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Contents

Editorial

Original articles

The gap remains: The challenge of translating research into policies for the health care of people and communities

Mauricio Barría P.[1]

In health sciences, day-to-day a large amount of research is accumulated in different settings and contexts, which serve as the substrate for decision-making at the individual and collective clinical level. Nevertheless, strategies persist to modify the clinical practice based more on beliefs than on scientific evidence. In addition, although research evidence is generated at a growing rhythm, the clinical practice to reflect this evidence has been delayed.(1) According to the evidence-based practice model, the gold standard that supports the best recommendation for prevention and therapeutic interventions is constituted by the randomized controlled trial. Although it is also recognized that this design does not manage to establish if the treatment context influences upon the trial results or how an intervention achieves its effects beyond the study scenario. Thus, the difficulty of translating research findings suggests that an intervention that has demonstrated effectiveness needs to address the context for implementation.

At the same time, it is verified that both clinical-epidemiological research, as well as research in health systems and services, exert little influence upon health policies or practices and that the principal obstacle of translating research results into improving health services and their impact upon the community is the lack of alignment between the research purposes and the needs of clinical professionals and those in charge of policy.(2) Within this context, the use of evidence or research has been of growing concern in the health setting. It is considered an extension of research on the efficacy and effectiveness of interventions, but which also encompasses research of health services, public health, and community medicine. From a policy level, it has been described that in developed and developing countries elements may exist that potentially distance scientific information from health policies.(3)

The term MeSH "Translational Medical Research" refers to the application of discovery generated in research labs and preclinical studies to conduct clinical trials and studies in human beings. A second area of translational research refers to improving the adoption of better practices. In addition, the use and

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study of research in health care practices, as well as in the development of policies has been defined in different ways including terms, like translational research, knowledge translation, dissemination of knowledge, or transfer of knowledge, which can vary in their significance.(3-5) Thus, translational research constitutes in itself applied research for health care focused on studying how to translate available knowledge to make it useful in reducing the burden of disease. It is worth mentioning that it has the purpose of increasing the probability that the evidence derived from research is used in policy and practice.

However, independent of its concept, little evidence exists to quantify to what point research is used in decision-making processes in public health, but the need is clear to continue until it is considered a priority for health policies in each country. In this respect, some have already described a "path to translate health research into improved health care" and have identified two principal voids in this path: translation of basic and clinical research into ideas and products, and introduction of those ideas and products into the clinical practice.(5) Factors have been identified that limit the use of research evidence in public health policy, among which is the perception of lack of research evidence among decision makers and the negative perceptions of the research evidence available. This includes abundance of evidence "free of policies", an inadequate approach of the random control trials, too much scientific uncertainty, poor local applicability, lack of focus on the social determinants of health, and lack of complexity to address health systems of multiple components. Also highlighted is the gap among decision makers and researchers, the culture within which decision makers act, lack of support for policy makers to acquire the skills required or to use research evidence. Likewise, factors have been reported, such as organizational, political and strategic, financial and resource limitations; personal experience; common sense; expert opinion, dissemination problems, and access to research evidence.(6) In contrast, these obstacles can be confronted by improving communication between researchers and users, as well as trust between researchers and policy formulators. In addition, we must increase the capacity of researchers to produce and effectively disseminate evidence to decision makers and bring about changes in their culture to add value to the use of research evidence in decision-making.

Currently, it is urgent to progress in strategies and models that facilitate translating research into effective policies to face problems that persist in health systems and their different benefits. Implementation success must consider this phase in the design of research, considering end users and the assessment of the implementation of findings, taking into account those responsible for policy formulation and the professionals involved to permit these to take place in the specific contexts.

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Biosocial-academic profile and stress in first- and fourth-year nursing students

Leticia Oliveira Bosso[1]
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Ana Lucia Siqueira Costa[3]

Biosocial-academic profile and stress in first- and fourth-year nursing students

Objective. To compare the biosocial and academic profile and stress levels between first- and last-year nursing students from a public university in Sao Paulo. **Methods.** This is an analytic and quantitative study. A biosocial and academic form and the instrument for Assessment of Stress in Nursing Students by Costa and Polak were applied to 83 students between February and March 2016. **Results.** Insufficient income and extracurricular activities contribute to higher levels of stress in both groups of students assessed. Fourth-year students showed higher levels of general stress, particularly generated by the factors: performance of practical activities, professional communication, environment and professional training. Time management produces higher stress in first-year students. **Conclusion.** Few biosocial and academic features equally contribute for the stress levels in first- and last-year nursing students, but those in last-year present higher stress than students who are starting the course.

Desctriptors: stress, psychological; students, nursing; education, higher; comparative study.

Perfil biosocial y académico y nivel de estrés en estudiantes de Enfermería de primero y cuarto años

Objetivo. Comparar el perfil biosocial y académico y el nivel de estrés entre estudiantes del primero y cuarto año del curso de graduación en enfermería de una universidad pública de São Paulo, Brasil. **Métodos.** Estudio analítico y cuantitativo. Entre febrero y marzo de 2016 se aplicó un formulario con datos biosociales y académicos y el Instrumento para Evaluación de Estrés en Estudiantes de Enfermería de Costa y Polak en 83 alumnos. **Resultados.** La renta insuficiente y las actividades extracurriculares contribuyen para un mayor nivel de estrés en ambos años. Los estudiantes del cuarto año presentan mayores niveles de estrés general en los siguientes factores: realización de actividades prácticas, comunicación profesional, ambiente y formación profesional. La gestión del tiempo representa

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el mayor nivel de estrés en estudiantes del primer año. **Conclusión.** Algunas características del perfil biosocial y académico contribuyen igualmente al nivel de estrés en los estudiantes de primero y cuarto año, pero para los de cuarto año representan mayor estrés que para los alumnos en el inicio del curso.

Descriptores: estrés psicológico; estudiantes de enfermería; educación superior; estudio comparativo.

Perfil biossocial e acadêmico e nível de estresse em estudantes de Enfermagem do primeiro e do quarto ano.

Objetivo. Comparar o perfil biossocial e acadêmico e o nível de estresse entre estudantes do primeiro e do quarto ano do curso de graduação em enfermagem de uma universidade pública de São Paulo, Brasil. **Métodos.** Estudo analítico e quantitativo. Entre fevereiro e março de 2016 se aplicou um formulário com dados biossociais e acadêmicos e o Instrumento para Avaliação de Estresse nos Estudantes de Enfermagem de Costa e Polak em 83 alunos. **Resultados.** A renta insuficiente e as atividades extracurriculares contribuem para um maior nível de estresse em ambos anos. Os estudantes do quarto ano apresentam maiores níveis de estresse em geral e nos fatores: realização de atividades práticas, comunicação profissional, ambiente e formação profissional. A gestão do tempo representa o maior nível de estresse nos estudantes do primeiro ano. **Conclusão.** Algumas características do perfil biossocial e acadêmico contribuem igualmente ao nível de estresse nos estudantes do primeiro e do quarto ano, mas para os do quarto ano representam maior estresse que para os alunos no início do curso.

Descritores: estresse psicológico; estudantes de enfermagem; educação superior; estudo comparative.

Introduction

Undergraduate training in the nursing area is complex. It involves a large academic load distributed into theoretical lessons and practical traineeship that put students in contact with daily situations of the nursing practice that require dedication, commitment and balance.(1) In this course, students interact with sick individuals under distress and vulnerability, and this requires skills beyond those developed in the classroom.(2-4) On this, previous research carried out in Brazil cite some situations frequently experienced by nursing students, namely: the extensive curricular load; the obligation to perform extraclass work; little time left for academic activities and social and family life; insufficient content addressed in class; personal and family problems; dissatisfaction with public transport; inflexible schedules in the institutions; and difficulties with interpersonal relationships such as conflicts with classmates and professional staff in the fields of practice.(1)

Faced with this, students may perceive the academic demands as stressors. According to the interactionist model, stress is defined as any and all situations that tax or exceed the sources or adaptive resources of an individual or social system.(5) In this context, the number of studies on stress among nursing undergraduates has increased, and they have reported a frequent occurrence of stress. A study with university students of a Colombian educational institution showed that 73.9% of them had high level of stress. Also, the research revealed that frequent exposure to stressors is linked to depressive and anxious symptoms, with negative effects on the academic performance.(6)

In addition, stress can have an impact on the students' health, leading to anxiety and depression. The levels of these conditions have already proved to be higher among students than in the general population in Brazil.(7) At the international context, a study carried out with 700 university students from Spain found that 65.9% had symptoms of anxiety and depression, 42% were predisposed to mental exhaustion, 52.1% were socially dysfunctional, and 64% showed signs of emotional hardening, with an impact on students' interaction with patients, peers and professors.(8) This can interfere with the quality of care provided during the internships and in professional practice, when individuals should be able to evaluate and make their own decisions.(9)

In this context, although different researches available in national and international literature have already identified stress levels and factors among nursing students, it is important to consider that in the interactionist model, stress is an individual experience and depends on the relationships established with other people and with the environment. In this process, the individual defines the meaning of the situation based on a series of evaluative categories, which is called cognitive evaluation.(10) The students who are in the initial phase of the course experience situations different from those in the final phase, which may involve different levels of stress. In the first year, they face adaptation to the academic environment, and new responsibilities and requirements. In the fourth year, we must deal with increased decision-making responsibility, the feeling of unpreparedness and the end-of-course written paper.(9) In addition to academic aspects, last-year students experience insecurity and inexperience, competitiveness of the labor market and the fear of not getting a job after the end of the course.

However, few studies have evaluated and compared the stress factors and levels of this phenomenon among students at the beginning and end of the course. This investigation would allow identifying the variation of stress levels and the factors that contribute the most to this phenomenon throughout the course of nursing. It would also make it possible to develop preventive actions to minimize stress and its negative outcomes to the students' health. Thus, the present study aimed to compare the biosocial and academic profile and the stress level of first- and fourth-year students of the undergraduate nursing course at a public university in São Paulo, Brazil. Considering that, besides academic aspects, the students experience stressors related to the training and future professional performance,(9) we hypothesize that fourth-year students experience higher level of stress than first-year students.

Methods

This is a cross-sectional, analytical and quantitative study developed at a public institution in the state of São Paulo, Brazil. The study population was represented by all students enrolled in the first and fourth years of the institution's nursing course and who were over 18 years of age. The exclusion criteria were: students who participated in the research as collaborators in the data collection and students who could not be enrolled in all courses of the current semester because they failed to be approved in previous courses. First, the undergraduate service was contacted in order to obtain the list of courses to be taught and the list of students enrolled in the first and fourth years. Based on these lists, the objectives of the research and the operational flow of collection were presented to the professor responsible for one of the specific courses of the semesters. After authorization of this professor, the day and time to present the objectives of the research to the students and to have over the IC forms to those who accepted to participate were scheduled. The protocols were then sent by e-mail, with a deadline of 10 days to reply the researcher by e-mail. Subsequently, due to technical difficulties with some e-mail addresses, the face-to-face approach was carried out in the classroom. For this, a new schedule was established with the responsible professor. Questionnaires were distributed in the classroom and collected at a later moment.

Data collection took place between February and March 2016 through a research protocol consisting of a form for biosocial and academic carachterization and the instrument for Assessment of Stress in Nursing Students (ASNS). The characterization form included the following biosocial variables: e-mail, telephone, birth date, sex, children, ethnicity, marital status, city of residence, place of residence, people in the household, type of institution where high school was completed for the most part, admission way to the institution's undergraduate course, leisure activities, sports practice, income sources, financial dependents, total monthly income in minimum salaries, monthly expenses in minimum salaries, sufficiency of monthly income for the maintenance, use of oral or injectable contraceptive, use of drugs or substance (tea, coffee, energizing drinks, etc) to inhibit sleep and to get to sleep; smoking habits, number of cigarettes consumed per day, consumption of alcoholic beverages, frequency of consumption of alcoholic beverages. The academic variables were: time spent to get to the institution, University City and field of internship, means of transport, month and year of beginning of the course, current academic semester, number of courses in the current semester, hourly load in the current semester, number of daily hours dedicated to study, presence and type of extracurricular activities carried out, participation in research groups, time dedicated every week to the research group, work activity, professional experience in the health area, further higher education degrees, satisfaction with the course and intention to give up the Nursing course.

The instrument for Assessment of Stress in Nursing Students (ASNS) was proposed by Costa and Polak in 2009(2) and consists of 30 items grouped into six areas: Performance of practical activities (Items 4,5,7,9,12 and 21); Professional communication (items 6,8,16 and 20); Time management (Items 3,18,23, 26 and 30); Environment (Items 11,22,24 and 29); Professional training (Items 1,15,17,19,25 and 27); and Theoretical activity (Items 2,10,13,14 and 28). The items are presented in a Likert-type scale with four points, where: zero - “I do not experience this situation”; one - “I do not feel stressed about the situation”; two - “I feel a little stressed about the situation”; and three- “I feel very stressed about the situation”. The Alpha values obtained for the ASNS domains in the validation process by the authors were: 0.806 (Performance of Practical Activities), 0.768 (Professional Communication), 0.717 (Time Management), 0.866 (Environment), 0.772 (Professional Training), 0.720 (Theoretical Activity).(2)

Data were organizied in a database in Excel software (Office 2007) and the Statistical Package for Social Sciences (SPSS, version 10.0) was used for analysis. The instruments were analyzed as previously described, recommending the analysis described by the authors of the instruments. Qualitative variables were presented in absolute and percentage values. The quantitative variables were exposed in descriptive measures: minimum and maximum values, mean and standard deviation. We used ANOVA (Test F) models to compare stress scores among first- and fourth-year students. The effect of the biosocial and academic profile on the stress between the groups was compared through regression models, two-way ANOVA in cases of two categorical predictors and Factorial ANCOVA when there were categorical and numerical predictors.

This project was submitted to the Research Ethics Committee (REC) of the researched university, since students of this institution were involved, and was approved under nº 1,363,890. Concomitantly, the project was submitted to the Research Service of the specific unit (School of Nursing) to be assessed as to feasibility and merit. Furthermore, in compliance with the Guidelines and Norms Regulating Research Involving Human Beings (Resolution NCH 466/12),(10) an Informed Consent Form was sent along with the instruments with information related to the research. Two copies of the IC were signed (one for the subject and the other for the researcher), expressing authorization and voluntary participation in the research. Students were assured that individual personal data that could facilitate the identification of subjects would not be disclosed.

Results

The initial population of the study consisted of 151 nursing students; 86 were enrolled in the first year and 65 in the fourth year. Fourty-six of the first-year students and 37 of the fourth-year students accepted to participate in the study and returned the completed protocols, totaling 83 nursing students as access population. The alpha value found for the 30 items of the ASNS was 0.873, enough to attest the satisfactory reliability of the instrument. In the reliability analysis per domain, the following values were observed: 0.873 for Performance of Practical Activities; 0.810 for Professional Communication; 0.497 for Time management; 0.703 for Environment; 0.759 for Professional Training; and 0.516 for Theoretical Activity.

Insufficient monthly income for maintenance and realization of extracurricular activities contributes to increased levels of stress, both in the first and the fourth year. Age had a differentiated impact on the stress level of nursing students ($p= 0.018$); age led to higher level of stress in fourth-year students. The regression analysis showed that age and stress interact in different ways in the two gorups of students; the relation was positive in first-year students ($\beta= 0.533$) and negative in fourth-year students ($\beta= -0.622$). Thus, younger students have lower levels of stress at the beginning of the course and higher levels at the end of the course when compared to older students.

There is a predominance of a moderate level of stress (80.4%) among first-year students and high level of stress (54.3%) among fourth-year students. Stress level was significantly higher in the students of the last year (44.50; SD = 10.85) than in the first-year students (61.00; SD = 10.14) ($p<0.001$). Table 2 presents the comparison of the means of stress according to ASNS factors among first- and fourth-year students.

It is observed that the performance of practical activities, professional communication, environment and professional training cause greater stress to the fourth-year students than first-year students. In turn, time management implies a higher level of stress for first-year students.

Although the mean stress in the factor theoretical activity was higher in first-year students, no statistically significant difference was observed between groups.

Table 1. Comparison of the effect of the biosocial and academic profile on the stress among first- and fourth-year students. São Paulo, 2016

Variable*		**Stress**			***p* value**	
		1rst year	**4th year**	**General**	**Between groups**	**Intragroup**
Sufficient Income	Yes	43.38	59.74	51.93	0.785	0.047
	No	48.79	63.86	54.34		
Extracurricular Activities	Yes	43.18	60.57	54.88	0.308	0.025
	No	48.28	74.00	49.94		

(*) Only variables with significant difference in at least one of the analyses were presented.

Table 2. Comparison of the means of stress according to ASNS factors among students of the first and fourth years of the undergraduate nursing course. São Paulo, 2016

Stress Factor	**1rst year Mean (SD*)**	**4th year Mean (SD*)**	***p* value**
Performance of Practical Activities	6.83 (3.94)	11.00 (3.17)	< 0.001
Professional Communication	3.59 (2.94)	6.95 (2.51)	< 0.001
Time Management	12.13 (1.93)	11.16 (2.33)	0.042
Environment	5.91 (2.64)	8.68 (3.18)	< 0.001
Professional Training	7.54 (2.84)	12.49 (2.96)	< 0.001
Theoretical Activities	10.39 (2.32)	9.86 (1.98)	0.278

*Standard deviation

Discussion

Population growth has turned the labour market more competitive, requiring a dynamic posture and frequent updating of professionals to act in various scenarios.(11) Because undergraduate courses must also be able to respond to market trends, they may overwhelm students with the amount of knowledge and methods presented for them to learn during training. Individual characteristics and economic factors are associated with this and contribute to exhaust the students' adaptive resources and drive them to stress.(12)

Insufficient monthly income for maintenance and realization of extracurricular activities contributes to increased levels of stress, both in the first and the fourth year of the course. Income influences, to different degrees, factors that contribute to reducing stress levels such as access to cultural and leisure activities and sports. This relationship was evident in a study with 160 nursing students in São Paulo where higher stress levels were seen in students who did not share in leisure activities and sports.(4) In this sense, by limiting the access of individuals to socio-cultural and sports activities, insufficient income contributes to higher levels of stress, reducing the students' academic performance and quality of life.(13)

As for age, it was observed that this variable causes higher level of stress in fourth-year students. Younger students experience lower levels of stress at the beginning of the course and higher levels at the end of the course. Lowest level of stress at the beginning of the course is probably due to fewer burdens from social and family responsibilities of students. In general, these students live with the parents, who are responsible for the financial maintenance of the student. Over time, many students move in with friends or classmates, becoming responsible for their own financial maintenance.(13) Also, these younger students experience for the first time the closeness to the end of the course, concern for their professional future and the competitiveness of the labor market; these elements explain the higher levels of stress in younger students at the end of the course.(2,4)

It was verified that the students of the last year present a higher level of stress when compared to those of the first year. First-year students had moderate level of stress (80.4%), while fourth-year students had high level of stress (54.3%). This finding confirms the hypothesis of this research, that is, that students' level of stress is higher at the end of the course the than at the beginning. A study with 562 medical students from the northeastern region of Brazil had a similar result, with predominant stress among students of the fifth (51.7%), sixth (41.3%) and seventh (41.0%) semesters.(14) In the last year of the Nursing course, besides the typical stressors of academic training (theory classes, tests and extraclass activities), students face aspects of the practice of nursing care itself, including lack of human and material resources, professional responsibility with the health of other people, and competitiveness imposed by the labor market. (1,3,14) All of these are factors that promote high levels of stress in this semester.

It is observed that the performance of practical activities, professional communication, environment and professional training cause greater stress to the fourth-year students than to the first-year students. At the end of the course, nursing students experience greater internship workload in addition to theoretical activities, tests and individual studies. This involves greater interaction with patients and multiprofessional teams, contact with the difficulties of nursing assistance, and more demands and responsibility in decision-making procedures.(1,3,14) Thus, feelings of anxiety and distress become common and contribute to higher levels of stress related to practical activities and professional communication at the end of the course. Furthermore, the contact with health service limitations and competitiveness allied with insecurity about their own preparation to act may explain the higher level of stress in the Professional Training domain. Faced with this overload of theoretical and practical activities, students need to move to different fields of traineeship and to the educational institution, where they attend theoretical classes and carry out case studies.(1,9,15,16) Consequently, they spend much time commuting every day to meet the academic demands. This must explain the fact that Environment represented a greater source of stress to the fourth-year students.

In turn, time management implies a higher level of stress for first-year students. Since they are young students who have not attended another undergraduate course, the beginning of the course may represent an adaptive phase. During this period, students enter a new environment, filled with new experiences. This period has also the largest number of courses, tests and extra-curricular work per semester.(2) In addition, full-time dedication to study and the frequent displacement to the different institutes for curricular activities are typical of this phase.(1,4) In this transition to the academic environment, the overload experienced by new students and their greater difficulty to manage time in order to meet the academic, personal and social demands is understandable.(1,4)

Although the mean stress in the factor theoretical activity was higher in first-year students, no statistically significant difference was observed between groups. Research conducted with Colombian university students identified that oral presentations and the amount of content to be studied were the variables that caused most stress to the sample.(6) A study carried out with 28 nursing students from São Paulo showed that the most frequent stressors were: obligation to carry out extraclass work and activities, the extensive workload, lack of time for rest, and insecurity at theoretical activities.(1) It is important to emphasize the role of institutions in this aspect, since preparation for professional practice should not be emphasized exclusively in the domain of theoretical and practical content offered, but also in stimulating self-knowledge as a personal and professional development tool for the student.(12) In this sense, the practice of extensive lectures and without open dialogue with students may reduce the interest in learning and in the performance of students, as well as lead to a lack of link between training and the reality of the profession.(17)

The data presented showed that nursing students are vulnerable to stressors that come from living situations and experiencing feelings of responsibility for the life and health of people. Thus, stress can be considered inherent in professional activities of nurses, as well as in academic training in this area.(18) If stress in nursing care is found to affect the health professionals' performance and health, stress-related illnesses and lower level of learning may occur in students who experience stress during academic nursing education.

Conclusion. It was found in this study that some biosocial and academic features contribute to the levels of stress in first- and fourth-year students. The stressors included the insufficient monthly income for maintenance and extracurricular activities. In turn, age interacts differently with stress. Younger students have lower levels of stress at the beginning of the course and higher levels at the end of it when compared to older students. The level of stress of fourth-year students is higher than that of first-year students at the beginning of the course, which is classified as moderate at the beginning of the course and high at the end. The performance of practical activities, professional communication, environment and professional training represent greater stress to the students at the end of the course. In turn, time management implies a higher level of stress for first-year students.

Based on the profile found, it is necessary that teaching institutions and faculty be attentive to the occurrence of stress among nursing students, since this affects the health, quality of learning and performance of students. Furthermore, it is important to strengthen discussions on the health of nursing students in educational spaces with a view to develop actions of prevention, control and reduction of the level of stress in this population.

As limitations of this research, we highlight the use of cross-sectional sampling because this does not allow the analysis of causality between the academic environment and the stress presented by the student, as well as the variation of stress throughout the course. Also, the limited sample size obtained in this research requires that the findings be interpreted with caution. In this sense, further studies with larger samples and longitudinal design are suggested to provide more accurate information about the variation of stress and its outcomes in the same group of subjects throughout the course, as well as the effects of nursing training on the students' health.

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Original article

Profile of nursing diagnoses in people with hypertension and diabetes

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Profile of nursing diagnoses in people with hypertension and diabetes

Objective. To identify the profile of nursing diagnoses in people with hypertension and diabetes in primary health care. **Methods.** A cross-sectional study involving 175 individuals followed up in eight primary health units of Minas Gerais, Brazil. Data collection was made through interview and physical examination, and diagnostic inference was made according with NANDA-I Taxonomy II. Results. The average age of the users was 62.1 years and the female gender predominated (66.9%). A total of 26 diagnoses were identified, an average of 16 per client (standard deviation=3.9). The most frequent problem-focused diagnosis were: Ineffective Health Management (98.9%), Ineffective Peripheral Tissue Perfusion (78.3%), Sedentary lifestyle (74.3%), Obesity (54.3%) and Insomnia (51.4%). With respect to the defining characteristics and related factors, the average per person was 24 and 28, respectively. **Conclusion.** In this group of clients, the most frequent diagnoses were in the domain activity/rest. These diagnoses are the basis for planning nursing interventions and provide improved quality of life for these clients.

Descriptors: nursing diagnosis; hypertension; diabetes mellitus, type 2; public health.

Perfil de diagnósticos de enfermería en personas hipertensas y diabéticas

Objetivo. Identificar el perfil de diagnósticos de enfermería en personas hipertensas y diabéticas usuarios de la atención primaria en salud. **Métodos.** Estudio de corte transversal realizado con 175 usuarios acompañados en ocho unidades básicas de salud de Minas Gerais, Brasil. La recolección de los datos fue realizada a partir de la historia clínica y de la exploración física. La inferencia

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diagnóstica se realizó de acuerdo con la Taxonomía II de la NANDA-I. **Resultados.** El promedio de edad de los usuarios estudiados fue de 62.1 años; predominó el sexo femenino (66.9%). Se identificaron 26 diagnósticos de enfermería, con un promedio de 16±3.9 por usuario. Los diagnósticos enfermeros focalizados en el problema más frecuente fueron: Gestión Ineficaz de la Salud (98.9%), Perfusión Tisular Periférica Ineficaz (78.3%), Estilo de Vida Sedentario (74.3%), Obesidad (54.3%) e Insomnio (51.4%). Con respecto a las características definitorias y a los factores relacionados el promedio por persona fue de 24 y 28, respectivamente. **Conclusión.** En este grupo de usuários, los diagnósticos más frecuentes fueron del dominio actividad/reposo. Estos diagnósticos son la base para la planeación de las intervenciones de enfermería que conducen al mejoramiento de su calidad de vida de los pacientes.

Descritores: diagnóstico de enfermagem; hipertensão; diabetes mellitus tipo 2; saúde pública.

Perfil de diagnósticos de enfermagem em pessoas hipertensas e diabéticas

Objetivo. Identificar o perfil de diagnósticos de enfermagem em pessoas hipertensas e diabéticas usuárias da Atenção Primária à Saúde. **Métodos.** Estudo de corte transversal, realizado com 175 indivíduos acompanhados em oito unidades básicas de saúde de Minas Gerais, Brasil. A coleta dos dados aconteceu através de entrevista e exame físico e a inferência diagnóstica foi feita de acordo com a Taxonomia II da NANDA-I. **Resultados.** A média de idade dos clientes foi de 62.1 anos e predominou o sexo feminino (66.9%). Foram identificados 26 diagnósticos, média de 16 por cliente (desvio padrão=3.9). Os diagnósticos de enfermagem com foco no problema mais frequentes foram: Controle Ineficaz da Saúde (98.9%), Perfusão Tissular Periférica Ineficaz (78.3%), Estilo de Vida Sedentário (74.3%), Obesidade (54.3%) e Insônia (51.4%). Com respeito às características definidoras e aos fatores relacionados a média por pessoa foi de 24 e 28, respectivamente. **Conclusão.** Neste grupo de clientes os diagnósticos mais frequentes foram do domínio atividade/repouso. Estes diagnósticos são a base para o planejamento das intervenções de enfermagem que conduzem ao melhoramento da qualidade de vida desses clientes.

Descriptores: diagnóstico de enfermería; hipertensión; diabetes mellitus tipo 2; salud pública.

Introduction

Systemic arterial hypertension (SAH) and diabetes mellitus (DM) are chronic noncommunicable diseases (CNCDs), that is, diseases that are persistent and require permanent care.(1) Global data indicate that, in 2015, 415 million people between 20 and 79 years of age were living with DM and it is estimated that in 2040 there will be 642 million people with this disease, increasing by 65% in Central and South America.(2) Epidemiological studies indicate that diabetes and hypertension are commonly associated conditions.(3,4) The prevalence of hypertension is approximately twice as high among diabetics compared to non-diabetics. This alarming information is mainly due to sedentary lifestyle, obesity and the aging of the world population.(4)

Considering the increasing incidence of new cases of CNCDs, the need for preventive and control actions have become crucial, since they represent an important public health problem.(5) In Brazil, the monitoring of individuals with a diagnosis of SAH and DM should be carried out primarily by Primary Health Care (PHC).(3,5) PHC is considered the gateway to the health system, by establishing its own level of care, with the structuring of service in the programmatic dialectics, in the longitudinal care, comprehensiveness and in the coordination of health actions and services.(3,5) Although it has been established for more than a decade in Brazil, the standard of care for people with SAH and DM by PHC, that is, the Hiperdia program, which consists of the continuous monitoring of these individuals along with the basic health units (BHU) of the Brazilian Health System (SUS), with the provision of medicines and the promotion of healthy living habits, there is still a low percentage of follow-up of these people by the professional teams of the BHUs.(6,7) Therefore, it is essential that professionals maintain the provision of a comprehensive, effective and quality care.(1,3,4) In this way, in addition to curative care, professionals must be able to perform early detection of risk factors for CNCDs, as well as organize strategies for their prevention.(3)

Thus, nursing can act in an expressive, evidence-based manner, identifying human responses and establishing strategies that provide for the recovery of health and/or the improvement of individual or collective well-being. For this, nursing needs to use tools, such as the Nursing Process (NP), which, when executed using standard languages(7) and encompassing nursing diagnoses of NANDA International (NANDA-I),(8) systematizes the care provided to the person, family or community focusing on the coprehensive care and interaction between professional-client-family.(7,8) Nursing diagnoses (ND) are clinical judgments derived from interpretations of information/data raised during the nursing appointment.(8) They compose the synthesis of clinical reasoning and are primordial in the orientation of nursing care planning, implementation of interventions and evaluation of care provided.(7) The situations/potentialities of nursing diagnoses are: problem-focused, health promotion and risk promotion.(8) The elaboration of ND brings multiple benefits, such as an objective assessment of care; it helps in determining priorities in nursing care, promotes a continuous development of the profession, contributes to improving the quality of care and facilitates the selection of the most important nursing interventions that lead to better results.(10,11)

In a systematic review of the evidence of the use of standardized nursing language, the authors emphasized the importance of conducting studies to link the use of taxonomies with the health outcomes of clients.(9) Studies addressing ND for hypertensive and diabetic individuals were found, however, with small number of participants and convenience sampling,(12) case study,(13,14) others studies addressing ND/nursing interventions for hypertensive people only(15-17) or describing the ND/nursing process for diabetics(18,19) and addressing the management of the two chronic diseases without describing the ND.(20,21) Therefore, although there has been a wide discussion about the nursing process and the management of hypertension and DM, there has also been a shortage of articles describing the profile of ND of hypertensive individuals and also diabetic users of PHC with sample size from the population of interest and with data obtained through anamnesis and physical examination of all the participants by the researchers themselves. Within this perspective, this study is of great relevance to improve the care of nurses working in PHC, as well as to corroborate or confront the existing NDs in the literature. Therefore, the objective of this study was to identify the profile of nursing diagnoses of hypertensive and diabetic people using Primary Health Care.

Methods

This is an exploratory and descriptive study, carried out in eight BHUs located in the state of Minas Gerais, Brazil. These BHUs were intentionally chosen because they received nurses linked to a residency program on Primary Health Care/Family Health Care. This is a postgraduate specialization with a weekly workload of 60 hours intended for in-service teaching of health-related professions, in this case, nurses. One of the structuring axes of residencies should be the comprehensiveness of care with the adoption of evidence-based practice; therefore, the use of the NP is essential.(22) People with type 2 diabetes mellitus and hypertension, enrolled in the Hiperdia program, were chosen as the selection criteria in the participating health units. Inclusion criteria were clients over 18 years of age with preserved cognitive ability, which was verified through the application of the Mini Mental State Exam, an important tool for screening cognitive impairment to be used in research and clinical evaluation, validated for the Brazilian population.(23) Exclusion criteria included individuals with other medical diagnoses and hospitalizations during the study period.

Data were collected at the participant's home or at their reference health unit by two researchers, from September 2015 to July 2016. The study population comprised 175 adults with hypertension and diabetes. The sample calculation was defined by means of the z statistic test, with a normal distribution, estimating a proportion referring to the population of interest for a significance level of 5% and statistical test power of 80%. Data were obtained by primary source directly with the clients, through interview and physical examination.

For the clinical evaluation of the participants and interview, a form prepared by the authors was used, based on two previous studies. The first, on the validation of a questionnaire with diabetic adults in Brazil and the other, on an instrument for nursing appointment of hypertensive patients in family health.(24,25) This form contained data regarding the date of birth, sex, marital status, SUS card number, profession, religion, occupation, housing, information on the disease and treatment, medications in use, family history, lifestyle, psychosocial data, vital signs and physical examination with relevant information about organs and systems. The collected data were examined based on the process of diagnostic reasoning proposed by Gordon, which involves the following steps: information collection, interpretation of information, grouping of information and denomination of nursing diagnoses, in this case, using the NANDA-I Taxonomy.(8)

The indications and inferences obtained, based on the scientific basis of nursing diagnoses, were performed by two authors independently. One of the researchers was the one who collected and filled out the instruments with the clients, and the other researcher, a specialist in nursing diagnosis, member of NANDA-I, performed the diagnostic reasoning process based on the filled instruments. Afterwards, the nursing diagnoses were compared and, when there was disagreement, the two researchers debated until reaching an agreement. The data obtained were organized in a database built in the software Excel version 2016 and statistical analysis was done through the Statistical Package for the Social Sciences (SPSS), version 21.0 for Windows® and Program Epi Info, version 7, according to absolute and relative measures of numerical frequency, measures of central tendency and dispersion.

This research was approved by the Research Ethics Committee of a Federal University of Minas Gerais, Brazil (CAAE: 46439415.7.0000.5545 and Opinion no. 1,218,267/2015). Data were collected after the participant signed the Informed Consent Form.

Results

Of the 175 hypertensive and diabetic subjects, 66.9% were female. The age ranged from 39 to 89 years, with a mean of 62.1 years and a standard deviation of 10.6. The majority were married (62.3%), had some religious practice (93.1%), incomplete elementary school (57.7%), were retired or pensioner (%), had white skin color (52%), and 94.8% did not live alone. All interviewees lived in urban areas with access to running water and basic sanitation (Table 1).

The average length of time patients lived with the disease was 17.8 years for hypertension and 10.8 years for diabetes. Regarding users' knowledge on their health problem, 72% were poorly oriented while only 20.6% showed some knowledge about their current condition. Regarding the risk classification of these users in the Hiperdia program, 71.4% were considered individuals at high risk for the development of cardiovascular diseases and complications associated with hypertension and diabetes, 16.6% were at moderate risk and 12% at low risk.

From the diagnostic reasoning process, 26 different diagnoses were identified, with a mean of 16 ND per client, 39 defining characteristics, 46 related factors and 62 risk factors (Table 2).

Most of the nursing diagnoses found were of the domain activity/rest (38.5%), followed by nutrition (15.4%), safety/protection (15.4%), health promotion (11.5%), elimination and discharge (7.7%), coping/stress tolerance (7.7%) and comfort (3.8%). 13 (50%) ND were problem-focused, 12 (46.1%) were risk nursing diagnoses and one (3.9%) diagnosis was of health promotion. Nursing diagnoses were observed in all clients: risk for ineffective gastrointestinal

Table 1. General characteristics of 175 hypertensive and diabetic subjects. Minas Gerais Brazil, 2016

Variable	*n*	%
Sex		
Female	117	66.9
Male	58	33.1
Age Group		
39 to 59 years	73	41.7
60 to 79 years	95	54.3
80 to 89 years	7	4.0
Marital status		
Married	109	62.3
Single	15	8.6
Others	51	29.1
Religious Practice		
Yes	162	93.1
No	12	6.9
Education		
Uneducated	28	16.0
Incomplete elementary school	101	57.7
Complete elementary school	20	11.4
Incomplete high school	12	6.9
Complete high school	9	5.1
Complete higher education	5	2.9
Profession		
Retired/pensioner	92	52.6
Paid activity	82	46.8
Unemployed	1	0.6
Skin color		
White	91	52.0
Brown	49	28.0
Black	35	20.0
Own home		
Yes	141	80.6
No	34	19.4
Lives with the family		
Yes	166	94.8
No	9	5.2
Resident in urban area	175	100.0
Access to running water	175	100.0
Basic sanitation	175	100.0

Table 2. Distribution of nursing diagnoses, defining characteristics, related factors and risk factors formulated for the 175 hypertensive and diabetic participants. Minas Gerais Brazil, 2016

Variable	Total	Mean	Standard deviation	CI* 95%
Nursing Diagnoses	26	16	3.9	15.4 – 16.5
Defining Characteristics	39	24	5.8	23.1 – 24.8
Related Factors	46	28	6.8	27.0 – 28.9
Risk factors	62	38	9.2	36.6 – 39.3

* Confidence Interval

perfusion, risk for ineffective renal perfusion, risk for reduced cardiac tissue perfusion, risk for ineffective peripheral tissue perfusion, risk for impaired cardiovascular function. Other high frequency diagnoses above the 75th percentile were: ineffective health control (98.9%), risk for unstable blood glucose level (92.6%), risk for constipation (82.3%), ineffective peripheral tissue perfusion (78.3%), risk for activity intolerance (78.3%). Nursing diagnoses were organized according to 75th, 50th, 25th and below 25th percentiles (Table 3). In the data found, the nursing diagnoses that presented above the 50th percentile were analyzed.

