Family-centered care: from discourse to practice

The family-centered care is a philosophy of care with more than half a century of existence. This philosophy has its origin in the pediatric care, being expanded to all types of care and opening a perspective of paradigm shift in healthcare.

This shift requires that the patriarchal and paternalistic model (which is centered on the knowledge and power of health professionals) be discarded and another model (which is characterized by partnership, dignity, and respect) be adopted, in which information is shared and the patients and their families have collaboration.\(^1\),\(^2\)

In most developed countries, these values are part of the health policies and mission of health systems. However, we often see that the family-centered care is merely a discourse in which family health is only spoken about. In fact, evaluations are performed regarding the number of consultations provided in primary care to patients with a given chronic disease or training of the care provider ensuring continuity of care to dependent family members.

We are living in times of economic austerity, in which the health systems are threatened by both resource scarcity and increase in care needs. Such a threat stems in part from population aging and increase in the number of chronic diseases. In these conditions, transferring care provision to the families, without a proper professional support, is undesirable and dangerous.

The family-centered care requires a systematic assessment of the complexity of each family. In turn, this requires the use of instruments that permit to know and document the story of that family, including their beliefs and values, communication style, and ability to make decisions.

Taking into account the proximity of nurses in the health services and the nature of their care, they are particularly well positioned to intervene and support families throughout the cycle of their lives. In addition, they can help families to mobilize their own resources and strengthen themselves in moments of crises, which may be moments of growth and family reward as well.

There is currently a considerable body of family nursing knowledge, which was generated by research. However, this knowledge should be taught in undergraduate and graduate courses, and then transferred to clinical practice in both hospital and outpatient contexts.

To implement family-centered care, it is also necessary to transform professionals of the multidisciplinary health teams, strengthening their facilitating beliefs about the families and their relational skills.\(^1\)

In one of the first texts on family nursing (1997), Dorothy Whyte, a Scottish nurse and researcher, stated the following: “Nursing work with families is not confined to community care, or to more obvious areas of practice i.e. paediatric or psychiatry nursing. Rather it is the logical develop-
ment of a holistic approach to patient care, and to a commitment to health promotion”.(3)

Almost two decades later, her words remain true and are a challenge for us to move from discourse to practice and make the family-centered care the usual care.(1)


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Prevalence of mental disorders and associated factors in pregnant women

Prevalência de transtornos mentais e fatores associados em gestantes

Danielle Satie Kassada¹
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Adriana Inocenti Miasso¹
Sonia Silva Marcon²

Abstract

Objective: To identify the prevalence of mental disorders and associated factors in pregnant women.

Methods: Cross-sectional study with 394 pregnant women, randomly and proportionally selected. Data were collected during home visits, using a semi-structured questionnaire. Bivariate logistic regression was used for the analysis.

Results: A total of 51 pregnant women (12.94%) were diagnosed with mental disorder and this number was significantly higher among those between 19 and 30 years of age, unmarried, white skin colored, who were in the second trimester of pregnancy, had a chronic disease associated and had been hospitalized during the current pregnancy. Nine of them were taking psychotropic drugs, and antidepressants were the most commonly used drug.

Conclusion: The prevalence of self-reported mental disorders was 12.94% and the associated variables were: age, marital status, skin color, pregnancy trimester, hospitalization during pregnancy and chronic disease.

Keywords
Mental disorders; Psychotropic drugs; Prevalence; Pregnant women; Depressive disorders; Pregnancy complications

Descritores
Transtornos mentais; Psicofármacos; Prevalência; Gestantes; Transtornos depressivos; Complicações na gravidez

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Introduction

The mental health of pregnant women has not been the focus of much research, which may be related to the popular belief that pregnancy is usually a period of well-being for women. Greater emphasis is given to mental disorders that take place in the immediate postpartum period, which receive more attention from health professionals since they generate more psychiatric hospitalizations.\(^1\)

Epidemiological data currently point to the prevalence of mental disorders in up to 20% of women, with the most common being mood disorders and anxiety.\(^2\) Thus, around 10 to 15% of women suffer a depressive episode during pregnancy or in the first year following birth. The perinatal period is the moment of greater risk of manifestation of mental disorders in women – with those who present a previous history of mental disorder having a greater risk of manifestations in this period.\(^3\)

Mental disorders during pregnancy may be related to obstetric complications, inadequate prenatal care, pre-eclampsia,\(^4\) depression and/or postpartum anxiety,\(^5\) and they can negatively influence infant growth and development,\(^6\) besides contributing to a higher rate of development of mental disorders, such as depression in the born children.\(^7\) Some factors associated with the mental disorder include not studying, not having a partner, having two or more children, being hospitalized while pregnant and using drugs.\(^1,2\)

In the light of the aforementioned, the objective of this study was to identify the prevalence of mental disorders and the factors associated with the disease in pregnant women.

Methods

Quantitative, exploratory and descriptive research, conducted in the city of Maringá, Paraná, Brazil, from January to July 2012.

The study population was composed of 2,504 pregnant women who were registered in the 25 basic health units in the city. Sample size was calculated considering the prevalence of not having mental disorder in 50%, in order to ensure the maximum sample variability to a confidence level of 95% and an estimation error of 5%.

The quantity of pregnant women to be approached in each Basic Heath Unit (BHU) was defined upon the proportional stratification. Participants were randomly selected, by electronic raffle, using the list of registered pregnant women in each Basic Heath Unit.

The only inclusion criterion used was having less than 42 weeks of gestational age. In case of non-compliance with this criterion, or refusal to participate, a single replacement was made with the next name on the list, resulting in a sample of 394 pregnant women who were effectively studied.

The medical records of the selected pregnant women were verified to obtain their telephone number and to identify whether they met the inclusion criterion adopted. Data were collected in the homes of the pregnant women, after previous telephone contact, by means of semi-structured interviews.

The instrument used for data collection was a semi-structured questionnaire comprising 20 questions that address topics related to sociodemographic characteristics, health conditions, use of drugs and psychotropic drugs and prenatal care. The data related to the diagnosis of mental disorder and the use of medications were confirmed through the medical records at the respective basic health units. In other words, this information was only considered for the study when it was on the medical records, regardless of the fact that the diagnosis being established by physicians in that service or in another one.

The dependent variables was the record of mental disorder during pregnancy. Independent variables were: age, years of education, marital status, occupation, family income, skin color, pregnancy trimester, number of children, planned pregnancy, previous abortion, history of violence, drug use, chronic disease, previous mental disorder, hospitalization during pregnancy, participation in groups for pregnant women, and guidance of a healthcare professional on mental disorder and the use of drug during pregnancy.

Data were compiled into the software Microsoft Excel 2010, with subsequent migration to the
Statistical Package for the Social Sciences (SPSS 19.0). For data analysis, a univariate analysis was performed through Pearson's chi-square test, and bivariate logistic regression. Odds ratio (OR) was used as an association measurement, with a confidence interval of 95%, and a significance level established at p-value<0.05 for the tests performed.

The development of this study complied with national and international ethical guidelines for research involving human subjects.

Results

Of the 394 pregnant women who were interviewed, 51 (12.94%) reported having a mental disorder during pregnancy and all cases were confirmed on the medical records. The mean age of the participants was 27.07 years. Table 1 shows that the sociodemographic variables associated with mental disorders were: age, marital status and skin color.

Regarding obstetric and health characteristics, more than half were in the second trimester of pregnancy (55.84%), had up to 2 children (47.46%), did not plan the current pregnancy (59.90%), never had an abortion (84.01%), nor used drugs (81.74%). The majority did not have a history of violence throughout their lives up to the moment of research (98.73%), did not suffer from a previous mental disorder (98.99%), did not have a chronic disease (91.12%) and still had not been hospitalized during the current pregnancy (78.17%). Furthermore, more

Table 1. Pregnant women assisted in the Basic Health Care network according to sociodemographic characteristics and mental disorders during pregnancy

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No</th>
<th>Mental disorders</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n(%)</td>
<td>n(%)</td>
<td>n(%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 18</td>
<td>40(10.15)</td>
<td>01(0.25)</td>
<td>41(10.40)</td>
<td>0.00**</td>
</tr>
<tr>
<td>From 19 to 30</td>
<td>205(52.03)</td>
<td>36(9.14)</td>
<td>241(61.17)</td>
<td></td>
</tr>
<tr>
<td>From 31 to 39</td>
<td>94(23.87)</td>
<td>14(3.55)</td>
<td>108(27.42)</td>
<td></td>
</tr>
<tr>
<td>40 or over</td>
<td>04(1.01)</td>
<td>00(0.00)</td>
<td>04(1.01)</td>
<td></td>
</tr>
<tr>
<td>Years of education</td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>Up to 4 years</td>
<td>08(2.02)</td>
<td>00(0.00)</td>
<td>08(2.02)</td>
<td></td>
</tr>
<tr>
<td>From 5 to 8</td>
<td>99(25.13)</td>
<td>21(5.33)</td>
<td>120(30.46)</td>
<td></td>
</tr>
<tr>
<td>From 9 to 11</td>
<td>194(49.24)</td>
<td>26(6.60)</td>
<td>220(55.84)</td>
<td></td>
</tr>
<tr>
<td>12 or over</td>
<td>42(10.67)</td>
<td>04(1.01)</td>
<td>46(11.68)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td>0.01**</td>
</tr>
<tr>
<td>Single</td>
<td>63(15.99)</td>
<td>21(5.33)</td>
<td>84(21.32)</td>
<td></td>
</tr>
<tr>
<td>Common-law marriage</td>
<td>79(20.05)</td>
<td>02(0.51)</td>
<td>81(20.56)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>195(49.49)</td>
<td>28(7.11)</td>
<td>223(56.60)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>04(1.01)</td>
<td>00(0.00)</td>
<td>04(1.01)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>02(0.51)</td>
<td>00(0.00)</td>
<td>02(0.51)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td>Employed</td>
<td>197(50.00)</td>
<td>24(6.10)</td>
<td>221(56.10)</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>146(37.05)</td>
<td>27(6.85)</td>
<td>173(43.90)</td>
<td></td>
</tr>
<tr>
<td>Family income</td>
<td></td>
<td></td>
<td></td>
<td>0.89</td>
</tr>
<tr>
<td>No income</td>
<td>02(0.51)</td>
<td>00(0.00)</td>
<td>02(0.51)</td>
<td></td>
</tr>
<tr>
<td>Up to 1 MW*</td>
<td>22(5.58)</td>
<td>10(2.54)</td>
<td>32(8.12)</td>
<td></td>
</tr>
<tr>
<td>From 2 to 3 MW*</td>
<td>220(55.84)</td>
<td>27(6.85)</td>
<td>247(62.69)</td>
<td></td>
</tr>
<tr>
<td>From 4 to 5 MW*</td>
<td>87(22.08)</td>
<td>12(3.04)</td>
<td>99(25.12)</td>
<td></td>
</tr>
<tr>
<td>Over 5 MW*</td>
<td>12(3.05)</td>
<td>02(0.51)</td>
<td>17(3.56)</td>
<td></td>
</tr>
<tr>
<td>Skin color</td>
<td></td>
<td></td>
<td></td>
<td>0.02**</td>
</tr>
<tr>
<td>Yellow</td>
<td>205(52.03)</td>
<td>02(0.51)</td>
<td>22(5.59)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>183(46.45)</td>
<td>22(5.58)</td>
<td>205(52.03)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>14(3.55)</td>
<td>09(2.28)</td>
<td>23(5.83)</td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>126(31.98)</td>
<td>18(4.57)</td>
<td>144(36.55)</td>
<td></td>
</tr>
</tbody>
</table>

*MW: Minimum wage; **p-value significant for Pearson's chi-square test
Prevalence of mental disorders and associated factors in pregnant women

than half of them did not attend groups for pregnant women (58.88%), and had not been questioned or guided regarding mental disorders and the use of drugs during pregnancy (60.15%). In table 2, obstetric and health characteristics associated with mental disorders were: pregnancy trimester, chronic disease and hospitalization during the pregnancy.

In the bivariate logistic regression analysis, the variables significantly associated with the presence of mental disorder were: age, marital status, skin color, pregnancy trimester, chronic disease and hospitalization to treat any clinical complication during the current pregnancy.

Risk analysis showed an odds ratio of 2.7 (IC 95%: 1.47-4.90) for the age variable, which means that pregnant women aged from 19 to 30 years were 2.7 times more likely of having mental disorders when compared to women aged up to 18. Those who had a partner had 33% less chances of having mental disorders than those without a partner. The black skin color was considered a protective factor, since it reduced in 69% the chance of having mental disorders.

Concerning clinical and obstetric conditions, pregnant women who were in the third trimester of pregnancy had 41% less chances of having mental

Table 2. Pregnant women assisted in the Basic Health Care network according to obstetric and health characteristics and mental disorders during pregnancy

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy trimester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>55 (13.96)</td>
<td>16 (4.06)</td>
<td>71 (18.02)</td>
<td>0.00*</td>
</tr>
<tr>
<td>Second</td>
<td>196 (49.75)</td>
<td>24 (6.09)</td>
<td>220 (55.84)</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>92 (23.35)</td>
<td>11 (2.79)</td>
<td>103 (26.14)</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>142 (36.04)</td>
<td>24 (6.09)</td>
<td>166 (42.13)</td>
<td>0.11</td>
</tr>
<tr>
<td>Up to 2</td>
<td>164 (41.62)</td>
<td>23 (5.84)</td>
<td>187 (47.46)</td>
<td></td>
</tr>
<tr>
<td>From 3 to 4</td>
<td>31 (7.87)</td>
<td>0 (0.51)</td>
<td>33 (8.38)</td>
<td></td>
</tr>
<tr>
<td>Over 4</td>
<td>06 (1.52)</td>
<td>0 (0.51)</td>
<td>08 (2.03)</td>
<td></td>
</tr>
<tr>
<td>Planned pregnancy</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>146 (37.05)</td>
<td>12 (3.05)</td>
<td>158 (40.10)</td>
<td>0.15</td>
</tr>
<tr>
<td>No</td>
<td>197 (50.00)</td>
<td>39 (9.90)</td>
<td>236 (59.90)</td>
<td></td>
</tr>
<tr>
<td>Previous abortion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53 (13.45)</td>
<td>102 (25.4)</td>
<td>63 (15.99)</td>
<td>0.83</td>
</tr>
<tr>
<td>No</td>
<td>290 (73.60)</td>
<td>41 (10.41)</td>
<td>331 (84.01)</td>
<td></td>
</tr>
<tr>
<td>Victim of violence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>03 (0.76)</td>
<td>0 (0.51)</td>
<td>05 (1.27)</td>
<td>0.09</td>
</tr>
<tr>
<td>No</td>
<td>340 (86.29)</td>
<td>40 (12.44)</td>
<td>380 (98.73)</td>
<td></td>
</tr>
<tr>
<td>Previous mental disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>00 (0.00)</td>
<td>0 (0.01)</td>
<td>01 (0.01)</td>
<td>0.90</td>
</tr>
<tr>
<td>No</td>
<td>343 (87.06)</td>
<td>47 (11.93)</td>
<td>390 (98.99)</td>
<td></td>
</tr>
<tr>
<td>Drug use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>60 (15.22)</td>
<td>12 (3.04)</td>
<td>72 (18.26)</td>
<td>0.86</td>
</tr>
<tr>
<td>No</td>
<td>283 (71.84)</td>
<td>39 (9.90)</td>
<td>322 (81.74)</td>
<td></td>
</tr>
<tr>
<td>Chronic disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27 (6.85)</td>
<td>0 (0.51)</td>
<td>27 (7.14)</td>
<td>0.04*</td>
</tr>
<tr>
<td>No</td>
<td>316 (80.21)</td>
<td>40 (10.13)</td>
<td>356 (90.14)</td>
<td></td>
</tr>
<tr>
<td>Hospitalization during pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71 (18.02)</td>
<td>15 (4.03)</td>
<td>86 (21.83)</td>
<td>0.02*</td>
</tr>
<tr>
<td>No</td>
<td>272 (69.03)</td>
<td>36 (9.53)</td>
<td>308 (78.17)</td>
<td></td>
</tr>
<tr>
<td>Attending pregnant women groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>129 (32.74)</td>
<td>33 (8.38)</td>
<td>162 (41.12)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>214 (54.31)</td>
<td>18 (4.57)</td>
<td>232 (58.88)</td>
<td></td>
</tr>
<tr>
<td>Orientation made by professional from the Basic Health Unit (BHU) about MD/Psychotropics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>137 (34.77)</td>
<td>20 (5.08)</td>
<td>157 (39.85)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>206 (52.28)</td>
<td>31 (7.87)</td>
<td>237 (60.15)</td>
<td></td>
</tr>
</tbody>
</table>

*p-value significant for Pearson’s chi-square test
disorders when compared to those who were in the first or second trimester.

Women with a chronic disease had 3.1 (IC:1.15-8.63) more chances of having mental disorders than those without a disease, and those who were hospitalized during the current pregnancy had 2.41 (IC:1.12-5.18) more chances of having mental disorders than those who were not hospitalized.

Depression was the mental disorder most commonly reported by women (Table 3). Only nine (17.68%), of the 51 women with mental disorders, reported the use of psychotropic drugs, with an emphasis on antidepressants, which were used by five women, followed by three who reported concurrent use of anticonvulsants and anxiolytics, and one who reported the use of a mood stabilizer.

Regarding the psychotropic drugs used, these were prescribed by general physicians from the BHU, who changed the drug therapy once they identified the pregnancy. Of the five pregnant women who used antidepressants, two reported the concurrent use of Paraxotine (20 mg per day) and Fluoxetine (20 mg per day), however after the pregnancy diagnosis only Fluoxetine was kept and Paraxotine was suspended in both cases. The other three women reported the use of Amitriptyline (25 mg per day), which was switched to Fluoxetine in one case, whereas the other two had their medication suspended during pregnancy. The anticonvulsant used was Carbamazepine (200 mg per day) together with Clonazepam (0.5 mg per day), being used by three women; and one woman used Lithium Carbonate (300mg per day), as a mood stabilizer. In these four cases, the medication was suspended and all women who made use of medications were referred to psychiatric evaluation and high-risk prenatal follow-up at a reference service.

**Discussion**

The limitations of this study are related to its cross-sectional design, which does not allow the establishment of a cause and effect relationship, and to the possibility of measurement bias, since the use of interviews as a data collection instrument is subject to the memory and confusion of participants. In addition, the interviews were conducted at different gestational periods, which may have produced underestimated data in relation to some variables.

Even with the progress of public policies to assist people who suffer from mental disorders, the importance of this study must be highlighted, as its results can favor care during the gestational period by making healthcare professionals aware and qualified, specially nurses, to prepare educational proposals and interventions to be developed with pregnant women in primary care.

The lack of a specific manual to guide the actions of health professionals on this issue points to the need for indicatives that can be used to support care, as well as to increase awareness and qualify professionals, aiming to provide a more suitable and effective approach of this problem during the gestational period.

Considering that during pregnancy, women are usually motivated and concerned with the fetus health, they may be willing to reconsider their attitudes and assume new health behaviors. Thus, prenatal care is the right moment to trace and approach mental disorders, as well as the use of psychotropic drugs by women of childbearing age. Nurses can perform this tracing by means of specific instruments, provide mental health counselling and, if necessary, refer the patient to a psychiatrist for treatment.

The prevalence of mental disorders found (12.94%) does not differ much from an interna-
tional study performed with pregnant women, which had a prevalence of 17.4%, however, it is far lower than that found in a study conducted in Rio Grande do Sul, which detected a prevalence of 41.7%. It is noteworthy that scientific advances in obstetrics have led professionals to acquire fundamental abilities to care for women during pregnancy and the postpartum, however the investigation of psychic aspects in this life stage of women is still rare. This aspect can partially explain the lower prevalence of pregnant women with mental disorder found in the present study.

In the present study, the marital status of women without a partner was associated with a higher prevalence of mental disorders, similarly to results obtained in an international study. Not having a partner is a risk factor for mental disorders, especially depression, due the lack of social support from a partner. The social support received before and after pregnancy, mainly that offered by a spouse, seems to be determinant for the woman’s mental well-being, since the absence of a partner has been associated with the manifestation of depressive symptoms during pregnancy. Thus, single or divorced women are among those who present more depressive symptoms in this period. However, the existence of problems in the marital relationship also seems to be associated with the prevalence of mental disorders during pregnancy.

The fact that skin color and the trimester of pregnancy present an association with mental disorder may be a result of the sample homogeneity, since just nine pregnant women with mental disorders were black and just eleven were in the third trimester of pregnancy. It is noteworthy that no reference to this association was found in the literature.

Considering the association between chronic diseases and mental disorder during pregnancy, it is known that people who suffer from mental disorders usually have higher rates of morbidity and clinical complications, and it is not different during pregnancy, which is associated with postpartum depression, postpartum psychosis, child mortality, deficit in the baby’s development, among other problems.

The use of street drugs showed no significant association with mental disorders, however, the quantity of drug users can be considered high, when taking into consideration the fact that these women were pregnant. This aspect is relevant, since in addition to being related to a higher predisposition to the development of mental disorders, the use of street drugs can also bring physical consequences both to the pregnant women (premature labor, placental abruption, neurological alterations, among others) and to their babies (cognitive and motor deficits). In this context, it is important to highlight the relevance of nurses in preparing the team to embrace the specific needs of these women, since pregnant drug users can skip prenatal care and present a higher incidence of clinical and obstetric complications.

Depression was the most commonly reported mental disorder, which is in compliance with national and international studies and relevant to public health. The emotional burden caused by depression on pregnant women can compromise their mental and physical health, constitute a risk factor for postpartum depression, and compromise the development of the fetus. In addition, the literature reveals that the presence of this disorder during pregnancy increases the risk of complications such as pre-eclampsia and premature birth.

In terms of psychotropic drug use, antidepressant was the most used category, which is in accordance with other studies conducted with pregnant women. Selective inhibitors of serotonin reuptake as fluoxetine and paroxetine have been related to miscarriage, congenital malformation, among other problems. However, there are controversies about the impact and the risk-benefit of using these drugs during pregnancy.

As for other psychotropics, Lithium Carbonate and Carbamazepine are contraindicated during pregnancy, because of their teratogenicity, and because they are associated with maternal and neonatal complications. The use of Lithium Carbonate (D risk), for instance, is frequent-
ly associated with congenital malformation, particularly cardiovascular - especially the Ebstein anomaly -, and its use is prohibited in the first trimester. It can be used in the second and third trimester when other treatment options have been exhausted.\(^{(23)}\)

When pregnancy is associated with the presence of mental disorders, it is a pregnancy of extreme risk due not only to the disorder itself, but also to the condition of social and emotional risk of these women. For that reason, it becomes important to implement specialized services to guide the population. Primary care, as the entrance to the health care system must be able to early detect cases in which pregnant women need to be followed by a mental healthcare professional, through comprehensive and qualified prenatal care.

**Conclusion**

The prevalence of mental disorders during pregnancy was 12.94%, and depression was the most common pathology. The factors associated were age, marital status, skin color, pregnancy trimester, hospitalization during pregnancy and chronic disease.

**Collaborations**

Kassada DS, Waidaman MAP (In Memoriam), Miasso AI and Marcon SS contributed with the conception and development of the research, data interpretation, writing of the article, relevant critical review of its intellectual content and final approval of the version to be published.

**References**

Prevalence of mental disorders and associated factors in pregnant women


Frailty syndrome in elderly patients with type 2 diabetes mellitus

Síndrome da fragilidade em idosos com diabetes mellitus tipo 2

Analizia Pena da Silva¹
Demilto Yamaguchi da Pureza¹
Cleuton Braga Landre¹

Abstract

Objective: To determine the prevalence of frailty syndrome in elderly patients with type 2 diabetes mellitus.

Methods: Cross-sectional study including 30 elderly of both genders, aged 60-79 years, and diagnosed with type 2 diabetes mellitus. The research instruments were validated for Portuguese, included sociodemographic and clinical variables, and criteria for frailty syndrome. The elderly were divided into frail, pre-frail and non-frail. Data were analyzed using descriptive statistics.

Results: The prevalence of frailty was 56.7%. The associated factors were the following: female gender (70.6%); widowed (69.2%); white color (58.8%); not working (69.2%); and time since diagnosis of 25-48 months (47.1%).

Conclusion: The associated factors such as sociodemographic, economic and time since diagnosis did not affect the prevalence of frailty syndrome in elderly patients with type 2 diabetes mellitus.

Keywords
Elderly; Frail elderly; Geriatric nursing; Public health nursing; Diabetes mellitus, type 2

Descritores
Idoso; Idoso fragilizado; Enfermagem geriátrica; Enfermagem em saúde pública; Diabetes mellitus tipo 2

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Conflicts of interest: no conflicts of interest to declare.
Frailty syndrome in elderly patients with type 2 diabetes mellitus

Introduction

The growing life expectancy of the population has shown significant increase in the number of elderly. This process is confirmed by the analysis of demographic data, according to which the elderly population worldwide was 600 million in 2000. By 2050, it is estimated that the world population of this age group will exceed 2 billion.(1)

An increase of chronic diseases associated with aging is expected in this scenario, contributing to high rates of mortality, disability, increased dependency, immobility, falls, fractures and hence, the institutionalization, resulting in frail elderly.(2)

The literature describes frailty as loss of capacity, which makes the individual more vulnerable to environmental challenges. Some research groups in geriatrics and gerontology began to suggest a syndromic picture of frailty with multisystemic character, loss of physiological reserve, and reduced resistance to stressors. However, it may not be directly associated with weight loss, and observed in obese people.(3)

Some scholars have reported that frailty syndrome and the chronic and disabling diseases generated by aging must be properly treated and monitored over the years.(4,5) Among the pathological conditions that have received more attention in recent years, type 2 diabetes mellitus stands out because it is a complex disorder of potential deleterious effects that favors morbidity and mortality.

Most studies on frailty syndrome and type 2 diabetes mellitus including the elderly are justified by the fact that this condition makes this population more likely to progressive reduction of functional capacity, repeated hospitalizations and consequently, increased demand for health services at various levels.(4)

The choice of type 2 diabetes mellitus for analysis in this study was due to the high prevalence of the condition among the elderly over 60 years; for its relation to an increased risk of premature death; for its greater association with comorbidities, and especially with major geriatric syndromes, such as the frailty syndrome.

The information on frailty syndrome available in the databases related to the population’s health should facilitate the organization of policies for implementing prevention and treatment services for the health of the elderly, especially those with diabetes mellitus. Thus, the aim of this study was to determine the prevalence of frailty syndrome and associated factors in elderly patients with type 2 diabetes mellitus.

Methods

This is a cross-sectional, observational study conducted in the city of Macapá (capital of the state of Amapá) in specific locations such as the Basic Health Unit of the Universidade Federal do Amapá, the Human Promotion Center and the Women’s Hospital, in the year 2013.

The study was carried out in stages. In the first, was provided information about the research, such as the identification of the researcher, the nature and objectives of the study. At this stage, there was also prior contact with the elderly with type 2 diabetes mellitus.

The second stage was data collection, by applying a multidimensional questionnaire containing specific sections, and instruments validated to Portuguese. All procedures for data collection were carried out by a team of employees selected and trained for the interview with the elderly, in a way that the whole collection process was done in a single day for each institution.

The study population consisted of men and women who met the following inclusion criteria: age from 60 years, diagnosed with type 2 diabetes mellitus, resident and domiciled in Macapá; with score ≥17 in the Mini-Mental State Examination. The exclusion criteria were: seniors with severe cognitive or motor sequelae resulting from cerebrovascular accident; with some terminal illness; diagnosed with dementia or severe cognitive impairment affecting locomotion and communication, informed by a family member, or with difficulty in memory, language and self-identification.
The study variables were sociodemographic characterization (gender, age, socioeconomic status, educational level), clinical and anthropometric data, and the verification of variables indicative of frailty syndrome according to the criteria proposed by Fried et al.\(^\text{5}\) and Neri et al.\(^\text{6}\) and observing the following: unintentional weight loss, muscle weakness, self-reported exhaustion, slow gait and low level of physical activity.

Following the study proposed by Neri et al.,\(^\text{6}\) data were collected in a single session in the hospital, entities and basic health units. The elderly who obtained a score equal to or above the cutoff point progressed to other parts of the protocol. In case of a result lower than the cutoff score, the elderly was released from the research. For entering data into electronic databases, the protocols were successively checked by members of the research team to obtain 100% reliability in the results.

The frailty rating was divided into non-frail for seniors without any positive criterion; pre-frail, for those with up to two positive results; and frail for those with more than three positive items. The elderly classified as non-frail and pre-frail were grouped into one category because only an elderly was classified as non-frail. Thus, two groups were considered: Group 1, of non-frail or pre-frail elderly, and Group 2, of frail elderly.

Data were processed, stored and analyzed using the Statistical Package for the Social Sciences, version 20.0 for Windows and submitted to descriptive and analytical statistical analysis. The level of statistical significance was set at \(p<0.05\). The quantitative variables were characterized by values of mean and standard deviation. The qualitative variables were characterized by absolute and relative frequency (in %) presented in frequency tables and/or graphs. The Fisher’s exact test was adopted to study the relationship between the frailty syndrome and some quantitative and qualitative variables.

The development of the study met national and international standards of ethics in research involving human subjects.

### Results

The study sample comprised 30 seniors interviewed in different locations in 2013, and 70% of them were female. The predominant age group was 60-64 years (36.7%) with mean age of 68.77±6.92 years. Table 1 provides a description of the independent variables.

#### Table 1. Sample characterization

<table>
<thead>
<tr>
<th>Variables</th>
<th>n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21(70.0)</td>
</tr>
<tr>
<td>Male</td>
<td>9(30.0)</td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
</tr>
<tr>
<td>60-64</td>
<td>11(20.0)</td>
</tr>
<tr>
<td>65-69</td>
<td>6(36.7)</td>
</tr>
<tr>
<td>70-74</td>
<td>4(13.3)</td>
</tr>
<tr>
<td>75-79</td>
<td>9(30.0)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>12(40.0)</td>
</tr>
<tr>
<td>Single</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Divorced</td>
<td>4(13.3)</td>
</tr>
<tr>
<td>Widowed</td>
<td>13(43.3)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>14(46.7)</td>
</tr>
<tr>
<td>Black</td>
<td>4(13.3)</td>
</tr>
<tr>
<td>Mulatto</td>
<td>11(36.7)</td>
</tr>
<tr>
<td>Yellow</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Current work status</td>
<td></td>
</tr>
<tr>
<td>Works</td>
<td>12(40.0)</td>
</tr>
<tr>
<td>Does not work</td>
<td>18(60.0)</td>
</tr>
<tr>
<td>Educational level</td>
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</tr>
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<td>Never been to school</td>
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</tr>
<tr>
<td>Literacy course</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Primary (1st-4th)</td>
<td>15(50.0)</td>
</tr>
<tr>
<td>Secondary (5th-8th)</td>
<td>5(16.7)</td>
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<tr>
<td>Tertiary school</td>
<td>6(20.0)</td>
</tr>
<tr>
<td>Higher education</td>
<td>1(3.3)</td>
</tr>
<tr>
<td>Monthly income, minimum wage*</td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>10(33.3)</td>
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<tr>
<td>1-2</td>
<td>13(43.3)</td>
</tr>
<tr>
<td>&gt;2</td>
<td>7(23.3)</td>
</tr>
<tr>
<td>Time since diagnosis, months</td>
<td></td>
</tr>
<tr>
<td>0-24</td>
<td>5(16.7)</td>
</tr>
<tr>
<td>25-48</td>
<td>14(46.7)</td>
</tr>
<tr>
<td>49-72</td>
<td>9(30.0)</td>
</tr>
<tr>
<td>73-96</td>
<td>2(6.7)</td>
</tr>
</tbody>
</table>

*Minimum wage in Brazil at the time of research: R$678.00*

There was predominance of widowed seniors (43.3%). There was a higher percentage of the white ethnicity (46.7%); of those who did not work (60%); those who have completed primary school
Frailty syndrome in elderly patients with type 2 diabetes mellitus

In face of the results related to the time since diagnosis of type 2 diabetes mellitus, the highest percentage was of elderly with time between 25 and 48 months (46.7%), with variation of 12 to 96 months and mean of 48.33±19.72 months.

Regarding the correlation of frailty syndrome with sociodemographic variables (Table 2), the female gender was prevalent (70.6%), without significant differences between men and women in relation to the frailty syndrome (p = 1.000).

The predominant age range was of the elderly in Group 1, between 75 and 79 years (46.1%), in contrast to Group 2, aged 60-64 years old (41.2%), with no significant differences between groups (p = 0.299). In Group 1, there was prevalence of widowed seniors (69.2%), followed by married seniors in Group 2 (47.1%), demonstrating significant differences (p = 0.041). In the sample, there was prevalence of frail elderly among whites (58.8%) compared to the other ethnic categories, without significant differences.

With regard to the elderly who worked, there were higher scores among those who did not work in Group 1 (69.2%) compared to Group 2 (52.9%), with no statistically significant differences. The educational level was prevalent among those who com-

Table 2. Correlation of the frailty syndrome and sociodemographic variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group 1 n=13</th>
<th>Group 2 n=17</th>
<th>p-value</th>
</tr>
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<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9(30.8)</td>
<td>12(70.6)</td>
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</tr>
<tr>
<td>Male</td>
<td>4(69.2)</td>
<td>5(29.4)</td>
<td></td>
</tr>
<tr>
<td>Age group, years</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>60-64</td>
<td>4(30.8)</td>
<td>7(41.2)</td>
<td>0.299</td>
</tr>
<tr>
<td>65-69</td>
<td>1(7.7)</td>
<td>5(29.4)</td>
<td></td>
</tr>
<tr>
<td>70-74</td>
<td>2(15.4)</td>
<td>2(11.8)</td>
<td></td>
</tr>
<tr>
<td>75-79</td>
<td>6(46.1)</td>
<td>3(17.6)</td>
<td></td>
</tr>
<tr>
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<td>8(47.1)</td>
<td>0.041</td>
</tr>
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<td>1(5.9)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>0(0.0)</td>
<td>4(23.5)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>9(69.2)</td>
<td>4(23.5)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
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<td></td>
<td></td>
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<td>10(58.8)</td>
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<td>2(11.8)</td>
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<td>Mulatto</td>
<td>7(53.8)</td>
<td>4(23.5)</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>0(0.0)</td>
<td>1(5.9)</td>
<td></td>
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<tr>
<td>Current work status</td>
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<tr>
<td>Works</td>
<td>4(30.8)</td>
<td>8(47.1)</td>
<td>0.465</td>
</tr>
<tr>
<td>Does not work</td>
<td>9(69.2)</td>
<td>9(52.9)</td>
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<td>Educational level</td>
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<td></td>
</tr>
<tr>
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<td>2(11.8)</td>
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<tr>
<td>Literacy course</td>
<td>0(0.0)</td>
<td>1(5.9)</td>
<td></td>
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<tr>
<td>Primary (1st-4th)</td>
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<td>Secondary (5th-8th)</td>
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<td>3(17.6)</td>
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<tr>
<td>Tertiary school</td>
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<td>4(23.5)</td>
<td></td>
</tr>
<tr>
<td>Higher education</td>
<td>0(0.0)</td>
<td>1(5.9)</td>
<td></td>
</tr>
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<td>Monthly income, minimum wage*</td>
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<td>&lt;1</td>
<td>5(38.5)</td>
<td>5(29.4)</td>
<td>0.721</td>
</tr>
<tr>
<td>1-2</td>
<td>6(46.1)</td>
<td>7(41.2)</td>
<td></td>
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<tr>
<td>&gt;2</td>
<td>2(15.4)</td>
<td>5(29.4)</td>
<td></td>
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<tr>
<td>Time since diagnosis, months</td>
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<td></td>
</tr>
<tr>
<td>0-24</td>
<td>2(15.4)</td>
<td>3(17.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>25-48</td>
<td>6(46.1)</td>
<td>8(47.1)</td>
<td></td>
</tr>
<tr>
<td>49-72</td>
<td>4(30.8)</td>
<td>5(29.4)</td>
<td></td>
</tr>
<tr>
<td>73-96</td>
<td>1(7.7)</td>
<td>1(5.9)</td>
<td></td>
</tr>
</tbody>
</table>

Group 1 was formed by non-frail/pre-frail elderly; Group 2 comprised frail elderly; * Minimum wage in Brazil at the time of research: R$678.00
pleted primary school (1st to 4th grade) in Group 2 (35.3%), as well as among the elderly in Group 1 (69.2%). Between monthly income and the frailty syndrome, there were great percentages in both groups: those with income between one and two minimum wages in Group 1 (46.1%) and in Group 2 (41.2%), with no significant differences. In relation to time since diagnosis of type 2 diabetes mellitus, frailty was prevalent among the elderly with time since diagnosis of 25-48 months (47.1%), in comparison to the other times.

