



Holistic care in stress echocardiography

Cuidados holísticos en la ecocardiografía de estrés

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SUMMARY

Introduction: the scientific question of this article is the following: How can we contribute to the holistic care of people with an indication for stress echocardiography for the diagnosis of ischemic heart disease? In order to delve into the actions of nursing

professionals in relation to the care of people with ischemic heart disease.

Objective: provide holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease.

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Material and methods: a sequential mixed study was conducted with a combination of qualitative and quantitative methods. The universe consisted of 64 people who underwent stress echocardiography at the Cardiocenter of the Medical-Surgical Research Center from January 2019 to March 2020, as well as seven nursing professionals who work at the aforementioned Cardiocenter in carrying out diagnostic tests. The research required, in an articulated manner, methods at the theoretical level, at the empirical level, and at the mathematical level.

Results: both the observation and the knowledge survey yielded a poor knowledge of the subject. As part of these results, a nursing intervention was developed aimed at providing holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease.

Conclusions: contextualizing the problem made it easier for nursing professionals to provide holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease.

Keywords: nursing; echocardiography; holistic care.

RESUMEN

Introducción: la interrogante científica de este artículo es la siguiente ¿Cómo contribuir al cuidado holístico en personas con indicación de ecocardiografía de estrés para el diagnóstico de cardiopatía isquémica? En aras de profundizar en detalle en el accionar de los profesionales de Enfermería en lo

referente a los cuidados de las personas con cardiopatía isquémica.

Objetivo: brindar cuidados holísticos a personas con indicación de ecocardiografía de estrés para el diagnóstico de cardiopatía isquémica.

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Material y métodos: se realizó un estudio mixto secuencial con la combinación de métodos cualitativos y cuantitativos. El universo estuvo constituido por 64 personas a las que se les realizó ecocardiografía de estrés, en el Cardiocentro del Centro de Investigaciones Médico-Quirúrgicas desde enero de 2019 a marzo de 2020, así como siete profesionales de enfermería que laboran en el Cardiocentro antes mencionado en la realización de pruebas diagnósticas. La investigación requirió de manera articulada de métodos de nivel teórico, del nivel empírico y matemáticos.

Resultados: tanto la observación como la encuesta de conocimiento brindaron como

producto un pobre conocimiento sobre el tema. Como parte de estos resultados se desarrolló la intervención de enfermería dirigida a brindar cuidados holísticos a las personas con indicación de ecocardiografía de estrés para el diagnóstico de cardiopatía isquémica.

Conclusiones: la contextualización del problema facilitó a los profesionales de enfermería brindar cuidados holísticos a las personas con indicación de ecocardiografía de estrés para el diagnóstico de cardiopatía isquémica.

Palabras clave: enfermería; ecocardiografía; cuidados holísticos.

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INTRODUCTION

The word holism or holistic is used by many disciplines in all fields, both artistic and scientific. Holism is part of the conception and development of multiple sciences such as medicine and nursing. Professionals in both disciplines have tried to give meaning to their practice by basing their philosophy and care on a holistic model. ⁽¹⁾

According to the authors, in order to examine the actions of nursing professionals in relation to the care of people with ischemic heart disease, it is essential to provide comprehensive care to them. Providing efficient holistic care would avoid the inconvenience of an inadequate assessment of their health problems, as well as an incorrect satisfaction of their affected needs.

An article from the Argentine Journal of Cardiology ⁽²⁾ explains that echocardiography is the most widely used imaging technique for assessing the structure and function of the heart. It also points out that stress-induced ischemia can be detected by this diagnostic method, revealing segmental alterations in left ventricular motility. Compared to other imaging methods, stress echocardiography, from a monetary point of view, has a relatively low cost and is more widely available. In recent decades, in relation to myocardial ischemia, stress echocardiography has shown assessment accuracy similar to nuclear medicine techniques in terms of sensitivity and specificity.