Table 4 below shows the distribution of the defining characteristics and the most significant related factors in the ND proposed for the hypertensive and diabetic clients of this study. It shows that, in relation to the ND with a high frequency, above the 75th percentile, that is, ''Ineffective Health Control'', the defining characteristics: Failure to include treatment regimen in daily living (98.9%) and Ineffective choices in daily living for meeting health goals (98.9%) and; the related factor: Perceived barrier (90.3%) were the most observed in the participants. In the NE ''Ineffective Peripheral Tissue Perfusion'', the defining characteristic: Altered skin characteristics (78.3%) and the related factors: SAH and DM (100.0%) were the most examined in participants.

Table 5 below shows the risk diagnoses of hypertensive and diabetic clients according to the vulnerabilities. The risk factor of high frequency, i.e., above the 75th percentile, that is, ''risk for ineffective gastrointestinal perfusion'', the risk factor DM (100.0%) was the most observed in people of this group research; regarding the ND "Risk for ineffective renal perfusion", "Risk for decreased cardiac tissue perfusion", "Risk for ineffective peripheral tissue perfusion", "Risk for impaired cardiovascular function", risk factors for hypertension (100.0%) and DM (100.0%). With regard to the ND "Risk for unstable blood glucose levels", the most commonly found risk factors were: Insufficient control of diabetes (92.6%) and Ineffective drug control (90.3%) and; in relation to the ND "Risk for constipation", the risk factor Average physical activity lower than recommended (78.3%) was the most prevalent. Regarding the ND "Risk for activity intolerance", the risk factor circulatory problem (78.3%) stood out in hypertensive and diabetic subjects in this study.

Table 3. Distribution of the nursing diagnoses formulated for the 175 hypertensive and diabetic participants, according to the domains of human response and according to the percentile. Minas Gerais Brazil, 2016

Domains	Nursing Diagnoses	*n*	%	CI* (95%)	Percentile
Activity/Rest	Risk for Ineffective Gastrointestinal Perfusion	175	100	96.4 - 100	P75
Activity/Rest	Risk of Ineffective Renal Perfusion	175	100	96.4 - 100	P75
Activity/Rest	Risk for Decreased Cardiac Tissue Perfusion	175	100	96.4 - 100	P75
Activity/Rest	Risk of Ineffective Peripheral Tissue Perfusion	175	100	96.4 - 100	P75
Activity/Rest	Risk for Impaired Cardiovascular Function	175	100	96.4 - 100	P75
Health promotion	Ineffective Health Control	173	98.9	95.5 - 99.8	P75
Nutrition	Risk for Unstable Blood Glucose Level	162	92.6	87.4 - 95.8	P75
Elimination and discharge	Risk for Constipation	144	82.3	75.6 - 87.5	P75
Activity/Rest	Ineffective Peripheral Tissue Perfusion	137	78.3	71.3 - 84.0	P75
Activity/Rest	Risk for Activity Intolerance	137	78.3	71.3 - 84.0	P75
Health promotion	Sedentary Lifestyle	130	74.3	67.0 - 80.4	P50
Coping/Stress Tolerance	Readiness for Enhanced Coping	98	56.0	48.3 - 63.4	P50
Nutrition	Obesity	95	54.3	46.6 - 61.8	P50
Safety/Protection	Risk for Impaired Skin Integrity	92	52.6	44.9 - 60.1	P50
Activity/Rest	Insomnia	90	51.4	43.8 - 59.0	P50
Safety/Protection	Risk for Falls	89	50.9	43.2 - 58.4	P50
Nutrition	Excessive Liquid Volume	69	39.4	32.2 - 47.1	P25
Activity/Rest	Fatigue	59	33.7	26.9 - 41.3	P25
Comfort	Chronic pain	59	33.7	26.9 - 41.3	P25
Activity/Rest	Impaired Physical Mobility	57	32.6	25.8 - 40.1	P25
Safety/Protection	Risk for Pressure Ulcer	57	32.6	25.8 - 40.1	P25
Coping/Stress Tolerance	Anxiety	52	29.7	23.2 - 37.2	P25
Nutrition	Overweight	51	29.1	22.7 - 36.6	P25
Elimination and discharge	Constipation	43	24.6	18.5 - 31.8	↓ P25
Health promotion	Riskprone Health Behavior	39	22.3	16.5 - 29.8	↓ P25
Safety/Protection	Risk for Impaired Oral Mucosa	32	18.3	13.1 - 25.0	↓ P25

Table 4. Distribution of the 39 defining characteristics and 46 related factors of the nursing diagnoses proposed for hypertensive and diabetic clients. Minas Gerais Brazil, 2016

Nursing Diagnoses	Defining Characteristics / Related Factors	*n*	%	CI (95%)
Ineffective Health Control	**Defining Characteristics**			
	1. Difficulty with prescribed regimen	144	82.3	75.6 - 87.5
	2. Failure to include treatment regimen in daily living	173	98.9	95.5 - 99.8
	3. Ineffective choices in daily living for meeting health goals	173	98.9	95.5 - 99.8
	4. Failure to take action to reduce risk factors	163	93.1	88.1 - 96.2
	Related Factors			
	1. Perceived severity	144	82.3	75.6 - 87.5
	2. Insufficient knowledge of therapeutic regimen	144	82.3	75.6 - 87.5
	3. Perceived barrier	158	90.3	84.7 - 94.1
	4. Inadequate number of evidence of action	137	78.3	71.3 - 84.0
Ineffective Peripheral Tissue Perfusion	**Defining Characteristics**			
	5. Altered skin characteristics	137	78.3	71.3 - 84.0
	6. End pain	92	52.6	44.9 - 60.1
	7. Edema	69	39.4	32.2 - 47.1
	8. Altered motor function	59	33.7	26.9 - 41.3
	Related Factors			
	5. Poor knowledge: disease process/ 6. aggravating factors	158	90.3	84.7 - 94.1
	7.Diabetes mellitus / 8. Hypertension	175	100.0	96.4 - 100
	9. Sedentary lifestyle	130	74.3	67.0 - 80.4
	10. Smoking	17	9.7	5.9 - 15.3
Sedentary Lifestyle	**Defining Characteristics**			
	9. Lack of physical conditioning	130	74.3	67.0 - 80.4
	10. Daily physical activity lower than recommended	129	73.7	66.4 - 79.9
	Related Factors			
	11. Poor knowledge	144	82.3	75.6 - 87.5
	12. Insufficient motivation, interest and resources	92	52.6	44.9 - 60.1
Readiness for Enhanced Coping	**Defining Characteristics**			
	11. Expresses desire to improve the use of emotion-oriented strategies	98	56.0	48.3 - 63.4
	12. Expresses desire to improve the use of problem-oriented strategies	95	54.3	46.6 - 61.8
Obesity	**Defining Characteristics**			
	13. BMI above 30 kg/m^2	95	54.3	46.6 - 61.8
	Related Factors			
	13. Daily physical activity lower than recommended	130	74.3	67.0 - 80.4
	14. Inadequate eating behaviors	92	52.6	44.9 - 60.1
	15. Reduced sleep time	90	51.4	43.8 - 59.0
Insomnia	**Defining Characteristics**			
	14. Change in sleep pattern / 15. Dissatisfaction with sleep	90	51.4	43.8 - 59.0
	16. Sleep disorder that have consequences the other day	59	33.7	26.9 - 41.3
	17. Insufficient power	59	33.7	26.9 - 41.3
	Related Factors			
	16. Anxiety	52	29.7	23.2 - 37.2
	17.Depression	12	6.9	3.8 - 11.9
	18. Average physical activity lower than recommended	137	78.3	71.3 - 84.0

Table 4. Distribution of the 39 defining characteristics and 46 related factors of the nursing diagnoses proposed for hypertensive and diabetic clients. Minas Gerais Brazil, 2016. (Cont.)

Nursing Diagnoses	Defining Characteristics / Related Factors	*n*	%	CI (95%)
Excessive Liquid Volume	**Defining Characteristics**			
	18. Alteração na pressão sanguínea	90	51.4	43.8 - 59.0
	19. Dyspnea	32	18.3	13.1 - 25.0
	20.Edema	69	39.4	32.2 - 47.1
	Related Factors			
	19. Impaired regulatory mechanism	69	39.4	32.2 - 47.1
Fatigue	**Defining Characteristics**			
	21. Tiredness	59	33.7	26.9 - 41.3
	22. Inability to maintain the usual level of physical activity / 23. Insufficient power	43	24.6	18.5 - 31.8
	24. Non-restorative sleep pattern	59	33.7	26.9 - 41.3
	Related Factors			
	20. Anxiety	52	29.7	23.2 - 37.2
	21. Stressors	92	52.6	44.9 - 60.1
	22. Sleep deprivation	95	54.3	46.6 - 61.8
Chronic pain	**Defining Characteristics**			
	25. Change in ability to continue previous activities	20	11.4	7.3 - 17.3
	26. Self-reported pain	59	33.7	26.9 - 41.3
	27. Sleep deprivation	95	54.3	46.6 - 61.8
	Related Factors			
	23. Change in sleep pattern	95	54.3	46.6 - 61.8
	24. Fatigue	59	33.7	26.9 - 41.3
	25. Injurious agent	12	6.9	3.8 - 11.9
	26. Age over 50 years	150	85.7	81.9 - 92.9
Impaired Physical Mobility	**Defining Characteristics**			
	28. Dyspnea on exertion	32	18.3	13.1 - 25.0
	29. Postural Instability	9	5.1	2.5 - 9.8
	30. Reduction in gross and fine motor skills	49	28.0	21.6 - 35.4
	Related Factors			
	27.Pain	59	33.7	26.9 - 41.3
	28. Sedentary lifestyle	130	74.3	67.0 - 80.4
	29. Anxiety	52	29.7	23.2 - 37.2
	30. Decreased muscle strength	9	5.1	2.5 - 9.8
Anxiety	**Defining Characteristics**			
	31. Insomnia	90	51.4	43.2 - 65.9
	32. Fatigue / 33. Insufficient power / 34. Tiredness	59	33.7	26.9 - 41.3
	35. Increased blood pressure	90	51.4	43.2 - 65.9
	Related Factors			
	31. Stressors	92	52.6	44.9 - 60.1
	32. Unmet needs	90	51.4	43.2 - 65.9
Overweight	**Defining Characteristics**			
	36. BMI above 25 kg/m^2	51	29.1	22.7 - 36.6
	Related Factors			
	33. Average physical activity lower than recommended	137	78.3	71.3 - 84.0
	34. Inadequate eating behaviors	92	52.6	44.9 - 60.1
	35. Reduced sleep time	90	51.4	43.2 - 65.9

Table 4. Distribution of the 39 defining characteristics and 46 related factors of the nursing diagnoses proposed for hypertensive and diabetic clients. Minas Gerais Brazil, 2016. (Cont.)

Nursing Diagnoses	Defining Characteristics / Related Factors	*n*	%	CI (95%)
Constipation	**Defining Characteristics**			
	37. Change in Intestinal Pattern / 35. Reduction: Stool frequency / 36. Stool Volume Reduction	43	24.6	18.5 - 31.8
	Related Factors			
	36. Average physical activity lower than recommended	137	78.3	67.0 - 80.4
	37. Electrolyte imbalance	43	24.6	18.5 - 31.8
	38. Obesity / 39. Inadequate eating habits	95	54.3	46.6 - 61.8
	40. Pharmacological agents	59	33.7	26.9 - 41.3
	41. Insufficient Ingestion: Fibers / 42. Inadequate intake: liquids / 43. Decreased gastrointestinal mobility	43	24.6	18.5 - 31.8
Riskprone Health Behavior	**Defining Characteristics**			
	38. Failure to take action to prevent health problems	39	22.3	12.6 - 41.6
	39. Failure to achieve optimal sense of control	39	22.3	12.6 - 41.6
	Related Factors			
	44. Substance abuse / 45. Economic disadvantage	30	17.1	12.0 - 23.7
	46. Smoking / 47. Negative attitude related to health care	17	9.7	5.9 - 15.3
	48. Inadequate understanding / 49. Low self-efficacy	32	18.3	13.1 - 25.0

Table 5. Distribution of risk diagnoses and the 62 risk factors of hypertensive and diabetic clients. Minas Gerais Brazil, 2016

Nursing Diagnoses	Risk factors	*n*	%	CI (95%)
Risk for Ineffective Gastrointestinal Perfusion	1. Diabetes mellitus	175	100	96.4 - 100
	2. Female gender	117	66.9	59.3 - 73.7
	3. Smoking	17	9.7	5.9 - 15.3
	4. Age greater than 60 years	102	58.3	50.6 - 65.6
Risk for Ineffective Renal Perfusion	5. Diabetes mellitus / 6. Hypertension	175	100	96.4 - 100
	7. Female gender	117	66.9	59.3 - 73.7
	8. Smoking	17	9.7	5.9 - 15.3
	9. Age greater than 60 years	102	58.3	50.6 - 65.6
Risk for decreased cardiac tissue perfusion	10. Diabetes mellitus/ 11. Hypertension	175	100	96.4 - 100
	12. Obesity	95	54.3	46.6 - 61.8
	13. Sedentary lifestyle	130	74.3	67.0 - 80.4
	14. Smoking	17	9.7	5.9 - 15.3
	15. Cardiovascular surgery	19	10.8	6.8 - 16.7
Risk for Ineffective Peripheral Tissue Perfusion	16. Insufficient knowledge of the disease process	144	82.3	75.6 - 87.5
	17. Diabetes mellitus/18. Hypertension	175	100	96.4 - 100
	19. Sedentary lifestyle	130	74.3	67.0 - 80.4
	20. Smoking	17	9.7	5.9 - 15.3
Risk for Impaired Cardiovascular Function	21. Diabetes mellitus / 22. Hypertension	175	100	96.4 - 100
	23. Sedentary lifestyle	130	74.3	67.0 - 80.4
	24. History of cardiovascular disease	35	20.0	14.5 - 26.9
	25. Family history of cardiovascular disease	92	52.6	44.9 - 60.1
	26. Age greater than or equal to 66 years	78	44.6	37.1 - 52.3
	27. Obesity	95	54.3	46.6 - 61.8
	28. Smoking	17	9.7	5.9 - 15.3

Table 5. Distribution of risk diagnoses and the 62 risk factors of hypertensive and diabetic clients. Minas Gerais Brazil, 2016. (Cont.)

Nursing Diagnoses	Risk factors	*n*	%	CI (95%)
Risk for Unstable Blood Glucose Levels	29. Average physical activity lower than recommended	137	78.3	71.3 - 84.0
	30. Excessive weight gain /	144	82.3	75.6 - 87.5
	31. Insufficient knowledge of disease control	144	82.3	75.6 - 87.5
	32. Ineffective drug control	158	90.3	84.7 - 94.1
	33. Insufficient diabetes control	162	92.6	87.4 - 95.8
	34. Lack of acceptance of diagnosis	12	6.9	3.8 - 11.9
Risk for Constipation	35. Average physical activity lower than re commended	137	78.3	71.3 - 84.0
	36. Sedentary lifestyle	130	74.3	67.0 - 80.4
	37. Pharmacological agents	59	33.7	26.9 - 41.3
Risk for Activity Intolerance	38. Lack of conditioning	130	74.3	67.0 - 80.4
	39. Circulatory problem	137	78.3	71.3 - 84.0
Risk for Impaired Skin Integrity	40. Age extremes	78	44.6	37.1 - 52.3
	41. Inadequate moisture / 42. Change in skin turgor	92	52.6	44.9 - 60.1
	43. Moisture	78	44.6	37.1 - 52.3
	44. Edema	69	39.4	32.2 - 47.1
Risk for Falls	45. Age greater than or equal to 66 years	78	44.6	37.1 - 52.3
	46. Living alone	9	5.1	2.5 - 9.8
	47. Use of auxiliary devices	12	6.9	3.8 - 11.9
	48. Alcohol consumption	30	17.1	12.0 - 23.7
	49. Change in blood glucose level	89	50.9	43.2 - 58.4
Risk for Impaired Oral Mucosa	50. Inadequate Oral Hygiene	24	13.7	9.2 - 19.9
	51. Smoking	17	9.7	5.9 - 15.3
	52. Alcohol consumption	30	17.1	12.0 - 23.7
Risk for Pressure Ulcer	53. Self-care deficit	15	8.6	5.9 - 14.0
	54. Cardiovascular disease	35	20.0	14.5 - 26.9
	55. Edema	69	39.4	32.2 - 47.1
	56. Age extremes / 57. Skin moisture	78	44.6	37.1 - 52.3
	58. Weight extremes	95	54.3	46.6 - 61.8
	59. Female gender	117	66.9	59.3 - 73.7
	60. Dry skin	92	52.6	44.9 - 60.1
	61. Decreased mobility	57	32.6	25.8 - 40.1
	62. Smoking	17	9.7	5.9 - 15.3

Discussion

A person's life habits, beliefs and values characterize the way the individual identifies themselves within the social world. Such attitudes are corroborated by socioeconomic and political factors that interfere with the environment, behavior and biology of these individuals, influencing the health-illness process and, consequently, their disposition, safety, independence and quality of life.(1) These environmental/cultural/social/historical determinants influence inexorably in the daily lives of people with chronic diseases, such as hypertensive and diabetic patients.(1,5) Therefore, they need care and follow-up provided by the health services in order to have a better quality of life.

The analysis of the data revealed that the majority of the interviewed population were female, married, had some religious practice, incomplete elementary education and average age of 62.1 years, did not live alone and had retirement or pension as the main source of income. This reflects the reality of low- and middle-income populations around the world as they are most affected by chronic diseases and their complications. The percentage of elderly people living with their children continues to be high, even with the increase in longevity, which corroborates the research carried out with elderly people assisted by the Family Health Strategy of a municipality in Minas Gerais, Brazil.(5) In relation to ethnicity, the white color predominated, as opposed to other studies that indicate a higher prevalence of chronic auto-referred diseases in black people when compared to white.(6) The baseline diseases studied, hypertension and diabetes mellitus, had a significant mean time of diagnosis, being 17.8 years for hypertension and 10.8 years for diabetes. This data shows that in the majority of clients interviewed, hypertension evolved with a prognosis for diabetes. From the epidemiological point of view, hypertension is considered three times more frequent in diabetics than in the general population. In type 2 diabetics, about 40% have already been hypertensive at the time of diagnosis.(1,5,6)

However, despite the respective periods with the diseases, a considerable number of participants presented deficient knowledge about the meaning of the diseases, their complications, prognosis and treatment, mainly related to the use of insulin. The lack of information becomes an obstacle to user empowerment and to adherence to treatment. Hypertensive and diabetic patients are known have chronic conditions that require continuous nursing care in order to prevent complications from diseases. Health care priorities are defined in an equitable manner, according to the degree of risk they present, and high risk, observed in 71.4% of the participants, corresponds to the population that demands greater attention. In view of the above, nurses should improve their practices, based on scientific evidence for decision making, which requires that nursing care is based on nursing diagnoses in order to prevent complications that affect quality of life of the hypertensive and diabetic individual in a general manner. This study identified a total of 26 different nursing diagnoses, 13 problem-focused diagnoses, 12 risk diagnoses and one diagnosis of health promotion, presenting an average of 16 diagnoses per client, 24 defining characteristics, 28 related factors and 38 risk factors.

The quantity and multiplicity of NDs detected in this study indicate that nursing professionals need to develop individualized interventions, always aiming at the humanization of health actions, the respect for the dignity and the comprehensiveness of the citizen, also assuming a dialogical interaction, respecting the needs and fears of expressing the aspirations lived by each person. This profile of nursing diagnoses was relevant since, in the planning of nursing care, the initial care to the problem-focused diagnoses should be prioritized. These diagnoses are the human responses to health conditions and preventive interventions must be implemented jointly for the risk diagnoses.(10,11) Five risk diagnoses were present in all hypertensive and diabetic subjects interviewed (“Risk for Ineffective Gastrointestinal Perfusion”, “Risk for Ineffective Renal Perfusion”, “Risk for Decreased Cardiac Tissue Perfusion”, “Risk for Ineffective Peripheral Tissue Perfusion”, “Risk for Impaired Cardiovascular Function”), and other five diagnoses (“Risk for Unstable Blood Glucose Levels”, “Risk for Constipation”, “ Risk for Activity Intolerance”, “Risk for Impaired Skin Integrity” and “Risk for Falls”) score above the 50th percentile. Given this finding, nursing care planning should be performed in a way to make a control of risks, with the goal of prioritizing safety. Research performed at the PHC in Madrid, Spain, showed that clients with CNCDs had better indicators of control of their condition in health units where nurses used the nursing process compared to clients accompanied by nurses who do not use NP.(11)

With regard to nursing diagnoses, studies involving diagnoses profile in specific clinical circumstances and those related to validation and diagnostic accuracy have helped in the process of diagnostic inference, making clinical practice more safe and effective.(7) In this research, the defining characteristics ‘’Failure to include treatment regimen in daily living’’ and ‘’Ineffective choices in daily living for meeting health goals’’ of the nursing diagnosis ''Ineffective Health Control'' were the most observed among participants. Data from the literature show that long-term or chronic treatments generally have less adherence, since therapeutic regimens require discipline and a great commitment of the client who, at times, needs to modify their habits of life to fulfill their treatment.(1,5) For this reason, hypertensive and diabetic patients must have adequate answers to their doubts regarding the management of chronic diseases, such as care related to specific use of medications, the search for adequate diet, physical activity, among others. This will provide greater credibility around health professionals and therefore provide customers with real and individualized parameters for their self-care.(4,5)

The diagnosis "Ineffective Peripheral Tissue Perfusion", referring to the reduction of blood circulation to the periphery, which can compromise health(8) due to "altered skin characteristics", score above the 75th percentile. Poor knowledge about the disease process, sedentary lifestyle and self-reported smoking are relevant variables that influenced ineffective peripheral perfusion, corroborating with the literature.(1,7) The diagnostic title "Sedentary Lifestyle", evidenced in the majority of the participants, refers to a habit of life characterized by a low level of physical activity.(8) In a study on the review of the nursing diagnosis ''Sedentary lifestyle'' in hypertensive patients, the defining characteristics of ''Choice of a daily routine without physical exercises'' and ''Lack of physical conditioning'' were the main ones of this diagnosis, according to a conceptual analysis performed by the authors.(26) Many studies have shown that lifestyle modification in people with chronic conditions, besides contributing to the improvement of indicators of clinical control of diseases, significantly reduces drug consumption and, consequently, financial costs with drugs.(1,4,6)

The nursing diagnosis with potential for health promotion "Readiness for enhanced coping", which refers to the pattern of behavioral and cognitive efforts to address demands for well-being and that can be strengthened (8) was observed in 56.0% of the studied public. 60.57% of respondents are optimistic about their treatment and although 74.3% are sedentary, 82.8% believe that physical exercise is paramount for their health and for the control of chronic diseases diagnosed. This is contrary to the literature, since this diagnosis has not been verified in other studies with hypertensive and/or diabetic patients. In a considerable number of patients (54.2%), the diagnosis "Obesity" was identified, a condition in which the individual accumulates abnormal or excessive fat for their age and sex, which exceeds overweight.(8) Obesity has been considered a serious public health problem, reaching ever higher levels among the elderly in Brazil and in the world.(1,5) Faced with this reality, nurses should encourage changes to promote a healthier lifestyle, including helping users overcome obstacles related to dietary changes, regular physical exercise and use of community support devices.

The diagnosis "Insomnia", considered as a disturbance in the quantity and quality of sleep that impairs functioning,(8) was present in 51.4% of the participants. The defining characteristics associated to the definition of this diagnosis include "dissatisfaction with sleep", "anxiety" and "sedentary lifestyle". Impaired sleep increases blood pressure, increases appetite and may compromise insulin sensitivity, as well as being associated with the incidence of diabetes.(1,2) Insomnia is more frequent from middle age, as in the population of this study. This fact has been proven by other studies.(5,10)

In view of the above, when providing care for chronically ill users, nurses should adopt a flexible, individualized approach adjusted to the different stages of the disease, to the needs and interests of each individual, and appropriate to the cultural environment where care is provided. One of the most important aspects for the control of chronic diseases is the therapeutic adherence, since non-compliance or lack of adherence to treatment is considered the main cause of difficulty in the control of chronic diseases.(1,5) A research has showed that nurses who use the nursing process in PHC presented greater coverage in all health promotion services and risk and injury prevention, better indicators of control of the patient's health condition and consequently less expenditures on the consumption of medicines, when compared to nurses who planned and executed their interventions without the aid of the nursing process.(11)

These results allow concluding that establishing the profile of hypertensive and diabetic people assisted in PHC is necessary to propose care actions specific to this clientele, considering their limitations and possibilities in coping with the disease. Health education actions carried out in the basic health units environment and focused on the profile of this clientele are crucial and may favor changes in behaviors in the hypertensive and diabetic person. In the present study, 26 NDs were identified, according to NANDA-I, and 16 diagnoses above the 50th percentile were found and discussed in greater depth. The largest number of NDs was identified in the domain activity/rest. Risk diagnoses had an expressive frequency, corroborating the risk classification of these users in the Hiperdia program, in which the great majority of the participants in this study were considered to be at high risk for the development of cardiovascular diseases and complications associated with hypertension and diabetes.

The objective outlined for this study was reached; however, a limiting factor in this study was the fact that it was performed only with the research and diagnosis stages of the nursing process. Thus, further studies that contemplate all stages of the nursing process should be carries out aiming at developing accuracy, validation, results and intervention studies involving the main diagnoses found in this study in order to confirm the findings and cooperate with the choice of the defining characteristics and related factors that actually represent the conditions of the hypertensive and diabetic client.

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Validity and Reliability of the Spanish Version of the Technological Competency as Caring in Nursing Instrument

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Validity and Reliability of the Spanish Version of the Technological Competency as Caring in Nursing Instrument

Objective. This work aimed to evaluate validity and reliability to measure the technological competency of Nursing in Colombia of the Spanish version of the Technological Competency as Caring in Nursing Instrument (TCCNI). **Methods.** This was a test validation study, which evaluated linguistic, facial, content, and construct validity, besides, the instrument's reliability. **Results.** The instrument reported face validity with Lawshe's index: clarity 0.86, precision 0.83, and comprehension 0.89. Agreement of Fleiss' kappa index was clarity 0.75, precision 0.72, and comprehension 0.81. Content validity was obtained with Lawshe's index: relevance of 0.9 and pertinence of 0.9. Agreement of experts with Fleiss' kappa index was relevance at 0.9 and pertinence at 0.9. For construct validity, 255 nurses participated. Factor analysis generated six factors (Knowing is Caring, Professional and Disciplinary Values of Nursing, Care and Ethics, Technological Competency, Healing and Human Care), which yielded a total accumulated variance of 54.2% and Cronbach's alpha of 0.88. **Conclusion.** The TCCNI Spanish version reported a consolidated validity, becoming a viable and reliable instrument to measure the technological competency of Nursing in Colombia.

Descriptors: validation studies; models, nursing; professional competence; nurses.

Validez y confiabilidad de la versión en español del Technological Competency as Caring in Nursing Instrument

Objetivo. Evaluar la validez y la confiabilidad para la medición de la competencia tecnológica de Enfermería en Colombia de la versión en español del Technological Competency As Caring In Nursing Instrument (TCCNI). **Métodos.** Estudio de validación de pruebas en el que se evaluó la validez lingüística, facial, de contenido y de constructo; además, la confiabilidad del instrumento. **Resultados.** El instrumento reportó una validez facial

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con índice de Lawshe de: claridad 0.86, precisión 0.83 y comprensión 0.89. La concordancia del índice de Kappa de Fleiss fue de: claridad 0.75; precisión 0.72 y comprensión 0.81. La validez de contenido obtuvo con el índice de Lawshe: relevancia de 0.9 y pertinencia de 0.9. La concordancia de los expertos con el índice de Kappa Fleiss fue de: relevancia 0.9 y pertinencia de 0.9. Para la validez de constructo participaron 255 enfermeras. El análisis de factorial generó seis factores (Conocer es Cuidar, Valores Profesionales y disciplinares de enfermería, Cuidado y Ética, Competencia Tecnológica, Sanación y Cuidado Humano), para lo cual se obtuvo una varianza acumulada total de 54.2%. A su vez, arrojó un alfa de Cronbach de 0.88. **Conclusión.** La versión en español del instrumento TCCNI reportó una validez consolidada constituyéndose en un instrumento viable y confiable para la medición de la competencia tecnológica de Enfermería en Colombia.

Descriptores: estudios de validación; modelos de enfermería; competencia profesional; enfermeros.

Validez e confiabilidade da versão em espanhol de Technological Competency as Caring in Nursing Instrument

Objetivo. Avaliar a validez e a confiabilidade para a medição da competência tecnológica da Enfermagem na Colômbia da versão em espanhol de Technological Competency As Caring In Nursing Instrument (TCCNI). **Métodos.** Estudo de validação de provas na qual se avaliou a validez linguística, facial, de conteúdo e de construto; ademais, a confiabilidade do instrumento. **Resultados.** O instrumento reportou uma validez facial com índice de Lawshe de: claridade 0.86, precisão 0.83 e compreensão 0.89. A concordância do índice de Kappa de Fleiss foi de: claridade 0.75; precisão 0.72 e compreensão 0.81. A validez de conteúdo obteve com o índice de Lawshe: relevância de 0.9 e pertinência de 0.9. A concordância dos especialistas com o índice de Kappa Fleiss foi de: relevância 0.9 e pertinência de 0.9. Para a validez de construto participaram 255 enfermeiras. A análise de fatorial gerou seis fatores (Conhecer é Cuidar, Valores Profissionais e disciplinares de enfermagem, Cuidado e Ética, Competência Tecnológica, Cura e Cuidado Humano), para o qual se obteve uma variável acumulada total de 54.2%. Por sua vez, mostrou um alfa de Cronbach de 0.88. **Conclusão.** A versão em espanhol de instrumento TCCNI reportou uma validez consolidada constituindo-se num instrumento viável e confiável para a medição da competência tecnológica da Enfermagem na Colômbia.

Descritores: estudos de validação; modelos de enfermagem; competência profissional; enfermeiras e enfermeiros.

Introduction

Throughout history, humans have developed and evolutions their way of living from different dimensions that characterize the past holistic beings, among these is the overwhelming and incredible capacity to create and innovate their lifestyle, by inventing new artifacts, improving these, and through technological progress that improve their comfort and offer well-being. Nevertheless, this human conduct has been at the forefront of effectively responding to those needs and problems that affect humanity, as well as diseases, from the development and improvement of medications, treatments, artifacts, and clinical services. This technological progress in health has created highly technical and developed environments to provide effective optimal intervention from the health staff, especially from nursing, on the use and handling of technology to care for life and human health.

By the mid-1970s, hospital institutions began to develop and create higher quality care models, with the aid of better equipment and from the technological progress to offer better services to patients and their families. Then, questions emerged on the sense and meaning assigned to technology in the professional care nursing provides to its patients. This led to reflecting on whether technology is becoming a barrier that distances and displaces personal and human contact between nursing professionals and their patients, or if the distancing and division is not technology itself; rather, the sense humans have of detracting from the reason said technology was created, in the first place, as a tool and aid to express their care with a high degree of quality and humanization and, in the second place, to recognize patients as humans just as the nursing professionals, who expect dignified treatment.(1) Quite often, technology has been considered contrary to caring, that is, technology as a factor that isolates personal and human contact between nursing professionals and their patients, considered dichotomous. Due to user manifestations on healthcare services on dehumanization, in recent years, it has become relevant to discuss on humanization, defined as the "conduct and actions in thoughtful, emotional, and existential manner that differentiates it from other species, being an action inherent to human behavior",(2) and dehumanization as every physical or verbal action that generates harm or abuse from one person over another.

Some predecessors to the study of human care in nursing include Jean Watson with the theory of human care(3) and Anne Boykin and Savina Schoenhofer with the theory of nursing con la Theory of Nursing as Caring in a kind, human and warm manner. (4) Regarding the construct of Technology and Care, it has been defined by authors like Marilyn Anne Ray,(5) who published the theory of Technological Care, and Margarete Sandelowski with the theory of Dependence on Technology.(6) These proposals were the foundation for the midrange theory Technological Competency as Caring in Nursing (TCCN) by Rozzano Locsin,(7) as well as Heidegger's philosophical thoughts that defined technology:(8) "technology is seen as a means to an end and as a human activity" and Peck's:(9) "technology for nursing is the instrument to know about fully in the patient's well-being". These statements highlight that technology is an activity created by man and designed as a tool for the modern development of humans; additionally, the study of technology in relation to nursing care defines technology as an expression of nursing. Locsin proposes that the technological competency of Nursing is a skill and expertise to offer care, within a context that permits knowing patients integrally and achieving their recovery and healing under the premise of a harmonious coexistence between technology and care.(7)

The TCCN is a relatively new theory, as well as the Technological Competency as Caring in Nursing Instrument (TCCNI).(10) Its development began in 1999 when Dr. Locsin created the instrument from the theory of Technological Caring by Dr. Ray: Technological Caring Instrument (TCI),(11) applied to hospitalization nurses (in critical and noncritical areas), which permitted designing and elaborating her first version of the instruments in its TCCNI theory with 30 items in 2010. This version was subjected to content validity with 13 experts related to and familiarized with the theory and practice, among which there were five theorists with over 20 years dedicated to nursing in education, practice, and research, and eight expert nurses women average of 15 years of practice experience in different specializations in the United States. The TCCNI was adapted to one electronic formats in an analog visual scale through linear graphics, where the left extreme of the line corresponds to totally disagree and the far right to totally agree. This research was adapted to Likert-type response options (totally disagree, disagree, agree, and totally agree) with prior authorization from the author. The results yielded a version of 25 items that was the basis of our study.(10) According to email communication with the author on 22 August 2012, this version is applicable to nursing professionals to evaluate their competency and to users as an indicator of nursing care. The dimensions in which the instrument was originally postulated were based by the author on the TCCNI theoretical assumptions, which prior to the study were: D1-Knowing people/patients = items 4, 5, 7, 8, 9, 15, and 19; D2-Technological competency = items 13, 22, 23, 24, and 25; D3-Nursing as a discipline and profession = items 2, 6, 12, 17, and 21; D4- Nursing care = items 10, 11, and 14; and D5- People as participants in their care = items 1, 3, 18, 20 y 16) . The objective of this study was to evaluate the validity and reliability of the Spanish version of the Technological Competency as Caring in Nursing Instrument (TCCNI).

Methods

An observational, quantitative, test validation, psychometrics-type study was conducted between

2012 and 2014 with a population mainly from Bogotá; however, data collection was extended to cities, like Medellín and Cali.

Linguistic validity. For this validity, the study selected two official American English language translators from the Colombian Ministry of Foreign Relations and Justice. In addition, two nursing professionals were selected who spoke American English and had knowledge of the TCCN theory and who had professional experience in technological and labor environments in the United States and Canada, which permitted contextualizing the technical language and that of the profession. Further, expert assessment was made of the quality of the English to Spanish translation with a linguist familiarized with medical terminology. Lastly, a third official translator re-translated the instrument. This last version was carried out after approval by the expert evaluators in the face and content validity and, finally, with approval from the instrument's author.

