. In a Chilean study reported by Triviño Vargas, the population studied was concentrated under 30 years of age; in this range, it is to be expected that the nursing professional lives and acts in society according to his responsibility and not under the tutelage of others, as reported in the present study; however, upon becoming a nursing professional, the respective level of autonomy will be partly determined by the conception that society has of the nursing profession, which is influenced by the concept that they attribute to their professional activity.20

Conclusions

The findings of this research allowed us to determine the self-perception of the level of autonomy of nursing professionals in the care of people in a tertiary hospital in Mexico City.

We explored how nurses construct this perception in their clinical practice.

In their daily practice and daily work, professionals still show limitations in the exercise of autonomy, particularly in activities of an administrative nature.

The existing empowerment of professionals in decision-making on education, prevention, and health promotion actions and choice in interventions and follow-up for both patients and family members is recognized.

References

- Guerrero-Núñez S, Cid-Henríquez P. A reflection on autonomy and leadership in nursing. Aquichan. 2015;15(1):129-40. DOI: <u>10.5294/aqui.2015.15.1.12</u>
- Paredes P, Rivas E. History of the professional practice of hospital nurses in southern Chile (1940-1980). Cien Enferm. 2014;20(1):9-21. <u>http://dx.doi.org/10.4067/</u> <u>S0717-95532014000100002</u>
- Torres-Galán J, Sanfilippo-Borras J. The birth of the School of Nursing in Mexico City (1888-1911), Tzintzun. Rev Est Hist. 2016;64:139-64. <u>https://cutt.ly/Xeikte0Y</u>
- Siles J. The social construction of the History of Nursing. Index Enferm. 2004;13(47):7-10. <u>https://cutt.ly/EeikiAIb</u>
- Ayala-Valenzuela R. Biopower: power and violence in the education of nursing professionals. Educ Méd. 2008;11(3):125-29. <u>https://cutt.ly/oeiksyOG</u>
- Urteaga E. Sociology of professions: a theory of complexity. Lan Harremanak. 2008;18(1):169-98. <u>https://doi.org/10.1387/</u> <u>lan-harremanak.2812</u>
- Milos P, Bórquez B, Larraín A. "Care management" in Chilean legislation: interpretation and scope. Cien Enferm. 2010;16(1):17-29. <u>https://cutt.ly/YeikhqYW</u>

- Barrio I, Molina A, Sánchez C, Ayudarte M. Nursing ethics and new challenges. An Sis San Navarra. 2006;29(3):41-7. <u>https://</u> <u>cutt.ly/neikjddz</u>
- Tapp D, Stansfield K, Stewart J. Autonomy in nursing practice. Rev Aquichán. 2005;5(1):114-27. <u>https://cutt.ly/beikkEAV</u>
- Triviño P, Barría R. Level of autonomy of nurses in pediatric practice. A Chilean experience. Enferm Univer. 2016. 13(4): 216-25. DOI: <u>http://dx.doi.org/10.1016/j.</u> reu.2016.09.002
- González A. Hernández G. Nursing process as a builder of professional autonomy: an action research. Enferm Univer. Académica. 2012; 10(8):114-26. <u>https://cutt.ly/Beikznpc</u>
- Alexander W. Determinants of nurse staffing and perception of autonomy within different clinical settings. J Nurs Admin 2000;30(12):611-17.
- Acorn R. Decentralization and organization as determinants of nursing work. Index Enferm. 2004;13(46):9-12.
- Krugman M. Longitudinal evaluation of the redesign of professional nursing practice. Cien Enferm. 2011;17I(3):23-33.
- 15. Gómez-Torres D. Nursing process as a builder of professional autonomy. Rev Enferm Inst Mex Seg Soc. 2016;24(3):183-9. https://cutt.ly/7eikE46F
- Tosoli A. A. Comparative study on the representations of professional autonomy elaborated by initiating and concluding students. Rev Latino-Am Enfermagem. 2017;25:e2927. DOI: <u>10.1590/1518-</u> <u>8345.1919.2927</u>
- Landman C. Moving toward the exercise of autonomy and leadership. Enferm Univer. 2019;16(2). DOI: http://dx.doi. org/10.22201/eneo.23958421e.2019.2.644

Neurological Nursing: opinion and perspectives... Ugalde Basabe CA., et al.

- Torres DG, Rojas GTR, Garduño MDM, Peres AM. Professional autonomy for perinatal nurses: social perception of competences gained Rev Enferm UERJ, 2019;27(6). DOI: <u>http://dx.doi.org/10.12957/reuerj.2019.37778</u>
- 19. Foucault M. Power a magnificent beast: on power, prison and life. Buenos Aires, Siglo XXI; 2012.
- 20. Iliopoulou G, While A. Professional autonomy and job satisfaction: survey of critical care nurses in mainland. JAN 2010;66(11):2520-31. Available at: doi: 10.1111/j.1365-2648.2010.05424.x.

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Original article

Condiciones de trabajo del personal de enfermería en tres instituciones de salud públicas

Working conditions of nursing staff in three public health institutions

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Resumen

Introducción: Las condiciones de trabajo abarcan todos aquellos aspectos circunstanciales en los que se desarrolla la actividad laboral. Esto incluye tanto los factores del entorno físico donde se realiza el trabajo, como las circunstancias temporales en las que se lleva a cabo. En otras palabras, se refiere a todos los elementos que rodean la labor diaria de los trabajadores. En este contexto, surge la necesidad de investigar: ¿Cuáles son las condiciones de trabajo del personal de enfermería en instituciones de salud públicas en Michoacán, México? Esta pregunta busca explorar y comprender los factores que afectan el desempeño y bienestar del personal de enfermería en esta región, y cómo estos elementos pueden influir en la calidad de los servicios de salud proporcionados.

Objetivo: Analizar las Condiciones de Trabajo del personal de Enfermería en Instituciones de Salud Públicas, en Michoacán, México.

Material y Métodos: Estudio de carácter cuantitativo, no experimental, transversal, prolectivo, descriptivo y diagnóstico. La variable estudiada fue Condiciones de Trabajo del personal de Enfermería. La población fueron 5112 personas y la muestra 335 profesionales.

Resultados: El 83% del personal de Enfermería encuestado tiene la Licenciatura de Enfermería, el 51% manifiestan sobrecarga de trabajo, el otro 51% dicen que faltan insumos para trabajar, el 66% consideran que hay sobrecarga física y mental en el trabajo, el 50% dicen tener inseguridad en el empleo y el 58% consideran que hay conflictos en el trabajo que tratan de solucionar, sin lograrlo.

Discusión: El 66% del personal manifiesta que sí hay sobrecarga de trabajo física y mental, lo que se asemeja a la investigación de Orcasitas A. y Ovalle L. cuyos resultados coinciden también con la sobrecarga de trabajo en un 50% de sus entrevistados.

Conclusiones: Los profesionales de Enfermería no están satisfechos con las Condiciones de Trabajo que tienen en la SSA, IMSS e ISSSTE. Convendría atender las carencias de insumos, la falta de personal y el salario, para poder garantizar la calidad de atención de los pacientes.

Palabras clave: Condiciones de trabajo, Enfermería, Personal, Salud.

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Abstract

Introduction: Working conditions encompass all the detailed aspects of the work activity. This includes the factors of the physical environment where the work is performed and the temporary circumstances in which it is carried out. In other words, it refers to all the elements surrounding workers' daily tasks. In this context, the need arises to investigate the following: What are the working conditions of nursing personnel in public health institutions in Michoacán, Mexico? This question seeks to explore and understand the factors that affect the performance and well-being of nursing personnel in this region, and how these elements can influence the quality of health services provided. **Objective:** To analyze the working conditions of nursing personnel in public health institutions in Michoacán, Mexico.

Material and Methods: Quantitative, non-experimental, cross-sectional, prolective, descriptive, and diagnostic study. The variable studied was the working conditions of nursing personnel. The population was 5112 people and the sample was 335 professionals.

Results: Of the nursing personnel surveyed, 83% have a Bachelor's Degree in Nursing, 51% report work overload, another 51% say that there is a lack of supplies to work with, 66% feel that there is physical and mental overload at work, 50% say they have job insecurity and 58% consider that there are conflicts at work that they try to solve, without succeeding.

Discussion: 66% of the personnel state that there is physical and mental work overload, similar to the research of Orcasitas A. and Ovalle L. whose results also coincide with the overload of work in 50% of their interviewees.

Conclusions: Nursing professionals are unsatisfied with the Working Conditions in the SSA, IMSS, and ISSSTE. The lack of supplies, personnel, and salary should be addressed to guarantee the quality of patient care.

Keywords: Working conditions, Nursing, Personnel, Health.

Introduction

For Peiró J.M and Prieto F.¹, Working Conditions (WC) are all the elements that are located around the work, without being the work itself, with the set of factors that surround it, that is, they are the detailed aspects in which the work activity takes place, both in the factors of the physical environment in which it is performed and in the temporary circumstances in which it occurs. Similarly, for Saltos I. *et* al.² WC are defined according to the tasks or activities with the characteristics of the work environment, which may or may not directly affect organizational results and the quality of care.

Therefore, according to Granero A. *et al.*³, it is vitally important to analyze the WC of nursing personnel, since in recent decades the development of the nursing profession has followed a paradoxical development, both globally and locally: on the one hand, training in competencies and material and technological resources for professional performance has improved substantially, while, on the other hand, WC have become harder, more complex and more difficult. This means that while nursing personnel have access to postgraduate specializations with master's and doctoral degrees, the dynamics of the work have collateral effects on the occupational health of the personnel by maintaining work overload, lack of personnel, lack of time to attend to patients, absenteeism, stress, pressure to complete tasks, shortage of work supplies, which harms the occupational health of the personnel, with lack of recognition of their work and an increase in associated psychosocial risks. This gives the idea that the positive trend of nursing professionals in their professional training contrasts with the negative trend of WC.

In fact, for Orozco O. and López M.4, the undesirable effects of WC correspond mainly to: work accidents, occupational diseases, absenteeism, staff turnover, negative organizational climate, etc., which translates into a decrease in the productivity of the institutions and a deterioration in the quality of life of the workers. In other words, deficient WC constitute not only a potential psychosocial risk for nursing personnel but also a decrease in the quality of patient care because WC include variables such as organizational contractual characteristics. infrastructure. supplies, work organization, task demands, negative attitude, physical insecurity and lack of care for the worker's physical, psychological and social health.

According to Mahecha M. and León E.⁵ for the International Council of Nurses (ICN), the current WC of nursing are a consequence of the greater demands in clinical services, as a result of the financial policies of the health sector, which have repercussions on the quality of life, with a greater impact on women, due to their condition as "*caregivers*". This group of caregivers is characterized by being under the supervision and control of bosses and

authorities, with low salaries and a system of 8 to 12-hour rotating shifts with frequent extensions of the working day for extra shifts or double shifts, which is reflected in high physical and psychological workloads and precarious health conditions determined by their working conditions.

Thus, for Zabalegui A.6 in Pereyra F. and Micha A., the nursing practice is key for society, because these personnel, based on their knowledge and experience, provide the necessary care for the processes of promotion, recovery, and maintenance of health. However, unlike other care occupations, this profession has typical problems that mark a significant level of precariousness. For example: low salaries, multiple jobs, work stress and lack of adequate equipment and infrastructure, which indicate the permanent exposure of these personnel to biological, chemical and physical risks, with musculoskeletal and joint pathologies caused by the physical efforts required by the tasks, by the shortage of nurses and by the work overload, all of which contribute to the decrease in the quality of their services.

Material and methods

A quantitative, non-experimental, cross-sectional, cross-sectional, descriptive, descriptive and diagnostic study, whose purpose was to analyze the working conditions of nursing personnel in public health hospitals in the state of Michoacán, Mexico.

The variable measured was Working Conditions, which has dimensions and indicators as explained below. The dimensions were: Individual Conditions, Intra-workplace Conditions and Extra-workplace Conditions. Of course, each dimension has its indicators.

For example, for the Individual Conditions dimension, the following were measured: perception of health, level of professional training, work motivation, and selfconcept. For the Intra-workplace Conditions dimension, the following were measured: work environment, workload, work inputs, work organization, physical and mental workload, amount of work that is not finished with the shift, occupational risk, cleanliness of the work area, exhaustion and fatigue, work conflicts, and salary. In the Extra-workplace Conditions, the following were measured: quality of life, possession of a house or apartment, means of commuting from home to work, and disabled or unemployed family members. In addition, we measured what the nursing personnel dislike most about WC and what suggestions these personnel propose to improve WC in Michoacán hospitals.

The study was carried out in three stages: in the first, an analysis was made of the state of the art of working conditions in nursing; in the second, the instrument of García J.C. *et al.*⁷ developed in Bogotá, Colombia was restructured and validated by expert judgment, with a total of 4 indicators for individual conditions, 11 for intra-workplace conditions and 4 for extraworkplace conditions, in addition to two openended questions. In total, there were 19 items for Labor Conditions.

In the case of sociodemographic data, the following were measured: age, work shift, gender, work category, current service, years of service, institutional unit, and State of the Republic where they work. Each indicator generated an item with four closed, structured, Likert-type response options. Also at this stage, the instrument was validated with a Pilot Test of 100 nursing professionals and a Judges' Criteria. The universe was 7200 general nurses, specialists, and nursing managers. The population was 5112 people, of which 2664 were from the SSA, 1800 were from the IMSS, and 648 were from the ISSSTE. The random sample consisted of 335 nursing professionals from the four work shifts.

In the inclusion criteria, professional nursing personnel from the different work shifts and the public institutions SSA, IMSS, and ISSSTE were taken into account. In the exclusion criterion, Nursing Assistants and Orderlies were taken into account, as well as private and university institutions, and in the elimination criterion, nursing personnel who were on vacation or rest on the days when the survey was applied were taken into account. In the third stage of the collection of information, nurses were contacted and their voluntary participation was requested through Informed Consent by e-mail to carry out the survey through the Google Forms Platform to the telephone devices of each nursing professional reported as part of the Mexican Federation of Nursing Colleges.

Results

Regarding Sociodemographic Data, 60% of the nursing personnel surveyed are between 0 and 50 years of age, 48% work the morning shift, 89% are female, 48% are general nurses A, B, or C, 14% are specialists and 16% work in Outpatient Care, 9% in Internal Medicine and 4% in Pediatrics and other services (See *Graph No.1*).