According to the criteria of Professor Vivacqua Cardoso, ⁽³⁾ in people with ischemic heart disease, good results have been obtained with the use of stress echocardiography; as well as in decision-making to guide the appropriate treatment.

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The background presented and the authors' experience of more than 10 years of clinical cardiology work in the care of people with an indication for stress echocardiography for the diagnosis of ischemic heart disease allowed them to raise the following problematic situation: There is a weak interrelation between nursing professionals and people with an indication for stress echocardiography, which limits the satisfaction of human responses.

The authors identified the following scientific problem:

How can we contribute to holistic care in people with an indication for stress echocardiography for the diagnosis of ischemic heart disease?

This work was carried out with the aim of providing holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease.

METHODS

A sequential mixed study was conducted with a combination of qualitative and quantitative methods. The universe consisted of 64 people who underwent stress echocardiography at the Cardiocenter of the Medical-Surgical Research Center between January 2021 and March 2022, as well as seven nursing professionals who work at that center in carrying out diagnostic tests. Through intentional non-probabilistic sampling by criterion, a sample consisting of 57 people was obtained.

Inclusion criteria

- People with suspected ischemic heart disease.
- Patient consent to participate in the study.

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Exclusion criteria

- People with a history of other heart diseases concomitant with ischemic heart disease.

The second group of the study consisted of seven nursing professionals who work at this Cardiocenter in carrying out diagnostic tests in the Cardiology department, and who have more than 10 years of experience in carrying out noninvasive diagnostic tests.

Table 1. Parameterization of the variable

Variable	Holistic care for people with an indication for stress echocardiography for the diagnosis of ischemic heart disease		
Dimensions	Careful	Behavior professional	Human behavior
Subdimensions	Nursing Person Health Around	Cognitive Labor	Axiological Ethics

The variable mentioned above has qualities or characteristics that are intertwined in the phenomenon to be investigated. It is a nominal qualitative variable, which allows for fractionation into dimensions, subdimensions and indicators. Its concrete practical expression was achieved through parameterization.

Parameterization is a more complex process than operationalization of the variable. Parameterization is to derive the analysis of the object and/or field of study of the research into

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measurable or observable elements that allow the assessment or issuance of value judgments about the state, level or development of the phenomenon or process investigated. (4)

During the development of the research, different logical procedures of thought were taken into account, such as analysis and synthesis and the deduction-induction process. The research required, in an articulated manner, methods at the theoretical, empirical and mathematical levels.

Theoretical level methods

- Systematization: it facilitated the organization of the references based on the behavior of the practice and the consulted literature, which allowed the structuring and organization of knowledge. This favored the identification of the variable and indicators related to holistic care.
- Historical-logical: it allowed us to determine the historical background of the phenomenon studied, which made it possible to identify the references that support the intervention.
- Document analysis: information was used from scientific texts related to holistic care and the participation of nursing professionals in the preparation and performance of stress echocardiography.
- Structural-functional systemic: allowed structuring the nursing intervention to provide holistic care to people with an indication for stress echocardiography.
- Modeling: This was used in the design of the nursing intervention based on holistic care in people with an indication for stress echocardiography. It was used as a simple and subjective method of reproducing the objective reality of the study.

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Empirical level methods

- Observation: Direct and participant observation was carried out, aimed at nursing professionals, to identify and recognize the behavior of facts and phenomena related to the process of providing holistic care.
- Knowledge survey: This survey was applied to all persons with an indication for stress echocardiography to assess their knowledge on the subject. The instruments applied, both the observation guide and the knowledge survey, were validated through the parameterization process and a facial validation scale.
- Mathematical methods: the weighted index calculation was used to process the observation guide. The percentage calculation was used for the knowledge survey.

The research complied with the standards established by the Declaration of Helsinki, ⁽⁵⁾ and the current legislation in Cuba for conducting research on human beings. The work of Gutiérrez ⁽⁶⁾ entitled: "Methodological proposal for the ethical evaluation of different investigations that do not constitute clinical trials" was taken into account.