Face validity. Two groups were established: the first, to see the behavior of the instrument and evaluate the need to make adjustments in semantics and ease of reading. This group comprised 17 nursing professionals who coordinated different hospital care services and who had been contacted via email. The second group was a panel of experts, selected with the profile of specialists and knowledgeable of technological services, nurses with at least five years of teaching experience and work experience in clinical service over 10 years. Contact was made through email, which contained the invitation to participate in the study, the justification, the objective, and study instrument to evaluate. The invitation was sent to 20 experts of which only 10 accepted to participate. The experts scored each item (0 = does not comply and 1 = complies) from three criteria: Comprehension, Clarity, and Precision. Furthermore, they made their respective observations and recommendations. With the results from this phase, Lawshe's modified content validity index(12) was determined to define inter-observer agreement among judges with Fleiss' kappa index.(13)

Content validity. This phase had the participation of the 10 experts who conducted the instrument's face validity. An evaluation was requested of each item under the criteria of Pertinence and Relevance, and each of the scored, as mentioned by Denise Polit (14) with 0 = Not pertinent/relevant, 1 = Poorly pertinent/relevant, and 2 = Pertinent or relevant. Analysis of the data obtained was verified with Lawshe's modified content validity index; to determine inter-observer agreement among judges, the study used Fleiss' kappa index.(13)

Construct validity. This phase permitted measuring the instrument in the object population of nursing professionals from hospitalization areas. Sample determination was based on the classical instrument validity theory according to Henson and Roberts (15) and Beavers,(16) who propose 10 subjects per variable. According to this, the option was a calculated sample of 250 participants (n = 25 items times 10 participants) and 255 nurses participated. The information obtained was tested for factor analysis of principal components extraction and the Varimax rotation method with Káiser-Meyer-Olkin and Barlett's sphericity test.

Evaluation of reliability. The internal consistency of the instrument was evaluated with Cronbach's alpha coefficient.

Techniques and information collection. The invitation to participate in the study was sent via email, after selecting the nursing professionals who complied with the following inclusion criteria: working in services (surgery, recovery, hemodynamics, renal units, adult intensive care, emergency, cardiac rehabilitation, and hospitalization) or studying in any graduate program (emphasis in cardiovascular, critical care, cardiac rehabilitation, nephrology, emergency, perfusion or cardiorespiratory surgery); or with knowledge, experience, and studies in managing technological machines (training, courses, specializations), and with at least one year working in services. Exclusion criteria involved nursing professionals who worked in administrative areas, public health, epidemiology, and teaching. The study sought nursing professionals from Bogotá and from other cities in Colombia to broaden the context of the instrument and not limit it to the country's capital.

Ethical considerations. The study considered Resolution 8430 of 1993 and Legislation 911 of 2004, chapter IV, articles 29, 30, and 34 of the Republic of Colombia. This research was approved by the Ethics Committee of the Faculty of Nursing at Universidad Nacional de Colombia. All the phases had informed signed consent from the participants, after receiving explanations on the nature of the study.

Results

Linguistic validity. It was found that in items 2 and 7 of the original instrument in English there was no clarity in the sense of the words "What" and "Who". Through the accompaniment of the instrument's author it was clarified that the words asked, "what is" and "who is" the person. Item 3 conducted an exhaustive consensus with the experts regarding the discussion on the Word curing or healing, contextualizing it in everyday professional language in nursing; and the term saving the patient, whose sense in item 3 is: increases their self-sense, to finally write this item as: "the purpose of nursing is healing – saving lives and increasing self-sense". The rest of the items presented favorable acceptance by the translators, experts, and the linguist.

Face validity. Bearing in mind that Lawshe's modified content validity index must be above 0.5823, this criterion was fulfilled in most of the items with clarity of 0.86, precision of 0.83, and comprehension of 0.89. The agreement of Fleiss' kappa index showed substantial agreement in clarity and precision (0.75 and 0.72, respectively) and almost perfect agreement in comprehension (0.81). Inter-observer agreement evaluated with Fleiss' kappa index coefficient had a global average of 0.8, with this result being highly satisfactory.

Content validity. Lawshe's modified content validity index of the criterion of Pertinence was 0.9, being a high degree of agreement among experts and in the criterion of relevance of 0.9, considered a highly important result. Expert evaluation of the concordance performed through Fleiss' kappa index obtained 0.82 in the criterion of relevance and 0.82 in the criterion of pertinence, which indicates high acceptability in coherence and concordance, being almost perfect in the evaluation of the Spanish version TCCNI. Additionally, the work considered the recommendations and qualitative observations of experts of the items to draft the final version of the instrument.

Construct validity. This phase reports the data from the 255 participating nursing professionals of which 189 participated in person and grouped according to the institution and area of service. These participants were briefed about the research and voluntarily accepted to participate in it. Regarding the virtual participation, the instrument was created online with the google questionnaire form comprising: invitation, research presentation, informed consent, and instrument. The online invitation was sent via email, having previously selected those who complied with the criteria established for this research. Of the 115 email invitations, only 66 participated by answering the questionnaire; of the total participants, in the professional profile 93.3% were females; 65.1% of the participants had only undergraduate education, and most were assigned to high-technology services, like cardiology, obstetrics gynecology, hemodynamics, hospitalization, oncology, surgery and recovery wards, renal unit and dialysis, intensive and intermediate care unit, and emergency (Table 1).

Table 1. Sociodemographic characteristics of the 255 participants

Characteristic	*n*	%
Gender		
Female	238	93.3
Male	17	6.7
Residence		
Bogotá	243	95.2
Medellín	7	2.7
Cali	5	2.0
Formation		
Undergraduate	166	65.1
Graduate	89	34.9
Form of participation		
In person	189	74.1
Virtual	66	25.9
Service		
Cardiology	17	6.6
Obstetrics gynecology	10	3.9
Hemodynamics	17	6.6
Hospitalization	54	21.2
Oncology	5	2.0
Surgery and recovery wards	36	14.1
Renal unit and dialysis	8	3.1
Intensive and Intermediate Care Unit	63	24.7
Emergency	45	17.6

Factor analysis. The factor analysis with the extraction method was used, along with principal components and Varimax rotation. Prior to the factor analysis, adequacy indicators were obtained of the items to the factor analysis. The Káiser-Meyer-Olkin sample adequacy measurement was 0.85, proving good sample adequacy paired with Barlett's sphericity test of approximate chi square of 1840.58. Anti-image matricity in extraction by the principal components method and Varimax rotation method permitted generating six factors that had a total accumulated variance of 54.16%. Table 2 shows the explained variance of each item per component.

Table 2. Rotated components matrix of the 25 items from the TCCNI Spanish version

Item	Component					
	1	2	3	4	5	6
P01	0.214	-0.035	0.203	0.039	-0.021	**0.588**
P02	-0.002	-0.149	0.048	**0.733**	0.102	-0.022
P03	0.059	0.086	-0.001	0.164	**0.716**	0.197
P04	**0.470**	0.260	0.196	0.025	0.075	0.244
P05	0.049	0.201	0.110	0.020	0.323	**0.677**
P06	0.374	0.061	0.067	0.295	**0.394**	0.331
P07	**0.468**	0.397	-0.031	-0.011	0.144	0.295
P08	0.097	0.252	**0.577**	0.187	-0.193	0.276
P09	0.019	0.516	**0.546**	0.134	0.022	0.044
P10	0.307	**0.604**	0.033	0.051	-0.173	-0.031
P11	0.098	**0.677**	0.086	0.086	0.207	0.249
P12	**0.615**	0.150	0.159	-0.016	-0.075	0.155
P13	0.229	0.336	0.141	**0.348**	-0.236	0.174
P14	0.342	**0.505**	0.310	0.033	0.015	-0.351
P15	**0.634**	0.270	0.091	0.126	0.117	0.041
P16	0.370	**0.486**	0.285	0.197	0.182	-0.004
P17	0.161	0.192	**0.735**	0.013	0.116	0.168
P18	0.364	-0.190	**0.677**	0.059	0.105	0.029
P19	0.314	0.373	**0.434**	0.008	0.189	0.067
P20	0.402	0.037	0.370	-0.019	**0.589**	0.022
P21	**0.647**	0.217	0.151	0.165	0.022	0.096
P22	**0.701**	-0.036	0.209	0.278	0.109	-0.060
P23	0.231	0.343	0.118	**0.396**	0.309	0.164
P24	0.163	0.215	-0.069	**0.763**	0.114	0.046
P25	0.163	0.238	0.322	**0.572**	-0.182	0.012

Through the variance report with the Varimax Rotation Standardization method with Kaiser, it was possible to identify six components of the instrument, one more than in the instrument, selecting those items from the instrument that provide the greatest variance by component. Because these are generated in the instrument, each component or dimension is labeled, based on the assumptions and concepts of the TCCN theory (Table 3).

Reliability. The internal consistency of the TCCNI in Spanish was 0.88.

Table 3. Distribution of items from the TCCNI scale Spanish version by dimensions

Component – Label of the Dimension	Item
1_Knowing is Caring	P04. Nurses use special techniques to care for their patients. P07. Knowing the "what is" and the "who is" of a patient means recognizing the patient beyond the physical P12. Nurses must involve their patients in the design of care plans to ensure precision and integrity of their care. P15. Nurses need to practice nursing from a perspective of care in the evaluation and interpretation of data for health care P21. Nursing care occurs in shared teaching and learning situations among nurses, patients, and family members. P22. Nursing care serves to reduce vulnerability and other factors of stress/anxiety, inherent in nurse-patient relationships
2_Professional and Disciplinary Values of Nursing	P08. Nursing is a unique field of knowledge, abilities, and skills in care. P09. Care in nursing is listening to, doing with, and being with the patient. P17. Nurses relate with their patients to create a sense of protection and trust P18. Competent nurses execute and monitor their tasks and emotions and use their creativity in meeting/exceeding patients' needs. P19. Knowing the patients implies respect for the person as a total and complete being at every moment
3_Care and Ethics	P10. Nurses need to balance the demands of competent use of technological appa ratus with nursing care P11. Caring means knowing the person's physical being and their emotional conditions at a given moment P14. Nurses must respect the personal hopes of their patients and their dreams, which can change from one moment to another. P16. Nurses must value their patients as knowledgeable of themselves and of their care
4_Technological competency	P02. Technology helps nurses to know the "who is" and the "what is" of people P13. Technological competency is the skill to use apparatus from the care point of view. P23. Caring is a generous commitment with the needs of patients, their hopes, and dreams P24. As an expression of nursing care, there is technological competency, which is using many forms of knowing, so that nurses and patients can know each other. P25. Nurses use technology and human contact jointly to relate to their patients as of their authentic presence and with the intention of caring for them
5_Healing	P03. The purpose of nursing is that of curing – saving lives, and increasing self-sense. P06. Technology and care help to construct patient autonomy when used in balanced manner. P20. Competent nurses are those who anticipate the needs of patients, while respecting their beliefs focusing on healing the patient.
6_Human care	P01. Nursing, an important part of health care, centers on human care. P05. Caring is committing through compassion and physical presence; comforting and respecting the person integrally.

Discussion

The instruments, as empirical indicators of the nursing concepts and theories, are required to advance in knowledge. It is a challenge for these to be truly based on theory for which the TCCNI fulfills this criterion by being based on a series of its own theories and widely known philosophical postulates.

The methodological requirement in the language transcription from the TCCNI was an aspect worth highlighting in this study, given that recommendation by the Mapi Research Institute(17) and Jaimes *et al*.,(18) were followed. This work also received permanent accompaniment and feedback to the process from the TCCNI author, which is not always viable in instrument validation processes.

Among the words that had to be revised in the linguistic validity were Healing or Curing, rescued by Jean Watson(3) as an important result of nursing, supported principally by the spiritual component of care and which recognizes that perspective that moves away from the biomedical paradigm that had impregnated nursing in its beginnings. Likewise, it was found that the fact of "increasing self-sense" is now necessary in nursing, given that we no longer have a person traditionally recognized as a patient, rather, the act of caring is a process of interaction and nutrition between two people, coherent with that proposed by Boykin and Shoenhofer.(4) These theoretical perspectives rescue concepts that really belong to nursing that are often invisible in care, which confirms the need to rescue the theoretical disciplinary background.

The results found in face validity through the FVI are adequate according to that proposed by Tristan in the modification of Lawshe(12) of being above 0.582. In obtaining the degree through Fleiss' kappa index, the results confirm the correlation among the experts, which were finally 10, surpassing Polit's recommendation of three experts(14) and that by Tristan of a minimum of five experts.(12) The sociodemographic characteristics of the nursing professionals in this study are similar to populations in intensive care units in Brazil(19) and Colombia,(20) which indicates that these professionals require some important experience; rarely, are these people younger than 30 years of age. In addition, quite often they require formal specialized formation or technical courses.

The TCCNI is among the few found in literature that does not focus attention on the description of technology, but which harmoniously gathers the characteristics of human care and technology from skills and expertise. This may not be attractive for those seeking to measure technological behaviors and not care in technology. Due to this, it may be felt that it is viable to apply the instrument in any context that does not necessarily have high technology, but minimum technology, like a thermometer, blood pressure meter, glucometer, among others, but necessary in basic nursing care.

This instrument had no published evidence of its own dimensions. The author provided, via email, the five dimensions from the theoretical assumptions. However, based on the area with the Varimax standardization rotation method with Káiser, others were identified that may better reflect the concept of technological competency in Colombia. The dimensions were: 1_Knowing is Caring (originally called Knowing the people/patients): found in items: (4, 7, and 15) that correspond, according to Locsin, to the dimension of "knowing the people", followed by items 12 and 21 that belong to the dimension of "Nursing as Discipline and Profession", and item 22 belonging to the dimension of "technological competency". 2_Professional and Disciplinary Values of Nursing (originally called Knowing the people/patients): is constituted by items: (8, 9, and 19) corresponding to the dimension of "knowing the people", item 17 of the dimension "Nursing as Discipline and Profession" and item 18 belonging to the dimension of "people as participants of their care". 3_Care and Ethics (originally called Cares in Nursing): had the peculiarity of maintaining the three only items of the dimension "Cares of Nursing" items: 10, 11, and 14. Item 16 was added, belonging to the dimension of "people as participants of their care". 4_Technological competence (originally called Technological competency): is constituted by four items of which three belong to the dimension of "Technological competency". The additional, item 2, belongs to the dimension of "Nursing as Discipline and Profession". 5_Healing (originally called People as participants in their care): this dimension has items 3 and 20 from the dimension "People as participants in their care", and item 6 that belongs to the dimension of "Nursing as Discipline and Profession". 6_ Human care (originally called People as participants in their care): a dimension constituted by only two statements, item 1 belonging to the dimension of "People as participants in their care", and item 5 belonging to the dimension of "Knowing people". The dimension of Nursing as discipline and profession was not visible statistically as a grouping of items, but such were part of other dimensions.

Studies that have reviewed care in environments with technology reconfirmed the need to have elements of human visitation,(21) technical skills and direct care,(22) interpersonal(23) and inter-professional(21) interaction, and the search for visible results in health principally in the biomedical area.(24) The TCCNI does not center its results on any concrete indicator of physical health; rather, it contemplates health as healing, which is the search for the equilibrium of the human being in constant interaction with the caregiver. The reliability results of the TCCNI are within the expected interval proposed by Carvajal, corresponding to 0.8 and 0.9, classified as excellent.(25)

Among the limitations of the study, we have that the TCCNI may have measurement bias, given that the instrument used is a relatively new research tool in the world and these are the initial studies within the nursing context and specifically in the Latin American context.

To conclude this study, it may be said that the TCCNI has adequate psychometric properties in terms of reliability and validity, which will allow this instrument to be used to measure the technological competency of nurses with similar characteristics to those of the study group.

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Meanings of ‘Tuberculosis’ in Rural Indigenous Communities from a Municipality in the Colombian Amazon

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Meanings of ‘Tuberculosis’ in Rural Indigenous Communities from a Municipality in the Colombian Amazon

Objective. The purpose herein was to describe the meanings on tuberculosis (TB) in rural indigenous communities from a municipality in the Colombian Amazon. **Methods.** This was an ethnographic study with theoretical reference of dialectical hermeneutics, which created focus groups, one for each rural community of Puerto Nariño, for a total of 15 focus groups. The participants were community leaders and health referents. **Results**. Seventy-nine subjects participated, mostly midwives, kurakas, traditional physicians, and shamans. The analysis yielded four categories: knowledge of TB, attitudes regarding TB, community practices of TB, and the intervention proposal on TB by the participants. It was found that community leaders recognize TB as a disease that can cause death, but which can be cured if timely care is secured. The study also identified the need to conjugate western medicine with traditional medicine. **Conclusion.** It is recognized that meanings may impact upon knowledge, attitudes, and practices that affect early detection and treatment of the disease. In addition, this work corroborates the need to strengthen and develop educational programs on tuberculosis supported by the real needs of the communities to enhance their knowledge, attitudes, and practices on the disease

Descriptors: health knowledge, attitudes, practice; tuberculosis; focus groups; qualitative research; indigenous population.

Significados de ‘tuberculosis’ en comunidades rurales indígenas de un municipio de la amazonia colombiana

Objetivo. Describir los significados sobre la tuberculosis (TB) en comunidades rurales indígenas de un municipio de la Amazonía colombiana. **Métodos.** Estudio etnográfico con referencial teórico de la hermenéutica dialéctica, en el cual se realizaron grupos focales, uno por cada comunidad rural de Puerto Nariño, para un total de 15 grupos. Los participantes fueron líderes comunitarios y referentes en salud. **Resultados.** Participaron 79 personas, en su mayoría parteras,

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curacas, médicos tradicionales y chamanes. El análisis arrojó 4 categorías: conocimientos sobre TB, actitudes frente a la TB, prácticas comunitarias de la TB y la propuesta de intervención sobre la TB desde los participantes. Se encontró que los líderes comunitarios reconocen la TB como una enfermedad que puede causar la muerte, pero que tiene cura si se brinda atención oportuna; e identifican la necesidad de conjugar la medicina occidental con la medicina tradicional. **Conclusión.** Se reconoce que los significados pueden incidir en conocimientos, actitudes y prácticas que afectan la detección precoz y el tratamiento de la enfermedad. Además, se corrobora la necesidad de fortalecer y desarrollar programas educativos sobre tuberculosis sustentados en las reales necesidades de las comunidades, para el fortalecimiento de sus conocimientos, actitudes y prácticas sobre la enfermedad.

Descriptores: conocimientos, actitudes y prácticas en salud; tuberculosis; grupos focales; investigación cualitativa; población indígena.

Significados de 'tuberculose' em comunidades rurais indígenas de um município da Amazônia colombiana

Objetivo. Descrever os significados sobre a tuberculose (TB) em comunidades rurais indígenas de um município da Amazônia colombiana. **Métodos.** Estudo etnográfico com referencial teórico da hermenêutica dialética, na qual se realizaram grupos focais, um por cada comunidade rural de Puerto Nariño, para um total de 15 grupos focais. Os participantes foram líderes comunitários e referentes em saúde. **Resultados.** Participaram 79 pessoas, na sua maioria parteiras, curacas, médicos tradicionais e pajés. A análise mostrou 4 categorias: conhecimentos sobre TB, atitudes frente à TB, práticas comunitárias da TB e a proposta de intervenção sobre a TB desde os participantes. Se encontrou que os líderes comunitários reconhecem a TB como uma doença que pode causar a morte, mas que tem cura com a atenção oportuna, e identificam a necessidade de conjugar a medicina ocidental com a medicina tradicional. **Conclusão.** Se reconhece que os significados podem incidir em conhecimentos, atitudes e práticas que afetam a detecção precoce e o tratamento da doença. Ademais, se verifica a necessidade de fortalecer e desenvolver programas educativos sobre tuberculose sustentados nas reais necessidades das comunidades, para o fortalecimento dos seus conhecimentos, atitudes e práticas sobre a doença.

Descritores: conhecimentos, atitudes e prática em saúde; tuberculosis; grupos focais; pesquisa qualitativa; população indígena.

Introduction

Tuberculosis (TB) is an infectious disease of global distribution, which is predominantly of airborne transmission. The easy transmission of TB and the precarious living and working conditions have placed the disease as a public health problem. The most recent global report on TB, issued by the World Health Organization, revealed that 10.4-million people contracted TB, globally, in 2015,(1) and that the most-affected populations are: persons deprived of their freedom, the indigenous, and health care workers.(2) Indigenous peoples have great ancestral heritage that enriches the culture of humanity; nevertheless, they are considered one of the populations with highest vulnerability to acquire TB due to their geographic location, limited access to health services and education, and to the precarious living conditions (overcrowding and poverty), which potentiate social inequalities.(3) In Latin America, the indigenous population is affected by TB with a propagation frequency 2.5 times higher than that of the rest of the population(4) and with a mortality rate five times higher.(5)

In Colombia, for the 36th epidemiological week of 2016, the department of Amazonas reported a rate of TB incidence of 134.9 cases per 100 000 inhabitants, a high figure in comparison to places in the country occupying the second and third places of case reports: Chocó and Buenaventura, with an incidence rate of 31.9 and 31.7 cases of TB per 100 000 inhabitants, respectively.(6) Mortality due to TB in the department of Amazonas is at 10.73 per 100 000 inhabitants, ten times higher than that of Bogotá, which reported rates at 1.1.(7) The permanence of TB is related to flaws in the control programs and to the population's precarious living conditions, in addition to the erroneous knowledge and meanings of the disease. It must be mentioned that these are related to social, geographic, and cultural processes appertaining to their organization. Diverse studies have identified the importance of learning the meanings and knowledge in relation to TB, so that these, well guided, can contribute to controlling the disease.(8) In addition, the scientific evidence on TB in the indigenous population extolls the need to design public health policies, as well as educational interventions to control the disease;(9,10) consequently, the need was noted to describe the meanings of TB in rural indigenous communities of Puerto Nariño (Amazonas) in favor of guiding the decisions made in health and performing culturally adapted interventions, aimed at these communities, so that they impact positively upon their health-disease processes for prevention and control of TB.

Methods

The ethnographic study used as principal technique for the collection of data from the focus groups, whose conformation highlighted the importance in these regions of the community leaders because these people can influence on the meanings the indigenous communities have on TB. Data was collected from March to July 2016. This document presents the information emanating from the focus groups, due to the length of the material gathered, given that other information collection techniques were used. The focus groups are a strategy that permits inquiring on knowledge and values of certain groups from their context and delving into ideas and perceptions of the subjects; likewise, these groups permit obtaining reflections and options to solve problems provided by the very study subjects. This technique permitted identifying the meanings on TB through participative and constructivist discussion of educational actions with the indigenous population.(11)

A focus group was created in each of the 15 rural communities from Puerto Nariño: Ticoya, San Juan de Atacuari, Boyahuasu, Naranjales-Barrio Tinajita, Naranjales, Puerto Esperanza, Puerto Rico, Santa Teresita, San José de Villa Andrea, Nuevo Paraíso, San Francisco, Tarapoto, Palmeras, and San Martin de Amacayacu. Each focus group had the participation of four to nine people, and each lasted approximately one hour. To establish a dialogue of knowledge on the theme, guiding questions on TB were designed, supported on scientific literature. The participants had as inclusion criteria that of being community leaders, hence, the study involved individuals with the following roles: midwives, shamans (differentiated by the community as individuals who use spiritual means for healing), traditional physicians (differentiated by the community as people who use plants as means of healing) and kurakas or vice-kurakas, who represent the traditional social and political authority of the indigenous communities. The focus groups were directed by two nursing professionals and these were accompanied by two indigenous liaisons who helped understand the native languages. The focus groups created complied with the criteria of quality and saturation of the information collected.(12)

The information collected was organized in the Atlas Ti program, by assigning codes to each of the focus groups and to each of the participants from each group; for example, code “GF15P1” represents focus group number 15 (GF15) and participant number one (P1). The analysis was performed through dialectical hermeneutics, through the continuous construction and deconstruction of the concepts and meanings provided by the participants.(13) The research received ethical support and informed signed consent was obtained from each participant.

Results

The study had the participation of 79 individuals (44 men and 35 women). With respect to the role played, 26 were midwives, 9 kurakas or vicekurakas, 8 traditional physicians, 7 health promoters, 7 shamans, 6 health aides, and 16 other community leaders. From the analysis of the focus groups, four categories emerged: knowledge of TB, attitudes regarding TB in the indigenous community of Puerto Nariño, community practices to manage TB, and intervention proposal from the indigenous perspective on TB, which are described in the following.

Knowledge of TB

The category on knowledge of TB revolved around three subcategories: concept and causes of TB, diagnosis of TB, and treatment of TB.

Concept and causes of TB

The participants recognized TB as a contagious disease that causes death; while also identifying that it is a curable disease: GF2P5: with tuberculosis, I have seen that people die, I know that because a neighbor died from coughing and vomiting blood; GF10P3: well, I think that disease attacks humanity a lot because it can be transmitted to people, but it can be cured when it is detected soon or when it is just starting. With respect to the causes of TB, some participants spoke of the existence of a bacteria: GF10P4: tuberculosis is a bacillus that attacks the human being's immunity and which has affected some communities a lot; on the contrary, others believe the cause of TB is external: GF15P3: before, our grandparents told us that it was a disease from the 'cutipe' (fuzz) of the tiger or blows to the back due to a bad fall.

Regarding the risk factors for acquiring TB, the participants mentioned: GF9P2: the disease is eating away at the person because they don't eat anything during the work day and do drink alcohol and smoke; GF12P1: sometimes people have the house closed shut without good ventilation, so here is where people get tuberculosis because there are too many people and the germ (bacteria) stays there and has no way out. Respiratory transmission was understood as contagion through the air when coughing, speaking, or through saliva: GF8P1: tuberculosis is transmitted through the air when coughing or when stepping on the catarrh (term: sputum) of the person with tuberculosis, another example is: GF4P3: if a person has tuberculosis and invites you to their house to drink masato (a typical corn-based beverage of the indigenous), here the tradition is that the same totumo (vessel) is used for everyone to drink from, so you get infected. With the aerial form of transmission, the participants recognized the lungs as the principal organ affected, although it may affect other parts of the body: GF14P1: tuberculosis is a disease produced by a bacteria that attacks the lungs, but can also affect the red blood cells; GF7P1: it is a microorganism that penetrates the lungs and opens holes and wounds.

Diagnosis of TB

As means to diagnose TB, bacteriological and radiological tests were mentioned: GF3P1: they take samples of the catarrh (sputum), I think it is three small cups that are filled (bacilloscopy) and that is taken to the hospital. Shamans and traditional physicians identify individuals with TB through signs and symptoms: GF15P1: you have over 15 days of coughing with yellow catarrh, and the body starts to weaken until the person gets skinny or dries up (term used to refer to weight loss).

Treatment of TB

Participants identified the treatment with anti-tuberculosis drugs as the hospital treatment: GF9P3: the pill (medication) he was taking was because a physician always came and gave it to him; he took one in the morning and another one in the afternoon, that was for four or six months. However, they state that it is difficult for people to adhere to the anti-tuberculosis treatment due to their requiring economic resources for transportation, the long duration of the treatment, and the fear of the people because of the adverse effects of the anti-tuberculosis drugs, GF6P3: those medications from the hospital are strong because there are people who when they take the pills, it is like the body does not receive it well, they say they get shaky or dizzy; GF12P3: the hospital thing does not happen much here because, for example, for me to get my treatment I have to go to the hospital of Puerto Nariño and sometimes there is no money to buy the gasoline for the ‘peque-peque’ (boats with small motors), and I would have to travel for two hours up river and then another two hours down river to come back; but, what about work?

Additionally, from the participants’ meanings, the traditional treatment is important and affordable for the population, but, for example: we here have tried to cure with traditional medications, but it is not enough because the bacteria is very strong for the traditional medicine. In this sense, focus groups permitted establishing the discussion on the different plant remedies from the different rural indigenous communities to treat TB, among which there are tree barks: GF12P3: the bark from that tree is cut and cooked and when it is very thick it gets bitter; you give that to the patient without cooling it down, that has to be drunk for a month without stopping. Another widely used remedy is the blowing of breath or prayers by shamans to eliminate the tuberculous spirit: GF5P2: I work or heal with prayers for the spirits to help me get the disease out of the body; GF15P3: the knowing, who knew much about spirituality, cured with tobacco, until they extracted the ailment the person had.

Attitudes regarding TB in the indigenous community of Puerto Nariño

Support to people with TB

The participants described different attitudes regarding people with TB; one of these is that of support: GF15P2: you need not be afraid of the disease because if you are afraid, then it gets you much faster, that is like summoning the ailment to the body. GF6P4: you do have to talk to him (the person with tuberculosis) because sometimes people who are not sick will reject those who are sick, and that gets their mood down and drops their defenses and that is why they die.

Rejection and stigmatization of people with TB

On the contrary, other attitudes are fear and stigmatization, as evidenced in the following: GF3P1 generally, people are always afraid of him (the person struck with TB), and the man I had last year came here every day and my children would be scared.

Community practices to manage TB

Route of TB

According to the difficulties of geographic access of the municipality of Puerto Nariño (can only be reached via riverine transport), the departmental control program and community leaders were in charge of generating a strategy to train the communities with knowledge about TB; said strategy is “the route of tuberculosis”. This was done to enhance early detection actions of respiratory symptoms and strengthen adherence to anti-tuberculosis treatment by articulating traditional and western medicine. In this sense, it was identified that some communities were aware of the route and it functioned there, and others were not aware of its existence or manifested flaws in it. GF3P1: within the route, we search for respiratory symptoms and conduct promotion and prevention activities; also, the patient is diagnosed and is intervened with both medicines to cure the patient; GF8P1: in the route we are weak, here it almost does not work, or they don’t even know what it is.

Care of patients with TB

Health care of patients with TB is related to knowledge of the risk factors of the disease, to the ancestral beliefs, to caring for the body and the hygienic and isolation actions: GF3P3: my wife would try to eat three times a day and sometimes egg, chocolate, and beans for the body to cure itself; GF15P3: during the time of treatment they cannot drink alcohol or masato; they cannot eat ‘contras’ (ancestral diet) as well as greasy food, which is why they can only eat ‘bocachico’ (Prochilodus magdalenae) and sardine. Another important care is using masks, covering the mouth when coughing or sneezing, and completing the treatment: GF8P3: I could not cough like that in front of my children, or in bed or anything, that is why I had my piece of cloth because I did not want my children to get infected with that.

Preventive measures against TB

As prevention measures to avoid being infected with TB, the community states: GF8P3: rooms must be clean because where it is dark is where the germs are, that is what the promoter teaches us, and to keep Windows open; as prevention measures, there are also those that contribute to isolation: GF11P1: what we do here is to stay away from him (the person who is sick with tuberculosis); GF7P1: I would tell my community that when we do ‘Minga’ (community work of social utility), we should bring our own water and our own utensils and to avoid inviting the person who is sick. Lastly, it is necessary to carry out spiritual protection for the whole family, through prayers; GF2P4: the protections are for them (those sick with tuberculosis) to keep from infecting when they are sick at home; look, I have cured people in my house, and my children have not been infected because I pray for them and protect them.

Intervention proposal from the indigenous perspective of TB

Finally, an intervention proposal emerges from the perspective of the participants, that is, that it stems from the meanings and knowledge the region’s indigenous communities have on TB to carry out educational actions culturally adapted to them.

Importance of intervening

The different indigenous communities had as a common point the need conduct educational interventions as formative process on TB; for the purpose of adjusting some beliefs and myths on the disease, which can affect the good development of the control program: GF11P3: that was about 20 years ago that treatments were with injections and that is why people would get bored because they had to be injected every day, but thank God nowadays it is with pills (oral medications) and that makes the patient feel safer, but people don’t know that because they are not aware of their health. Another important aspect for the intervention is to establish an interaction with the indigenous population, which promotes the exchange of traditional and ancestral knowledge with western knowledge: GF2P2: Clearly, that is sharing western knowledge with traditional knowledge, for all the species and cultures to be talking.

Intervention adapted to the indigenous community

The indigenous communities have a learning level linked to ludic and dynamic activities: GF14P1: having workshops, offering them or teaching each person about it, showing films, booklets, brochures or something different, GF4P2: they should come, give their talk, but not only in a classroom, they should do recreation, sports and all that for the children and the elderly and tell us then how tuberculosis occurs, and in between a snack, lunch, or a ‘sancocho’ (soup stew) spend the whole day with you to share ideas and all that.

Poor support in health and social programmatic actions

The participants recognize that TB is a reality within their context and referred to neglect and poor support from the health institutions: GF11P1: the hospital is not helping us and does not provide support to bring the patient to town (municipal seat of Puerto Nariño) because here we do not have a motor (boat for river transport), we only have a small shallop (boat) that is broken, we have no fuel, these are things that during an emergency we don’t have and sometimes you take four hours by river. In addition, participants state that the hospitals have not carried out training, workshops, or educational courses on TB: GF14P1: it is an institution that has never been present in the community, on some occasions people have come, but from the Governor's office.

Discussion

The results permitted learning that the indigenous population expresses in its meanings their vulnerability regarding the tuberculosis infection due to their precarious living conditions and their geographic location. These findings have been corroborated by other studies conducted in the department of Amazonas, which mention social determinants, like deficient living conditions, rapid increase of population density,(9) food insecurity, lack of knowledge of the disease, malnutrition, unemployment, low income sources, and the characteristics of the homes (small, poorly ventilated and illuminated, and with numerous dwellers), which intensify the vulnerability for TB;(14) also, the geographic location of the indigenous communities hinders their access to health services, given that it demands economic resources to acquire fuel to bring patients to the local hospital in Puerto Nariño (located in the municipal seat).(3) With respect to the aforementioned, it is important to highlight that there are routes from a community to the municipal seat that can take three hours or more, according to the type of boat or motor used and the navigation conditions through the Loretoyacu and Amazonas Rivers.

Regarding knowledge about TB, it was demonstrated that some individuals have mistaken knowledge, which affect their meanings and beliefs around this disease. In this regard, a study identified that, in spite of having programs to control TB, inadequate knowledge and practices still persist against this disease as a consequence of culture.(15,16) In the indigenous communities, autochthonous processes of self-care prevail, traditional prevention and healing, due to their easy access, low economic cost, and minor discomfort. This influences upon the low attendance to the hospital,(17) which – in turn – represents a higher risk of acquiring the tuberculosis infection and delays in diagnosis and timely treatment of the disease.(15) With this in mind, the literature refers to the importance of surveillance and control of patient's contacts with TB and fortifying the communication between the health staff and the indigenous populations.(18)

According to the aforementioned, interculturality is a fundamental aspect, insofar as the indigenous communities recognized the importance of the cultural meeting between ancestral knowledge and modern knowledge to establish an exchange of knowledge and a cultural negotiation that permits comprehending both cultures in health-disease processes and construct spaces for the practice of modern medicine and traditional medicine, as proposed by other authors, when stating that it is important to address the health-disease concepts of the indigenous populations through educational processes that know and understand their culture and context.(19,20) Similarly, community leaders and health referents accepted that there were themes they ignored about TB, as consequence of the scarce support from health institutions in conducting educational workshops that permit replicating information in the community. In this respect, an author states that formation processes did not fit the language or culture of the indigenous populations.(21) Also found is the lack of an assigned budget for the different levels articulated to the good performance of the program and the health institutions, which is why it is imperative to strengthen the programmatic actions supported with financial, logistic, and human resources, which combine practices of traditional medicine and western medicine with community agents trained in health and with continuous support to adequately carry out activities for early detection of TB.(22) In agreement with the previously stated, this study unveiled the need to conduct educational interventions with innovative strategies on TB, as indicated by a study that identified the need to develop programs with social support in the indigenous populations to improve their living and health conditions.(23)

It is important to highlight that, to achieve a greater impact of controlling TB in the indigenous population, it is necessary to enhance the research and the interventions of entities related to the program(24) to sensitize, diagnose, and treat TB.(25) Further, it is a priority for the State to assign economic resources for this region of such high cultural and social wealth of the Colombian geography, to strengthen programmatic and social actions to control TB. Finally, the importance of qualitative studies is denoted, given that they reveal meanings of health-disease processes as complex as tuberculosis and become potential in directing health programs and services.

To conclude, given the approach used, it is recognized that this study applies for the participating population, that is, the rural indigenous communities from a municipality in the Colombian Amazon. From the description of the results found, the study identified some meanings of TB that can affect the disease's early detection; among them, erroneous knowledge, attitudes, and practices that require guidance from education interventions. However, this study showed that community leaders from the indigenous populations identify key aspects of TB, such as that it is a disease that can cause death, but which can be cured. Likewise, the participants propose measures to develop educational interventions that are adequate for their culture; hence, the need was identified to strengthen educational programs and programmatic actions in health to TB, through strategies appropriate to their culture and context, which sensitize and contribute in the prevention and control of TB. Intercultural dialogues should be enhanced, so that participation by the indigenous communities is indispensable to create educational proposals adapted to their culture and tradition, as well as having support from competent state entities.

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Outcome assessment of patients classified through the Manchester Triage System in emergency units in Brazil and Portugal

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Outcome assessment of patients classified through the Manchester Triage System in emergency units in Brazil and Portugal

Introduction: The aim was to evaluate the outcomes of patients' treatment classified according to the Manchester Triage System (MTS) in two large hospitals. **Methods:** Historical cohort study performed in two hospitals in different countries: one emergency unit of a hospital in Portugal, and another in Brazil. The studied population was composed of all patients attended and triaged by nurses in emergency services using the MTS, based on data obtained through the ALERT® software. The sample in this study was composed of 158 959 triages in Portugal and 155 121 in Brazil. **Results:** The higher the priority attributed to the patient according to the MTS, the longer the hospital stay and risk of death. For both groups, the higher the risk classification of the patient, the greater the risk of death when compared to the group classified as "green". In Portugal, patients classified in the "red" category according to the MTS had 1 516-fold higher risk of death compared to those classified in the green category, and in Brazil, this risk was 1 177-fold higher. **Conclusion:** In both countries, the MTS proved to be a good predictor of length of hospital stay and death.