Discussion

The study limitations were the aspects of using a non-probability sample and the cross-sectional design that does not allow the establishment of cause and effect relationships. The prevalence of frailty syndrome in elderly patients with type 2 diabetes mellitus found in the present study was corroborated by previous studies, showing that the frequency stood out in those considered frail. Fried et al. stated that the term ‘frailty’ has been understood as a synonym for one or more of the following characteristics: old age, functional disability and presence of one or more chronic diseases. This can worsen the health and functional status of an individual who is already highly vulnerable or susceptible to develop frailty syndrome.

As for data correlating the frailty syndrome with sociodemographic variables in elderly patients with type 2 diabetes mellitus, the results showed prevalence of the syndrome in females compared to males. These findings are similar to those found in previous studies, although in smaller proportions. However, there was predominance of the frailty syndrome in females compared to males. A possible explanation for these findings is that older women have higher vulnerability to adverse clinical outcomes related to their longevity, as found in the literature, especially the lower body mass index related to reduced testosterone levels and reduced secretion of the growth hormone.

There was no significant difference between groups with respect to age range. The predominant age range in Group 1 was between 75 and 79 years old, and in Group 2, from 60 to 64 years old, corroborating the findings evidenced in other studies, where the interval with greater distribution ranged between 60 and 69 years. This average age was also similar to data found in other studies, highlighting the predominance of the age range between 65 and 69 years. The high mean age may be related to the age structure of society, with greater evidence of the elderly living up to near 100 years.

In Group 1, there was predominance of frail seniors among the widowed, while in Group 2, the frail elderly were prevalent among married subjects. It is noteworthy that the last data are similar to other studies, in which prevalence in married elderly was also observed. Supposedly, the widowed in Group 1 have less incentive and engagement with health-related care than the married seniors emphasized in Group 2.

Regarding the variable of ethnicity, the present study identified predominance of frailty in white subjects, compared to blacks, mulattos and browns. This fact was observed in other studies, which revealed prevalence of white people among the subjects who participated in the analysis. The reason for the prevalence of frail elderly of white ethnicity can be because the evaluations were carried out at various locations in order to cover different socioeconomic and demographic classes.

As for the variable of work, there was predominance of elderly subjects among those not working in Group 1 compared to Group 2. Although the latter had higher proportions of those not working, data were similar to that found in previous studies, where only 2% of the elderly reported developing professional activities. Within this context, is suggested the possible explanation for the results found in this study: the fact that the elderly who work have less time to perform Activities of Daily Living, activities of self-care and search for health services, which make them susceptible to the frailty syndrome.

Regarding educational background, there was no significant difference. However, frailty was prevalent among those who completed their education from 1st to 4th grade (primary school). This finding is consistent with other studies involving the elderly over 65 years, verifying that among those considered frail, most had low socioeconomic status and low educati-
Frailty syndrome in elderly patients with type 2 diabetes mellitus

ducational level, ranging from 1-4 years of study. It is clear that those with high educational level were related to good health and living conditions, given their greater access and understanding of information, as well as better economic conditions.

There was no significant difference in the seniors of the study regarding the relation between the variable of monthly income with frailty. However, there was predominance in both Group 1 as in Group 2 of those who had monthly income between one and two minimum wages. These results differ from the findings in the literature,(14) which identified prevalence of frailty in the elderly with average income above two minimum wages. It is known that many of these seniors still work formally or informally in order to improve or add to their retirement income, but they are not immune to stress factors inherent to work that can influence their health and quality of life.

As for the time since diagnosis of type 2 diabetes mellitus, there was no significant difference among the study participants. The time since diagnosis of the disease did not affect the prevalence of frailty syndrome in elderly patients with type 2 diabetes mellitus. However, frailty was more prevalent in seniors with time since diagnosis in the range of 25 to 48 months. From this perspective, data from this study differed from others, in which was observed that seniors with diagnosis time of 5-10 years had higher percentages for frailty.(16,17)

Therefore, data from this study suggest that demographic and economic factors, as well as time since diagnosis did not interfere in the frailty syndrome, except for marital status, with widowed subjects predominant in Group 1 and married subjects in Group 2.

Given the context of aging and the high proportion of frailty in the elderly population with type 2 diabetes mellitus, it is necessary to structure, plan and implement public health policies programs in Brazil to stimulate healthy life habits, resulting in delay of detrimental effects of frailty syndrome in these elderly.

For a better understanding of the factors involved with frailty in the elderly with type 2 diabetes mellitus, they should be studied over time, specifically through longitudinal studies, in order to assist in planning concrete actions, whether under the physical dimensions of the human body, or by creating networks of medical and social support capable to meet the material, instrument and information needs.

Conclusion

For most elderly of this study, the correlation of the frailty syndrome with sociodemographic variables in people with type 2 diabetes mellitus occurred in contexts of low educational level and lack of work. This demonstrates the enormous challenges imposed on current and future cohorts of Brazilian elderly with diabetes.

Collaborations

Silva AP, Pureza DY and Landre CL contributed to the writing of the article, relevant critical review of the intellectual content and final approval of the version to be published.

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Quality of life and associated factors in people living with HIV/AIDS

Keywords
Quality of life; HIV; HIV infections; Acquired immunodeficiency syndrome; Public health nursing; Questionnaires

Abstract
Objective: To evaluate quality of life and the associated factors in people living with HIV/AIDS.
Methods: A cross-sectional study was performed with 146 people with HIV, receiving outpatient treatment. The instruments used were: a questionnaire for socioeconomic, demographic, epidemiological and clinical evaluation and the WHOQOL-HIV BREF scale for the quality of life evaluation. A descriptive analysis and a stepwise forward multiple linear regression test were performed.
Results: There was a predominance of male gender, lower educational level, and people who were asymptomatic. The Level of Independence and Environment domains had the worst scores. Having a paid occupation, the income per capita, having a religion, a longer time since diagnosis, and adherence to treatment were positively associated with quality of life. A homo-affective relationship, having been stigmatized or suffered prejudice, the presence of psychosocial symptoms, and having acquired opportunistic infections were predictors associated with a poorer quality of life.
Conclusion: Quality of life had associated predictors and compromise in two areas of the scale.

Resumo
Objetivo: Avaliar a qualidade de vida em pessoas vivendo com HIV/AIDS e os fatores associados.
Métodos: Estudo transversal, realizado com 146 pessoas com HIV em tratamento ambulatorial. Os instrumentos utilizados foram: questionário para avaliação socioeconômica, demográfica, epidemiológica e clínica e a escala WHOQOL HIV-bref para avaliação da qualidade de vida. Foi realizada análise descritiva e empregado o teste de Regressão linear múltipla com modelagem stepwise forward.
Resultados: Houve prevalência do sexo masculino, baixa escolaridade e assintomáticos. Os domínios Nível de independência e Meio ambiente tiveram os piores escores. Ter ocupação remunerada, renda per capita, possuir religião, maior tempo de diagnóstico e adesão ao tratamento associaram-se positivamente à qualidade de vida. Relação homoafetiva, ter sofrido estigma ou preconceito, presença de sintomas psicossociais e ter adquirido infecções oportunistas foram preditores associados à pior qualidade de vida.
Conclusão: A qualidade de vida apresentou preditores associados e comprometimento em dois domínios da escala.

Keywords
Quality of life; HIV; HIV infections; Acquired immunodeficiency syndrome; Public health nursing; Questionnaires

Descritores
Qualidade de vida; HIV; Infecções por HIV; Síndrome de imunodeficiência adquirida; Enfermagem em saúde pública; Questionários

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Introduction

There are currently over 35 million people living with the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) worldwide. The conquest of access to treatment, adherence to the antiretroviral therapy, the expansion of the diagnosis identification, and the chronic nature of the disease have created impacts on the quality of life of these people, leading to an increase in the survival time, a decrease in morbidity and mortality, an increase in the life expectancy, and a redefinition of future projects.

In this context, the possibility of a longer life is not directly linked to a good quality of life, because HIV infection also implies changes related to coping with the HIV serostatus, such as the regular use of antiretroviral therapy, self-perception and the clinical stage of the disease, bodily changes, personal income, occupation, victimization due to discrimination and prejudice, lack of social support, and depressive symptoms.

As a broad World Health Organization (WHO) concept, quality of life is the individuals’ perception of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns. It is a comprehensive evaluation of the individuals’ perceptions of a number of domains.

In recent years, in response to the struggle of coping with AIDS, interest has increased in evaluating the quality of life in people with HIV, based on the human needs affected by the chronic nature of the disease, progressing from clinical and laboratory outcomes (CD4, viral load and opportunistic infections), to the bioethical and socio-cultural dimensions.

To this end, the aim of this study was to evaluate quality of life and the associated factors in people living with HIV/AIDS.

Methods

This was a cross-sectional, exploratory study with a quantitative approach, conducted with 146 people living with HIV/AIDS who were receiving care in a specialized care center of an integrated health center in the state of Piauí, in the Northeastern region of Brazil.

The inclusion criteria for the study were: individuals of both genders, older than or equal to 18; positive HIV-serologic test result, with or without the development of the syndrome; use of antiretroviral therapy; being at the specialized care service at the time of data collection; residency in Teresina (PI); having physical, mental and psychological capacity to participate in the interview; and, agreeing to participate in the study. The exclusion criteria were: individuals deprived of their freedom, or those with cognitive difficulties.

The selection of participants was accidental, when they went to the service for medical care in a private place, before the start of the consultation. Data were collected through interviews, from August to December of 2013, by administering a questionnaire for socioeconomic, demographic, epidemiological and clinical evaluation, and an instrument previously translated and validated in Brazil, the World Health Organization Quality of Life (WHOQOL) HIV-BREF scale, used to measure parameters of quality of life specifically for people living with HIV/AIDS.

For data analysis, the Statistical Package for the Social Sciences (SPSS), version 19.0 for Windows, was used. To characterize the study population (univariate analysis), a descriptive analysis was performed using means and standard deviations for the quantitative variables, and proportions for qualitative variables.

The socioeconomic, demographic, epidemiological and clinical variables related with HIV were presented through univariate distributions of frequencies and descriptive measures. The WHOQOL-HIV-BREF reliability was analysed using the Cronbach’s alpha. The calculation of scores was performed by following the syntax proposed by the WHOQOL Group. In the final model of the analysis, the socioeconomic, demographic, epidemiological and clinical variables were dichotomized and transformed into dummy variables by means of multiple linear regression, by adopting the stepwise
forward modeling with a statistical significance set at 5% (p≤0.05) and a 95% confidence interval. The development of the study met national and international standards of ethics in research involving human subjects.

Results

The socioeconomic and demographic characteristics of the sample evidenced a prevalence of males (63.7%), a mean age of 38.4 years (standard deviation 12.1), lower educational level (43.8%), single (57.5%), non-practicing any religion (57.5%), with a paid occupation (71.2%), personal income between one and two minimum wages, and distribution of per capita income lower than the minimum wage, in a setting of up to four people per household (67.8%). The predominant type of relationship was heterosexual (86.3%). In the clinical analysis, there was a prevalence of asymptomatic cases (44.5%), with time since diagnosis between two and eight years (64.4%), presence of adherence-related issues (78.8%), absence of opportunistic infections (65.8%), presence of psychosocial symptoms - such as fear, anxiety, depression (76.0%), and having been stigmatized or suffered prejudice (61.6%), as shown in table 1.

In the WHOQOL-HIV-BREF dimensions, the most affected domains were: Level of independence (55.1) and Environment (59.2). The Psychological domain (67.9) had a better evaluation of quality of life, followed by the Spirituality, religion and personal beliefs (65.7) and social relations (65.0) domains, as shown in table 2.

The final multiple regression model of the determinants that significantly differ within the quality of life domains are presented in table 3. In the six domains, those which mostly explained the quality of life were Social relationships (40.4%) and Environment (40.1%).

In the multivariate analysis, the predictors contributing to increased quality of life scores in the physical domain, in order of influence of the adjusted linear regression coefficient ($\beta$) were: income per capita higher than three minimum wages ($\beta=11.93; p=0.035$) and one to three minimum wages ($\beta=7.80; p=0.020$). The physical domain included evaluation
of energy and fatigue in the performance of physical activity, pain and/or physical limitation, tiredness or limitation for social engagement, and symptoms of people living with HIV/AIDS. The predictors that decreased the scores in this domain were bisexual orientation ($\beta$=-15.94; $p=0.002$), psychosocial symptoms such as fear and/or anxiety ($\beta$=-15.26, $p<0.001$) and homosexual orientation ($\beta$=-11.04; $p=0.002$). The regression model with the adjusted determination coefficient ($r^2_a$) explained 24.6% of the variance in that domain.

The regression model that used the Psychological domain as the dependent variable explained 28.3% of the variance in that domain; it evaluated positive and negative feelings; cognition, through memory capacity and concentration; self-esteem; body image and appearance. The variable that contributed the most to positively explain it, in order of influence, was: having a per capita income greater than three minimum wages ($\beta=11.9; p=0.016$). In contrast, the predictors that negatively influenced quality of life in this domain were the presence of psychosocial feelings ($\beta=-7.64; p=0.005$), and having been stigmatized or experienced prejudice ($\beta=-7.16; p=0.020$).

As for the Level of independence, which evaluated physical mobility, activities of daily living, working capacity and dependence on medications and treatments, the predictors positively associated with a better quality of life were, in order of influence: having a per capita income greater than three minimum wages ($\beta=11.05; p=0.010$) or a per capita income of one to three minimum wages ($\beta=6.95; p=0.07$), and practicing a religion ($\beta=5.48; p=0.017$). Having a bisexual sexual orientation ($\beta=-10.95; p=0.004$), having been stigmatized or experienced prejudice ($\beta=-6.57; p=0.007$), and being homosexual ($\beta=-5.72; p=0.017$) were negatively associated, thereby reducing the quality of life in this domain.

The predictors associated with a better quality of life in the Social relationships domain, which evaluated affective and sexual relationships, social inclusion and social support received from friends and family, were: length of HIV infection greater than eight years ($\beta=14.45; p=0.011$) and having a paid occupation ($\beta=12.71; p=0.007$). In this domain, having been stigmatized or suffered prejudice were associated with a poorer quality of life ($\beta=-14.47, p<0.001$).

The Environment domain evaluated the aspects related to physical safety and security, home environment, financial resources, quality of health and social care, information technology, leisure, physical environment and transport. The predictors positively associated with a better quality of life were: per capita income greater than three minimum wages ($\beta=23.87; p<0.001$), per capita income of one to three minimum wages ($\beta=12.25; p<0.001$), treatment adherence ($\beta=9.29; p=0.005$) and having a paid occupation ($\beta=6.94; p=0.02$). Having been stigmatized/suffered prejudice ($\beta=-6.62; p=0.019$) and a history of sexually transmitted infection or opportunistic infection ($\beta=-6.18; p=0.035$) decreased the quality of life in this domain.

Regarding the Spirituality domain, religion and personal beliefs, which evaluated aspects related to forgiveness and guilt over living with HIV/AIDS, and concern for the future and death, the regression model explained 23.6% of the variance. Only the occupation variable ($\beta=9.24; p=0.049$) was positively associated with quality of life. Presence of psychosocial feelings ($\beta=-21.83; p=0.004$) decreased the quality of life in this domain.

Table 2. Distribution of the quality of life scores in the domain of the World Health Organization Quality of Life (WHOQOL) HIV-BREF

<table>
<thead>
<tr>
<th>WHOQOL HIV-BREF Domains</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>62.5</td>
<td>20.3</td>
<td>12.5</td>
<td>100.0</td>
<td>62.5</td>
<td>0.80</td>
</tr>
<tr>
<td>Psychological</td>
<td>67.9</td>
<td>17.8</td>
<td>5.0</td>
<td>100.0</td>
<td>70.0</td>
<td>0.78</td>
</tr>
<tr>
<td>Level of independence</td>
<td>55.1</td>
<td>15.5</td>
<td>18.8</td>
<td>87.5</td>
<td>56.3</td>
<td>0.79</td>
</tr>
<tr>
<td>Social relationships</td>
<td>65.0</td>
<td>19.3</td>
<td>6.3</td>
<td>100.0</td>
<td>62.5</td>
<td>0.81</td>
</tr>
<tr>
<td>Environment</td>
<td>59.2</td>
<td>17.6</td>
<td>25.0</td>
<td>100.0</td>
<td>59.4</td>
<td>0.78</td>
</tr>
<tr>
<td>Spirituality, religion and personal beliefs</td>
<td>65.7</td>
<td>23.1</td>
<td>6.3</td>
<td>100.0</td>
<td>68.8</td>
<td>0.82</td>
</tr>
<tr>
<td>Global</td>
<td>64.1</td>
<td>20.1</td>
<td>12.5</td>
<td>100.0</td>
<td>62.5</td>
<td>0.82</td>
</tr>
</tbody>
</table>

SD - Standard Deviation
Quality of life and associated factors in people living with HIV/AIDS

Table 3. Multiple linear regression analysis to identify predictors of quality of life, according to domains of the World Health Organization Quality of Life (WHOQOL) HIV-BREF

<table>
<thead>
<tr>
<th>WHOQOL-HIV-BREF Domain</th>
<th>β*</th>
<th>CI95%</th>
<th>p-value</th>
<th>r²a**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
<td>0.246</td>
</tr>
<tr>
<td>Constant</td>
<td>89.87</td>
<td>73.42-106.53</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Income per capita (1-3 MW)</td>
<td>7.80</td>
<td>1.22-14.37</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>Income per capita (&gt;3 MW)</td>
<td>11.93</td>
<td>8.33-23.03</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>Homosexual orientation</td>
<td>-11.04</td>
<td>-17.83-4.25</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Bisexual orientation</td>
<td>-15.94</td>
<td>-25.76-6.11</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Presence of psychosocial symptoms</td>
<td>-15.26</td>
<td>-22.33-8.20</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
<td></td>
<td></td>
<td>0.283</td>
</tr>
<tr>
<td>Constant</td>
<td>91.31</td>
<td>79.90-102.73</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Income per capita (1-3 MW)</td>
<td>11.90</td>
<td>2.25-21.56</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td>Has been stigmatized/suffered prejudice</td>
<td>-7.64</td>
<td>-12.98-2.29</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Presence of psychosocial symptoms</td>
<td>-7.16</td>
<td>-13.18-1.14</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>Level of independence</td>
<td></td>
<td></td>
<td></td>
<td>0.288</td>
</tr>
<tr>
<td>Constant</td>
<td>49.97</td>
<td>43.40-56.55</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Income per capita (1-3 MW)</td>
<td>6.96</td>
<td>1.95-19.95</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>Income per capita (&gt;3 MW)</td>
<td>11.05</td>
<td>2.68-19.41</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td>Practicing a religion</td>
<td>5.48</td>
<td>1.01-9.96</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>Homosexual orientation</td>
<td>-5.72</td>
<td>-10.64-0.80</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td>Bisexual orientation</td>
<td>-10.95</td>
<td>-18.40-3.51</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>Has been stigmatized/suffered prejudice</td>
<td>-6.57</td>
<td>-11.27-1.86</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>Social relationships</td>
<td></td>
<td></td>
<td></td>
<td>0.404</td>
</tr>
<tr>
<td>Constant</td>
<td>55.10</td>
<td>43.31-66.89</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>12.71</td>
<td>6.59-18.82</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>Time since HIV diagnosis (&gt;8 years)</td>
<td>14.45</td>
<td>6.11-22.79</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>Has been stigmatized/suffered prejudice</td>
<td>-14.47</td>
<td>-20.04-8.30</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
<td>0.401</td>
</tr>
<tr>
<td>Constant</td>
<td>53.55</td>
<td>46.73-60.37</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Income per capita (1-3 MW)</td>
<td>12.25</td>
<td>6.48-18.12</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Income per capita (&gt;3 MW)</td>
<td>23.87</td>
<td>14.68-33.06</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>6.94</td>
<td>1.09-12.79</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>STI and HIV-associated opportunistic diseases</td>
<td>-6.18</td>
<td>-11.92-9.44</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>Adherence to treatment</td>
<td>9.29</td>
<td>2.80-15.77</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Has been stigmatized/suffered prejudice</td>
<td>-6.62</td>
<td>-12.15-3.10</td>
<td>0.019</td>
<td></td>
</tr>
<tr>
<td>Spirituality, religion and personal beliefs</td>
<td></td>
<td></td>
<td></td>
<td>0.236</td>
</tr>
<tr>
<td>Constant</td>
<td>76.19</td>
<td>64.44-87.95</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>With occupation</td>
<td>9.24</td>
<td>0.03-18.45</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>Presence of psychosocial symptoms</td>
<td>-13.05</td>
<td>-21.83-4.26</td>
<td>0.004</td>
<td></td>
</tr>
</tbody>
</table>

*Adjusted linear regression coefficient; **Adjusted coefficient of determination; CI95% - 95% Confidence Interval; MW - Minimum Wage; STI - Sexually Transmitted Infection

**Discussion**

The study had limitations such as the non-probabilistic sample size and the cross-sectional design, which did not enable the establishment of cause and effect relationships. The results, however, provided new scientific knowledge about the behavior of people living with HIV in Brazil, thereby supporting planning of health promotion and quality of life, especially in the Northeast of the country.

Socioeconomic, demographic, epidemiological and clinical data of 146 study participants evidenced a significant prevalence of males (63.7%), with a mean age of 38.4 years. This characterization is similar to other Brazilian studies: male gender, aged 30-39 years, lower educational level, income between one to two minimum wages, exposure through heterosexual intercourse, time since diagnosis of 2-8 years, asymptomatic stage of infection, and problems related to antiretroviral therapy adherence.(4-7)

Other studies corroborate these findings: in South Africa, there was prevalence of cases among males (54.5%), with lower educational levels (48.2%) and young adults with a mean age of 36.2 years, which is typical of underdeveloped and developing countries. In China, the majority of participants (92%) also did not practice a religion(8) In Nigeria, the region with the second highest number of people living with HIV/AIDS, the results diverged, indicating a greater prevalence of married women or women with stable unions.(10)

According to the quality of life domains, the individuals presented good scores in most domains, thereby emphasizing the Psychological (67.9) and Spirituality, religion and personal beliefs (65.7) domains, and worst average scores in the Environment (59.2) and Level of independence (55.1) domains. In Brazilian studies and international studies, the Environment and Level of independence domains also had lower scores compared to other quality of life domains.

Considering the comparative analysis between the evaluation of quality of life and the studied variables, the multiple regression analysis results indicate that having a paid occupation, per capita income, having a religion, longer time since diagnosis, and treatment adherence were positively associated with quality of life. Homo-affective relationships, having been stigmatized or suffered prejudice, presence of psychosocial symptoms, and having acquired opportunistic infections were predictors associated with a poorer quality of life in the WHOQOL-HIV BREF domains.

If per capita income and occupation are considered as a labor force, they showed statistically positive differences regarding all domains. Thereby, higher scores were identified among those who have
been or are somehow included in the labor market and among those whose proportion of gross income distribution, considering the wage of all people living in the same household, was higher than one minimum wage per person.

In other research in the area, employment or retirement, income above one minimum wage, and higher levels of education were associated with higher quality of life scores.\(^{(3)}\) A study evaluating employability and adherence to antiretroviral therapy showed that employed people were 27% more likely to adhere to antiretroviral therapy than unemployed people.\(^{(12)}\)

Considering the influence of the use of antiretrovirals, most of the sample had problems with treatment adherence regarding the scheme, doses and schedules. Adherence is a determining predictor of quality of life, viral suppression, and decreased risk of opportunistic infections. Given the changes in morbidity and mortality, studies have shown the positive impact of adherence to antiretroviral therapy on the quality of life.\(^{(15,13,14)}\)

Permeated by feelings of guilt, loneliness and fear of death, participants who exercised spirituality by means of faith or religious beliefs achieved better coping with the HIV serostatus, encouragement and ability to work. Spirituality and religion improve health, quality of life, and help people living with HIV to cope with stress from stigma and discriminatory practices.\(^{(15)}\)

Facing the chronic AIDS phenomenon, the redefinition of living with HIV in participants with a longer time since diagnosis enables acceptance, adaptation and conformity to the disease, thereby providing opportunities to complete projects, social inclusion, affective and sexual relationships, and even higher treatment adherence. Similar results show that higher CD4 levels, an undetectable viral load, and increased time length of antiretroviral therapy increased quality of life.\(^{(5)}\)

Considering the representations of the disease in the lives of participants, there were statistically significant differences in all six domains, with the presence of psychosocial symptoms and having been stigmatized and/or suffered prejudice. Studies performed in southern India showed the prevalence of severe forms of depression and stigma in people with HIV, 12 and 27.1%, respectively. They also found an association between anxiety, depression and stigma and a poorer quality of life.\(^{(16-18)}\) In Nigeria, a high prevalence of depression (23.1%) was identified in women 30-39 years old, single, with suicidal thoughts or attempts.\(^{(19)}\) In Brazil, a cross-sectional study revealed a high prevalence of depressive symptoms (61%) and a poorer quality of life associated with a lower socioeconomic status, lower educational level, and presence of stigma.\(^{(4)}\)

With increasing survival, actions to prevent and manage comorbidities have assumed an important role in the agenda of affirmative public policies. One study evaluating mortality from opportunistic infections showed a decrease of: 75.3% in the mortality rate for \textit{Pneumocystis carinii} pneumonia, 82.8% from tuberculosis, 80.5% from Kaposi’s sarcoma, and 70.8% from non-Hodgkin’s lymphoma. In contrast, cancer mortality has increased by 12.7 times, lung cancer being the most common (13.6%), followed by lip malignancies, oral and pharynx cavity (10%), and stomach cancer (10%).\(^{(2)}\)

Since the occurrence of the first HIV infection cases in the world, homo-affective relations have represented an important, key, vulnerable group with a significant influence on quality of life.\(^{(20)}\)

**Conclusion**

People living with HIV/AIDS have a poorer quality of life in the Level of independence and Environment domains. The predictors negatively associated with it were homo-affective relationship, having been stigmatized or suffered prejudice, presence of psychosocial feelings, and a history of a sexually transmitted or opportunistic infection.

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Collaborations
Oliveira FBM and Moura MEB state that they contributed to the project design, data analysis and interpretation, writing of the article, critical review of the relevant intellectual content and final approval of the version to be published. Araújo TME and Andrade EMLR contributed to writing of the article and final approval of the version to be published.

References
Incidence of local complications in peripheral venous catheters and associated risk factors

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Abstract

Objective: To estimate the incidence of local complications associated with peripheral catheters and identify risk factors for the development of most common complications.

Methods: This prospective cohort study included 92 adult inpatients at clinical and surgical units who had peripheral catheterization. By daily observance of the catheters we determined time of permanence and local complications due to the use of a complete safety catheter. All actions began after training of nursing teams. Statistical tests used were the Fisher exact test, G test (Williams), chi-square, Mann-Whitney U test, and relative risk.

Results: Local complications occurred in 56.2% of cases. Time of catheter permanence over 72 hours increased the risk for phlebitis development in 2.34% of cases (RR; p=0.0483; CI [0.91; 6.07]).

Conclusion: Incidence of local complications was high. Phlebitis was the predominant complication and the time of catheter permanence over 72 hours was a considered risk factor for this complication.

Keywords
Catheterization, peripheral/adverse effects; Risk factors; Catheter-related infections; Catheters; Technology

Descritores
Cateterismo periférico/efeitos adversos; Fatores de risco; Infecções relacionadas a cateter; Cateteres; Tecnologia

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Introduction

Intravenous therapy is widely used in hospital care and is viable because of several technologic devices, including peripheral intravenous catheters. These devices are mainly indicated for administration of medicine, fluids, blood, and nutritional products.\(^{(1,2)}\)

Peripheral intravenous catheters are the most used invasive device,\(^{(2)}\) and the technological advances made with this device in the past decades is remarkable. In Brazil, use of health technologies is below the international average. An example is the complete safety catheter, an intravenous peripheral device indicated for medium-term treatment. The complete safety catheter has particular characteristics that aim to improve practice and improve safety of professionals performing the procedure.

This “under needle” device has two access pathways: an extensive tube that enables the practitioner to see blood reflux during puncture and to handle wings/fixation and a safety device that covers the needle in order to reduce risks for accidents with biological and hazardous waste. This device consists of polyurethane (Vialon\(^*\)) and presents low thrombogenicity; this catheter is better adapted the venous network anatomy and reduces the occurrence of mechanical phlebitis caused by irritation.

Peripheral catheters, despite their wide use, can lead to local and systemic complications. In this study we focus on local complications (i.e., injuries in the area surrounding the catheter insertion site), which are rarely severe and can be observed early by objective assessment. These complications include hematoma, occlusion, phlebitis, thrombophlebitis, infiltration, leakage and local infection.\(^{(2)}\)

To support nurses’ decision making regarding the most adequate and safe intravenous peripheral device, our study attempted to estimate the incidence of local complications associated with peripheral catheters and identify risk factors associated with the development of most common complications.

Methods

This prospective cohort study was carried out at clinical (Women’s Internal Medicine, Men’s Internal Medicine, Cardiology and Neurology) and surgical (Gastro-intestinal and General Surgery) units at a teaching hospital in Curitiba, Paraná, Brazil.

Data were collected between August and October 2014, a period during which the stipulated number of participants for sample calculation was achieved. In August, a pilot test was conducted to verify adequacy of the method and the instrument for data collection.

We included both adult inpatients of both sexes who had undergone peripheral venous puncture with a complete safety catheter during the period of data collection. This convenience sample was assemble via consecutive selection and included patients who met the eligibility criteria. Inclusion criteria were age 18 years or older, hospitalization, and need for intravenous peripheral therapy. Exclusion criteria were weakness in peripheral venous network that prohibited puncture with a peripheral catheter and allergy to any material used to produce catheters.

Data were collected by the research team after staff members received training on standards for performing the collection. Collection started after information was obtained from medical records and daily follow-up of inserted catheters in order to evaluate endpoints. We used a structured instrument with variables related to the patient (sociodemographic and clinical data), the catheter and its daily follow-up report. Sociodemographic variables included: name initials, number of medical record, sex, age, ethnic group, formal education level, occupation, family history of diseases, use of smoking products, and use of alcohol. The variable concomitant infection referred to any infectious site observed in the patient, and this finding was collected daily through the checking of therapeutic prescription of antimicrobial agents during the hospitalization.

Variables related with catheter were: gauge, anatomical localization, duty hour when the catheter was inserted, duration of catheter permanence, intravenous drugs used, and reason for the catheter
removal (elective because of end of intravenous therapy, discharge, death, transference from the unit, or development of complications).

Direct and daily follow-up of the device enabled to determine the frequency of fixation change and its material, presence of concomitant venous access (central and/or peripheral) and complications associated with the catheter (phlebitis, thrombophlebitis, obstruction, infiltration, leakage and local infection). For the variation local infection we standardized the following: presence of purulent discharge at the catheter exit site, hyperemia and edema in the surrounding skin. These information were collected daily, along with information about drugs administered through catheter, concomitant infection and surgical procedures. Endpoint variables evaluated were infiltration, leakage, obstruction, phlebitis, thrombophlebitis, local infection and accidental catheter traction.

Puncture and handling of devices were done by the nursing teams in the units. The study institution did not use this technology; thus, before we began data collection we offered training to all employees on how to handle the device.

We analyzed the following themes: technological advances of intravenous devices, general specification of complete safety catheter, puncture technology – handling of short flexible catheter (conventional) complete safety catheter; risks and benefits of each technology, methods of fixation; frequency of catheter change, research protocol, inclusions in medical records, local complications. The correct and complete register of data in the patient’s medical record was emphasized, particularly because medical records were the single source where researchers could obtain all information concerning insertion and removal of the catheter, occurrence of local complications and their severity degree.

Healthcare personnel were trained with the last recommendations of the Infusion Nurses Society - INS concerning the frequency of catheter change. Therefore, catheters were removal according to clinical indication or in case of contamination, complication, inefficient therapy or discontinuation of the therapy.

The guidelines of Centers for Disease Control and Prevention - CDC was followed for sterilization, puncture, fixation, and stabilization of catheters - skin preparation with 2% chlorhexidine or 70% alcohol for antisepsis and use of sterile, transparent, semipermeable dressings. However, because the institution where this study was conducted did not have this material available, we used sterile gauze with dressing tape, which was changed every 24 hours or in case of appearance of residues, humidity, and adhesive tape detachment.

Data were entered into a spreadsheet using Microsoft Excel® and were analyzed using the Bioestat® program by a descriptive statistical approach. To analyze occurrence of local complications we used chi-square tests, Fisher exact test, and G test (Williams) for categorical explanatory variables and a Mann-Whitney U test for quantitative explanatory variables. A significance level of 5% was used for all tests. To evaluate risk factors we calculated the relative risk (RR) and confidence interval (CI).

Development of this study followed national and international ethical and legal aspects of research on human subjects.

Results

The sample consisted of 92 patients. One complete safety catheter was analyzed per patient. Most punctures were done at a men’s clinic (27.17%). The majority of individuals were women (53.26%), and the mean age was 54.8±18.03 years. Most patients were white (89.13%). In general, participants were non-smokers and did not consume alcohol (85.87% and 73.91%, respectively).

Most of patients had no comorbidities (73.91%), and the reason for hospital admission was related to bowel (31.52%) and cardiovascular (22.83%) disease. Mean duration of hospitalization was 11.6±8.56 days. Most patients were discharged (93.48%). We did not analyze mean duration of hospitalization of patients who remained hospitalized after the end of data collection (4.35%); the same occurred with one patient who remained hospitalized for 442 days (outlier).