Regarding Individual Conditions, 41% of the personnel interviewed stated that they are in good health, 83% have Bachelor's and Master's Degrees, 24% have Bachelor's Degrees and Specialties and 12% have Doctorates in different fields. Similarly, 47% are highly motivated to work because they are fulfilled as individuals and professionals, and 51.50% consider themselves to have an excellent self-concept that allows them to project security, responsibility, and individual commitment (See Graph No. 2.).

Graph 1. Distribution of nursing staff according to years of service, 2022.



Observations: 25% of the staff work in operating rooms, 11% are service substitutes, 9% in nursing management, 7% in emergency, renal replacement, administrative, and supervisory roles, 6% in the CSSD, and 23% in other services.



Graph 2. Distribution according to the motivation of the nursing staff in their work, 2022.

Observations: 47% of the staff are highly motivated because they work in what they like, 30% are also motivated because they like taking care of patients, 19.5% are sometimes motivated, but given the conflicts, they become demotivated and 3% are not motivated by the work because of the fatigue and stress it causes them.

Concerning the Intralaboral Conditions, 47% of the personnel consider that they have a good work environment because the nursing personnel help each other, 51% think that there is an overload of work and this means that they do not have time for anything, 51% believe that there is a lack of resources and supplies for the work, which causes setbacks in patient care, 54% believe that the work

is organized, 66% think that there is an overload of physical and mental work and 23% of the personnel think that they have two jobs because what they earn in one is not enough for anything. In addition, 50% say that there is a medium level of safety because there are occupational hazards in the hospitals, given that the protective equipment they use is not of good quality (*See Graph No. 3*).





Observations: 66% consider that, yes there is physical and mental overload at work, 7% state that they do not feel the overload, 16% think that there is no overload because they work coordinated, and 9% yes there is overload which harms them a lot because of the tiredness and stress they feel.

Similarly, 58% of the personnel say that their work area is always clean and that they always try to keep it that way, 39% think that they do suffer from fatigue and exhaustion, 58% believe that sometimes there are conflicts that they try to solve for the good of all, and 37% believe that their salary is fair to bad because it is barely enough. (See Graph No. 4).

Regarding the extra-workplace conditions

of the nursing personnel, 46.50% consider that their quality of life is good, 38% say that they have their own houses or apartments that they enjoy with their families, 58% say that they travel from home to work by car, although 17% also use public transportation and 38% do not have disabled family members, but do have unemployed family members, so they must help them. (See Graph No. 5).



Graph 4. Distribution of burnout and fatigue among nursing personnel, 2022.

Observations: 40% say that they do not have exhaustion or tiredness in the activities they perform, 39% think that, yes they have signs of tiredness and exhaustion, 18% feel good at work because they fulfill their activities and 1.1% say that they are exhausted and that is why they are absent.





Observations: 46.5% believe they have a good quality of life, 27% say they have an excellent quality of life, 25% believe their quality of life is barely fair, and 1% believe they have a mediocre quality of life.

Finally, when asked open-ended questions about what nursing personnel dislike most about working conditions, 26% answered that there is a lack of supplies and resources to work with, 15% that the problem is the salary, 13% the lack of personnel, 10% the injustices, and 8% the working environment. Similarly, proposals suggested by nurses to improve WC include: 21% said they would hire more nurses, 19% said they would increase training, 15% said they would increase salaries, and 7% said they would improve effective communication, among others.

Discussion

In the Sociodemographic Data, 60% of the nursing personnel surveyed were between 31 and 50 years of age and 89% were female personnel, which coincides with the research of Acevedo S. *et al.*⁸ carried out in Buenos Aires, where 65% of the respondents were between 18 and 45 years of age and 68% of the population was also female.

About Working Conditions concerning Individual Conditions, 51.1% of the personnel clearly state that they are professionals with a very good self-image that projects security and individual commitment, which is similar to the results of research by Orcasita A.P. and Ovalle L.⁹ carried out in Colombia where 100% responded affirmatively that they also have a very good self-image, which gives an idea that, in terms of self-concept, the nursing personnel have a high concept of themselves as health professionals.

Regarding Intra-workplace Conditions, 51% of the nursing personnel interviewed stated that there are workloads and that they do not have time for anything, which is similar to the research conducted by Luengo C. and Sanhueza O.¹⁰ in various Latin American countries such as Brazil, Colombia and Cuba, where 45% of the nursing personnel stated that the WC, in general, were adverse. However, 36.3% of the nurses in the United States and Canada and the rest in Europe and Tanzania stated that the WC were adverse and the highest proportion in decreasing order was: work overload, lack of supplies or poor quality of these, unsatisfactory salary, inadequate number of nursing professionals, etc. Of course, all this produces great job dissatisfaction. Similarly, Aspiazo E.11 also reported that 70% of nursing personnel affirm that there is deterioration in WC in Argentina, due to the extension of working hours and their precariousness. Similarly, regarding salaries, 46% of nurses in Michoacán consider that the salary is more or less good, although 37% of them say that it is barely enough for the basics. These data are contrasted with those of Mesa L. and Romero M.N.12 who investigated Colombia reporting that there is dissatisfaction with the possibilities offered by remuneration since nurses find that their salary is too low to reach the desired standards of living since they cannot cover the responsibilities of housing, food and clothing for themselves and their families. Similarly, 39% of the staff in Michoacán report fatigue and exhaustion, which is similar to the findings of Gómez W.H.13 in an investigation carried out in Sincelejo, Colombia. They say that the responsibilities assumed by nursing professionals together with the current working conditions, given the institutional demands, have generated physical and mental exhaustion that translates into wear and tear and tiredness, as a result of the intense work shifts, not only because of the ordinary shifts and work overload but also because these shifts are increased by two or three hours more, which are used to fulfill the tasks required by the institution. This tiredness and exhaustion of the nursing staff also displaces their personal space and time and causes them to lose the recognition of the human aspect in the working world, since what matters is the fulfillment of the task over the rights of rest, leisure, recreation, and family enjoyment. In addition, excessive workloads lead to illnesses and resignations due to job dissatisfaction and the absence of well-being at work. Now, concerning occupational risk, 50% of the nursing personnel interviewed commented that there is a medium level of safety in the hospitals because the personal protective equipment is not of good quality, which increases the risk of illnesses and contagions. These results are similar to those of Quintana M.O. et al.14 who interviewed 170 nurses from the Secretary of Health of the state of Sonora, stating that for 42.4% of the personnel, the protective equipment was provided frequently, although for 35.9% of the personnel these equipment were rarely or never of good quality, which means that for 74.4% of the personnel they were afraid of becoming infected when attending to patients.

Regarding extra-labor relations, 46.50% of the personnel surveyed stated that they have a good quality of life with their family, although 25% of them consider that their quality of life is only average because they have unmet needs. Contrary to these assertions, the 11 studies developed by Luengo C. and Sanhueza O. 45% of nurses in Latin America and 36.3% in the United States and Canada stated that the WC identified in general were adverse due to work overload, lack of supplies, lack of clarity in functions, lack of recognition, lack of training, lack of professional autonomy and poor organizational participation, which affects both personal and work quality of life. Similarly, for Leguizamón L.C. and Gómez V.¹⁵ in an investigation carried out on 91 nurses in Bogotá, it was found that for 100% of this personnel, there were deficient WC, due to overcrowding, gases, dangerous environmental conditions, heavy loads to be lifted, work accidents, lack of supplies and excess of patients, etc., which determines the precariousness not only in their work but also in their quality of life.

Conclusions

SSA, IMSS. and ISSSTE nursing professionals in Michoacán are not satisfied with the limited and adverse WC they have in their hospitals. The main negative aspects found were: the work overload they have, the lack of supplies, the existence of physical and mental overload that harms them because it causes fatigue and stress, the anguish of not being able to finish the tasks, the existing risks of contagion because the protective equipment is of poor quality, the conflicts derived from the work due to the lack of personnel, the salary that is not enough to live with dignity and the lack of recognition.

Despite the above, the nursing staff is motivated every day to continue with their tasks by trying to maintain their health in a state that allows them to function. They study postgraduate specialties in the version of Specialties, Masters, and Doctorates to fully comply with the updating of knowledge and skills for patient care, which allows them to maintain status, project professionalism and coordinate their work to make a positive and collaborative work environment. Likewise, they organize their work and always keep their patients clean and tidy without taking into account that, although the WC are not always good, they do everything possible to provide quality care. In other words, although intralaboral WC are adverse, nurses give their best to provide quality care.

When nursing professionals were asked what they disliked most about WC, they reported these deficiencies in decreasing order: lack of supplies, lack of personnel, salary, injustice, lack of recognition, difficult work environment, fatigue, stress, and risks. Likewise, the nursing personnel proposed the following to improve WC: increase the number of nurses on the staff, provide the services with supplies, improve salaries, ensure equity and fairness in workloads, value and recognize the work of nurses with incentives, more training, and scholarships at all levels, etc.

Today we know that in the international context, it is recognized that the nursing staff is the most important part of the Health System of any country, however, it does not happen in the National Health System in Mexico. Even though nurses make their best effort to provide quality care to patients, WC are still deficient and even averse to ensuring the health of the nurses themselves, not only in the physical but also in the psychological and social areas because they are hardly valued and are hardly recognized for the work they do. With all this, nurses must bear within themselves not only the anguish of their patients and families but also the anguish of their own families, regardless of the physical and mental wear and tear and the fatigue that exceeds their capabilities.

Therefore, the care workers who are nurses require today more than ever the valuing of the tasks they perform, when valuing means promoting their development and providing them with a decent job with well-paid health and safety conditions. This could be a challenge due to the current crisis in the health sector due to the increase in the health needs of the population and budgetary restrictions, but it is also an area of opportunity to provide better WC to nurses because it is thanks to the work they perform daily that the patient population and their families can get ahead in the health services.

Although nursing today demands better WC, all institutional management strategies must also be put into practice today to correct the usual omissions, remedy unfavorable deficiencies, and achieve the welfare of the only profession that cares for human beings. Therefore, it is necessary to meet the demands of the nursing staff to provide them with decent work with equity, safety conditions, and human dignity following the international conventions of the International Labor Organization (ILO) so that the nursing staff can provide the specialized and quality care required by the users.

References

 Peiró J.M. y Prieto F. Tratado de psicología del trabajo VoI N.1: La actividad laboral en su contexto. Síntesis. Psicología. Madrid, 1996. En Acevedo S y Cols. Condiciones de trabajo del equipo de salud en centros de Atención Privada desde la perspectiva del trabajo Decente. Argentina de Salud Pública. Buenos Aires, 2012; 3 (12): 15-22. Available at: <u>https://cutt. ly/Eeeu6JJS</u>. Accessed on: March 10, 2023.

- Saltos I. y Cols. Visibility of working conditions of health staff in Ecuador in pandemic times. Eugenio Espejo. Quito, 2022: 16 (2): 113-156. Available at: <u>https://doi.org/10.37135/ee.04.14.15</u>. Accessed on: March 11, 2023.
- Granero A. y Cols. Labor conditions and the meanings of nursing work in Barcelona. Latino Americana de Enfermería. Enfermagem. Barcelona, 2018; 20 (e2947): 1-8. Available at: <u>https:// doi.org/10.1590/1518-8345.2342.2947</u>. Accessed on: March 3, 2023.
- Orozco O. y López M. Occupational Health Program: Technological Units of Santander. México, 2013; 44 (5). En Saltos I. y Cols. Visibility of working conditions of health staff in Ecuador in pandemic times. Eugenio Espejo. Quito, 2022: 11 (2): 153-158. Available at: <u>https://cutt.ly/ Jeeit8tq</u>. Accessed on: March 3, 2023.
- Mahecha M. y León E. Health-work conditions of professional nursing teachers connected to formative programmes for nursing assistants. Enfermería Global. Madrid, 2014; 13 (3): 148-159. Available at: <u>https://cutt.ly/6eeiykN7</u>. Accessed on: March 12, 2023.
- 6. Zabalegui A. En Pereyra F. y Micha A. The configuration of nursing labor conditions in the Buenos Aires Metropolitan Area: An analysis at the intersection of the gender order and the organization of the health system. Salud Colectiva. Buenos Aires, 2016; 12 (2): 221-223. Available at: <u>https://cutt.ly/VeeiuT0G</u>. Accessed on: March 7, 2023.
- García J.C. y Cols. Self-evaluation of the work conditions of nursing high complexity situations. Avances en Enfermería. Julio-Diciembre. Bogotá, 2011; XXIX N° 2: 331-334. Available at: <u>https://cutt.ly/yeeifeIv</u>. Accessed on: March 10, 2023.
- Acevedo S. y Cols. Working Conditions of Health Personnel in Primary Care Centers from the Perspective of Decent Work. Argentina de Salud Pública. Buenos Aires, 2012; 3 (12):19. Available at: <u>https://cutt.ly/BeeimIOL</u>. Accessed on: April 13, 2023.
- Orcasita A.P. Y Ovalle L. Work conditions of nursing staff at a high complexity clinic in Valledupar. Biociencias. Enero-Junio. Barranquilla, 2019; 14 (1): 83-98. Available at: <u>https://doi.org/10.18041/2390-0512/biociencias.1.5334</u>. Accessed on: April 13, 2023.
- Luengo C. y Sanhueza O. Condiciones de trabajo y su relación con la calidad del cuidado y salud del profesional de Enfermería. Medicina y Seguridad del Trabajo. Santiago de Chile, 2016; 62 (248): 368-380. Available at: <u>https://cutt.ly/XeeiQJAZ</u>. Accessed on: April 13, 2023.
- 11. Aspiazu E. The labour conditions of care workers in Argentina Reflections based on the analysis of three selected occupations. Trabajo y Sociedad. No. 28. Buenos Aires, 2017: 1-32. Available at: https://cutt.ly/KeeiRY6Y. Accessed on: April 13, 2023.
- Mesa L. y Romero M.N. Profesionales de enfermería y cuidado en las condiciones laborales actuales. Investigación en Enfermería: Imagen y Desarrollo. Bogotá, 2010; 12 (2): 55-92. Available at: <u>https://cutt.ly/TeeiTjdc</u>. Accessed on: April 13, 2023.
- Gómez W.H. Nursing work conditions in times of COVID 19. Sincelejo, Sucre. Colombia. Horizontes de Enfermería. Sucre, 2022; 33 (2): 191-202. Available at: <u>https://cutt.ly/xeeiY3co</u>. Accessed on: April 13, 2023.
- 14. Quintana M.O. y Cols. Perception of the work context of nursing professionals in northwestern

Working conditions of nursing personnel... Balseiro Almario C.L., et al.