Descriptors: nursing; emergency service, hospital; triage.

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Evaluación de los resultados del tratamiento de los pacientes clasificados con el Sistema de Triaje de Manchester en escenários de Brasil y en Portugal

Objetivo. Evaluar los resultados del tratamiento de los pacientes clasificados con el Sistema de Triaje Manchester (STM) en dos grandes hospitales. **Métodos.** Cohorte histórica realizada en las unidades de emergencia de dos hospitales: uno en Portugal, y otro en Brasil. Se estudiaron todos los pacientes atendidos por la enfermera en las Unidades de Emergencia, a quienes se les realizó el triaje con STM. Los datos se obtuvieron con el software ALERT®. La muestra estuvo compuesta por 158 959 triajes en Portugal y 155 121 en Brasil. **Resultados.** Cuanto mayor la prioridad atribuida al paciente por el STM, mayor fue el tiempo de permanencia en el hospital. Para ambos grupos, cuanto más alta la calificación de riesgo del paciente, mayor es el riesgo de muerte en comparación con el grupo clasificado como “verde”. En Portugal, los pacientes clasificados como “rojo” por el STM tenían un riesgo de muerte 1 516 veces mayor en comparación con los pacientes clasificados como “verdes”. En Brasil, los pacientes clasificados como “rojo” tenían un riesgo de muerte 1 177 veces mayor que los pacientes clasificados como “verdes”. **Conclusión.** En ambos países, el STM mostró ser un buen predictor del tiempo de hospitalización y del riesgo de muerte.

Descriptores: enfermeria; servicio de urgencia en hospital; triaje.

Avaliação do desfecho dos pacientes classificados através do Sistema de Triagem De Manchester em cenários no Brasil e em Portugal

Objetivo. Avaliar o desfecho dos pacientes que foram classificados através do Sistema de Triagem de Manchester (STM) em dois hospitais de grande porte. **Métodos.** Coorte histórica realizada em dois hospitais: unidade de emergência (UE) em Portugal, e a UE no Brasil. A população estudada foi composta por todos os pacientes atendidos e triados pela enfermeira de uma UE utilizando o STM, com base em dados obtidos pelo software ALERT®. A amostra deste estudo foi composta por 158 959 pacientes triagens em Portugal e 155 121 no Brasil. **Resultados.** Quanto maior prioridade atribuída ao paciente pelo STM, maior o tempo de permanência do paciente no hospital. Para ambos os grupos estudados, quanto maior a classificação de risco do paciente, maior o risco de morte quando comparado com o grupo classificado como “verde”. Em Portugal, pacientes classificados como “vermelho” pelo STM tiveram um risco de morte 1 516 vezes maior em comparação com os pacientes classificados como “verde”. No Brasil, pacientes classificados como “vermelho” tiveram um risco de morte 1 177 vezes maior do que os pacientes classificados como “verde”. **Conclusão.** Em ambos os países, o STM mostrou ser um bom preditor de tempo de permanência hospitalar e morte.

Introduction

The Manchester Triage System (MTS) was created in England in 1994 and has been adopted in most emergency services (ES) as a guiding tool for risk classification. In Brazil, patient triage systems emerged in 2002 and the MTS is the most frequently used among them. The use of the MTS has been a requirement of the state government of Minas Gerais since 2007, as part of the regionalization master plan of the state to which all municipalities must adhere.(1)

In Portugal, the MTS was implemented in 2000, initially in two hospitals in Coimbra. At present, the system is used in 60 urgency services and it is in the process of implementation in others units, although it is considered indispensable for the organization and administration of such services in the country.(1) Emergency and urgency rooms have been mistakenly seen as the first choice of care by users, even in situations where the most apropriate service is not that provided in first-aid posts.(2,3) This generates overcrowding, disorganization of care and dissatisfaction among the population. For this reason, new ways of organizing the flow of users in the health service are necessary.(4) In an attempt to remedy these problems, the Ministry of Health in each of these countries has taken actions seeking to organize emergency and urgency services, in order to meet different levels of specificity and resolution in the assistance provided to emergent or urgent grievances. One of these actions is the reception with risk classification.(4,5)

Risk classification is a dynamic process where patients are evaluated as soon as they arrive at the service. This ensures that high-risk users receive immediate care and reduces the waiting time for medical care, depending on the degree of priority assigned to each user, decongesting emergency rooms, determining the primary care area and referring users to specialties, according to the guiding protocol.(1) The assignment of degrees of risk to patients consists in a complex decision-making process. Nurses have been the most indicated professionals to perform this task. Protocols have been used to guide the prioritization of care.(6,7)

The MTS includes levels of priority, color to be assigned, and an estimative of waiting time for medical care. Based on the identification of the user's main complaint by the nurse, a specific flowchart guided by discriminators presented in the form of questions is selected. There are 55 different flow charts and a risk scale that, depending on signs and symptoms, classifies the situation of the patients into: emergent (red), very urgent (orange), urgent (yellow), not urgent (green) care to be provided between 0 and 240 minutes.(1) A study carried out in Brazil compared the MTS with an institutional classification system showing that the former is more inclusive and increases the priority level of the classified patients.(8)

In a study carried out in Portugal, the MTS was useful to distinguish patients who needed emergency care from the others.(9) Brazil and Portugal have similar health services; in both, the health system is controlled by the State, is ruled laws of the Federal Constitution and is under the responsibility of the Ministry of Health. Principles of universality, comprehensiveness, gratuity and validity throughout the national territory are also guaranteed in both countries. In Portugal, fees are charged, which are not intended to finance the system, but rather to limit unnecessary access to certain services. Moreover, the MTS in the emergency services has been adopted as a guiding protocol in the two countries. Thus, the system data such as complaints, colors, stratifications, severity, time of service, and so on, can allow valuable analyses. The patients' behavior towards the classification of risk has been studied by authors from several countries.(9-11) The predictive validity of the classification is understood as the affirmation of the patients' correct classification, based on their clinical evolution and length of stay in urgency and emergency services.(12) Considering that the implementation of the MTS in Brazil was assisted by the Portuguese Risk Classification Group and that the MTS has not been translated, adaptated and validated for its use in Brazil, a study evaluating the prediction of the protocol in these two countries is necessary. The present study aimed to evaluate the outcome of patients classified through the MTS in two large hospitals, one in Brazil and the other in Portugal.

Methods

This is a historical cohort study carried out in two hospitals in different countries: the emergency service (ES) of the Hospital Centre and University of Coimbra (CHUC), Portugal, and in the ES of the Odilon Behrens Municipal Hospital (HOB) of Belo Horizonte, Minas Gerais, Brazil. They share common characteristics: both are large hospitals, and references for urgent care in municipalities and regions. The CHUC is a national reference in clinical and surgical areas of various medical specialties, besides offering field of internships for undergraduate, graduate and research programs. The HOB is also a teaching hospital and a state reference in trauma, and clinical and surgical care of various medical specialties. Both have medical and multiprofessional residency programs in various specialties. The study population consisted of all the patients who entered the ES in both hospitals, who passed through the triage room between January 1st and December 31st, 2012, and were triaged by nurses using the MTS.

This study used data obtained from the ALERT software®, which is a management system for risk classification of patients employing the MTS as the guiding protocol. In Brazil, it was necessary to collect data from the HOSPUB system®, which is used for inpatient registration. This system makes it possible to calculate the length of stay, based on the clinical outcome of patients in the institution.

The five categories of classification were always compared with the color considered of lower priority in the service, the "blue" category. This was applied to the length of stay. For analysis of the risk of death, data were evaluated in relation to the "Green" color, because deaths did not occur in the "blue" category in either country.

Patients classified in the "white" color were excluded from statistical analysis because this is a category that refers to hospital returns or administrative appointments, which are not emergency cases. A total of 13 968 (9.0%) patients were classified as "white" in Brazil, and 4 244 (2.7%) in Portugal. The sample consisted, therefore, of 158 959 cases in Portugal and 155 121 in Brazil, in the year 2012.

Evolution to hospital discharge, transference, abandonment of treatment and death, as well as the length of stay of the users who sought the emergency service within the stipulated period were considered as "outcome". The following data were surveyed: age, sex, MTS classification (red, orange, yellow, green and blue) and flowchart.

Data were submitted to statistical analysis in the software Statistical Package for Social Sciences (SPSS), version 19.0. Descriptive statistics with frequency and inferential analysis were used for characterization of patients. In order to measure the strength of association between exposure and outcome, the Relative Risk (RR), the 95% confidence interval and the p value were calculated. Median was used for length of stay, which corresponds to the 50th percentile. Logistic regression was performed to control confounding variables.

The study was approved by the Research Ethics Committee (REC) of the Odilon Behrens Municipal Hospital and the University Hospital of Coimbra, under Opinion nº 834 973/2014 and nº 0110/2013, respectively.

Results

Among the patients analyzed in the Portuguese group (158,959), female subjects predominated (56.5%), with mean age of 54 years and standard deviation of 21.1 years, minimum of three days and maximum of 112 years. In the Brazilian group (155,121), female subjects (58%) were also predominant, with mean age of 32 years and standard deviation of 22 years, minimum of four days and maximum of 114 years. The characterization data is presented in Table 1.

Table 1. Sex distribution and risk classification of patients assisted in the emergency service. Portugal, 2012 (*n* = 158,959), Brazil, 2012 (*n* = 155,121).

Characterization	Portugal		Brazil	
	n	%	*n*	%
Sex				
Female	89 796	56.5	89 696	58
Male	69 163	43.5	65 425	42
Risk Classification				
Red	1 207	0.8	823	0.5
Orange	23 930	15.1	18 241	11.8
Yellow	87 805	55.2	57 099	36.8
Green	35 421	22.3	59 789	38.5
Blue	6 352	4.0	5 201	3.4
White	4 244	2.7	13 968	9.0

The main complaints of patients attended at the institution in Portugal were: adult malaise (22 679 - 14.3%), problems in the extremities (18 810 - 11.8%), problems in the eyes (12 150 - 7.6%), obstetrics/gynecology (11 253 - 7.1%), dyspnea (9 234 - 5.8%), and abdominal pain (8 830 - 5.6%). In Brazil, problems in extremities (21 627 - 12.9%), obstetrics/gynecology (13 300 - 7.9%), abdominal pain (12 471 - 7.5%), dental problems (9 892 - 5.9%), headache (9 566 - 5.7%) and thoracic pain (6 447 - 3.9%) were the most frequent flowcharts.

Regarding the length of hospital stay of patients in Portugal, 2 264 (9.2%) stayed hospitalized for less than 1 day; 4 501 (18.3%), from 1 to 3 days; 10 753 (43.7%), from 4 to 10 days; 4 329 (17.6%), from 11 to 20 days; 2 738 (11.1%), for more than 20 days, and the maximum length of stay was 276 days. Of the total number of patients studied, 130 536 were admitted to the ES and discharged within 24 hours, and were not hospitalized. In the case of patients in Brazil, 75 175 (48.4%) stayed in the hospital for less than 1 day; 8 799 (5.7%), from 1 to 3 days; 67 074 (43.2%), from 4 to 10 days; 1 744 (1.1%), from 11 to 20 days; 1 739 (1.2%), for more than 20 days, and the maximum length of stay was 518 days. This information was not obtained in the case of 590 patients (0.4%). In Brazil, the variable "less than 1 day" refers to the patients who entered into the ES, received assistance, and were discharged within 24 hours or were hospitalized for less than one day.

Statistically significant difference of length of hospital stay was found among all groups of patients in the two cases studied. The five categories of classification were always compared to the color considered of lower priority in the service, i.e. the "blue" category. Thus, the higher the priority of the patients, the longer they would remain in the hospital (Table 2).

Table 2. Analysis of length of hospital stay of patients in relation to risk classification groups based on the MTS. Portugal, 2012 (*n*= 158,959), Brazil, 2012 (*n*= 155,121)

Classification	Portugal				Brazil			
	Median	Q1	Q3	*p**	Median	Q1	Q3	*p**
Red	7.0	3.0	16.0	<0.001	3.0	0.0	11.0	<0.001
Orange	7.0	4.0	13.0	<0.001	1.0	0.0	4.0	0.001
Yellow	6.0	3.0	11.0	<0.001	0.0	0.0	4.0	0.035
Green	6.0	3.0	12.0	<0.001	2.0	0.0	4.0	0.004
Blue	4.0	3.0	5.0	-	0.0	0.0	4.0	-

(*) *p*-value calculated using the Mann-Whitney Test

Table 3 presents the outcomes of patient care in the emergency units of the hospitals studied in Portugal and Brazil. Notably, in both cases, discharge numbers are high, and in Brazil, treatment abandonment is more frequent. The relationship between patients classified as red and the outcome of death is also outstanding in both hospitals.

For the two groups studied, the risk of death in each risk classification color was determined through the calculation of Relative Risk (RR). It was observed that, for the two groups studied, the higher the patient's priority, the greater the risk of death compared to the "Green" classification group (Table 4).

Patients classified in the red category in Portugal had 1516-fold higher risk of evolving to death compared to those classified in the green category. In Brazil, patients classified in the red category had 1177-fold higher risk of evolving to death when compared to those classified in the green color.

Table 3. Distribution of frequency of care in relation to outcome and risk classification in hospitals in Portugal and Brazil

Country - Classification	*n*	Discharge from the emergency unit %	Hospitalization %	Transference %	Abandonment of treatment %	Death %
Portugal						
Red	1,207	33	49.6	4.4	0	13
Orange	23,930	56	38.5	5	0	0.5
Yellow	87,805	77	19.9	3	0	0.1
Green	35,421	83	14	2	1	0
Blue	6,352	87	12.5	0	0.5	0
Total	158 959	74.5	21.4	2.9	0.5	0.2
Brazil						
Red	823	54	*	10	6	30
Orange	18,241	87	*	5	6	2
Yellow	57,099	93	*	2	5	0
Green	59,789	66	*	28	6	0
Blue	5,201	78	*	19	3	0
Total	155 121	80.1	12,6	1,3	5.4	0.5

(*) In the database collected in Brazil, patients who stayed longer than 24 hours were automatically considered hospitalized, regardless availability of vacancies in the hospitalization units.

Table 4. Risk of death among patient groups by color classification. Portugal, 2012 (***n*** =158,959), Brazil, 2012 (***n*** =155,121)

Risk classification	Portugal				Brazil			
	Death %	RR	CI 95%	*p**	Death %	RR	CI 95%	*p**
Red	12.8	1516	(484 – 4 746)	<0.001	29.5	1177	(702 – 1 973)	<0.001
Orange	0.5	61	(19 - 191)	<0.001	1.8	73	(44 - 122)	<0.001
Yellow	0.03	3.6	(1.1 – 12.0)	0.034	0.3	10.5	(6.2 – 17.9)	<0.001
Green	0.01	-	-	-	0.03	-	-	-
Blue	0.00	-	-	-	0.02	-	-	-

(*) *p* calculated in the Poisson regression model $p < 0.05$.

Discussion

It was noticed that the majority of patients who sought care in the hospitals of Portugal and Brazil were female (58% and 56.5%, respectively). This result is similar to studies carried out in Brazil(13) and in Portugal.(14) In Brazil, the mean age of the population was lower (32 years) than in Portugal (53 years). A study conducted in Brazil found that the mean age was also 32 years.(15) This indicates greater aging of the Portuguese population when compared to the Brazilian population. As for risk classification in the two hospitals, there were differences regarding the priority of patients. Patients classified in the categories with the highest clinical priority (red, orange and yellow) in Portugal had higher percentages when compared to Brazil: 71.1% and 49.1%, respectively. Portuguese reported 76.2% of the patients classified in the categories of higher clinical priority.(9) In turn, a Brazilian study found 46.4% of the patients classified in the categories with the highest clinical priority.(3)

These data suggest that people who are in situations that are no urgencies continue to seek the ES as the main gateway to the health service in Brazil. This contributes to overcrowding the service, and hampering the resolubility in basic care services.(15) The study showed that the

Brazilian hospital had more patients classified in the white category (13,968 - 9.0%) than the Portuguese hospital (4,244 - 2.7%). This finding may be related to the fact that patients referred by doctors from other services to the hospital in Brazil, such as Basic Health Units and Emergency Care Units, are classified in the white category. It is worth mentioning that the flow of patients from other municipal services is quite intense, since several specialties and diagnostic tests are only available in the HOB. In Portugal, patients are classified and the category assigned guides their transference to hospitals close to the patients' residence, medical indication, realization of programmed techniques, among others. Thus, a difference was detected between the two countries with respect to the system of patient referral.

Among the six most frequent flowcharts analyzed in both countries, abdominal pain and gynecological/ obstetric problems were present. It is important to know the complaints that lead people to seek the ES so that health care levels may be organized based on the degree of severity of complaints, in order to better meet the demand in each level.(16) In Portugal, 130,536 people entered the ES and were discharged in less than 24 hours. In Brazil, this number dropped to 75,175 people. This may be related to the fact that health care in Portugal is public but still paid, which means that the population opts to go to ES because of technological resources and different professional categories gathered in the same environment. In Brazil, the health service is public and free, in the case of basic health units and the hospital area. People classified into little urgent or non-urgent categories should initially seek basic health units and have their needs met there. The purpose of basic units is to try to solve 85% of the health demands of Brazilians; needs that are not contemplated in this level are to be referred to services of greater technological complexity. It is suggested that further studies investigate this theme.(3) Regarding the length of stay in hospitals, it was observed that numbers are higher in the Portuguese hospital. This data may be related to the increase in age (53 years) and the prevalence of chronic diseases in that country, which require longer hospitalization times to stabilize the disease. The greater the clinical priority (red, orange and yellow), the longer was the stay in both hospitals. Statistical significance was found between the length of stay and MTS colors. The findings of this study corroborate a research carried out in Brazil in which more severe patients stayed hospitalized for longer periods when compared to those of lower clinical priority.(11) Thus, the MTS can be considered a good predictor for length of hospital stay of patients of high clinical priority when compared to those of low clinical priority. Regarding the outcome of the patients, it was observed in both countries that the lower the urgency (blue, green and yellow colors), the higher the number of discharges , and the lower the number of deaths. This is in line with a study carried out in the Netherlands and another carried out in Portugal.(9,10) However, whereas the behavior of patients in relation to severity in the classification corresponds to an equivalent distribution in hospital stay and outcome (discharge and death) in Portugal, the majority of patients was discharged in Brazil, indicating that less severe cases continue to seek ES in Brazil.

The univariate analysis showed that there is statistical difference between risk classification groups in relation to death. It is reasonable to expect, thus, that the greater the severity of the patient, the greater the risk of evolving to death, showing that MTS is a good predictor of death, as it has been pointed in other studies.(11,13,15) The lack of a unified database for patients who entered the ES and were admitted to the hospitals studied represents a limitation of the study. It was necessary to resort to different databases to find the outcome of the patients. Ideally, the ALERT® should bring together all the information.

Conclusion

The MTS was introduced in Brazil more recently when compared to Portugal. It is still necessary to organize health services so that the emergency units responsible for providing care for seriously ill patients and also the reference and counter-reference systems may work better. Assistance to cases of lesser seriousness should be provided without involvement of levels of greater complexity, in services such basic health units. This restructuring will make it possible to reduce overcrowding and offer a more resilient service in both countries. The fact that the population of Portugal with higher levels of clinical severity seeks ES may be related to the fact that the health system is paid. We suggest that further studies be conducted with the aim to compare data from the emergency department of free and private hospitals (with and without health insurance plans).

In both countries, the MTS proved to be a good predictor of hospital stay and death outcome, confirming data from national and international surveys.

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Questionnaire to Measure the Participation of Nursing Professionals in Mentoring Students

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Questionnaire to Measure the Participation of Nursing Professionals in Mentoring Students

Objective. The aim herein was to validate a questionnaire to measure the level of participation of clinical nursing professionals in the mentorship of nursing students during clinical practices. **Methods**. Design and validation of a questionnaire. The psychometric properties of the tool were determined through four phases: 1- literature review; 2- evaluation of content validity; 3- pilot test, cognitive pretest and intra-observer reliability study; 4- construct validity study through an exploratory factor analysis of main components with varimax rotation in a sample of 249 nursing professionals from primary care and hospital care from different Spanish provinces. The internal consistency was studied with Cronbach's alpha coefficient. **Results.** The global content validity was above 0.8. The final version of the questionnaire had 33 items, with a global intraclass correlation coefficient of 0.852 and Cronbach's alpha of 0.837. Factor analysis explained 55.4% of the total variance, with a solution of five factors that made up the dimensions: Implication, Motivation, Satisfaction, Obstacles, and Commitment. **Conclusion.** The questionnaire evaluated has adequate validity and reliability to permit determining the level of nurse participation in the mentorship of students.

Desctriptors: nursing education; clinical clerkship; mentors; validation studies.

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Cuestionario para medir la participación de los profesionales de enfermería en la tutela de estudiantes

Objetivo. Validar un cuestionario para medir el nivel de participación de los profesionales de enfermería clínicos en la tutela de estudiantes de enfermería durante las prácticas clínicas. **Métodos.** Diseño y validación de un cuestionario. Se determinaron las propiedades psicométricas de la herramienta mediante cuatro fases: 1- revisión de la literatura; 2- evaluación de la validez de contenido; 3- prueba piloto, pretest cognitivo y estudio de la fiabilidad intraobservador; 4-, estudio de validez de constructo mediante un análisis factorial exploratorio de componentes principales con rotación varimax en una muestra de 249 profesionales de enfermería de atención primaria y de atención hospitalaria de diferentes provincias españolas. La consistencia interna se estudió con el coeficiente Alfa de Cronbach. **Resultados.** La validez de contenido global fue superior a 0.8. La versión final del cuestionario fue de 33 ítems, con un CCI global de 0.852 y un alfa de Cronbach de 0.837. El análisis factorial explicó el 55.4% de varianza total, con una solución de cinco factores que formaron las dimensiones Implicación, Motivación, Satisfacción, Obstáculos y Compromiso. **Conclusión.** El cuestionario evaluado tiene validez y fiabilidad adecuadas que permite determinar el nivel de participación de las enfermeras en la tutela de estudiantes.

Descriptores: educación en enfermería; prácticas clínicas; mentores; estudios de validación.

Questionário para medir a participação dos profissionais de enfermagem na tutela de estudantes

Objetivo. Validar um questionário para medir o nível de participação dos profissionais de enfermagem clínicos na tutela de estudantes de enfermagem durante as práticas clínicas. **Métodos.** Desenho e validação de um questionário. Se determinaram as propriedades psicométricas da ferramenta mediante quatro fases: 1- revisão da literatura; 2- avaliação da validez de conteúdo; 3- prova piloto, pré-teste cognitivo e estudo da fiabilidade intra-observador; 4-, estudo de validez de construto mediante uma análise fatorial exploratório de componentes principais com rotação varimax numa amostra de 249 profissionais de enfermagem de atenção primária e de atenção hospitalar de diferentes províncias espanholas. A consistência interna se estudou com o coeficiente Alfa de Cronbach. **Resultados.** A validez de conteúdo global foi superior a 0.8. A versão final do questionário foi de 33 itens, com um CCI global de 0.852 e um alfa de Cronbach de 0.837. A análise fatorial explicou que 55.4% de variância total, com uma solução de cinco fatores que formaram as dimensões; Implicação, Motivação, Satisfação, Obstáculos e Compromisso. **Conclusão.** O questionário avaliado tem validez e fiabilidade adequadas que permite determinar o nível de participação das enfermeiras na tutela de estudantes.

Descritores: educação em enfermagem; estágio clínico; mentores; estudos de validação.

Introduction

Clinical practices comprise around 50% of the educational programs in Nursing; not only in the European Union, but in the rest of the world,(1) so that clinical nurses are a key element to help students acquire skills(2) due to direct relationship both have during clinical practices.(3) All students have during their clinical learning several figures with greater or lesser involvement with the university and distinct denominations. This research focused on the role of clinical nursing with mentorship function and without formal ties to the student's university of origin. To conduct mentorship of students, it is important for nursing care professionals to maintain ties with the university and receive prior formation in mentorship of students, although it is true that a variability exists in this process.(4–6) Diversity exists in the terms that describe professionals who mentor students in the clinical setting due to the different health and educational systems in the world. In all cases, these are nursing care professionals who guide students, as a model to imitate who helps to integrate theory and practice.(7,8)

Jokelainen *et al.*,(6) state that the functions of practice mentors are confusing and provide a conceptual framework with four principal functions: (i) create an environment of solidarity learning; (ii) that permits a process of individual learning; (iii) development of empowerment of professional attributes and identity; (iv) achieve improvement in professional skills. These functions are developed within a context that combines the culture of two complex organizations: university and health center. Lack of time, work overload, or institutional support can limit the availability of nursing professionals to carry out adequately the mentor function.(9,10) In some cases, deficiencies exist in teaching methodology, lack of clear evaluation criteria,(11) or inadequate communication between professors and mentors, which are obstacles that can have negative impact on student evaluations during the clinical practices.(12)

Further, nursing professionals must have skills, like experience, enthusiasm, positive attitude,(5,13) commitment, and level of implication(6,9) necessary to achieve effective learning. Formation from the university on aspects related to teaching methodology, evidence-based practice, or the educational program and the evaluation tools are well-received by clinical professionals who mentor students and contribute improvement to student learning.(14–16) In synthesis, adequate mentorship of students by nursing care professionals during clinical practices requires fluent institutional relationships between the university and health services, besides pedagogic, clinical, and academic attributes of the practice mentors, which along with experience, improve the quality of clinical learning(1) and by extension, the formation of future nurses. In the literature reviewed, no tools have been found to measure the level of participation of clinical professionals in mentoring students. Hence, the objective of this research study was to design and validate a questionnaire that permits determining the level of participation of nursing care professionals in mentoring nursing students during clinical practices.

Methods

This study was conducted to design and validate a questionnaire that permits knowing the participation of nursing professionals in mentoring nursing students during their clinical practices within the setting of Spanish universities. The study was conducted between January and November of 2014. The following phases were carried out:

Phase I: Literature review. A literature review was conducted to obtain a battery of items related to mentoring nursing students, which was carried out by combining the descriptors ‘Survey’, ‘Mentor’, ‘Preceptor’, ‘Clinical learning’, ‘Clinical training’, and ‘Nursing’. PubMed, CINAHL, SciELO, and ERIC databases were consulted to recover all the research articles of interest in English and Spanish between 2009 and 2014; this permitted the recovery of 324 articles and 27 were included in the study because they are directly related to the study theme. Many of the articles included were from qualitative methodology and a systematic review. The items were obtained through abstraction of content and were grouped into four initial dimensions (Implication, Motivation, Satisfaction, and Obstacles). This literature review based the first version on the items from the questionnaire.

Phase II: Content validity. Five nursing professionals who are experts in educational innovation participated; these had PhD or Masters academic level and over 10 years of teaching experience in nursing assignments with clinical practices in different Spanish universities. They received, via e-mail, the initial version of the questionnaire to evaluate through a four-point ascending Likert scale if each of the items fit the construct; also, they were asked to propose new items in an open space where they could express their general opinion on the questionnaire. The experts were given a week to complete the evaluation. One round was sufficient to reach adequate consensus levels. The content validity analysis was conducted by following the methodology by Polit and Beck;(17) the content validity index, CVI, (adequate validity I-CVI ≥ 0.8) was calculated for each item and the global coefficient of content validity (adequate validity S-CVI ≥ 0.8) was calculated for the questionnaire and for each dimension. Content validity results and comments from the experts were considered in the elaboration of the second version of the questionnaire.

Phase III: Pilot test, cognitive pretest and intra-observer reliability. With version 2 of the questionnaire, a pilot test and cognitive pretest were run to detect possible comprehension problems, response of items, and comprehension in general, with a group of 30 nursing care professionals from different health centers near Castellón, a branch of Universidad Jaume I, and where the nursing students conduct their practices. Upon completion, a researcher asked for possible comprehension problems of the items, response categories, encoding, and functioning of the dimensions. Besides, the formal aspect and compliance time were evaluated. This phase also studied intra-observer reliability: in the same sample a re-test was applied with a new delivery of the questionnaire three weeks later, and intra-observer reliability was studied with the intraclass correlation coefficient (ICC; excellent agreement ICC $\geq$0.75). Also, a first internal consistency analysis was performed with Cronbach's alpha.

Phase IV: Construct validation and internal consistency. To finish the validation process, the questionnaire's psychometric properties were studied in a sample of 249 nursing professionals who mentored nursing students in primary care and hospital care from different Spanish provinces, through convenience sampling. Construct validity was studied with exploratory factor analysis of main components with varimax rotation and the amount of dimensions from the third version of the questionnaire was examined. This version of the questionnaire was introduced into electronic support with Google Drive and the data were collected by sending e-mails that included a presentation letter with the objectives and methodology of the study and the link for the questionnaire. The nursing professionals answered the items from the questionnaire with a five-level Likert-type scale (1: Totally disagree; 2: Disagree; 3: Neither agree nor disagree; 4: Agree; 5: Totally agree). Sociodemographic variables, like age and work environment (primary care, specialized care, or social-health care) were collected. The viability of the factor analysis was confirmed with Bartlett's sphericity test and the Kaiser-Meyer-Olkin test (acceptable KMO test $\geq$0.7). The research group discussed including items with factor loading below 0.4. The global internal consistency and that of each dimension was studied with Cronbach's alpha coefficient (acceptable consistency $a \geq 0.7$). Statistical analysis was performed via Excel and the SPSS statistical package V21 for IOS operating system. The statistical significance level was established at $p \leq 0.05$.

Ethical considerations. Informed signed consent was obtained from all the experts and nursing professionals participating in the study. The questionnaire sent via e-mail to the nursing care professionals did not request data of personal nature that would permit their identification and their compliance was completely volunteer. All the information was maintained encoded under a password to guarantee data confidentiality. At all times, respect was upheld for the ethical principles of the Helsinki Declaration of October 2013 and the Spanish legislation regarding the protection of data of personal nature, Legislation 15/1999.(18)

Results

Table 1 shows the modifications in the number of items and dimensions as the questionnaire's validation process advanced.

After the literature review, the research team constructed the first version (v1) of the questionnaire, with four dimensions: Implication (15 items), Motivation (11 items), Satisfaction (11 items), and Obstacles (6 items).

Content validity: the global S-CVI score was 0.82 points and all the dimensions obtained S-CVI scores above 0.8, except for the dimension of Satisfaction (S-CVI = 0.76). Table 2 shows the eight items eliminated from the first version for having values of I-CVI<0.8. According to comments by the experts, some of the items from the dimension of Satisfaction and Motivation had small changes in their writing. Thus, version 2 (v2) of the questionnaire was created with 34 items distributed in the same dimensions.

Table 1. Validation process through phases

Phase	Activities	Number of items	Number of dimensions
I	Literature review	43	4
II	Content validity	34	4
III	Pilot test, cognitive pretest, intra-observer reliability	33	4
IV	Construct validity, reliability	33	5

Table 2. Items eliminated from the first version of the questionnaire for having values of I-CVI<0.8

Dimensions and Items	I-CVI
Implication	
I know the current academic situation of the student I mentor	0.6
Mentoring students has encouraged me to conduct research projects	0.4
Since the university, the contact me frequently	0.6
Motivation	
I find it entertaining	0.6
I can learn skills that I could use in other areas in my life	0.6
It is what I should do to feel good	0.4
It is seen well by the service supervisor	0.6
Satisfaction	
The practices conducted and the skills established in the degree program are related	0.6

The phase that ran the pilot test and the cognitive pretest included 30 questionnaires and three were discarded because they were not filled out correctly. The writing of the items was not modified, but the item from the dimension of Motivation 'I mentor students because I work in a university hospital' was eliminated given that it was not well taken by the primary care nursing professionals. It was estimated that the time to complete the questionnaire was between 10 and 12 minutes and the most appropriate format to reach the professionals was an on-line questionnaire.

Intra-observer reliability results after three weeks were excellent with global ICC = 0.852 and the values of each dimension were: Implication ICC = 0.851, Motivation ICC = 0.819, Satisfaction ICC = 0.854, and Obstacles ICC = 0.79.

To evaluate construct validity and internal consistency, 249 questionnaires correctly filled out were collected. The mean age of the nurses surveyed was 42.26 years (sd = 9.02; 95%CI 41.23-43.48 years); 75.1% (*n* = 187) worked in specialized care (95%CI 69.8%-80.09%). The viability of the factor analysis was confirmed with the KMO test (*p* = 0.862) and Bartlett's sphericity test (X^2 = 4258.726, p <0.001), verifying that correlations between pairs of variables could be explained by other variables and that the correlations were different from zero, respectively. With the principal components analysis method, with varimax rotation and a factor solution with five factors, 55.4% of the variance was explained. The first factor explained 15.08% of the total accumulated variance and corresponding to the dimension of Implication, composed of eight items. The second factor explained 11.39% of the variance (26.47% of the accumulated variance); corresponding to the dimension of Motivation, with six items. The third factor corresponded to the dimension of Satisfaction, with eight items, and explained 10.77% of the variance (37.24% of the accumulated variance). The fourth factor explained 10.41% of the variance (47.65% of the accumulated variance) and corresponded to the dimension of Obstacles, comprised of six items. A fifth factor appeared, denominated Commitment

Table 3. Rotated component matrix and construct of the definite version of the questionnaire

Items	Dimensions*				
	I	M	S	O	C
I know the university's student evaluation systems	0.856	0.251	0.005	-0.035	0.068
I use the evaluation systems applied	0.845	0.192	-0.052	-0.035	0.095
I fill out the student evaluation guides	0.81	0.122	0.042	-0.037	0.028
I conduct student attendance control	0.726	-0.05	0.199	-0.068	0.027
I know the learning results that student must acquire when they attend practices	0.271	0.241	0.043	-0.059	0.328
I plan the practices	0.72	0.227	0.16	-0.127	0.163
I know the university's student evaluation systems	0.698	0.268	0.145	-0.102	0.071
I know the Nursing Degree course being taken by the students I mentor	0.419	-0.236	0.379	-0.037	0.115
I am satisfied with the results the students obtain during the period of practices	0.421	0.49	0.369	-0.16	-0.064
I am satisfied with my participation as mentor of practices	0.365	0.587	0.199	-0.186	0.183
It generates personal interest in me	0.159	0.585	0.118	-0.013	0.428
I find it pleasant and interesting	0.144	0.617	0.109	-0.131	0.424
I like to transmit my knowledge to others	0.083	0.723	0.073	0.025	0.266
I consider that the practices permit acquiring and developing professional skills	0.069	0.606	0.114	-0.125	-0.054
I believe the practices are conducted in the most adequate academic course period	-0.124	0.49	0.231	-0.085	0.071
I have been informed and have resources are at my disposition	0.343	0.119	0.73	-0.116	0.069
I am satisfied with the treatment I have received from the university professors	0.301	0.338	0.603	-0.162	-0.024
I have been informed and have resources are at my disposition	-0.081	-0.065	0.317	-0.042	0.117
We establish objectives jointly between professors and clinical nurses	0.257	0.193	0.71	-0.1	0.082
The existing coordination between the university and the practice center is satisfactory	0.244	0.214	0.768	-0.163	-0.055
I am satisfied with the organization of the clinical practices	0.173	0.406	0.665	-0.169	-0.054
I have greater recognition from my supervisors	0.134	0.089	0.578	0.035	0.304
It is an obstacle due to the responsibility it provokes	-0.002	-0.126	-0.082	0.787	-0.132
It is an obstacle to mentor students due to the fatigue caused by the work day	-0.012	-0.083	-0.113	0.774	-0.141
It is an obstacle due to the additional work load it supposes	-0.047	-0.168	-0.03	0.863	-0.161
It is an obstacle due to the time required	-0.069	-0.112	-0.058	0.837	-0.172
It is an obstacle due to the poor teaching methodology I have	-0.122	0.039	-0.034	0.506	0.192
It is an obstacle to work shifts	-0.16	-0.142	-0.26	0.417	0.132
Mentoring students has promoted in me an active attitude toward formation	0.436	0.108	0.408	-0.096	0.469
I believe mentoring students in practices is a function of nursing professionals	0.173	-0.02	0.248	-0.248	0.53
I feel it necessary to have courses for the formation of practice mentors	0.151	-0.074	-0.039	0.058	0.662
It is a professional commitment	0.007	0.258	0.357	-0.113	0.658
It is a moral and ethical commitment that is necessary to assume	-0.176	0.307	0.207	-0.077	0.517

(*): I: Implication S: Satisfaction; M: Motivation; O: Obstacles; C: Commitmet and composed of five items. This new dimension explained 7.75% of the variance (55.4% of the accumulated variance). Table 3 shows the rotated component matrix in search of a simpler and more interpretable structure to observe in which factor each item obtains better saturation. The table also shows the definite version of the questionnaire (v4) after the factor analysis, illustrating a questionnaire made up of 33 items distributed into five dimensions (it uses a five-level Likert-type scale and permits obtaining a global score as the sum of the score of the items, with a range between 33 and 165 points), which offer information on: Implication, Motivation, Satisfaction, Obstacles, and Commitment of nurses in mentoring students. The questionnaire was denominated IMSOC, corresponding to the initials of its dimensions (Implication, Motivation, Satisfaction, Obstacles, and Commitment), and it is in the process of intellectual property registration.