Most punctures were achieved with a 20-gauge catheter (72.83%), in the left upper limb (68.48%),
Incidence of local complications in peripheral venous catheters and associated risk factors

and in the forearm region (64.13%). In most cases the nurse successfully achieved the puncture procedure at first attempt (83.7%). Most catheters were used to administer sedatives or analgesics (66.3%).

Mean duration of catheter permanence was 3.73±2.23 days (minimum, 1 day; maximum, 10 days). In most patients catheter permanence was ≥72 hours (60.87%). However, for 14 catheters (15.2%) permanence was greater than 120 hours. Of these, nine (9.8%) were removed electively (at discharge or at the end of intravenous therapy).

Reasons for catheter removal were occurrence of a complication in 52 patients (56.52%) and elective removal due to discharge or end of intravenous therapy in 35 (38.04%). Other reasons included injury in one of the extensor routes (3.27%) and local pain reported by patients without evidence of complication (1.09%). Phlebitis was the most frequent complication (36.54%), followed by infiltration (23.08%), accidental catheter traction (17.31%), obstruction (15.38%), local infection (3.85%), leakage (1.92%), and thrombophlebitis (1.92%).

Risk factors were analyzed for the most frequent complication. We found no significant associations between phlebitis occurrence and several sociodemographic and clinical variables. The p-value* was greater than 0.05 for all variables. Mean time between catheter permanence and phlebitis development (4.36 days) was significantly different compared with the time between catheter permanence and other complications (3.18 days) (p=0.0430**). No statistical significance was found for the other variables.

Considering data presented, phlebitis was most frequent in men (52.63%), who had bowel diseases (36.84%), used a 20-gauge catheter (78.95%) in the left limb (57.89%), in the forearm (68.42%), and with time of catheter permanence over 72 hours (79%) and who received sedative/analgesic intravenous (73.68%).

To verify the existence of risk factors for phlebitis development, we conducted an analysis after excluding all patients who did not develop any complications (n=40). This analysis included 52 patients. In this analysis we considered two groups: patients who had phlebitis (n=19) and patients who did not present other complications (n=33).

It is important to highlight that phlebitis was detected in patients who used a catheter for more than 72 hours (79%). This finding indicates that longer permanence increases the risk of phlebitis development (Table 1).

Table 1. Analysis of duration of permanence associated with phlebitis caused by the use of complete safety catheter

<table>
<thead>
<tr>
<th>Time of permanence</th>
<th>Phlebitis</th>
<th>p-value</th>
<th>RR</th>
<th>CI [95%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 72 hours</td>
<td>Yes (n=19)</td>
<td>0.0483</td>
<td>2.34</td>
<td>[0.916.07]</td>
</tr>
<tr>
<td></td>
<td>No (n=33)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 72 hours</td>
<td>15(79.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17(51.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n=52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RR – Relative Risk; CI [95%] – 95% Confidence Interval

Discussion

The small numbers of significant associations among variables and occurrence of phlebitis in our sample limited our ability to identify other risk factors for complications related to the use of catheters.

The complete safety catheter appears to be an innovation for intravenous therapy, considering the benefits pointed out in the research. These include the high rate of successful placement with the first puncture attempt; longer permanence until appearance of local complications; low incidence of local infection due to components of the closed system; and protection offered to the professional against accidental exposure to biological and hazardous waste. In addition, our results can be used to help prevent local complications because of the use of peripheral intravenous catheter by the nursing team once they are responsible for choosing the technology to be used, as well as catheter insertion and maintenance until removal.

Most patients were women (53.26%); the mean age was 54.8±18.03 years. Most were white (89.13%) and non-smokers (73.91%) and did not consume alcohol (85.87%). Our results corroborate those of similar studies; an earlier study population

*Tests: Chi-square, Fisher’s exact, G Williams and Mann-Whitney.
**Mann-Whitney U test
also had a majority of women (55%), age older than 50 years and non-smokers (56.1%).

Most patients in our study had no comorbidities (73.91%). The majority of the patients were admitted for treatment of disease related with gastrointestinal system and cardiovascular diseases, especially because these are specialties investigated where the study was conducted. A randomized clinical study also reported the predominance of hospitalized patients for gastrointestinal related-problems (27.07%), however most patients (59.3%) had more than two comorbidities.

Mean duration of hospitalization was 11.6±8.56 days, a result similar to that of an earlier study (mean duration of hospitalization, 12 days). Of note is the high incidence of discharge (93.48%), especially because in the units studied inpatients are at lower risk of death. However, the lack of comorbidities also contributes to satisfactory patient recovery.

Most of the complete safety catheters used in our analysis were 20 gauge (72.83%) and were inserted in the left upper limb and in the forearm region to administer sedatives or analgesics. Another study in the literature also reported the prevalent use of 20-gauge catheters (53%); in that study, however, punctures were mainly made at the dorsum of the hand (47%).

It is important to highlight the rate of success in the first attempt at puncture by the professional; this is notable because until the beginning of the study the employees were unfamiliar with the technology. Such success is due to the professionals’ lengthy experience with venous puncture; it also suggests the positive effect of the training provided.

Mean duration of catheter permanence was similar to that reported in an earlier study (mean duration, 3.5 days). We highlight that the majority of patients had the catheter in place for 72 hours or more, and in many patients catheter permanence was over 96 hours. A prospective study reported that permanence of most peripherally inserted central catheters was 72 hours or less (93%); 5.8% were in place for 73 to 96 hours, and the others (1.2%), more than 96 hours. These results are different from those reported in our study.

Most studies in the literature report that catheter permanence for more than 120 hours is unusual; in a prospective cohort study, this occurred in only 7.8% of cases. However, our study found a high proportion of permanence over 120 hours, and the majority was due to elective removal.

The guidelines created to prevent complications of intravenous therapy recommend the scheduled replacement of peripheral catheters in adults every 72-96 hours. For newborns, children and patients with weak peripheral venous network, the recommendation is to replace the catheter only when clinically indicated.

There is no consensus about catheter permanence in adults. However, a systematic review did not find conclusive results concerning benefits in scheduled change of catheters. Clinical trials, which were included in the review, reported that scheduled removal every 72-96 hours was associated with complication rates similar to those seen with required removal. Since 2011, INS has recommended changing intravenous peripheral catheters according to clinical indication. For this reason, the catheter insertion site should be regularly inspected in order to identify clinical signs of complications, of inefficient therapy, or discontinuation of therapy.

The main reason for catheter removal was the occurrence of complications with predominance of phlebitis, followed by infiltration, and accidental catheter traction. In addition, we observed a low occurrence of local infection, leakage and thrombophlebitis. A multicenter study presented the following rates of complications related to catheters: obstruction (20.95%), infiltration (15.65%), accidental catheter traction (9.89%), phlebitis (6.94%) and local infection (0%). This study differs from ours in that regard. The phlebitis rate exceeds the accepted standard by Infusion Nurses Society, which established an acceptable frequency of 5% in one population.

The low occurrence of leakage is because of the little amount of catheter used for infusion of irritant and/or vesicant agents, due to preference of central venous access for administration this type of medication.
In our study the phlebitis was not significantly associated with a number of sociodemographic and clinical variables. In catheters variables we observed that devices that developed complications had greater mean duration of permanence than those that were associated with several complications. The permanence greater than 72 hours was a risk factor for complication. A national prospective cohort study including 100 patients, reported that phlebitis was statistically associated with catheters with permanence greater than 72 hours.\textsuperscript{(14)}

A study including 171 adult patients identified that permanence greater than 48 hours and catheter insertion in the antecubital fossa were significant factors for development of phlebitis, as well as 18-gauge catheter size, pre-existing diabetes mellitus and smoking.\textsuperscript{(3)} Another study identified four risk factors: female sex, insertion of catheter in emergencies, insertion in the forearm and administration of antibiotic drugs (which normally are irritants to blood vessels).\textsuperscript{(10)}

Such data were validated in a multivariate analysis showing that catheter insertion in an emergency department and female sex were risk factors for phlebitis.\textsuperscript{(15)} International guidelines recommend that catheters inserted in emergency situations and with compromises in aseptic technique should be changed as soon as possible in order to prevent infectious complications.\textsuperscript{(2,7)}

Although other variables statistically associated with the occurrence of phlebitis were no identified in our study, a higher frequency of complications was seen among male patients who were admitted for gastrointestinal related problems and used 20-gauge catheter size on the upper left limb, inserted in the forearm region to administer sedatives or analgesics. These facts might explain the irritant characteristics to the vascular endothelium of most of these medicines.

A study identified that women with neurologic manifestations and hospitalized for eight and 20 days had higher occurrence of phlebitis, but this result was not associated with any statistically significant variable. The same study identified, concerning aspects related with catheter, higher frequency of complication in patients who received analgesics and antipyretic intravenously, used 22- and 24-gauge catheter size inserted in the forearm, received intermittent infusion and had catheter with permanence lower than 72 hours, this latter result does not corroborate with our findings.\textsuperscript{(16)}

Another study with 76 adult patients using peripherally inserted catheter showed results similar to our study findings, their identified higher occurrence of phlebitis in those who used 18- and 20-gauge catheter size in the upper left limb and forearm. However, their study identified more complications in catheter with permanence equal or lower than 72 hours, a similar result identified by the other study mentioned above.\textsuperscript{(17)}

The use of a complete safety catheter can provide more comfort for patients and safety for professionals; however, actions taken to prevent complications of peripheral intravenous therapy do not depend exclusively on the adoption of new devices. Rather, it is important to help people become more aware and to foster an attitude that encourages prevention.

**Conclusion**

A high incidence of complications associated with use of a complete safety catheter was seen. Phlebitis was the predominant complication and duration of catheter permanence was over 72 hours. This long period was considered a risk factor for this complication.

**Acknowledgements**

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**Collaborations**

Danski MTR contributed to the conception of the project, data collection, critical review relevant for intellectual content and approval of proofs. Oliveira-
ra GLR and Johann DA contributed to the conception of the project, data collection, analysis and interpretation of data, drafting the manuscript and approval of proofs. Vayego SA contributed to the analysis and interpretation of data, critical review relevant for intellectual content. Pedrolo E contributed to the conception of the project, drafting the manuscript and approval of proofs.

References


Nursing diagnoses in children with congenital heart disease: cross mapping

Diagnósticos de Enfermagem em crianças com cardiopatias congênitas: mapeamento cruzado

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Abstract

Objective: To identify the NANDA International nursing diagnoses from the terms found in the nursing records of hospitalized children with congenital heart defects, and verify the association between these terms and the mapped nursing diagnoses.

Methods: Observational and cross sectional study, developed by mapping of the terms in the nursing records of hospitalized children up to two years of age with congenital heart disease. The association between the terms and the most frequent nursing diagnoses were evaluated using the Student’s t-test or chi-square.

Results: The most frequent nursing diagnoses in the 82 records analyzed were: risk for infection (81.7%), impaired gas exchange (46.3%) and activity intolerance (36.6%). The terms “cyanotic” and “pallor” had significant associations with the diagnosis, impaired gas exchange.

Conclusion: The terms recorded in the records of children with congenital heart disease allowed for the identification of NANDA International nursing diagnoses, in addition to verification of associations.

Keywords
Nursing diagnosis; Heart defects, congenital; Pediatric nursing; Child

Descritores
Diagnóstico de Enfermagem; Cardiopatias congênitas; Enfermagem pediátrica; Crianças

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Resumo

Objetivo: Identificar Diagnósticos de Enfermagem da NANDA International a partir dos termos encontrados nos registros Enfermagem de crianças com cardiopatias congênitas hospitalizadas e verificar associação entre estes termos e os Diagnósticos de Enfermagem mapeados.

Métodos: Estudo observacional, transversal desenvolvido por mapeamento dos termos nos registros de Enfermagem de crianças hospitalizadas de até 2 anos com cardiopatia congênita. A associação entre os termos e os Diagnósticos de Enfermagem mais frequentes foi avaliada pelo teste t de Student ou qui quadrado.

Resultados: Nos 82 registros analisados, os Diagnósticos de Enfermagem mais frequentes foram Risco de infecção (81.7%), Troca de gases prejudicada (46.3%) e Intolerância à atividade (36.6%). Os termos “cianótico” e “hipocorado” tiveram relação estatisticamente significativa com o diagnóstico Troca de gases prejudicada.

Conclusão: Observou-se que os termos registrados em prontuários de crianças com cardiopatias congênitas permitiram a identificação dos Diagnósticos de Enfermagem da NANDA International, além da verificação das associações.

Conflicts of interest: there are no conflicts of interest to declare.
Introduction

Congenital heart defects are abnormalities observed at birth, both in structure as well as in cardiocirculatory function. Malformations appear to result from multifactorial interactions, including genetic and environmental factors.(1) One in every thousand children born each year has a heart defect, corresponding to almost 1% of live births.(2)

The nursing care must be established and implemented early, when the diagnosis of congenital heart disease is identified, in order to maintain the child in a stable or hemodynamically compensated state. (3) The nursing process, which is a dynamic, systematized and interrelated set of actions used for this purpose, is organized into five steps: assessment, nursing diagnosis (ND), planning, implementation, evaluation.(4)

The ND in this study represent clinical judgments of the responses of children and/or families to heart disease and hospitalization, which provided for the selection of interventions aimed at achieving results for which nurses were responsible.(5,6)

The implementation of the nursing process based on standardized nursing language (SNL) generates documentation and information about the contribution of nursing to the care of children with congenital heart diseases. In this regard, knowing the most frequently diagnosed NANDA International (NANDA-I) ND within this population contributes to the standardization of nursing care by providing evidence for the development of electronic patient records, protocols and recording instruments, care planning, risk management, audits, selection of indicators and outcomes to be measured, improving the quality of care, and providing greater safety to the patients.

With the advancement of knowledge, and the need to base health care on scientific evidence, this study identifies a gap in knowledge about human responses of hospitalized children with congenital heart disease, the disease and its treatment, and documenting the ND with standardized language that, until now, were described in non-standardized language in nursing records.

This study aimed to identify the ND of NANDA-I from the terms found in the nursing records of hospitalized children with congenital heart defects, and assess the association between these terms and the mapped ND.

Methods

This was an observational, cross-sectional study, using the cross mapping as a methodological tool, defined as a method to explain something in words with the same or similar meaning, serving as a method to compare data.(7)

The study was conducted by analyzing 82 medical records of hospitalized children in a national reference institution in cardiology, in the city of Rio de Janeiro (RJ), Brazil. The main characteristics of the institute were: high complexity cardiology activities; caring services (prevention, diagnosis, medical-surgical treatment of cardiovascular diseases, and rehabilitation); teaching and research. The research scenario was chosen because of the implementation of the nursing process with standardized languages.

For data collection, all records were used of children up to 2 years old, admitted to the service in the period from January to June of 2014, corresponding to approximately 110 hospitalizations, according to data taken from the hospital management system of the institution. Among these, 17 records corresponded to recurrent hospitalizations and 11 records were not found by the medical archive service, because they were in use for medical evaluations, billing or hospitalization, totaling 82 studied medical records.

Inclusion criteria for the children’s records were: those with confirmed medical diagnosis of acyanotic or cyanotic congenital heart disease, and, hospitalization ≥48 hours from January to June of 2014. All the records completed by nurses and nursing technicians/assistants, without identifying the authorship of those records, were...
considered. The records of children with congenital heart disease who underwent corrective surgery were excluded.

The mapping was performed through transcription and analysis of the admission nursing record, which was completed between 24 and 48 hours after admission. The selection of this period for the collection of the terms was due the higher amount of terms registered by the nursing staff during this time.

For the mapping, two rules were used: categorization of the nursing terms (search terms) and separation of nuclear modifier concepts (process performed to increase the combinations between terms). In order to facilitate the completion of the mapping, a documentation tool was used, developed by the researchers, composed of five parts: child identification; transcript of records after 24 hours of admission; fragmentation of records to search for the original terms; identification of diagnostic labels by exact or partial combination, and evaluation by experts.

The records contained a total of 3,940 terms, which were analyzed and mapped by one nurse researcher with ten years of professional experience in pediatric cardiology, and another with a doctorate in nursing, specializing in the nursing process and SNL.

The mapping was performed from the fragmentation of records to search for original terms, and the distribution into categories, according to the type of combination. If the term found matched exactly with the language of NANDA-I, it was categorized as an exact combination; if synonyms, similar concepts or related terms were present, it was categorized as a partial combination. The exclusion of repetitions and standardization of the terms occurred subsequent to the mapping.

A total of 357 terms were obtained after excluding repetitions. Next, the standardization was performed, with 312 remaining terms; namely, the uniformity of genera and elimination of elements that did not refer to particular concepts, defined as pseudo-terminological expressions. In the standardization step, only 45 terms were excluded, due to the small deletion of synonyms, since the partial match mapping considers the synonyms. Through partial combination, 148 terms were mapped, and five terms through exact combination; thus, a total of 153 terms were mapped. Likewise, a total of 159 terms were not mapped, because they did not result in an exact or partial combination with the ND of the NANDA-I classification. Therefore, these terms did not affect the outcome of the study. Some examples of terms that had no combination are: acyanotic, afebrile, without normality.

The forms were sent via e-mail for evaluation by five expert nurses who analyzed the ND, whose presence or absence were considered to be valid when there was agreement from three experts. This method of evaluation was used to ensure greater accuracy in the selected ND.

The selection of expert nurses occurred according to the following criteria: professionals in clinical practice for more than five years in pediatric cardiology, experience in teaching and research in nursing diagnoses confirmed by at least two publications in the area, master’s and/or doctorate with thesis/dissertation in the field of congenital heart defects/nursing diagnoses.

The following variables were considered for the study: sex, age, place of birth, origin, ethnicity, reason for hospitalization, type of heart disease, vital signs (respiratory rate, heart rate, temperature, systolic blood pressure, arterial oxygen saturation), nursing terms, ND of NANDA-I, and the number of ND per patient. All variables were transversally analyzed. The documentation and registration form data were entered into the computer and stored in a Microsoft Excel 2013 program database; the Statistical Package for the Social Sciences (SPSS), version 20.0, was used for statistical analysis. A descriptive analysis was performed using frequency of calculation, mean or median, standard deviation and percentiles, according to the behavior of the variable (normal), as identified by the Shapiro-Wilk statistical test.
In the inferential analysis, the association between the characterization of numerical variables (vital signs and number of ND per patient) and the more frequent ND was evaluated using the Student t-test or Mann Whitney. The most frequent ND were those present in at least 30% of the nursing records after analysis of agreement of the expert nurses.

To evaluate the association between nominal variables of characterization and the ND, the chi-square test and Fisher’s exact test were used, when necessary. In all cases, the differences were considered statistically significant when the value associated with the analysis was <0.05.

The development of the study met national and international standards of ethics in research involving human subjects.

**Results**

Table 1 presents the characteristics of children with congenital heart disease. The patients were predominantly: male (54.9%), infants (91.5%), born in the metropolitan area of Rio de Janeiro (76.8%), and of mixed race (41.5%). The children were admitted mostly for surgical treatment (53.7%), with acyanotic heart disease (58.5%). Among them, 19.5% also had Down syndrome. Of the records obtained from the medical files, 41.5% were completed by nursing technicians. Six of the children who were participants of this study died.

After selecting the 153 nursing terms for cross mapping to ND by the experts, the most commonly found terms in the medical files of children with congenital heart disease were: “cyanotic” (80.5%), “respiratory effort” (79.3%) “tachypnea” (72.0%), “pallor” (65%), “infant” (64.6%), “peripheral venous access” (42.7%), “intravenous hydration” (34.1%), “respiratory rate = 60 rpm” (30.5%), “respiratory rate = 52 bpm” (28.0%), “accompanied by the mother” (28.0%), “tearful” (22%), “heart rate = 160bpm” (19.5%) and “arterial oxygen saturation = 75%” (18%).

Table 2 shows the frequency of ND related to the presence or absence of the ND, along with disagreements among experts, **risk for infection** (NANDA-I code 00004) was the most frequent diagnosis among the patients (81.7%), followed by impaired gas exchange (00030) with 46.3%, and activity intolerance (00092) with 36.6%. There was a mean of 3.0 ± 1.5 ND per child, and more than 75% of the patients had more than five diagnoses. The **risk for falls** (00155)
Nursing diagnoses in children with congenital heart disease: cross mapping

Diagnosis showed the highest percentage of disagreement among the experts (45.1%).

Verifying the association between the three most frequent ND, risk for infection, impaired gas exchange and activity intolerance, with the most frequently mapped terms, “cyanotic” (p < 0.001) and “pallor” (p = 0.04), showed statistical significance with the diagnosis, impaired gas exchange.

Children who had the risk for infection diagnosis had more ND inferred by the experts (p = 0.004). Children with the impaired gas exchange diagnosis presented a higher number of ND and a lower mean oxygen saturation than children without this ND (p < 0.001 and p = 0.002, respectively). Patients with the activity intolerance diagnosis demonstrated a lower oxygen saturation than children without this diagnosis (p < 0.001).

Table 3 shows the related/risk factors and defining characteristics of the nursing diagnosis most frequently present in patients with congenital heart disease (n = 82)

### Discussion

A limitation presented by this study is the cross-sectional design of the method, which makes it impossible to evaluate the evolution of the ND in the sample studied during hospitalization. Moreover, the diagnostic inference of experts may have been interfered with by the incomplete description of the nursing records concerning human responses of patients.

This study showed, for the first time, the most common NANDA-I ND in children with congenital heart disease, by mapping of the terms from the nursing records, and made the inclusion of these data in the computer information systems that use this standardized language possible, bringing benefits to nursing and to the hospital institutions caring for this population. The most frequent ND were
risk for infection, impaired gas exchange and activity intolerance.

A study on ND in children with congenital heart disease hospitalized in northeastern Brazil found an association between ND, related factors/collaborative problems, and also identified risk for infection as the most frequent risk ND (82.2%). The major risk factors of this diagnosis were invasive procedures and inadequate primary defenses.⁹

Considering the complexity of congenital heart diseases, this population becomes more vulnerable to infections, which may lead to increased length of stay and higher mortality. A number of factors contribute to the development of nosocomial infections in the child, such as: the slow maturation of the immune system, sharing of objects among pediatric patients; acute malnutrition; the presence of congenital anomalies; the use of medicines, particularly corticosteroids; and, hematological and oncological diseases. Bacteria cause most infections that affect hospitalized children, and it can be seen that even clinically important viral infections are less common. The incidence of pediatric infection has grown in recent years, with the increase in invasive procedures, technological development, and the indiscriminate use of antimicrobials.¹⁰

A study in Fortaleza (CE) with 270 diagnostic assessments in children with congenital heart disease found impaired gas exchange (91.5%) to be the most frequent ND, and the most prominent related factor was ventilation-perfusion imbalance (89.5%).⁹ Such evidence is consistent with the data shown in this study, in which children received this diagnosis, often due to the same related factor. The most evident defining characteristic of this diagnosis was mapped in nursing records with the term “cyanotic”. Another study found a high incidence of this diagnosis prenatally (66%), by means of a public health screening performed by nurses with pulse oximetry. The early detection of these heart diseases is essential, given the prognostic implications due to rapid clinical deterioration and high mortality.¹¹

The nursing diagnosis, activity intolerance, was evidenced in more than one third of the study sample. A study, featuring the sociodemographic and diet history of children with congenital heart diseases, described that in newborns, physical efforts are very limited; with only sucking at the breast and crying constituting physical effort. Infants may experience respiratory distress during the effort to evacuate and in activities such as playing with other children. Such situations were identified and characterized in the study primarily as dyspnea on exertion, which is one of the defining characteristics of activity intolerance.¹²

Ineffective breathing pattern was one of the few diagnoses mapped by exact combination, from the term recorded in the chart, namely tachypneic, which is an important human response to congenital heart disease due to the imbalance between oxygen supply/demand. It was also the human response (88.5%) most commonly found in studies that analyzed this diagnosis in children with congenital heart disease.⁵,¹³,¹⁴

Risk for falls was the ND with the highest percentage of disagreement among the experts (45.1%) as the only risk factor mapped in the records was “under two years of age”, because this was considered to be of little clinical importance for diagnostic inference.

However, a case study of a child at eight months of age, with congenital heart disease, which described a plan of care using NANDA-I ND, the Nursing Interventions Classification (NIC), and Nursing Outcomes Classification (NOC), identified risk for falls as the main risk ND in the presence of risk factors related to the child location.¹⁵ Further studies are necessary to demonstrate the etiology of risk for fall in this population, and to establish nursing interventions.

Conclusion

The cross mapping enabled a correspondence between the free terms used by nurses with the standardized nomenclature of NANDA I ND. These terms confirmed the presence of 21 ND in children in these clinical conditions and age groups, and reinforced the need for planning of actions that meet these care demands. The most frequent ND were:
risk for infection, impaired gas exchange, and activity intolerance, and the terms “cyanotic” and “pallor” were associated with the impaired gas exchange ND.

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Collaborations
Silva VG, Figueiredo LS and Guimarães TCF declare that contributed to the writing of the article, relevant critical review of the intellectual content and final approval of the version to be published. Silva VG, Pereira JMV and Cavalcanti ACD collaborated in the design stages of the study, analysis, data interpretation, article writing, critical review of the relevant intellectual content and final approval of the version to be published.

References
Counseling about sexually transmitted diseases in primary care: perception and professional practice

Aconselhamento em doenças sexualmente transmissíveis na atenção primária: percepção e prática profissional

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Ludmila Mourão Xavier Gomes²
Ana Paula Ferreira Holzmann¹
Alfredo Mauricio Batista De Paula¹
Desirée Sant Ana Haikal¹

Abstract

Objective: To understand professionals’ perception of counseling about sexually transmitted diseases and HIV in primary care.

Methods: Qualitative study conducted among nurses and physicians in primary care. The data were collected through the focus group technique, anchored by the Consolidated Criteria for Reporting Qualitative Research (COREQ). Data analysis was performed by using the steps of social phenomenology of Alfred Schütz, which showed the categories of the study.

Results: The professionals perform counseling in a reduced form based on the orientation for disease prevention. This practice is part of family planning and school activities. User access to sexually transmitted disease is marked by minimum demand. The priorities cases to receive care are emphasized. The professionals feel themselves unprepared and insecure in reporting test results and difficulties in counseling during home visits and maintaining confidentiality and privacy of user information.

Conclusion: The professionals perceive counseling as an important practice but find limitations and barriers to conducting counseling.

Keywords
Counseling; Sexually transmitted diseases; Primary care nursing; Public health nursing; Nursing evaluation research

Descriptors
Aconselhamento; Doenças sexualmente transmissíveis; Enfermagem de atenção primária; Enfermagem em saúde pública; Pesquisa em avaliação de enfermagem

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Introduction

Counseling is an important public health practice in the challenging task of breaking the chain of transmission of sexually transmitted diseases (STDs), HIV, and AIDS. It is based on three basic tasks: providing information, assessing risks, and emotionally supporting the user. It must be done by trained health care professionals.(1) In Brazil and worldwide, counseling is an important strategy in the fight against STD, HIV, and AIDS because of the low cost of implementation and its potential effectiveness.(2,3) In addition to the preventive measures available (condoms, postexposure prophylaxis), counseling is a method to address these diseases.(1,4)

Counseling has particular relevance in situations of infection risk through sexual exposure; educational activities can improve health care quality and can be used at several different times in health facilities, not just at the offer for HIV testing.(5) In the 1980s, the Brazil Ministry of Health established testing and counseling centers in order to offer diagnosis and counseling based on the principles of voluntariness, confidentiality, anonymity, speed, and resolution of HIV diagnosis.(6) In the late 1990s, the Ministry of Health began decentralizing STD prevention activities for primary health care.(7) This has become an important area of prevention and care of these diseases because it is a priority component of the Brazilian government control of the HIV epidemic. While one of the priorities of primary care is the development of preventive actions for STD in the individual and collective context, few studies have examined how professionals act and perform (or not) counseling in daily service.(5,8)

Considering the importance of counseling as a moment in which the user and the professional relate, exchange ideas, and share knowledge,(9) it is necessary to know the perceptions of professionals about how this practice has been developed in order to guide planning and relevant actions, provide the professional a reflection on their practices, and provide them with a scientific base that can coherently and consistently support and direct their actions during counseling.(5) This study aimed to understand the perceptions of health care professionals about the practice of counseling on STD and HIV/AIDS in primary care.

Methods

This is a qualitative study based on the social phenomenology theory of Alfred Schütz,(10) which allows understanding of the social issues of human action. It is designed in the meanings of inter-subjective experience of social relationships and to meet social needs that have contextualized meaning and configure a social sense.

In this framework,(10) action is based on existential reasons related to past and present experienced (reasons why), and orientation for future action comprises the possibility of proper, early, and imaginative action, based on the subjective meaning of the action (reasons for). It addresses the classification of concepts that is the action of a particular social group. Other key concepts used in this study are inter-subjectivity and natural attitude.

The study was conducted in Montes Claros, southeast of Brazil, with 12 nurses and physicians that had worked for more than three months in primary care during the survey period and who agreed to participate. The inclusion of professionals who worked in basic health units geographically close by was avoided, and only one professional from each team (physician or nurse) was invited to participate in the study. This selection occurred after educating the manager about submitting future proposals for training of professionals. Initially, they invited 18 professionals (nine nurses and nine physicians) via an email that outlined the study objectives. Overall, six professionals refused to participate in the study.

Data were collected through a focus group technique, allowing interaction, in-depth discussion and debate on the basis of seven questions drawn up by the researcher on the following topics: counseling on STD and HIV/AIDS, the per-
son seeking counseling intake, and monitoring health service users after counseling. The focus group was attended by a moderator/coordinator and two observers in order to record responses in a field diary. The debate was recorded in a room provided by the Municipal Health Department in January 2015; the debate was previously scheduled with the participants and lasted 1.5 hours. The focus group ended when the debate showed signs unveiling the phenomenon, the researchers’ concerns were answered, and the goals were achieved.

For data analysis, we used the social phenomenology steps: reading and careful rereading; grouping of significant aspects present in the statements to compose the categories; and analysis of categories, trying to understand the “reasons why” and “reasons for” of the participants’ actions. Two researchers independently analyzed data from the focus group. The researchers eliminated the differences between the categories found through personal meetings and email correspondence.

To maintain rigor in the study, we used the Consolidated Criteria for Reporting Qualitative Research (COREQ) as a support tool. However, after the transcripts of the debate were made, we did not return to participants for comment. The relationship between researcher and participants before the study was technical support for the development of actions related to STDs.

This study adhered to national and international standards of ethics in research involving human beings.

**Results**

The profile of professionals is described in Table 1. The perception of professionals about the practice of counseling on STD and HIV/AIDS in primary care was grouped into two categories that address the “reasons why” and “reasons for” (Figure 1). The “reasons why” were grouped into the following categories:

**Table 1. Characteristics of participants**

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>8(66.7)</td>
</tr>
<tr>
<td>Male</td>
<td>4(33.3)</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
</tr>
<tr>
<td>23 to 30 years</td>
<td>5(50.0)</td>
</tr>
<tr>
<td>31 to 40 years</td>
<td>5(50.0)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married or stable relationship</td>
<td>6(50.0)</td>
</tr>
<tr>
<td>Single or divorced</td>
<td>6(50.0)</td>
</tr>
<tr>
<td>Practice of religion</td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>8(66.6)</td>
</tr>
<tr>
<td>Protestant</td>
<td>2(16.7)</td>
</tr>
<tr>
<td>No practiced religion</td>
<td>2(16.7)</td>
</tr>
<tr>
<td>Professional category</td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>4(33.3)</td>
</tr>
<tr>
<td>Nurse</td>
<td>8(66.7)</td>
</tr>
<tr>
<td>Length of service in primary care</td>
<td></td>
</tr>
<tr>
<td>06 to 12 months</td>
<td>6(50.0)</td>
</tr>
<tr>
<td>13 to 24 months</td>
<td>1(8.3)</td>
</tr>
<tr>
<td>25 to 36 months</td>
<td>2(16.7)</td>
</tr>
<tr>
<td>37 to 48 months</td>
<td>1(8.3)</td>
</tr>
<tr>
<td>&gt; 48 months</td>
<td>2(16.7)</td>
</tr>
</tbody>
</table>

The first category included the views and practices on counseling about STD and HIV/AIDS. The first subcategory referred to the meaning of counseling for professionals and its use in practice. This was defined as a guide for the user to act correctly in relation to the reduction of risks for disease. It was observed that counseling is incorporated into family planning and work with teenagers in schools. The counseling consists of providing guidance on the use of contraceptive methods, especially condoms, vulnerability and disease prevention. The collective actions consisted of discussions of guidelines on the transmission and prevention of the main STDs for adolescents. It was reported that in schools, teenagers demonstrate doubts and seek clarification of professionals. The results indicate the perceived absence of specific educational groups on STD and HIV/AIDS in primary health care. The professionals considered the primary care setting to be appropriate for counseling, primarily because of relationship with the professional afforded by care longitudinality.

The second subcategory involved access, intake, and user STD treatment in basic health
Counseling about sexually transmitted diseases in primary care: perception and professional practice

unit. Professionals reported that the demand for the service is minimal and, for some professionals, when it occurs, there is prioritization in attendance. The person seeking counseling intake is done according to scheduled appointment and spontaneous demand of the most common complaints. Users seek to talk to the professionals after the intake for collection of information about the particular situation for a consultation appointment. Treatment is conducted without calling sexual partners but rather focuses on drug therapy and condoms. Professionals who are asked to adopt such an approach are apprehensive about calling sexual partner because of issues involving conjugality.

The third subcategory depicts the approach and disclosure of post-test time. The approach is performed with user guidance on risk behaviors, vulnerability, window period and offering of HIV testing. In reporting the results of STD and HIV testing, there was fear because of the revelation’s consequences and the professionals’ unpreparedness, especially in notification of STD results to women and non-acceptance of the diagnosis by the sexual partners.

The second category concerns barriers that compromise the practice of counseling. The first subcategory involves inadequate syndromic approach by practitioners that could compromise the detection of STD during counseling. The second subcategory consisted of barriers in the incorporation of counseling into the home visit, such as negative experiences and lack of privacy to discuss the issue.

The third category includes the “reason for” and addresses the expectations of participants to improve counseling in primary care. The first subcategory includes the forward expectations for maintaining the confidentiality of user information about STDs obtained from the service. Professionals were concerned about the privacy management of users with STD due to breaks in confidentiality by community health workers. The professionals expect to use electronic medical records use in basic health units and know that community health workers are aware of sensitive information. The second subcategory considers expectations of professional training, mainly by the new information that is aggregated to address the user with STD so that they provide good-quality care.