Mexico during the COVID-19. SANUS ISSN Investigación. México, 2020;(16):1-14. Available at: <u>https://cutt.ly/deeiUOOq</u>. Accessed on: April 13, 2023.

 Leguizamón L.C. y Gómez V. Condiciones laborales y de salud en enfermeras de Santafé de Bogotá. International Journal of Clinical and Health Psychology. Enero. Granada, 2002; 2(1); 173-182. Available at: <u>https://cutt.ly/LeeiI2ei</u>. Accessed on: April 13, 2023. Original article



Identificación de competencias de enfermería de práctica avanzada en profesionales de clínicas de cuidado especializado

Identification of advanced practice nursing competencies in professionals from specialized care clinics

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Resumen

Introducción: para la implementación exitosa de la Enfermería de Práctica Avanzada (EPA), es necesario identificar y diferenciar a los profesionales que poseen este perfil acorde a las competencias que la caracterizan, luego, llevar a cabo estrategias dirigidas a potenciarlas y fortalecerlas.

Objetivo: identificar las competencias de EPA de los profesionales que laboran en Clínicas de Cuidado Especializado de un Hospital de Segundo Nivel en México.

Material y métodos: estudio observacional, descriptivo, transversal, prospectivo. Se incluyó a todas las enfermeras adscritas a las clínicas de cuidado especializado (n=28): terapia de infusión, gerontogeriatría, heridas y estomas, cuidado de la piel y prevención de lesiones asociadas a la dependencia, dolor y cuidados paliativos y reemplazo renal a quienes se les aplicó el Inventario para la Evaluación de Competencias de Enfermería de Práctica Avanzada (IECEPA), que identifica competencias de EPA a través de 8 dimensiones.

Resultados: los puntajes medios obtenidos respecto a las competencias de EPA: investigación y práctica basada en la evidencia (\overline{x} =30.03), liderazgo clínico y profesional (\overline{x} =14.92), autonomía profesional (\overline{x} =32.57), relaciones interprofesionales y mentoría (\overline{x} =26.03), gestión de la calidad (\overline{x} =15.67), gestión de cuidados (\overline{x} =24.17), enseñanza y educación profesional (\overline{x} =17.85), promoción de la salud (\overline{x} =15.17).

Limitaciones del estudio: no existe un instrumento adaptado al contexto mexicano que identifique competencias de EPA.

Originalidad: los autores declaran que se trata de un artículo original.

Conclusiones: esta investigación representa un avance en la implementación de la EPA, pues permitió identificar la práctica avanzada de los profesionales que integran las clínicas de cuidado especializado.

Palabras clave: enfermería de práctica avanzada, competencias, clínicas de cuidado especializado.

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Abstract

Introduction: For the successful implementation of Advanced Practice Nursing (APN), it is necessary to identify and differentiate the professionals who possess this profile according to the competencies that characterize it, and then to carry out strategies aimed at enhancing and strengthening them.

Objective: to identify the APN competencies of professionals working in Specialized Care Clinics of a Second Level Hospital in Mexico.

Material and methods: observational, descriptive, cross-sectional, prospective study. All nurses assigned to specialized care clinics (n=28) were included: infusion therapy, gerontogeriatrics, wounds and stomas, skin care and prevention of injuries associated with dependency, pain and palliative care, and renal replacement, to whom the Advanced Practice Nursing Competency Evaluation Instrument (APNCEI) was applied, which identifies APN competencies through 8 dimensions

Results: mean scores obtained for APN competencies: research and evidence-based practice (\overline{x} =30.03), clinical and professional leadership (\overline{x} =14.92), professional autonomy (\overline{x} =32.57), interprofessional relations and mentoring (\overline{x} =26.03), quality management (\overline{x} =15.67), care management (\overline{x} =24.17), teaching and professional education (\overline{x} =17.85), health promotion (\overline{x} =15.17).

Limitations of the study: There is no instrument adapted to the Mexican context that identifies APN competencies.

Originality: The authors declare that this is an original article.

Conclusions: This research represents an advance in the implementation of the APN since it allowed the identification of the advanced practice of the professionals who integrate the specialized care clinics.

Keywords: advanced nursing practice, competences, specialized care clinics.

Introduction

The increase in the incidence and early prevalence of chronic degenerative diseases, the progressive aging of the population, the emergence of new global pandemics, the deficit of physicians, and the lack of access and universal health coverage, require that the nursing profession is constantly redefined through the generation of new roles based on knowledge with scientific evidence and focused practice, which guarantee the quality and efficiency of care, as well as contribute to the access and coverage of universal health care.^{1,2,3}

The APN emerged in the 1970s in Canada and the United States of America, through two figures: Nurse Practioner (NP) and Clinical Nurse Specialist (CNS). The NP has assessment, diagnostic, and treatment skills; he/she is in charge of direct patient care, while the CNS has in-depth knowledge of a specialized area of nursing; apart from patient care, he/she is in charge of training nursing staff in quality of care; he/she has leadership and evidence-based practice skills. Both arise in these countries due to the deficit of physicians and the lack of access to and coverage of health services, these nurses were in charge of providing primary health care with effectiveness, safety, and quality.^{4,5,6}

The role of APNs is based on the models of *task shifting* and *skill mix*. Task shifting is a process by which tasks are shifted, allowing the workforce to be reorganized and making more efficient use of human resources; it is applied in the healthcare context in response to the shortage of health professionals.

In task shifting, APNs would perform certain duties of the physician in primary health care, as well as other activities that would include diagnosis and treatment; always from a nursing care model: preventive, holistic, promotive, and patientcentered.

The concept of skill mix can be classified into substitution and diversification. Substitution refers to replacing one professional with another to increase efficiency, improve results, and reduce costs. Diversification consists of introducing new professional groups to broaden the range of skills that can be provided.⁷

At least 38 countries have now introduced APN roles, especially high-income countries such as Australia, Belgium, Canada, Cyprus, the United States of America, Finland, France, Ireland, Japan, Poland, the United Kingdom, and the Czech Republic, where APNs have made a significant contribution to the development and functioning of health systems, improved accessibility to primary health care services and reduced health care costs.^{8,9}

The Canadian Nurses Association (CNA)

defines APN as a generic term that describes an advanced level of clinical nursing practice, which maximizes the utilization of postgraduate educational preparation with in-depth knowledge and experience in addressing the health needs of individuals, families, groups, communities, and populations. For the CNA, APNs possess the training, clinical expertise, leadership skills, and understanding of organizations, have an important role in health policy, and make decisions that affect patient and system health outcomes.¹⁰

For its part, PAHO/WHO considers the APN as a professional with postgraduate training who, integrated into the interprofessional team of the first level of health care services, contributes to the management of the care of patients/users with mild acute illnesses and diagnosed chronic disorders, under the guidelines of clinical protocols or manuals. The extended professional practice differs from that of the primary care nurse in the degree of autonomy in decision-making, including the diagnosis and treatment of the patient's disorders.⁷

APN has the following core competencies:

a. Experience in clinical practice: implies the competencies of consultant, collaborator, communicator, use of critical thinking and advanced assessment, intervention and evaluation skills, as well as ethical decision making and use of leadership tools. This is fostered by the specialization and the development of knowledge in areas such as diagnosis and treatment linked to various methods that seldom used by nurses, for example, the physical examination. The latter includes diagnostic tests and interpretation, planning and managing complete episodes of care, team work, delegating and resolving challenges appropriately to optimize health outcomes and the use of resources.

- b. Educator: with the competencies of education, mentor, and role model.
- c. **Research:** ability to monitor and improve the quality of care and effectiveness of their practice, evaluation and selection of the best evidence in the literature and transfer to practice. Similarly, they can conduct their research and dissemination in scientific journals.
- d. Self and organizational professional development: includes change agent and leadership competencies, generates governance systems, implements evidencebased protocols, optimizes processes, policies, and clinical guidelines; includes management competencies; policy development and implementation, decision making and practice innovations.^{7,11}

In the Region of the Americas, the role of the APN is being implemented. It is believed that the APN can play a crucial role in the advancement of primary health care, health promotion, disease prevention, adequate control of communicable and non-communicable diseases, and care especially in rural, and underserved areas, thus achieving universal health access and coverage.

Jamaica, the country with the most experience in this area, introduced the role of family NP, pediatrics, and mental health/psychiatry as a response to the lack of physicians in rural areas and the scarce health services in the communities since 1977.

In Mexico, in 2017 the Ministry of Health integrated working groups composed of national and international leaders and experts from various institutions and agencies: the Ministry of Health, the National Autonomous University of Mexico, the Autonomous Metropolitan University, and the Pan American Health Organization. They designed a strategy that contributes to the solution of the problems caused by the inequality in coverage and effective access to health services, the imbalance between the burden of chronic non-communicable diseases, and the insufficient response of the health system, through the optimization and distribution of nursing functions.

This comprehensive strategy consists of expanding the role of nurses at the primary care level, with the aim of establishing a human resources training policy and incorporating this new role into the Mexican health system. It intends for human resources in health to be actively deployed in the community, aimed at health promotion, disease prevention, early care, and timely intervention to prevent complications.

The work team agreed on the need to create two new nursing job profiles in Mexico: expanded role nursing (ERN) and advanced practice nursing (APN). ERN refers to the insertion in the first level of care of those human resources that meet the professional and labor requirements where, through robust training schemes, the definition of areas of interprofessional competence, among other resources and support, allow them to acquire an advanced role, with greater autonomy and significant participation within the health team. The APN will be composed of professionals with a minimum level of a professional master's degree, development of professional experience in the clinical field, possessing a range of scientific knowledge, skills, ethical principles and values that legitimize their autonomy for innovation and improvement of care, as well as a series of specialization options linked to the needs of the population.

Similarly, the Mexican framework of competencies is developed, which defines the scope of knowledge, skills, and abilities necessary for the expansion of the nursing role in Mexico, with a perspective of comprehensive care of the person, family, or community. In this way, the total capabilities of the nursing staff are optimized to strengthen the efforts of the health system and contribute to the achievement of universal access and coverage in health, prioritizing the first level of care in Mexico.¹²

Accordingly, the Dr. Manuel Gea González General Hospital in Mexico City seeks to implement an advanced practice nursing model in its 6 specialized care clinics: 1. infusion therapy, 2. skin care and prevention of injuries associated with dependency, 3. gerontogeriatrics, 4. renal replacement, 5. wounds and stomas, and 6. pain and palliative care, and integrate them into an Advanced Practice Nursing Center (APNC) to guarantee access and health coverage for all its users. In this way, the APNs will provide timely specialized care, education, and health promotion aimed at preventing complications. These specialized clinics are integrated and led by nursing professionals who provide comprehensive care, with a great humanistic sense to the person and his family, in the outpatient and inpatient setting according to their area of specialization, using the technological resources, supplies, and infrastructure available in the hospital.

However, to this end, it is essential to begin by identifying the extent to which the professionals who make up these clinics possess APN competencies. This will make it possible to differentiate nursing practice through the different roles, distinguish the professionals who carry out the advanced practice and know their competencies,^{13,14,15} in addition to carrying out specific interventions to strengthen or enhance them.

For this purpose, used the we instrument designed and validated by Sastre¹⁷ in 2016: the Inventory for the Evaluation of Advanced Practice Nursing Competencies (IECEPA). This instrument, in addition to being useful for the evaluation/identification of basic advanced practice nursing competencies, can also be used to manage the selection and education of advanced practice nurses, to develop the advanced practice nursing role in healthcare organizations, or to formalize levels of advanced practice that are not recognized in certain settings.

Target

To identify advanced practice nursing competencies in professionals working in specialty care clinics.

Material and methods

Observational, descriptive, cross-sectional,
prospective study. The sampling was nonprobabilistic by convenience; it included all nursing professionals assigned to the specialized care clinics: infusion therapy, skin care and prevention of injuries associated with dependency, gerontogeriatrics, renal replacement, wounds and stomas, and pain and palliative care (n=28) of the Hospital General Dr. Manuel Gea González, of both sexes, basic and temporary, from the four work shifts (morning, afternoon, night A and night B), who agreed to participate, signed the informed consent and privacy notice, excluding all those who were on vacation, rest or for any other reason were not in the hospital at the time of data collection. The Advanced Practice Nursing Competency Assessment Instrument (APNCAI) was applied to them; evaluates APN competencies through it 8 dimensions: evidence-based practice research, clinical and professional leadership, professional autonomy, interprofessional relations and mentoring, quality management, care management, teaching and professional education, and health promotion. The overall reliability is 0.96 by Cronbach's α coefficient, it is a self-assessment instrument that uses a five-point Likert scale, ranging from "never" to "always", and is composed of 44 items.

The data obtained were then analyzed through descriptive statistics using SPSS version 25. The sociodemographic variables of the surveyed professionals were analyzed: age, sex, academic degree, shift, job position, work seniority, area of specialization, and specialized clinic to which they belonged. Then, the APN competencies were estimated through mean scores to determine the most and least developed competencies. The competencies were also analyzed by specialized clinic to determine which clinic had the most APN competencies. Then the sample was separated into 2 groups: 1 - 15 years and 16 - 30 years of work seniority to estimate their APN competencies. Finally, APN competencies were analyzed according to academic level dividing the sample into 2 groups: postgraduate/master's degree and technician/bachelor's degree. It should be noted that this instrument does not have a cut-off point; consequently, the competencies were estimated through mean scores; the higher the score, the higher the competency, and vice versa.

This work was approved by the Ethics and Research Committee of the Hospital Gral. Dr. Manuel Gea González, registration number: 42-99-2022. All procedures complied with the provisions of the regulations of the General Health Law on health research in force. Participants were informed of the implications of the study through signed consent. A privacy notice protects all data.

Results

Information was collected from 28 professionals, with a mean age of 35.7 years (SD: 7.39 [SD: standard deviation]). The mean number of years of work experience was 14 (SD: 8.56). Regarding sex, 78.6 % were women, and 21.4 % were men. Of these professionals, 57.1 % belonged to the morning shift, 17.9 % to the night shift, 14.3 % to the afternoon shift and 10.7 % to the special shift.

Concerning academic level, 35.7% have a bachelor's degree as their highest level of education, 28.6% have a master's degree, 21.4% have a postgraduate/specialty degree and 14.3% have a technical nursing degree. As for the area of specialization of these professionals, 25% have a specialty/master's degree/diploma in wounds and stomas, 10.7% a specialty in nephrology, 7.1% in palliative care, 7.1% in geriatrics, 3.6% in mental health, 3.6% in critical care, 21.4% a diploma in infusion therapy and 21.4% no specialization at all (Table 1).