The questionnaire's internal consistency was excellent, with a value of $\alpha = 0.837$. The values of the questionnaire's dimensions were: Implication $\alpha = 0.875$, Motivation $\alpha = 0.824$, Satisfaction $\alpha = 0.811$, Obstacles $\alpha = 0.811$, and Commitment $\alpha = 0.713$.

Discussion

Fifty percent of learning in the nursing degree program occurs in the clinical setting and clinical nursing professionals assume the mentorship of nursing students. It is important to know the level of participation in the formation and the related factors(19) through validated tools. The results of the questionnaire elaboration show adequate content validity, temporal stability, and internal consistency, according to the literature proposed.(17) Two items from the dimension of Implication and one from the dimension of Satisfaction obtained factor loading in their respective dimensions considered insufficient by other authors,(20) although the research team decided to keep them because of their practical relevance against the statistical relevance, given that these contributed important information to know how clinical nurses assess the organization of the practices.

Student mentoring during clinical practices has been debated in nursing literature for over 25 years.(21) According to Jokelainen *et al.*,(7) comparative studies must be conducted with different approaches of clinical mentorship that help to determine the best methods to train future professionals in clinical settings, but for this it is necessary to establish a series of valid and reliable tools that permit gathering relevant information to make this comparison. The IMSOC questionnaire offers relevant information on the level of participation from nursing care professionals in mentoring students and has adequate psychometric properties, which can be useful to improve the evaluation of clinical practices in different contexts and organizational models.

In addition, the IMSOC questionnaire may be used to evaluate the effect of the formation of mentors in their level of participation or to select mentors and practice units, along with other tools, like the Clinical Learning Environment, Supervision and Nurse Teacher evaluation scale (CLES+T)(22,23) that permits evaluating the adaptation of the learning environment in the practice units. The difference between both is that the IMSOC questionnaire permits knowing beforehand the level of implication or participation of the mentors and the CLES+T questionnaire offers information from the students' perspectives and it is administered when the students have already done the clinical practices.

It is worth highlighting that the validation process of a questionnaire is a live and continuous process and that in spite of the good psychometric properties obtained, it is possible to continue working on it, given that this study was conducted within the Spanish context – limiting its application within the international setting – making it necessary to develop transcultural adaptation and validity studies in other contexts different from the Spanish. A limitation may be the fact that a round with five experts was carried out and this may have influenced upon the definite version, given that the modifications made after the first round were not subjected to a new round, although the experts were selected with stringent criteria and the results of content validity were adequate, according to criteria by Polit *et al*.(17) Additionally, questionnaires validated with a panel of three experts and one round can be found in literature.(24) Besides, the criterion validity could not be studied because no Gold Standard was found that would permit a comparison.

To conclude, the IMSOC questionnaire has been validated to determine the level of nurse participation in the mentorship of nursing students with adequate validity and reliability in the Spanish context. This questionnaire offers information on the implication, motivation, satisfaction, obstacles, and commitment of nursing care professionals in the mentorship of students and may be used to select practice mentors, compare different models of clinical mentorship, or evaluate intervention strategies to promote nurse participation in mentoring students during clinical practices. It is pertinent to continue investigating the factors that can affect the level of implication of nurses in student mentorship.

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Overweight and Obesity Conditions: Prevalence and Associated Risk Factors in Nursing Students in a Public University in Medellín, Colombia

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Overweight and Obesity Conditions: Prevalence and Associated Risk Factors in Nursing Students in a Public University in Medellín, Colombia

Objective. This work sought to identify the prevalence of overweight and obesity conditions and the associated factors in nursing students in a public university in Medellín, Colombia. **Methodology.** This was a descriptive cross-sectional study conducted in 2015. The study selected 171 participants through stratified random sampling. A structured questionnaire was applied and weight and height were taken to calculate the body mass index (BMI). **Results.** The prevalence of overweight condition was 25.1% and obesity at 7.6%. Statistically significant association exists with family background of overweight or obesity conditions (OR = 6.65) and the perception of unhealthy feeding (OR = 3.01). No association was found with cases suggesting anxiety and depression and physical activity. **Conclusion.** A high prevalence was found of overweight and obesity conditions in the population studied, which is why it is recommended to develop self-care programs in university populations, principally in Nursing, given that as future professionals they will be co-responsible for health promotion in individuals and collectives.

Descriptors: cross-sectional studies; obesity; overweight; risk factors; students, nursing.

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Sobrepeso y obesidad: prevalencia y factores de riesgo asociados en estudiantes de Enfermería en una universidad pública de Medellín, Colombia

Objetivo. Identificar prevalencia de sobrepeso y de obesidad y los factores asociados en estudiantes de Enfermería en una universidad pública de Medellín, Colombia. **Metodología.** Estudio descriptivo transversal realizado en 2015. Se seleccionaron 171 participantes por muestreo aleatorio estratificado. Se aplicó un cuestionario estructurado y se tomó peso y talla para calcular Índice de Masa Corporal (IMC). **Resultados.** La prevalencia de sobrepeso fue de 25.1% y de obesidad 7.6%. Existe asociación estadísticamente significativa con antecedentes familiares de sobrepeso u obesidad (OR=6.65) y la percepción de alimentación no saludable (OR=3.01). No se encontró asociación con casos sugestivos de ansiedad y depresión y actividad física. **Conclusión.** Se encuentra una alta prevalencia de sobrepeso y obesidad en la población estudiada por lo que se recomienda desarrollar programas de autocuidado en población universitaria, principalmente en Enfermería, pues como futuros profesionales serán corresponsables de la promoción de la salud en individuos y colectivos.

Descriptores: estudios transversales; obesidad; sobrepeso; factores de riesgo; estudiantes de enfermería.

Sobrepeso e obesidade: prevalência e fatores de risco associados em estudantes de Enfermagem numa universidade pública de Medellín, Colômbia

Objetivo. Identificar prevalência de sobrepeso e de obesidade e os fatores associados em estudantes de Enfermagem numa universidade pública de Medellín, Colômbia. **Metodologia.** Estudo descritivo transversal realizado em 2015. Se selecionaram 171 participantes por amostragem aleatória estratificado. Se aplicou um questionário estruturado e se tomou peso e tamanho para calcular Índice de Massa Corporal (IMC). **Resultados.** A prevalência de sobrepeso foi de 25.1% e de obesidade 7.6%. Existe associação estatisticamente significativa com antecedentes familiares de sobrepeso ou obesidade (OR=6.65) e a percepção de alimentação não saudável (OR=3.01). Não se encontrou associação com casos sugestivos de ansiedade e depressão e atividade física. **Conclusão.** Se encontra uma alta prevalência de sobrepeso e obesidade na população estudada pelo qual se recomenda desenvolver programas de autocuidado na população universitária, principalmente em Enfermagem, pois como futuros profissionais serão correspondentes da promoção da saúde nos indivíduos e coletivos.

Descritores: estudos transversais; obesidade; sobrepeso; fatores de risco; estudantes de enfermagem.

Introduction

The World Health Organization (WHO) defines overweight and obesity as the abnormal or excessive accumulation of fat that can be harmful to health, and has classified this problem as an epidemic in expansion, given that since 1980 to 2016 obesity has duplicated in the world.(1) In 2014, 39% of adult individuals were overweight and 13% were obese, which has negative repercussions to health because of the direct association between the degree of obesity, comorbidity, and mortality related to this cause.(1) In fact, excess weight is a global public health problem due to its effects on the health of people and their families.(2) According to the results from the Food and Nutrition Security Profile - SAN 2015 from Medellín,(3) 51.5% of the population from 18 to 59 years of age has excess weight (32.9% overweight and 18.6% obesity), with the proportion of overweight condition being higher in women than in men (33% versus 11.6%) and in the group 45 years of age and older.

It is also important to bear in mind that the transition from high school to the university implies significant lifestyle changes related to increased academic pressures, changes in relationships with peers, relatives, and friends, and the opportunity to participate in risk behaviors, like abusive consumption of alcohol and drugs.(4) Added to the aforementioned are elements, like changes in the quality of sleep and rest and of feeding routines.(5) A study conducted on nutritional state in adolescents and youth from northeast Mexico,(6) found 31.2% prevalence of overweight condition in university students. In Medellín, a research carried out with nursing students from a private university(7) found that 11.14% had excess weight (9% overweight and 1.4% obesity), besides 52% did not do exercise and 17% smoked.

The aim of this study was to identify the prevalence of overweight or obesity conditions and their associated factors in nursing students from a public university in Medellín, which will permit an approach to the reality of the problem in this population and will provide the bases to implement prevention and intervention strategies in the future professionals.

Methods

A descriptive cross-sectional study was conducted in a population of 468 undergraduate nursing students from a public university in Medellín, Colombia. The sample size calculated was 171 subjects, for an expected prevalence of overweight and obesity conditions of 29.6%, obtained through a pilot test performed on 27 volunteer nursing students from different semesters in the university where the study took place, with 5.5% maximum error and 95% CI in the estimations. The sampling method was stratified random for each of the academic semesters proportionate to the number of students during the semester. With the list of students, using the Epidat 4.0 program, the number of students required per semester was randomly selected. In turn, the selection of randomized individuals was increased by 10% to conform a replacement list, for the students selected by the software who did not comply with the inclusion criteria to be changed for one from the list, which permitted complying with the sample. The study selected undergraduate adult nursing students, registered in the second academic period of 2015. Exclusion criteria involved women in the gestation process, as well as those, in spite of being selected in the sample, who due to illness or serious incidents did not attend the university during the period of data collection. At the end of class, the students selected in the randomization were approached. After their signing the informed consent, a structured self-filled questionnaire was applied, adapted from an instrument designed and applied in Mexico in a similar study(8) and using prior authorization from the authors, with the commitment to compare results in a later stage. This questionnaire inquires on variables related to data: a) sociodemographic; b) physical activity (moderate intensity aerobic physical activity during at least 30 min in five days per week or of vigorous intensity aerobic physical activity during a minimum of 20 min three days per week),(9) c) Goldberg scale(10) to identify presumptive symptoms of anxiety and depression.

A nutritionist, researcher from Universidad Autónoma San Luis Potosí in Mexico, standardized the group of researchers in collecting weight and height. A scale and a portable stadiometer (SECA) were used to take measurements. To estimate prevalence of overweight and obesity conditions, the body mass index [weight in kilograms/height in meters2] was calculated and classified according to the parameters proposed by the WHO.(1) Data processing was performed with the SPSS 23 statistical software. Likewise, measures of central tendency and frequencies were calculated; prevalence of overweight and obesity conditions were estimated in the variables inquired on by the questionnaire; and chi-squared and Fisher's exact tests were run (according to the case) to detect statistically significant differences. A logistic regression model was applied for the dependent variable of excess weight (sum of the figures of overweight and obesity conditions), which included the independent variables in their totality in an initial model that later was debugged with successive models where each step eliminated one by one the variables that in the estimation of their coefficients yielded a value of $p \leq 0.10$, seeking a final model that identified the explanatory variables from the variable of excess weight.

The research followed the pertinent principles and ethical norms and was approved by the Research Ethics Committee from the Faculty of Nursing at the university where the study was conducted.

Results

Table 1 illustrates that the general characteristics prevailing in the study sample were: age between

20 and 24 years (56.1%, mean 22±3, minimum = 18, and maximum = 33); three of every four are women and most are single (93%) and without children (93.6%); four of every five belong to socioeconomic levels two or three. Three percent are identified as indigenous or Afro-descendent and the rest are mestizo. With respect to family background, the most frequent aspects were: high blood pressure (71.3%), hyperlipidemia (63.7%), and excess weight (56.7%). The most reported health conducts included healthy nutrition (42.7%) and physical activity (32.7%), while unhealthy conducts included alcohol consumption (31%) and continue eating even when satisfied (30.4%). Since entering the Faculty, 14.4% of the participants increased their physical activity, while 70.1% diminished it. According to the Goldberg scale, 69.6% of the participants has probable anxiety and 70.2% has probable depression.

Also, regarding the nutritional state, 32.7% of those surveyed has excess weight (25.1% overweight and 7.6% obese), 62.6% has normal weight, and 4.7% is underweight. The overweight and obesity conditions vary according to the year coursed, but no clear trend was observed as students advanced in their academic formation, although the overweight prevalence is higher in students coursing the last year (34.2%), surpassing the general prevalence estimated. If we add to this the prevalence of obesity for the same group (7.9%), we have that four of every 10 students upon ending the undergraduate have excess weight. However, no statistically significant association was found between the academic year coursed by the student and the overweight condition or obesity.

Upon inquiring about the family background for chronic diseases, a statistical association was found between family background of excess weight for overweight condition and for obesity. Moving on to the students' health conducts, an association was only observed between obesity and not having healthy nutrition. The prevalence of obesity is higher for students with probable depression than for those with probable anxiety, while for the overweight condition it is higher only with probable anxiety, although said differences are not statistically significant.

Table 2 shows the parameters of the logistic regression model for the dependent variable of excess weight, according the inclusion criteria for the independent variables. The final model shows that, for a significance of 0.1, the explanatory variables of this condition in the population of students are: family background of excess weight (OR = 6.65), unhealthy feeding (OR = 3.01), and alcohol consumption (OR = 6.65). This model manages to correctly predict 73% of the cases, which permits stating that a Nursing student from the population studied who has these three risk factors has 0.73 probability of having excess weight.

Table 1. General characteristics, prevalence of overweight and obesity conditions according to risk factors of 171 nursing students from a public university in Medellín

Variables	Total		Overweight			Obesity		
	n	%	*n*	%	*p*	*n*	%	*p*
Gender								
Masculine	44	25.7	11	25.0	0.979	3	6.80	0.999*
Feminine	127	74.3	32	25.2		10	7.90	
Age Group								
18-19	46	26.9	11	23.9	0.406	2	4.30	0.526
20-24	96	56.1	22	22.9		8	8.30	
25-29	23	13.5	9	39.1		3	13.00	
30 or more	6	3.5	1	16.7		0	0.00	
Marital status								
Single	159	93.0	39	24.5	0.391	12	7.50	0.884
Married	10	5.8	4	40.0		1	10.00	
Divorced	2	1.2	0	0.0		0	0.00	
Number of children								
0	160	93.6	41	25.6	0.587	12	7.50	0.708
1	7	4.1	2	28.6		1	14.30	
2	3	1.8	0	0.0		0	0.00	
Socioeconomic level								
1	10	5.8	3	30.0	0.777	1	10.00	0.709
2	53	31.0	12	22.6		3	5.70	
3	82	48.0	22	26.8		7	8.50	
4	16	9.4	4	25.0		1	6.30	
5	4	2.3	0	0.0		1	25.00	
Year coursed								
1st	43	25.1	10	23.3	0.188	3	7.00	0.585
2nd	42	24.6	6	14.3		5	11.90	
3rd	48	28.1	14	29.2		2	4.20	
4th	38	22.2	13	34.2		3	7.90	
Physical activity								
Yes	56	32.7	16	28.6	0.511	4	7.10	0.999*
No	113	66.1	27	23.9		8	7.10	
Healthy nutrition								
Yes	73	42.7	14	19.2	0.121	0	0.00	0.001*
No	98	57.3	29	29.6		13	13.30	
Continues eating even when satisfied								
Yes	52	30.4	7	13.5	0.141	17	32.70	0.068*
No	118	69.0	6	5.1		26	22.00	
Probable anxiety								
Yes	119	69.6	31	26.1	0.68	11	9.20	0.348*
No	52	30.4	12	23.1		2	3.80	
Probable depression								
Yes	120	70.2	28	23.3	0.402	12	10.00	0.111*
No	51	29.8	15	29.4		1	2.00	
Current smoker								
Yes	10	5.8	3	30.0	0.715	2	20.00	0.171*
No	160	93.6	40	25.0		11	6.90	
Alcohol consumption								
Yes	53	31.0	17	32.1	0.162	7	13.20	0.114*
No	118	69.0	26	22.0		6	5.10	
FB[†] High blood pressure								
Yes	122	71.3	31	25.4	0.788	11	9.00	0.692*
No	25	14.6	7	28.0		1	4.00	
FB Diabetes Mellitus								
Yes	54	31.6	12	22.2	0.375	4	7.40	0.999*
No	79	46.2	23	29.1		6	7.60	
FB Hyperlipidemia								
Yes	109	63.7	32	29.4	0.403	11	10.10	0.459*
No	28	16.4	6	21.4		1	3.60	
FB Excess weight								
Yes	97	56.7	33	34.0	0.005	11	11.30	0.018*
No	44	25.7	5	11.4		0	0.00	

(*): Probability value when applying Fisher's exact test; (†) FB: family background

Table 2. Parameters estimated in the logistic regression for the variable of excess weight in nursing students from a public university in Medellín, Colombia

Variables	B	Standard error	Wald	GL	*P*	OR	$CI_{95\%}$ OR
Family background of excess weight	1.89	0.53	12.59	1	<0.001	6.65	2.33-18.96
Unhealthy feeding	1.10	0.41	7.24	1	0.007	3.01	1.34-6.73
Alcohol consumption	0.74	0.40	3.36	1	0.067	2.10	0.95-4.64
Constant	-3.01	0.61	24.50	1	<0.001	0.04	-

Discussion

This research with Nursing students from a public university from the city of Medellín found that excess weight was at 32.7% (25.1% overweight and 7.6% obesity), data much higher than that reported by the study conducted with students from a private university in the same city where 9% was overweight and 1.4% were obese; (7) and somewhat lower than those reported in Nursing students from Universidad Autónoma de San Luis Potosí in Mexico,(8) 35.29% (25.49% overweight and 9.8% obese). By gender, the proportion is similar for overweight condition and higher for obesity in women; similar to the information found in the Mexico study already cited. It is of general knowledge that excess weight in nurses influences upon the care they offer.(11)

Upon analyzing the year of study and the prevalence of overweight or obesity conditions, a higher proportion was observed of overweight condition during the last year, however, there is no clear upward trend, which contrasts with a study carried out with Chilean students who report increased BMI per year of study.(12) Regarding family background for overweight and obesity conditions, it was found that 34% of the students with overweight condition and 11.3% with obesity had family background with these conditions, higher prevalence than students who did not have overweight or obesity conditions. These results are similar to those found in a study with Mexican university students.(13)

With respect to cigarette smoking, a 5.8% proportion was found in the students surveyed. Compared to a research conducted with students from a public university in Mexico, this proportion resulted lower to what they reported, where smoking was at 20%, 13 and also lower than that reported in Nursing students in Medellín at 17%.7 Besides, it was evidenced that 30% of the students who smoked were overweight and another 20% were obese, higher proportions in relation to those who did not smoke. Kim *et al*., (14) reported that direct association exists between smoking and obesity, which is why current smokers are at higher risk than non-smokers. Furthermore, it is known that individuals who are overweight and smoke increase the risk of developing some non-communicable chronic diseases, among them cardiovascular diseases.(15) With respect to alcohol consumption, the study shows its association to excess weight, as it has also been shown by the systematic review by Sayon *et al*.,(16) on this theme.

According to this study, another prediction factor for overweight and obesity conditions is physical activity. The percentage of students with overweight and obesity conditions who do not engage in physical activity is much higher compared to the percentage of those who do practice it. Furthermore, it is of concern that two of every three participants in the study do not practice recommended physical activity, a figure over 52% of the students from a private university in Medellín do not perform exercise.(7) In addition, it was found that seven of every ten students from this research report having diminished their physical activity upon entering the university, data above 56% of the students from the health area in San Luis Potosí in Mexico.(8) Sarma *et al*.,(17) in the data analysis of research in this regard, reached the conclusion that after controlling some socioeconomic factors, physical activity was related to reduced BMI. Also, healthy nutrition is a protection factor to keep from developing overweight and obesity conditions. According to this research work, 57.3% of the participants did not follow a healthy nutrition, a value equal to that reported in a study conducted with Chilean university students.(18) These data are alarming when considering that the study group are young adults who are being trained in Nursing. According to Reed, (11) healthy feeding helps nurses diminish stress on their health.

Another finding worth highlighting is that related to anxiety and depression, which shows that 69.6% of the students surveyed have cases suggesting anxeiety, and 70% show cases suggesting depression, according to the Goldberg scale. These percentages are higher than those found in Mexican students(19) with symptoms of depression at 20.4% and anxiety at 2.76%; likewise, 28.9% have presumptive symptoms of anxiety and 30.6% have presumptive symptoms of depression. In addition, the same study from Mexico City(19) proposes that personal characteristics, like impulsiveness, low self-esteem, anxiety, and depression were found in nearly half the students with obesity and overweight conditions.

In conclusion, there is a high prevalence of excess weight in the population of Nursing students from a public university in Medellín and it is noted that the proportions of healthy habits are not the best, which could – over time – propitiate the development of non-communicable chronic diseases, a situation that poses a challenge for the institutions in charge of the formation of future professionals. It is recommended for higher education institutions to carry out integral interventions aimed at self-care and the social responsibility of their students for them, as future educators in health, to contribute to diminishing this phenomenon. Finally, as stated by Rodríguez *et al*.,(20) Nursing students today are being trained as caregivers of individuals and collectives for which, besides knowledge, they need to acquire and promote lifestyles that generate their own health conducts to care for others.

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The possible meanings of care: self-care and care-for-the-other

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The possible meanings of care: self-care and care-for-the-other

Objective. To understand and to reflect about care based on the experiences of managers, professionals and users of maternal and child health services. **Methods.** We developed an evaluative research with a qualitative approach in a Northeastern state of Brazil with extensive experience in the regionalization and implementation process of integrated health networks. Semi-structured interviews were carried out with 68 subjects and direct observation of the maternal and child health services. We adopted the theoretical reference framework of Gadamer's hermeneutics to analyze the narratives. **Results.** Some units of meaning were present, such as: perception and knowledge about oneself; exercise of autonomy; weaknesses in the provision of resources for the materialization of self-care; and difficulties in accessing health services and care practices. We perceive that care is dynamic, comprises various subjective aspects with respect to the singularities of the subjects and is related to the possibility of generating both individual and collective transformation. **Conclusion.** Care is built based on a movement among the subjects and between them and the social and health services. Thus, when we intend to take care, we need to consider this instead of focusing care solely on the technical support of health professionals.

Descriptors: comprehensive health care; maternal-child health services; health evaluation; hermeneutics.

Los posibles sentidos del cuidado: el cuidar de sí y el cuidar de otros

Objetivo. Comprender y reflexionar sobre el cuidado a luz de las experiencias de directivos, profesionales y usuarios de los servicios de salud materna e infantil. **Métodos.** Se desarrolló una investigación de evaluación con enfoque cualitativo en un estado en el noreste de Brasil, con una amplia experiencia en el proceso de regionalización e implementación de redes. Se realizaron entrevistas semiestructuradas a 68 sujetos y la observación directa

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de los servicios de salud materna e infantil. Se adoptó el referencial teórico de la hermenéutica de Gadamer para el análisis de las narrativas. **Resultados.** Estuvieron presentes algunas unidades de significado, como la percepción y conocimiento sobre sí, el ejercicio de la autonomía, las debilidades en la oferta de recursos para la materialización del cuidar de sí mismos y dificultades en el acceso a los servicios de salud y a las prácticas de cuidado. Se percibió que el cuidado es dinámico, se compone de aspectos subjetivos diversos en relación con las singularidades de los sujetos y está asociado a la posibilidad de generar transformación individual y colectiva. **Conclusión.** El cuidado se construye a partir de un movimiento entre los sujetos y entre éstos y los servicios sociales y de salud. De esta forma, cuando pretendemos cuidar, debemos partir de este horizonte y no centrar únicamente el cuidado en el apoyo técnico de los profesionales de la salud.

Descriptores: atención integral de salud; servicios de salud materno-infantil; evaluación en salud; hermenéutica.

Os possíveis sentidos do cuidado: o cuidar-de-si e o cuidar-dos-outros

Objetivo. Compreender e refletir sobre o cuidado à luz das experiências de gestores, profissionais e usuárias dos serviços de saúde materna e infantil. **Métodos.** Desenvolvemos uma pesquisa avaliativa com abordagem qualitativa em um estado do nordeste brasileiro com vasta experiência no processo de regionalização e implantação de redes integradas. Foram realizadas entrevistas semiestruturadas com 68 sujeitos e observação direta dos serviços de saúde materna e infantil. Adotamos o referencial teórico da hermenêutica de Gadamer para análise das narrativas. **Resultados.** Algumas unidades de significado estiveram presentes, como: percepção e o conhecimento sobre si; exercício da autonomia; fragilidades na oferta de recursos para a materialização do cuidar de si; e, dificuldades quanto ao acesso aos serviços de saúde e às práticas de cuidado. Percebemos que o cuidado é dinâmico, compreende aspectos subjetivos diversos em respeito às singularidades dos sujeitos e está relacionado com a possibilidade de gerar transformação tanto individual como coletiva. **Conclusão.** O cuidado se constrói a partir de um movimento entre os sujeitos e entre eles e os serviços sociais e de saúde. Desta forma, quando pretendemos cuidar, devemos partir deste horizonte e não centrar o cuidado, unicamente, no apoio técnico dos profissionais de saúde.

Descritores: cuidados integrais de saúde; serviços de saúde materno-infantil; avaliação em saúde; hermenêutica.

Introduction

The knowledge production about care has been intense and useful.(1,3) Some authors alert that this concept is not limited and restricted to the health professionals' technical support.(3,5) We believe that care actually departs from an expanded focus, in which technical support is one part of this process, but not the sole aspect to be taken into account. In a broader discussion, we include the aspects of comprehensiveness,(6) coordination(7,8) and problem-solving ability amidst humanization and affectivity.(9) There seems to exist a close relation between care and all of these themes, so that they are mixed up. The current National Humanization Policy, which has existed in Brazil since 2003 and comprises health care and management, has focused on all of these aspects.(10) In view of this complexity, we outline a dialogue that intends to invite the reader to reflect on the care theme considering several of these aspects. This production resulted from the consequences of an evaluative research with a qualitative approach the authors executed about the integrated maternal and child health network in a Northeastern state of Brazil.

The theme maternal and child health service network results from an international macro-strategic movement in response to the expressions of social issues, translated in this context by the high Maternal Mortality Ratio and Child Mortality Rate,(11,12) associated with the proposal to regionalize the health services.(13-15) Its intention was related to the rationalization of the available resources, besides the approximation, communication, articulation and integration among the services. Over time, strategies have been discussed to put in practice the care for pregnant and postpartum women from these different perspectives.(16-18) In that sense, the objective in this study was to understand and reflect on the care in the light of managers, professionals and users' experience with maternal and child health services.

Methods

To support this study, we intended to implement a method to capture the strength of health production in the access to maternal and child health services. Therefore, we developed an evaluative study(19) with a qualitative approach(20,21) about the integrated maternal and child health network in a Northeastern state of Brazil. We identified four health institutions that are reference services for the tertiary level in the state, which had previously been mentioned as national highlights due to the high prevalence of maternal deaths in the country. We decided to hold individual and semistructured interviews with users over 18 years of age (pregnant and postpartum women) and health professionals from each of these services. The interviews were held between July and December 2015, after the researchers' previous immersion into these spaces and monitoring of the services. Throughout the research process, we used attentive and sensitive observation with records in research diaries(22) and the production of versions of meaning.(23) Here, the researcher's narratives were joined in his historical-social context, implied with and in the research, and resulting from his experiences and influences in the field.

In the same period, interviews were held with managers (local, regional and state level) and supporters for this thematic network. The local managers were the heads of the maternal and child health services who were practicing their functions at each hospital unit. What the regional managers are concerned, all coordinators of the health regions in the state related to these institutions were interviewed, as well as the state managers directly involved in the management of the maternal and child health network. The supporters were professionals selected and hired by the central level in the country to discuss and monitor the implementation of the integrated networks in each region of the country. As a research project, the study complied with the ethical premises of the Brazilian National Health Council Resolution 466/12 to obtain the participants' informed consent and guarantee the confidentiality of the data. Approval for the project was obtained from the Research Ethics Committee at Universidade Federal do Ceará under opinion 1.320.567. Based on the theoretical saturation sampling procedures,(24) interviews were held with 12 managers, 15 health professionals and 41 users. The interviews were recorded, transcribed by the researcher and analyzed in blocks of three, interspersed with the field immersion process, without the use of any professional software, based on the theoretical reference framework of Hans-Georg Gadamer's(25) hermeneutics, associated with Paul Ricoeur's contributions.(26) To guarantee the protection of the interviewed subjects' identity, we used the identification "I" for all of them, using I1 till I12 for managers, I13 till I27 for health professionals and I28 till I68 for users.

Results

Based on the research subjects' narratives, four units of meaning were registered: self-perception and self-knowledge; exercise of autonomy; weaknesses in the supply of resources for the materialization of self-care; and difficulties in the access to health services and care practices.

The **self-perception and self-knowledge** was identified based on some women's narrative, when they reflected about 'feeling pregnant' or 'being pregnant': *I discovered that I was pregnant in the fifth month of pregnancy* [...] *my menstruation was very late already* [...] *my mother asked me to get tested* [...] *I went to the nearest hospital and it was positive* [I65]. In this movement of self-perception and self-knowledge, situations were acknowledged related to the decision process and the exercise of autonomy. **The exercise of autonomy** was perceived in the narratives in which the women mentioned their decisions and the materialization of self-care even before they got pregnant: *I spent two years without taking and last year I got pregnant* [...] *I stopped taking the injection, because it was already harming me… I felt headaches and pain in my legs* [...] *the doctor told me to change the method and I didn't go looking for another method [I58].*

The **weaknesses in the supply of resources to materialize self-care** were identified in the health professionals and managers' narratives when they discussed the alternatives the health system made available. According to the managers, there were countless problems: *the guaranteed methods are not what the women themselves want* [...] *there is a lack of integrated primary care coordination with the teams in listening to these women so as to know what they prefer and produce the program* [...] *only a specific oral contraceptive is offered to the women* [...] *the injectable contraceptives are restricted and the insertion of the IUD is not guaranteed* [I5].

After they get pregnant, we recognize **difficulties in the access to health services and care practices.** In some situations, obstacles emerged as early as during the users' welcoming and admission. The health service itself raised functional barriers that impeded the access flow to care: *a patient without any comorbidities is not our profile* [I25]. Other subunits of meaning were elaborated based on the difficulties in the access to the health services and the care practices, that is: the companion's participation; the bond; the requisites to seek care; and the information about the care to be provided.

The **companion's participation** before, during and after birth was also observed as an important aspect. Besides functional barriers, as appointed earlier, we acknowledge structural problems to welcome this demand. Nevertheless, the health services have sought to approximate the father to the woman: *we have worked a lot on the issue of the father's responsibility and his inclusion in prenatal care* [...] *for that man to feel responsible for that woman and that baby as soon as it is conceived* [I2].

The **bond** was also perceived as a subunit of meaning in this study with a view to putting the care in practice. Nevertheless, some interference was identified, such as the turnover of professionals in the different care production spaces: *each day there's a different person here* [I58]. Nevertheless, we perceive that the women prefer the hospitals as the first care option: *at the hospital, we feel safe because a physician is directly available* [I64]. Some women demonstrated dissatisfaction with the available PHC services: *the health stations do not work correctly* […] *there's nothing available* [...] *we are never attended to* [...] *you need to queue and wait for I don't know how many years for an examination* [...] *The Community Health Agent never visits other people's home* [I65]. That outlined the **requisites to seek care.**

During the hospitalization period, other weaknesses were identified, such as the lack of i**nformation about the care to be provided.** The women usually were not informed about the tests they were taking: *here [at the hospital], they do a lot of tests* [...] we do that many tests that we don't even know what they're for [I64]. *When informed, they demonstrated feeling well and safe concerning the procedures and their health conditions: I'm fine* [...] *I came in yesterday at five o'clock* [...] *they did an ECG yesterday already and instructed me more or less what is going to happen* [I60].

Discussion

Based on the women, professionals and managers' experiences with the maternal and child health services, we elaborated a possible meaning for the care. It should be mentioned that we did not intend to deny other meanings previously presented in the literature about care, but to guarantee that the experiences of our research process are addressed and present in this construction. We know about the complexity related to this theme and have previously announced the singular nature(27) the care assumes here based on the experience of each subject. We believe that the care is initially related to the knowledge and perception of oneself and the other. That can be translated through an exercise of tuning into oneself based on each experience (individual component) or the interaction among the subjects (social component). It is constructed as a process and comprises subjective and singular aspects that build the equilibrium and harmony of life, as Gadamer had already mentioned.(25)

Each subject presents a particular movement towards the intimate self, and also towards the other, with different trajectories and intensities. Hence, we can affirm that the composition of care is not static. In this sense, the search for care is sometimes natural and sometimes social and motivated by the other. That happens because the subject gains new experiences and also interacts with the other to stimulate the expansion of meanings. The opposite is also possible and the subject can restrict to a limited care. The search process of new information for the sake of care for the self and the other aims for the appropriation and construction of a new horizon, besides the need to generate elements for empowerment.(28) That usually happens based on a discomfort or concern with 'feeling well'. It can be produced by an own movement or by contact with the family group or social and community network the subject is part of. This movement also permits the expansion of this mode of perceiving and feeling.
The perception or knowledge about the other, then, imprints complementary requisites, such as the bond for example.(29) The bond is established through the encounters and opening of a world particular to the subject and which can now be explored. As this permits and operates a transformation process, the care itself happens. The care is motivated by the subject(s) and that is where the being capable of doing appointed by Gadamer takes form.(25) Another aspect that should be considered in the care proposal is the possibility of putting oneself in the other's place.(30) This concept once again refers to the relation between the 'I' and the 'other'. As one subject permits this type of movement, (s)he dives into a context and a scenario that used to be unknown and now becomes close or sensitive. Thus, we can elaborate two concepts, which are: self-care and care-for-the-other. Each of them relates an own movement based on knowledge, perception, interaction and bond, adopting the subject(s) as a reference and aiming for a transformation process.

When demands are perceived the subjects do not apprehend, they go beyond their family and community groups and other means are sought to obtain a response, such as contact with a health services, that is, care. These means are not necessarily related to the other and can be linked to the care potential of the health service or equipment. The health care possesses specific characteristics and is part of a list of possibilities that characterizes the health care. Health care overcomes the logic of care, as it goes beyond the individual demand for contact with the health professional or service. It remits to the managers, professionals and users' activities, in view of putting in practice a public policy coherent with the demands presented, and takes into account other socioeconomic, cultural and environmental contextual aspects, besides items of health promotion, disease prevention, diagnosis, treatment and rehabilitation.

It is important to highlight that healthcare may not result in a transformation. It can temporarily reestablish the balance without making a change. It can produce potential elements for the harmony, but without operating any impact. In this case, the care has not been put in practice. The care is more comprehensive and closely related with this possibility to produce an individual and collective impact in health. This study permitted getting somewhat further into this theme based on women's experiences in different situations. As they acknowledge the possibility of conceiving a new life, for example, they seek methods for this to take place. The opposite can also happen and the woman can seek to join means for this not to take place. In this study, we do not intend to judge the woman's decision, but to mention that something should be devised and granted to subject for the sake of care.

When a new experience puts the **self-perception and self-knowledge** at risk, like in the case of pregnancy and birth, for example, care demands are produced. Acknowledging the care demand in this situation initially represents an exercise of self-perception. There is not pattern to be established and, in that sense, it is important to recognize each singularity. This movement is particular to the subjects and is intended to consolidate the autonomy,(28) which is fundamental for the exercise of self-care. That does not depend on the timeframe.