### Figure 1. Professionals’ perceptions

<table>
<thead>
<tr>
<th>REASONS WHY</th>
<th>REASONS TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptions and practices of counseling on STD and HIV/AIDS in Family Health Strategy</td>
<td></td>
</tr>
<tr>
<td>Meanings and practices of counseling on STD and HIV/AIDS for professionals</td>
<td></td>
</tr>
<tr>
<td>Access, intake and treatment of users with STD and HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td>Approach and communication of professional about STD result to the user</td>
<td></td>
</tr>
<tr>
<td>Barriers to practice of counseling on STD and HIV/AIDS in Family Health Strategy</td>
<td></td>
</tr>
<tr>
<td>Impaired detection of STD and HIV/AIDS: consequences to user</td>
<td></td>
</tr>
<tr>
<td>Needs of professional training about counseling on STD and HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td>Difficulties in approaching STDs on home visit</td>
<td></td>
</tr>
<tr>
<td>Confidentiality in the attendance of user with STD in Family Health Strategy</td>
<td></td>
</tr>
<tr>
<td>SigiloCommunity health worker and attendance of users with STD in basic health unit</td>
<td></td>
</tr>
<tr>
<td>Suggestions to improve the confidentiality in counseling on STD and HIV/AIDS in basic health unit</td>
<td></td>
</tr>
</tbody>
</table>


**Discussion**

The results of this study are limited because they were obtained from professionals from the same social group and who experience specific situations. As a result, the findings cannot be generalized or used to establish cause-and-effect relationships. We must emphasize that this study offers interesting contributions to the understanding of how professionals perceive counseling. The findings may contribute to the reflection of professional work processes.

In this study, the significance of counseling professionals has been guided by the user guidance for minimizing the risk of certain disease. This meaning must go beyond guidelines so that the users are encouraged to express what they know, think and feel. The meaning attributed by professionals goes back to the concept of natural attitude, which refers to how humans experience the inter-subjective world, incorporated into the world of common sense. The natural attitude is influenced by prior knowledge and personal background of each subject.\(^\text{(10)}\) Thus, professionals attribute the meaning of counseling on the basis of knowledge and experienced practice.

The categories related to the “reasons why” show that the actions performed in the daily work of counseling denote objective aspects, occur according to events of the past and present, and are permeated by numerous challenges. The way their activities are performed unveils knowledge and experiences. It is apprehended that professionals have discourse in common, constituting part of their classification.\(^\text{(10)}\)

It was evident that counseling is minimized in the practice of family planning and school educational activities. Reduced counseling practice is justified by the difficulty of working the issue into primary care because of the associated preconceptions and stigma. The efficacy of counseling depends on users’ comfort and willingness to deal with potentially sensitive health care issues; these can be especially difficult given preconceptions and taboos.\(^\text{(12,13)}\) Because of the difficulty of working with such issues, the inclusion of issues considered controversial in counseling can be facilitated in family planning.

In this study, counseling was performed by professionals with teenagers in schools for the purpose of clarification. The activities developed with teenagers are relevant because this age group has been the priority in campaigns and protection and prevention strategies, given their high susceptibility to STD.\(^\text{(14,15)}\)

Longitudinality was considered important for users’ participation in counseling because of the relationship created with the professional. It is an attribute of primary care that allows monitoring the user over time by the same professionals.\(^\text{(16,17)}\) Longitudinality permits formation of trust and bond with the user, which can be considered a facilitator in attendance of STD and HIV/AIDS counseling. Through consolidation of this attribute in professional practice, a new demand can be addressed more efficiently and in a problem-solving way.\(^\text{(18)}\) Although longitudinality is deemed relevant by the professionals and the primary care setting is a scenario for developing the counseling, this practice is not yet consolidated in this scenario.

The access of users with STD to primary health care is still characterized by minimum demand, which may be related to stigma and discrimination. The existence of fear in seeking for services close to the patient’s residence or the fear of being identified and people finding out reduce the demand for the service. The search occurs mainly in cases of symptoms suggestive of STD, in which it is revealed to the professional situation in a particular way, after delivery care to others. Strategies are needed to ensure user access to STD and HIV/AIDS counseling and the timely use of services to achieve the best possible results. The strengthening of policy recommendations in primary care setting can be seen as a way to provide early identification of and immediate treatment of STD.\(^\text{(6,19)}\)

The health care user’s intake in the primary care setting was characterized by the prioritization of care for treating diseases characterized by social stigma. Most people seeking the service because of an STD prefer not to talk about their sexual health with a professional because they feel uncomfortable about it. This could compromise the success of counseling. This stigma has been associated with
shame directed to individuals in risk groups, reinforced above all by the fact that people with HIV/AIDS are perceived by society as responsible for causing their infection.\(^{20}\) Intake provides universal access, strengthens the multidisciplinary work, provides qualified assistance, humanizes the practices, and stimulates the fight against prejudice.\(^{21}\) It is important that primary care incorporates in its process technologies that represent the real practices such as embracement and bound with the patient.

Regarding communication of STD results, especially in cases of HIV, we found that the professionals experience fear, insecurity, and unpreparedness in the face of the user’s reaction to the results. There are difficulties in dealing with subjective and intimate aspects of counseling involving sexuality and conjugality. The professionals express fears about speaking and communicating, revealing vulnerability of practice. As a result of this weakness in communication, counseling concentrates on biological parameters and test ordering; this fragments health care and distances it from the psychological and social suffering of users.\(^{12,22}\)

Professionals adopt drug treatment without calling sexual partners; they avoid getting involved in issues that may compromise them before the service. Calling sexual partners is essential in order for them to seek institutional care and break the chain of transmission. In practice, the professionals experience personal difficulties and do not feel supported by their institution with regard to the convening of partnerships.\(^{23}\) The conduct described was observed mainly for women with STDs who look for the service. It is possible to see the imbalance in power between the genders, with the man tending to produce more risk behaviors and difficulties in negotiating condom use.\(^{24}\) A study among women who underwent counseling without the support of male partners pointed out that these women cannot disclose their status to a partner for fear of accusations of infidelity, violence, abandonment and loss of economic support.\(^{25}\)

Detection of STD and HIV is compromised due by the syndromic approach, which is inadequate, represents a barrier, and suggests the need for training. The training of professionals in the primary care setting for counseling practice is indispensable in adapting care for a more effective response, particularly in relation to HIV.\(^{12,22}\)

Another barrier is the reluctance of professionals to approach counseling in the context of home visits because of the confidentiality of conversation, privacy, and sharing the results on site. It appears that there is a lack of strategies to ensure the opportunity for counseling outside the primary care setting, representing potential loss of timely treatment. A study in Kenya with home visits to pregnant women living with HIV found high acceptance of the couples, most likely due to the result of an examination approach that ensured confidentiality and sharing of results between partners, allowing for more frequent and comprehensive monitoring.\(^ {25}\)

The “reasons for” reveal expectations for improving the work process in counseling to the user. Professionals have expectations regarding the use of electronic medical records, which are seen as an alternative to the breakdown of confidential information because their use is restricted by professionals. Concern about privacy stems from the fact that community health workers reside in the community where users live.\(^{9}\) In the city where this study took place, documents are organized in files accessible to all professionals. In addition, professionals expect that community health workers be involved with and aware of confidentiality.

The professionals expressed desire to improve their vocational training, particularly regarding diagnosis and treatment of STD. In the primary care setting, the training of practitioners is relevant in order to improve the detection of these diseases and the approach made to the user. A study carried out in Spain with practitioners revealed the need for training in rapid testing for HIV and counseling for these professionals.\(^{26}\)

Professionals’ expectations translate into improving their formation and work processes for the provision of counseling guided on ethics and integrity. These aspirations are the characteristics of this group in relation to their desires. The need felt by these professionals is shared by and is included in inter-subjectivity, in which experiences are interpreted in a reciprocal manner.\(^ {10}\)
It should be noted that in the social phenomenology theory of Alfred Schütz, all people who share a social reality feel personal and social needs in belonging to a social group. From this perspective, individuals need to have a definition of the role they play in daily practice, determining their place in society and in a certain position, which is part of their expectations.

Conclusion

Professional counseling is reduced to user guidance for minimizing the risk of certain disease but is still considered a relevant practice. The achievement in primary health care involves limitations and barriers and is not consolidated. It is imperative that strategies be used to support the user approach to STD in the basic health unit at the time of home visits to establish a bond and trust in the initial contact and follow-up of cases. Professionals must be equipped not only for counseling but also for addressing issues involved in the detection and treatment of STD and HIV/AIDS. Finally, confidentiality and user information privacy must be discussed and awareness raised among professionals, especially community health workers.

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Collaborations

Barbosa TLA and Gomes LMX contributed to the project design, data collection, analysis, data interpretation, article writing, critical review of the relevant intellectual content and approval of version to be published. Holzmann APF and De Paula AMB participated in the interpretation of data, critical review of the relevant intellectual content and approval of version to be published. Haikal DSA participated in the project design, interpretation of data, critical review of the relevant intellectual content and approval of version to be published.

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Counseling about sexually transmitted diseases in primary care: perception and professional practice


Routine of the family companion during hospitalization of a family member

Cotidiano do familiar acompanhante durante a hospitalização de um membro da família

Silvia da Silva Santos Passos1
Álvaro Pereira2
Rosane Gonçalves Nitschke3

Abstract

Objective: To understand the changes in the routine of the family companion during the hospitalization of a family member.

Methods: Qualitative research carried out with 16 family companions of people with self-care dependency in a public hospital. The recorded interviews were conducted individually using a semi-structured script. We used the thematic analysis for data organization and analysis, and discussed in light of theoretical assumptions and the sensitivity proposed by Maffesoli.

Results: Four categories emerged, namely: break of substantial bonds with the children; the abdication of labor activity in favor of being together; hospital rituals in the routine of the family companion; and, self-care and the power of being together.

Conclusion: Staying in the accompanying process overlaps all the daily life activities of the family companions.

Keywords
Daily activities; Family relationships; Family nursing; Hospital nursing service

Descritores
Atividades cotidianas; Relações familiares; Enfermagem familiar; Serviço hospitalar de enfermagem

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Conflicts of interest: no conflicts of interest to declare.
Introduction

Finding a definition for the family has been an attempt of some theories that encounter difficulties due to the complexity of this social group. However, they converge on common themes such as: families are a system composed of units that are interdependent and at the same time connected; families are systems guided by goals aimed at balance and homeostasis; and the environment interferes in their characteristics, as well as in the available resources and in the answers of family before adversities. (1)

The adversities interfere with family balance affecting the dynamics of all its members. Disease and disability are common experiences for families and represent a major challenge, since the psychosocial problems caused by a dependent person generate impact on the entire family system. (2)

The disability and dependency caused by the illness of a family member are more intense in case of hospitalization, causing repercussions in the whole family system, especially when a companion is needed. Although almost always the hospitalized people with some kind of care dependency require support and accompaniment of a family member, the studies do not report the kind of intervention the family should perform during the treatment. (1)

Regardless of the interventions performed by the family companion during the care process in hospitals, they experience positive and negative feelings. The negative aspects are related to the changes occurring in their daily life, interference in their routine, physical and emotional stress and financial problems. On the other hand, caregivers feel satisfaction for being able to help their families. (3)

The hospitalization of a family member disrupts the family structure, changing its dynamics and resulting in attempts of self-reorganization to maintain the balance. Almost always, this reorganization is accompanied by suffering and conflicts, in which the abdication of oneself to care for the other is so intense that some people interrupt their daily lives to carry out the process of accompaniment.

These changes were perceived empirically during practical and academic activities. When conducting a survey on studies with families in process of accompaniment in hospitals, we identified that the literature has been directed to groups in which the Brazilian law grants the accompaniment legally, such as children, the elderly and women in labor. Thus, we found a gap in the accompaniment of people with self-care dependency. However, in this study all these people had a family companion full-time, regardless of age range, authorized by the hospital.

Thus, understanding the changes that occur in the lives of these families during the accompaniment process at the hospital will allow the elaboration of user embracement strategies by the nursing, in order to improve communication, understand the relationships with consequent organization and better quality of care provided to this group in the hospital. The aim of this study was to understand the changes in the routine of the family companion during the hospitalization of a family member.

Methods

This is a descriptive, exploratory study with qualitative and comprehensive approach, carried out in the medical and neurological clinic of a public teaching hospital in the countryside of the state of Bahia, Brazil. These units were chosen because in these places we found a higher concentration of people with self-care dependency accompanied by their family members and accommodated in collective rooms.

People participating in the study were the family companions of people with self-care dependency who met the criteria of age over 18 years and accommodated in collective hospital rooms. The exclusion criterion was the fact of receiving financial compensation to accompany the hospitalized family member. Therefore, this was an intentional sample.

Data were collected from May to July 2014, using the data collection technique of semi-structured
interviews. In total, were interviewed 16 families who met the inclusion criteria and agreed to participate in the study.

Of the 16 participants, three were males and thirteen females. With respect to age range, five participants were in the age group of 50 years old, five in the group of 40 years, two in the group of 30 years, three in the group of 20 years and one in the group of 60 years. Of the 13 women, four accompanied their mother, three accompanied their children, two their brothers and one accompanied their grandmother, husband, nephew and brother-in-law. Among men, one accompanied his wife and two their hospitalized children. All respondents affirmed their faith in God: nine were Catholic; five Evangelical; and two stated they did not have religion.

The interviews lasted thirty minutes, on average, and were held in a private place, in the presence of the researcher and the participant. Data from the interviews were recorded and transcribed. After exhaustive reading, they were decoded and submitted to thematic analysis and discussed through comprehensive analysis, based on theoretical assumptions and the sensitivity proposed by comprehensive sociology.

We used the following strategies to maintain the methodological rigor: the interviews were presented to participants, who approved the final recording result; and we used the criteria consolidated in the Reporting Qualitative Research (COREQ) as a support tool. This consists of a 32-item checklist: in relation to the research team; in relation to the research project and analysis of data; and with respect to qualitative research methods. (4)

The development of this study met national and international standards of ethics in research involving human subjects.

Results

The analysis of the interviews revealed the following: Break of substantial bonds with the children; The abdication of labor activity in favor of being together; Hospital rituals in the routine of the family companion; and Self-care and the power of being together.

Break of substantial bonds with the children
The greatest difficulty with being a companion reported by the family members was the feeling of having to leave their children, because some remain in the hospital for several consecutive days. All actors who responded to this category were women. In addition to coping with the separation of their children, they still faced conflicting situations in the interactions and aid relationships with their partners and family members.

Regardless of their children’s age, the concern for not being present on a daily basis arises as an ongoing feeling of family members.

The delegation of their children’s care to other people causes anxiety and insecurity, especially when they do not find someone to be responsible for this care. The activity of being a companion also interferes with daily activities of other family members, like children who suddenly interrupt their educational activities because their mother cannot accompany them to school due to being at the hospital. However, by following their parents’ orders, children transmit a sense of tranquility in order that the accompaniment can be done with less concern.

The abdication of labor activity in favor of being together
In this thematic category, the speeches reflect that the feeling of being together with the other in a situation of disease in the hospital overlaps the need to develop work activities, since people abdicate the latter for being a companion.

The hospital rituals in the routine of the family companion
In the third category, the relatives reported the hospital routines they must follow, both when entering and leaving the premises and in relation to accommodation and freedom during their stay in the process of accompanying a family member. Hospital
rules are very different from those experienced and established at home.

**Self-care and the power of being together**

The fourth and final category showed that during the activity of accompanying their relatives, the family companions abdicate the care of their healthy daily lives to strengthen the bonds of affection during the illness and hospital stay.

The emotional exhaustion and necessity of rest at night are compromised by the need to be together with their relative. Life outside the hospital is suspended: studies; boyfriends; husbands; children; leisure; and the care for their health and physical appearance are not considered to favor the activity of accompanying the family member.

Changes in the routine of family companions are felt and described in all aspects of life; in the relationships with their children, those at work, in their marriage, leisure, and in the care for their health.

**Discussion**

The limitations of this study relate to its qualitative method that does not allow generalizations. However, the results are relevant for understanding the changes brought to the life of the family members accompanying hospitalized people, which must be considered by the nursing staff.

The results showed that thirteen of the study participants were women, so the main daily life changes occurred in their lives. Although they show disposition, solidarity and sensitivity to remain as companions in the hospital, they are also the most affected by changes in their daily routine.

A study conducted in the United States showed that the care experience for men and women is different due to the different forms of socialization and roles assigned to them in society. From childhood, women are prepared to take responsibility for the family meals, for performing manual work and the care in case of illness of a family member. Thus, women may have more negative experiences than men during the care process. This same study showed that female family caregivers are mostly mothers, daughters and spouses.\(^3\)

The accompaniment of people with self-care dependency is carried out mostly by women in the age group of 36-59 years, showing the diversity of roles played by these women: they are mothers, daughters, sisters and spouses.\(^5\)

Historically, women are responsible for the care of the home and children. Given this assumption, being together as a companion in the hospitalization of a family member triggers the feeling of having to break, even temporarily, the bond with their children, who are left at home and cared for by other people. The break of this relationship does not happen only with small children; adults also need care and support, and the family companion suffers with the distance.

Despite suffering with the break of a substantial bond with their children, these women have positive and satisfaction feelings for being in the accompaniment process, and this causes that the physical and emotional loads are not perceived as heavy.\(^6\)

The care provided to the hospitalized family member by the family companion is a response of the families to meet a new and extremely stressful situation. These family caregivers rely on the sense of maintaining the survival of human beings at various stages of the life cycle. The family dynamics is changed in face of this process, triggering difficulties in decision making and interactions with other family members.\(^7\)

The hospital stay for long periods causes conflicts because some family members feel abandoned and may show sadness. This fact is considered as a negative experience, given that during the hospital stay the family caregiver has less free time for the other family members.\(^3\)

In the second thematic category, the abdication of labor activity in favor of being together, the family companions report changes in their work routine. A study shows that even with the active participation of several family members in the care, in most times, the responsibility lies with a particular
family member. Thus, the primary caregiver experiences a disruption in his/her way of life, characterized by the absence of boundaries between his/her private life and the patient’s life. Thus, there is less time for work, leisure, and the social, family and affective life.\(^8\)

For being together in the accompaniment process, it is necessary to deny the individuality in an almost self-destructive movement. The family companions give up their work activities to stay in the hospital. The need to care and be together with the ill family member hinders the work activities.\(^9\)

The hospitalization of a family member affects the desire to live and the work activities of the family companion because of the need to stay in the hospital often for long periods of time.\(^10\)

By strengthening the logic of being together, despite the disruption of work activities and the suffering caused by this break, family companions understand that staying in the hospital is their moral duty with the relative. The frustrations and suffering generated by the experiences of changes and difficulties bring a sense of responsibility to the family companion, as well as the obligation to be firm, encouraging, helping and giving strength.\(^10\)

Another aspect that emerged from the speeches as an interference in the daily life of families is the hospital routine, presented in the third category called “The hospital rituals in the routine of the family companion”. Prolonged hospitalization and the need that family companions remain with the ill person interfere negatively on the family dynamics, the need to work, and the compliance with hospital rules, considered strict, originating the feeling of impotence.\(^11\)

The hospital as part of modern society has set up a working process based on rules and routines, with pre-established schedules to meet the service needs such as visiting hours, care liability limits, control of sleep, bath, temperature, food, among others. The hospital was not planned nor directs its standards for family caregivers.\(^12\) From this perspective, the familiar rhythm of life is not always compatible with the schedules of most hospitals because the family members normally have their jobs and other activities.

The changes occurring in the dynamics of families who accompany their hospitalized relatives arise from inner needs, emotional balance, external pressures, such as the break of the work routine and financial difficulties. All these factors interfere with self-care, quality of life and there may be feelings of depression, anxiety, anger, sadness, fear, guilt and frustration. A study pointed that these caregivers are more likely to have psychiatric symptoms and health problems, including high blood pressure, digestive and respiratory disorders, depression, and of experiencing family conflicts and problems at work more often, compared to people of the same age who do not exercise this function.\(^11\)

The effects triggered by the hospital stay were observed in the fourth and final category when the family member reflects the abnegation of self-care in favor of being together. Although the family members showed solidarity with the hospitalized relative, in this category, the speeches of respondents demonstrated that living with the disease in the hospital environment weakens the family companion. They refer loss of strength, emotional distress, especially when the person already presents predisposition to emotional fragility. They perceive the hospital as an unpleasant, poor and confused environment, showing feelings of rejection, dissatisfaction, insecurity, and the hospitalization as an interruption of the planned, the disorder of the customary, the urgency of coping with the doubtful, fearful and unknown.\(^13\)

A study conducted in North Carolina (USA) with 488 families showed that family involvement in the care of relatives with dependency resulted in physical burden and depressive symptoms.\(^14\)

Family members of hospitalized children revealed that remaining as a companion in the hospital impairs sleep and rest, bringing physical consequences that can compromise one's health. They reported feeling fatigue and lack of time for self-care.\(^10\)

The main psychological symptoms associated with family caregivers are those related to depression and anxiety disorders, which cause acute stress.\(^15\)
In addition to depressive symptoms, family companions are faced with the abrupt interruption of their daily activities. The activities become those of care for the hospitalized relative in a solidary practice of mutual aid and in the development of charitable actions.

Thus, family companions are more likely to become ill than other family members and friends, because remaining in the hospital environment, the denial of self-care and direct contact with the care dependent person mobilize inner tensions and cause psychological distress.

Understanding the various manifestations of stress, anxiety and changes in family dynamics during the accompaniment of a member in the hospital can determine improvements in the quality of familial care. By understanding these changes and adopting a professional behavior that includes sensitivity and availability to listen to this important group who is increasingly present in care settings, the nursing for the family is strengthened through the global care.

Conclusion

Family companions had significant changes in their lives during the process of accompanying their relative in the hospital. Women suffer for leaving their children and face conflicting situations with other family members and their partner. The feeling of being together is a determining factor for the abdication of all their activities for staying in the hospital. The hospital rules and routines interfere with daily activities due to the incompatibility with the activities of families. Self-care is disregarded in favor of strengthening the being together.

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Collaborations

Passos SSS and Pereira A contributed to the project design, analysis, data interpretation and writing of the article. Passos SSS, Pereira A and Nitschke RG participated in the stages of intellectual critical review and final approval of the version to be published.

References


Association between alcohol and tobacco consumption and religiosity

Associação entre o consumo de bebidas alcoólicas e tabaco e a religiosidade

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Angela Maria Mendes Abreu¹

Abstract
Objective: To verify the association between religiosity and the pattern of alcohol and tobacco consumption among the population assisted by primary health care services.

Methods: A cross-sectional study was conducted with 363 individuals over 18 years of age. The variable of exposure, religiosity, was evaluated according to the Duke University Religion Index. The outcome, alcohol and tobacco consumption, was evaluated through the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) questionnaire. The association between exposure and outcome was verified based on a multivariate logistic regression analysis.

Results: There was a high prevalence of alcohol and tobacco consumption among most vulnerable groups. Organizational and intrinsic religiosity were protective factors in relation to moderate and high alcohol and tobacco consumption.

Conclusion: The higher the score for organizational and intrinsic religiosity, the lower the consumption of alcohol and tobacco.

Keywords
Primary care nursing; Tobacco use; Consumption drinking; Religion; Public health nursing

Resumo
Objetivo: Verificar a associação entre a religiosidade e o padrão de consumo de álcool e tabaco em população atendida na Atenção Primária à Saúde.

Métodos: Estudo transversal realizado com 363 indivíduos, maiores de 18 anos. A variável de exposição, religiosidade, foi avaliada segundo o Índice de Religiosidade da Universidade de Duke. O desfecho, consumo de álcool e tabaco, foi avaliado pelo questionário Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Verificou-se a associação entre exposição e desfecho, com base na análise de regressão logística multivariada.

Resultados: Foi alta a prevalência no consumo de álcool e tabaco nos grupos mais vulneráveis. As religiosidades organizacional e intrínseca mostraram-se fator de proteção em relação ao consumo moderado/alto de álcool e tabaco.

Conclusão: Quanto maior o escore para a religiosidade organizacional e intrínseca, menor o consumo para essas substâncias.

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Conflicts of interest: there are no conflicts of interest to be declared.
Introduction

According to the United Nations estimates, the global prevalence of tobacco consumption is ten times higher and of alcohol is eight times higher than the annual prevalence of illegal drugs consumption.\(^1\) Disorders related to alcohol and tobacco consumption are among the ten main health conditions that contribute to explain the years of life lost from premature deaths among the adult population all over the world.\(^2\) In Brazil, a study with a representative sample of the population showed alarming data regarding alcohol and tobacco consumption. Nearly 74.6% used alcohol at least once in life, whereas 44% used tobacco. According to authors,\(^3\) 6,109 deaths from alcohol consumption were registered in 2005, whereas 375 were related to the use of tobacco. In addition, there is evidence that the mean age to start using tobacco is 16 years old and to alcohol that is 17 years old.\(^3\)

In this sense, it is worth mentioning that, due to damages to health, family and society in general regarding the use of alcohol, tobacco and other psychoactive substances, factors associated with the use of and protection against these substances have been identified.\(^4\) Religiosity is one of the protective factors frequently quoted in literature.\(^5,6\) Among the many religiosity dimensions that could be investigated, those frequently associated with health outcomes and most used in studies are religious affiliation, subjective religiosity (importance of religion to the individual) and organizational religiosity (attending the mass, worships and other religious services).\(^7\)

By virtue of the prevalence of problems related to alcohol and tobacco consumption, it is worth mentioning that primary health care (PHC) services developed by the Family Health Strategy enable tracking the abusive use of these substances. In addition, it is a field to develop actions on early identification, preventive actions and health promotion.\(^8,9\) Studies show the need for identifying the pattern of consumption of psychoactive substances in the population served, mainly in PHC, to provide them with the required level of care, information about the damages resulting from the use of these substances, assisting the prevention of diseases caused by consumption.\(^9,12\)

In the context of problems related to the use of alcohol and other drugs, and due to short national literature on the topic, the authors would like to emphasize that this is a different study because it understands religiosity relevance as an additional element to prevent diseases and to assist the actions implemented in the practice of health professionals.

In face of the aforementioned, the objective of this study was to verify the association between religiosity and the pattern of alcohol and tobacco consumption in the population assisted by primary health care services.

Methods

A cross-sectional study was developed with users of a Family Health Care Clinic located in the central area of the city of Rio de Janeiro (state of Rio de Janeiro), in the southeast region of Brazil.

All individuals over 18 years of age, of both sexes, who sought for services for any reason in the aforementioned Basic Health Care Unit were considered to be eligible participants. The study sample included 363 subjects, of whom 269 were women, selected from a convenience sample.

Data were collected from October 2012 to January 2013. Individuals were invited to participate promptly after a nursing visit or by the end of home medical visits. Interviews were performed by a professional trained in the Family Health Care Clinic or during home medical visits, at reserved sites with no presence of third parties.

The instrument adopted is made up of a semi-structured questionnaire with questions about the living and health habits of participants, and socio-demographic questions. In addition, the instrument included the Duke University Religion Index\(^7\) and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) questionnaire.\(^13\)

The Duke University Religion Index includes three dimensions of religiosity: organizational religi-
Association between alcohol and tobacco consumption and religiosity

The first dimension (organizational religiosity) concerns which frequency the person uses to go to church or religious temples, presenting six options of answer (“>1 time/week”, “1 time/week”, “2 to 3 times/month”, “some times/year”, “≤1 time/year” and “never”). Non-organizational religiosity concerns time devoted to religious activities and also presents six options of answer (“>1 time/day”, “daily”, “≥2 times/week”, “1 time/week”, “few times/month”, and “barely or never”). Intrinsic religiosity evaluates how individuals feel the presence of God in their lives, if religious beliefs rule their way of living and the effort to live religion in all aspects of their lives. All items that evaluate the intrinsic religiosity dimension present five options of answer in a Likert scale, ranging from “totally true to me” (score zero) to “not true” (score 4). For the purposes of analyses, the three dimensions (organizational, non-organizational and intrinsic religiosity) were analyzed in separate. Organizational religiosity was pooled in two levels >“weekly/monthly” (“>1 time/week”, “1 time/week” and “2 to 3 times/week”) – reference group - and “annual/never” (“some times/year”, “≤1 time/year” and “never”). Non-organizational religiosity was also ranked in two levels: “daily/weekly” (“>1 time/day”, “daily”, “≥2 times/week” and “1 time/week”) - reference group - and “monthly/never” (“few times/month” and “barely or never”). To investigate the variable “intrinsic religiosity” the relative score of each item of the Likert scale was summed. This procedure generated a continuous variable with scores ranging from 3 to 15. This way, lower scores referring to intrinsic religiosity would represent a stronger presence of religiosity in the lives of the individuals being studied.

Alcohol consumption was evaluated according to the ASSIST questionnaire, version 3.1. This is a worldwide renowned tracking questionnaire developed by the World Health Organization and validated in Brazil. The instrument bears the objective of identifying - in PHC services - individuals with low, moderate and high risk consumption of nine classes of psychoactive substances. To that end, it considers the frequency of use along the individual’s life and in the last three months; problems related to use; concern about use; and, use through injectable route.

The ASSIST answers score from zero to 33. Scores ranging from zero to three stand for occasional use; from 4 to 26 for abuse; and 27 or more suggests dependency. It is worth mentioning that scores to evaluate the alcohol consumption pattern are different from the remainder substances. Alcohol presents higher tolerance with scores ranging from zero to 10 indicating occasional use; 11 to 26 as indication of abuse; and 27 or above as indication of dependency.

These scores served as ground to create the variables “consumption patterns”, both of tobacco and alcohol, ranked in two levels. The group reporting “low consumption” of tobacco included individuals scoring from zero to three; individuals with scores ≥ 4 were included in the group with “moderate/high consumption”. The group of “low consumption” of alcohol was composed of participants scoring ≤10, in opposition to >11 values classified as “moderate/high consumption” of alcohol.

As potential factors of confounding, the following variables were tested: sex, age, skin color, education, marital status and family income. The association between religiosity (organizational, non-organizational and intrinsic religiosity) and alcohol and tobacco consumption pattern was analyzed in two stages. The first stage concerned the definition of confounding variables based on bivariate analyses using the Chi-square test. The multivariate model included all variables associated to both outcome and exposure (p<0.2). The second stage referred to the multivariate logistical regression model. The Statistical Package for the Social Sciences (SPSS, IBM) software version 19.0 was used for analyses.

The development of this study complied with national and international ethical standards for research involving human subjects.

Results

The group studied was aged, on average, 29.0 years (standard deviation ±12.4 years) ranging from 18
to 59 years, mainly made up of women (74.1%) and 86.0% self-declared to be black or brownish. Regarding education, 62.5% had concluded only elementary education and 50.1% were married. As regards monthly family income 43% of respondents stated earning up to one minimum wage (R$678.00). Regarding religion, 33.3% said to be Catholic; 29.5% were Evangelical and 34.4% said to have no religion. As regards alcohol consumption 14% of respondents reported moderate / high-risk consumption. The moderate and high-risk tobacco consumption pattern was found among 18.7% of participants.

The evaluation on the association between the characteristics of the population studied and alcohol consumption resulted in a significant association between sex and moderate/high consumption of alcohol. When compared to men, women had 3.67 more chances of presenting moderate/high consumption of tobacco.

After the adjustment by sex, age and income, a significant association was found between organizational and intrinsic religiosity and alcohol consumption pattern. Individuals reporting low attendance to churches/temples (annually or never) had about three times more chances to present higher alcohol consumption when compared to those who attended churches/temples more regularly (weekly or monthly). Regarding intrinsic religiosity, a protective factor in relation to moderate/high consumption of alcohol was found. In other words, results showed that the higher the score for intrinsic religiosity, the lower the consumption of alcohol (Table 2).

Similar results were found in the evaluation of tobacco consumption in relation to exposure to religiosity. Both organizational and intrinsic religiosity showed to be strongly associated to moderate/high consumption of tobacco. Individuals who attended churches and religious temples less frequently had 3.4 more chances of moderate/high consumption

Table 1. Association between socio-demographic characteristics and alcohol and tobacco consumption pattern, based on the odds ratio (OR) and respective confidence interval of 95% (CI95%)

<table>
<thead>
<tr>
<th>Characteristics studied</th>
<th>Moderate/high consumption of alcohol (n=51)</th>
<th>Moderate/high consumption of tobacco (n=68)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n(%) OR (CI95%) p-value</td>
<td>n(%) OR (CI95%) p-value</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5(5.3) 1.0</td>
<td>16(17.0) 1.0</td>
</tr>
<tr>
<td>Female</td>
<td>46(17.1) 3.67(1.41-9.54) 0.008</td>
<td>52(19.3) 1.16(0.63-2.16) 0.621</td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-32</td>
<td>31(14.3) 1.0</td>
<td>43(19.4) 1.0</td>
</tr>
<tr>
<td>33-59</td>
<td>20(14.2) 1.01(0.55-1.87) 0.953</td>
<td>25(17.7) 0.90(0.52-1.55) 0.696</td>
</tr>
<tr>
<td>Skin color</td>
<td></td>
<td></td>
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<tr>
<td>White</td>
<td>5(9.8) 1.0</td>
<td>15(29.4) 1.0</td>
</tr>
<tr>
<td>Non-white</td>
<td>46(14.7) 1.59(0.60-4.21) 0.346</td>
<td>53(17.0) 0.49(0.25-0.96) 0.035</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to complete elementary school</td>
<td>30(13.2) 1.0</td>
<td>45(19.8) 1.0</td>
</tr>
<tr>
<td>From incomplete high school onwards</td>
<td>21(15.4) 1.19(0.66-2.19) 0.554</td>
<td>23(16.9) 0.82(0.47-1.43) 0.278</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>27(14.8) 1.0</td>
<td>37(20.3) 1.0</td>
</tr>
<tr>
<td>Not married</td>
<td>24(13.3) 0.88(0.49-1.59) 0.665</td>
<td>31(17.1) 0.81(0.48-1.37) 0.434</td>
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<tr>
<td>Employment status</td>
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<td></td>
</tr>
<tr>
<td>Employed</td>
<td>26(13.9) 1.0</td>
<td>31(16.6) 1.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>25(14.2) 0.97(0.54-1.76) 0.934</td>
<td>37(21.0) 0.75(0.44-1.27) 0.278</td>
</tr>
<tr>
<td>Per capita income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥R$622.00 (≥1 MW)</td>
<td>26(12.6) 1.0</td>
<td>34(21.8) 1.0</td>
</tr>
<tr>
<td>R$0 to 622.00 (up to 1 MW)</td>
<td>25(16.0) 1.32(0.73-2.40) 0.348</td>
<td>34(16.4) 0.70(0.42-1.20) 0.194</td>
</tr>
<tr>
<td>Has a religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32(13.4) 1.0</td>
<td>47(19.7) 1.0</td>
</tr>
<tr>
<td>No</td>
<td>19(15.2) 0.87(0.47-1.60) 0.647</td>
<td>21(16.8) 1.21(0.69-2.15) 0.493</td>
</tr>
</tbody>
</table>

MW - Minimum Wage
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Discussion

Among the limitations of the present study, it is important to highlight its sectional nature, which does not allow to establish a cause and effect relationship between religiosity and the outcomes investigated. The convenience sample (rather than random) employed could have influenced on results, and the fact that the group of participants came from one single health care unit in the municipality of Rio de Janeiro demands caution when generalizing the findings of this study to other populations.

This investigation reached the objectives proposed and can support the development and planning of actions to prevent alcohol and tobacco consumption among adolescents and youngsters, mainly through activities performed by nurses and other members of the Family Health Strategy team. That is possible because of the greater possibility of these professionals to coordinate and work with partners from social and religious organizations active in the community where they work.

This is a current and relevant topic for collective health, but with few references in national literature, mainly in religiosity-related aspects in the scope of PHC. According to the findings of this study, investments in longitudinal studies are important to evaluate to which extent factors like religiosity could curb the abusive consumption of alcohol, tobacco and other drugs by the population.