Table 1. Description of the sample (n=28)

	Mean (SD)
Age (years)	35,71 (7,39)
Work experience (years)	14,04 (8,56)
% (#)	
Sex	
Mujer	78, (22)
Hombre	21,4 (6)
Total	28
Shift	
Morning	57,1 (16)
Afternoon	14,3 (4)
Night	17,9 (5)
Special	10,7 (3)
Total	28
Specialized clin	ic
Infusion therapy	21 (6)
Pain and palliative care	7 (2)
Gerontogeriatrics	7 (2)
Skin care and prevention of	29 (8)
dependency injuries	= (0)
Wounds and stomata	/ (2)
Renal replacement	29 (8)
Total	28
Academic leve	1
Technician	14,3 (4)
Bachelor's Degree	35,7 (10)
Specialty/postgraduate degree	21,4 (6)
Master's Degree	28,6 (8)
Total	28
Areas of specializa	ition
Infusion therapy	21,4 (6)
Wounds and stomata	25 (7)
Geriatrics/gerontology	7,1 (2)
Nephrology	10,7 (3)
Critical care	3,6 (1)
Palliative care/tanatology	7,1 (2)
Teaching	3,6 (1)
None	21,4 (6)
Total	28

*SD: standard deviation

	In	terms	of	-	APN	C	omţ	petend	cies,
pro	fessio	onal	aut	on	omy	(r	nea	n = 32	.57)
and	rese	earch	and	ev	iden	ce-ba	sed	prac	tice
(me	ean=3	30.03)	wei	re	the	mos	t c	levelo	ped

competencies, clinical and professional leadership (mean=14.92) and health promotion (mean=15.17) the least developed (Table 2) (Figure 1).

Table 2. Mean scores for advanced practice nursing competencies of practitioners in specialty care clinics

	Research and evidence- based practice	Clinical and professional leadership	Professional autonomy	Interprofessional relations and mentoring	Quality management	Care management	Vocational education and training	Health promotion
	n=28	n=28	n=28	n=28	n=28	n=28	n=28	n=28
Media	30,03	14,92	32,57	26,03	15,67	24,17	17,85	15,17
Median	32	16	34	27	16	24	19	15,5

Figure 1. Mean scores for advanced practice nursing competencies of professionals in specialty care clinics



The specialty care clinic with the most APN, pain and palliative care competencies: research and evidence-based practice (mean=36), clinical and professional leadership (mean=17.50), professional autonomy (39.50),

interprofessional relations and mentoring (mean=29), quality management (mean=19), care management (mean=29, 50), professional teaching and education (mean=20), health promotion (mean=19) (Table 3).

		Research and evidence- based practice	Clinical and professional leadership	Professional autonomy	Interprofessional relations and mentoring	Quality management	Care management	Vocational education and training	Health promotion
	n	x	X	X	x	x	X	X	x
Infusion therapy	6	31,66	16,33	32,66	26,33	17,66	25	18	14,83
Pain and palliative care	2	36	17,5	39,5	29	19	29,5	20	19
Gerontogeriatrics	2	33	18	35	27,5	17,5	27	20	19,5
Wounds and stomata	2	29,5	16	35,5	23,5	15	24,5	17	13,5
Skin care and prevention of dependency injuries	8	27,5	14,75	31,5	26,37	15,12	22,75	16,75	14,25
Renal replacement	7	31	13,57	32,71	26,84	14,14	24	18,42	14,85

Table 3. Mean advanced practice nursing competency scores by Specialty Care Clinic

At the academic level, staff who had postgraduate and master's degrees (n=14)presented higher mean scores in most of the APN competencies: evidence-based research and practice (30.42), professional autonomy (33.50), care management (24.85), professional teaching and education (18.21), health promotion (15.57). This includes staff having technical and bachelor level (n=14): evidence-based research and practice (29.64), professional autonomy (31.64), care management (23.50), professional teaching and education (17.50), health promotion (14.78) (Table 4).

Table 4. Mean scores for advanced practice nursing competencies by academic level

		Resear evide bas prac	rch and ence- sed rtice	Clinic profes leade	al and sional rship	Profes autor	sional nomy	Interpro relatio ment	fessional ns and oring	Qua manag	llity ement	Ca manag	ure ement	Vocat educa ar train	tional ation nd ning	Health promotion	
Academic level	n	x	SD	\overline{X}	SD	\overline{X}	SD	x	SD	\overline{X}	SD	\overline{X}	SD	\overline{X}	SD	x	DE
Technical/ bachelor's degree	14	29,64	6,89	15,42	3,89	31,64	5,69	26,21	3,37	15,85	3,27	23,5	3,13	17,5	2,17	14,78	2,99
Postgraduate/ master>s degree	14	30,42	6,46	14,42	5,15	35,5	7,26	25,85	4,24	15,5	3,95	24,85	4,43	18,21	2,77	15,57	3,75

Identification of advance practice... Cuellar Buendía J.A., et al.

In professional experience, personnel who had between 1 and 15 years of nursing practice (n=18) presented the highest scores in the different dimensions: research and evidence-based practice (mean=32.38), clinical and professional leadership (mean=15.94), professional autonomy (mean=34.44), interprofessional relations and mentoring (mean=27.38), quality management (16. 55), care management (mean=25.33), professional teaching and education (mean=18.72), health promotion (mean=16.11) concerning staff with 16 to 30 years of nursing practice (n=10)this inclydes: research and evidence-based practice (mean=25.80), clinical and professional leadership (mean=13.10), professional autonomy (mean=29.20), interprofessional relations mentoring (mean = 23.60),and quality management (mean=14.10), care management (mean=22.10), professional teaching and education (mean=16.30), health promotion (mean=13.50) (Table 5).

			1 C	1 .
Table 5 Average advanced	practice nursing	r competency scores	by years of w	ork experience
rapic J. Hyerage advanced	practice nursing	competency scores	by years or w	ork experience
0	1 0	/ 1 /		1

		Resear evide bas prac	rch and ence- sed ctice	Clinic profes leade	al and sional rship	Profes autor	sional 10my	Interpr relat mer	ofessional ions and ntoring	Qua manag	llity ement	Ca manag	are gement	Vocat educa ar train	tional ation nd ning	Health promotion	
Years of work experience	n	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD
1-15 years	18	32,38	4,97	15,94	4,26	34,44	5,56	27,38	3,14	16,55	3,58	25,33	3.86	18.72	1.84	16.11	2.92
16-30 years	10	25,8	7,19	13,1	4,58	29,2	6,89	23,6	3,68	14,1	3,1	22,1	2.88	16.3	2.79	13.5	3.56

Discussion

Over the years, APN profiles have been identified and differentiated in several countries through various measurement instruments¹⁷, such is the case of the work of Gardner¹³ *et al*, Mick and Ackerman¹⁴ in which the main APN activities were identified and the role of APNs was differentiated respectively. With our article, we identify to what extent the surveyed nurses carry out APN activities. In addition, it will allow us to recognize them through this profile.

On the other hand, análisis, such as that of Bautista's,¹⁵ show that nurses with a higher academic level (master's/specialty/doctorate) obtained higher mean scores in each dimensión. Their skills include research and evidencebased practice (21.5, clinical and professional leadership (12.5), professional autonomy (25), interprofessional relations and mentoring (22.3), quality management (13.4), care management (19.8), teaching and professional education (17.5) and health promotion (14.1). This was compared to the skills of those with a diploma/graduate degree: research and evidence-based practice (20.3) clinical and professional leadership (9.9), professional autonomy (25.7), interprofessional relations and mentoring (21.8), quality management (12), care management (19.4); teaching and professional education (16.4) and health promotion (13.6). In our study group, nurses with higher academic level (master's/specialty) obtained the highest scores: this included research and evidencebased practice (30.42), clinical and professional leadership(15.42), professional autonomy(33.50), interprofessional relations and mentoring (26.21), quality management (15.85), care management (24.85), professional teaching and education (18.21), health promotion (15.57); concerning staff having a technical and bachelor's level (14): research and evidence-based practice (29.64), clinical and professional leadership (14.42), professional autonomy (31.64), interprofessional relations and mentoring (25.85), quality management (15.50), care management (23.50), professional teaching and education (17.50), health promotion (14.78).

Conclusion

This research presents a step forward for the implementation of APNs in our institution since it has provided us with the evidence of the necessity of nursing professionals to specialized to acquire or enhance their clinical caring and APN competencies. Likewise, we will be able to plan and carry out strategies aimed at strengthening and enhancing all their competencies, to form the first APNC in Mexico, to be a national reference, and to increase the existing information on APN in Latin America.

According to the findings, not all the professionals in these clinics are APNs, since the ICN recommends a postgraduate/master's degree as the academic level to perform this role.¹⁸ Consequently, it is essential to strengthen them with nursing professionals who have the academic level, professional experience, and precise competencies to enable them to develop the APN. Accordingly, future research will be able to measure the impact that these nurses have on the patient, family, institution, and health system.

Nurses with higher academic levels were found to possess more APN competencies; however, even though professional experience is an important component of APN, nurses with more years of practice were not found to possess more competencies than nurses with less experience.

Similarly, it is important to mention that the evaluation instrument used for this study is valid and reliable; however, one of the difficulties faced is that, although in Mexico we have a competency framework, there is no validated instrument or one adapted to the Mexican context that identifies APN competencies; therefore, it is essential to design and validate an instrument that meets this objective.

References

- Naranjo Y, Concepción JA. Definition and history of advanced practice nursing. Rev Cubana Enfermer [Internet] 2018 [cited: 1 June 2023];34(1). Available from: <u>https://</u> cutt.ly/hw2S4Enz.
- González E, Vázquez RE, Arreola S, Mijangos KI. Advanced practice nursing: the key to improving the health care system in Mexico. Enferm Activa [Internet] 2020 [cited: 1 June 2023];6(18): 6-32. Available from: <u>https://cutt.ly/Sw2S73pg</u>
- Schober M. Development of advanced practice nursing (APN): the international context. Enferm Clin [Internet] 2019 [cited: 1 June 2023];29(2):63-6. DOI: <u>10.1016/j.</u> enfcle.2018.08.006
- San Martín L. Advanced practice in nursing and new models of healthcare organization. Enferm Clin [Internet] 2016 [cited: 1 June 2023];26(3): 155-7. DOI: <u>10.1016/j.enfcli.2016.04.007</u>

- Cassiani S, López S, Rosales LK. Strengthening competencies at the curricular level to facilitate the implementation of advanced practice nursing in Latin America. Enferm Univ [Internet] 2016 [cited: 1 June 2023];13(4):199-200. DOI: <u>https://doi.org/10.1016/j.reu.2016.09.003</u>
- 6. Morán L. Advanced practice nursing, what is it and what could it be in Latin America? Enferm Univ [Internet] 2017 [cited: 1 June 2023];14(4):219-23. DOI: <u>https://doi.org/10.1016/j.reu.2017.09.004</u>
- Pan American Health Organization. Expanding the role of nurses in primary health care. Washington, DC: PAHO; [Internet] 2018 [cited: 1 June 2023]. Available from: <u>https://doi.org/10.37774/9789275320037</u>
- Galiana T, Gómez J, García JJ, Fernández D. Advanced practice nursing in emergency care, a proposal for change: a systematic review. Rev Esp Sal Púb. [Internet] 2018[cited: 1 June 2023];92:1-20. <u>https://cutt.ly/Yw2DrGbb</u>
- Bryant D, et al. Advanced practice nursing: a strategy for achieving universal health coverage and universal access to health. Rev. Latino-Am. Enfermagem. [Internet] 2017 [cited June 1, 2023]; 25: 1-11. DOI: 10.1590/1518-8345.1677.2826
- Comellas M. Construction of the advanced practice nurse in Catalonia (Spain). Rev Bras Enferm [Internet] 2016 [cited: 1 June 2023];69(5):991-5. DOI: <u>https://doi.org/10.1590/0034-7167.2016690507</u>
- Sastre P. Concensus on competencies for advanced practice nursing in Spain. Enferm Clin [Internet] 2015 [cited: 1 June 2023] ;25(5): 267-75. DOI: <u>10.1016/j.enfcli.2015.06.007</u>
- Leija C, Olivera H, Acuña MC, Zárate RA, Choperena DG, et al. Comprehensive strategy for the expansion of the nursing role in primary health care. Enferm Univ [Internet] 2020 [cited: 1 June 2023];17(2):243-57. DOI: <u>https://doi.org/10.22201/eneo.23958421e.2020.2.892</u>
- Gardner G, Duffield C, Doubrovsky A, Adams M. . Identifying advanced practice: a national survey of a nursing workforce. Intern J Nurs Studies. [Internet] 2016 [cited: 1 June 2023];55: 60-70. DOI: <u>10.1016/j.ijnurstu.2015.12.001</u>
- Mick DJ, Ackerman MH. Advanced practice nursing role delineation in acute and critical care: application if the strong model of advanced practice. Heart Lung [Internet] 2000 [cited: 1 June 2023];29(3): 210-21. DOI: <u>10.1067/mhl.2000.106936</u>
- 15. Bautista MC. Doctoral dissertation: evaluation of advanced practice nursing competencies in the nursing staff of a public hospital in the community of Madrid. Madrid, Spain. Universidad Autónoma de Madrid. [Internet] 2021[cited June 1, 2023]: p.1-72. Available from: <u>https://cutt.ly/yw2Dp2O</u>e
- 16. Sastre P. Adavanced practice nursing competency assessment instrument (APNCAI): clinimetric validation. BMJ Open [Internet] 2017 [cited: 1 June 2023]; 7:1-9. DOI: <u>10.1136/bmjopen-2016-013659</u>
- 17. Sevilla S, Zabalegui A. Analysis instruments for advanced practice nurse performance. Enferm Clín [Internet] 2019 [cited: 1 June 2023];29(2):90-8. DOI: <u>10.1016/j.enfcli.2017.10.002</u>
- Nursing Council for the Professional Development of Nursing and Midwifery. Framework for the establishment of advanced nurse practitioner and advanced midwife practitioner posts. 4th Edition. [Internet] 2008 [cited: 1 June 2023]:1-15. Disponible en: <u>https://cutt.ly/Jw2DszMM</u>

Case study



Intervenciones de enfermería a persona post operada de meningioma sustentadas en el modelo del autocuidado

Nursing interventions for a post-operative meningioma patient based on the self-care model

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Resumen

Introducción: Estudio de caso que aborda las secuelas neurológicas desarrolladas en una persona post operada de una resección de meningioma recidivante, para quien se implementaron planes de autocuidado con enfoque en la atención neurológica.