RESULTS

The authors, after having applied the theoretical level methods, admitted that holistic care for people with an indication for stress echocardiography, is a group of care related to comprehensive care that guarantees the preservation of health and that results from dynamic balance from a human, systemic, global and multidimensional vision.

It is evident that the nursing professionals who work at the Cardiocenter in carrying out diagnostic tests in the Cardiology department need to update and improve their performance in order to provide holistic care for people with an indication for stress echocardiography for the

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diagnosis of ischemic heart disease. It is necessary to address the lack of knowledge of people who underwent stress echocardiography. The above was obtained by identifying the weaknesses and potentialities of the observations made to nursing professionals.

Table 2. Strengths and weaknesses of nursing professionals

Potentialities	Weaknesses
Organization of the work position of nursing professionals is observed	No mastery of the nursing care process is observed
Autonomy is observed during the care process	No application of the Nursing care process is observed
Clinical assessment by nursing professionals is observed	Compliance with the objectives of the care plan is not observed
Communication skills are observed in Nursing professionals	
Understanding of the code of ethics is observed at all times.	

The results of the observation guide are shown in graph 1 based on the calculation of the weighted index.

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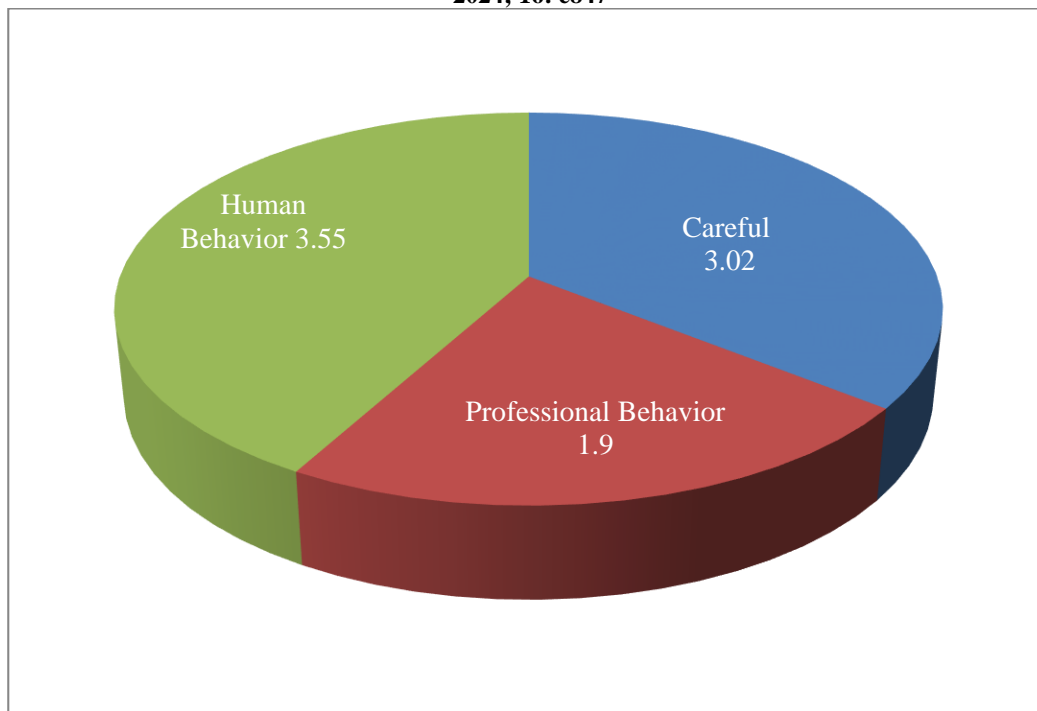


Chart 1. Result of the Observation Guide from the calculation of the weighted index

An analysis of the following is carried out: Results of the knowledge survey applied to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease. In the classification of knowledge related to the therapeutic procedure, 12.2 % of people considered their knowledge about the procedure to be adequate; while 70.1% estimated that their knowledge about this study is inadequate. 17.5 % rated their knowledge as inadequate.