This study includes young, married, non-white, low-education and low-income individuals. These data are similar to those found in studies performed at this health care level in Brazil. As regards religion, there was a significant percentage of Catholics and Evangelicals; these data are shown in the 2010 Brazilian census and other studies about the Brazilian population profile.

The association between female sex and higher consumption of alcohol is in line with national and international studies that described the global increase in alcohol consumption among women in the last few years. The national survey about alcohol consumption patterns in the Brazilian population identified that young women make up the group with highest indexes of increase in alcohol consumption, and are in higher risk of presenting harmful consumption. In brief, studies show universalization of consumption in relation to sex, and men cannot be thought as the main consumers.

It is worth emphasizing the importance of understanding this specific change of behavior observed among women. In order to plan intervention strategies focused on women with consumption similar of tobacco if compared to individuals who attended more frequently. On the other hand, intrinsic religiosity seemed to have a protective effect on tobacco consumption (Table 3).

Table 2. Association between religiosity and alcohol consumption pattern. Odds ratio (OR) and respective confidence interval of 95% (CI95%) based on the multivariate logistical regression model

<table>
<thead>
<tr>
<th>Adjustment model</th>
<th>OR</th>
<th>95%CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 = OR</td>
<td>3.20</td>
<td>1.74-5.87</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>M2 = M1 + sex</td>
<td>3.39</td>
<td>1.83-6.28</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>M3 = M2 + age</td>
<td>3.44</td>
<td>1.86-6.40</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>M4 = M3 + income</td>
<td>3.41</td>
<td>1.83-6.36</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 3. Association between religiosity and tobacco consumption pattern. Odds ratio (OR) and respective confidence interval of 95% (CI95%) based on the multivariate logistical regression model

<table>
<thead>
<tr>
<th>Adjustment models</th>
<th>OR</th>
<th>95%CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 = OR</td>
<td>3.84</td>
<td>2.22-6.63</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>M2 = M1 + skin color</td>
<td>3.75</td>
<td>2.17-6.50</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>M3 = M2 + income</td>
<td>3.86</td>
<td>2.19-6.71</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

OR - Organizational Religiosity; M1 - Model 1; M2 - Model 2; M3 - Model 3; M4 - Model 4; NOR - Non-Organizational Religiosity; IR - Intrinsic Religiosity
to men, there were differences regarding location, kind of substance and situation of use.

The association between skin color and tobacco consumption disagreed with the results reported in specialized literature. In fact, some studies have shown a higher prevalence of smoking initiation among black individuals when compared to white subjects.\(^{(15,16,20)}\) Here, it is possible to infer that the study limitations, like the type of sample, could have influenced on this result.

Although age was not associated with outcome, there is a high prevalence of moderate/high consumption among the youngest individuals in the sample studied. It is widely known that younger individuals tend to consume more alcohol and tobacco\(^{(15,16,20)}\) and are considered the group under higher risk of diseases associated with these substances. Hence, the prevalence of consumption patterns in this demographic sector should be carefully monitored, mainly regarding health promotion and disease prevention, which are activities inherent to the PHC service team in the Family Health Strategy.\(^{(3,8,10,16)}\)

In this study, the association between religiosity and alcohol and tobacco consumption patterns is in line with other studies in this field.\(^{(5,6)}\)

In brief, the presence of religiosity (evaluated by the dimensions of organizational and intrinsic religiosity) seemed to have a protective effect on the consumption of alcohol and tobacco. This result reinforced the idea that attending church or religious meetings would deviate individuals from the harmful consumption of alcohol and tobacco. Feeling the presence of God in their lives, living according to religious beliefs and endeavoring to follow the precepts of a religion proved to be protective factors to the non-use of alcohol and tobacco.

It is worth mentioning that individuals reporting to have no religion, when inquired about the intrinsic religious dimension, affirmed to believe in a higher being - “God” - showing that denying to have a religion is not necessarily the same as being an atheist. This result is in line with other studies in which individuals with no religion justified their condition saying they had their own religiosity, with no link to churches, and only a minority did not believe in God.\(^{(5-7)}\)

In this context, one can infer that religiosity stands for an element with the potential to maximize the work by Family Health Strategy professionals. In practical terms, strengthening partnerships with churches and religious temples in the community could facilitate the development of actions on health promotion focusing on the planning of educational actions for health, in the sense of preventing and minimizing the consumption of alcohol and tobacco.

**Conclusion**

An association was observed between organizational and intrinsic religiosity as a factor of protection in relation to moderate and high consumption of alcohol and tobacco among primary health care users.

**Collaborations**

Queiroz NR, Portella LF and Abreu AMM state they have contributed to the project design and planning, collection of data, data interpretation, wording of the article, relevant critical review of its content and final approval of the version to be published.

**References**


Validation of surgical checklist to prevent surgical site infection

Validation de checklist cirúrgico para prevenção de infecção de sítio cirúrgico

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Antônio Gonçalves de Oliveira Filho
Maria Isabel Pedreira de Freitas

Abstract

Objective: To design and validate a surgical checklist to improve patient safety and prevent surgical site infection.

Methods: This quantitative study was carried out to validate an instrument created and used for surgical safety. Seven experts validated the instrument. For agreement among experts, was used Kendall’s concordance coefficient; if their opinions differed significantly, the Cochran’s test was adopted. An instrument is validated when concordance among experts is achieved and its clarity is significant.

Results: In the first assessment of the instrument, Kendall’s concordance coefficients were 0.230 in terms of pertinence and 0.390 for clarity. These results caused a reformulation in the checklist. After reformulation, an absolute concordance was achieved for pertinence and no significant difference was seen in terms of clarity. After instrument validation, was created an information system to input data collected.

Conclusion: The instrument was validated. It can help improve patient safety and prevent surgical site infection.

Resumo

Objetivo: Construir e validar checklist cirúrgico para segurança do paciente e prevenção de infecção de sítio cirúrgico.

Métodos: Pesquisa quantitativa realizada para validar instrumento criado e utilizado em cirurgia segura. O instrumento foi validado por sete peritos. Para concordância entre os juízes utilizou-se o coeficiente de concordância de Kendall e para verificar se a opinião dos juízes diferiu significativamente, o teste de Cochran.

Resultados: Na primeira avaliação do instrumento, obteve-se Kendall de 0,230 para pertinência e 0,390 para clareza, o que implicou em reformulação do checklist. Após a reformulação, obteve-se concordância absoluta para pertinência e não houve diferença significativa para clareza. Com o instrumento validado, foi criado um sistema informatizado para inserção dos dados coletados.

Conclusão: O instrumento criado foi validado e pode auxiliar na segurança do paciente e prevenção de infecção de sítio cirúrgico.

Keywords
Operating room nursing; Perioperative nursing; Nursing service, hospital; Infecção da ferida operatória; Patient safety

Descritores
Enfermagem de centro cirúrgico; Enfermagem perioratório; Serviço hospitalar de enfermagem; Infecção de ferida operatória; Segurança do paciente

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Conflicts of interest: none reported.
Introduction

Risks for patients are a reality in surgical care, and health teams have the responsibility to propose strategies and establish barriers to guarantee patient safety.

The program implemented by the World Health Organization (WHO) in 2008, “Safe Surgery Saves Lives,” presents a global challenge to increase quality of surgical care standards in health service worldwide. This program is focused on fundamentals and surgical safety practices and emphasizes the need to invest in quality improvement and guarantee safety in surgical interventions, while progressively saving more lives and causing less harm to patients. (1)

This challenge describes four areas of action: prevention of surgical site infection (SSI), general anesthesia, safety surgical teams, and indicators of surgical care. (1)

In a strategy to consolidate surgical safety, the WHO proposes that surgical teams follow ten basic and essential objectives when performing any surgical procedure. It also establishes the following as the program main objective: a set of demographic statistics for surgery that incorporate structural measures and results that track process effort, such as use of a safety checklist in the operating room. (1)

The surgical safety checklist is considered a key element for reducing adverse events (1-6) and aims to guarantee that surgical teams consistently follow critical safety measures to increase surgical procedure safety, reinforce accepted safety practices and promote better communication and work among the surgical team. However, the list proposed by the WHO is only a basic one. For this reason, adaptations and changes in this instrument are highly encouraged and recommended. (1-3)

Healthcare-associated infections are those acquired on or after the third day of hospital admission at healthcare institutions. (7) SSI is the most frequent complication in patient who have undergone surgery. (8) It contributes to about 31% of all healthcare-associated infections (9) and to about 37% of infections in surgical patients acquired in the hospital. (1,10)

In Brazil, SSI is ranked third among all healthcare services–associated infection. It makes up 14% to 16% of infections seen in hospitalized patients. A national study by Brazilian National Health Ministry in 1999 identified an SSI rate of 11% among the total surgical procedures analyzed. (10)

Considering the important role of surgical procedures, the WHO established a goal to reduce SSI rates by 25% by 2020; this reduction will significantly decrease morbidity and mortality. (1)

SSI is one of most feared complication from surgical procedure because it is a severe episode that involves high costs and is associated with morbidity and mortality. (1,10) Infected patients have twice the risk for death or admission to the intensive care unit and a five times greater chance of readmission after discharge. (9-13)

From professional experience at a surgical center, was identified the need to evaluate areas in which to act using ten objectives proposed by the WHO program. The relationship of existing risk between surgical procedure and SSI occurrence, which refers to the sixth objective of the program (“Team will use in a systematic manner known methods to reduce risk of surgical site infection”) was highlighted and recommendations to be developed by surgical teams and health institutions. (1) Therefore, the strategy to establish barriers and promote improvement in surgical care included a checklist, proposed by the WHO, consisting of steps to verify safety in prevention of SSIs during care in the surgical environment. This study aimed to design and validate an instrument to verify surgical safety to increase patient safety and prevent SSIs.

Methods

This quantitative study sought to validate a surgical safety checklist designed to improve patient safety and prevent surgical site infection. The instrument was based on the checklist created by the WHO in 2009 (presented in Appendix 1), scientific literature published on the subject and the professional experience of researchers who work at health institution which is consolidation process of the implementing
a patient safety protocol. After the instrument was designed, its content was evaluated and then validated by experts.

**Elaboration of the instrument**

The validation of the instrument was sought in order to optimize its use in the institution where this study was carried out; the WHO has proposed that health units develop lists that address the practice needs.

The model proposed by the WHO entails three points during surgery within the operating room: identification, confirmation and recording. The purpose of this list verification is to collect data before anesthesia infusion, before surgical incision and before the patient leaves the operating room (Appendix 1).

In the instrument in our study, patient identification was collected in the first line of the instrument. Next, were established five points at which surgical context was to be investigated: admission at the surgical center, before anesthesia infusion, before surgical incision, before patient leaves the operating room and before post-anesthesia recovery. This objective sought to check not only that the right procedure was being performed but also to verify the right surgical location and right patient, as noted in the WHO list. Was also aimed to emphasize prevention of SSI, which is an avoidable complication.

The first version of the instrument consisted of 48 items divided into six sections. Each section was designed to verify safety items related to care delivery according to the specificity of the period that the patient was experiencing. The top line was completed when the patient entered the surgical preparation room (where admission to surgical center takes place) and collected data to identify and characterize the patient, the surgery and the surgical team.

Data collected upon admission to surgical center included conditions for which the patient was admitted, his/her preparation for the procedure, patient knowledge about the surgery, marking of the surgical site (if necessary), verification of safety items (such as patient ID wristbands), printed labels with patient information to be placed on samples or exams performed during the surgery, and presence of invasive devices.

After these checks, the infection prevention process was initiated. The adequacy of the process and structure required for surgical procedure based on established guidelines was verified. In addition, were checked preoperative bathing, hair removal and patient’s temperature.

Anesthesia and distribution of the surgical field occur when the patient enters in the operating room. One the reasons is to check information obtained in the preparatory room about identification and adequacy of organizing the room for the procedure proposed for the patient. At this time, data to guarantee a safety surgery are sought, such as equipment functioning, measures to prevent iatrogenesis associated with electrosurgery, surgical position, and monitoring of the sterilization process and the patient’s metabolic condition. The infection-prevention process included measuring the patient’s glycaemia and indicators of sterilization of materials.

The period before surgical incision occurs before the team begins the surgery. At this stage specific data are collected about the health team working on the procedure and the use of prophylactic antibiotic administration, when necessary, is checked.

The period before the patient leave the operating room occurs after the surgery. The goal during this period is to verify possible intercurrences during the surgery and specific safety items, such as counting compresses and needles and checking the number of instruments. The next check was the placement of labels to identify patient’s samples and exams. The last check occurs before the patient leaves the surgical center, the point at which care for patients in the surgical center ends. This checking can occur within the operating room for patients who will be directly referred to specialized inpatient units or within the post-anesthesia care unit. The last check is mainly meant to observe the presence of invasive devices and occurrence of possible specific recommendations in specific surgeries.
The instrument also identifies professionals who participate in the surgery.

**Validation of instrument content**

Validation concerns the degree to which an instrument measures what it is supposed to measure. The three types of validation of an instrument are content validity, construct validity, and validity related to a criterion.\(^{(14)}\)

In this study, was validated the content by assessing the representativeness of items in relation to what was proposed to be evaluated. The assessment include how representative the questions of the instrument are within the universe of all questions that can be formed for the topic.\(^{(14,15)}\)

The assessment was carried out by a group of experts with proven experience in the area and with publications in the studied area or with experience in validation of instruments. The instrument was judged by experts and evaluated in terms of pertinence, clarity and coverage of its items.

Was considered pertinent the domain that evaluated whether items really reflected the involved concepts and whether they were relevant and adequate to achieve the objectives proposed by the study. The clarity criterion was considered as the domain that evaluates whether the item wording is adequate, whether the language used to describe the items was properly organized to be understood and whether the language expressed exactly what was expected to be measured. Coverage is the domain in which the overall instrument is evaluated; have been evaluated whether each main topic contains an adequate set of items and whether all dimensions were included.\(^{(14-16)}\)

**Characterization of experts**

The instrument was evaluated by the following seven experts:

2. MD, PhD, surgeon, professor at *Universidade Pública Estadual* located in the municipality of Campinas-SP, with experience in patient care, teaching, research, and surgery.
3. MD, PhD, infectious disease specialist, responsible for the Nosocomial Infection Control Committee, with experience in patient care and health service management.
4. Nurse, PhD in public health and epidemiology, professor at *Universidade Pública Estadual* located in the municipality of São Paulo-SP, with experience in teaching in nosocomial infection and perioperative nursing.
5. Nurse, PhD in nursing, professor at *Universidade Pública Estadual* located in the municipality of Ribeirão Preto-SP, with experience in patient care and teaching in clinical and surgical nursing.
6. Nurse, master’s degree, manager at private health service, with experience in patient and surgical center management.
7. Nurse, master’s degree, working at private health service, with experience in surgical center and sterilized material center.

Demographic characteristics of experts were as follows: Four (75%) were women aged 30 to 73 years, with seven to 50 years of experience. The group was heterogeneous in terms of work specialty; professionals worked with patient care, teaching, research, consulting and management. It is important to highlight that four experts of the research were also professors.

**Validation of the instrument process**

The process began with contact over the phone to invite the expert to participate. After the experts accepted, they were sent by email or postal mail (per participant’s preference) a letter presenting the project, other presentations of instrument and instructions to proceed and evaluate the instrument. All items of the instrument were left blank for experts to make suggestions and comments.

In the first evaluation, the seven experts returned the material with their analyses and sugges-
tions. With these data, we constructed an electronic spreadsheet to evaluate the validation process. Experts were categorized as P1 to P7 and for each item that the expert’s score was recorded.

Data analyses
Data obtained were submitted to descriptive statistical analysis using Microsoft Excel for characterization of the group of experts. Concordance between experts was assessed and statistical analyses were carried out using SAS® software, version 9.2. Kendall’s coefficient of concordance (W) was used to evaluate the concordance among experts in criteria pertinence, clarity, and coverage of the instrument. This coefficient can vary from 0 to 1. The higher the W value (W ≥ 0.66), the greater the agreement among the experts. For items of clarity, we used Cochran’s Q test to verify whether the experts’ opinion significantly differed; this can be understood as discordance among them. We considered the variation from -1 to 1 (1 meant that the option is clear and -1 meant that the option was unclear). To incorporate experts’ suggestions for evaluated items of the instrument, we considered the concordance obtained for each item. As acceptance criteria for the item, we established that those with concordance percentage (CP) greater than 80% for pertinence or clarity would be accepted and those that obtained concordance lower than 80% were excluded or changed. To calculate CP among experts, the following formula was used:

\[
CP = \left( \frac{n^2 \text{ of experts that checked the options}}{\text{total number of experts}} \right) \times 100
\]

The significance level considered was 5%.

Development of this study followed national and international ethical and legal aspects of research on human subjects.

Results

First assessment of the instrument
In the first assessment, the value of Kendall’s concordance test was 0.230 (p=0.000) for pertinence and 0.390 for clarity (p=0.015). Because no concordance among experts was achieved concerning the evaluated criteria in the first version of the instrument, changes were made according to suggestions and observations presented.

In terms of pertinence, four items of the instrument had concordance level below 80%. The variation from 43% to 100% necessitated the exclusion of three items: “Was the trans-operative questionnaire presented? (43%), “Was the responsible surgeon in the room? (71%), “Was body temperature between 36 and 36.5%?” (57%). The item “Do all professionals wear hat, mask, gloves and apron accordingly during the procedure?” had a significance level of 71%. However, even with the low index, it was not excluded but reformulated because of its relevance for preventing SSIs.

In clarity assessment, the CP varied from 43% to 100%. Of 15 items that obtained concordance below 80%, given that one was excluded, 10 were reformulated and three were maintained. The item “Infection control area” was excluded because it had 71% concordance based on experts’ evaluation and notes made by experts P1, P2 and P5. The reformulated items were: “HC” (57%), “which became “Record number”. The items “Did the patient take the pre-operative bath with antiseptic?” (71%) and “Does the patient considered under specific safeguard measures?” (57%) were included in a field to describe the product used and the specific type of safeguard measures. The item “Removal of hair” (43%) was excluded, along with the type of device used; the item “Were patient’s name and HC checked? (57%) was replaced with “Was the patient’s name and record number checked?” The item “Are required materials present? (57%) became “Are materials and required materials present?” The item “Within sterilization deadline?” (71%) was replaced with “Were validation of indication and expiration date of sterilization of surgical instruments checked?” In the item “Is scalpel plate positioned?” (57%) and “Is surgical field sterilized? (57%), a field was inserted to describe the location of plate placement and the product used. The item “Does patient have any skin lesion associated with positioning or surgery?” (71%) also received a field to describe the location of injury.

In terms of clarity, the item “surgical center admission” at the time of checking was not evaluated
by experts P1 and P4; as a result, one CP was lower than 80%. However, this item was maintained because of its function in the outline. The item “Use of antibiotics within the last 24 hours?” (57%) was questioned by experts P3 and P7 with regard to its relevance; for expert P6 the item “was unclear” but no suggestion was made. The item was maintained because it is related to the checking process of antibiotic prophylaxis that comes before the surgery, which is an important aspect in SSI prevention. Expert P3 had “no opinion” on the item “Can essential diagnostic images be visualized?” (71%), and P6 recommended that this item be “removed” because the item does not apply. However, we decided to keep the item because it is important for correct assessment of the imaging exams, which in turn is essential for the adequate performance of the surgery.

For the items that had concordance greater than 80%, all suggestions and comments by the experts were accepted. Nine items were changed: “Age” (100%) was replaced with “Date of birth”; “Marked surgical site?” became “Demarcated surgical site”; “Consent form” (86%) was replaced with “Was surgical consent form presented?”; “Labels identifying medical record” (86%) was revised to “ID labels for the patients in the medical record”; “Before the anesthesia and distribution of fields (in the operating room)” (100%) was replaced with “Before anesthesia initiation and distribution of fields”; “Difficult airways/Aspiration risk” (86%) became “Difficult airway/Bronchoaspiration risk?”; “Considerable risk for blood loss” (86%) was changed to “Considerable risk of blood loss (>500 ml or 7 ml/kg in children)?”; “Regional Nursing Board” (86%) was replaced with “Regional Nursing Board Certification: ___________ Anesthesiologist – Regional Medical Board_________ Surgeon - Regional Medical Board: ___________”; “and Before leaving the SC” (86%) was revised to “Before leaving the Surgical Center”.

For item coverage, concordance was over 80% for all items.

Second assessment of the instrument

After modifications, the reformulated instrument was again forwarded for the assessment of four experts who directly worked with patient safety. We obtained the absolute concordance for pertinent criteria. For the clarity criterion, the opinion of experts did not differ significantly (Cochran’s Q test, p=0.112).

Regarding clarity, one of the experts had suggested that, in the case of a positive response for the following items: “Are there critical events expected for the procedure?” and “Any specific recommendation for the immediate post-operative period?” a space should be added to describe the event that occurred. We considered that incorporating this suggestion would make the item more clear and would facilitate the ability to quantitatively measure the findings. Therefore, we modified those items accordingly.

Concerning coverage, all experts agreed with all items.

The final version of the instrument was composed of 44 verification items distributed over five points at which to be performed, from admission to the surgical unit through discharge (Appendix 2).

Information system for safety surgery checklist

Using a web-based platform, we developed an information system to house final version of the instrument in a partnership with our institution information technology team. The aim was to establish a tool to monitor the checklist execution to prevent SSIs as a strategy to monitor indicators in real time (Appendix 3).

Discussion

The health care system cannot disregard the human factor with all the possibilities for variation and fallibility. This factor is the foundation of all processes need for the patient care. These conditions cannot be changed, but prevention strategies can be established to ensure working processes are adequate to avoid adverse events and guarantee the improvement of quality and patient safety.(18)

Similar to the situation with aviation in the 1970s, when great catastrophes mobilized leaders to
recognize the limitations of human performance in this segment and to evaluate how this affected the safety of users and the sustainability of the sector, the healthcare area has identified risk factors and unsafe conditions that permeate processes.\(^{(1)}\) Adverse events occur in 4% to 16% of every 100 hospital admissions around the globe. Of these, more than half originate from surgical care.\(^{(1)}\)

It is important to highlight that, unlike aviation, in which a serious event often can be seen rapidly in the media, in healthcare several severe events can be silent, discovered only through meticulous investigation. The method with which to conduct this investigation has been retrospective analysis for assessment studies of adverse events. However, in many health institutions in the world, a medical record containing events that occurred during surgery procedures is still not incorporated into daily practice. This lack of information prevents the rapid gathering of information about adverse events.

The evident need to establish controls and safety standards for healthcare is the basis for the incorporation of a systematized proven method to verify safety in terms of people and equipment: a checklist for each procedure.\(^{(1)}\) However, the main focus of this model in aviation is in the relationship between human and machine. A different model is needed for healthcare because the relevant interactions are not just between humans and technology but also, more importantly, in interaction and communication among members of the health care team with the patient.\(^{(19,20)}\)

The pioneering use of a checklist helps prevent errors and human failure in this interaction process.\(^{(1,2)}\) However, in the healthcare environment it is important to highlight that the first principle to be considered is variability. There is a single standard of patient or structural resources, institutional norms and teams available to assist in an individual manner. Each institution has its own reality and context. Teams should understand the variability of the environment and evolve in order to systematize their actions as much as possible in a scenario where each procedure has its own particularities. This justifies the recommendation of making changes and adaptations to the WHO’s instrument.\(^{(1)}\)

However, to improve the method, it is important to consider the complexity that surgical care scenarios present to individuals who participate in this process. The technological apparatus and material resources needed to perform the surgical procedure are associated with interaction and constant communication among individuals, services, and equipment. To professionals working at the surgical center, pursuing only technical skill is not enough; they should also, if not primarily, be able to efficiently communicate, recognize limitations, learn from mistakes and work in teams in order to guarantee the continuous improvement of quality and safe patient care.\(^{(19,20)}\)

Use of a checklist in surgical procedures has the goal of allowing surgical teams to systematically follow the critical steps for safety.\(^{(1)}\) The checklist is associated with systematization of data to identify points to be reinforced or changed to improve care standards, to reduce morbidity and mortality rates and surgical complications, and to prevent infection and reduce the number of errors due to lack of team communication.\(^{(2-6)}\)

However, in contrast to studies that have found benefits to implementing a checklist,\(^{(1-6)}\) a study carried out in Ontario, Canada\(^{(21)}\) on use of a checklist in 130 hospitals in an institutionalized format showed no significant improvement in mortality or surgical complications after three months of implementation. According to the authors, this finding could be partly attributed to the mandatory introduction of a checklist.\(^{(21)}\)

Another relevant situation considered in our study was already observed in the use of checklist - not only within the operative room but to expand opportunities to improve patient safety during the entire perioperative period. A checklist model with inclusion of pre-entrance point in the operating room, called check-in, was proposed by the Association of Perioperative Registered Nurses (AORN).\(^{(22)}\) In this model, items related to the patient’s preparation are
checked, along with materials and equipment. In addition, the presence of specific documents to perform the procedure is verified. Compared with the instrument from AORN, our validated checklist has more items for working process control considered pertinent by experts at the time of check-in. The validated instrument also contributes to the safety of the surgical patient and includes a database designed from the gathering of checklists that can support management decisions to improve working processes.

Another model already used is the Surgical Patient Safety System (SURPASS), which was developed to be applied during delivery of all surgical care to the patient, i.e., all activities from admission to discharge. Its goal is to verify surgical safety in a global and multidisciplinary format. In addition to use related to surgical safety, SURPASS has been used to prevent legal actions due to poor surgical practice, especially because it covers all care process delivery to the surgical patient. A study reported that use of a checklist can prevent poor surgical practice; of 94 incidents of permanent incapability or death, 30% can be prevented with the use of SURPASS. Although SURPASS covers more areas and shows potential to improve patient safety, this system is not considered for surgical situations with their specific risks, such as risk of bleeding, and because SURPASS is a system there is cost-relationship involved.

Experience suggests that success of implementing a checklist and good results are linked to participation, involvement and engagement of teams. For this reason, to implement a prevention strategy for interventionist working processes specific to surgical patients, the use of a validated checklist can optimize possible obtained results. To include the check-in (patient admission to the surgical center) and the check-out (patient discharge) stages in the instrument was meant to close the loop of surgical care to include patients who returned home after the procedure.

Based on this scenario and according to recommendations of the WHO, in addition of introducing the check-in and check-out, we also analyzed and validated, along with the multidisciplinary team, the items specific to prevent SSI.

This direction was given to the instrument based on the evidence of care practice associated with literature findings on assessment of surgical care results, which showed that SSI is an avoidable complication of surgery. The prevalence of SSI is higher among healthcare-associated infections.

After instrument design and before effective care, scientific validation is required. We emphasize that the composition of the panel of experts for this study included specialists in three areas of knowledge: patient care, teaching and research. Another important factor in the selection and composition of the experts was their heterogeneity; they worked with patient care in areas of infection, management, sterilization processes and surgical intervention. In addition, the experts were professionals with experience in surgery or providing support during surgery.

Experts’ contributions enabled us to develop an instrument that, unlike the instrument proposed by the WHO, considers that surgery must be done in the right patient, in the right place and for the right procedure. It also verifies the steps recognized in the literature for preventing SSI in the perioperative period.

An additional part of our validated instrument was the design of an on-line form that included all checklist items. This enables the inputting and recording of data in real time during surgical safety checking. This on-line form eliminates the need to transfer information written on paper to a database, allows for ease of daily indicators analysis of the effective use of the checklist, and permits auditing of factors that compromise patient safety and prevention of SSIs.

Despite the variability seen in the study, simple recommendations to prevent SSIs can help reduce infections at health institutions. Leaders have the role to establish valid strategies and make decisions based on systematized data in order to improve working processes in such a way that may guarantee the best results for the patient. If these
actions are taken, we can structure a sustainable pathway for the healthcare system.

Conclusion

We validated the content of modified checklist based on the model of the WHO instrument. This checklist can help prevent mistakes and complications in surgical patient and addressed the needs of the institution where the study took place. The items that make up the instrument were considered relevant, clear and comprehensible, and as a result the instrument can be used in the care of surgical patients.

Acknowledgements

We thank the multidisciplinary team that participated in the instrument design and the team from the information technology division, who worked with us to develop the on-line system of the validated instrument. This study did not receive any funding.

Collaborations

Ferraz EM contributed to drafting of the manuscript, critical review relevant for the intellectual content and approval of proofs. Roscani ANCP, Oliveira-Filho AG and Freitas MI contributed to the conception of the study, analysis, interpretation of data, drafting of the manuscript, critical review relevant for the intellectual content and approval of proofs.

References


Validation of surgical checklist to prevent surgical site infection


Appendix 1

**SURGICAL SAFETY CHECKLIST (FIRST EDITION)**

*Before induction of anaesthesia*  
*TIME OUT*  
*Before patient leaves operating room*

**SIGN IN**

- Patient has confirmed
  - Identity
  - Site
  - Procedure
  - Consent
- Site marked/not applicable
- Anaesthesia safety check completed
- Pulse oximeter on patient and functioning

**Does patient have a:**
- Known allergy?
  - No
  - Yes
- Difficult airway/aspiration risk?
  - No
  - Yes, and equipment/assistance available
- Risk of > 500 mL blood loss (7mL/kg in children)?
  - No
  - Yes, and adequate intravenous access and fluids planned.

**TIME OUT**

- Confirm all team members have introduced themselves by name and role
- Surgeon, anaesthesia professional and nurse verbally confirm
  - Patient
  - Site
  - Procedure
- Anticipated critical events
- Surgeon reviews: what are the critical or unexpected steps, operative duration, anticipated blood loss?
- Anaesthesia team reviews: are there any patient-specific concerns?
- Nursing team reviews: has sterility (including indicator results) been confirmed? Are there equipment issues or any concerns?
- Has antibiotic prophylaxis been given within the last 60 minutes?
  - Yes
  - Not applicable
- Is essential imaging displayed?
  - Yes
  - Not applicable

**SIGN OUT**

- Nurse verbally confirms with the team:
  - The name of the procedure recorded
  - That instrument, sponge and needle counts are correct (or not applicable)
  - How the specimen is labelled (including patient name)
  - Whether there are any equipment problems to be addressed
- Surgeon, anaesthesia professional and nurse review the key concerns for recovery and management of this patient

*This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.*

Source: [http://proqualis.net/sites/proqualis.net/files/2169_Chelist.pdf](http://proqualis.net/sites/proqualis.net/files/2169_Chelist.pdf)
Validation of surgical checklist to prevent surgical site infection

Appendix 2

Appendix 3

Predictive and associated factors with nursing students’ satisfaction

Fatores preditores e associados à satisfação dos estudantes de enfermagem

Carolina Domingues Hirsch¹
Edison Luiz Devos Barlem¹
Jamila Geri Tomaszewski Barlem¹
Rosemary Silva da Silveira¹
Daniel Pinho Mendes¹

Abstract

Objective: To identify predictors and factors associated with the satisfaction of nursing students regarding the curriculum and school activities, social/professional interaction, and environment of the undergraduate program.

Methods: Cross-sectional study, conducted with 123 nursing students of a public university. The Nursing Student Satisfaction Scale was the research instrument. Descriptive statistics, analysis of variance, and logistic regression analysis were used for data analysis.

Results: In the descriptive analysis, the curriculum and teaching dimension presented the highest mean (3.57), followed by the environment dimension (3.33), and social/professional interactions (3.28). Younger students and those who had children, more intensely acknowledged the curriculum and teaching dimension as a factor promoting satisfaction.

Conclusion: It is necessary to promote improvements in the education and training scenario, investing in curriculum issues and education, to contribute to a satisfactory academic experience through the reduction of barriers to academic education.

Keywords
Students, nursing; Personal satisfaction; Education, nursing; Motivation; Educational measurement

Descritores
Estudantes de enfermagem; Satisfação pessoal; Educação em enfermagem; Motivação; Avaliação educacional

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Conflicts of interest: there are no conflicts of interest to declare.
Introduction

The economic and social changes promoted by globalization have substantially modified the relationship between man and work.\(^1\) The search for expansion of production through efficiency demands better qualifications of the professional to meet the demands of the new reality.\(^2\) However, the increase in workload and the speed with which work is accomplished, which overlaps the needs of individuals, which can leave their aspirations in the background, reflected in the long term in worker dissatisfaction.\(^3\)

In this sense, university admission can also promote discomfort, because of the numerous demands and requirements imposed by the new context of life and which may lead to stress in the student and to their withdrawal from a future profession.\(^1\) Thus, what should be a beneficial environment for training and acquiring new experience, eventually becomes a place that repeatedly promotes potentially stressful life events.\(^4\)

The condition of daily dissatisfaction triggers feelings of nervousness, anxiety, irritability and impatience, lack of interest and demotivation in issues related to the course, and can be observed by a drop in class attendance.\(^5\) The progression of this inadequate situation between requirements and the capacity of individuals to meet the demands leads to problems with students’ health and quality of life,\(^3\) promoting feelings of introspection, translated into apathy and lack of motivation for performing academic activities,\(^6\) which results in academic dissatisfaction.

Thus, academic satisfaction can be understood as the perception of the individual with regard to the scope of their academic expectations, that is, the perception of success obtained in relation to educational performance. The satisfaction of an individual seems to be a consequence not only of how much s/he receives from the environment, but also the position she occupies in relation to her/his level of idealization.\(^7\) Considering that higher educational institutions play an important role in the development of scientific knowledge and in professional interaction and performance, these institutions should work on ways of adaptation and development of behaviors that meet the students’ expectations, promoting a satisfactory academic experience.

Thus, the quality and improvement of higher education are closely related to the identification and care of factors related to the level of quality of universities, such as: facilities, structure, academic services, social assistance programs, institutional evaluation policy, teaching qualifications, technical and administrative qualifications, teacher/student ratios, methodological processes of teaching, the existence of graduate programs.\(^2\) In this sense, the development of research regarding student satisfaction, allows for the recognition of the multiplicity of influences that promote failure or success within the educational process, thereby assuring the maintenance or restoration of the quality of education through the optimization of teaching, infrastructure, curriculum and programs.\(^8\)

The objective of this study was to identify the predictors and factors associated with satisfaction of nursing students with the curriculum and teaching activities, social/professional interaction, and learning environment in the undergraduate course.

Methods

This was a cross-sectional study conducted in a public, federal university, located in southern Brazil. The study included 123 nursing students enrolled during the second semester of 2014. A non-probabilistic convenience sampling for was used as sample selection criterion, so that participants were selected convenience according to their presence and availability on the site and moment of data collection.

This instrument was administered collectively, at one time, during school hours assigned for this research. The Nursing Students Satisfaction Scale (NSSS) - Brazilian version,\(^9\) culturally adapted and validated for the national context, was the instrument used. The scale was operationalized as a 22 question, five-point Likert scale that aimed to analyze the satisfaction of nursing students across
Predictive and associated factors with nursing students’ satisfaction

the dimensions: curriculum and teaching; social/professional interaction, and environment.

Data were subjected to factor analysis, grouping the results into three groups of responses known as constructs, entitled: social/professional interaction, curriculum, and, teaching and learning environment. The instrument’s reliability level was calculated using Cronbach’s Alpha, which showed a value of 0.934. The coefficients of the constructs presented alpha values between 0.88 and 0.89, proving the reliability of the categories generated.