Objetivo: Elaborar un estudio de caso del paciente post operado con secuelas neurológicas mediante la implementación de planes de atención de enfermería basados en el modelo de Dorotea Orem, con el propósito de mejorar su calidad de vida.

Metodología: Se utilizaron fuentes legales nacionales e internacionales, siguiendo los principios de ética en investigación de salud, la ley general de salud, normas oficiales y la implementación del consentimiento informado. Se realizó la selección del participante con criterios de conveniencia para el autor, y los datos se obtuvieron mediante fuentes directas (entrevista, valoraciones) y fuentes indirectas (historia clínica).

Presentación del estudio de caso: Un hombre de 35 años con signos de probable recidiva de meningioma (parestesia en la lengua, disartria, cefalea e hipoacusia).

Plan de alta: Se realizó un plan de alta mediante la nemotecnia CUIDARME, y se ofreció continuo seguimiento mediante medios digitales.

Conclusiones: Se lograron alcanzar los objetivos establecidos mediante la implementación de planes de cuidado en enfermería y el plan de alta, se continúa trabajando con la persona y la familia en el hogar hasta la actualidad.

Palabras clave: intervenciones de enfermería, meningioma, neurorrehabilitación, autocuidado.

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Abstract

Introduction: Case study addressing the neurological sequelae developed in a person post-operated from a recurrent meningioma resection, for whom self-care plans with a focus on neurological care were implemented.

Objective: To elaborate a case study of the post-operated patient with neurological sequelae through the implementation of nursing care plans based on Dorotea Orem's model, with the purpose of improving his quality of life.

Methodology: National and international legal sources were used, following the principles of ethics in health research, the general health law, official norms and the implementation of informed consent. The selection of the participant was made with criteria of convenience for the author, and the data were obtained through direct sources (interview, assessments) and indirect sources (clinical history).

Case study presentation: A 35-year-old man with signs of probable recurrence of meningioma (paresthesia of the tongue, dysarthria, headache and hypoacusis).

Discharge plan: A discharge plan was made using the CUIDARME mnemonic, and continuous follow-up was offered via digital media.

Conclusions: The established objectives were achieved through the implementation of nursing care plans and the discharge plan, and the work with the person and the family at home continues to this day.

Keywords: Nursing interventions, Meningioma, Neurorehabilitation, Self-Care

Introducción

The case study is a fundamental tool to increase the body of knowledge of any profession, especially those related to the care of people. This tool has played an important role in the development of nursing, since it provides the opportunity to plan care for people with different altered health requirements, that is, with the requirements necessary for their health. This is described in Dorothea Orem's self-care model, which proposes that effective self-care is crucial for maintaining health and preventing disease, and defines three interrelated systems: the self-care system, the self-care deficit system and the nursing system. In this sense, the present case study aims to describe the care and application of nursing interventions to a person with neurological sequelae caused by the resection of a meningioma, in order to improve his quality of life and that of her family.

Meningiomas are the most frequent brain neoplasms worldwide and nationally, the vast majority are benign and slow growing, however, this can lead to neurological symptoms in affected individuals, depending on the region where they are formed, and the clinical picture can be very varied and the diagnosis can be very incidental.^{1,2}

The self-care model and the care process are used together with the purpose

of directing nursing interventions towards holistic care, in order to address the different spheres that affect the person. Likewise, the information for this study was collected through direct assessments, direct and indirect interviews, clinical records and databases, with which care plans were made for the person from a neurological and integral approach, with the aim of improving his quality of life and avoiding complications caused by neurological sequelae.

Likewise, a discharge plan was implemented that covered the current state of the person and the family, weighing the altered health requirements and prioritizing those that will have a greater impact on improving their quality of life, as well as a section of conclusions and recommendations for continuous improvement.

Objetives

General objective:

 To elaborate a case study of a person postoperated of a meningioma resection with neurological sequelae, implementing nursing care plans based on Dorotea Orem's model. The main purpose is to improve the quality of life of the affected person.

Specific objectives

- To identify by means of the neurological nursing assessment the universal requirements altered in the person with neurological sequelae caused by meningioma resection.
- Design nursing intervention plans for the care of the person with altered universal requirements.

- Evaluate the effectiveness of the nursing interventions implemented, seeking feedback and improvement in the person's quality of life.
- Elaborate a discharge plan according to the person's improvement, which supports the caregivers and the family in the continuity of the person's health restoration, guaranteeing the quality of life granted by the care.

Methodology

The case study was conducted with a qualitative, descriptive, cross-sectional approach and with a selection of the person using criteria of convenience for the author: availability, pathology of interest, disposition of the person and the family.

To obtain and select documentary information, a systematized search of the information was carried out using keywords such as nursing interventions, meningioma, neurorehabilitation and self-care, as well as the Boolean operators AND, OR, NOT, obtaining a total of 93 articles, of which 41 were selected from the databases of PubMed, Scielo, Elsevier, among others.

Likewise, data collection strategies were used from direct sources (directed interviews and implementation of the neurological assessment instrument) and indirect sources (consultation of the clinical record). A neurological assessment instrument specific to the specialization in neurological nursing was applied, which is distributed into 8 main topics and was validated by the National School of Nursing and Obstetrics (ENEO) of the UNAM in 2006. Its application was carried out in 45 minutes.

Ethical consideratios

For the preparation of this case study, the requirements for conducting research on human subjects were met, applying NOM-012-SSA3, which establishes the criteria for the execution of health research projects on human subjects. The person and the family decided to participate voluntarily by signing an informed consent form. In addition, the guidelines of the Declaration of Helsinki and the ethical principles of the Belmont report were followed, considering the ethics committee, since the research chair was informed of this study. Finally, the regulations established by NOM-004-SA03-2021 for the collection of information by means of the clinical record were respected.

Case study design

Meningiomas are the most common primary tumors of the central nervous system (CNS) worldwide. They originate in the arachnoid meningothelial cells and belong to the group of intracranial and extra-axial neoplasms.¹

Epidemiology

According to the databases and studies consulted, primary CNS tumors have a worldwide incidence of approximately 1.4% of new cancer diagnoses and cause 2.6% of cancer deaths. In a study carried out in Latin America, it was established that meningiomas are the most common CNS neoplasm in adults with an incidence of 36%, followed by glioblastomas with 15%.¹

Worldwide, incidence rates range from 10.8

to 23.0 per 100,000 inhabitants.² In Colombia, the latest statistics report an incidence of 3.4 per 100,000 male inhabitants and 2.5 per 100,000 female inhabitants.¹

In Mexico, in a study conducted at the National Institute of Neurology and Neurosurgery, it was recorded that the most common cause of hospital admission was CNS tumors, representing 33% of total admissions from 1965 to 2014.3 Another study conducted at the same institution reported a total prevalence of CNS tumors of 511 patients from 1993 to 2013. With a predominant frequency, the most common cases correspond to those originating in the meninges, totaling 71 cases.⁴ Finally, a study conducted in Guanajuato established an incidence of 79 cases of primary CNS tumors from January 2017 to July 2018, of which meningiomas were the most common, registering a frequency of 26 cases.¹

In view of this emphasis on meningiomas, a worldwide incidence of 37.7% of all primary CNS tumors has been established, of which 53.3% are benign.⁵ According to age distribution, meningiomas have a higher incidence in patients older than 60 years; in addition, other factors such as sex seem to affect the degree of malignancy in meningiomas, as men have twice the risk of developing a malignant meningioma. In terms of biological diversity, people of black ethnicity have a higher risk of developing a meningioma compared to those of white ethnicity.⁶

Etiology

Like the vast majority of neoplasms, meningiomas have their etiology in genetic mutations, which are closely linked to risk factors. These factors are varied and include genetic aspects, ethnicity, diabetes, hypertension, age, sex and radiation exposure. For the purposes of this case study, only the three most studied genetic mutations that have been observed to predispose to the development of meningiomas are listed below:

- Neurofibroma 2 (NF2): the NF2 tumor suppressor is located on chromosome 22.⁷ Loss of this chromosome has been identified in 40-80% of meningiomas, approximately 60% of these tumors have a deficiency of the NF2 gene. The function of this gene is the production of the protein called merlin, which mediates between the protein membrane and the cell cytoskeleton. It plays a crucial role in inhibiting tumor formation. Loss of this protein is characteristic of all NF2associated meningiomas.⁸
- TNF receptor activating factor 7 (TRAF7): mutations in this gene affect the WD40 protein involved in the regulation of p38MAPK, which plays a role in tumor suppression, and MEKK3, which in turn regulates NF-kB function.⁷⁻⁹
- AKTI: about 8% of meningiomas are linked to this genetic alteration. This gene is part of the PI3K signaling pathway,

which controls cell proliferation.⁷ AKTI contributes to the production of the kinase that activates PI3K. Disruption of this gene results in hyperactivation of PI3K which promotes cell growth signals.⁸

Pathophysiology

The formation of a neoplasm encompasses a sequence of intricate procedures, in which diverse mechanisms come into play. Factors such as environmental conditions, genetic aspects, dysfunctions in suppressor genes and proto-oncogenes are considered; the combination of these elements favors the process of carcinogenesis, which involves through different stages the transformation of a normal cell into one with cancerous characteristics.^{10,11}

It should be understood that, in the pathophysiological process of carcinogenesis of any neoplasm, variation will occur according to the proto-oncogene that is present. In the case of meningiomas, we can list NF2, TRAF7, Soma and AKTI, which prevent or reduce the signaling pathways for apoptosis of suppressor genes, such as P30 or P53. It is worth mentioning that the probability of all these factors being present is low.¹¹



Figure 1. Stages of carcinogenesis

Classifications

There are several classifications that consider different points to describe meningiomas; however, currently the most widely used classification is that of the World Health Organization (WHO).¹¹ Most CNS tumors, rather than showing specific signs, tend to be asymptomatic and are discovered incidentally. However, if symptoms do occur, they are usually related to the location and area affected, rather than to the neoplasm

Clinical manifestatios

Table 1. WHO classification of CNS brain tumors.

	Classification of CNS brain tumors according to WHO
Grades	Características
Grade I	Circumscribed, slow-growing tumors with low potential for conversion to a tumor of greater malignancy.
Grade I	Tumors with a diffuse border, slow growth and some with a tendency to progress to tumors of greater malignancy.
Grade III	Infiltrating tumors with atypical or anaplastic cells and increased number of mitoses.
Grade IV	Rapidly growing tumors with cells of high mitotic rate, may present neoformation vessels and area of necrosis.

Source: Sinning (2017).12

itself. The following three possible signs can be distinguished:¹³

- Mass effect: Mass effect: there may be neurological effects, such as the involvement of a cranial nerve.
- Seizures: they occur in case of affecting any area of high epileptic incidence.
- Increased intracranial pressure: may lead to headaches of variable intensity.

Diagnosis

As discussed above, the diagnosis of meningiomas usually happens incidentally, although determining the subtype and grade can be a bit more complicated, because currently 15 variants have been identified according to their histopathology and molecular characteristics.¹⁵ Nevertheless,

Table 2. Clinical manifestations according to lo	ocalization
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Туре	pe Possible location		Clinical picture
			They represent 5-10% of intracranial meningiomas.
Anterior	fossa	Orbital roof, orbit and optic nerve,	Initial symptoms: progressive unilateral or bilateral visual
meningiom	as	olfactory sulcus, celar diaphragm	deficit and cognitive impairment of higher functions.
			Late symptoms: headache and hypo-anosmia.

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Туре	Possible location	Clinical picture
Middle fossa meningiomas	Anterior clinoid, lesser wing of the sphenoid, cavernous sinus, optic chiasm, free edge of the tentorium in its middle and anterior third.	They represent 3.8% of intracranial meningiomas. Initial symptoms: epileptic seizures, headaches, visual deficit, hemifacial hypoesthesia with ophthalmoplegia due to compression of nerves III, IV and/or VI. Late symptoms: headaches, epileptic seizures, facial neuralgia, memory disorders.
Posterior fossa meningiomas	Clival, petroclival, petrosal, foramen magnum and tentorium	They represent 10% of intracranial meningiomas. Initial symptoms: they are closely related to its location, memory disorders and progressive visual deficit.

Source: Pérez-Castro et al. (2018).¹⁴

imaging studies are the gold standard for diagnosis. In this case the clinical history is used together with the physical examination, MRI or, if not available, CT with contrast, to determine the histology of the biopsy.¹⁶

On MRI, the tumors are usually seen hypointense to isointense, in contrast to the cerebral cortex in T1 sequence, and are hyperintense when gadolinium is administered in T2 sequence.^{17,18} Another frequent finding in this type of neoplasm is the dural tail or "*mouse tail*" sign, which occurs in 60-70% of meningiomas and basically consists of a linear presence at one or both ends of the meningioma. This characteristic helps to determine the extraaxial location of the tumor and establish that it is a meningioma.^{18,19}

Treatment

The large number of variants of meningiomas means that any therapy provided for their control or elimination must be individualized, considering factors such as age, life expectancy, patient preferences, histologic grade and location of the meningioma, and that careful planning must be carried out prior to any health intervention. It is currently considered that the first line should be surgical, followed by fractionated radiotherapy or radiosurgery.⁷

Similarly, in the European Association of Neuro-Oncology (EANO) guide for the treatment and diagnosis of meningioma, it is mentioned that if the patient is asymptomatic, with small or calcified meningioma, it is unlikely that treatment will be required.²⁰ On the other hand, patients presenting neuronal deficits, with a high histopathological grade according to the classification or a partial resection with a high level of recurrence, will probably need adjuvant treatment with radiotherapy or radiosurgery.⁷

Surgical treatment

Total surgical resection is the gold standard treatment to solve the problems caused by meningiomas, because it eliminates the compression it causes in the affected structure, quickly relieving the symptoms and improving the patient's quality of life; however, there is also a risk of some neurological deficit, which can vary between 2% and 30%, depending on the location and histological grade.²¹

Another study performed at the University

Hospital of Salamanca established that factors such as the number of arteries and nerves involved in the tumor will directly affect the possibility of performing a total or partial resection and, with this, of assessing the degree of functionality after the surgical event.²² In addition, the surgeon's experience plays a vital role, since the new trends in performing safe surgeries through the use of less invasive techniques seem to improve the prognosis of the surgeries.^{7,23}

Due to the risk of recurrence despite successful total or partial resection, in 1957

Table 3. Simpson>s classification

Simpson established a classification to determine the grade and percentage of recurrence.^{17,24}

Another treatment that can be used as adjuvant therapy is radiotherapy in partial resections of grade III meningiomas, which will depend on the morphologic and histopathologic characteristics.²⁵ Currently, novel treatments have been developed such as immunotherapy or the cybernetic knife -which has shown promising results, but its high cost has limited its use in the United States of America-,²⁵ as they seem to be the treatments

Grade	Surgical resection	Relapse (%)					
Grade I	Complete resection, including dural insertion and abnormal bone.	9%					
Grade II	Complete resection, with dural insertion coagulation.	19%					
Grade III	Complete resection, without resection or coagulation of the dural insertion.	29%					
Grade IV	Subtotal resection. 44%						
Grade V	Tumor decompression (biopsy) only						

Source: Simpson (1957).²⁴

with the highest rate of effectiveness in grade II and III meningiomas.^{26,27}

Presentation of the case

In the hospitalization service on March 25, 2023, the patient is found post-operated of total resection of meningioma and dural plasty, and has the following signs: isochoric pupils with photomotor response and no involvement in visual fields (cranial nerves II, III, IV and VI with preserved function), bilateral hyposmia (cranial nerve I with possible involvement), dysarthria, hypoparesis of the tongue and loss of swallowing ability (cranial nerves IX and XII with possible involvement),

hypoacusis in right ear (cranial nerve XIII with possible involvement), other nerves unaffected, ventricular drainage with 54ml/hr output, severe headaches with VAS 7 out of 10 during the course of the day, increasing with mobilization.