Respondents answered the question regarding their knowledge of the process of diagnosing the disease. 17.5 % considered their knowledge of the process to be adequate, 29.8 % considered their knowledge to be inadequate, and 52.6 % considered it inadequate.

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Regarding knowledge of how to conduct appropriate health care, 15 % had very adequate knowledge, 10.5 % had fairly adequate knowledge, 30.7 % had adequate knowledge, and 43.8 % had little adequate knowledge. To determine the level of knowledge regarding risk factors and prevention measures for ischemic heart disease, 7% had very adequate knowledge, 20 % had adequate knowledge, 35 % admitted to having little inadequate knowledge, and 38 % claimed to have inadequate knowledge.

In order to understand the guidance that people have received about their illness and how to avoid its complications, 8.7 % reported that the guidance they received was very adequate, with the same number considering the guidance received as quite adequate. 36.3 % rated it as adequate. 55 % rated it as somewhat inadequate.

According to the willingness of people to prepare satisfactorily for the test and comply with the guidance given by nursing professionals to improve their quality of life, 100 % considered themselves to have a very adequate willingness. The findings found after having carried out the knowledge survey showed poor knowledge on the subject of stress echocardiography and ischemic heart disease. It was found that people do not know about the disease, nor about the factors that cause it and worsen it. Therefore, it became necessary to outline multifactorial, complex and effective actions.

The nursing intervention model aimed at providing holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease, proposed below (Figure 1), has been the result of an abstraction process that the authors have carried out from the objective reality that exists independently of consciousness, with the aim of discovering and studying the new qualities, relationships and principles or laws of the object of study.

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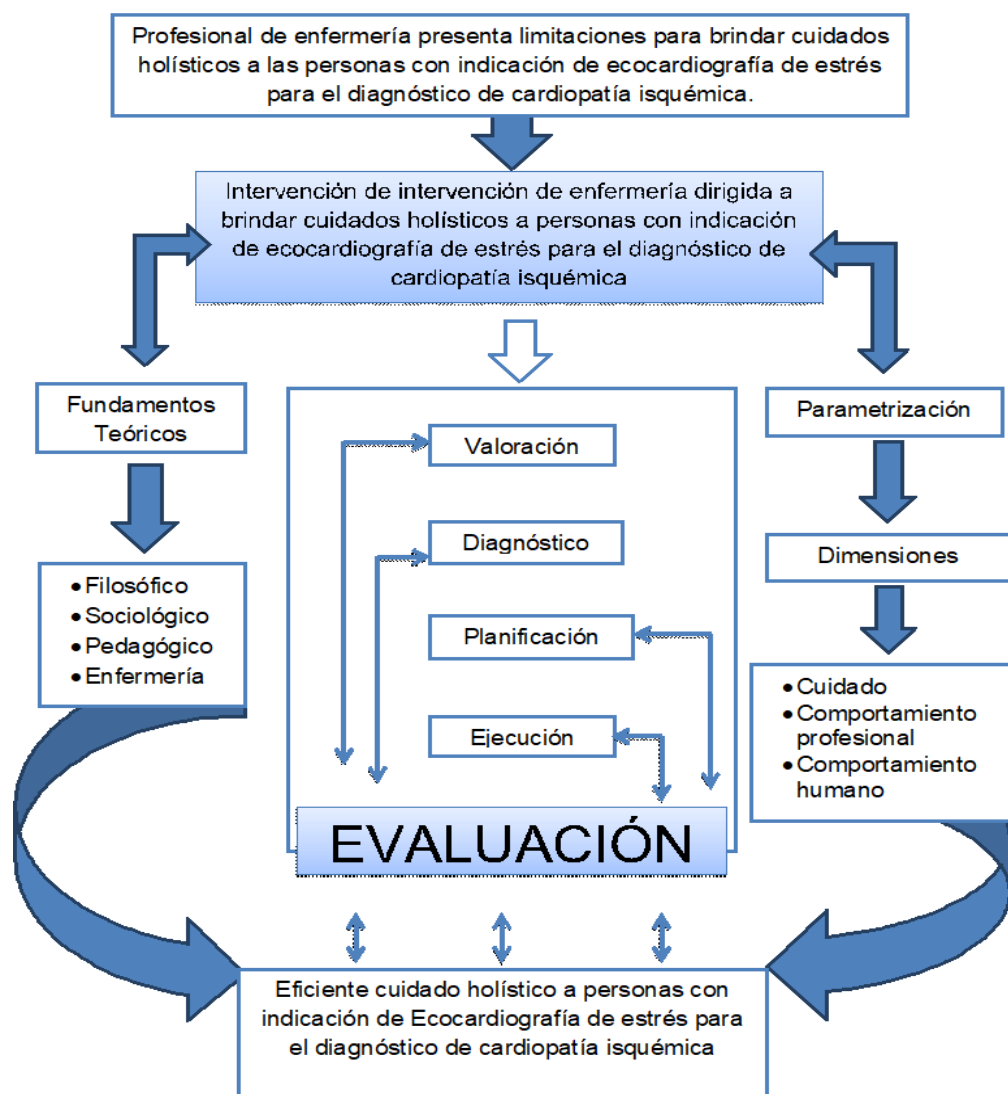