The results were obtained using descriptive statistics, analysis of variance (ANOVA), and regression analysis. Data analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 22.0. The use of the data collection instrument was authorized by the researchers responsible for its validation, and by the author of the original English version of the instrument.

The development of the study followed national and international standards of ethics in research involving human subjects.

Results

The sociodemographic profile of the 123 nursing students was: 91.05% female, 79.7% single, 81.3% without children, a mean age of 25 years, ranging between 18 and 50 years of age. Participation in extra curricular activities was reported by 59.4%, and among those 49.6% had a scholarship. Most students (77.2%) were not working, but 13.8% reported working in health care. The nursing major was the first choice for 72.6% and 61.8% reported they had never considered withdrawing from the major.

With regard to the results obtained by descriptive analysis (Table 1), the curriculum and teaching dimension was the one with the greatest mean (3.57) on the instrument, showing that this factor was perceived by students as the biggest promoter in the perception with satisfaction in their major.

The environment dimension showed the second highest mean on the instrument (3.33), followed

<table>
<thead>
<tr>
<th>Factors</th>
<th>n</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/professional interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were positive role models of professional nursing</td>
<td>122</td>
<td>3.16</td>
</tr>
<tr>
<td>Felt comfortable asking questions of nursing faculty</td>
<td>123</td>
<td>3.20</td>
</tr>
<tr>
<td>Was respected by the nursing faculty</td>
<td>123</td>
<td>3.44</td>
</tr>
<tr>
<td>Were fair/unbiased in their assessment of my learning</td>
<td>120</td>
<td>2.95</td>
</tr>
<tr>
<td>I have positive professional interactions with my nursing faculty</td>
<td>119</td>
<td>3.50</td>
</tr>
<tr>
<td>Made an effort to make their topics interesting</td>
<td>123</td>
<td>3.12</td>
</tr>
<tr>
<td>Effectively explained essential concepts</td>
<td>121</td>
<td>3.63</td>
</tr>
<tr>
<td>Well qualified in their area of expertise</td>
<td>122</td>
<td>3.50</td>
</tr>
<tr>
<td>Collaboratively worked with each other in their teaching</td>
<td>122</td>
<td>3.02</td>
</tr>
<tr>
<td>Curriculum and Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced my problem solving skills</td>
<td>123</td>
<td>3.53</td>
</tr>
<tr>
<td>Prepared me to become a professional nurse</td>
<td>121</td>
<td>3.61</td>
</tr>
<tr>
<td>Prepared me to use the nursing process in my clinical practice</td>
<td>121</td>
<td>3.64</td>
</tr>
<tr>
<td>Helped me improve my communication skills</td>
<td>121</td>
<td>3.81</td>
</tr>
<tr>
<td>Was relevant to current nursing practice</td>
<td>122</td>
<td>3.57</td>
</tr>
<tr>
<td>Progressed logically from simple to complex concepts</td>
<td>120</td>
<td>3.45</td>
</tr>
<tr>
<td>Feel confident about my ability to practice in clinical settings</td>
<td>122</td>
<td>3.40</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The equipment in the nursing lab are in good repair</td>
<td>122</td>
<td>3.45</td>
</tr>
<tr>
<td>The equipment in the nursing lab was up to date</td>
<td>122</td>
<td>3.35</td>
</tr>
<tr>
<td>There was sufficient equipment in the nursing lab</td>
<td>122</td>
<td>3.30</td>
</tr>
<tr>
<td>The nursing lab had ample space</td>
<td>122</td>
<td>3.34</td>
</tr>
<tr>
<td>Library resources were adequate</td>
<td>122</td>
<td>3.11</td>
</tr>
<tr>
<td>Effectively used technology to enhance my learning</td>
<td>120</td>
<td>3.43</td>
</tr>
<tr>
<td>General satisfaction</td>
<td>123</td>
<td>3.58</td>
</tr>
</tbody>
</table>
Hirsch CD, Barlem EL, Barlem JG, Silveira RS, Mendes DP

by the social/professional interaction factor (3.28). The dependent variable, general satisfaction, had a mean response of 3.56, indicating that students, in general, perceived themselves as neither satisfied nor dissatisfied with their major.

The ANOVA variance analysis (Table 2) allows for the relation of dimensions of professional satisfaction with socio-demographic variables, indicating that younger students and those who have children recognized the curriculum and teaching dimension as a more intense promoter of satisfaction than the others.

With regard to having considered withdrawing from the major, students who said they had never considered giving up more intensely considered the curriculum and teaching dimension than students who experienced thoughts of withdrawal from the major. The grade level variable did not have statistical significance ($\rho = 0.02$), demonstrating that in the context in which this study was conducted, this variable did not represent a factor that promoted academic satisfaction. The social/professional interaction and environment dimensions did not achieve statistical significance in the correlations with socio-demographic and academics factors.

The assessment of the effects of the three constructs, in relation to the satisfaction factors using simple linear regression analysis, had general satisfaction as a dependent variable; the results identified significant relationship at the 5% level for all the constructs. The test with the adjusted determination coefficient obtained a value of 0.54, representing a value that explained 54% of the factors related to personal satisfaction, according to table 3.

The statistical analyses show that nursing students perceive the curriculum and teaching and the social/professional interaction dimensions to be major predictors of personal satisfaction (Figure 1).

### Table 2. Relationship between the personal satisfaction dimensions, sociodemographic and academic variables - ANOVA Variance Analysis

<table>
<thead>
<tr>
<th>Factor</th>
<th>Curriculum and teaching</th>
<th>Social professional interaction</th>
<th>Learning environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>µ</td>
<td>ρ</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100</td>
<td>3.61</td>
<td>0.37</td>
</tr>
<tr>
<td>Yes</td>
<td>23</td>
<td>3.38</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>0.11</td>
</tr>
<tr>
<td>&gt;=25</td>
<td>54</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>&lt;25</td>
<td>60</td>
<td>3.73</td>
<td></td>
</tr>
<tr>
<td>Withdrawal thoughts</td>
<td></td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>No</td>
<td>76</td>
<td>3.74</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>45</td>
<td>3.28</td>
<td></td>
</tr>
</tbody>
</table>

All variables shown in the table had a significative difference of 5%.

### Table 3. Linear regression analysis of personal satisfaction factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta ($\beta$)</th>
<th>Sigma ($\rho$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum and teaching</td>
<td>0.518</td>
<td>0.000</td>
</tr>
<tr>
<td>Social/professional interaction</td>
<td>0.330</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning environment</td>
<td>0.052</td>
<td>0.493</td>
</tr>
</tbody>
</table>

Significance level 5%

![Figure 1. Correlation between the factors that contribute to personal satisfaction](image-url)
Discussion

The limitation of this study was the specific population of students in a public university in southern Brazil, which does not allow for the generalization of its results since the sample, although representative possibly does not characterize the multiple university contexts existing in Brazil.

The results of this study enabled the understanding of the phenomenon of personal satisfaction, as well as the factors that cause demotivation throughout the formative period, in the specific context of Brazilian nursing students. In this sense, through the knowledge of institutional dimensions that predict personal satisfaction of nursing students, it is possible for institutions of higher education to reassess their training processes, aimed at educational quality.

This research showed that students perceive curriculum and teaching dimensions, learning environment, and social/professional interaction as the main factors associated with personal satisfaction. Thus, personal satisfaction can be described as the harmony between the different areas that comprise university life: affective and interpersonal relationships, available environmental resources, the result of expectations linked to the satisfaction of personal and professional life. Thus, in view of the different factors that can influence personal satisfaction of nursing students, it is necessary to evaluate satisfaction in higher education as a way to enhance learning, through the diagnosis of situations that promote academic dissatisfaction.

Among the dimensions perceived by students as major promoters of personal satisfaction, the construct of curriculum and teaching was highlighted; also, issues relating to teacher qualifications, use of appropriate methodologies, updated didactic, distribution of curriculum content, and consistency of the subjects were perceived by students as major promoters of academic satisfaction or dissatisfaction.

The teaching method used directly influences the satisfaction of nursing students. The activities that stimulate active participation of students in problem solving allow for the development of responsiveness and initiative, increase autonomy, control, independence and security, while they build themselves along their way. In this sense, older students perceive themselves less satisfied with curriculum issues and education than younger students, possibly because they have been in the training environment for a longer period, both the theoretical and practical, and have a more comprehensive and critical view of the teaching-learning process.

In parallel, curriculum issues were also perceived by nursing students as important, such as: distribution of curricular content; consistency of the offered disciplines; similarity of the content with the practice reality; and curricular capability to promote training that is consistent with market demand. Still, in relation to the curriculum, the students who worked perceived themselves to be less satisfied than students who did not work. As the majority of students worked in health care, it gave them the perception of the discrepancies between the teaching of theory and practice and the caring reality of the profession.

The curricular inadequacies that were perceived, such as insufficient training hours for practice activities, and a lack of professionals to meet the expectations and demands of students, were highlighted as recurring situations by nursing students. Increased work time in the practice disciplines provided students with increased safety and confidence in their knowledge acquired during the formative period.

The curricular inadequacies that were perceived, such as insufficient training hours for practice activities, and a lack of professionals to meet the expectations and demands of students, were highlighted as recurring situations by nursing students. Increased work time in the practice disciplines provided students with increased safety and confidence in their knowledge acquired during the formative period.

Thus, the nursing students perceive these courses as factors contributing to the enhancement of professional identity by increasing the experience and clinical knowledge promoted by the curricula and quality of instruction, which not only includes specific knowledge, but also promotes a global view, leading the student to professional independence through the progressive development of critical
thinking and clinical reasoning.\textsuperscript{(13)} The environment dimension was also perceived by students as a promoter of academic satisfaction, demonstrating that issues related to infrastructure, support facilities, acquisition and maintenance of equipment, are relevant to the perception of satisfaction with the nursing major.

The investment in structural improvements can increase the efficiency and productivity of students. This readjustment of the environment can be seen as an effective strategy for achieving organizational goals, as it considers the institution’s needs and also the expectations and personal ideals of students by eliminating or preventing the negative effects of dissatisfaction with the educational environment and the nursing major.\textsuperscript{(14)} In this sense, investment in the area of information and communications technology deserves attention, more specifically informatics, in which computer programs promise to optimize the issues of quality management, the development of the faculty, provide greater accessibility of content through online sharing of new teaching methods, and greater interaction among students and teachers from different grade levels.\textsuperscript{(15)}

The adoption of new environment of online classes positively influences interest and academic performance. These technologies, as well as benefiting knowledge construction, also promote the satisfaction of nursing students by generating updated teaching methods.\textsuperscript{(16)} However, it is not just communication and information technologies that are important for promoting an environment consistent with students needs: the physical structure of the institutions also deserves attention, since this is indicated by students as a determining factor of satisfaction with the major.\textsuperscript{(17)} In this sense, students identify the support facilities, computers, libraries with updated collections, and laboratories with equipment in good condition, as well as the physical structure of classrooms, as fundamental to the satisfaction with the major.\textsuperscript{(18)}

It was evident that satisfaction levels are defined not only by the experiences of students in relation to their interactions with teachers and institutional support, but also the modernization of technological learning methods that provide an increase in the exchange of information. So, the quality of the physical structure promotes support and encouragement of the student, acting as supports for the theoretical and practical deepening of knowledge acquired during the educational process.\textsuperscript{(17)} Another factor evidenced by nursing students as a promoter of satisfaction with the major was the social/professional interaction dimension, demonstrating that relational difficulties are the third leading cause of personal dissatisfaction. The development of a positive relationship of exchange between all involved in the educational process promotes personal, academic and professional growth of these students, and prepares them to become future nurses.\textsuperscript{(14)}

Studies reported that students develop negative attitudes when they are not satisfied, often negative symptoms due to relationship difficulties, rivalry with colleagues, interpersonal problems, hostile work environment, among others.\textsuperscript{(12,18)} In this sense, near the end of the undergraduate studies, the students perceive themselves to be less satisfied with the issues related to social/professional interaction, which can be explained by the greater exposure of students to clinical environments and conflicts of work teams.

Interpersonal difficulties experienced by students in the learning environment hinder the articulation of theoretical and practical knowledge that depend on harmonious interaction between teachers, students and staff.\textsuperscript{(13)} Thus, the interrelationships established in the educational environment were perceived as important predictors of personal satisfaction of nursing students associated with a positive perception of faculty support, encouragement from their social networks of friends, and the solicitude of the professionals in the instructional environments.\textsuperscript{(19)}

\section*{Conclusion}

Curriculum and teaching were the factors perceived as major predictors of academic satisfaction with the major, followed by the social/professional interaction, and environment dimensions. Thus, in view of the multiple determinants of academic satisfaction,
Predictive and associated factors with nursing students’ satisfaction

It is necessary to promote specific improvements in the educational and formative scenario, that enable an adaptation of institutions to the needs of these students, in order to contribute to a satisfactory academic experience by decreasing the barriers to academic education.

Collaborations
Hirsch CD, Barlem ELD, Barlem JGT, Silveira RS and Mendes DP declare that they contributed to the project design, analysis and data interpretation, critical review of the relevant intellectual content, and final approval of the version to be published.

References


Repercussions on the daily living of post-heart transplantation patients
Repercussões no cotidiano dos pacientes pós-transplante cardíaco

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Vera Lúcia Mendes de Paula Pessoa²
Francisco Wagner Pereira Menezes³
Raquel Sampaio Florêncio²
Marília Ximenes Freitas Frota¹

Abstract
Objective: To learn the repercussions on the daily living of patients that underwent heart transplantation.

Methods: A descriptive and qualitative study was conducted in a transplantation center in the Brazilian Northeast region. Nine patients who underwent heart transplantation participated in the study. Data were collected using the focus group technique, facilitated in four meetings. The excerpts of their statements resulted in two thematic categories: being a heart transplantation patient - before and after; and feelings and perceptions on heart transplantation.

Results: The people submitted to transplantation identified positive changes achieved after the surgery, but suffered with the countless prohibitions that directly interfered on their daily living; the limitations resulting from transplantation were highlighted and hindered patients from feeling effectively healed.

Conclusion: Participants recognized heart transportation as a solution for their clinical symptoms, but with a significant loss of autonomy that compel them to intensive adaptation efforts.

Keywords
Heart transplantation; Activities of daily living; Adult; Quality of life

Descritores
Transplante de coração; Atividades cotidianas; Adulto; Qualidade de vida

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DOI
http://dx.doi.org/10.1590/1982-0194201500094

Resumo
Objetivo: Conhecer as repercussões no cotidiano de pacientes submetidos a transplante cardíaco.

Métodos: Trata-se de estudo descritivo, qualitativo, conduzido em um centro de transplantes do nordeste brasileiro. Nove pacientes submetidos ao transplante cardíaco participaram do estudo, tendo sido utilizada para coleta dos dados a técnica de grupo focal, facilitada em quatro reuniões. Os recortes de suas falas resultaram em duas categorias temáticas: ser transplantado cardíaco - o antes e o depois; e sentimentos e percepções sobre o transplante cardíaco.

Resultados: A pessoa submetida ao transplante identificou as modificações positivas obtidas após o procedimento, porém ressentiu-se com as inúmeras proibições, com interferência direta em seu cotidiano; as limitações decorrentes do transplante ganharam destaque e não permitiram que os pacientes se sentissem realmente curados.

Conclusão: Os participantes reconheceram o transplante cardíaco como uma solução para seus sintomas clínicos, contudo, com significativa perda de autonomia, obrigando-os a um intenso esforço adaptativo.

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³Universidade Estadual do Ceará (UECE), Fortaleza, CE, Brazil.

Conflicts of interest: There are no conflicts of interest to declare.
Introduction

Heart failure is the main cause of hospitalization due to cardiovascular diseases, and the etiologies associated with it account for about 6% of the deaths registered in Brazil.\(^{(1,2)}\) In an attempt to minimize the situation, heart transplantation is a surgical alternative used to treat heart failure not responsive to clinical and/or outpatient treatment, improving the expectancy and quality of life of patients suffering from this disease.\(^{(2)}\)

However, the survival rate after heart transplantation decreases as the years since the procedure go by, and this rate suffers the influence of the post-surgery monitoring of patients. Hence, heart transportation outpatient care plays an important role in the maintenance of the well-being of heart transplantation patients, favoring longer survival time with better quality of life, which is correlated to the absence of heart failure symptoms that allows resuming basic and instrumental activities of daily living and a potential return to labor activities.\(^{(3)}\)

Nonetheless, this resumption demands a wide range of adjustments and patients must follow several instructions to keep their well-being and prevent complications, mainly in the initial post-transplantation months. It demands changes on the daily living that, in turn, reduce the range of personal decisions due to a set of instructions and rules characterized by standardization and impersonality. The work of a multidisciplinary team is crucial in this matter to assist patients in their adjustment to the new life.\(^{(4,5)}\)

The daily living of those submitted to transplantation is different from that of people who have not undergone the procedure, because of the excessive care required to prevent infection, the healthy and proper food demanded, weight maintenance and continuous administration of medication sharply on time. Thus, the participation of the team in health promotion measures is of special importance,\(^{(4)}\) as this care is effectively required and has strong social impact on the lives of those submitted to transplantation. However, few studies, mainly at national level, approach this phenomenon, showing the need for promoting research on this topic.\(^{(5-8)}\)

A consensual point in the existing studies on heart transplantation is that life itself gives a sense to the daily living; however, complex situations and new concerns related to the condition of being a heart transplantation patient come about. In that context, the existence of social, professional and, above all, spiritual support is crucial to meet the patients’ aspirations, as self-care maintenance brings positive impacts on their daily living, improving the quality of life even of those with over five years of heart transplantation.\(^{(5-9)}\)

Understanding the daily living of patients submitted to transplantation implies understanding how these people relate to the guidance provided by the health team and the heart transplantation itself. In this sense, the objective of this study is to learn the repercussions of heart transplantation on the daily living of individuals submitted to the procedure.

Methods

This was a descriptive study with a qualitative approach, developed at the unit of heart transplantation and failure of a hospital in Ceará, which is specialized in cardiopulmonary diseases. The unit had a multi-disciplinary team and booked medical visits following the service protocol, as follows: weekly up to one month of transplantation after hospital discharge; every two weeks until the third month after transplantation, and then on a monthly basis until one year after the procedure, when patients start going to hospital every three months. In order to ensure the medical visit quality, the hospital established the limit of 12 patients a day, regardless the length of transplantation.

Based on that protocol, the study participants were selected according to the following criteria of inclusion: having been submitted to heart transplantation for up to six months and being in regular outpatient care monitoring. The post-transplantation period was selected due to the significant volume of information imposed by the multidisciplinary team, which required the transplantation patients to make continuous adjustments to their
daily living. After that period rules are relaxed, establishing a more independent and autonomous behavior of the patient. After the selection, patients presenting unsatisfactory clinical conditions like admission in an intensive care unit, isolation for use of medication due to graft rejection and damage to the consciousness level, were excluded.

In 2012, 29 patients were submitted to heart transplantation. Of these, 14 had undergone the procedure within six months, according to the data collection period, and five patients missed the required clinical conditions to participate in the study due to clinical instability and need for specific care, as aforementioned. Hence, nine participants were identified to the study, of which seven were men with a mean age of 40.8 years (± 8.8 years). The anonymity of subjects was preserved identifying participants with letters followed by a cardinal number.

Data were collected in January 2013, using the focus group technique. The informal nature of discussion and small size of the group allowed in-depth information collection, as participants felt at ease to talk about their experiences. Although this is a quick and low-cost technique for data assessment and collection, its scientific character results from the systematization of groups that facilitated analyzing the statements by participants.

The focus group was organized in 9-patient groups that participated in the four meetings held and previously booked. The focus group started at 9 am, lasting 60 minutes on average. There was a facilitator who started, conducted and closed the session, additionally to an observing rapporteur in charge of recording the participants’ speech and non-verbal language, and analyze the focus group conduction.

The following script of guiding questions was employed for discussions: (1) describe the experience of being a patient of heart transplantation; (2) comment on your daily living as a heart transplantation patient; (3) talk about the instructions provided by the multidisciplinary team. The first question was used to conduct the first and second meetings because of the need for making room to the debate on pre-transplantation period that was widely quoted as a comparison element; the second and third questions, in turn, were developed in the third and fourth meetings.

The questions have the potential to foster the active participation of the patients selected, besides guiding the formulation of new questions based on the oral expressions. In order to deepen the reflection about the repercussions of heart transplantation on the daily living of patients, sometimes the facilitator returned to some questions proposed adding new contributions by the participants, and improving the understanding about implicit meanings.

The meetings were recorded and then transcribed. Based on transcriptions, the statements were organized into units of meanings that, after categorization, led to two different categories: being a heart transplantation patient - before and after, and feelings and perceptions about heart transplantation.

Hermeneutic principles oriented the understanding and interpretation of speeches favoring the suspension of characteristics inherent to individual experience, bringing up life experience, as suggested by Dilthey. According to the hermeneutics, as a methodological resource, the whole can be understood when decomposed into parts that preserve shared meanings. The decomposition of speeches highlighting implicit meanings, and further reconstitution based on a whole that is elaborated, allowed understanding more relevant aspects that assisted deepening the proposed object of study.

Guided by these foundations, the authors took significant excerpts of the participants’ speeches and, after recomposing these, obtained five units of meaning as follows: life before heart transplantation; plans for the future; social isolation; behavioral restrictions; feelings and perceptions about the team and guidance. Further, these units gave rise to the following thematic categories: being a heart transplantation patient - before and after, and feelings and perceptions about heart transplantation.

The development of the present study complied with national and international ethical guidelines on research involving human subjects.
Results

Being a heart transplantation patient: before and after
Based on the statements by the study participants and their experiences prior to transplantation, it was observed that for most cases patients perceived the indication of heart transplantation as a possibility for restoring their health status. This fact can be observed in the following statement: “I was in a critical situation, I was 70% dead and 30% alive”. (N1).

In face of the uncertainty if the expected organ would arrive on time and of the development of disabling signs and symptoms, some patients found the necessary power to manage the situation in spirituality. That happened before and after the surgery with different motivations for both periods, as shown in the following statement: “Jesus has always given me power to stay without my kids”. (E16).

After the heart transplantation, new situations emerged in the patient daily living and spirituality remained a means of motivation to cope with the changes in several aspects of their lives. Some patients became solitary and present some deficit when it comes to socialization, due to the requirements resulting from treatment, reinforcing the need for being adjusted to the social environment by engaging in groups or getting closer to spiritual matters.

Some adjustments were also related to following the therapeutics. Among the difficulties to adhere to the post-transplantation required care, patients highlight limitations related to self-care as this involved adhering to behaviors which used to be unfamiliar to them: “It’s hard because we want to do the right thing”. (O2).

After overcoming the initial difficulties, the participants started resuming or planning activities of daily living, including work, which was a positive factor as it is an important element in people’s lives, often improving the well-being and the health of individuals submitted to transplantation. Many statements reflect the patients’ expectation to resume their labor activities as an alternative to the recovery of their identity as healthy individuals. This is shown in the following statement: “I really had to work”. (P8)

Feelings and perceptions about heart transportation
In the period prior to the procedure, transplantation was perceived as the cure to all the ills. However, after transplantations patients faced several limitations and difficulties to maintain the required care, including the feeling of losing autonomy.

The individuals submitted to transplantation recognized several changes and said as follows: “I have completely changed psychologically and physically”. (K3). They found themselves subjected to several limitations and difficulties to maintain the required care, including the feeling of having lost their autonomy, as transcribed: “There is nothing we can do, everything we want we just can’t”. (K7).

Moreover, patients found difficulties in taking the care recommended by the team, and it was observed the objective interference of the health professionals’ instructions on patients’ social habits. These were often imposed, with no plausible explanation to facilitate understanding and, thus, accepting the rules. Some patients vehemently commented on this fact: “It is difficult to be isolated at home; I have one little granddaughter and she just stayed at the doorstep”. (Q15); “This part will be really hard, I have young kids, I haven’t seen them for almost five months”. (M5).

Despite all difficulties, the organs recipients felt happy, thankful and victorious for having survived to the heart transplantation. The feeling of gratitude and recognition of a new life is found in the statement by many transplantation patients, with visible feelings of victory: “I thank for being alive” (N8); “It is a new life to me” (J1); “I was born again” (R2).

The statements of heart transplantation patients show that, despite the strict and continued treatment to keep their quality of life and the organ feasibility, the feeling of satisfaction for being alive and having a longer survival expectancy prevail.
The comfort of no longer living with the limiting signs of heart failure, of having the right to planning the future and, above all, of having the certainty that they had their right to be happy restored were the prevailing elements on the statements of these patients.

**Discussion**

The daily living of patients submitted to heart transplantation is characterized by new situations that involve adjustments by the family and the social network surrounding them. Understanding this issue, we believe that the participation of these other elements in further studies would be important to better understand this phenomenon, as this study was limited to the patients’ perceptions.

A wide range of physical and psychosocial manifestations were found in the period prior to and after heart transplantation. It is in this context full of dualities (life/death, health/disease) that the path to be followed by individuals waiting for or submitted to heart transplantation is built.

Heart failure is one of the main causes of hospitalization in Brazil and in the world, with symptoms that bring about significant limitations to the daily living of those waiting for transplantation. This perception of losing vitality is often associated with lower autonomy and a higher level of impairment for self-care. As the disease develops, patients often wait for the organ in the hospital, which results in social isolation and feelings of impotence and vulnerability.

After the phase of uncertainties about the procedure, the transplantation patients recognize the situation as complex, and report difficulties regarding adaptation to the social environment as they stay a long time far from their peers, in the beginning in compliance with the guidance provided by the multi-professional team and, then, for fear. Nonetheless, other studies agree on the significant improvement of patients’ quality of life resulting from the presence of their caregivers and of the social, family and spiritual support.

There was also some difficulty regarding adherence to post-transplantation care, although patients acknowledge its importance. Since adherence is defined as the degree of coincidence between the behavior of a person regarding taking medicines, following a diet and/or changing their lifestyle, and the recommendations by a health professional, the limited health status damages the achievement of adherence goals and demands changes and adaptations during the whole process of waiting for the transplantation or after it.

As corroborated by a survey carried out by Sadala and Stolf, transplantation patients report some difficulties regarding self-care. According to the authors, the practice demands adherence to unusual behaviors, thus requiring more preparation during the pre-transplantation period. Despite the difficulties and intensive adaptation efforts, the study by Aguiar et al. supports our findings as it also shows that the transplant patients interviewed strictly followed the required treatment to reach good quality of life.

Supplementing these results, Buendía et al. restate that heart transplantation improves the functional capacity of patients that adhere to the treatment. However, they only feel to be healthy after a certain period of treatment, when they start performing activities of daily living in a normal way, including working. This context of return to everyday and labor activities poses many challenges. According to the study by Jalowiec et al., only 26% of the patients submitted to transplantation were working one year after surgery and faced many difficulties in the rehabilitation period.

These adaptations involve several feelings. As presented in the study, patients experienced happiness, gratitude and victory as they overcame the waiting phase and could envisage a new day and a new life. These feelings are common among patients submitted to heart transplantation in other countries, where gratitude, satisfaction and resignation alternate. Patients show gratitude when their health considerably improve, but feel resignation when complications or side effects occur due to the lack of information or support.
the other hand, negative feelings such as sadness, have also been reported in another study, characterizing this path of “being a transplantation patient” as complex and controversial, but which generates life.

### Conclusion

People submitted to heart transplantation identified positive changes after the procedure, but suffered with the countless prohibitions that directly interfere with their daily living. Limitations resulting from transplantation were highlighted and prevented patients from feeling really healed, although recognizing the procedure as a solution to their clinical symptoms. There is a significant loss of autonomy that obliges patients to intensively endeavor to be adjusted. However, those efforts culminate in the adherence to the guidance by the team and to the understanding that maintaining care is important to maintain life, which makes them happy and thankful. It is worth mentioning that inclusion of patients that were submitted to the procedure within up to six months was a limitation to the study. In that period, the heart transplantation patient, fearing the procedure failure, put all their efforts to adhere to the pharmacological and non-pharmacological measures, which makes us consider if this commitment with guidance provided by the team is persistent and a reflex of deeper awareness about the adoption of a new lifestyle.

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### Collaborations

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### References


Self-care comparison of hypertensive patients in primary and secondary health care services

Comparação do autocuidado entre usuários com hipertensão de serviços da atenção à saúde primária e secundária

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Keywords
Health services evaluation; Public health nursing; Nursing; Hypertension; Self care

Abstract
Objective: To compare the self-care performed by hypertensive patients monitored in primary and secondary health care.

Methods: Cross-sectional study with 189 patients with arterial hypertension in a Basic Health Unit and in an integrated center for diabetes and hypertension in Fortaleza, from March to June, and from September to November of 2013. An interview with a guide based on Orem’s self care theory was conducted. For statistical analysis, percentage and chi square test distributions were used.

Results: Adequate fluid intake (77.6%), attending nurse consultation (88.0%), and changes in lifestyle (54.3%) had better results with patients monitored in primary care. Appropriate salt consumption (100.0%) and abstinence from alcoholic beverages (88.7%) were more common in patients monitored in secondary care.

Conclusion: Hypertensive patients from both primary and secondary care showed a self-care demand, without significant differences.

Resumo
Objetivo: Comparar o autocuidado realizado pelos usuários com hipertensão acompanhados na Atenção Primária e Secundária de saúde.

Métodos: Estudo transversal com 189 usuários com hipertensão arterial, em uma Unidade Básica de Saúde e em um centro integrado de diabetes e hipertensão de Fortaleza-CE, de março a junho e setembro a novembro de 2013. Realizou-se entrevista com roteiro fundamentado na Teoria do Autocuidado de Orem. Para análise estatística, utilizou-se distribuição porcentual e teste qui quadrado.

Resultados: Ingesta hídrica adequada (77.6%), comparecimento às consultas de enfermagem (88.0%), e mudanças no estilo de vida (54.3%) apresentaram melhores resultados nos usuários acompanhados na Atenção Primária. Consumo adequado de sal (100.0%) e abstinência de bebidas alcoólicas (88.7%) foram mais comuns em pacientes monitorados na Atenção Secundária.

Conclusão: Tanto os usuários com hipertensão da Atenção Primária como da secundária apresentaram demanda de autocuidado, sem diferença significativa.
Introduction

The World Health Organization defines hypertension as the chronic elevation of systolic and/or diastolic blood pressure to levels ≥140mmHg and 90 mmHg, respectively. During the patient’s assessment, the presence of risk factors, comorbidities and damage to target organs must be considered in addition to the pressure levels.(1)

In Brazil, it is estimated that 30% of the population older than 40 years of age has high blood pressure, which is becoming one of the most serious public health problems, especially because of the complex resources needed for its control and the impact on population health.(1) Moreover, it is considered one of the biggest risk factors for developing cardiovascular and cerebrovascular diseases, or diseases that are major causes of morbidity and mortality, in addition to its high social cost.(2) Despite the risks that hypertension presents, adherence to antihypertensive therapy is still inefficient; it is seen as a challenge for health services and public policies; most affected individuals do not have their blood pressure properly controlled, as a result of poor adherence to treatment.(3)

The control of the disease is closely related to lifestyle changes, such as proper nutrition, regular physical exercise and smoking cessation, practices that are related to self-care activities. People with hypertension should be guided by health professionals about such practices in order to control blood pressure and prevent diseases.(4) Thus, to successfully control hypertension, self-care practices by the patient are needed, which are defined as the performance of activities by individuals for their own benefit, to maintain life, health and well-being.(5) When effectively performed, self-care helps to maintain structural and functional integrity, contributing to human development.(6) However, when self-care is not performed, self-care deficits arise, making the integration of the healthcare professional essential to make the patients aware of the need to adopt self-care practices, aiming to prevent complications and promote health.(7)

Studies examining predictive factors for the control of hypertension have less frequently addressed self-care practices, indicating the challenge of developing new research on the subject, considering that poor adherence to self-care may be related to poor rates of controlling blood pressure levels.(6)

So, the question is: is there a difference between the self-care demand of patients monitored in primary and secondary health care?

The study is justified by the need to evaluate self-care practices in hypertensive patients, comparing the performance levels of primary and secondary care in encouraging self-care, considering that personal care is essential for improving quality of life and reducing complications.

The objective was to compare the self-care practices performed by hypertensive patients monitored in primary and secondary health care.

Methods

This was an analytical study with a quantitative, cross-sectional design, performed in Fortaleza (CE), Brazil, in a Basic Health Unit within the Family Health Strategy, from March to June of 2013, and in an integrated center for diabetes and hypertension from September to November of 2013.

The Basic Health Unit researched offered physician and nurse consultations, immunizations, dental care, pharmacy, among other services. The multidisciplinary team consisted of nurses, nurse technicians, physicians, dentists, community health workers and administrative personnel, in addition to receiving professional aid from the Support Center for Family Health.

In the secondary care unit, the multidisciplinary team is composed of nurses, a psychologist, pharmacist, dentist, social worker, nutritionist, physical therapist, occupational therapist, ophthalmologist, nephrologist, neurologist, endocrinologist and general practitioner. The main objective of this unit is to educate and help the hypertensive and/or diabetic patient to con-
trol his clinical condition and prevent complications.

The study population consisted of patients who were waiting for the nurse and/or physician consultation, or had just had their consultation, in the units studied. The sample included 92 primary care and 97 secondary care patients, totaling 189 diagnosed hypertensive patients. The inclusion criteria were: a medical diagnosis of arterial hypertension, age ≥18 years, and attending the nurse and/or physician consultations at these units during the data collection period. The exclusion criteria were: absence of physical, psychological or cognitive ability to answer the questions.

Data collection was performed by means of individual interview, using a guide based on Orem’s self care theory (8) that was divided into two parts. The first addressed conditioning factors for the practice of self-care, considering the sociodemographic and clinical characteristics of the patients; the second included data related to self-care performed by the patient. Each interview had an average duration of 20 minutes; patients were invited to a waiting area in the designated space reserved for physician or nurse consultation and/or nursing care.

Regarding the data on patient self-care, the following issues were discussed: (1) universal self-care requisites: fluid intake, diet, salt and coffee intake, consumption of artificial seasonings, physical activity, leisure activity, stress, hours of nighttime sleep per day, and type of sleep; (2) developmental self-care requisites: tobacco and alcohol; (3) health deviation self-care requisites: knowledge about the disease and treatment, in which the users were asked about the definition, the factors that cause hypertension, and the care needed to control it, use of hypertensive drugs, abandonment or discontinuation of hypertensive treatment, attending nursing and/or medical consultations, participation in educational activities, and modifications after the diagnosis.

With regard to fluid intake and eating habits, including appropriate salt and coffee intake, the Food Guide for the Brazilian population was used, which considers healthy eating, Dietary Approaches to Stop Hypertension (DASH), as the dietary pattern, which is rich in fruits, vegetables, fiber, minerals and low-fat dairy products. Fluid intake is adequate when the individual ingests at least 2L of water, coffee consumption is no more than three cups, and salt consumption remains below 2g of sodium per day (9,10).

The data were displayed in tables. Percentage distribution was used for statistical analysis, and the chi square test was performed, adopting p<0.05 for statistical significance. The data tabulation, calculations and statistical analyses were performed using Microsoft Office Excel Starter 2010 and the Statistical Package for the Social Sciences (SPSS), version 20.