He maintains tracheostomy and oxygen support through Puritan at 35% FiO₂, lung fields with moist rales in apical areas, manifests pain in the left shoulder joint with VAS 8 of 10, and has a functional trilumen central venous catheter covered with transparent dressing.

Functional gastrostomy with artesian type feeding and covered with dressing and gauze. The relative reported that the patient presented constipation with 2 days of evolution and peristaltic sounds were heard at 2-3 per minute, spontaneous urination was observed. As for motor function, there is evidence of strength of 3/5 in the left hemisphere and 4/5 in the right hemisphere, evaluated by Daniels scale. There is generalized hypotrophy, normal tone. Osteotendinous reflexes are preserved, with no involvement in sensory function. Cerebellar function diadochokinesia in right limb, gait not

Figure 2. MRI of the postoperative patient.

assessable due to absolute rest of the person.

Nursing care plan

With the assessment presented, the altered universal self-care requirements 5, 3, 4 and 7 were prioritized in order to carry out the nursing care plans. Descriptive tables of each requirement and the care plans are presented below.



Source: clinical record. Date of capture: March 04, 2023.

Discharge plan

Discharge plans should be developed in collaboration with all health professionals who may be involved in the person's care, such as nursing, medical personnel, social work, rehabilitation, nutrition, among others.²⁸ These plans should take into account the possible limitations that the person and his

Table 4. Diagnosis 1

Universal self-care requirement: 5 Maintaining a balance between activity and rest.						
Self-care deficits: impaired physical mobility r / t affectation in pyramidal pathway m / b strength 3 / 5 left hemisphere and 4 / 5 in right hemisphere, according to Daniels strength scale, quadriparesis.						
Nursing system: Fully compensatory.	Objective: Improved mobility.					
Nursing intervention: Physical neurorehabilitation.	 Actions: Inform the person about the benefits of early rehabilitation. Assess the person's ability to perform physical activities and range of motion. Plan a passive physical exercise routine (schedule, time and amount of exercise). Implement an exercise routine in conjunction with the family member of the sick person. 					

Evaluation: rehabilitation products (textured balls, kinesthetic plasticine, hand and finger exerciser) were provided for the implementation of fine and gross motor exercises, a daily exercise plan of 15-30 minutes was designed according to patient tolerance and a schedule was established (10:00-11:00 am) to perform them. No hemodynamic alterations or signs of dyspnea were observed during the exercises.

Table 5. Diagnosis 2

Universal self-care requirement: 3.- Maintenance of sufficient food intake.

Self-care deficits: feeding r/ tongue hypoparesis.	t involvement of medulla oblongata (cranial nerves IX and XII) m/b impaired swallowing,							
Nursing system: Fully compensatory.	Objective: Improvement of self-care in feeding.							
Nursing intervention: Self-care assistance: gastrostomy feeding	 Actions: Evaluate the characteristics of the abdomen prior to the initiation of feeding. Verify indication of diet (name, quantity, speed) prior to administration Position the patient at 45° degrees prior to the start of feeding. Install feeding set on infusion pump and administer according to nutrition instructions. 							

Evaluation: together with the nutrition staff, the administration of gastrostomy feeding (diet of 2400 Kcal, 1236 total volume at 95ml/hr by gastrostomy) was performed, assessing data of abdominal distension or gastroesophageal reflux; no changes in the characteristics of the abdomen were observed before, during or after the administration of the feeding.

Table 6. Diagnosis 3

Universal self-care requirement:

4.- Provision of care associated with the elimination processes.

Self-care deficits: decreased bowel motility r/t prolonged prostration m/b constipation (2 days evolution), decreased peristaltic sounds (1-2 per minute).

Nursing system:	Objective:
Fully compensatory	Promote intestinal motility.
Nursing intervention: Constipation management.	 Actions: Evaluate abdominal distention, abdominal pain and peristaltic sounds in turn. Administer laxative drugs (suggest the use of the drug during the night). Apply evacuating enemas (place patient in Sims position and instruct to hold the enema as long as possible). Assess the characteristics of the stool and the amount of stool.

Evaluation: abdominal assessment of the patient was performed, no signs of abdominal distension or pain were observed, laxative drug was used (Lactulose 15ml VO every 12 hours) without apparent improvement, it was decided that if during the course of the day there was no evacuation, the application of soapy enemas would begin on March 26, 2023.

Table 7. Diagnosis 4

Universal self-care requirement:

7.- Prevention of hazards to human life, functioning and welfare.

Chronic pain r/t brain parenchymal inflammation m/b headaches during the day with variable intensity, 5-10/10 according to VAS.

Nursing system:	Objective:
Fully compensatory.	Pain control.
Nursing intervention: Chronic pain management.	 Actions: Evaluate pain (characteristics, timing, triggers, schedule) Assess the level of pain using standardized pain scales. Implement breathing techniques and provide comfort to the patient during episodes of pain. Use pharmacological measures for pain control according to the WHO analgesia scale. In case of using buprenorphine patches avoid cutting the patch and change it every 72 hours.

Evaluation: pharmacological and non-pharmacological measures were implemented for pain control, used at the onset of discomfort to avoid pain peaks. Among the pharmacological measures the following medications were applied: Paracetamol 1 gr IV every 8 hours, Ketoprofen 100mg VO every 12 hours, and buprenorphine patch of 10mcg with replacement every 72 hours. Pain was controlled with VAS from 2 to 4 without eliminating it, and it is considered to increase analgesic measures with the treating physician.

or her family may face in order to carry them out adequately.

For the following discharge plan, the CUIDARME mnemonic was used, which facilitates understanding and comprehension of the care to be provided at home.²⁹ We worked together with the consulting service to train family members on home care.

Relevance

The development of case studies, although challenging, remains a solid tool for expanding the body of knowledge in the profession. It also helps to establish the basis for the implementation of nursing interventions in pathologies or cases of

Cuadro 8. Plan de alta

Effective communication	 Recommendations for communication Maintain a close relationship with health personnel and keep scheduled appointments in a strict manner. Keep a diary of symptomatology or changes in the person to be communicated to the health personnel during scheduled consultations 						
Emergencies and warning signs	 Gastrostomy tube occlusion, accidental removal of gastrostomy tube Respiratory distress Constipation for more than 3 days Headache that does not yield to paracetamol Fever above 38°C Pain, suppuration, redness in surgical wounds or stomas. Vomiting episodes (at least 3) 						
Information	 Health education provided Teaching about the five-step hand hygiene technique and the importance of performing it for the care of the person. Training on gastrostomy tube management, feeding, medication, care and cure Training on tracheostomy and tracheostomy cannula management, airway suctioning, healing and cleaning of the endocannula Teaching bed bathing, patient mobilization, skin care and prevention of pressure sores. Physical sensory and cognitive rehabilitation 						
Diet	 Food recommendations Disinfect all food in case of fruits and vegetables. Administer tube feeding at room temperature. Avoid very thick or liquid foods due to risk of tube obstruction or diarrhea. 						
Environment	 Recommendations at home Keep the area where the person is located clear to avoid risk of falling. Keep the area where the person is illuminated. Perform household hygiene at least twice a week. 						
Recreation and use of free time	 Recreational recommendations Evaluate the difficulties the sick person may have in performing recreational activities. Seek activities that are adapted to the health conditions of the person. 						

CUIDARME

• Encourage the sick person to engage in recreational activities.

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	Medication counseling						
Medications and treatments	Maintain a strict regimen when administering medications						
	Preparation of medicines for administration by gastrostomy tube						
	• Report adverse reactions to some medications.						
	• Suggestion of appropriate schedules according to the indicated medication.						
Spirituality	Recommendations:						
	• Maintain constant communication with the family and seek support groups.						
	Avoid overburdening a caregiver						
	• Keep the ill person involved in family and social events as much as possible.						

low incidence. It is vitally important that nursing professionals continue to develop this type of work, as it represents one of the most effective ways of establishing standards or recommendations for the care of sick people.

Conclusions

Meningiomas continue to be one of the main causes of hospital admissions in neurological areas today. Although they are mostly benign in nature, they tend to cause neurological damage due to their location in the brain. Likewise, meningiomas with a high probability of recurrence represent a challenge for health professionals, since treatment becomes complex and the possibilities of presenting neurological sequelae increase exponentially.

There is currently a boom in studies related to neuro-oncological aspects in surgical, medical and pharmacological sections, among other areas; however, from the perspective of self-care and the nursing care process, no articles were found focused on the care of postoperative patients with neurological sequelae caused by meningioma resection.

The nursing approach to these types of neoplasms should be multidisciplinary and holistic. Given that they present a wide range of affectations from the physiological to the emotional side of the person, it is essential to implement care plans that cover the patient's biological, social and psychological aspects. In addition, involving the family as a support network will be crucial for the care and treatment provided to the affected person.

With respect to the case of the patient studied, the objectives were met, which had an impact on the improvement of the quality of life, interpersonal relationships and coping with the state of health. Emphasis is placed on the need for nursing personnel specialized in the neurological area to implement individualized and specialized care plans for this type of conditions, which involve all the biopsychosocial spheres of people.

References

- Gómez-Vega JC, Ocampo Navia MI, Feo Lee O. Epidemiology and general characterization of adult primary brain tumors. Universitas Medica [Internet]. 2019 [cited 2023 Apr 19]; 60(1). Available from: https://cutt.ly/DwKFnVwx
- Meza García CF, Reynaga Ornelas L, Rodríguez Medina RM, Dávalos Pérez A, Pérez Reyes SP. Epidemiological overview of encephalic neoplasms with surgical treatment in a third level hospital in

Guanajuato, Mexico. Sanus [Internet]. 2022 [cited 2023 Apr 8]; no. 7. Doi: <u>10.36789/revsanus.</u> <u>vi1.246</u>

- Aguirre Cruz L, Rangel López E, Cruz Aguilera D de la L, Rodríguez Pérez CE, Ruano L, Velásquez Pérez L, et al. Historical distribution of central nervous system tumors in the Mexican National Institute of Neurology and Neurosurgery. Salud pública Méx [Internet]. 2016 [cited 2016 Apr 19, 2023]; 58(2):171-8. Available from: <u>https://cutt.ly/ywKFWyWo</u>
- Anaya Delgadillo G, Juambelz Cisneros P, Fernández Alvarado B, Pazos Gómez F, Velasco Torre A, Revuelta Gutiérrez R. Prevalence of nervous system tumors and their histologic identification in operated patients: 20 years of experience. Cir Ciruj [Internet]. 2016 [cited 19 April 2023]; 84(6):447-53 Available from: <u>https://cutt.ly/8wKFEO1D</u>
- Ogasawara C, Philbrick BD, Adamson DC. Meningioma: A Review of Epidemiology, Pathology, Diagnosis, Treatment, and Future Directions. Biomedicines. 2021; 9(3). Doi: <u>10.3390/</u> <u>biomedicines9030319</u>
- Ostrom QT, Adel Fahmideh M, Cote DJ, Muskens IS, Schraw JM, Scheurer ME, et al. Risk factors for childhood and adult primary brain tumors. Neuro Oncol. 2019; 21(11):1357-75. Doi: 10.1093/neuonc/noz123
- Preusser M, Brastianos PK, Mawrin C. Advances in meningioma genetics: novel therapeutic opportunities. Nat Rev Neurol [Internet]. 2018 [cited 2023 Apr 21]; 14(2):106-15. Doi: <u>10.1038/</u> <u>nrneurol.2017.168</u>
- Moussalem C, Massaad E, Minassian GB, Ftouni L, Bsat S, El Houshiemy MN, et al. Meningioma genomics: a therapeutic challenge for clinicians. J Integr Neurosci. [Internet]. 2021 [cited 2023 Apr 21]; 20(2):463-9.Doi: <u>10.31083/j.jin2002049</u>
- Zang WJ, Hu YL, Qian CY, Feng Y, Liu JZ, Yang JL, et al. HDAC4 promotes the growth and metastasis of gastric cancer via autophagic degradation of MEKK3. Br J Cancer. 2022; 127(2):237-48. Doi: <u>10.1038/s41416-022-01805-7</u>
- Peters JM, Gonzalez FJ. The Evolution of Carcinogenesis. Toxicol Sci. 2018; 165(2):272-6. Doi: <u>10.1093/toxsci/kfy184</u>
- Benítez SE, Pérez CAE, Hinojosa RY.. Evolutionary and ecological bases of human carcinogenesis: a matter of bad luck? Rev Cub Med Mil [Internet]. 2018 [cited 2023 Apr 28]; 47(2). Available from: <u>https://cutt.ly/IwKFKq5x</u>
- 12. Sinning M. Classification of brain tumors. Rev Med Clin Condes [Internet]. 2017 [cited 2023 Apr 21]; 28(3):339-42. Doi: <u>10.1016/j.rmclc.2017.05.002</u>
- Maggio I, Franceschi E, Tosoni A, Di Nunno V, Gatto L, Lodi R, et al. Meningioma: not always a benign tumor. A review of advances in the treatment of meningiomas. CNS Oncol. 2021;10(2). Doi: <u>10.2217/cns-2021-0003</u>
- Pérez Castro y Vázquez JA, Díaz Echevarria A, Barrios Calyecac DY, Lara Moctezuma L. Presentation of a meningioma with initial ophthalmologic symptoms. Rev Fac Med (Mex.) [Internet]. 2018 [cited 2023 Apr 23]; 61(5):32-43. Available from: <u>https://cutt.ly/HwKFZnXO</u>
- 15. Gritsch S, Batchelor TT, Gonzalez Castro LN. Diagnostic, therapeutic, and prognostic implications of the 2021 World Health Organization classification of tumors of the central nervous system. Cancer.