Figure 1. Nursing intervention scheme aimed at providing holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease

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DISCUSSION

Based on the results mentioned above, the authors considered that, in order to contribute to providing holistic care to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease, it was necessary to carry out a nursing intervention. The foundations on which the intervention is based are the following:

- Philosophical foundation: obtained from materialist dialectics.
- Sociological basis: it is assumed from nursing adjusted to transitional relationships.
- Pedagogical basis: part of the nursing care process as a scientific method of the profession.
- Nursing foundation: It is achieved from the integral nature of nursing care.

In the nursing intervention, the following qualities are identified that characterize it: it has a systemic character; it is objective, participatory, interdisciplinary and transdisciplinary, integral and flexible. ⁽⁷⁾ In its elaboration, the nursing intervention goes through a set of stages such as: ^(8, 9)

- A. Assessment: This stage focused on obtaining information related to individuals and families in order to identify the human needs, problems, concerns or responses of people with an indication for stress echocardiography for the diagnosis of ischemic heart disease.
- B. Diagnosis: At this stage, nursing professionals critically analyze and interpret the data collected during the assessment. Conclusions are drawn regarding the needs, problems, concerns and human responses of people with an indication for stress echocardiography for the diagnosis of ischemic heart disease, and nursing diagnoses are identified.
- C. Planning: the care plan is designed based on the previously identified nursing diagnoses. Strategies are developed to provide solutions to people's human responses, helping to avoid,

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reduce or correct the problems identified in the assessment stage. Priorities are established, objectives are drawn up, nursing interventions are developed and documentation of the care plan is prepared.

- D. Execution: The actions necessary to obtain the results defined during the planning stage are initiated. A record is made of all holistic care that has been provided to people with an indication for stress echocardiography for the diagnosis of ischemic heart disease. At this stage, work is done to ensure better care to optimize human responses in people.
- E. Evaluation: the extent to which the expectations outlined in the care plan have been achieved is determined. At this stage, nursing professionals evaluated the progress of people with an indication for stress echocardiography for the diagnosis of ischemic heart disease through human responses and established measures to correct deficiencies in cases where the proposed care plan has not been effective. This evaluation was systematic and continuous.