The development of the study complied with national and international regulations of ethics in research on human beings, considering the principle of respect for human dignity. Participants were informed about the purposes of the research and could freely decide whether they wanted to participate; those who agreed signed the Terms of Free and Informed Consent form.

Results

The predominant sociodemographic characteristics of hypertensive patients monitored by primary and secondary care were: female (68.3%), age ≥60 years (69.7%), married or in a consensual union (58.2%), non-white (72.5%), primary school education (57.1%), retirees or pensioners (63%), and family income below or equal to the minimum wage (57.5%). Despite the high frequency of retirees or pensioners, 31.5% and 24.7% of the sample surveyed in primary and secondary care, respectively, had some sort of work activity.

The comparison of self-care practices among patients in primary and secondary care is enabled by the Universal Self-care Requirements, Developmental and Health Deviations, as shown in tables 1, 2 and 3.
Table 1 shows a statistical association between adequate fluid intake and follow-up in primary care (77.6; p = 0.012), which leads to the belief that this level of care achieved better results with hypertensive clients, regarding the achievement of the daily recommended water intake.

Regarding salt consumption, individuals monitored in both primary and secondary care showed high compliance related to a low sodium diet or food totally without salt added. All users monitored in secondary care said that they had a salt restricted diet, demonstrating a better result in relation to this aspect, with statistical significance (p = 0.016). On the other hand, only 47.6% of respondents avoided the regular consumption of artificial seasonings.

The variables related to coffee consumption (93.5%), physical activity (32.6%), participation in leisure activities (42.4%) and uninterrupted sleep (38.0%) obtained better rates among patients monitored in primary care. However, this was without statistical significance, showing homogeneity among patients followed in both levels of health care.

Table 2 showed that all variables in relation to developmental self-care received higher rates among patients monitored in secondary care.

Abstinence from alcohol (88.7%) was the only issue with statistical significance (p = 0.000), demonstrating that patients monitored in secondary care abstained more from the use of alcohol as compared to those monitored in primary care.

Abstinence from smoking was not statistically significant, showing that the level of care in which patients were being followed did not influence this factor.

Table 2. Distribution of hypertensive patients according to the Developmental Self-care Requisites for abstinence from smoking and alcohol

<table>
<thead>
<tr>
<th>Developmental Self-care Requisites</th>
<th>Primary care</th>
<th>Secondary care</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking abstinence</td>
<td>n=92</td>
<td>n=97</td>
<td>n=189</td>
<td></td>
</tr>
<tr>
<td>Alcohol abstinence</td>
<td>86(93.5)</td>
<td>95(97.9)</td>
<td>181(95.7)</td>
<td>0.076</td>
</tr>
<tr>
<td>Alcohol abstinence</td>
<td>74(80.4)</td>
<td>86(88.7)</td>
<td>160(84.7)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Regarding the Health Deviation Self Care practices, presented in table 3, a higher number of patients followed in primary care reported making lifestyle changes (54.3%; p = 0.037) in order to contribute to the normalization of blood pressure, demonstrating that the care level achieved better results in relation to the engagement of hypertensive patients in non-pharmacological treatment.

Another factor emphasized in the primary care sample was attending nurse consultations (88.0%; p = 0.000), revealing closer monitoring performed by the nurse with patients receiving services in this level of care.

The patients monitored in secondary care had higher rates in relation to knowledge about hypertension (40.2%), participation in educational activities at the health service (37.1%), and adherence to drug treatment (77.1%). Although higher, these results were not very different from those achieved by those in primary care, which may be related to certain equivalence in the effectiveness of care in both health care levels.

The low rate of knowledge can be related to lack of participation in educational activities, as only 25 primary care and 37.1% of secondary care respondents, respectively, affirmed participating in educational activities.

Despite their relatively limited knowledge about the disease, the majority (72.9%) denied discontinuing the use of medications, and in
those cases where it did occur, the main reason was the lack of medicines available at the health services, considering that almost all reported that they always attended their regular consultations.

**Table 3. Distribution of hypertensive patients according to the Health Deviation Self Care Requisites**

<table>
<thead>
<tr>
<th>Health Deviation Self Care Requisites</th>
<th>Primary care n=92</th>
<th>Secondary care n=97</th>
<th>Total n=189</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about the disease</td>
<td>25(27.2)</td>
<td>39(40.2)</td>
<td>64(33.9)</td>
<td>0.058</td>
</tr>
<tr>
<td>Participates in educational activities</td>
<td>23(25.0)</td>
<td>36(37.1)</td>
<td>59(31.2)</td>
<td>0.072</td>
</tr>
<tr>
<td>Adherence to medical treatment</td>
<td>63(68.5)</td>
<td>74(77.1)</td>
<td>137(72.9)</td>
<td>0.185</td>
</tr>
<tr>
<td>Attendance to medical consultations</td>
<td>90(97.8)</td>
<td>92(94.8)</td>
<td>182(96.3)</td>
<td>0.278</td>
</tr>
<tr>
<td>Attendance to nurse consultations</td>
<td>81(88.0)</td>
<td>52(53.6)</td>
<td>133(70.4)</td>
<td>0.000</td>
</tr>
<tr>
<td>Modifications after the diagnosis</td>
<td>50(54.3)</td>
<td>38(39.2)</td>
<td>88(46.8)</td>
<td>0.037</td>
</tr>
</tbody>
</table>

**Discussion**

Results of this study were limited by its cross-sectional design, since the data collection with the patients occurred in a single moment, rather than over time, to allow larger inferences. However, relevant information was identified in regard to factors related to the self-care practices and demands of hypertensive patients, as well as the comparison between primary and secondary health care. It was found that, regardless of the level of care in which they are monitored, these individuals present demands and, because nurses work systematically in the primary care unit and/or outpatient care center, this information provides a foundation for planning and developing interventions with these patients to stimulate self-care practice.

A greater demand by women was found in health care, already evidenced by the literature, especially with regard to preventive practices due to structural and/or cultural reasons and, furthermore, because the man are the focus of the healthcare service, which makes them almost invisible for professionals, especially in primary care. Elderly women have a higher prevalence in relation to systemic arterial hypertension, whereas the overall prevalence between men and women is similar, although it is higher in men up to 50 years, reversing with the beginning of the fifth decade. Study with individuals of Asian origin found that female consumers are more likely to perform self-care practices.

The adoption of a healthy diet is among the self-care practices. The guidelines of the Brazilian Society of Hypertension result in a recommendation for the adoption of the DASH diet, as part of hypertensive treatment, which emphasizes the increased consumption of fruits, vegetables and low-fat dairy products; includes whole grains, poultry, fish and nuts; and reduces consumption of fats, red meat, sweets and soft drinks. In addition, a low sodium diet favors the reduction of blood pressure.

However it was found that most of the participants used artificial seasonings, which generally included sodium in their ingredients, which contributes to elevated blood pressure. A study involving individuals of Hispanic/Latin American origin identified the characteristic dietary patterns of this group as a possible barrier to self-care, and identified some difficulties in following a healthy diet. According to the author, preparing different meals for different family members to have an appropriate diet can expensive which segregate the family.

This study identified that most primary and secondary care patients consumed coffee. However, they consumed doses that did not present risks for blood pressure level elevation, as they drank three cups or less of coffee per day. The polyphenols contained in coffee, and in some types of teas, have vasoprotective properties, thereby making the risk of high blood pressure due to caffeine use irrelevant in usual doses.

It was shown that less than half of the sample surveyed denied being able to avoid stress, all the time, which can have as an aggravating factor for the poor quality of sleep found, which can also contribute to increased stress and, consequently, elevated blood pressure. The low practice of leisure activities can also be an interfering factor in the emotional state of those clients, leading to increased blood pressure and complications.

Leisure can be identified as a form of coping with loneliness, increasing the process of socialization and interfering positively on the mental health
of people who practice activities focused on this purpose, helping in the treatment of hypertension. Considering regular physical activity, it was noted that only a small portion of the sample, both in primary and secondary care, was adept in this practice, despite its importance, both in hypertensive individuals as well as in prevention of mortality and risk of cardiovascular disease in those who already have a diagnosis of arterial hypertension. The regular practice of physical exercise has been recognized in the literature as an important strategy to be implemented for prevention and control of hypertension, for its effect in reducing blood pressure levels. However, it is acknowledged the difficulty of implementation of physical activity as self-care practice.

Regarding smoking, most patients monitored in primary and secondary care did not have this habit or had quit, corroborating what highlighted studies show that, in general, the prevalence of smoking among the elderly is lower, resulting from the cessation of this habit with aging. A study conducted in the urban area of a city in Florianópolis showed that the majority (61%) of the elderly never smoked, and 30.7% had stopped, corroborating what was evidenced in this study and confirming the importance of this self-care practice.

Alcohol use for long periods may increase blood pressure and mortality rates from cardiovascular diseases in general. In the Brazilian population, excessive consumption of alcohol is associated with the occurrence of hypertension, independently of demographic characteristics. However, in the present study, most clients, especially those monitored in secondary care, had no habit of consuming alcoholic drinks.

Another factor that can influence the control of hypertension is knowledge of the disease and its treatment, as it is closely related to treatment adherence. The largest number of individuals with knowledge about the disease, identified among those followed in secondary care, may be related to the fact that they participate more often in activities focused on health education and are monitored by professionals involved almost exclusively with the theme of hypertension in their daily lives. In general, hypertensive patients have information about their health problem, but if the blood pressure levels are not properly controlled, the difference between knowledge and adherence is evident.

Due to the treatment of hypertension being chronic, and influenced by financial and social conditions, lifestyle changes becomes one of the barriers to be faced by hypertensive patients, since these changes require persistence and determination, constituting one of the greatest difficulties for adherence to non-pharmacological treatment, making pharmacotherapy more “practical” to be performed. It was found that primary care achieved better results related to this aspect, possibly because it offers a broader vision that is closer to the reality of the individual that provides the care.

Conclusion

A statistically significant association was found between fluid intake, lifestyle modification, attending nurse consultations and primary care monitoring. The adequate intake of salt and abstinence from alcohol were associated with monitoring in secondary care.

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Collaborations

Mendes CRS contributed to the project design, execution of the research and writing of the article. Souza TLV and Felipe GFF collaborated with analysis and data interpretation, article writing and critical review of the intellectual content. Lima FET and Miranda MDC contributed to the project design, relevant critical review of the intellectual content and final approval of the version to be published.
References


Factors associated with condom use in people living with HIV/AIDS

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Abstract

Objective: Identify condom use in people living with HIV/AIDS attended at a Specialized Care Service in STD/HIV/AIDS and associate it with sociodemographic and behavioral variables.

Methods: Cross-sectional study, involving 300 people living with HIV/AIDS between 18 and 66 years of age. Student's t-test was used for intergroup comparison. The association between condom use and the sociodemographic and behavioral factors was verified using Pearson's correlation tests and its effect was measured through the odds ratio.

Results: It was observed that 79.3% of the participants reported using condoms in sexual relations. Single people had less chance of using condoms than married women. And not revealing the HIV positive status to the partner increases the chances of using the condom.

Conclusion: Condom use is frequent among people living with HIV/AIDS, even when they do not reveal the positive serum status to their partners, but a significant part of the single people have unprotected sexual practices.

Keywords
Condom; HIV seropositivity; Sexual behavior; Sexual partners; Unsafe sex; Safe sex

Descritores
Preservativo; HIV soropositivo; Comportamento sexual; Parceiros sexuais; Sexo sem proteção; Sexo seguro

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Resumo

Objetivo: Identificar o uso de preservativo em pessoas que vivem com HIV/AIDS atendidas em um Serviço de Assistência Especializado em DST/HIV/AIDS e associá-los a variáveis sociodemográficas e comportamentais.

Métodos: Estudo transversal, realizado com 300 pessoas vivendo com HIV/AIDS com idade entre 18 e 66 anos. O teste t Student foi utilizado para comparação entre os grupos. A associação entre o uso de preservativo e os fatores sociodemográficos e comportamentais foi verificada por meio dos testes de correlação de Pearson e medida seu efeito por meio da razão de chance.

Resultados: Observou-se que 79,3% dos participantes relataram o uso de preservativo nas relações sexuais. Os solteiros tinham menor chance de usarem o preservativo que os casados. E não revelar a sorologia HIV positiva ao parceiro, aumenta as chances de usar o preservativo.

Conclusão: O uso do preservativo é uma prática frequente entre as pessoas que vivem com HIV/AIDS, mesmo quando não revelam a sorologia positiva aos parceiros, porém uma parcela significativa de pessoas solteiras têm práticas sexuais desprotegidas.

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Conflicts of interest: none to declare.
Factors associated with condom use in people living with HIV/AIDS

Introduction

It is estimated that, today, about 34 million people around the world are infected by the acquired immunodeficiency virus (HIV), which is responsible for the development of the acquired immunodeficiency syndrome (AIDS), a pandemic condition that is considered a severe public health problem.\(^{(1)}\)

Condom use in people living with HIV/AIDS reduces the risk of transmitting the virus and also of contracting other sexually transmissible diseases, besides reducing the superinfection with different viral specimens, contributing to prevent more severe and resistant forms of the disease.\(^{(2,3)}\)

The people living with HIV/AIDS have presented a healthy improvement in the quality of life and life expectancy, as a result of the advent of antiretroviral therapy and treatment access,\(^{(4)}\) as opposed to some studies that show that the risk of practicing unsafe sex has increased in patients who are using antiretroviral drugs, due to the control of the viral loading and increased immunity, which lead to the absence of symptoms and improvement of these patients’ quality of life, discouraging safe sexual practices.\(^{(4,5)}\)

Different sociodemographic and behavioral factors are involving in unsafe sex in HIV/AIDS patients and vary around the world, including sex, age, education, marital status, lack of perception of the severity of the disease due to the absence of symptoms, partner’s serum status, difficulty to negotiate on the condom use and fixed or casual partners.\(^{(6,7)}\) This highlights the responsibility of health services to comprehensively and effectively monitor these clients, with a focus on the prevention of transmission and complications deriving from AIDS.

Therefore, understanding the factors that stimulate safe sexual practices, such as condom use in people living with HIV/AIDS, will permit developing concrete and contextualized actions with these clients, with strong implications in the execution of preventive measures and appropriate conducts in the control of this infection.

Hence, this study aimed to identify condom use in people living with HIV/AIDS attended at a Specialized Care Service in STD/HIV/AIDS and associate them with sociodemographic and behavioral variables.

Methods

A cross-sectional study was undertaken at a Specialized Care Service for HIV/AIDS patients, which at the time of the study monitored 1020 people living with HIV/AIDS, located in the Brazilian Northeast. The sample was calculated using a formula for infinite populations. A prevalence ratio of 50% was adopted because it offers a maximum sample size, a significance level of \(\alpha=0.05\) and an absolute sampling error of 4%. To mitigate possible losses, 10% was added to the sample size (n=300 people living with HIV/AIDS).

The participants were randomly selected in accordance with the established eligibility criteria. The inclusion criteria were: patients aged 18 years or older, carriers of the HIV virus and registered at the Specialized Care Service in STD/HIV/AIDS. The exclusion criteria were: patients with cognitive deficit, communication deficit or severely ill.

The tool used to collect the data was a semi-structured questionnaire involving sociodemographic characteristics (sex, ethnic origin, age, education, income, occupation, marital status, religion) and behavioral characteristics related to the sexual practices (sexual relation in the last three months, condom use in the last three months, difficulty to negotiate on condom use with the partner, revelation of HIV serum status to the partner, change in sexual desire after the serum status test, use of antiretroviral therapy, knowledge on reinfection). Before the actual data collection, the questionnaire was pretested in 10 participants. After the pretest, some questions were reconsidered and, then, the data were collected.

To collect the data, a 30-hour training was held with the field researchers. The data were collected...
between November 2013 and February 2014 in private rooms at the Municipal Referral Center in STD/HIV/AIDS. The patients were recruited at the waiting rooms of the medical and nursing appointments, after clarifications on the research objectives and methods.

The following outcome variable was selected: condom use (condom use in all sexual relations, whether vaginal, anal, oral in the last three months), while the sociodemographic and behavioral factors of sexual practice were the independent variable.

The processing of the data and the statistical analysis were undertaken in the software *Statistical Package for the Social Sciences*, version 22.0. The quantitative variables were presented using descriptive statistics (mean and standard deviation), and the qualitative variables using proportions and 95% confidence intervals. First, the Kolmogorov-Smirnov test was applied to assess the normality of the quantitative variables. To analyze the difference of means, Student’s t-test was used for independent samples and, to check for associations among the variables, Pearson’s chi-square test was applied and its effect was measured using the odds ratio, with significance being set at p<0.05.

The study development complied with the Brazilian and international ethical standards of research involving human beings.

**Results**

In total, 300 people living with HIV/AIDS were assessed, with a predominance of the female gender (53.3%), the age ranged between 18 and 66 years, with a mean age of 37.1% (standard deviation 8.78), 80.3% were mulatto or black, 65% had studied less than ten years, 75.3% gained a monthly income of less than one minimum wage ($ 1851.41), 92.3% had an occupation, 52% were single, 93% had a religion.

In this study, most women had a paid job (p= 0.02), were married (p= 0.03) and reported having difficulties to negotiate on condom use with their partners (p= 0.002). No association was found between sex and age and condom use, as observed in table 1.

**Table 1. Distribution of sociodemographic and behavioral variables of sexual practice in people living with HIV/AIDS**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Male n= 140</th>
<th>Female n= 160</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 30 years</td>
<td>31(22.1)</td>
<td>41(25.6)</td>
<td>0.48</td>
</tr>
<tr>
<td>&gt; 30 years</td>
<td>103(77.9)</td>
<td>119(74.4)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10 years</td>
<td>95(67.8)</td>
<td>100(62.5)</td>
<td>0.33</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>45(32.2)</td>
<td>60(37.5)</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;= 1 salary</td>
<td>103(73.5)</td>
<td>123(76.8)</td>
<td>0.50</td>
</tr>
<tr>
<td>&gt;1 salary</td>
<td>37(26.5)</td>
<td>37(23.2)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>124(88.5)</td>
<td>153(95.6)</td>
<td>0.02</td>
</tr>
<tr>
<td>No</td>
<td>16(11.5)</td>
<td>07(4.4)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>82(58.5)</td>
<td>74(46.2)</td>
<td>0.03</td>
</tr>
<tr>
<td>Married</td>
<td>58(41.5)</td>
<td>86(53.8)</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>128(91.4)</td>
<td>151(94.3)</td>
<td>0.31</td>
</tr>
<tr>
<td>No</td>
<td>12(8.6)</td>
<td>09(5.7)</td>
<td></td>
</tr>
<tr>
<td>Ethnic origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22(15.7)</td>
<td>37(23.1)</td>
<td>0.10</td>
</tr>
<tr>
<td>Non white</td>
<td>118(84.3)</td>
<td>123(76.9)</td>
<td></td>
</tr>
<tr>
<td>Current sexual practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>131(93.5)</td>
<td>148(92.5)</td>
<td>0.71</td>
</tr>
<tr>
<td>No</td>
<td>9(6.5)</td>
<td>12(7.5)</td>
<td></td>
</tr>
<tr>
<td>Condom use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>116(82.8)</td>
<td>112(76.2)</td>
<td>0.15</td>
</tr>
<tr>
<td>No</td>
<td>24(17.2)</td>
<td>38(23.8)</td>
<td></td>
</tr>
<tr>
<td>Difficulty to negotiate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13(3.2)</td>
<td>36(22.5)</td>
<td>0.002</td>
</tr>
<tr>
<td>No</td>
<td>127(90.8)</td>
<td>124(77.5)</td>
<td></td>
</tr>
<tr>
<td>Reveals the serum status to the casual partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34(24.2)</td>
<td>48(30)</td>
<td>0.26</td>
</tr>
<tr>
<td>No</td>
<td>106(75.8)</td>
<td>112(70)</td>
<td></td>
</tr>
<tr>
<td>Reveals the serum status to the fixed partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>113(80.7)</td>
<td>133(83.1)</td>
<td>0.58</td>
</tr>
<tr>
<td>No</td>
<td>27(19.3)</td>
<td>27(16.9)</td>
<td></td>
</tr>
<tr>
<td>If does not reveal uses condom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>137(97.8)</td>
<td>160(100)</td>
<td>0.06</td>
</tr>
<tr>
<td>No</td>
<td>03(2.2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Knowledge on reinfection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>116(82.8)</td>
<td>125(78.1)</td>
<td>0.30</td>
</tr>
<tr>
<td>No</td>
<td>24(17.2)</td>
<td>35(21.9)</td>
<td></td>
</tr>
<tr>
<td>Use ARVT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>123(87.8)</td>
<td>130(81.2)</td>
<td>0.14</td>
</tr>
<tr>
<td>No</td>
<td>17(12.2)</td>
<td>29(18.8)</td>
<td></td>
</tr>
<tr>
<td>Change in sexual desire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>43(30.7)</td>
<td>61(38.1)</td>
<td>0.17</td>
</tr>
<tr>
<td>No</td>
<td>97(69.3)</td>
<td>99(61.9)</td>
<td></td>
</tr>
</tbody>
</table>
It was observed that 79.3% of the people living with HIV/AIDS reported having used condoms in sexual relations in the last three months. This practice was predominant among women (51.3%), over thirty years of age (75.3%), mulatto or black (78.9%), studied less than ten years (64.2%), had a paid job (91.5%), gained a monthly income of less than one minimum wage (75.6%), married (50.9%), religious (92.4%).

As regards safe sex using condoms and socio-demographic factors, the chance of using condoms was lesser among single than among married participants (p=0.05; odds ratio=0.89), a statistically significant association (Table 2).

Among 79.3% of the people living with HIV/AIDS who reported safe sexual practices with condom use, 33.9% had not used the condom because they had not had sexual practice in the last three months, 84.1% reported no difficulties to negotiate on the condom use, 72.3% did not reveal the HIV serum status to the casual partners, 82.3% reveal the positive HIV serum status to the fixed partners, 99.5% do not reveal the serum status but use condoms, 82.3% know about reinfection, 67.3% had no change in their sexual desire after the HIV positive diagnosis and 85.2% are taking antiretroviral drugs.

As regards the behavioral factors of sexual practice, it was observed that sexual practice in the last three months had a six times higher chance of taking place with condom use (p<0.0001; odds ratio = 6.80) and that not revealing the HIV positive serum status to the partner increases the chance of using condoms two times more (p= 0.04; odds ratio = 2.39) (Table 3).

**Discussion**

In this study, the goal was to identify the main factors related to safe sexual practice through condom use in patients living with HIV/AIDS. It was evidenced that condom use was a frequent practice...
in most study participants, but 20.7% still report sexual practices without condom use.

These study findings are almost the same as another cross-sectional study undertaken in the South of Brazil, where the prevalence of unsafe sexual practice corresponded to 25.3%, similar to the findings in most studies involving people living with HIV/AIDS in cities in Italy, Southern China, African countries and lower than findings in Argentina and the United States.

Among the people living with HIV/AIDS under study, it was observed that the female sex was associated with having a paid job, being married and reporting difficulties to negotiate on condom use with the partners. These data evidence women’s increasing participation in the job market, which guarantees their permanent inclusion in the public sphere in recent decades. Despite their professional emancipation, women’s family and sexual issues are still based on the submission to the male sex.

A Brazilian study involving 2780 women showed that they are more vulnerable to unprotected sexual practices, due to difficulties to negotiate on condom use with the partner, as they are linked to macho cultural factors and out of fear of male violence by their intimate partners. Therefore, comprehensive care to these women, understanding all of their vulnerabilities and inviting sexual partners to participate in the health service, are necessary for the couple to understand the dimension of their sexuality and the HIV infection, turning them into protagonists of self-care, so as to promote pleasant and protected sexual practices and promote a better quality of life for these clients.

In this study, it was evidenced that single participants had a lesser chance of using condoms than married participants, similar to a study developed in Ethiopia involving people living with HIV/AIDS, where single people had a four times higher chance of engaging in unsafe sexual practices than married people and differently from the study by Anand et al., where married people, due to the greater confidence between the partners, engage in sexual practices without condom use.

Therefore, the relevant contribution of the multidisciplinary team is highlighted, which works in the orientation and care for people living with HIV/AIDS, as most participants in this study reported on condom use and knowledge on reinfection. Nevertheless, preventive actions need to be reinforced for the single people, who still engage in risky sexual practices (without condom use), with a view to avoiding reinfection and reducing potential risks for transmission of the HIV virus.

The study showed that sexual practice in the last three months had more chance of happening with condom use, even when the HIV-positive serum status is not revealed to the partners, a fact that suggests the stigmatization and excluding potential the HIV/AIDS infection still produces in society. And it contrasts with the study by Engedashet et al., in which people who did not reveal serum status had a greater chance of not using condoms.

In the course of this research, some limitations were faced, such as the sample from a single service, hampering the generalization of the results in relation to the general population.

As this was a cross-sectional study, the study participants could not be monitored with regard to their sexual practices. The assessment was only based on self-reporting and not other reliability measure of the report was obtained. Finally, there is the memory bias, as sexual practices in the last three months were investigated.

Therefore, despite the above limitations, the results of this study are relevant, contributing to the quality of care delivery to people living with HIV/AIDS and to the elaboration of appropriate prevention programs for these clients’ needs.

Thus, the development of similar studies in different geographical regions, with different methodological approaches, is important to support the health professionals’ work in the detection of possible risk behaviors and in planning appropriate prevention and control strategies for these clients.

**Conclusion**

The study shows that most people living with HIV/AIDS use a condom, even when they do not reveal their HIV positive serum status to their partners.
Nevertheless, a significant part of single people still maintains unprotected sexual practices. Despite being professionally emancipated and mostly married, women still face difficulties to negotiate on condom use with their sexual partners.

Acknowledgements
The authors acknowledge the support of the Research and Scientific and Technological Development Support Foundation of the State of Maranhão (FAPEMA) in the development of the research.

Collaborations
Silva WS, Oliveira FJF, Serra MAAO, Rosa CRAA and Ferreira AGN declare that they contributed to the conception, research development and interpretation of the data, writing, relevant critical review of the intellectual content and final approval of the version for publication.

References
Nursing ethical issues occurring within the State of Sao Paulo: factual description
Ocorrências éticas de enfermagem no Estado de São Paulo: descrição fática

Fabiola de Campos Braga Mattozinho¹
Genival Fernandes de Freitas¹

Abstract

Objective: To describe ethical issues occurring in nursing ethical cases (NECs) judged by the Nursing Council of Sao Paulo (Coren/SP).

Methods: Retrospective quantitative study, performed at the Coren/SP. The sample size consisted of 399 documents of nursing professionals obtained in 254 NECs judged in 2012 and 2013. Data was collected through an instrument, which were tabulated and analyzed through descriptive statistics.

Results: The category of nursing assistants (46.12%) was the most involved in the cases, with higher prevalence of beginners in the professional exercise, mean age of 36 years. Most issues highlighted were iatrogenic by omission (22.6%), iatrogenic by mistake in the administration of medicines (22.1%), crimes or criminal misdemeanor (18.0%).

Conclusion: The results were important to identify the characteristics of the issues and the professionals involved and the need to deepen the discussion on the ethical problems in everyday nursing practice.

Keywords
Ethics; Nursing/ethics; Codes of ethics; Legislation, nursing; Professional review organizations

Descritores
Ética; Enfermagem/ética; Códigos de ética; Legislação de enfermagem; Organizações de normalização profissional

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Conflict of interest: the authors declare that there are no conflicts of interest.
**Introduction**

As citizens, we are subject to standards of social life. It’s not different in relation to nursing professionals, who follow not only guiding norms of coexistence in his/her civilian life, but are also compelled to obey the rules inherent in professional practice.

Ethical issues while “damaging events caused by nursing professionals throughout the exercise related to improper attitude towards co-workers, patients or the institution where they work”\(^{(1)}\) occur daily in the professional routine, who should have knowledge on the analyses performed by the Board of Registered Nursing, in this case the Nursing Council of Sao Paulo (Coren/SP), in order to de-mystify the punitive aspect, as in most cases, errors are reported only when there is evidence that the patient has been harmed, making hard to critical discuss the implementation of measures for prevention and education.\(^{(2)}\)

Living norms, both in the ethical planning of a profession or in the midst of the sparse legislation should not be conceived only as a command, but mainly in the form of maintenance of an orderly coexistence, because we assumed the existence of intersubjective relations conducted in respect for the basic principles of our existence from the intangibility of human values.\(^{(3)}\)

Regarding professional ethics, there is a statement of the principles which should guide the professional conduct, to ensure compliance with the established norms and values.\(^{(4)}\) In this sense, the Ethics Code of Nursing Professionals (ECNP) is an instrument that brings together a set of norms, moral principles and rights related to the profession and its exercise.\(^{(5)}\) It has been reformulated by COFEN Resolution 311/2007,\(^{(6)}\) whose applications reach all relations involving professionals registered at Nursing Councils.

The studies regarding Nursing Ethical Cases (NECs) related to Regional Councils of Nursing, COFEN\(^{(7)}\) are scarce and consequently the knowledge of cases judged by Coren/SP.

Therefore, the present study aims to increase the debate about the ethical issues and, consequently, envision new possibilities of acting on this kind of phenomenon, taking into account the approach that the socialization of information can contribute to improvement of educational and preventive action in the daily work of nursing professionals.

Given the above, this study aims to describe the ethical issues involving nursing professionals reporting the ethical cases judged by Coren/SP.

**Methods**

This is a retrospective, exploratory-descriptive quantitative approach and documentary analysis study. The study was carried out from the analysis of documents from Coren/SP, which were obtained from the Ethics Department, linked respectively to Management and Presidency Offices. The cases were scanned to the trial phase and the nursing data in computerised system WebCoren, being accessed with password-restricted and traceable, in addition to the physical file found in the archives sector of that institution.

The cross-sectional timeframe was established for the period from January 1\(^{st}\), 2012 to December 31\(^{st}\), 2013, due to the facts that these are recent decisions and the organization was implemented at the beginning of 2012-2014, since the researcher is part of management and the restricted follow-up of the guidelines published by COFEN Resolution 370/2010.\(^{(8)}\)

The data collection started after approval and authorization of Coren/SP of the State of São Paulo. To ensure the anonymity of the subjects and/or institutions involved, we ensured the confidentiality of information concerning names of professionals and/or workplaces, restricting any exposure or embarrassment. A consent form was not used, as we conducted a historical sources analysis under Coren/SP responsibility, which holds the prerogative of custody and access authorization and usage of data.

The population of 399 professionals was established from documents that were on 254 ethical cases completed in first instance on the
timeframe established. The instrument of data collection, developed by the author, had the following variables: Professional category, type of incident, age group, years of professional training and training institution. Data was stored, tabulated and analyzed in Excel® through descriptive statistics.

The development of study followed national and international standards of ethics in research involving humans.

Results

Table 1 presents the Professional category by level of education, excluding midwives or nursing attendant among the ethical cases.

Table 1. Distribution of population by occupational category

<table>
<thead>
<tr>
<th>Professional</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Assistant</td>
<td>184</td>
<td>46.12</td>
<td>46.12</td>
</tr>
<tr>
<td>Nurse</td>
<td>142</td>
<td>35.59</td>
<td>81.70</td>
</tr>
<tr>
<td>Nursing Technician</td>
<td>73</td>
<td>18.30</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>399</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

As for the types of incidents involving professionals, the analysis was divided into two groups, attitudinal and procedural.

The following cases were considered attitudinal incidents: abandonment of duty, non-compliance with the obligation of professional secrecy, failure to observe the right to autonomy, no attendance of service calls and non-compliance with ethical tools as Technical Manager, categorized as voluntary acts contrary to CEPE (AVC); abuse, embezzlement, rape, illegal practice, document forgery, identity theft, illegally exhuming a corpse, abandonment of incapable, racism, sexual harassment, sexual acts, racketeering, narcotics trafficking, larceny, categorized as crimes or misdemeanours under criminal law (MUCL); physical and verbal aggression, moral harassment and insubordination in the team relations, categorized as inter-professional relations (IPR); and physical and verbal aggression to users and family members, categorized as interpersonal relationships with users and family (IRU).

The following incident ethical cases were considered procedural: clumsiness, recklessness and administration of parenteral enteral diet, categorized as iatrogenesis of action (IA); negligence, categorized as iatrogenesis of omission (IO); error in the administration of medications, categorized as medication misuse associated with negligence, incompetence or carelessness (DI) and error in the administration of blood products, categorized as iatrogenesis with blood products (IB).

From this categorization, figure 1 demonstrates the incidences complained by level of training.

Most professionals were aged 31 to 40 years, 141 (35.3%), followed by the age group between 21 and 30 years, totaling 126 (31.3%) professionals.

Another study variable referred to the time of training of each professional involved in the analyzed cases. Therefore, considering the date of graduation as initial term and final term of the incident date, we found professionals who had had a degree from zero to 41 years, being the majority, 170 (42.6%), graduated in the period from 0 to 5 years, followed by 97 (24.3%) from 6 to 10 years. Analyzing by level of education, we observed that all categories maintain the same pattern. Among nurses, 74 (52.1%) professionals had their training period dating from 0 to 5 years, followed by 23 (16.2%) of 6 to 10 years. Among nursing technicians 38 (52.1%) had their training from 0 to 5 years ago, followed by 24 (32.9%) from 6 to 10 years. In relation to nursing assistants 58 (31.5%) had their training from 0 to 5 years ago, followed by 50 (27.29%) from 6 to 10 years.

From the data related to the time of training, the analysis of the type of undergraduate institution was only possible for Nurses, as we could not access accurate information from Coren/SP database for nursing assistants and technicians (Table 2).

Out of the 142 Nurses, that corresponded to 35.6% of the population of this study, 01 (0.7%) could not be identified due to incomplete data in the records.
As shown in table 1, there has been a greater quantitative incident involving nursing assistants (46.1%). Thus, these data reveals the need to reconsider studies, such as those made by Peduzzi and Anselmi(9) with regard to activities that in practice these professionals develop. In this sense, Padilha et al(10) also alerted about how nursing assistants are performing activities of greater complexity, although they are often unprepared to make them.

Nurse cases accounted for 35.59% of incidents, highlighting the change in the profile of the activities of Nurses from the implementation of the Unified Health System (SUS), as well as the changes in nursing practice based on historical, political and social contexts, expanding the work of Nurses, especially in public service, generating greater accumulation of assignments.

(11) It is still known, that management action of the nurse is closely linked to their professional practice, thus creating, many times, the accountability for the activities performed by the nursing assistants and technicians, once focused on the implementation of the nursing care, “guided by the understanding and knowledge of the patient as a person, and their specific needs.”(12)

The results regarding the Professional category, in this study, converge with the results of the research conducted by Schneider and Ramos,(13) which was conducted in the Regional Council of Santa Catarina. This study analyzed 128 NECs, judged from 1999 and 2007, involving 172 professionals. From this quota,

Table 2. Nurses, according to the type of undergraduate institution

<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid percentage</th>
<th>Cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>122</td>
<td>85.9</td>
<td>85.9</td>
<td>85.9</td>
</tr>
<tr>
<td>Public</td>
<td>19</td>
<td>13.4</td>
<td>13.4</td>
<td>99.3</td>
</tr>
<tr>
<td>Impaired</td>
<td>1</td>
<td>0.7</td>
<td>0.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>142</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Incident ethical cases by level of training
66 (38.4%) were nursing assistants, followed by 61 (35.5%) Nurses. Also, a study conducted by Penna(14) analyzed 158 NECs, involving 189 professionals judged by Coren/SP, between 2001 and 2004, as it showed greater number of cases in the category of nursing assistant with 105 (55.6%), followed by the Nurse with 64 (33.9%) cases.