[Internet]. 2022 [cited 2023 Apr 23]; 128(1):47-58. Doi: 10.1002/cncr.33918

- Quirós Chávez K, Ching Chacón A, Rosales Víquez M. Overview of meningiomas: genetic basis, clinical evaluation and therapeutic strategies. Revista Médica Sinergia [Internet]. 2022 [cited 2023 Apr 23, 2023]; 7(7). Available from: <u>https://doi.org/10.31434/rms.v7i7.862</u>
- Villar Blanco I, González Martín J, Gutiérrez Ortega C, Vallejo Desviat P, Molina López-Navas P. Radio-histologic concordance in intracranial meningiomas. Sanid. mil. [Internet].
 2018 [cited 2023 Aug 10]; 74(4):248-54. Doi: <u>10.4321/s1887-85712018000400006.</u>
- Buerki RA, Horbinski CM, Kruser T, Horowitz PM, James CD, Lukas RV. An overview of meningiomas. Future Oncol [Internet]. 2018 [ccited 2023 Apr 23]; 14(21):2161–77. Doi: 10.2217/fon-2018-0006
- Husni H, Hamrahian AH. Dural Tail Sign in Meningiomas. AACE Clin Case Rep. 2021; 7(3):226-7. Doi: <u>10.1016/j.aace.2020.12.014</u>
- Goldbrunner R, Stavrinou P, Jenkinson MD, Sahm F, Mawrin C, Weber DC, et al. EANO guideline on the diagnosis and management of meningiomas. Neuro Oncol. 2021; 23(11):1821-34. Doi: <u>10.1093/neuonc/noab150</u>
- Roig Caraballo E, Valladares Rodríguez CL, Blanco González R. Posterior fossa meningioma with hydrocephalus secondary to surgical resection. Medicentro Electrónica [Internet]. 2022 [cited 2023 Apr 23, 2023]; 26(2):475-82. Available from: <u>https://cutt.ly/UwKF0xYP</u>
- Wang B, Zhang GJ, Wu Z, Zhang JT, Liu PN. Surgical outcomes and prognostic factors of parasagittal meningioma: a single-center experience 165 consecutive cases. Br J Neurosurg. 2022; 36(6):756-61. Doi: <u>10.1080/02688697.2020.1867825</u>
- Perales-C I, Cuellar-T JC, García-G. J, Villaroel C, Hortal JT. Morbimortality Associated With Foramen Magnum Meningioma Surgery. Literature Review: Case Report. Rev chil neuropsychiat [Internet]. 2020 [cited 2023 Apr 23, 2023]; 58(2):186-90. Disponible en: https://cutt.ly/ swLASlkC. doi: <u>http://dx.doi.org/10.4067/S0717-92272020000200186</u>
- Simpson D. The recurrence of intracranial meningiomas after surgical treatment. J Neurol Neurosurg Psychiatry [Internet] 1957 [cited April 23, 2023]; 20(1):22-39. Doi: <u>10.1136/jnnp.20.1.22</u>
- 25. Di Franco R, Borzillo V, Ravo V, Falivene S, Romano FJ, Muto M, et al. Radiosurgery and stereotactic radiotherapy with cyberknife system for meningioma treatment. Neuroradiol J. [Internet]. 2018 [cited April 23, 2023]; 31(1):18-26. Doi: <u>10.1177/1971400917744885</u>
- 26. Young JS, Kidwell RL, Zheng A, Haddad AF, Aghi MK, Raleigh DR, et al. CDK 4/6 inhibitors for the treatment of meningioma. Front Oncol [Internet]. 2022 [cited April 23, 2023]; núm. 12. Doi: <u>10.3389/fonc.2022.931371</u>
- Mair MJ, Berghoff AS, Brastianos PK, Preusser M. Emerging systemic treatment options in meningioma. J Neurooncol [Internet]. 2023 [cited April 23, 2023]; 161(2):245-58. Doi: <u>10.1007/</u> <u>s11060-022-04148-8</u>
- Pírez C, Peluffo G, Giachetto G, Menchaca A, Pérez W, Machado K, et al. Hospital discharge. Arch Pediatr Urug [Internet]. 2020 [cited 2023 June 5]; 91(Suppl 1):64-8. Available from: <u>https:// cutt.ly/2wKF62qM</u>

Nursing interventions for post... Sánchez Varquez Z. A., et al.

29. Aragón Alegría D, Muñoz Bravo SF, Prado Villegas YM, Ramírez Cuevas LA, Hurtado García DM, Meneses Sotelo CA, et al. Evaluation of the Discharge Plan by nursing at San José hospital, Popayán 2017. Rev Méd Risaralda [Internet]. 2020 [cited 2023 Aug 28]; 26(1):61-7. Doi: 10.22517/25395203.20951.

Test



Validation and adaptation of psychometric instruments for the advancement of nursing research

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Resumen

Introducción: de acuerdo con los análisis bibliométricos realizados a investigaciones publicadas por profesionales de enfermería, un gran porcentaje utilizan instrumentos sin validación, lo cual indica que los trabajos no son confiables, existe la posibilidad de presentar sesgos o errores. Existen diversas metodologías para crear o validar instrumentos previos, pero se requiere de una propuesta para la ciencia del cuidado, ya sea en una adaptación o creación de algún indicador empírico.

Objetivo: presentar una propuesta con la finalidad de validar y adaptar instrumentos psicométricos para el desarrollo de la investigación en enfermería.

Desarrollo: la validación de un instrumento que depende del tiempo, objetivo de estudio y de las etapas a cubrir; por lo cual, se proponen ocho etapas. 1. Traducción del instrumento original al idioma español. 2. Adaptación semántica. 3. Validación por jueces. 4. Corrección de estilo. 5. Prueba piloto. 6. Propiedades psicométricas. 7. Prueba final o análisis factorial, y 8. Prueba de sensibilidad.

Conclusión: existen más formas de validar los instrumentos, la expuesta en este trabajo, representa una forma pragmática para adaptar un instrumento al contexto donde enfermería realiza investigación; en consecuencia, obtener instrumentos que den confiabilidad a los resultados de las intervenciones de enfermería.

Palabras clave: estudio de validación, evaluación de instrumentos de investigación, enfermería.

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Abstract

Introduction: According to bibliometric analyses of research published by nursing professionals, a large percentage use instruments without validation, which indicates that the studies are unreliable and may present biases or errors. There are various methodologies to create or validate existing instruments; however, a proposal is needed for the science of care, whether through the adaptation or creation of an empirical indicator.

Objective: To present a proposal aimed at validating and adapting psychometric instruments to support the development of nursing research.

Methodology: tthe validation of an instrument depends on timeframe, study's objective and the stages to be covered; for which eight stages are proposed. 1. Translation of the original instrument into Spanish language. 2. Semantic adaptation. 3. Validation by judges. 4. Style correction. 5. Pilot test. 6. Psychometric properties. 7. Final test or factorial analysis, and 8. Sensitivity test.

Conclusion: There are more ways to validate instruments; the one presented in this paper represents a pragmatic way to adapt an instrument to the context where nursing conducts research; consequently, obtaining instruments that provide reliability to the results of nursing interventions.

Keywords (MeSH): validation study, research instrument evaluation, nursing.

Introduction

According to bibliometric analyses of Mexican nursing journals, over the period of 2005-2015, the average number of psychometric instruments that did not report reliability or validity was 20%.^{1,2} In many cases, these are Anglo-Saxon instruments translated by the same researchers or instruments in Spanish; however, without previous validation or application in the Mexican context. In other cases the researchers constructed them to measure the variable of interest. In either case, they represent sources of internal invalidation.³ That is, 20% of the research papers published in Mexican nursing journals from 2005 to 2015, are unreliable due to the possibility of presenting biases or type III errors.⁴

There is no single technique or methodology for adapting or validating an instrument. It all depends on the objective of the study. However a long and rigorous methodological process is required, and its design is usually referred as multistage or process-oriented.⁵ Literature provides a great deal of information based on three types of validation: content, construct, and criterion.⁶

For content validation, qualitative, quantitative, and mixed evaluations are included. The first one includes the Delphi method and the Fehring model⁷. In the second one, peer review is measured, considering the content validity ratio, the Kendall's "*W*" concordance coefficient, content validity index, and Aiken's V test.⁸ The third one uses the Q methodology that encompasses both research paradigms.⁹

As for construct validity, it can be evaluated

through an exploratory or confirmatory factor analysis, in addition to the use of the VARIMAX method.¹⁰

Finally, the criterion validity, which includes statistical approaches such as the Kappa concordance coefficient, sensitivity, ROC curve, parametric correlations, and interclass correlation coefficient, will depend on the type of variable.

According to the above, for nursing science, "*the method*" should not be different, however, there is no reference for this discipline. There is no single method that is better than another, it depends on pragmatic considerations. Therefore, nursing professionals need to have valid and reliable empirical indicators. In this way, the potential for errors is reduced.¹¹ Given the above arguments, the objective of this manuscript is to present a proposal to validate and adapt psychometric instruments for the development of nursing research.

Validation and adaptation of instruments

The design for the validation of an instrument is of longitudinal process and scope.⁵ The following eight stages are proposed:

1. Traduction: If the instrument is not written Spanish, the items should be translated into Spanish. The documents that constitute the instrument must be translated by a certified translator in the language in which the instrument is originally written. In-house translations, the use of free translators on the internet, and the use of artificial intelligence (AI) should be avoided.¹², The first version of the instrument is obtained should follow these criteria.

Sometimes it is necessary to request permission from the original authors to make the corresponding adaptation or to request psychometric details of the instrument. It is always a matter of professional courtesy to communicate directly with the original authors and to ensure that the instrument is truly public or to obtain the consent of the copyright holder.¹³ 2. Semantic adaptation of the translation. At this stage, it is important to make decisions about the meaning of each item; but first, whether they are questions or statements must be verified, in order to link them to the response format. For example: if the sentences need to be in the affirmative sense, the verb is placed in the present indicative, to be congruent with the Likert-type response format.¹⁴

It is recommended that the meaning of the original sentence of each item be preserved, despite the changes in syntax; consequently, the second version of the instrument should be achieved. 3. Face validity through peer-review technique. Ten experts in the subject related to the instrument are invited, with a consideration of 50% of attrition since almost always half of the specialized peers do not submit their evaluations or postpone it.¹⁵

The expertise of the peers should be discussed with the purpose of unifying competencies, experience in the subject, and academic qualifications, among others. The invitation to each judge is made by an official letter through institutional mail, where they will be given an unpublished instrument, and the provided information must be kept confidential. If the judge accepts, it is explained to they that their evaluation has two phases. The quantitative phase, which consists of providing them with an evaluation format using a Likert-type scale, evaluating each item individually, ranging from 0 = definitely not related, 1 = Not related, 2 = Not sure of their relationship, the items require further review, 3 = Related, but minor modifications are necessary, and 4 = Extremely related. In order to evaluate each item according to the previous

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scale, the nominal definition of the notion to be evaluated must be placed in the instructions for the judges, allowing them to observe the degree of correlation. For example: the vocation of service for human care is defined as the *'inclination or sense of inspiration that the student possesses to offer or* dedicate nursing care to healthy or ill individuals'.¹⁶ With the definition, an evaluation form is sent with all the items, see the example in Table 1, where some of the items that make up the instrument of vocation of service to human care in nursing students are presented.¹⁶

Table 1. Example of judges' evaluation form

Ítems	0	1	2	3	4
7. I promote health with my family or friends.					
9. I like to listen attentively to people when they have health problems.					
12. I am happy to offer my nursing services in a community with low social development.					

Source: Validation of the human care service vocation instrument in nursing students¹⁶

Accordingly, the ten evaluation forms from the judges are entered in a data table, those items with a score equal to or greater than three are considered acceptable (A), whereas those with a score lower than three are classified as not acceptable (NA). An example is presented in Table 2 (only a portion of a 23-items instrument of is included).

	JUDGES								NA	A	
	1	2	3	4	5	6	7	8	9	10	
ÍTEMS											
1	3	4	4	4	4	3	4	4	4	$_4 \Rightarrow _0$	10
2	3	3	3	2	4	3	3	2	2	$_4 \Rightarrow _3$	7
23	4	4	4	3	2	3	3	4	4	$_4 \Rightarrow _1$	9 1
Total										↓ 48	182

Table 2. Judges' evaluation data

Own source. Note: The criterion for identifying the NA (Not Acceptable) and A (Acceptable) items is determined horizontally, considering each of the judges (\Rightarrow), and then summed vertically. This takes into account all the items (\downarrow).

Employing the results from 10 judges, the following parameters are calculated: item validity index (IVI), criterion validity (CV), and content validity index (CVI).¹⁷

Considering the results of the previous table as an example, the IVI is calculated with the sum

of the items with a score lower than three points (NA= 48) and divided by the total number of judges (10). This is done in the following way: (48/10) IVI= 4.8. This result is divided by the total number of items (23), to obtain the validity criterion: (4.8/23) CV = .2086. The result is

multiplied by 100 and represents a 20% possibility of error that the items do not measure the concept they claim to measure. To obtain the CVI, the items with scores equal to or greater than three were added (A = 182) and divided by the total number of items (182/23), resulting in 7.91, which is close to 10. The results in the three indexes of this exercise are acceptable to validate analysis from judges in its quantitative phase.

In the second phase, the judges make qualitative observations of the instrument, and the suggestions of each judge must be discussed to decide the pertinence of the modifications to the item. Each change must be supported not only by the judge's opinion but also by the published evidence for the adaptation of the item in the context where the instrument will be applied or tested. In this way, the third version of the instrument is obtained.

4. Style correction. The result of the previous stage must be reviewed by a proofreader (expert in Spanish language linguistics) to improve the syntax and coherence of the sentences of each item, thus obtaining the fourth version of the instrument.