CONCLUSIONS

The nursing intervention promoted the contextualization of holistic care in people with an indication for stress echocardiography for the diagnosis of ischemic heart disease. The rationale and structuring of the intervention improved the performance of nursing professionals at the Cardiocenter of the Medical-Surgical Research Center, which contributes to a permanent and preserved dignity of the nursing sciences.

BIBLIOGRAPHIC REFERENCES

1. Delgado Riffo CA, Sanhueza Alvarado OI. Experiences and Feelings of Nurses Working In Oncology: An Integrative Review. Cienc enferm [Internet]. 2021; 27: 22. DOI: <http://dx.doi.org/10.29393/ce27-22escd20022>.
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2. Lowenstein Haber DM., Arbutti Rosina AM, Merlo Pablo, Saad Ariel, Lowenstein JA. Fisiopatología y pronóstico de la deformación longitudinal regional durante el eco estrés con dipiridamol. *Rev argent cardiol* [Internet]. 2022; 90(2): 98-104. DOI: <http://dx.doi.org/10.7775/rac.es.v90.i2.20502>
3. Costa RVC. Exercise Testing Protocols to Detect the Presence of Coronary Artery Disease: Bruce or Ramp? *Int J Cardiovasc Sci* [Internet]. 2022 35 (1). DOI: <https://doi.org/10.36660/ijcs.20210164>
4. Lemus-Lima E, Hernández-Pérez R, Izquierdo-Machón E, Espinosa-Aguilar A, Señán-Hernández N. Parametrización de cuidados de enfermería para satisfacer necesidades humanas en personas con lesiones por quemaduras. *Rev. Cub de Enfer* [Internet]. 2021 [acceso: 26/01/2023]; 37 (3). Available in: <https://revenfermeria.sld.cu/index.php/enf/article/view/4285>
5. World Medical Association. Declaration of Helsinki: Ethical principles for medical research involving human subjects [Internet]. 2015 [acceso: 26/01/2023]; 18(1): 363-368. Available in: <https://www.wma.net/wp-content/uploads/2016/11/DoH-Oct2013-JAMA.pdf>
6. Gutiérrez Gutiérrez C, Torres Rodríguez B, Suero Gutiérrez L. Propuesta metodológica para la evaluación ética de diferentes investigaciones que no constituyan ensayos clínicos. *Invest Medicoquir* [Internet]. 2015; 7(1):111-9. Available in: <https://revcimeq.sld.cu/index.php/imq/article/view/309/394>
7. Martínez Trujillo Nelcy, Torres Esperón Maricela. La interdisciplinariedad en enfermería y sus oportunidades de aplicación en Cuba. *Rev Cubana Salud Pública* [Internet]. 2014 [acceso: 26/01/2023]; 40(1): 85-95. Available in: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-34662014000100010&lng=es
8. Mastrapa Y, Gibert Lamadrid M. Relación enfermera-paciente: una perspectiva desde las teorías de las relaciones interpersonales. *Revista Cubana de Enfermería* [Internet]. 2016 [acceso: 26/01/2023]; 32 (4). Available in: <https://revenfermeria.sld.cu/index.php/enf/article/view/976>
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9. Rubio Sevilla JC. Papel de enfermería en el juicio clínico: la valoración y el diagnóstico (2ª parte). Enferm Cardiol [Internet]. 2016 [acceso: 26/01/2023]; 23 (69): 30-39. Available in: https://enfermeriaencardiologia.com/wp-content/uploads/69_02.pdf

Conflicts of interest

The authors report no conflicts of interest.

Authors' contribution

Conceptualization: Yunay Rojas Valdés.

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Formal analysis: Yunay Rojas Valdés, Idermis Hernandez Ramirez, Grisel Coello Seijo.

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Supervision: Yunay Rojas Valdés, Esther Izquierdo Machin.

Editorial – original draft: Esther Izquierdo Machín, Idermis Hernández Ramírez, Grisel Coello Seijo.

Writing – review and editing: Esther Izquierdo Machín, Idermis Hernández Ramírez, Grisel Coello Seijo

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