Community groups for women have been appointed as a power to exercise self-care and care-for-the-other and are related to this perception and knowledge we are discussing. These spaces were created to promote the encounter among the subjects, in the attempt to share knowledge and practices about the balance and harmony of life, besides strengthening family and community bonds.(31) Through this type of device, we could exchange experiences, take a fresh look at some situation among the subjects involved and promote health. These groups should not be limited to the state the woman is in, whether during pregnancy or postpartum. Different encounters should take place to the extent that the woman presents a need for perception and knowledge about herself and the other subjects, about her family environment or about the surrounding social, community or intersectoral context.

Nevertheless, this type of practice has been hardly valued in primary, medium and high-complexity care. Restricted community groups have been observed in the form of a course, in which the attendance and punctuality are key elements. No open and spontaneous contact with the groups is possible, which allow the women to take part anytime and anywhere. Overall, these strict and hard proposals do not permit an own movement. As opposed to what this device permits, this type of action has been elaborated to respond to a demand by the health service or professionals, and not by the subjects involved. Thus, opportunities are lost among the subjects from the perspective of self-care and care-for-the-other, which the community groups would permit at each encounter.

When considering the self-care practice, we can mention other situations observed through this study. On some occasions and based on the desire not to get pregnant, the woman uses contraceptive methods to establish ‘self-care’. We believe that, at that moment, she apprehends a list of possibilities to attend to one of her needs and makes a decision. The contact with this type of method can vary in the country.(32) Nevertheless, many women required the public service to put it in practice. In that sense, they were limited to the resources available for this end. Some of them reported signs of alert towards the use of some contraceptives obtained from the public service. Then, they visited a health professional to report on these problems and received alternatives to incorporate new methods. Nevertheless, difficulties were perceived to accept this new prescription established and, in that sense, many of them quit using these methods, mentioning other signs and symptoms that compromised their state of equilibrium. Without the contact with other methods, the women followed their life routines and fortunately got pregnant. When that happened, it did not seem to be a reason for concern for the large majority of them. Recognizing the signs of alert the use of some contraceptive caused, for example, means perceiving that something breaks their state of balance. That is the **exercise of autonomy**(28) reported earlier. No longer using medication due to the emergence of signs and symptoms that interfere in their health and seeking other alternatives are also understood as an opportunity for self-care, as the subject decides not to take the risk or not to experience this situation of disequilibrium, suffering and discomfort.

Nevertheless, simply giving up using medication does not permit a safe conclusion about the care. In fact, when she stops using contraceptive methods, the woman attests that she was not granted possibilities to re-establish the balance coherent with her need. In this case, the expanded care perspective, extensive to other subjects, failed. Women also reported the lack of alternative medication available through the health system or even errors in its distribution or dispensing. These were some **weaknesses in the supply of resources to put in practice the self-care,** perceived by each of them. Therefore, as health managers and professionals, we should permit the contact with different alternatives for care, qualifying the subjects and respecting their decision on the practice of self-care.

In case of a suspected pregnancy, the women mentioned seeking different resources to confirm it. In general, they visited laboratories, private clinics or pharmacies to have access to the tests that confirm the pregnancy in an easy and fast manner. That raised questions about the contact and access to the primary health care services, the bond and interaction between the subjects and professionals, scheduling and practice of consultations and tests, the public services' response time and forwarding. That should be one of the most common alternatives for the women during the confirmation phase of the pregnancy, as the Primary Health Care (PHC) logic is related to the territory and community allocated to a health service.(33) Nevertheless, the access barriers, such as long queues, bureaucracy, difficulty to take tests and delay to get the results, in combination with the woman's judgment and the health team's violent approach make this alternative unfeasible.

The Brazilian maternal and child health policy prescribes the accomplishment of rapid tests in the PHC services. Nevertheless, we believe that other health and social services are potential devices to permit access to this type of test. The PHC teams would be responsible for mapping these services within the territory and agreeing on strategies to facilitate the access to this type of demand, as well as to quality different actors for this type of approach and establish a communication network among these services. It should be mentioned that these types of strategies are not intended to control the different services and the subjects, but to permit better qualification of the spaces to provide care. The perspective the subject is granted about this topic should consider the care, instead of an assistance practice, aiming to control the situation or achieve input for health indicators.

After confirming the pregnancy, an expanded care is needed, which comprises the woman, child and family's health. In that sense, strategies need to be reinforced to guarantee the right to health of one and the other in an integrated manner. We perceive that, sometimes, the pregnancy departed from the woman's desire to get pregnant, from the result of a daily relationship, whether stable or not. In other cases, the pregnancy derived from a lack of information, the difficulty to get access to the health services, the weak contact, trust and bond with health professionals, the lack of alternatives or the non-acceptance of contraceptive methods the public services offers, among others.

In the course of the analysis, we observed the women's difficulties to perceive their own body and the possibility of being pregnant. Some of them noted changes in their body and only realized they were pregnant after the fifth month of pregnancy, as mentioned. This fact did not necessarily compromise the care. As we discussed earlier, the care starts with the self-perception and knowledge. Nevertheless, this happens in different periods of the woman's life and, in that sense, we need to offer resources for this awakening. Recognizing oneself as pregnant is an exercise of self-perception and construction of a new identity, of knowledge about oneself and self-care.

The health policy urges the woman and the health professional to recognize the pregnancy as early as possible with a view to permitting the start of the care. That has been observed through the countless health indicators created, in combination with the transfer of financial incentives to the Brazilian cities.(34) Nevertheless, the care is constructed and deserves time, space and preparation for this to take place. That does not mean a denial of the scientific evidence to welcome the woman early at the start of pregnancy and elaborate a care plan to minimize the risks for the woman and the child's health. It is important to think of a care plan that permits the woman to go through the perception and knowledge phase, the recognition of her needs, search for information and contact other subjects to empower care for herself and the other. As we mentioned earlier, an interaction process takes place in the movement in favor of care.

In that sense, the practice of an active search, merely considering the procedure, to the detriment of the woman's appropriation and empowerment, the strengthening of the social and community network she is part of and the construction of a care network does not stand. Our efforts should focus on the subjects instead of the compliance with targets established with the health service. In that interval, discussing the health actions and services will be highly relevant, but by itself does not guarantee the care. Expanded efforts are needed for this to take place. As for the contact with the health services, the women mentioned particularities of the contact with PHC and the bond with the team. Some of them indicated not visiting the health center frequently or seeking care only when they were ill. Other women directly visited the hospital, independently of their demand. They did so due to the lack of professionals at the health service or because that was the place they preferred.

From the care perspective, the autonomous search for the service should be considered as a strength, in view of the possibility to expand the care the subject assumed. In this sense, a network should be constituted that is immeasurable and cannot be delimited easily; we cannot apprehend it. This place where the contact among the subjects is established should permit the welcoming.(29) That should not depend on its complexity level or technological density. This place can be related to the space the woman choice or was indicated as a reference for care. In addition, it may have been the place where the encounter with the health professional took place.

Nevertheless, the care has not been possible due to the subjects' restricted view in each of these spaces. Hence, **difficulties to access the health actions and services** were perceived. At services of different complexity levels, a care transfer routine exists and their co-accountability towards the subjects is compromised, independently of the clinical situation that responds to that health service's profile or not. Here, the network possibilities are denied which each of us can help to weave in a singular manner that is appropriate to the subject, instead of the service. In view of the mistaken contact with the health team, other aspects should be mentioned: the lack of dialogue, lovingness, trust, bonding and violence interfere in the practice of care. (1,2,10,27) That happens independently of the professional category and can result in a demand instead of care.

For the women, attention to some aspects is due in order to establish a relation among the subjects from the perspective of care. The fact of putting oneself in the other's place, manifesting lovingness, attention, respect, demonstrating concern, permitting the dialogue, all of this should be addressed. That is not only related to the health professionals. It extends to the subjects who maintain the intent to take care and who participate in the re-establishment of the individual or collective balance and harmony of life. That can be explained based on the expanded health concept that relates other dimensions and the need for an intersectoral practice. After the women are admitted to prenatal care, we perceive the difficulty for the partners to approach and participate with the women. That was appointed in the subjects' narrative as the need to extend the care. The woman usually felt safer and strengthened at the side of a person she chose when she visited a health service. Here, she put trust in her companions, and also in the health professionals and the institution in order to establish the care; she gave up the self-care and allowed the care by other people to overlap.

What this theme is concerned, the Brazilian policy in force has encouraged the participation of the partner in prenatal care with a view to guaranteeing his/her participation during the consultations, as well as the reduction of vertical infection transmission.(35) That would be a proper time also to discuss man's health and establish a self-care potential not only for the woman, but also for the family. Hence, it is important to encourage the partner's participation not only in the prenatal care appointments. During the contact with the hospitals and maternities, that is also necessary, as the companion tended to play a support role for the health team and to further the care in this environment.

That has been defended since 2005 and its regulatory base guarantees the parturient women the right to the presence of a companion in the labor, birth and immediate postpartum period in the context of the Brazilian health system, in line with the humanization policy. This measure has seriously strengthened the partner's bond and participation in all phases of the pregnancy-postpartum cycle and is fundamental for father-child bonding.(36,37) Without the companion, the health team's effort should compensate for this type of relationship. Nevertheless, in the hospital network, there is a turnover of professionals, in view of the organization and functioning of the services. The women perceive this and this makes the establishment of **bonding**(29) and the continuity of care impossible. In addition, we observe accommodation difficulties in the hospital environment that would interfere in this type of practice. Some women already demonstrated that they naturalize this type of situation and mentioned that it does not make a difference. They believed that they would truly have to go through this type of situation and merely the fact of being in the hospital environment already calmed them down. These aspects delimited the **requisites for the search for care.** That raised our concerns, as the starting point for this assessment did seem to be the suffering process. During the hospitalization period, other weaknesses were identified, such as the lack of **information about the care to be provided.** The women usually did not receive information about the tests they were taking. They recurrently complained about this type of situation and about the large number of tests. When the health professionals informed them about the procedures they would be submitted to, they demonstrated feeling well and safe about the procedures and their health condition.

In the exercise of self-care, it is important to socialize what is being provided to the subject to enable her to appropriate herself of her current condition. The lack of knowledge about her health condition puts the subject is a situation of tension and discomfort without any perspective. Hence, we mention the need to inform the subjects with a view to guaranteeing a right they are entitled to. That includes the diagnosis, treatment and any other procedure related to her health. Concerning the choice of the birth type, another problem was identified. The high c-section rates have been appointed from a negative perspective, as the service dominates the woman's health condition.(38) The women mentioned that they did not participate in this decision. That is incoherent with the subjects' empowerment(28) we had discussed as being necessary. In fact, if the woman does not participate in this type of choice, we are ignoring her right and her perception and knowledge about her health condition. This type of decision also needs to be discussed when we want to establish a care plan for the woman.

Finally, we reflect more broadly on the care, based on the prioritization of the subjects, instead of merely considering the health services' perspective and the health professionals' technical support. That conforms to the humanization proposal the Brazilian policy is strengthening. Humanization is the essence of care(10,27) and, therefore, it is important to join efforts and bring together resources, with a view to the dialogue, information, interaction, listening, bonding, participation and lovingness in the relation among the subjects. Based on the interpretation of the meanings emerged in the narratives, we believe that the care is constructed based on the subjects' movement and between them and the social and health services. Thus, when we intend to take care, we should depart from this horizon and not center the care solely on the available services and the health professionals' technical support. Nevertheless, we perceive some research subjects' relative lack of understanding about this dimension, highlighting the construction of barriers that make it impossible for the care to take place.

It should be mentioned that the study revealed the complexity that permeates the transformation process aimed at the care and the reestablishment of health and points towards the adoption of systemic rationalities and further attention for the organization and functioning of the services in networks that value all of these aspects. Acknowledging these limitations and having strategies in place to transform them in favor of the subjects are challenges to guarantee the quality of care. We hope that the information is this research can contribute to the realization of the care practices and respect for the subjects' singularities. It is important to mentioned that this research comes with some limitations that should be taken into account: restriction of the interviews to professionals from the hospital network; and lack of interviews with the municipal managers. Therefore, we acknowledge the need for new studies that mention these subjects' narratives to enhance the universe of understanding about the care theme.

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Depressive symptoms of the elderly people and caregiver's burden in home care

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Depressive symptoms of elderly people and caregiver's burden in Home Care

Objective. To characterize the elderly population and their caregivers and to verify the association of depressive symptoms of the elderly and the caregiver's burden with the variables of interest. **Methods.** A cross-sectional study with 80 elderly people and 78 caregivers in a Primary Health Service in southern Brazil. Retrospective collection conducted in a structured database based on the multidimensional evaluation tool applied to home care for the elderly participants and their caregivers. **Results.** Most elderly participants were women (71.3%), with an average age of 82.1 years and 52.6% reported sadness or discouragement. Systemic arterial hypertension was the most frequent morbidity (68.8%). Most caregivers were women (85.7%), daughters of the elderly person (53.2%), mean age 57.8 years and 38.7% reported feeling the burden. The presence of depressive symptoms in the elderly

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was associated with Parkinson's disease (*p*=0.016) and to have a male caregiver (*p*=0.006). Caregiver's burden was associated with daily life activities such as bathing (*p*=0.021). **Conclusion.** There was evidence of differences in caregiver's gender in the presence of depressive symptoms and differences in the assistance in daily life activities for the caregiver's burden.

Descriptors: home visit; caregivers; aged; nursing; primary health care; depression; cross-sectional studies; retrospective studies.

Síntomas depresivos en los ancianos y cuidadores de sobrecarga en la atención domiciliaria

Objetivo. Caracterizar a los ancianos y a sus cuidadores, verificando la asociación de los síntomas depresivos del anciano y la sobrecarga del cuidador con las variables de interés. **Métodos.** Estudio transversal con 80 ancianos y 78 cuidadores en una Unidad de Atención Primaria en el sur de Brasil. La recolección retrospectiva de la información se hizo utilizando una base de datos estructurada realizada a partir de un instrumento de evaluación multidimensional aplicado en la atención domiciliaria a los ancianos y sus cuidadores. **Resultados.** La mayoría de los ancianos eran mujeres (71.3%), con edad media de 82.1 años. 52.6% informó tristeza o abatimiento. La hipertensión fue la morbilidad más frecuente (68.8%). En cuanto a los cuidadores, la mayoría eran mujeres (85.7%), hijas de los ancianos (53.2%) con una edad media de 57.8 años. El 38.7% informó que se sentía con sobrecarga. La presencia de síntomas depresivos en los ancianos se asociaron con la enfermedad de Parkinson (*p*=0.016) y que tiene cuidador de sexo masculino (*p*=0.006). La sobrecarga del cuidador se relacionó con la ayuda en las actividades de la vida diaria, como el baño (*p*=0.021). **Conclusión.** Fue evidente la diferencia en cuanto al sexo del cuidador y la presencia de síntomas depresivos y en la asistencia en las actividades de la vida diaria del anciano para la sobrecarga del cuidador.

Descriptores: visita domiciliaria; cuidadores; anciano; enfermería; atención primaria de salud; depresión; estudios transversales; estudios retrospectivos.

Sintomas depressivos de idosos e sobrecarga de cuidadores em atenção domiciliar

Objetivo. Caracterizar os idosos e seus cuidadores e verificar a associação de sintomas depressivos do idoso e de sobrecarga do cuidador com as variáveis de interesse. **Métodos.** Estudo transversal com 80 idosos e 78 cuidadores em unidade de atenção primária do Sul do Brasil. Coleta retrospectiva realizada em banco de dados estruturado a partir do instrumento de avaliação multidimensional aplicado na atenção domiciliar aos idosos e seus cuidadores. **Resultados.** A maioria dos idosos eram mulheres (71.3%), com média de idade de 82.1 anos e 52.6% relatavam tristeza ou desânimo. Hipertensão arterial sistêmica foi a morbidade mais frequente (68.8%). Quanto aos cuidadores, a maioria eram mulheres (85.7%), filhas dos idosos (53.2%), com média de idade de 57.8 anos e 38.7% relataram sentir-se sobrecarregados. A presença de sintomas depressivos no idoso foi associada a Doença de Parkinson (*p*=0.016) e a ter cuidador do sexo masculino (*p*=0.006). A sobrecarga do cuidador foi associada com o auxílio a atividades de vida diária como banho (*p*=0.021). **Conclusão.** Evidenciou-se diferenças quanto ao sexo do cuidador na presença de sintomas depressivos e diferenças no auxílio nas atividades de vida diária do idoso para a sobrecarga do cuidador.

Descritores: visita domiciliar; cuidadores; idoso; enfermagem; atenção primária à saúde; depressão; estudos transversais; estudos retrospectivos.

Introduction

The demand for improvements in the quality of care and the population aging has strengthened the implementation of differentiated health care practices. Ways of home care have been implemented, such as the Home Health Care Services (SAD) and the Family Health Strategy (ESF).(1) Studies conducted in the international context show that home care (HC) is aimed to the elderly population, with the provision of governmental resources and different forms of organization. A systematic review of 74 articles from 15 European countries identified that home care is essentially provided to the elderly people, through

HC agencies and generally with public funding.(2) Brazilian literature is still restricted to the topic.(3)

In the national context, HC is proposed as a care modality integrated into the health care network and characterized by a set of health promotion, prevention, and treatment of diseases, palliation and rehabilitation actions carried out at home to guarantee the continuity of care. Also, it has a role to play in the management of the care of individuals and their families, articulating the care to increase the resolution and completeness of actions.(4) Recently, the HC was promoted by the publication of Ordinance 2527 of October 27th, 2011 launching the "Better at Home" program organizing the home care offered by the municipalities in the Unified Health System (SUS) through three modalities: HC1, HC2, and HC3. It provides home care by the ESF units (HC1) and, in a complementary way, by a SAD for cases of greater complexity (HC2 and HC3), as well as defining the responsibilities of the health teams within the various modalities. It reinforces the role of Basic Care/Primary Health Care (BC/PHC) as a caregiver and territorial action. HC1 should be accompanied by patients with compensated health problems with difficulty or impossibility of getting to the health unit who need a lower frequency of care.(4)

In the city of Porto Alegre/RS, there are seven HC services enabled in the Better at Home Program. Of them, only two are in operation, offering home care to the North and South of the City. Although the program is not implemented in all the territory of the municipality, the home monitoring provided by BC/PHC is performed by a large part of the services. The home care of the BC/PHC unit in which the study was carried out had about 90 linked users aged 12-98 years old at the beginning of 2014. Of them, approximately 90% were elderly people. Among the activities carried out by the unit, there is the multidimensional evaluation of the elderly patients and the assessment of the caregivers according to the instruments recommended by the Ministry of Health in the Basic Care Notebooks: aging and health of the elderly person.(5) Important aspects to be evaluated by professionals who work in BC/PHC and monitor the elderly and their caregivers at home, refers to the socioeconomic characteristics of the family, the functional capacity of the elderly, the presence of depressive symptoms in the elderly and the burden on caregivers.

The elderly people often have depressive symptoms associated with greater functional dependence, poor perception of health, falls in the last year, and pain on most days.(6) There is also need to support caregivers, who are not always able to support the elderly people in their daily lives and who are often overwhelmed by the care that needs to be performed in their daily lives.(7) Studies on factors associated with the presence of depression symptoms among elderly population and caregivers´ burden become relevant due to the recent proposal to rearrange HC by supporting planning at the local level and by subsidizing the planning of these actions in other realities. The nursing team plays a fundamental role in this scenario when planning care actions, guiding and educating patients and their families in the daily routine of home visits. To this end, the elderly people and their family should be offered a humanized assistance to promote health, identifying and evaluating their needs to provide better health conditions and to plan care actions, especially regarding the depressive symptoms in the elderly and overload of their caregivers. Therefore, the present research aims to characterize the elderly people and their caregivers, besides verifying the association of depressive symptoms of the elderly and the caregiver´s burden with the variables of interest.

Methods

This study is a cross-sectional research carried out in the Home Care Program (HCP) of the Santa Cecília Basic Health Unit of the Hospital de Clínicas of Porto Alegre (UBS/HCPA). UBS/HCPA is an assisting teaching unit of the Federal University of Rio Grande do Sul (UFRGS). The territory is divided into four health teams with approximately 28,000 people registered. Among the registered, about 5,000 are elderly people. UBS/HCPA is part of the Center District, with the highest proportion of elderly in Porto Alegre. According to the 2010 Demographic Census, the population of the area was approximately 40,000 people, and 21.64% of them were 60 years old or older.(8) The sample consisted of all the elderly population (80) who were part of the PAD in 2014 and 78 caregivers, 62 being family caregivers and 16 contractors (2 elderly did not have caregivers). The primary caregiver was defined as the one who was called the main caregiver for the elderly. Considering a level of significance of 5%, the power of 80% and a minimum prevalence ratio of two of the independent factors, at least 56 individuals would be required.

The data collection for this study was retrospective (November 2013 to June 2014), using a database developed for university extension project. The data were obtained by the multidimensional evaluation instrument of the elderly and their caregivers.

The instrument used was composed of socio-demographic and economic data of the elderly: gender, age, education, total household income, marital status, morbidities, hospitalization and falls in the last year, the presence of family and/or contracted primary caregiver. There was also a presence of sadness or discouragement frequently. In the affirmative answers, the Abbreviated Geriatric Depression Scale (EDGa), composed of 15 questions with dichotomous answers, was applied. the following cut-off points were observed to evaluate the results obtained through EDGa, a score between 0 and five is considered normal, between 6 and 10 indicates mild depression and between 11 and 15 means severe depression.

The following instruments were used to evaluate functional capacity: the Independence scale in the Basic Activities of Daily Living and the Evaluation of the Instrumental Activities of Daily Life. According to the Ministry of Health (MH) material, the Katz scale assesses the independence of the elderly in the performance of six functions, such as eating, bathing, dressing, going to the toilet, transference, and continence. Its classification consists of an index with identification by seven letters: A (independent for all activities); B (independent for all activities except one); C (Independent for all activities except bath and more an additional); D (Independent for all activities except bathing, dressing up and an additional one); E (Independent for all activities except bathing, dressing up, going to the bathroom and an additional one); F (Independent for all activities except bathing, dressing, going to the toilet, transfer and one more additional); G (Dependent on all activities); And Other (dependent on at least two functions, but not classified in C, D, E and F). The Lawton scale, according to the same guide of the MH, classifies the elderly in the performance of nine functions: using the telephone, going to distant places, shopping, preparing meals, tidying up the house, doing household chores, washing and ironing, taking medicine, taking care of finances. For each question, three means independence; 2 means partial dependence or capacity with help and one dependent. The maximum score is 27 points, and the lower the score, the more dependent the individual.(5) The author of the original scale and the MH material do not propose a cut-off point.

For the main caregivers, the following data were collected: age, gender, relationship with the elderly, type of support received in the demands of the elderly (instrumental, emotional or financial). The instrumental support referred to the concrete help to the material necessities and aid for the accomplishment of activities in the self-care, eliminations, and transference of the elderly. On the other hand, emotional support is the actions of love and affection shown to both the caregiver and the elderly.(9) Financial support was considered an aid in the payment of expenses related to the elderly. Also, the care activities performed by the caregivers for the elderly (purchases, cleaning of the house, finances, supervision for safety, preparation of meals, care with medication, bath, among others). In the presence of the main family caregivers, they were questioned if they felt overwhelmed by the care given to the elderly people. If so, the Zarit Caregiver´s Overload Scale was applied, classifying the level of overload, with a variation from 0 to 88. It was translated and validated for use in Brazil in a study with informal caregivers of people with mental illness, with Cronbach's alpha coefficient of 0.87.(5,10) The scale does not have a cutoff point, and the score is directly related to the burden.

The variables of interest for this study were transferred from the service database to the SPSS program (21.0). In the descriptive analysis, we calculated the means and standard deviations or the median and interquartile range for the quantitative variables. Qualitative variables were expressed by absolute and relative frequencies, a value of $p < 0.20$ was considered in the bivariate analysis to compose the multivariate analysis evaluating whether independent factors of the elderly (age, gender, marital status, education, total household income, morbidity, hospitalizations and falls in the last year, functional capacity and presenting family and/or contracted primary caregiver) and caregivers (age, gender, kinship, support received and activities performed) would be associated with depressive symptoms in the elderly or caregiver´s burden. To verify depressive symptoms, the answers obtained with the elderly person were used to feel sad or discouraged (yes or no) and to verify the overload was used the answer (yes or no) to the question to the caregiver about feeling overwhelmed. Regarding functional capacity, Katz scores were grouped into: A (independent); B, C, D and others (mild dependence); E and F (moderate dependence) and G (severe dependence). Values with $p < 0.05$ were considered statistically significant. The researchers signed the Term of Commitment for Data Use. The project was approved by the HCPA Research Ethics Committee (150275).

Results

It was verified that of a total of 80 elderly people, most of them were women (71.3%), with an average age of 82.1 and complete elementary education (33.8%). The income presented a median of 3.5 minimum wages, ranging from 2 to 5. Of the 80 elderly people, 78 (97.5%) had primary caregivers, and 61.5% had no contracted caregivers. As for the morbidities reported by the elderly or their caregivers, the most frequent (68.8%), stroke (37.5%), followed by type 2 diabetes mellitus (23.8%) and dementia (18.8%). In the last year, 46.2% were hospitalized and 48.7% had an episode of fall at home. Regarding functional capacity, it was found that 26.3% were dependent for all ABVDs. For the AIVDs, the mean score was 13.9 (± 5.01). As for depressive symptoms, 12 elderly people reported being sad or discouraged frequently. For these, EDGa was applied, and 52.6% presented mild depression. The data are shown in Table 1.

The mean age of the caregivers was 57.75 ± 13.7 years old, and most of them were women (85.7%). Of the primary caregivers, 62 were related to the elderly (53.2% were children). Among the activities performed by the caregiver, shopping (89.6%), house cleaning (88.3%), finances (81.8%) were the most cited. Instrumental support (63.8%) and emotional support (62.5%) were the most frequent types of care received by caregivers in assisting the elderly's demands. As for the burden, 24 reported feeling overwhelmed. For these patients, the mean score on the overload scale was 41.1 ± 14.75. Table 2 presents the socio-demographic, overload characterization of caregivers and care activities performed.

Table 1. Socio-demographic characterization, health condition and functional capacity of the elderly people associated with the PAD of the Santa Cecília Basic Health Unit of the Hospital de Clínicas of Porto Alegre, HCPA, Porto Alegre/RS, 2014

Variables	*n*	Descriptive Statistic
Age in years; average±DT	80	82.11±9.62
Elderly gender; *n* (%)	80	
Female		57 (71.3)
Male		23 (28.7)
Elderly education; *n* (%)	80	
Illiterate		8 (10.0)
Primary Education		18 (22.5)
Elementary School		27 (33.8)
HighSschool		20 (25.0)
Higher Education		7 (10.8)
Total income in minimum wages; median (RIQ)	60	3.5(2-5)
Marital status of the elderly; *n* (%)	80	
Widow		36 (45)
Married		27 (33.8)
Single		11 (13.8)
Divorced		6 (7.5)
Yes, Main caregiver; *n* (%)	80	78 (97.5)
Yes, contracted caregiver; *n* (%)	78	48 (61.53)
Morbidity; *n* (%)	80	
SAH		55 (68.8)
AVC		30 (37.5)
DM_2		19 (23.8)
Dementia		15 (18.8)
Parkinson		7 (8.8)
Hospitalization; *n* (%)	80	37 (46.2)
Fall; *n* (%)	80	39 (48.7)
Functional Capacity - Katz Index; *n* (%)	77	
A (Independent for all activities)		19 (24.7)
B (Independent for all activities except one)		16 (20.8)
C (Independent for all but bath and one more activity)		6 (7.8)
D (Independent for all activities except bathing, dressing up and one more)		1 (1.3)
E (Independent for all activities, less bathing, dressing, going to the bathroom and one more)		6 (7.8)
F (Independent for all activities, less bathing, dressing, going to the bathroom, transfer and one more)		5 (6.5)
G (Dependent for all activities)		21 (26.3)
Others (Dependent on at least two functions, but not C, D, E, and F)		3 (3.9)
Lawton Scale - Instrumental Activities of Daily Living; average±DT	78	13.85±5.01
The elderly was sad or discouraged; *n* (%)	66	18 (27.3)
Level of depression EDGa; *n* (%)	12	10 (83.3)

Table 2. Socio-demographic characterization, burden, and activities performed by the primary caregivers of elderly people associated with the PAD of the Santa Cecília Basic Health Unit of the Hospital de Clínicas of Porto Alegre, HCPA, Porto Alegre/RS, Brazil, 2014

Variables	*n*	Descriptive Statistics
Age, mean ±SD	74	57.75±13.67
Women; *n* (%)	78	66 (84.6)
Relationship of Family Caregivers; *n* (%)	62	
Son		33 (53.2)
Spouse		13 (20.9)
Other		9 (14.5)
Brother		7 (11.29)
Type of support received; *n* (%)	78	
Instrumental		51 (63.8)
Emotional		50 (62.5)
Finance		21 (26.3)
Family caregiver feels overwhelmed; *n* (%)	62	24 (38.7)
Burden Score; average±DT	24	41.04±14.75
Activity performed; *n* (%)	77	
Shopping		69 (89.6)
House cleaning		68 (88.3)
Business		63 (81.8)
Supervision for safety		60 (78.9)
Meal preparation		57 (74)
Beware of Medications		56 (72.7)
Bath		41 (53.2)

Among the independent factors that had a statistically significant association with the elderly feeling sad or discouraged, Parkinson's disease was present as morbidity and had a male caregiver (Table 3).

According to Table 4, there was a statistically significant association with the caregiver feeling overwhelmed only when he/she needs to perform activities such as dressing, combing hair, brushing teeth and bathing.

Table 3. Multivariate analysis of Poisson regression to assess the independent factors associated with the elderly feeling sad or discouraged

Variables	RP (CI 95%)	*p*
Male caregiver	2.97 (1.36 – 6.52)	0.006
Parkinson	2.35 (1.18 – 4.71)	0.016
Dressing up	2.63 (0.85 – 8.11)	0.092
Preparing meals	1.32 (0.34 – 5.17)	0.691

Table 4. Multivariate analysis of Poisson regression to assess the independent factors associated with the caregiver´s burden

Variables	RP (CI 95%)	*p*
Dressing up	2.43 (1.36 – 4.35)	0.003
Combing hair	2.08 (1.22 – 3.56)	0.007
Brushing teeth	1.97 (1.15 – 3.39)	0.014
Bathing	2.01 (1.11 – 3.64)	0.021
Preparing meals	2.57 (0,92 – 7.17)	0.071
Number of hospitalizations		
None	1.00	
One	0.66 (0.31 – 1.42)	0.287
Two or more	1.29 (0.73 – 2.28)	0.376
Katz Score		
A (Independents)	1.00	
B/C/D/Others (Mild dependence)	1.30 (0.48 – 3.57)	0.607
E/F (Moderate dependence)	0.56 (0.07 – 4.34)	0.581
G (Severe dependence)	2.33 (0.94 – 5.78)	0.068

Discussion

The elderly attending this study represented around 2% of the total number of elderly enrolled in the UBS/HCPA. In a population survey in the elderly population living in the urban zone in 100 municipalities of the five Brazilian regions, the prevalence of elderly people in HC was 11.7%.(3) It is possible that other elderly people residing in the health unit´s territory need care at home and have not yet been identified by the team or do not use the service.

As for gender, most were elderly, which may also be observed in previous studies on the elderly in home care.(11,12) Comparing the results related to the age of these studies, the mean age of this investigation was higher, composed of a larger proportion of older adults aged 80 years old or older.(5) Regarding morbidity, this study demonstrated that hypertension was more frequent, followed by DM-2 and stroke. It is known that the older the age, the greater the frequency of multi-morbidities and the incidence of functional decline. These multi-morbidities promote difficulties in activities of daily living, interfering with the autonomy and independence of the elderly.(11)

The percentage of elderly people who had hospitalization (46.2%) or some episode of home fall (48.7%) in the last year was high. A study with the objective of analyzing hospital admissions due to falls in the elderly in the scope of SUS between 2005 and 2010 identified that hospitalization for falls and corresponding costs, for this reason, increased during the period studied.(13) A cross-sectional study verified a prevalence of falls of 27.7 % in individuals classified as dependent for the Daily Life Activities (ADLs), identifying a strong association between falls and functional capacity (PR=2.08, 1.17-3.70). The results presented showed a significantly higher proportion of falls between elderly and functionally dependent elderly.(14) Findings regarding falls and hospitalizations of this investigation should also be related to age and the presence of some dependence. Most the elderly had independence for part of the basic activities and greater dependence on the instrumental ones. Functional incapacity favors the development of fragilities and is associated with the need for care and the presence of a caregiver, increasing their burden.(11) In the elderly, functional capacity is fundamental for clinical and functional evaluation, as an indicator of the health-disease process, being essential in the planning of care for this group.(15)

Regarding the score of the Depression Scale, most elderly people presented mild depression and were female. A study of 449 elderly people found a prevalence of depression significantly associated with females, low education, and unmarried individuals.(16) Depression is a serious health problem among elderly people who receive care at home and is often Under-diagnosed and under-treated, which may accentuate their health problems.(17) Randomized clinical trial involving 285 elderly people, low-income and severely impaired patients evaluated the association between pain, depression and functional capacity, and concluded that depression besides often underdiagnosed and undertreated has a great association with pain and functional limitations of the elderly population.(18) Similar to this investigation, qualitative and quantitative studies indicate that caregivers are mostly women, wives or daughters with mean age of 47.7 and 50.6 years old, respectively. The results indicate an important variability in the family organization, considering that the advanced age of the caregiver may be another factor of stress for the family and its overload.(19)

Regarding the caregiver´s burden, it was identified that 38.7% reported feeling overwhelmed. In the Zarit scale, the mean score obtained was 41.04 (± 14.75). Although the authors of the scale did not indicate a cutoff point, Sobral researchers established as a cut-off point the value of up to 44 points for mild overload and identified in a study with elderly caregivers in the HC of ESF that 81.7% of the caregivers presented mild overload.(20) It is possible that the scores were not so high because the elderly participants were not totally dependent on basic activities. On the other hand, it is known that one of the important tasks of BC/PHC professionals and alleviating the burden of caregivers is the orientation of the same ones on the care for the elderly and of the care of the elderly.

In the multivariate analysis, there was a significant association between the caregiver´s overload and the elderly´s dependence on some of the activities of daily living, such as dressing, combing hair, brushing teeth and bathing. According to the Ministry of Health, the act of caring is voluntary and complex, and it gives rise to different and contradictory feelings that may be simultaneous and should be understood as part of the relationship between the caregiver and the person being cared.(5) It is also known that care related to basic needs, such as food and bathing, require a greater dedication of the caregiver to the elderly, considering that they are uninterrupted activities, which makes caregiving often difficult for caregivers. (7) Regarding the support received, the study demonstrated that most caregivers received instrumental and emotional support. Other studies have shown that the caregiver often feels lonely and puts first the patients´ needs to the detriment of self-care.(21) The lack of social and emotional support leads to an overload on caregivers, and this chance is 2.60 and 2.27 times higher in caregivers with social interaction and unsatisfactory emotional support respectively.(22)

This study showed a significant association of the elderly feeling sad or discouraged with the presence of Parkinson’s disease, such as morbidity, and having a male caregiver. Review study found a strong link between major depressive disorder and neurodegenerative diseases, including Parkinson’s disease, as well as the natural processes of aging. This relationship is possibly due to changes in the neuroplasticity, morphology, and neurotransmission of the brain, caused by aging and the presence of neurodegenerative diseases.(23) Also, another study demonstrates the association of Parkinson’s disease with depression and anxiety that should be managed to prevent other morbidities.(24) No studies were found associating depressive symptoms or depression in the elderly with the presence of caregiver and gender. Only about the elderly male, widow, feeling alone, presence of disease and lack of financial resources were found.(25)

Knowing the characteristics of the elderly and their caregivers, considering aspects such as dependence falls, hospitalizations, depression evaluation, and overload show the importance of

HC in stimulating self-care, in guiding preventive measures, as well as the importance of performing a multidimensional evaluation of the elderly and evaluation of their caregivers. The implementation of home care, in an organized way, is an objective to be achieved, since it is a modality of fundamental attention for the care of the elderly and their informal network, having to respect the heterogeneity of the elderly and the possibilities of caring for the family. Thus, the nursing team can develop educational actions in the daily routine of home visits aimed at mitigating these aspects. Because it is a cross-sectional study, it is not possible to define causality, but only to establish hypotheses, which is a limitation of the study. Also, some elderly individuals who participated in the study and their caregivers may need to be followed up by SAD, not evaluated at the time of data collection. We suggest the development of follow-up studies evaluate the possible associations between the variables and the presence of depressive symptoms/depression and the caregiver's burden. Research that addresses the performance of home health care in the incidence of falls and re-hospitalizations is also recommended.