5. Pilot test. To test the fourth version of the instrument, a Pilot Test (PT) should be applied to a sample that meets the inclusion criteria to measure the concept of interest according to the objective of the study.18 The characteristics should be similar; for example, sociodemographic variables (gender, age, schooling, marital status, students, professionals), anthropometric variables (weight, BMI, percentage of fat, waist circumference), and clinical variables (blood pressure, glucose, lipids, clinical condition). The objective of a PT is to know the feasibility of the instrument, the response time, and the clarity of the wording of the items.^{19,20} Some authors recommend performing a PT on a minimum of 30 study subjects to test an instrument, the reason being that this sample size,

although small, has a sufficient statistical effect to determine whether or not there is a normal distribution in the data curve and preliminary reliability of the instrument.²¹ In the PT, study subjects are allowed to make observations on any item, these observations can be considered for developing changes and obtain the fifth version of the instrument.

6. Psychometric properties. In the fifth version of the instrument, the preliminary psychometric properties are established. Psychometrics is the science in charge of measuring cognitive concepts -usually subjective-, which require precise measurements of the constructs of a concept.⁵ The psychometric properties suggested to be established are the following: number of items (items, statements, or questions), maximum and minimum values according to the response score, and a five-choice Likert-type format (specify the response options).²² Similarly, the dimensions or sections of the instrument (if applicable) should be established and the number of items that make up each section should be specified, as well as the cut-off points to classify the grade to be measured. Here the preliminary internal consistency of the PT is placed (Cronbach's alpha).²¹

7. Final testing. This stage consists of testing the fifth version of the instrument on a significant sample, robust enough to obtain an acceptable effect size and valid and reliable results. To achieve the sixth and final version of the instrument, the statistical test pursued at this stage is factor analysis (FA), a multivariate technique intended to identify the structure between a group of variables to be analyzed (items) that underlie a group of data or variables, which in the instrument may be represented by sections or dimensions (hereafter referred to as factors).¹⁰

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With factor analysis, it is possible to explore and confirm whether by rotating the items of an instrument, they are grouped - from a statistical point of view - in the dimension where the researcher originally grouped the items - from a theoretical point of view.²³

There are two main techniques: exploratory FA and confirmatory FA. The first allows the identification of items that are more closely interconnected with one factor than with another. The second, after having explored and determined the set of items that belong to each factor, as its name indicates, confirms an already determined or pre-established number of items that make up each factor.²⁴

For exploratory FA, a correlation matrix is always used to identify the relationship between each data item and each factor (it must have an effect size greater than .30), and for confirmatory FA, structural equation models are used.¹⁰

For both techniques, the postulates or requirements for applying the technique must be taken into account: normality of the data, homoscedasticity of the variance, homogeneous samples (subjects with equivalent characteristics), without collinearity; in addition to the prior application of the Kaiser-Meyer-Olkin sample test (with values close to unity) and Bartlett's test of sphericity (with a p<.05), which prove the absence of significant correlations between the variables.

It should be considered that, in samples smaller than 150 study subjects, it does not support either of the two factor analyses.25 The sample should be a minimum of 300 instruments; some authors recommend 20 to 30 study subjects for each item to be analyzed, in other words, if the instrument has 20 items, a sample of 400 study subjects answering the instrument is required to submit it to a FA.¹⁸

In factorial analyses, it is necessary to generate an orthogonal rotation matrix. Usually, the varimax rotation is performed, which allows the data to be rotated to observe the variance explained through a sedimentation graph, thus clarifying the percentage of variance in each item in a cascade. For example, in graph I, it can be identified that the first four items explain more than 70% of the variance of the instrument, the others are almost in a horizontal line, which denotes consistency among the items.

Figure 1. Sedimentation graph





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8. Sensitivity test. The authors of this paper call it this way because it proves that the instrument is sensitive to the manipulation of the variable and, therefore, to time. With an experimental design under a statistical model *test, retest*,⁵ where the variable to manipulate is the concept that the instrument claims to measure, after the intervention (or intermediate measurements), in the end, the scores of the variable should change.

To achieve this, it is necessary to comply with the characteristics of a clinical trial,²⁶ to ensure greater certainty in the control of confounding variables to ensure that the changes in the variable are due to the manipulation through the nursing intervention. If after the manipulation, in the retest, the difference is statistically significant (p< .05), congratulations, your instrument is valid, reliable, and sensitive to the manipulation of the concept it claims to measure.

Figure 2. Process of validation and adaptation of psychometric instruments



Procedure and final recommendations

Many times, when there are no instruments to measure a particular concept, the option is to create one, but this requires several steps, such as a thorough review of the literature, perhaps previously analyzing the concept that the instrument measures, and a sharp handling of theoretical connotations around the concept to be measured. Then, to create the theoretical statements or items with their corresponding dimensions, after having this first version, the instrument would have to be submitted from stage 2 which has been shown in this paper.

Within the psychometric properties, a 5-point Likert-type scale is recommended, to avoid the "*ceiling-floor*" phenomenon²⁷ or to invert the sense of the score in some items to ensure the attention of the subject answering and avoid susceptible error.¹¹

In such a case, it is recommended that the cut-off points be made based on indices from zero to 100, using quartiles (0-25, 26-50, 51-75, and 76-100). This is equivalent to Bad, Fair, Good, and Excellent, thus speeding up statistical interpretation.

If stage eight is carried out to test the sensitivity of the instrument to the manipulation of the variable, the nursing intervention should be constructed based on the premises of a prior systematized theory and review of the literature.²⁸

It is not suggested to validate instruments with dichotomous response scales; however, if necessary, it is suggested to consult the Kurder-Richardson statistical validation (KR-20 or KR-21) for this type of scale.²⁹

If the instrument exists, but has not been tested in your country, validate it; if it does not exist, construct and validate it, avoid using unreliable instruments in research or graduate theses.

Conclusion

This academic manuscript presents a proposal to validate and adapt psychometric instruments for the development of nursing research; however, it is not the only way it can be done. The methodology depends on the type of instrument, the objectives of the study, the subject matter to be addressed, the resources available, the clarity of the concept to be measured and its constructs, and whether the validation corresponds to an existing instrument in another language or another Hispanic country, or whether it is the original construction of a new instrument.

Finally, your thesis or research project may be the adaptation and validation of some psychometric instrument that helps to measure nursing care, this would imply a great contribution.

References

- García RM, Gómez ÁMG, Aguilar PI, Pérez MGP, Velázquez DL, Soriano SM, et al. Trends and features of published nursing research in Mexico. Enferm Univ [Internet]. 2011 [Accessed 15 Jul 2023];8(1). Available at: <u>https://cutt.ly/dwMu5Zsc</u>
- Landeros-Olvera E, Ramírez-Girón N, Yáñez-Lozano Á, Guzmán-Ramírez G, Galicia-Aguilar RM. Topics and methodological characteristics of nursing research published in Mexican journals: 2010-2015. Enferm Univ [Internet]. 2018 [Accessed 15 Jul 2023];15(3). DOI <u>http://dx.doi.</u> org/10.22201/eneo.23958421e.2018.3.65994
- 3. Hernández-Sampieri R, Mendoza C.

Research methodology. Quantitative, qualitative and mixed routes. Mexico City: Mc Graw Hill Education; 2018.

- Villasís-Keever MÁ, Márquez-González H, Zurita-Cruz JN, Miranda-Novales G, Escamilla-Núñez A. Research protocol VII. Validity and reliability of the measurements. Rev Alerg México [Internet]. 2018 [Accessed 15 Jul 2023];65(4). Disponible en: <u>https://doi.org/10.29262/ram.v65i4.560</u>
- 5. Medrano L, Pérez E. Manual de psicometría y evaluación psicológica. Argentina: Brujas; 2019.
- Cruz-Avelar A, Cruz-Peralta ES. Methodology for the construction of measurement instruments in health. Alerg Asma Inmunol Pediátricas [Internet]. 2018 [Accessed 15 Jul 2023];26(3). Available at: <u>https://cutt.ly/fwMiwmFy</u>
- López FR, Avello MR, Palmero UDE, Sánchez GS, Quintana ÁM. Validation of instruments as a guarantee of credibility in scientific research. Rev Cuba Med Mil [Internet]. 2019 [Accessed 15 Jul 2023];48. Disponible en: <u>https://cutt.ly/OwMietbq</u>
- Sarabia CCM, Alconero CAR. Keys for the design and validation of questionnaires in health sciences. Enferm Cardiol [Internet]. 2019 [Accessed 15 Jul 2023];26(77). Available from: <u>https:// cutt.ly/mwMieAOA</u>
- Urrutia EM, Barrios AS, Gutiérrez NM, Mayorga CM. Optimal methods for content validity. Educ Médica Super [Internet]. 2014 [Accessed 16 Jul 2023];28(3). Available at: <u>https://cutt.ly/dwMie1yG</u>
- Ávila MM. Confirmatory factor analysis: a knowledge management model in the public university. RIDE Rev Iberoam Investig Desarro Educ [Internet]. 2021 [Accessed 15 Jul 2023];12(23). DOI: <u>https://doi.org/10.23913/ride.v12i23.1103</u>
- Blázquez SN. Validated Questionnaires: Solid Tools for Research. Actas Dermo-Sifiliográficas [Internet]. 2017 [Accessed 15 Jul 2023];108(10). Available from: <u>https://doi.org/10.1016/j.ad.2017.09.005</u>
- Corvalán JG. Artificial intelligence: challenges and opportunities Prometea: the first artificial intelligence of Latin America at the service of the Justice System. Rev Investig Const [Internet]. 2018 [Accessed 16 Jul 2023];5(1):295. DOI: <u>https://doi.org/10.5380/rinc.v5i1.55334</u>
- Rodríguez CP, Casañas SR, Collado PA, Maldonado AG, Vicente GM, Escuriet PR. Cultural Adaptation of the "Questionnaire for Assessing the Childbirth Experience (QACE)". Enferm Glob [Internet]. 2020 [Accessed 15 Jul 2023];19(4). Available from: <u>https://doi.org/10.6018/ eglobal.402271</u>
- Lira MT, Caballero E. Cross-cultural adaptation of evaluation instruments in health: history and reflections on why, how and when. Rev Médica Clínica Las Condes [Internet]. 2020 [Accessed 17 Jul 2023];31(1). Available at: <u>https://doi.org/10.1016/j.rmclc.2019.08.003</u>
- Zurita-Cruz JN, Villasís-Keever MÁ. Main biases in clinical research. Rev Alerg México [Internet]. 2021 [Accessed 17 Jul 2023];68(4). Available at: <u>https://doi.org/10.29262/ram.</u> v68i4.1003
- Antonio GG, Montes AJS, Ramírez-Girón N, Landeros-Olvera E. Validation of the instrument of vocation of service to human care in nursing students. Index Enferm [Internet]. 2021 [Accessed 17 Jul 2023];30(3):254-8. Available at: <u>https://cutt.ly/uwMivipA</u>

- 17. Waltz FC, Strickland LO, Lenz RE. Measurement in nursing and health research. 4ta ed. New York: Springer Publishing Company. 2010.
- Morales-Castillo FA, Hernández-Cruz MC, Morales RMC, Landeros-Olvera EA. Validation and standardization of the instrument: Assessment of the provided caring behaviors in Mexican nurses. Enferm Univ [Internet]. 2016 [Accessed 17 Jul 2023]; 13(1):3-11. Available at: <u>https://doi.org/10.1016/j.reu.2015.11.005</u>
- Mora EA, Carrasco AAS, Muñoz VPM, Salinas RS, Huerta SC, Noriega EP, et al. Characteristics of the pilot test: a review of articles published in nursing. Rev Enferm Neurológica [Internet]. 2015 [Accessed 19 Jul 2023];14(3):169-75. DOI: <u>https://cutt.ly/awMimi2M</u>
- 20. Muñiz J, Fonseca-Pedrero E. Ten steps for the construction of a test. Psicothema [Internet]. 2019;31(1):7-16. Available at: https://doi.org/10.7334/psicothema2018.291
- Yunkor-Romero YK, Ochoa-Pachas JM. Internal Validation of Research Instruments in Social Sciences. ACTA Juríd Peru [Internet]. 2020 [Accessed 19 Jul 2023];3(2):112-35. Available at: https://cutt.ly/WwMiWfKl
- 22. Muñiz J. Introducción a la psicometría teoría clásica y TRI. 1era ed. Madrid:Pirámide. 2018.
- Luján-Tangarife JA, Cardona-Arias JA. Construction and validation of measurement scales in health: a review of psychometric properties. Arch Med [Internet]. 2015 [Accessed 19 Jul 2023];11(31). DOI: <u>https://cutt.ly/2wMiW9KH</u>
- Lloret-Segura S, Ferreres-Traver A, Hernández-Baeza A, Tomás-Marco I. Exploratory Item Factor Analysis: A practical guide revised and updated. An Psicol [Internet]. 2014 [Accessed 19 Jul 2023];30(3). DOI: <u>https://dx.doi.org/10.6018/analesps.30.3.199361</u>
- Roco Videla Á, Hernández Orellana M, Silva González O. What is the adequate sample size to validate a questionnaire? Nutr Hosp [Internet]. 2021 [Accessed 20 Jul 2023]; 38(4). DOI: <u>https://</u> <u>dx.doi.org/10.20960/nh.03633</u>
- Cobos-Carbó A, Augustovski F. CONSORT 2010 Declaration: Updated guideline for reporting parallel group randomised trials. Med Clínica [Internet]. 2011 [Accessed 21 Jul 2023];137(5). Available at: <u>https://cutt.ly/qwMiR6Rw</u>
- Matas A. Likert-Type Scale Format Design: State of Art. Rev Electrónica Investig Educ [Internet].
 2018 [Accessed 21 Jul 2023];20(1). DOI: <u>https://doi.org/10.24320/redie.2018.20.1.1347</u>
- Carvajal EY, Herrera BS. Models of nursing applied in clinical practice: integrative review. Arch Med Col [Internet]. 2018 [Consultado 21 Jul 2023];18(1):86-96. Available at: <u>https://www.redalyc.org/journal/2738/273856494008/html/</u>
- 29. Cascaes SF, Gonçalves E, Valdivia ABA, Bento GG, Silva CTL, Soleman HSS, et al. Estimators of internal consistency in health research: the use of the alpha coefficient. Rev Peru Med Exp Sal Púb [Internet]. 2015 [Accessed 21 Jul 2023];32(1). Available at: <u>https://cutt.ly/6wMiYXry</u>