Regarding age group, there was higher prevalence in the age group up to 40 years with 67.9% of the population. Of these, 35.3% were 31 to 40 years. A study conducted by Mendes and Caldas(15) on ethical incidents with nursing professionals showed higher incidence in the age group of 21 to 39 years (70.5% of the ethical cases analysed).

The data related to the time of training of professionals revealed prevalence of professionals with up to 05 years of education (42.6%). In this sense, a study conducted by Silva et al,(16) showed concern for beginners in the nursing practice, addressing aspects that influence on direct assistance to the patient, contributing to potential risks, such as: lack of skills and training for professional practice, training of generalist nurses that immediately assume patients in specialized areas, insecurity, anxiety and even anguish in providing care to patients in units of greater complexity.

In table 2, we indicate that 85.9% of nurses were from private education institutions. In the year 2012, a study on the training of nurses from private undergraduate institutions, held in the State of Minas Gerais showed change in profile of these professionals, with the finding that the students would make double shifts, being in the labor market additionally to study, as well as emphasizes ease of college access, indicating that the private schools of nursing have attracted students with scholarship offer and opening of units near borders, which certainly attracts the individual who dreams of having higher education, even with the lack of training related to primary and secondary school, thus demonstrating the ease of enrolling without any criterion.(16)

On the other hand, a study conducted on the training of undergraduate nurses from public institutions, held in the State of São Paulo, shows that the students hardly ever carry work activities, considering the fact that the course is full-time, which does not make possible to combine work and study and indicates increase in freshmen who have completed secondary education in private schools.(17)

Considering these aspects, a differentiated profile must be taken into consideration to data collection. The undergraduate training can be undermined by students who try to reconcile work and study, where factors such as tiredness and lack of free time for supplementary activities, leads to a lower performance to those who have less worries and more time available.

Some authors consider that it is necessary to continue the process of professional learning, through training in service, aiming at the training of professionals working in health, taking into account the approach with the realities of the world of work. To do so, educational activities from the needs of the institution, of the professionals and those who will be served in this context are necessary.(18)

In this sense, it is important to invest in institutional policies towards permanent education, with establishment of the real needs of the institution and the individual, respecting all the practical context and multidisciplinary approach to enhance the technical, ethical and political skills, and consequently, increasing the critical capacity of those involved.(19)

As figure 1 shows, most incidents are related to IO 90 (22.6%), followed by DI 88 (22.1%) and MUCL 72 (18.0%), being in total 139 (34.8%) cases related to attitudinal issues and 260 (65.2%) cases related to procedural issues, noting that in the analysis by level of education the incidence of cases is diverse. Consistent with this result, a study conducted by Freitas and Oguisso(20) related to ethical incidents located in the city of São Paulo, for negligence, while omission iatrogenesis, was cited as the main cause of incidents in 57.33% of 114 cases conducted by nursing.
Oguiasso and Zoboli\textsuperscript{(21)} also mentioned that negligence is characterized by omission in attendance with consequent indifference of professional patient care, acting wrongly.

Incidents characterized as iatrogenics IA, IO, DI and IB were listed from Padilha\textsuperscript{(10)} “considering being undesirable events by health professionals, in the case of nursing, regardless of the different concepts that allow different interpretations.”

According to Madalosso\textsuperscript{(22)} “the iatrogenesis of nursing care is related to the deprivation of care, or unsatisfactory enforcement of these that would cause inconvenience, harm or injury to the patient.”

By category, the professional Nurse presents a higher incidence in cases related to negligence. The following incidents related to malpractice or recklessness, and the expansion of the Nurse tasks, especially after the advent of SUS.

Cases related to volunteer attitudes opposing the ethics code (EC), including actions related to technical responsibility in service, were also highlighted in the results, data that bring us to think about the ignorance of the professional about all their responsibilities not only in the field but also in the management assistance, once guided, towards knowledge, attitude and practice of Systematization of Nursing Care (SNC), the conduct of the performance of the whole team, being fundamental the knowledge about their rights, duties and responsibilities, because their performance directly impacts the assistance provided, regardless of their function.\textsuperscript{(13)}

Considering the advances in technology and legal provision of expertise in activities of greater technical complexity, this investment is required in constant training, especially given the views of this researcher, opening a large working space to the Nurse.

With regard to the nursing technician, there is a higher incidence of ethical iatrogenic drug misuse. In this respect, it should be noted that there is concern in relation to issues related to the administration of medicines, because as Cassiani and Coimbra\textsuperscript{(23)} reported, there is predominant understanding that such an action is one of the biggest responsibilities of the nursing staff that requires thought and not only practice. The data found in relation to crime cases require a specific study, not providing conjecture or value judgment now.

Regarding nursing assistants, there was a higher incidence of crime cases, demonstrating the utmost need of further study on this subject, because there are many factors influencing these incidents, and manifestation without deepening, as it can cause discomfort and even preconceptions. Incidents related to iatrogeny drug misuse and iatrogenic action, compatible with the nursing assistants’ functions, are the most common incidents, as these are prescribed procedures in the professional law.

According to Mirabete\textsuperscript{(24)} the concept of crime is essentially legal, it can be considered a fact contrary to human law and is analyzed on the formal aspect, extending this definition from the perspective of analytical fact committed with guilt subject to penalty application. On the other hand, the felony is a “crime” of lower proportion, with less offensive potential, with minor penalties.\textsuperscript{(25)}

There is no doubt that the details of procedural issues revealed to be of the utmost importance to implementation of actions aimed at minimizing incidents of mistakes or failures, with the establishment of guidelines for primary and preventive actions, aimed at not only theoretical but especially practical activities such as those carried out in realistic simulation centers. However, one cannot overlook the findings related to attitudinal issues, both regarding action and omission, since attitudes keep strong relationship with professional principles in nursing, namely: teamwork, communication, coexistence, respect and honesty, among others. Therefore, such principles are enveloped in the essence of the human being that cares and that relates to another human being.

According to Santos and Ceolim,\textsuperscript{(26)} the most frequent cause of iatrogenic cases is connected to human conduct, regardless of potential situations in the workplace that can enhance any damage, with constant investigation, avoiding punitive policies on human error.

Therefore, we must spread the view in the discussions that involve the exercise of nursing care both in management and in practice, ensuring that...
“recovery strategies and expansion of ethics discussions throughout the training process encourage the training of ethical issues”. (27)

**Conclusion**

Most ethical cases highlighted in this study allows us to point out the importance of investment not only in training related to procedural issues, but mainly in discussions involving the professionals attitudes (the values, behaviors, professional attitudes in the workplace, involving interpersonal relationships, among other aspects), in addition to the promotion of the integration of theoretical and practical skills with ethical values, attitudes and principles for the safe exercise of care and management practice.

**Collaborations**

Mattozinho FCB contributed with the project design, analysis and interpretation of the data and writing the article. Freitas GF contributed critical intellectual content, review and final approval of the version to be published.

**References**


Nursing ethical issues occurring within the State of Sao Paulo: factual description


Apparent validity of a questionnaire to assess workplace violence
Validade aparente de um questionário para avaliação da violência no trabalho

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Keywords
Nursing research; Questionnaires; Nursing staff; Workplace violence; Validation studies

Abstract
Objective: To elaborate a questionnaire for assessing and evaluate the apparent validity of the workplace violence suffered or witnessed by nursing staff.

Methods: A methodological study with the participation of five judges selected by competence. The questionnaire was evaluated by judges according to comprehensiveness, objectivity, organization and relevance. The percentage of presence or absence of the criteria for each item evaluated in the first and second round of evaluation was presented by descriptive statistics.

Results: The questionnaire was structured in five sections with 54 questions, and had as structure and content reference some of the existing instruments and the specialized literature on workplace violence. The second round of evaluation obtained favorable assessment of the judges as the presence of the criteria of each assessed item.

Conclusion: The questionnaire may present one more possibility for the measurement of the occurrence of violence in the nursing and health environment.

Resumo
Objetivo: Elaborar um questionário para avaliação da violência no trabalho sofrida ou testemunhada por trabalhadores de enfermagem e avaliar sua validade aparente.

Métodos: Estudo metodológico com participação de cinco juízes selecionados a critério de competência. Os juízes avaliariam o questionário segundo os critérios abrangência, objetividade, organização e pertinência. Foi apresentado, por meio da estatística descritiva, o porcentual de presença ou ausência dos critérios, em cada item avaliado, na primeira e segunda rodada de avaliação.

Resultados: O questionário foi estruturado em 5 seções, com 54 questões, e teve como referência de estrutura e conteúdo alguns dos instrumentos existentes e a literatura especializada sobre violência no trabalho. Na segunda rodada de avaliação, obteve-se avaliação favorável dos juízes quanto à presença dos critérios por item avaliado.

Conclusão: Espera-se que o questionário possa representar, aos interessados, mais uma possibilidade de mensuração da ocorrência de violência no ambiente de trabalho na enfermagem e na saúde.

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1Universidade Estadual de Campinas, SP, Brazil.
Conflicts of interest: there are no conflicts of interest to declare.
Introduction

Currently, violence is a concerning factor, which occurs in most health care environments, in both sexes and in different professional groups, most frequently with nursing professionals. Physical assault, verbal abuse, bullying, sexual harassment and others are some examples, all of which have generated consequences. All forms of violence can be associated with depressive symptoms, burnout, minor psychiatric disorders, low back pain and a range of other psychological, physical, industrial, institutional and/or social impacts.

In some healthcare workplaces, staff members have the risk of increased occupational violence. The work in emergency and inpatient hospital areas, for example, has been positively associated with workplace violence.

A study involving 30 members of the emergency room nursing staff of a hospital in Rio de Janeiro identified that most of them (76.7%) were victims of violence in the workplace environment. The most common form of aggression was verbal abuse, and the main perpetrators were companions and patients.

High workload is characteristic of the work process in emergency rooms. In these areas, staff members deal with considerable demand and pressure for more expedient care. The working conditions are often distressing, and, in addition to high demand, reflect difficult decision-making and patient care, favoring conflict and violence.

Thus, there is a need for policy makers, the scientific community, health services and interested parties to identify, discuss and develop strategies and health and safety programs, focused on prevention and management of workplace violence. Therefore, it is necessary to identify whether violence is present and, how it is expressed in each work context. Therefore, one of the aspects that can help in overcoming the current limitations, in the labor context, are investigations which include an analysis of exposure, which can support intervention on the determinants of those limits.

In this context, data collection instruments to identify and characterize workplace violence are fundamental. However, validated instruments on this subject for use in the Brazilian context are limited. From this perspective, the National Agenda for Health Research Priorities has as a priority within Brazil, the “translation, adaptation and validation of violence measurement tools, existing in other countries.”

Thus, the preparation of this questionnaire was justified by the absence of validated Brazilian instruments to measure the occurrence of workplace violence, to be used in research with nursing staff and that would include all the variables/characteristics of interest to the investigation.

Therefore, this study aimed to develop a questionnaire to assess workplace violence suffered or witnessed by nursing staff, and evaluate its apparent validity.

Methods

This was a methodological study to develop a questionnaire that was evaluated and optimized.

A search of available studies and data collection instruments was initially completed to develop the instrument. Subsequently, the structure and content of the questionnaire was developed, using the model presented by the World Health Organization, the International Labor Organization and Public Services and the International Council of Nurses as reference, based on the reduction of workplace violence and its impact in health care, allowing the identification of victims of violence in the last twelve months. This is a measurement period that has been used by many researchers on the subject.

The elaboration of the questionnaire was based, complementarily, upon the instrument developed by Contrera-Moreno, especially with regard to the question of measurement of the consequences of occupational violence for the worker. The use of specialized literature was directive to the process.

Thus, the structure and content of the developed questionnaire are supported by the instruments found within the specialized literature, including the reports from the World Health Organization.
and other related international agencies. Due to the need for a questionnaire to measure variables of interest to an investigation, which would be performed with nursing staff and bring a different approach to the issues and/or response options, specialized literature was used to assist. A conceptual adjustment was made to the sections, questions and most of the response possibilities, as well as the inclusion of new important variables to identify and characterize violence suffered by the nursing staff, and whether they were witnesses of physical violence, verbal abuse or sexual harassment in the workplace.

For conceptual purposes, violence related to work was defined as “every voluntary action of an individual or group against another individual or group that may cause physical or psychological harm, which occurred in the workplace, or involved established work relationships or activities related to work.” Therefore, violence (physical, verbal abuse and sexual harassment) that occurred in the workplace received more emphasis on the questionnaire.

Physical violence was defined as the use of “physical force against another person or group, that results in physical, sexual or psychological harm”, including assault, pushing, pulling, spitting, biting, scratching, kicking and other acts. Verbal abuse was defined as the behavior of yelling at, degrading, or showing disrespect for the value and dignity of someone. Sexual harassment was defined as unwanted behavior in which the victim is placed in a sexual condition of offense, humiliation or threat to his/her well-being.

The questionnaire was evaluated by five judges for assessment of apparent validity, which is considered a subtype of content validity. Therefore, this type of validity is not verified using statistics; however, experts and/or researchers can participate in assessing the relevance of a scale. Regarding the judges, they worked in related academic and/or professional areas, and were selected based on their competencies. They had a nursing degree; three held a doctorate and two a master’s degree, with experience in at least one of the following areas: adaptation and validation of measurement instruments, occupational health, occupational violence, clinical care, nursing management, or emergency care.

The judges performed the analysis according to the presence or absence of criteria: comprehensiveness, objectivity, organization and relevance, defined as “[...] comprehensive: that issue containing important information to reach the objective of the study, stated in a comprehensible manner; [...] Objective: that issue which is easy to understand; [...] organization: the disposition of the issues and alternatives as well as their content; [...] Relevant: that question which is related to achieving the goal of the research.”

The judges’ analysis was performed by item, evaluated with the aid of an evaluation guide. These were physical violence in the workplace; verbal abuse in the workplace; sexual harassment in the workplace; other types of violence in the workplace referenced by staff; and prevention and reduction of workplace violence. For each item, the judge could indicate the absence or presence of the corresponding criteria and highlight those items that were necessary, but absent in the instrument, as well as unnecessary items on the instrument, and other comments/suggestions in the open spaces. The minimum agreement considered among the judges was 70%, and was identified by the percentage of presence in the evaluated item.

The study was conducted according the national and international norms of ethics in research involving human beings.

**Results**

The questionnaire was structured in sections, initially composed of a conceptual introduction, since its structure was developed according the instrument presented by the World Health Organization, the International Labor Organization and Public Services and the International Council of Nurses. Considering its structure, the participant had the opportunity to identify whether or not she/he was a victim of the mentioned violence; if yes, there was
guidance to answer questions related to the characterization of the event; if not, there were directions that followed for the question that assessed whether he/she had witnessed the incident in question.

After adjustments, the resulting questionnaire consisted of five sections, one for each type of violence to be studied: (a) physical violence in the workplace; (b) verbal abuse in the workplace; (c) sexual harassment in the workplace; (d) other type of violence in the workplace referenced by the staff; and (e) prevention and reduction of violence in the workplace.

The questionnaire was then assessed for apparent validity, performed in stages, and in both, the suggestions of modifications made by the judges were analyzed and, in most cases, accepted. After returning the first round of evaluation, modifications were made with regard to formatting, change in the numbering of the questions, change or inclusion of questions and/or response options, exchange of concepts and/or terminology, adjusting according to the literature used.

The questionnaire was then assessed for apparent validity, performed in stages, and in both, the suggestions of modifications made by the judges were analyzed and, in most cases, accepted. After returning the first round of evaluation, modifications were made with regard to formatting, change in the numbering of the questions, change or inclusion of questions and/or response options, exchange of concepts and/or terminology, adjusting according to the literature used.

Table 1 shows the judges’ evaluation regarding the presence or absence of criteria, by item assessed in the first and second round.

<table>
<thead>
<tr>
<th>Item evaluated</th>
<th>Criteria</th>
<th>Comprehensiveness n(%)</th>
<th>Relevance n(%)</th>
<th>Objectivity n(%)</th>
<th>Organization n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical violence in the workplace</td>
<td>Absent</td>
<td>1(20)</td>
<td>1(20)</td>
<td>0(0)</td>
<td>2(40)</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>4(80)</td>
<td>4(80)</td>
<td>5(100)</td>
<td>3(60)</td>
</tr>
<tr>
<td>Verbal abuse in the workplace</td>
<td>Absent</td>
<td>2(40)</td>
<td>1(20)</td>
<td>1(20)</td>
<td>0(0)</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>3(60)</td>
<td>4(80)</td>
<td>4(80)</td>
<td>4(80)</td>
</tr>
<tr>
<td>Sexual harassment in the workplace</td>
<td>Absent</td>
<td>2(40)</td>
<td>1(20)</td>
<td>1(20)</td>
<td>0(0)</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>3(60)</td>
<td>4(80)</td>
<td>4(80)</td>
<td>4(80)</td>
</tr>
<tr>
<td>Others types of violence referenced by staff</td>
<td>Absent</td>
<td>2(40)</td>
<td>1(20)</td>
<td>1(20)</td>
<td>2(40)</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>3(60)</td>
<td>4(80)</td>
<td>4(80)</td>
<td>3(60)</td>
</tr>
<tr>
<td>Prevention and reduction of workplace violence</td>
<td>Absent</td>
<td>2(40)</td>
<td>1(20)</td>
<td>1(20)</td>
<td>2(40)</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>3(60)</td>
<td>4(80)</td>
<td>4(80)</td>
<td>3(60)</td>
</tr>
</tbody>
</table>

Table 1. Judges’ evaluation by item according to presence or absence of the criteria in the first and second round

The assessment of judges was favorable after the second round, achieving at least 80% of responses indicating the presence of the criteria in the item. The item “physical violence in the workplace” was considered organized by 100% (5/5) of the judges, and 80% (4/5) found it to be comprehensive, objective and relevant.

Considering the explanations provided after completion of the second round of evaluation, some modifications were made, based mostly on suggestions made by two judges, including a list of possible answers for some opened questions. Even when the item was considered comprehensive, objective, organized and relevant by 80% or more of the judges, the suggestions/justifications for changing of items were accepted in most cases after analysis, considering the qualification of the instrument in relation to its form and content.

Chart 1 shows the resulting version of the questionnaire.

Discussion

The limitation of this study was that the questionnaire was structured according to already existing instruments, which were not independently validated within this study. Also, a third round of evaluation was not performed after some modifications were made based on suggestions made by two judges, after the completion of the second round of evaluation.

The subject, “workplace violence”, has achieved prominence in the scientific community through studies conducted in different countries(1,5,6,9) and
### Chart 1. Questionnaire according to sections, questions and answer options

<table>
<thead>
<tr>
<th>Seção</th>
<th>Questões</th>
<th>Opções de resposta</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abuso verbal no ambiente de trabalho</strong></td>
<td>Nos últimos 12 meses você sofreu abuso verbal no seu ambiente de trabalho?</td>
<td>Não; Sim.</td>
</tr>
<tr>
<td></td>
<td>Se sim, nos últimos 12 meses quantas vezes você sofreu abuso verbal no seu ambiente de trabalho?</td>
<td>Uma vez; Duas vezes; Três vezes; Quatro vezes ou mais; Não lembro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho, como foi?</td>
<td>Violência física com arma (com uso de objeto, exemplo: faca, revólver...); Violência física sem arma (corpo a corpo, exemplo: soco, punção...).</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho quem foi o autor do abuso?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa____; Colega que não trabalha na unidade. Informe a profissão da pessoa____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho qual era o sexo do agressor?</td>
<td>Feminino; Masculino.</td>
</tr>
<tr>
<td></td>
<td>Ainda com relação ao sexo do agressor:</td>
<td>Eramos do mesmo sexo; éramos de sexo oposto.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho em qual turno ocorreu o incidente?</td>
<td>Manhã; Tarde; Noite.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho o incidente ocorreu nesta Unidade?</td>
<td>Não; Sim.</td>
</tr>
<tr>
<td></td>
<td>Se não, em qual local ocorreu?</td>
<td>Centro de saúde; Hospital; Outra Unidade de Pronto Atendimento; Trajeto de trabalho (percurso percorrido da residência para o trabalho e vice-versa); Outro. Quais?____.</td>
</tr>
<tr>
<td></td>
<td>Quais foram as consequências para você após sofrer abuso verbal no seu ambiente de trabalho?</td>
<td>Afastamento do trabalho. Por quantos dias?<strong><strong>; Ansiedade; Baixa autoestima; Cansaço; Crises de choro; Depressão; Dificuldade para dormir; Dor; Estresse; Irritação; Lesão corporal; Medo; Perda da concentração; Perda da satisfação com o trabalho; Raiva; Sentimento de inferioridade; Tristeza; Outro(s) Qual(is)?</strong></strong>.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido abuso verbal no seu ambiente de trabalho você: Foi liberado logo após o incidente; Foi liberado após já ter passado algum tempo do incidente. Quanto tempo após?___ horas ___ min; Continuou trabalhando.</td>
<td>Não; Sim; Qual?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido abuso verbal no seu ambiente de trabalho você registrou o incidente?</td>
<td>Não; Sim. Em qual local foi feito o registro?____.</td>
</tr>
<tr>
<td></td>
<td>O agressor teve consequências pelo ato de abuso verbal praticado?</td>
<td>Não; Sim. Não sei. Se sim, quais?____.</td>
</tr>
<tr>
<td></td>
<td>Nos últimos 12 meses você foi testemunha de situações de abuso verbal direcionado ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Não; Sim; uma vez; Sim, duas ou mais vezes.</td>
</tr>
<tr>
<td></td>
<td>Se sim, nos últimos 12 meses quantas vezes você sofreu abuso verbal no seu ambiente de trabalho?</td>
<td>Uma vez; Duas vezes; Três vezes; Quatro vezes ou mais; Não lembro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho quem foi o autor do abuso?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa____; Colega que não trabalha na unidade. Informe a profissão da pessoa____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido abuso verbal no seu ambiente de trabalho qual era o sexo do agressor?</td>
<td>Feminino; Masculino.</td>
</tr>
<tr>
<td></td>
<td>Se não, em qual local ocorreu?</td>
<td>Centro de saúde; Hospital; Outra Unidade de Pronto Atendimento; Trajeto de trabalho (percurso percorrido da residência para o trabalho e vice-versa); Outro. Quais?____.</td>
</tr>
<tr>
<td></td>
<td>Quais foram as consequências para você após sofrer abuso verbal no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papeis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado (sozinho); Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido abuso verbal no seu ambiente de trabalho você recebeu algum auxílio?</td>
<td>Não; Sim; Qual?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido abuso verbal no seu ambiente de trabalho você registrou o incidente?</td>
<td>Não; Sim. Em qual local foi feito o registro?____.</td>
</tr>
<tr>
<td></td>
<td>Quais são as causas que, na sua opinião, contribuíram para a ocorrência da violência física direcionada ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papeis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado (sozinho); Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td></td>
<td>Afastamento do trabalho. Por quantos dias?<strong><strong>; Ansiedade; Baixa autoestima; Cansaço; Crises de choro; Depressão; Dificuldade para dormir; Dor; Estresse; Irritação; Lesão corporal; Medo; Perda da concentração; Perda da satisfação com o trabalho; Raiva; Sentimento de inferioridade; Tristeza; Outro(s) Qual(is)?</strong></strong>.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Se sim, nos últimos 12 meses quantas vezes você sofreu violência física no seu ambiente de trabalho?</td>
<td>Uma vez; Duas vezes; Três vezes; Quatro vezes ou mais; Não lembro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido violência física no seu ambiente de trabalho quem foi o autor do ato?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa____; Colega que não trabalha na unidade. Informe a profissão da pessoa____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido violência física no seu ambiente de trabalho qual era o sexo do agressor?</td>
<td>Feminino; Masculino.</td>
</tr>
<tr>
<td></td>
<td>Se não, em qual local ocorreu?</td>
<td>Centro de saúde; Hospital; Outra Unidade de Pronto Atendimento; Trajeto de trabalho (percurso percorrido da residência para o trabalho e vice-versa); Outro. Quais?____.</td>
</tr>
<tr>
<td></td>
<td>Quais foram as consequências para você após sofrer violência física no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papeis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado (sozinho); Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido violência física no seu ambiente de trabalho você: Foi liberado logo após o incidente; Foi liberado após já ter passado algum tempo do incidente. Quanto tempo após?___ horas ___ min; Continuou trabalhando.</td>
<td>Não; Sim; Qual?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido violência física no seu ambiente de trabalho você registrou o incidente?</td>
<td>Não; Sim. Em qual local foi feito o registro?____.</td>
</tr>
<tr>
<td></td>
<td>O agressor teve consequências pelo ato de violência física praticado?</td>
<td>Não; Sim; Não sei. Se sim, quais?____.</td>
</tr>
<tr>
<td></td>
<td>Nos últimos 12 meses você foi testemunha de situações de violência física direcionada ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Não; Sim. Em qual local foi feito o registro?____.</td>
</tr>
<tr>
<td></td>
<td>Se sim, nos últimos 12 meses quantas vezes você sofreu violência física no seu ambiente de trabalho?</td>
<td>Uma vez; Duas vezes; Três vezes; Quatro vezes ou mais; Não lembro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido violência física no seu ambiente de trabalho quem foi o autor do ato?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa____; Colega que não trabalha na unidade. Informe a profissão da pessoa____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td></td>
<td>Na última vez que você se recorda ter sofrido violência física no seu ambiente de trabalho qual era o sexo do agressor?</td>
<td>Feminino; Masculino.</td>
</tr>
<tr>
<td></td>
<td>Se não, em qual local ocorreu?</td>
<td>Centro de saúde; Hospital; Outra Unidade de Pronto Atendimento; Trajeto de trabalho (percurso percorrido da residência para o trabalho e vice-versa); Outro. Quais?____.</td>
</tr>
<tr>
<td></td>
<td>Quais foram as consequências para você após sofrer violência física no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papeis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado (sozinho); Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido violência física no seu ambiente de trabalho você recebeu algum auxílio?</td>
<td>Não; Sim; Qual?____.</td>
</tr>
<tr>
<td></td>
<td>Após ter sofrido violência física no seu ambiente de trabalho você registrou o incidente?</td>
<td>Não; Sim. Em qual local foi feito o registro?____.</td>
</tr>
<tr>
<td></td>
<td>Quais são as causas que, na sua opinião, contribuíram para a ocorrência da violência física direcionada ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papeis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado (sozinho); Outro(s). Qual(is)?____.</td>
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### Seção Questões Opções de resposta

<table>
<thead>
<tr>
<th>Continuação</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Nos últimos 12 meses você sofreu assédio sexual no seu ambiente de trabalho?</td>
<td>Não; Sim.</td>
</tr>
<tr>
<td>Se sim, nos últimos 12 meses quantas vezes você sofreu assédio sexual no seu ambiente de trabalho?</td>
<td>Uma vez; Duas vezes; Três vezes; Quatro vezes ou mais; Não lembro.</td>
</tr>
<tr>
<td>Na última vez que você se recorda ter sofrido assédio sexual quem foi o autor do assédio?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa_____; Colega que não trabalha na unidade. Informe a profissão da pessoa_____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td>Na última vez que você se recorda ter sofrido assédio sexual no seu ambiente de trabalho qual era o sexo do agressor?</td>
<td>Feminino; Masculino.</td>
</tr>
<tr>
<td>Ainda com relação ao sexo do agressor:</td>
<td>Éramos do mesmo sexo; éramos de sexo oposto.</td>
</tr>
<tr>
<td>Na última vez que você se recorda ter sofrido assédio sexual no seu ambiente de trabalho o assédio ocorreu nesta Unidade?</td>
<td>Sim; Não.</td>
</tr>
<tr>
<td>Se não, em qual local ocorreu?</td>
<td>Centro de saúde; Hospital; Outra Unidade de Pronto Atendimento; Trajeto de trabalho (percurso percorrido da residência para o trabalho e vice-versa); Outro. Qual?____.</td>
</tr>
<tr>
<td>Quais foram as consequências para você após sofrer assédio sexual no seu ambiente de trabalho?</td>
<td>Afastamento do trabalho. Por quantos dias?_____; Ansiedade; Baixa autoestima; Cansaço; Crises de choro; Desespero; Dificuldade para dormir; Dor; Estresse; Imitação; Lesão; Medo; Perda da concentração; Perda da satisfação com o trabalho; Raiva; Sentimento de inferioridade; Tristeza; Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td>Após ter sofrido assédio sexual no seu ambiente de trabalho você recebeu algum auxílio?</td>
<td>Não; Sim. Qual?____.</td>
</tr>
<tr>
<td>Após ter sofrido assédio sexual no seu ambiente de trabalho você registrou o incidente?</td>
<td>Não; Sim; Não sei. Se sim, quais?____.</td>
</tr>
<tr>
<td>Quais são as causas que, na sua opinião, contribuem para a ocorrência do assédio sexual direcionado ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Estar em contato com o público (face a face); Falta de precisão na atribuição de papéis e responsabilidades; Falta de segurança no ambiente de trabalho; Instalações superlotadas; Longo tempo de espera por atendimento; Número reduzido de trabalhadores; Prestar assistência às pessoas com angústia, sua família e amigos; Trabalho isolado [escrever]; Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td>Se sim, o que você sentiu após presenciar o ocorrido?</td>
<td>Arrependimento; Culpa; Frustração; Medo; Raiva; Sentimento de impotência; Sentimento de injustiça; Tristeza; Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td>Se, sim, quantos dias?____; Horas ____min; Continuou trabalhando.</td>
<td></td>
</tr>
<tr>
<td>Quais foram as consequências para você após sofrer este tipo de violência no seu ambiente de trabalho?</td>
<td>Não; Sim. Onde foi feito o registro?____.</td>
</tr>
<tr>
<td>O agressor teve consequências pelo ato de assédio sexual praticado?</td>
<td>Não; Sim; Não sei. Se sim, quais?____.</td>
</tr>
<tr>
<td>Nos últimos 12 meses você foi testemunha de situações de assédio sexual direcionado ao trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Não; Sim; uma vez; Sim, duas ou mais vezes.</td>
</tr>
<tr>
<td>Na última vez que você se recorda ter sofrido assédio sexual no seu ambiente de trabalho quem foi o autor do assédio?</td>
<td>Chefe e/ou supervisor; Colega que trabalha na unidade. Informe a profissão da pessoa_____; Colega que não trabalha na unidade. Informe a profissão da pessoa_____; Familiar do paciente; Paciente; Público em geral; Outro.</td>
</tr>
<tr>
<td>Na sua opinião, quais medidas reduziram a ocorrência de violência no seu ambiente de trabalho?</td>
<td>Admitir trabalhadores em número suficiente; Dar oportunidade ao paciente de comentar sobre a qualidade do serviço e considerar seus comentários; Desenvolvimento de um sistema para alertar o pessoal da segurança em casos de ameaça à violência; Identificação dos visitantes; Iluminação adequada nos corredores, em torno da unidade e áreas de estacionamento; Instalação de detectores de metal para evitar que pessoas armadas entrem na unidade; Evitar o trabalho isolado ou manter contato com os trabalhadores que trabalham isolados; Formação aos trabalhadores quanto ao reconhecimento e gerenciamento de situações de violência e conflitos; Fornecer escolta de segurança para locais de estacionamento; Reduzir o tempo de espera do paciente; Melhorar o serviço de informação ao público; Presença do pessoal da área de segurança; Outro(s). Qual(is)?____.</td>
</tr>
<tr>
<td>Na sua opinião, quais medidas preveniram a ocorrência de violência no seu ambiente de trabalho?</td>
<td>(Questão aberta).</td>
</tr>
<tr>
<td>Você conhece medidas específicas de prevenção para cada tipo de violência sofrida pelo trabalhador da saúde no seu ambiente de trabalho?</td>
<td>Não; Sim.</td>
</tr>
</tbody>
</table>
by the press, in general. However, the availability of data collection instruments to assess workplace violence in healthcare from different Brazilian contexts, including the multiplicity of variables to characterize the event, and which were submitted to some process of validity assessment, is still incipient.

The nursing staff is essential to the composition of the health care workforce, because, without nurses, a large part of care is not performed. However, the high turnover among nurses, for example, represents a major challenge for health services in the world, and may be related to several factors, such as exposure to situations of occupational violence.

Thus, a data collection instrument submitted to expert evaluation is important for assessing the occurrence of such incidents in health care work environments. Knowing the reality, it is possible to provide foundations and resources to guide the incorporation of safety programs and the prevention of occupational violence appropriate to the demands of each work context, with greater potential for success.

After the assessment of the judges, the questionnaire was composed of 54 questions, as follows: physical violence in the workplace (17 questions), verbal abuse in the workplace (16 questions), sexual harassment in the workplace (16 questions), other types of violence in the workplace referred to by the staff (three questions), and prevention and reduction of violence in the workplace (3 questions). The judges’ analysis contributed considerably to the qualification of the instrument, with regard to its form and content. Thus, the apparent validity, although considered an unsophisticated method, was important in the development of a measurement instrument.

It is necessary to consider whether the individual referred to having suffered physical violence, verbal abuse or sexual harassment in the last twelve months, as he/she can then be considered a victim of workplace violence, a condition also adopted by another study.

The variables investigated to obtain information on the occurrence of occupational violence (physical violence, verbal abuse or sexual harassment) within the nursing staff were: number of times the person suffered physical violence; the profession of aggressor, whether or not he was a colleague working on the unit; gender of the aggressor, and whether or not he/she was the same sex as the victim; if the incident happened in the unit where the employee works today; if the employee remained working after the event or if he/she was fired; if the victim received support and, if yes, what kind and from whom; if there was a record of the incident; period of the occurrence; if the victim was a witness to physical violence, verbal abuse or sexual harassment and, if yes, what were his/her feelings; and others.

One question sought to enable the individual to report whether he/she had suffered any other kind of violence related to his/her work. Thus, although the focus was on physical violence, verbal abuse and sexual harassment, this question allowed for the possibility of identifying other types of violence that, in the victim’s opinion, may be present in the workplace, whether related to structure, institution or behavior and/or relationships, giving the possibility of approaching different manifestations of occupational violence and the complexity of the phenomenon.

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We thank the National Counsel of Technological and Scientific Development - Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq, for the scholarship for Maiara Bordignon, and to the judges for their contributions.

Collaborations
Bordignon M and Monteiro MI collaborated in the design, analysis, article writing, relevant critical review of the intellectual content, and final approval of the version to be published.

Conclusion
The questionnaire was developed. The favorable assessment by the judges, achieved in the second round of evaluation, suggested that it can be used
to estimate the occurrence of workplace violence of nursing or other health professionals, as it can be applied to different occupational groups in the area, representing a possibility for those who are interested in the study of the phenomenon.

References


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