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Quality of information given to surgical patients with abdominal cancer

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Quality of information given to surgical patients with abdominal cancer

Objective. To evaluate the need for information in patients with abdominal neoplasms. **Methods.** The sample consisted of 100 patients hospitalized in a surgical ward for patients with abdominal neoplasms at the National Institute of Cancer José de Alencar Gomes da Silva / INCA, in the period between June and December 2016. To collect the data, the Brazilian Portuguese version of the European Organization for Research and Treatment of Cancer (EORTC) information module questionnaire (QLQ-INFO25) was used. **Results.** In general, for most items, the patients showed satisfaction with the amount of information received. The items referring to the disease, examinations, treatment and general information stand out, with an average score of more than 80%. For some items, however, there is dissatisfaction with the amount of information received, especially those related to the cause of the disease, aspects of out-of-hospital and home care, different places of care and aspects of self-help, with a satisfaction level of less than 40%. **Conclusion.** Despite the high level of satisfaction with the information received, it was observed that almost all patients would like more information, which makes us recommend that, as part of the care, the information offered to these patients about the treatment and the evolutionary process of the disease should be enhanced.

Descriptors: abdominal neoplasms; oncology nursing; patient satisfaction.

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Calidad de la información ofrecida a los pacientes quirúrgicos com cáncer abdominal

Objetivo. Evaluar la necesidad de información en pacientes con tumores abdominales como proceso continuo para su cuidado. **Métodos.** La muestra consistió en 100 pacientes ingresados en la sala de cirugía, destinada a pacientes con cáncer abdominal del Instituto José de Alencar Gomes da Silva / Instituto Nacional de INCA, entre junio y diciembre de 2016. Para la colección de datos se utilizó la versión portuguesa del cuestionario QLQ-INFO25 la EORTC. **Resultados.** En general, para la mayoría de los artículos, los pacientes se mostraron satisfechos con la cantidad de información recibida. Cabe destacar los artículos relacionados con la enfermedad, examen, tratamiento, e información general, con más del 80% de la media. Sin embargo, para algunos artículos hay insatisfacción en la cantidad de información recibida, especialmente los vinculados a la causa de la enfermedad, los aspectos del hospital y el lugar de cuidado, así como los diferentes sitios de atención y aspectos de autoayuda, con un grado de satisfacción inferior al 40%. **Conclusión.** A pesar del alto nivel de satisfacción de la información recibida, se observó que casi todos los pacientes les gustaría obtener aún más, lo que nos lleva a creer que proporcionar continuamente información sobre el tratamiento y el proceso de evolución de la enfermedad debe ser un proceso constante en el cuidado de estos pacientes.

Descriptores: neoplasias abdominales; enfermería oncológica; satisfacción del paciente.

Qualidade da informação oferecida a pacientes cirúrgicos com câncer abdominal

Objetivo. Avaliar a necessidade de informação em pacientes portadores de neoplasias abdominais. **Método.** A amostra foi composta por 100 pacientes internados em enfermaria cirúrgica, destinada aos pacientes portadores de neoplasias abdominais do Instituto Nacional do Câncer José de Alencar Gomes da Silva/INCA, no período entre junho e dezembro de 2016. Para a coleta de dados foi utilizado o questionário versão Português- Brasil QLQ-INFO25 da EORTC. **Resultados.** De uma forma geral, para a maioria dos itens, os pacientes demonstraram satisfação com a quantidade de informação recebida. Destacam-se os itens referentes à doença, exames, tratamento e informações gerais, com mais de 80% de média. Entretanto, para alguns itens há insatisfação na quantidade de informação recebida, especialmente aqueles ligados à causa da doença, aspectos do cuidado extra- hospitalar e domiciliar, diferentes locais de cuidado e aspectos de autoajuda, com grau de satisfação inferior a 40%. **Conclusão.** Apesar do alto nível de satisfação das informações recebidas, observou-se que quase a totalidade dos pacientes gostaria de mais informações, o que nos leva a acreditar que oferecer continuamente informações a respeito do tratamento e do processo evolutivo da doença, deve ser um processo constante no cuidado destes pacientes.

Descritores: neoplasias abdominais; enfermagem oncológico; satisfação do paciente

Introduction

The incidence of cancer has considerably increased in Brazil. For Brazil, about 596 thousand new cancer cases are estimated for 2016-2017.(1) When the disease progresses, important physical and psychosocial changes happen, which gain intensity with the evolution process of the disease.(2) Therefore, it is known that approaching a cancer patient is a very difficult task, as it involves the transfer of countless pieces of information inherent in the disease, its diagnosis, prognosis, risks and benefits of the treatment, mutilations and other body image changes, besides the possibility of the irreversible progression of the disease.(3) The information provided to the cancer patient about his disease and treatment can profoundly influence his wellbeing, changing the meaning of the symptoms, problems and the way the patient faces the disease and its treatment.(4-6) One can say in this sense that the assessment of the information given to the cancer patient is an indicator of the quality of oncology care provided by the health institution.(7,8) One form of clinical, diagnostic and social approach is to use adapted scales and questionnaires.(9) To assess the amount of information the patients with different types of cancer receive during the phases of the diagnosis and treatment process, as well as for clinical and research purposes, the Quality of Life Group of the European Organization for Research and Treatment of Cancer (EORTC) developed the QLQ INFO 25 questionnaire,(10,11) which was validated for the Brazilian context by Monique Silva Carvalho concerning the semantic equivalence; and by Claudia Fernandes Rodrigues concerning the test-retest reliability (unpublished).

The abdominal-pelvic tumors include some of the most incident in the general population. They comprise a diversified group of tumors, classified according to the anatomic location, the most incident types between colon and stomach cancer(1). This topography entails some particularities. To give an example, surgical excision permits increasing patients' survival and reduces the possibility that the disease will spread to other organs. Nevertheless, the large majority results in the establishment of stomas.(11) The patients demonstrate difficulty to understand the surgery executed and its consequences. Therefore, there is a clear need for information about the disease, the therapeutic conducts, the physical and emotional changes deriving from the treatment, with a view to improving these patients' quality of life. In this context, the objective in this study is to assess the need for information in patients with abdominal and pelvic tumors, using the QLQ- INFO25 questionnaire by EORTC.

Methods

In this cross-sectional study, a set of data was used about the need to provide information to abdominal cancer patients attended at the Instituto Nacional do Câncer (INCA). The research sample consisted of the universe of 100 adult patients hospitalized at the nursing ward for surgical patients with abdominal tumors of the Instituto Nacional do Câncer José de Alencar Gomes da Silva/INCA, located in the city of Rio de Janeiro. The participants were included between June and December 2016. The inclusion criteria were male or female patients aged 18 years or older with abdominal tumors. The exclusion criteria were patients with cognitive disorders capable of compromising the veracity of the answers, with central nervous system tumors or metastases. To collect the data, the interview strategy was adopted, after background information about the research objectives, agreement to participate in the study and signing of the free and informed consent form, in accordance with the recommendation of the questionnaire validation study.

Sociodemographic characteristics were assessed (age range, sex, marital status, education level, race, primary diagnosis and presence of metastasis). To assess the need for information, the EORTC-QLQ INFO25 questionnaire about the information the oncology patient received was used, validated for Brazil. This version of the questionnaire, QLQ-INFO25 by EORTC, used in this study, consists of 25 questions and four dimensions. The first refers to information on the disease (4 questions), the second aims to discover information about the medical examinations (3 questions), the third refers to information on the treatment (6 questions) and the fourth investigates information about other services (4 questions). Besides the four multi-item dimensions highlighted, the EORTC QLQ-INFO25 contains eight individual items, which address questions on different care locations, self-help attempts, receipt of written and digital information, satisfaction with the information received, desire to receive further information, desire to receive less information and the utility of the information received. Among the 25 questions, 21 are organized on a Likert scale (1 - None\No; 2 - Little\A little; 3 - Reasonable\Moderately; 4 –A lot\Much), while four have dichotomous answers (20, 21, 23, 24). In addition, items 23 and 24 include a second, open-ended question. Nevertheless, based on the answers obtained, the answers were categorized for analysis purposes. The following categories were created: diagnosis; prognosis; treatment and complications. The subscales and their respective items have been described in Table 1. It should be highlighted that the scale does not have a fixed cut-off point. In this care, the assessment by the expert committee that validated the scale was to recommend the use of the research population's median score as a parameter whenever the scale is applied.

Table 1. Characteristics of EORTC QLQ-INFO25 questionnaire

Subscale	Dimensions	Questionnaire items	Items
Multi-items	Total items Information about your disease	1; 2; 3; 4	4
	Information on medical examinations	5; 6; 7	3
	Information on the treatment	8; 9; 10; 11; 12; 13	6
	Information on other services	14; 15; 16; 17	4
Information on other areas	Different care locations	18	1
	Self-help	19	1
	Written information	20	1
	Information on CD, cassette/video	21	1
Qualitative aspects	Satisfaction with the amount of information received	22	1
	Desire to receive further information	23	1
	Desire to have received less information	24	1
	Overall utility of the information	25	1

The scores were calculated for each subscale and the association between the subscales and the sociodemographic (sex, age, education, race, marital status) and clinical (tumor location, presence of metastases) variables was assessed. The means and standard deviations were analyzed for the multi-item dimensions in the EORTC QLQ-INFO25 questionnaire, divided and named subscale 1 (information on the diagnosis of the disease), subscale 2 (information on the medical examinations), subscale 3 (information on the treatment) and subscale 4 (information on other services) and the clinical and sociodemographic characteristics.

For the categorical variables, the ANOVA test was used and statistical significance was set at 95%. For the data analyses, the statistical software SPSS, version 22 was applied. This study received authorization from the INCA Ethics and Research Committee (CEP) and did not involve any conflicts of interests. The CEP's opinion, including the approval of this project, is attached, registered under protocol number: 863.339.

Results

One hundred patients participated in the study. The sample profile consisted of male (52%), white individuals (61%), with a relatively low education level (primary level 35% and secondary level 49%), married (61%) and elderly (52%). What the tumor location is concerned, the most frequent locations were colon and rectal tumor (64%), followed by stomach tumors (22%). What the disease prognosis is concerned, 40% of the participants present metasthases (Table 2).

For most items in the EORTC QLQ-INFO25, the patients demonstrated satisfaction with the amount of information received. The items related to the disease (1 and 2), tests (5 to 7), treatment (8) and general information (25) stand out with averages superior to 80%. For some items, however, the patients demonstrated dissatisfaction with the amount of information received, especially information linked to the cause of the disease (3), transcendental nature of the treatment (12 and 13), aspects of extra-hospital and home care (14 and 15), different care locations (18) and aspects of self-help (19), with satisfaction levels inferior to 40%. It is important to highlight that 100% of negative answers were obtained about receiving information on media (CD, tapes or videos) – as that is not part of the hospital routine. The same was found for the desire to receive less information. As for the desire for more information, the most frequent demand is related to the disease prognosis. Finally, the dimension with greater satisfaction with the amount of information is related to the medical tests, while the lowest satisfaction level is linked to other services (Table 3).

The general average scale score for the study population was 66. This demonstrated that the satisfaction with the amount of information offered is regular to good. When the subscales were assessed, however, a great difference was observed among the averages. For the subscales of information about the disease and the medical tests, the assessment is excellent. For the information about the treatment, the assessment was regular, and information about other services received a bad evaluation. The items that most strongly influenced this bad assessment were related to the treatment effects in social and family life, in sexual activity; and about additional care services beyond the hospital, including rehabilitation services. Thus, difficulty is observed to obtain information about the continuity of treatment beyond the hospital service, reflecting difficulties to manage the care network.

The analysis of the degree of satisfaction with the information given to the patients according to clinical and demographic characteristics is displayed in Table 4. For the subscale of information about the diagnosis of the disease, a statistically significant difference can be observed for race, with a higher degree of satisfaction among black and mulatto people. For the subscale of information about the treatment, a significant difference was found

Table 2. General characteristics of the patients (n=100)

Variables	***n***
Sex	
Male	52
Female	48
Age range	
20 to 39 years	4
40 to 59 years	44
60 years and older	52
Race	
White	61
Black/Mulatto	39
Education	
Primary	35
Secondary	49
Higher	16
Marital status	
Single	28
Married	61
Widowed/separated	11
Diagnosis	
Colon	42
Rectum	22
Stomach	22
Esophagus	3
Appendix	1
Liver	4
Bile Ducts	2
Pancreas	4
Metastasis	
Yes	40
No	60

Table 3. Summary of test statistics for the QLQ-INFO25 items among the interviewed patients (*n*=100)

Item	**% qualification per category**				**Statistics**	
	None	**Little**	**Modderate**	**A lot**	**Average**	**SD**
1- The diagnosis of your disease?	0	11	42	47	84.0	16.9
2- The extension of your disease (how much it has spread)?	3	13	44	40	80.3	19.6
3- The possible causes of your disease?	41	39	14	5	48.8	37.2
4- If the disease is under control?	8	19	44	29	73.5	22.4
5- The objective of the tests you underwent or may have to take?	3	4	18	75	91.3	17.5
6- The test procedures?	3	3	14	80	92.8	16.8
7- The results of the tests you have already undergone?	2	8	27	63	87.8	18.3
8- The medical treatment (chemotherapy, radiotherapy, surgery or other treatment form)	1	8	31	60	87.5	17.2
9- The expected benefit of the treatment?	4	16	40	40	79.0	20.9
10- The possible side effects of your treatment?	9	20	49	22	71.0	21.8
11- The expected effects of the treatment on the disease symptoms?	5	32	44	19	69.3	20.4
12- The effects of the treatment on your social and family life?	72	15	6	7	37.0	22.3
13- The effects of the treatment on your sexual activity?	80	11	5	4	33.3	18.8
14-Additional assistance beyond the hospital (e.g. help with activities of daily living, support group, visits by nursing professionals)?	80	14	2	4	23.5	17.6
15- Rehabilitation services (e.g. physiotherapy, occupational therapy)?	74	12	7	7	36.8	22.6
16- Aspects of how to take care of your disease at home?	12	20	51	17	68.3	22.1
17- Possible professional psychological support?	10	30	39	21	67.8	22.8
18- Other locations for medical care (hospital/outpatient clinic/ at home)?	57	32	7	4	39.5	19.8
19- Things you can do to help yourself to get better (rest, contact with other people...)?	47	31	15	7	45.5	23.4
22- Were you satisfied with the amount of information you received?	0	15	53	32	79.3	16.7
25- Overall, was the information you received during the treatment useful?	0	7	32	61	88.5	15.7
Dichotomous items			**Yes**	**No**	**Mean**	**SD**
20- Did you receive written information?			5	95	48.8	5.5
21- Did you receive information on a CD or tape/video?			0	100	50.0	0.0
23- Would you like to receive more information?			89	11	27.8	7.9
24- Would you like to have received less information?			0	100	50.0	0.0
Open question*	**Diag**	**Prog**	**Tt**	**Comp**	**Mean**	**SD**
23X- If yes, please specify about which themes	15	44	17	13		
Subscales						
Information related to the disease					71.6	16.7
Information related to the medical tests					90.6	15.5
Information related to the treatment					62.8	15.5
Information about other services					51.3	15.3

(*) Diag – diagnosis; Prog – prognosis; Tt – treatment; Comp – complications;

Table 4. Level of satisfaction for the dimensions of satisfaction with the information according to sociodemographic variables among the patients interviewed (*n*=100).

Variables	Subscale											
	Diagnosis			Medical tests			Treatment			Other services		
	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*
Sex												
Male	73.4	15.8	0.25	92.6	14.4	0.17	65.1	15.0	0.13	54.3	17.3	0.04
Female	69.7	17.4		88.4	16.4		60.4	15.7		48.0	12.2	
Age range												
20 to 39 years	65.6	15.7	0.73	83.3	11.8	0.62	59.4	21.6	0.48	43.8	8.8	0.55
40 to 59 years	72.4	17.5		90.4	17.0		65.0	17.4		52.4	14.5	
60 years and older	71.5	16.3		91.2	14.6		61.4	13.5		51.0	16.3	
Race												
White	74.0	15.8	0.03	92.4	14.5	0.87	65.3	15.0	0.22	53.3	15.2	0.05
Black/Mulatto	66.6	17.5		86.7	16.9		57.7	15.5		47.1	15.1	
Education												
Illiterate	81.3		0.74	91.7		0.11	45.8		0.01	25.0		0.02
Primary	67.4	19.2		86.2	16.6		57.9	14.2		48.0	15.1	
Secondary	71.9	13.2		94.4	9.6		64.4	15.0		51.8	13.9	
Higher	80.1	16.6		90.1	23.2		71.1	16.2		59.4	16.8	
Marital status												
Single	69.9	12.2	0.87	89.7	13.3	0.96	59.8	14.9	0.65	50.4	11.6	0.48
Married	72.2	17.3		90.8	16.1		63.1	15.9		52.8	16.7	
Widowed/separated	71.5	18.2		90.7	15.8		64.2	15.1		48.5	14.2	
Diagnosis												
Colon	73.5	17.1	0.11	90.7	13.3	0.22	64.0	17.4	0.53	49.2	15.6	0.26
Rectum	74.5	15.5		93.8	12.6		62.3	13.4		54.9	17.0	
Stomach	64.9	16.4		87.7	17.0		57.3	14.7		46.4	15.9	
Esophagus	84.4	22.1		100.0	0.0		75.0	17.7		62.5	17.7	
Appendix	57.5	18.4		75.0	29.5		63.3	21.5		57.5	12.0	
Liver	81.3	8.8		100.0	0.0		72.9	8.8		65.6	13.3	
Biliary Ducts	83.3	3.6		100.0	0.0		72.2	9.6		60.4	3.6	
Pancreas	72.2	15.1		90.2	17.8		64.0	13.9		49.4	9.9	
Metastasis												
Yes	71.3	14.2	0.83	90.6	17.8	0.99	62.4	16.1	0.77	52.3	15.6	0.48
No	72.0	19.3		90.6	12.4		63.3	14.8		50.1	15.2	

for education, with greater satisfaction among the patients with higher education levels. For the subscale of information about other services, a significant difference was found for sex and education, with greater satisfaction, respectively, for the male group and individuals with a higher education level. It is highlighted that, for the subscale of information about the medical tests, no statistically significant difference was observed for any sociodemographic variable.

A similar analysis was developed for the isolated scale items (Table 5). For the sex variable, significant differences were found for the items addressing Information about other medical care locations (item 18) and self-care (item 19), with greater satisfaction among men. For race, a difference was found for overall satisfaction (item 22), with greater satisfaction among white patients. The remaining characteristics did not show any significant difference. It is important to mention that items 21 and 24 were excluded from the table because they presented 100% of "no" answers among the interviewees. In addition, no variability measure is shown for the "illiterate" category because there was only one subject.

Discussion

The amount of information mentioned as received about the disease, the medical tests and treatment was superior to the average score. We believe that this is related to the fact that the sample consists of patients hospitalized at a surgical ward, which means more medical tests and therapeutic conducts, consequently offering information about the test objectives and results and about the disease and treatment more constantly. This finding is similar to the observations by Adler *et al*.,(12) in which the same questionnaire was applied to 72 patients and participants in the German study and to the phase IV study concerning the validation of the EORTC QLQ-INFO25 by Arraras *et al*.(6) Almost all participants indicated some knowledge about the diagnosis of their oncologic disease. About 89% of the sample referred having received moderate or plenty of information. Studies in other countries have also evidenced that most patients received a lot of information about their diagnosis.(6,12) It should be highlighted, however, that the amount of information referred does not translate the actual knowledge about the disease, as highlighted in the study by Ferraz Gonçalves *et al*.,(13) which verified that most patients (72%) indicated knowing the diagnosis; nevertheless, not all patients affirmed the diagnosis in a way that clearly showed that they were aware of the nature of their disease. Although these study results show the predominance of plenty of information about the diagnosis, a difference exists between the information provided and the patients' needs. The cultural and social differences, emotional issues and the range of communication patterns can characterize this difference.

What the information received about the possible causes of the disease is concerned, (41%) indicates having received no information and (39%) mentions having received little information, suggesting that the team did not even discuss the matter of exposure to the risk factors, an important approach in the prevention of gastrointestinal cancer and in the cases of relapse of the disease. Nunes(14) confirms this result in the study developed in Lisbon in 2012,

Table 5. Degree of satisfaction for the isolated items of satisfaction with the information according to sociodemographic variables among the patients interviewed (*n*=100)

Variables	Item 18			Item 19			Item 20			Item 22			Item 23			Item 25		
	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*	Mean	SD	*p*
Sex																		
Male	43.3	22.7	0.04	50.0	24.3	0.04	48.6	5.9	0.71	80.3	15.1	0.52	28.4	8.6	0.41	89.9	13.3	0.35
Female	35.4	15.3		40.6	21.7		49.0	5.0		78.1	18.3		27.1	7.0		87.0	17.9	
Age range																		
20 to 39	37.5	25.0	0.94	62.5	25.0	0.20	43.8	12.5	0.14	81.2	12.5	0.94	25.0	0.0	0.76	81.3	12.5	0.22
40 to 59	40.2	20.8		47.6	25.5		49.4	3.9		78.7	18.2		28.0	8.3		91.5	15.4	
60 +	39.1	19.1		42.7	21.3		48.6	5.7		79.5	16.0		27.7	7.9		86.8	15.9	
Race																		
White	40.4	19.3	0.49	47.4	23.3	0.23	48.2	6.6	0.11	82.0	16.1	0.01	28.3	8.5	0.30	91.5	13.4	0.99
Black/ Mulatto	37.5	21.1		41.4	23.4		50.0	0.0		73.4	16.7		26.6	6.1		82.0	18.2	
Education																		
Illiterate	25.0	0.0	0.21	25.0	0.0	0.06	50.0	0.0	0.98	100.0	0.0	0.02	50.0	0.0	0.02	100.0	0.0	0.17
Primary	36.8	17.2		40.1	20.6		48.7	5.7		74.3	16.9		28.3	8.6		84.2	17.8	
Secondary	38.9	20.3		46.1	21.9		48.9	5.2		80.0	14.7		26.7	6.3		91.1	14.3	
Higher	48.4	23.2		57.8	29.9		48.4	6.3		87.5	18.3		28.1	8.5		90.6	12.5	
Marital status																		
Single	33.8	15.2	0.38	39.7	19.9	0.34	48.5	6.1	0.96	79.4	13.2	0.96	27.9	8.3	0.86	94.1	10.9	0.26
Married	41.4	21.7		48.3	25.6		48.7	5.6		78.9	17.4		28.0	8.2		87.1	16.4	
Widowed/ separated	39.0	17.8		43.0	19.8		49.0	5.0		80.0	17.7		27.0	6.9		88.0	16.3	
Diagnosis																		
Colon	40.9	20.6	0.82	50.0	25.0	0.38	48.5	6.1	0.85	80.3	16.2	0.1	28.8	9.1	0.86	88.6	16.6	0.31
Rectum	37.0	19.8		50.0	26.1		48.9	5.2		82.6	14.0		28.3	8.6		91.3	14.3	
Stomach	38.1	18.7		38.1	20.3		48.8	5.5		73.8	18.5		27.4	7.5		83.3	16.5	
Esophagus	37.5	17.7		37.5	17.7		50.0	0.0		75.0	0.0		25.0	0.0		100.0	0.0	
Appendix	35.0	22.4		40.0	22.4		45.0	11.2		65.0	22.4		30.0	11.2		80.0	20.9	
Liver	62.5	17.7		62.5	17.7		50.0	0.0		100.0	0.0		25.0	0.0		100.0	0.0	
Biliary Ducts	41.7	14.4		50.0	25.0		50.0	0.0		91.7	14.4		25.0	0.0		100.0	0.0	
Pancreas	40.9	23.1		36.4	17.2		50.0	0.0		79.5	15.1		25.0	0.0		88.6	13.1	
Metastasis																		
Yes	42.1	21.6	0.15	46.8	23.8	0.56	48.6	5.8	0.78	79.6	16.2	0.8	28.2	8.5	0.5	89.4	15.0	0.55
No	36.4	17.2		44.0	23.1		48.9	5.2		78.8	17.5		27.2	7.1		87.5	16.5	

referring that 70% of the sample indicated not having any information about the possible causes of the disease. With regard to the small amount of information on the effects of the treatment on their sexual activity, a large proportion considered they had not received any information (80%), suggesting the relation with a lesser valuation of this theme in function of the disease and little room, for cultural reasons, to discuss the theme. These findings were also evidenced in another study,(13) based on which we conjecture that the theme in difficult to manage in different cultures, as these studies cited were developed in different European countries.

Concerning the items about additional assistance beyond the hospital, such as help with activities of daily living, support groups, visits from nursing professionals, rehabilitation services, and other locations for medical care, outpatient clinic, at home, the results showed that most answers indicated no information about these items, reflecting the insufficient comprehensiveness of the actions and services in the local health system, resulting in the discontinuity of the rehabilitation care and treatments, which are extremely important for the cancer patients' quality of life. These findings were supported by the results of the study by Matos,(5) which described the validation process of the QLQ-INFO25 or Portuguese from Portugal, as well as by the results of Arraras *et al*.(6) and Pinto *et al*.,(15) in the study developed at a Belgian cancer treatment center, involving patients under chemotherapy.

In that study, no association was found between the amount of information received and the sociodemographic and clinical characteristics studied. The validation study of the INFO25, developed by Arraras *et al*.,(6) also evidenced the lack of statistical association between the sociodemographic characteristics and the items described above. Bozec *et al*.,(16) then, in the multicenter study developed in 2016, involving 200 patients who received chemotherapy and/or radiotherapy for all cancer types, showed in the results that women were more dissatisfied with the items amount and utility of the information received when compared to men. Although some questions were answered satisfactorily, showing scores far superior to the average, it was observed that 89% of the sample indicates the desire to receive more overall information. This finding is very close to the results presented in other studies,(12-16) based on which we can suppose that, to respond to the demand concerning the amount of information, the quality of the information provided should be taken into account, as many variables interfere in the absorption of the information, such as the patient's way of life, the patient and family's ability to understand the information and how they interpret the disease.

The general conclusion of this study is that the satisfaction with the information received was analyzed in patients diagnosed with abdominal cancer using the QLQ-INFO25 scale by EORTC. Despite the high level of satisfaction with the information received, it was observed that all patients would like further information, which shows us that repeating or offering new information continuously should be an ongoing process in care for these patients. The objective for health care should be to find ways of providing information that grant patients the support they need and want for the disease coping process, ranging from the diagnosis until end-of-life care. Thus, measuring the satisfaction with the information the cancer patient receives throughout the various phases of the disease and its treatment enables us to identify and rank the problems: monitor the treatment response and the health changes and promote better communication with the patient by training the care team involved, among other applications.

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The Meaning of Assuming Dependency at Home of a Person with Cardiovascular Surgery: the Vision of Informal Caregivers

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The Meaning of Assuming Dependency at Home of a Person with Cardiovascular Surgery: the Vision of Informal Caregivers

Objective. Herein, the study sought to understand the significance for informal caregivers of assuming the dependency at home of an individual subjected to cardiovascular surgery. **Methods.** This was a phenomenological interpretative study conducted with eight adult participants, home caregivers of individuals with cardiovascular surgery discharged from intensive care units to their homes. An in-depth interview was used as technique to collect the information and the procedures proposed by Cohen, Kahn, and Steeves were used for analysis. **Results.** Caregivers of individuals with cardiovascular surgery at home face situations that lead them to taking on the dependency of the person being cared. The significance participants granted to the experience was the lack of preparation to deal with it due to the unexpected way it emerged. This created a difficult situation, where feelings surfaced, like misgivings, fear, and stress during the time dedicated to caring. In some cases, the caregiver prolonged the dependency of caring for another. **Conclusion.** Undertaking the dependency of a person at home meant to caregivers coping with new situations without preparation. This dependency stirs feelings and sometimes limits participation by the person in their own care.

Descriptors: caregivers; cardiac surgical procedures; self care; qualitative research.

El significado de asumir la dependencia en casa de una persona con cirugía cardiovascular: la mirada del cuidador informal

Objetivo. Comprender el significado para el cuidador informal el asumir la dependencia en el hogar de una persona sometida a cirugía cardiovascular. **Métodos.** Estudio fenomenológico interpretativo realizado con 8 participantes adultos, cuidadores en casa de personas con cirugía cardiovascular dados de alta desde las Unidades de Cuidado Intensivo (UCI). Se utilizó la entrevista en profundidad como técnica de recolección de la información y los procedimientos propuestos por Cohen, Kahn, y Steeves para el análisis. **Resultados.**

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El cuidador en el hogar de una persona con cirugía cardiovascular se enfrenta a situaciones que lo llevan a asumir la dependencia de la persona cuidada. El significado que otorgaron los participantes a dicha experiencia fue la falta de preparación para afrontarla, debido a la forma inesperada de cómo surge. Esto generó una situación difícil, donde afloraron sentimientos como temor, miedo y estrés durante el tiempo dedicado al cuidado. En algunos casos, la dependencia del cuidado del otro se vio prolongada por parte del cuidador. **Conclusión.** Para el cuidador, asumir la dependencia de una persona en el hogar significó afrontar nuevas situaciones pero sin la preparación adecuada. Esta dependencia genera sentimientos y, en ocasiones, limita la participación de la persona en el propio cuidado.

Descriptores: cuidadores; procedimientos quirúrgicos cardíacos; autocuidado; investigación cualitativa.

O significado de assumir a dependência em casa de uma pessoa com cirurgia cardiovascular: A visão do cuidador informal

Objetivo. Compreender o significado que tem para o cuidador informal, assumir a dependência em casa de uma pessoa submetida a cirurgia cardiovascular. **Métodos.** Estudo fenomenológico interpretativo realizado com 8 participantes adultos, cuidadores em casa de pessoas com cirurgia cardiovascular dados de alta desde as Unidades de Tratamento Intensivo à casa. Se utilizou a entrevista em profundidade como técnica de recolhimento da informação e os procedimentos propostos por Cohen, Kahn, e Steeves para a análise. **Resultados.** O cuidador de uma pessoa com cirurgia cardiovascular em casa, se enfrenta a situações que o leva a assumir a dependência da pessoa cuidada. O significado que outorgaram os participantes a dita experiência foi a falta de preparação para afrontá-la, devido à forma inesperada de como surge. Isto gerou uma situação difícil, onde apareceram sentimentos como temor, medo e estresse durante o tempo dedicado ao cuidado. Em alguns casos a dependência do cuidado do outro se viu prolongada por parte do cuidador. **Conclusão.** Assumir a dependência de uma pessoa no lar significou para o cuidador afrontar novas situações sem preparação. Esta dependência gera sentimentos e em ocasiões limita a participação da pessoa no próprio cuidado.

Descritores: cuidadores; procedimentos cirúrgicos cardíacos; autocuidado; pesquisa qualitativa.

Introduction

Humans experience situations that modify their vision on reality and motivate processes of adaptation toward new contexts and circumstances. Adapting to the change from being healthy to being ill is a complex process for the individual and for the family group, which is why it is necessary to identify phenomena from everyday life that permit coping satisfactorily with the problems caused by an illness to face caring for a relative. Especially, the person subjected to cardiovascular surgery shows conditions that merit for their care to take place under specific characteristics, according to the needs derived from the surgical procedure and the implications it produces. Within the current context, these people are discharged early from the hospital to continue their health recovery and rehabilitation in the company of their relative at home. This change calls for the person's health care to be carried out by someone who, according to the characteristics of how they provide care, is considered an informal caregiver.(1)

The term "informal caregiver" refers to the person in charge of continuing with the care at home, favoring the satisfaction of needs in all the spheres of the person being cared. Informal caregivers become the central axis for the maintenance of the individual's wellbeing and offer permanent support. In this process, these types of caregivers accept commitments and duties that, besides, they consider their own.(2) Taking on this role at home is a difficult task due to the sudden and unexpected way it occurs, demanding modifications in the habitual behaviors of individuals to reach the goals proposed in relation to the requirements of care. Different studies conducted with patients dependent on care(3,4) show that homecare is a complex situation requiring training and constant companionship from the person providing it, which on few occasions is received. These home caregivers must find alternatives to help satisfy care needs and contribute in their recovery, further diminishing the degree of dependency and promoting their self-care.(5)

During homecare and upon assuming the dependency from another, informal caregivers of individuals with cardiovascular alterations(6) identify needs, perceptions, and emotions associated to this situation, leading to the elaboration of strategies to cope with it. Most caregivers manifest anguish, depression, and fear due to the unknown and poor information about the future of their relative. Thereby, accepting the dependency of another at home becomes an important element within care due to the relationship established between both individuals, which sometimes reaches such a high degree of commitment that it impedes the recovery of the person who is ill, given that it limits the person's self-care instead of encouraging its practice. This situation occurs specially with cardiovascular patients who face a moment of dependency for care that, in most cases, is transient.(7)

The context in which the study problem is immersed is developed both in the social scenario as in the disciplinary. In the social setting, caring for patients at home has become a space increasingly used to diminish hospital stay, which does not mean that in all cases it is the appropriate measure, given that many patients require at home the type of care that often those by their side do not have the capacity or knowledge to provide. This leads to making it necessary to establish new conducts and forms of family organization at home that allow caregivers to acquire knowledge and availability of time for care and assume the dependency of another. Within the disciplinary context, the problem is focused on understanding the phenomenon of caring and the significance of relatives assuming it when they face it at home. Knowing the circumstances of care, the difficulties, strengths, and meanings accepted by the caregiver, will permit the nursing discipline to implement strategies aimed at promoting homecare centered on the patient's recovery and rehabilitation, guaranteeing the state of wellbeing of the persona conducting the care.

Finally, this study was carried out with the purpose of understanding the significance for informal caregivers of assuming the dependency at home of an individual subjected to cardiovascular surgery, which permits recognizing qualities and specific needs in these caregivers that differentiate them from assuming the dependency in relation to other health conditions.

Methods

This study used qualitative research methodology with a phenomenological interpretative approach. This was achieved by using in-depth interviews as the technique to obtain descriptive stories based on the caregivers' experiences. The interviews were audio recorded, transcribed, and organized by themes to interpret subsequently the information. Ten interviews were applied to eight participants (two participants received a second interview each to clarify some results). The interviews were held in the participant's home in a setting isolated from the rest of the family; this activity lasted between 60 and 90 min. To insure the confidentiality of the information, the stories were identified with the letter E and each person's initials.

Information saturation was reached with eight participants, six women and two men between 18 and 65 years of age; all had some degree of schooling and lived in the city of Medellín, Colombia. The participants were located upon inquiring about settings where informal caregivers existed with similar characteristics, like social support networks and homecare services, with the aid of the snowball strategy, given that each new participant reported knowing somebody with a similar experience to theirs. With each participant, an initial telephone contact was made to agree on a meeting to explain the objective and study methodology. To select the participants, these had to be adults experienced as home caregivers of adult patients with cardiovascular surgery who had been discharged from an ICU. The time elapsed, as informal home caregiver and the time between the experience of caring and the moment of the interview was not considered as selection criteria. It should be noted that two people invited to participate refused to due to their lack of time and because they did not want to recall the experience.

After the meeting, the interviews were transcribed and confronted by reading the text and listening to the audio to validate the data digitized and – in turn – provide a global recognition of the information gathered. Approval and monitoring were obtained from the committee on bioethical affairs in the Research Branch at Universidad de Antioquia (Act number 14-25-618). Each person participating in this study did so voluntarily by signing an informed consent.-

Information analysis used the procedures proposed by Cohen, Kahn, and Steeves who state that organization and analysis of information implies going from text drafted with the information obtained during the field study through data collection, to a narrative text that is significant for the readers who gathered the information.(8) Detailed, meticulous and repeated reading of the data obtained is called "diving into the data", which permits establishing an initial interpretation identifying the essential characteristics of each interview. This stage constructed labels or titles for these meanings.

The thematic analysis began after understanding the text, underlining outstanding phrases, thus, seeing the emergence of tentative themes and significant texts that support the results. All the data were examined line-by-line and labeled with the tentative themes by grouping and comparing them to each other. Starting from this point, analysis was performed of each of the themes and subthemes, which would permit responding to the objective of the study. Information collection and analysis was done simultaneously as fieldwork advanced. Information saturation was reached through the analysis of the stories obtained; evidencing that no different answers were obtained that permitted generating the creation of new themes or subthemes. All the information was analyzed manually.

Principles of rigor of qualitative research were followed to ensure congruence between the question, the literature, data collection strategies, and analysis. Transferability was achieved by making an exhaustive description of the characteristics of the context in which the research took place and of the subjects who participated. Credibility was obtained by contacting the participants prior to reporting the results, to return the information and seek their approval, stating that the results agreed with what they had wanted to express. Agreement was reached through the textual transcription of the audio obtained from the in-depth interviews, which were conducted by the researcher. This research work was carried out in the city of Medellín, Colombia, between March 2015 and February 2016.

Results

Individuals in charge of caring at home for an individual who has undergone cardiovascular surgery face different situations that lead to assuming the dependency of the person being cared as theirs. The significance participants give to the experience was related to the lack of preparation to confront it, given the unexpected way in which the disease and the cardiovascular surgery emerge. All this created a difficult situation in the caregiver, where feelings, like misgivings, fear, and stress surfaced throughout the time dedicated to caring. Sometimes, it was possible to identify how the caregiver prolonged the dependency for care by a third party.

Assuming the dependency of another

Upon returning home after a hospital stay, the person faces reality with notable differences with respect to their daily life, given that self-care activities previously performed in autonomous manner, quite often need assistance from another person. This person in most cases is a relative who does not have formation or knowledge of how to care and see themselves placed as informal caregivers. Thereby, this informal caregiver emerges from the dependency of the sick individuals, to help, support, and even satisfy their needs: …*my mother would leave him food, but when she returned at night she would find all the food in the refrigerator because he did not remember he had to eat and was not able to take things out to heat them* [ELMA12].

This dependency generates a need for companionship, which produces changes in the family dynamics and leads to a redistribution of functions among the members of the family group; consequently, caregivers modify their labor, personal, and social routines to have periods of time that permit their assuming the new role of being mindful of the needs of the other and – in turn – seek help and participation from other relatives: …*so we had to start looking for someone to stay and keep him company; my mother stopped working and decided to take care of him all the time* [ELMA13]. The person cared for subjected, by the disease or by the limitations of the surgical procedure, to a state of dependency on peo*ple who are in charge of caring for them, which is reflected in situations, like bathing and feeding, which must be carried out in company and with the aid of the caregiver. The relationship established is not exempt from producing certain reactions like discomfort and mutual annoyance: my father was in a state in which he obviously did not want to depend on the people caring for him; therefore, for him it was uncomfortable as it was for us to have to do certain things, like accompany him to the restroom* [EACJ18].

Regarding care related to basic needs, like bathing, going to the bathroom, skin care, and ambulation, there is a progressive learning process as the caregiver confronts the situation: *I did not even know how to clean him; I would wonder if this was the way to clean him. One somehow did it and, within my capacities felt, it was the right way* [ELJT6]. When caregivers faced this new situation at home, they established interventions based on the activities carried out by the health staff during the hospital stay. This meant having two different forms of care; in the first place, care they define as delegate or assigned and in the second place, care destined to intervene the basic needs of daily living, which they define as daily care: …*he always got up at 9 am; I would have his breakfast ready, he ate it, bathed; and then we'd go for a walk* [EMTJ9]. This whole process of caring at home creates a relationship between the caregiver and the person in which the first is in charge of watching over all the needs of the other, who – in turn – sees the caregiver as a figure of support and companionship during the recovery process, for their physical and emotional requirements: …*I was watchful over him, he would hold on to me to walk and I was like a walking cane for him* [EMTJ10].

By being so involved with caring, informal caregivers take on the activities of the person being cared as their own and begin to see the person they are caring as part of themselves. This situation sometimes limits the persons being cared from carrying out their self-care activities because everything is done for them. As goals are met and the results are derived from correct actions, caregivers feel satisfied: *feeding was very difficult, sometimes he would eat, other time he would note at; however, I kept insisting and tried to feed him what he liked most …I always gave him his food because he might choke on it* [EMTJ11]. During this whole process of companionship and homecare, relationships are secured and bonds become stronger, with the emergence of a reciprocal relationship of dependency in which caregivers feel they are doing things well due to expressions of satisfaction from the person being cared in relation to the care received: …*he refused my caring for him because he did not want; but when he was hospitalized and I had to stay with him in the clinic, he started assuming that and I was super happy that I was a very good nurse and was doing it well* [ELJT28].

During the course of this relationship of dependency, companionship and support are important aspects for the care process to the point that the patient cannot be left alone for fear of what may happen: …*for me, leaving him alone was a problem because I thought he could fall or get hurt; in that part I feel that they depend on what the other person does for them* [ELJT33]. This relationship of companionship created between the patient and the caregiver increasingly becomes stronger, to the point in which the caregiver can feel that if he is not present at all times, this would mean that he is leaving him alone. Somehow, this shows how the caregiver limits the person's independency on aspects from their daily living: … *if he does not have someone to stay with him, he is going to feel very lonely; in that part, I feel they are quite dependent…* [ELJT35].

Lack of preparation: without knowing how to care

When informal caregivers accept the dependency of care, a situation is generated in them that becomes difficult, when they realize they do not have enough information or necessary knowledge to offer care in the expected manner. *When he gets home, it is difficult because I believe one does not have enough information to offer care* [EACJ3]. This lack of knowledge on how to act upon certain situations generates in the caregivers doubts on the correct way to perform the care, which causes – in many cases – a state of guilt when thinking of the risk of making a mistake and doing things badly: …*you then feel a degree of guilt of having been able to do things better, but I did not know how to do them* [ELJT7]. The necessary knowledge to assume the dependency is acquired through observation and practice. This is how they learn to conduct certain activities and tries to imitate them at home according to how they saw it being done by the health staff during hospitalization. This becomes a challenge for the caregiver when individually performing the activities the formal caregivers carried out for the person: *the nurse would come in to bathe him and I paid close attention to how she moved him, how he was bathed; I even asked the nurse how to do it* [ELJT12]. Only until the moment of assuming the care do questions and concerns emerge on the adequate manner of caring, these doubts have no opportunity of being solved until the moment of returning to the hospital for follow up appointments or consultations. These questions permit improving the informal caregiver's technique: *when you finally face caring for the other and have the opportunity to go back to hospitalization, you find those questions that need to be asked and a bit of guidance from the staff* [EACJ29].

During the initial stages of homecare, informal caregivers do not clearly identify when and in which situations they have to recur to the hospital. This lack of clarity makes them feel insecure on how they must act upon a given situation: …*there are things you do not manage to identify and that makes you recur to emergency several times* [EACJ4]. After having clarity on the adequate way of caring at home and feeling the confidence of doing it well, caregivers start seeking support in other family members to have some options to act upon an unexpected situation, leading them to design plans or rapid action alternatives in case any emergency arises. *I sought support from my daughters; I waited for things to happen to see what had to be done. Sometimes I called them and told them: I am in the hospital with your father* [EMTJ28].

A difficult situation

The act of assuming the dependency at home is a difficult experience for the informal caregivers, above all when they have had no prior approach to these types of situations, which generates new conditions for which they are not prepared: *for me it was a difficult experience because we really had never had a similar situation. I had never had to care for anyone* [ELJT1]. For informal caregivers, the experience of caring at home represents a situation that must be assumed suddenly; it is surprising and demands adequate action, with the intention of seeking wellbeing and avoiding harm even when there is no training, which causes emotions and feelings: *It is like a shock and an impact having my father at home* [EACJ1].

This difficult experience for caregivers becomes increasingly complex, given that they can sense that the actions they carry out do not help produce the expected wellbeing in the person cared for or because of the increased difficulty of the actions due to changes in the health condition: …*as time passes, it becomes more difficult for me, he no* *longer wants to eat anything* [EALB21]. Along with the feeling of shock caused by homecare, informal caregivers live situations of stress that appear at several moments. One of these occurs when they confront care and discover they do not have the tools to carry out the activities required: *…it stresses you because you do not know what to do, plus the pressure of this being a relative, who is such an important person in your life…* [ELJT26].

Stress increases with time, at every moment situations of ambivalence are experienced with respect to how to proceed because of the insecurity and lack of training, which leads caregivers to think of the adequate manner of performing the activities: *stress is generated from thinking whether I will or will not take good care…* [EACJ17].

Likewise, insecurity leads caregivers to feeling fearful upon the possibility of the occurrence of some event that requires immediate action and which places at risk the life of the person being cared. This fear is associated to different factors, like being alone with the person and not knowing how to respond upon a given situation: *…I was quite scared that at any moment he would again have an arrhythmia or any other thing, of being alone at home and suddenly something happening [*EMTJ23]. The different actions of caring, their complexity, frequency of performance, and confronting the dependency of the patient toward the caregivers, lead to physical and mental weariness, which becomes evident in the development of their other activities, like work or recreation. This weariness is not always recognized in front of other people who make up the family group. The overload of activities and lack of rest contributes to increased stress: *the companionship you had to have with him at all time, because having to spend the night with him in the same bed and the next day having to go to work is a tiring and exhausting process* [ELJT25].

Discussion

Assuming the dependency of caring at home for a patient after cardiovascular surgery is a difficult situation that leads to a series of modifications in the living conditions of the person in charge of care. One of the most important changes is the modification of habits in the person who is ill, which must be assumed by the other family members. Most of the time, the role of caregiver at home emerges unexpectedly and there is no clarity on how to conduct these activities at home. This finding coincides with that by Zambrano *et al*.,(9) who state that informal caregivers are in charge of proving care to dependent individuals, assuming this activity in volunteer manner and without receiving or expecting economic remuneration for this function.

For the participants, being the home caregiver means being watchful of the person's needs, providing support and companionship at every moment to achieve wellbeing and comfort. This person acquires a series of commitments and responsibilities related to caring for another; they accompany the whole illness and recovery process at home, related to activities that range from the personal care of the individual to dependency for all their daily activities. Assuming this dependency generates a change of the caregiver's role within the family dynamics. Barrera(10) found that the responsibility of covering the needs of the sick person is granted by different reasons, like maintaining the family wellbeing, reciprocity if they were previously cared for, gratitude towards the person being cared for, and – frequently – because they are the only close person who can do this.

During this act of caring, informal caregivers encounter a series of situations that in most cases they do not know how to intervene, which go from feeding to other more complex situations, like bedside care, which generates in them the need to develop care skills. Nkongho(11) defined care skill as "the way of relating with the care receptor, which requires commitment from the caregiver to interact and understand this skill as a way of living and not as a collateral task". This is how caregivers develop this skill, experience a sense of belonging and bond, and are stable and resilient upon stress.(12) With this care skill emerges a dependency from the person toward the informal caregiver, evidenced by the participants as the need to perform activities for another.

Dependency is an important aspect in experiences of illness, to the point that it has been reviewed from different disciplines to achieve better understanding of the term. The European Council defined dependency as "the need for help or important assistance for everyday activities. A state in which people find themselves due to reasons involved with the lack of or loss of physical, psychic, or intellectual autonomy, having the important need for care and help to conduct activities of daily living and, particularly, that referring to self-care".(13) According to this definition, dependency has certain characteristics; one of them refers to the need for support by a third person, during a real situation that is observable and occasionally modifiable. The other aspect to highlight is that it has to do with activities that are potentially measurable and are related to the degree of performance of a given activity, but not to the cause that originates the situation of dependency.

The degree of dependency by the sick person toward the caregiver is difficult to measure in these cases because it is determined by the illness' compromise in bodily functions and by the way of responding to it, which are specific to each person.(14) The participants in this study had to conduct homecare according to the patient's needs, a situation that led them to permanently support and accompany the person, establishing a relationship around the dependency to achieve the other person's wellbeing. All this affected the everyday lives of the caregivers because they had to modify their daily activities, like quitting their work and spending nights without rest to care for their relatives. It is not rare that in the priorities the participants establish on said needs there is coincidence with that proposed by Henderson,(15) who refers to the importance of nutrition, elimination, and mobilization, which represented the greatest dedication of time and effort by the caregivers.

To undertake these activities, caregivers seek the necessary knowledge to help to satisfy partially or totally any of these basic needs, according to the individual's lack of autonomy. This situation justified implementing new activities in everyday life and which had not been done before; consequently, informal caregivers faced many moments when they did not know how to respond correctly and began to intervene intuitively in the way they felt appropriate. This coincides with that found by Montalvo *et al*.,(4) who say that initially knowledge in the group of caregivers is guided by a low level of preparation to assume their role. The first activities carried out by home caregivers refer to those conducted during the hospital stay and are delegated to them to continue the care at home, like maintaining the bed's head part elevated, administering prescribed drugs, changing the patient's position, and maintaining the family member comfortable and calm. The other group of activities has to do with routine care, emerging from the needs of daily life, like feeding, bathing, and ambulating, among others; and although these were not considered difficult to perform, they did require other knowledge and skills achieved over time and with practice. This learning coincides with that reported by Vargas(16) who states that most caregivers learn to care on their own during the daily practice, and manage it by doing, making mistakes, and getting it right in their actions.

According to the aforementioned, caregivers have two types of meanings for care at home: one is called delegated care because it has to do with care that had to be done in the hospital and continue at home; the others are called everyday care, which refer to all those conducted habitually in the same place. This agrees with Luengo *et al*.,(17) who indicate that caring at home includes different types of care; according to basic needs, like feeding, elimination, rest and sleep, hygiene and comfort, mobilization, and stimulation. These types of care seek a minimum of wellbeing, at the same time that they can deteriorate the state of health of the person if not done adequately.

Daily performance of all these care activities builds among people a close and special relationship due to the characteristics that comprise it. This relationship constitutes a space in which caregivers do their best to generate wellbeing and comfort in the sick person, by satisfying their basic needs and those, which because of their health condition; they cannot perform on their own. A relationship of support, companionship, and communication is established to favor the person's recovery.

Informal caregivers also accept a special function upon sensing the needs of care as their own, that is, they feel that if they do not carry out the activities for the person nobody will do it, and sometimes limits the person's self-care actions by keeping them from conducting their activities autonomously. In this sense, for informal caregivers moments in which the patient improves are satisfactory and reasons for joy. Likewise, it causes frustration when the patient's evolution and participation are not adequate. Montorio(18) has documented how caregivers can show different manifestations over time, like health problems, psychological and social alterations associated to the burden assumed by caring. In this regard, the participants refer to the need to conduct care activities not only to satisfy another but also themselves.

This relationship between the caregiver and the person being cared establishes moments of strong union between both, securing bonds of trust, improving communication, making the care process lighter and less tiring, generating in both gratitude for adequately assuming the current situation of their family environment. For their part Ferrer *et al*.,(19) state that during the whole care process, caregivers receive certain help and indications form the experiences of other relatives who have gone through the same situation. However, Roca *et al*.,(20) evidence that many informal caregivers perceive they are irreplaceable and essential in care, manifesting that they do not know who could care for the patient in case they could not do it.

Lack of knowledge on how to care meant for the participants one of the biggest difficulties when assuming the dependency of the person being cared at home. Several authors coincide in that caregivers are not prepared for homecare; Gómez,(21) for example, in a study of caregivers, states that the person who is already in care, and who is committed to it without preparation, needs to acquire knowledge that clears doubts and concerns caused by the patient's unexpected and disorderly behavior. Similarly, Pinto*et al*.,(22) pose that in Latin America people who are engaged as caregivers do not have adequate guidance, evidencing in them important deficiencies in care skills.

One of the first doubts that emerge in caregivers is related to how to act upon an emergency or a situation that gets out of control, that is, how to know when to go back to the hospital or stay home. According to Jofre,(23) the appearance of a health problem determines the need to make decisions, which must respond to a diagnosis, treatment, or lifestyle changes. The determinants for which decisions are made are triggered by new circumstances and transitional situations of development.

We must add other doubts and worries related to the correct way of caring for the person to favor their recovery and not cause harm to the concern of how to act upon an urgent situation. Deciding on what type of food to provide, what medications to administer, what exercises or changes in position to perform all become the principal internal questions caregivers ask themselves, without obtaining correct answers because they do not have sufficient information or training to achieve it. These situations lead caregivers to seek alternatives that allow them to obtain adequate information to provide care. One form of learning is related to the opinions and indications given the person being cared, that is, the orientation of how the person would like some activity or procedure to be done to feel more comfortable.

Throughout this process of assuming the dependency of care, informal caregivers experience a series of feelings that mean for them the emergence of set of elements that affect everyday life and obligate them to make plans and strategies to conduct the care. The feelings are described by Vargas(16) as stimuli from the physical and social environment, which in hand with other processes, like learning, memory, and symbolization, recognize and interpret meanings to elaborate perceptions. Upon these situations, caregivers experience feelings that can help enhance care, or – on the contrary – intervene negatively in its execution. According to Barrer,(10) caregivers are exposed to emotions and feelings; some positive, like the satisfaction of contributing to the wellbeing of their loved one – and some negative, like feelings of guilt, impotence, loneliness, and fatigue.

During the early stages of home care, caregivers feel it is a difficult experience for which they are not ready. This makes it more complex to develop skills and creates situations of stress that caregivers do not know how to face. Stress leads caregivers to feel incapable of practicing care and adequately satisfying needs, finding a sense of impotence that participants denominate as shock. Fear and misgivings surface in caregivers during the early stages of the process, given that these are new functions and roles in their lives that cause uncertainty about what may occur.(6) This uncertainty is conceptualized by Mishel *et al*.,(24) as the person's incapacity to determine the significance of events related to the disease, being incapable of assigning defined values to objects or events and, hence, not being able to predict the results due to lack of information and knowledge. Other sensations noted in the participants are frustration and impotence, when they realize that the efforts made to maintain the person's wellbeing are not enough. Finally, the weariness of the caregiver role is evidenced; according to Moreira *et al*.,(25) to the extent the patient becomes dependent on care due to the evolution of the disease, the caregiver assumes several self-care activities, which after a period of time overload the caregiver's daily capacities and provoke physical fatigue.

This study concludes that for informal caregivers undertaking the dependency at home of an individual subjected to cardiovascular surgery meant a difficult situation given the unexpected manner in which they had to face new situations for which they were not prepared. The sudden way in which the disease appears in this group of people is a differential factor with other health conditions that also cause dependency in care. This dependency generated – in turn – in caregivers feelings of misgivings, fear, and stress during the whole care process. This relationship of dependency sometimes limited participation in self-care from the person being cared, due to the degree of commitment assumed by the caregiver, which can even prolong the dependency in care. Knowing this significance, permits the nursing discipline to create spaces and strategies that allow providing education and formation to informal caregivers on how to conduct activities of wellbeing and comfort demanded by the sick person, to develop the necessary skills for caring. With caregivers having sufficient preparation, it is likely that the situation will be considered less difficult and lead to the surfacing of new feelings.

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Attitudes toward Community - based training and internship of Nursing students and professors: a qualitative study

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Attitudes toward Community - based training and internship of Nursing students and professors: a qualitative study

Objective. To explore the attitudes of nursing students and professors towards community-based training and internship in Fasa, Fars, Iran. **Methods.** This qualitative study was conducted using the content analysis approach. Data from students and professors were collected through five focal groups and data from patients was collected by using field notes. Interviews were conducted with 17 students and three professors responsible for implementing the study plan; in addition, 800 patient-related field notes were analyzed. **Results.** Community-based training and internship were identified as useful from the point of view of students, professors, and clients. Results were classified into two principal categories: "health preservation and promotion" and "promotion of students' skills". **Conclusion.** Attitudes toward the formation and community internship are favorable insofar as it is a highly beneficial experience for students, professors, and patients.

Descriptors: attitude; focus groups; health promotion; qualitative research; students, nursing.

Actitudes hacia la formación y pasantía comunitaria de estudiantes y profesores de Enfermería: un estudio cualitativo

Objetivo. Explorar las actitudes de los estudiantes y profesores de Enfermería hacia la formación y pasantías comunitarias en Fasa, Fars, Iran. **Métodos.** Estudio realizado en Fasa (Irán) con enfoque cualitativo fenomenológico. Los datos de los estudiantes y profesores se recogieron a partir de cinco grupos focales, los datos de los pacientes y con notas de campo. Se entrevistaron a 17 estudiantes y a tres profesores responsables de implementar el plan de estudios y se analizaron 800

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notas de campo relacionadas con pacientes. **Resultados.** La capacitación y prácticas en la comunidad se identificaron como útiles desde el punto de vista de los estudiantes, profesores y pacientes. Los resultados se clasificaron en dos categorías principales: "preservación y promoción de la salud" y "promoción de las habilidades de los estudiantes". **Conclusión.** Las actitudes hacia formación y la pasantía en la comunidad son favorables al ser una experiencia altamente beneficiosa para los estudiantes, los profesores y los pacientes.

Descriptores: actitud; grupos focales; promoción de la salud; investigación cualitativa; estudiantes de enfermería.

Atitudes à formação e estágio comunitário de estudantes e professores de Enfermagem: um estudo qualitativo

Objetivo. Explorar as atitudes dos estudantes e professores de Enfermagem à formação e estágios comunitários em Fasa, Fars, Irão. **Métodos.** Estudo realizado com enfoque qualitativo fenomenológico. Os dados dos estudantes e professores foram recolhidos através de cinco grupos focais e os dados dos pacientes se recolheram utilizando notas de campo. Se entrevistaram a 17 estudantes e três professores responsáveis de implementar o plano de estudos e se analisaram 800 notas de campo relacionadas com pacientes. **Resultados.** A capacitação e práticas na comunidade se identificaram como úteis durante um ano desde o ponto de vista dos estudantes, professores e clientes. Os resultados se classificaram em duas categorias principais: "preservação e promoção da saúde" e "promoção das habilidades dos estudantes". **Conclusão.** As atitudes à formação e o estágio na comunidade são favoráveis à ser uma experiência altamente benéfica para os estudantes, os professores e os pacientes.

Descritores: atitude; grupos focais; promoção da saúde; pesquisa qualitativa; estudantes de enfermagem.

Introduction

Supply and training of human resources that are committed, professional, efficient and entrepreneur based on local and national needs is one of the important missions of higher education in the field of health in Iran. In this regard, some programs have been developed and innovation in medical education based on the Health Sector Higher Education Plan. This document includes important packages such as strategies for realization of macro-policies aiming at reducing the displacement of clients in search for specialized services. This is done by the deployment of specialists in different endemic areas. There is also a responsive and equitable training package, which includes establishing a system for recognition and evaluation based on community needs, revising and developing training programs to meet the community needs, designing a system for increasing accountability and incentives to better meet the real needs of the society, and paying due attention to the social determinants of health.(1) In their qualitative study, Ahmadi *et al*.(2) suggested that in recent years, there has been much debate about the need for change in medical education in Iran. One of the desired changes is to increase accountability among medical students. In their study, they suggest eight proposals for education policy makers to develop accountable medical education including organizing accountable educational councils, developing community-based curricula, providing training in the real community contexts, organizing educational processes, integrating and coordinating educational rules and regulations, pursuing proper budget management, paying attention to educational outcomes, and carrying out educational programs in the wards. An example of fairness is to ensure equitable access of all people to health services.

Kulbok *et al*.(3) found that community health nursing is a community-based practice, which requires unique knowledge, competencies, and skills. The role of nurses in primary health care is beyond just patient care and covers issues such as the protection of clients' rights, social organization, health education, and promotion of social and political reforms. They believe that community health nurses can help the solution of multifactor community problems by encouraging people's participation in society. Development of students' capabilities during their education is the goal of all leading universities. In a study carried out by Zandee *et al*.(4) in the Calvin College, Department of Nursing community health nursing students worked with public health staff to provide service and training to West Michigan community. Nursing students in the program focused on cultural issues, critical thinking, nursing process, health indicators, available resources, social justice, vulnerable populations, and evidence-based practice. During the past decades, community-based education has been implanted in many developed and developing countries for providing health services.(5,6) In Iran, although community-based activities are abundant, there is little evidence about the provision of such services in remote and underdeveloped areas. Therefore, given that the training and internship program of the nursing students participating in this study was in the form of providing services in remote rural areas in the form of community-based home care, this study aimed to investigate the perception of clients, as well as the nursing students and instructors regarding community-based home care internship. The aim of this study was to determine the attitudes of nursing students and professors, and clients towards community-based training and internship in order to plan for the future development.

Methods

This was a qualitative research with content analysis approach. The community based training and internship planning conducted for one year from January 2016 to January 2017 in mianshar and villages around the city of Fasa in southeast of Fars province, Iran. The data from students and professors were collected using semi-structured in-depth interviews in five focus groups. The clients' attitudes were collected using field notes collected in 800 home care events. Out of the 77 students participating in the program, 17 students were chosen and interviewed. Three professors who had assumed the responsibility of leading the program were also interviewed. The interviews continued until data saturation. Interviews and notes were transcribed in word files. The interviews were listened over and over again so that a general perception was formed. Then, generating initial codes and searching for themes among codes were carried out. Then abstraction of data was done using open, axial and selective coding. Constant comparison was used for data analysis. Max QDA was used for analysis. Ethical clearance was obtained from the university's ethics committee. Participation was voluntary and informed consent was obtained from the participants. Gathered data was treated confidentially and code numbers were assigned to participants' taped transcripts to ensure anonymity.

Results

Providing health services in remote areas in the form of home care creates a mutual experience between clients, students, and professors. In addition to promoting fairness, it causes mutual empowerment of clients, students, and professors and creates a positive outlook towards health care system since the provision of services occurs in a warm and friendly environment. The results were classified into two main categories: "preservation and promotion of health" and "promotion of student abilities".

Preservation and promotion of health

The results of this study showed that students in this curriculum made attempts in the course of maintaining and improving the health of people who lived in remote areas and had insufficient access to health services. Their efforts resulted in client satisfaction of students and professors. The main category of preservation and promotion of health had two sub-categories: education and follow up and referral.

Education

The results showed that the students could play an educational role under faculty supervision in the curriculum and that they deemed their role in this area helpful. In addition to providing home care, the students provided instructions in urban and rural environment hygiene, home and school hygiene, occupational health, lifestyle, common diseases in the region, and mental health. In addition, students distributed pamphlets on nutritional control in patients diagnosed with hypertension and diabetes. The results showed that the instructions were useful for both clients and students:

Community-based research is widely done in the world today. This means that you must check the real problems of the society. A fact that was very interesting for me was that the students saw people's real problems and dealt with the status of hygiene in their environment and buildings, and the common diseases in the treated area. *Just like when we were dealing with the disease in the city of Fasa, the students themselves observed the health conditions in schools and talked to the teachers and school principals. In all these cases, professors and students taught the necessary points* [Participant 20, professor]; *Students instructed people on hypertension, diabetes, and cutaneous leishmaniasis and ways to prevent them; kidney stones and preventing water stagnation; separation of the livestock living place from that of the humans; the need to wear boots and gloves when working with livestock and wear a hat by farmers to avoid skin cancer; healthy diets to reduce the consumption of oil, salt, sugar and sweets; and ways to prevent back pain. People benefited from the instructions and students recognized the gap between theoretical knowledge and practice and tried to bridge it* [Participants 21, professor]; *Today I visited a patient who had been suffering from dental abscess since a few days ago. He had used multiple antibiotics arbitrarily, but the abscess area was still swollen and red. I instructed him that self-medication might cause severe effects. I encouraged him to go to the dentist or a doctor to determine the treatment and the proper antibiotic immediately* [Participant 5, student]; *One of the important things that we did was to provide instruction. For example, if the patient refused to use medicines, we instructed him/her about the importance of the drug and complications resulting from not taking the prescribed medicines* [Participant 7, student]; *I am grateful that when you came last time, you controlled my blood pressure, listened to me, and encouraged me to go to a doctor. I had not checked my blood pressure and my health status. When I went to the cardiologist, they said that I had some narrowed heart arteries and cardiac surgery was needed. I'm fine now after the operation. If you had not instructed me, I would have died. I thank those students who helped me realize about narrowing of my heart vessels* [Field note 130, 65-year-old patient].

Follow up and referral

In this curriculum, students checked the blood pressure and glucose of some family members when they entered their homes. Some patients were new cases of hypertension and hyperglycemia that were diagnosed and notified by students. New cases of a disease were referred to health centers at the village or nearby city and sometimes were sent to specialists via a referral letter by the University of Medical Sciences. The results of the study showed that clients, students and professors were satisfied with screening, follow-up, and subsequent referrals:

I did not know that I had hypertension. I will go to a doctor and follow up my treatment [Field note 300, 50-year-old patient]; *That's very good. I like health training and internship in the field more than hospital internship, because I can play a stronger and more important role here. For example, people who have not ever gone to a doctor and have not checked their, for example, blood glucose and pressure, are visited and can finally follow up their treatment. For example, today we visited a case that had been diagnosed with hyperglycemia a week ago, with a blood sugar level of 407. Now she has controlled the disease. It's really nice [Participant 18, student]; When the students went to provide care, people asked them questions. They asked about diabetes, cutaneous leishmaniasis, and hypertension, for example, and the students* *would answer the questions as far as they could. Sometimes the students came to the conclusion that they need to study more and more. In these cases, the students did their best to the answer the people's questions. One thing that encouraged both the students and us was those cases that were followed up. For example, some of the people we visited at their homes, were not aware that their blood pressure or sugar levels were high. We introduced them to health centers, hospitals, family doctors or specialists* [Participant 19, professor].

The promotion of students' abilities

The results of this study showed that as people benefited from nursing students and professors, going to serve the community and the people in real context enhanced the capabilities of the students. The main category of promoting students' abilities is divided into two sub-categories: improvement of interactions and development of professional competence.

Improvement of interaction

The results of this study showed that both students and professors believed that students' interactions had improved during the program. Students enjoyed communication with lonely elderly people, who sometimes lived without care and empathy from people around them:

Some patients had psychological problems. If they could feel better psychologically, the treatment of their physical diseases would be easier. They felt better as they talked to us. We needed to obtain their consent and confidence to enter their homes and our empathy was necessary [Participant 7, student]; *The good experience I have regarding the students' improvement is that many of the students had trouble communicating when they wanted to get into the homes to deliver the services, but some were capable in this regard and started communication earlier. Later on, we assigned the responsibility of the communication to students with weaker communication skills so that they can improve in this regard. The mere contact with rural community was very useful. The sincerity the students saw in the village was very interesting for them. People in the rural community accepted students more easily compared to people in urban areas* [Participant 19, professor]; *I'm so glad I'm here in this house, because this 72-year-old woman is very lonely and is feeling depressed. She has become very happy to see us. I also learned that elders are a blessing and we should not leave out parents alone* [Participant 12, student].

Development of professional competence

Based on the results of this study, both students and professors believed that the professional competence of students improved. Such competence includes their health-oriented perspective, policy making abilities, a sense of responsibility and concern for people, and the use of community experience and evidence, which sometimes lead to misconceptions in society and sometimes generate research ideas and innovation in health care:

If we can prevent diseases right here, there will be no need to bring the patient to the hospital. A small measure here can prevent a big problem, like for example, open heart surgery. If we had visited the villages, they would not have been forced to come to the hospital, faced with high costs and other consequences. I like this much more than I like working at the hospital, because it is more beneficial. It is as if we give life and opportunity to the people again [Participant 18, a student].

This program changed the medical students' focus from medical to health aspects. And even some research topics can be derived from these visits [Participant 20, professor].

Other examples of development of professional qualifications were the result of the experience and evidence they collected on health issues in their contact with people. Students may not find these experiences in their textbooks. Using critical thinking, the students modified the myths in their minds and the beliefs in need of reform. They also viewed some experiences as sparks of research ideas. Based on field note 570, the students visited a family consisting of husband, wife, and two children one aged five and the other two. The two-year-old child had multiple lesions of cutaneous leishmaniasis. The students listened to the experience of the family in treatment of their child: *We never took our child to hospitals or care centers for treatment. Cryotherapy makes the situation worse and increases the size of the wounds. We burnt wands of Tamarix, and mixed its soot with fig tree resin. The mixture had better results.* Based on note 230, the students visited a 27-year-old woman, who had a bachelor's degree, and listened to her experience in reducing the delay in fertility: *I did not became pregnant until about three years after marriage. In order to enhance the performance of my ovaries, I started eating the plant Ferula assafoetida (Stingingassa Asafetida)*. Then I became pregnant and I have a son now. Field note 909, which is the last one, includes comments by students indicating the fact that clients' concerns have become the students' concerns. Nursing students said: *All students in the class have collected some money. We want to give it to a child who had lost her parents and grandparents who do not have a good economic situation take care of her.*

Discussion

Discussing the development of medical education, some believe that training medical students is a responsibility that should be done collaboratively and requires the participation of universities, educational institutions, community institutions and service providers.(7-9) This study showed that although community-based training and internship along with professors have some challenges such as shortage of facilities, equipment, and human resources, it was evaluated as useful for the community by students and professors participated in this study. The results were in line with those of similar studies.(10) As the results showed, the main category of "preservation and promotion of health" had two sub-categories: "education" and "follow up and referral". In the provision of home care in remote areas, students played an important instructive role and the people benefited from the instruction provided by students and professors. This result was in line with the results of a study done for reform of medical sciences in Brazil, Falavigna *et al*.(11) suggest that there should always be a connection between the health system, universities, and the community. They believe that medical education and training must act as a means for providing service within the community. Sarrafzadegan *et al*.(12) studied a community-based interventional program designed to develop Healthy Heart Program in Isfahan, providing educational materials and training were important. They found that developing teaching materials and provision of instruction were more important. Despite the lack of human resources, the nurses did their best in training. In such programs, preparing students and encouraging them to participate can resolve the problem of lack of human resources to some extent and create a synergy in teaching.

The results of this study showed that the students and professors involved in the study performed screening in the area of diseases like diabetes and hypertension and made a referral and did follow up measures if necessary. All patients expressed their satisfaction with the screening, referrals, and follow-up measures. This finding of this study was consistent with studies stressing the importance of screening programs, follow up and referral, and those recommending the need to clarify the screening processes, using repeated reminders to patients to control the retina damage and other diabetes complications, including and repeating this advice in screening programs, and educating the public on the treatments of damage to the retina. It is also consistent with results on the role of nurses in public health promotion.(13-18)

The second main category, "promotion of students' abilities", is divided into two sub-categories: "improvement of interactions" and "development of professional competence". The results showed that although providing home and community-based services was primarily accompanied with challenges such as defects in communication or in gaining the trust of the families, over time, the students developed their interaction skills and completed the care process well. This is consistent with the results of studies suggesting that community-based training and internship improved socialization of students and made them acquainted with the social realities and needs of primary care.(19, 20) The results showed that home and community-based health care services help the development of professional competencies such as health-oriented perspective. This is consistent with findings of Martin(21) and Peters *et al*.(22) suggesting that nurses believe that entering the field of primary health care is essential due to the increase in the workload of non-communicable diseases.

In the field of policy making and economics, students understood issues such as the effect of health and poverty on the human's disease and health process, as well as the impact of diseases on the family economy. In their collective work, they tried to solve the economic problems faced by some people. This result was in line with the results by Freire,(23) who believed that in this type of training and internship, students are fused with the community and from a liberating perspective, understand the oppression from the perspective of people. For example, in the field of health, students understand health and social problems caused by the unfair distribution of resources or social injustices and shortages. They try to resolve the shortage of knowledge resulting from social, psychological, political, economic and cultural factors on people. Students also have a responsibility to inform people about the factors affecting their health and about the changes needed.

The results show that bilateral development and empowerment is a central variable. Moving education and health services to remote areas can improve the development and empowerment of individuals, families, and clients. In addition, the students can develop interactions and professional qualifications in such programs. This is consistent with the results of the study by Kulbok,(3) who found that community health nurses can increase participation of community members and empower them in health promotion and prevention. Such empowerment can in turn reduce threats to their health and increase social justice. However it was inconsistent with some studies that had shown an inverse relationship between society and higher education and deemed people as just passive receivers of services.(24,25)

The conclusion of this study is that community-based program of training and internship provides learning opportunities for undergraduate nursing students. Increase in non-communicable diseases and the growing population of the elderly in the community has increased the need for nurses who provide community-based home-based health care services. Therefore it is better to start education on provision of services beyond hospital beds.

Some limitations of the study is that the researchers were all healthcare professionals, which may have influenced the subjectivity of the findings. Like all other qualitative research, it is also acknowledged that the findings of this study have some limitation in their generalizability. However, qualitative research designs are often not generalizable although they offer opportunities of 'transferability to similar context.

We recommend community-based training and internship programs for students in the form of teamwork can be enriched with the participation of all health students, especially medical students; the participation of all university deputies; improvement of equipment; removal of weaknesses of the community-based programs based on opinions of clients, students and professors; and arrangement of workshops for students on dealing with common regional diseases and problems. At the regional level, recommendations include continuing community-based training and internship; and transferring comprehensive health service delivery to remote and underdeveloped areas, for example via employing resident health workers, lowering health care costs, making visits doctor or hospital referrals easier for people in remote areas. At the national level, cooperation is needed on the part of the Ministry of Health, Treatment and Medical Education, the Ministry of Cooperatives, Labour and Social Welfare, and other supporting organizations such as the Organization for Social Welfare, and Relief Committee to allocate one to five quotas to health workers supporting the poor, so that the deprived people in the country are covered by support efforts in the form a network.

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