

# Prevalence and factors associated with the use of sleep-inducing medication among women receiving Primary Health Care: a cross-sectional study in Vitória, Espírito Santo, Brazil, 2014

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## ABSTRACT

**Objective:** To verify prevalence and factors associated with the use of sleep-inducing medication among women receiving primary health care (PHC) in Vitória, ES, Brazil. **Methods:** This was a cross-sectional study conducted in 2014 with women aged 20-59. We analyzed association of sleep-inducing medication use with socioeconomic factors and experiences of violence (Poisson regression). **Results:** Out of 991 participants, 18.5% were using sleep-inducing medication and 45.9% had used it at some point in their lives. Current and lifetime use of these medications was associated with age, years of education, as well as psychological, physical and sexual violence in the last year ( $p$ -value $<0.05$ ). Lower family income (PR=1.30; 95%CI 1.03;1.64) and controlling partner (PR=1.35; 95%CI 1.08;1.69) were associated with current use, while experience of sexual violence in childhood (PR=1.33; 95%CI 1.13;1.56) was associated with lifetime use. **Conclusion:** Use of sleep-inducing medication was frequent among PHC service users, and was associated with socioeconomic factors and experiences of violence.

**Keywords:** Sleep Aids, Pharmaceutical; Sleep; Mental Health; Violence Against Women; Socioeconomic Factors; Observational Study.

## INTRODUCTION

Sleep-related complaints are quite frequent in health care.<sup>1</sup> Work overload, daily contact with technology and sociocultural trends can negatively interfere with sleep quality and patterns.<sup>2</sup> In addition, with regard to sleep quality, there are differences between the sexes, with a higher frequency of sleeping difficulties and sleep disorders in females.<sup>3</sup>

A meta-analysis study, investigating differences between the sexes regarding occurrence of insomnia, found a 41.0% higher predisposition to insomnia among women when compared to men.<sup>4</sup> In Spain, among 2,144 individuals observed, women were found to be three times more likely to use sleep-inducing medication.<sup>5</sup> In Brazil, a study with 743 male and female adults conducted in a city in the interior region of the state of São Paulo in 2012, found a prevalence rate of 46.7% for sleep disorders among the participants, and they were more frequent in women (52.1%).<sup>6</sup> Data from the 2013 National Health Survey showed that one in every 13 Brazilians used sleep-inducing medication, and this behavior was 2.2 times more prevalent in women: prevalence ratio (PR) = 2.21; 95% confidence interval (95%CI) = 1.97; 2.47.<sup>7</sup>

Poor sleep quality impacts quality of life, affects cognitive performance, memory, concentration and, furthermore, impairs the social, family and work context.<sup>8</sup> Among women, use of sleep-inducing medication is related to advancing age, presence of chronic disease,<sup>9</sup> physiological and hormonal changes,<sup>10</sup> social and family problems,<sup>11</sup> low schooling levels and low income.<sup>12</sup> Sociodemographic status is seen as one of the main reasons for using these drugs.<sup>11</sup>

It is worth noting that some women use sleep inducers to relieve unpleasant feelings and emotions,<sup>13</sup> which include issues such as physical and emotional exhaustion, insomnia, depression, anxiety, nervousness and fear.<sup>13</sup> In this scenario, we highlight the experience of intimate partner violence, a phenomenon that causes moral harm or damage to property and physical, sexual or psychological suffering to women, and may or may not lead to death.<sup>14</sup>

Study contribution	
<b>Main results</b>	Use of sleep-inducing medication was associated with socioeconomic factors and experience of violence. Women who had experienced three types of violence in the past 12 months were twice as likely to use these medications.
<b>Implications for services</b>	Understanding the impacts of violence on women's health is indispensable for health services. Training health service managers and health workers in investigating sleep disorders and addressing violence as a cause can contribute in this direction.
<b>Perspectives</b>	Association of sleep-inducing medication use with experience of violence is a complex and sometimes silent relationship. Further studies are needed to better understand different aspects of this relationship.

Various studies demonstrate the detrimental effects of intimate partner violence on sleep quality.<sup>15,16</sup> In Florianópolis, capital of the state of Santa Catarina, the dynamics of domestic violence were analyzed based on the discourse of battered women and their partners, about episodes of domestic violence recorded in the period from October 2006 to January 2007; the result showed that 56.7% of women used medication because of experiencing violence, and the amounts and frequency with which they used medication were not necessarily subject to medical supervision.<sup>17</sup>

The increase in the use of these medications among women is a public health problem and requires health workers to pay greater attention when providing care to these women.<sup>13</sup>

The objective of this study was to verify prevalence and factors associated with the use of sleep-inducing medication among women receiving primary health care (PHC) in Vitória, capital of the state of Espírito Santo, Brazil, between March and September 2014.

## METHODS

### *Design*

This was a cross-sectional study conducted with women aged 20-59 receiving care in all 26 of Vitória's primary health care centers between March and August 2014.

### *Background*

Vitória has 327,801 inhabitants and is the state's fourth most populous municipality with a population density of 3,338 inhab./km<sup>2</sup>. Vitória's municipal human development index (HDI-M) is 0.845 and some 98% of its households have basic sanitation.<sup>18</sup> The municipality has the largest number of health care facilities in Espírito Santo and has 93.3% primary health care coverage.<sup>19</sup>

The study scenario was comprised of the municipality's 26 primary health care centers belonging either to the Family Health Strategy or the Community Health Agent Program.

### *Sample size*

We used OpenEpi version 3 to calculate the sample size, considering a 5% margin of error, a 95% confidence level, 80% power and an exposed/unexposed ratio of 1. We added 10% to the result of this calculation to account for possible losses, plus 30% for adjusted analyses, totaling a sample of 998 women.

### *Participants*

The distribution of participants to be interviewed at the primary health care centers was defined by sampling proportional to the number of health service users aged 20 to 59 years old registered with each health center. The women were randomly selected. Eligible participants were women who

used the services of the Brazilian National Health System (SUS) aged 20 to 59 years old who were on primary health care center waiting lists and who had or had had an intimate partner in the 12 months prior to data collection.

After 'agreement' and signing of the Free and Informed Consent form, the interviews used to collect data were carried out in a closed room where there were only the interviewee and the interviewer. At the end of the interview, all participants received a folder containing educational and informative material and addresses of the main services for women in situations of violence.

### *Study variables*

The study outcomes were 'current use of sleep-inducing medication' (yes; no) and 'lifetime use of sleep-inducing medication' (yes; no).

In order to analyze associated factors, the following independent variables were included:

- a) Socioeconomic characteristics
  - age group (in completed years: 20-39; 40-59);
  - race/skin color (white; black; yellow; brown; indigenous);
  - schooling (in years of study: less than 5; 5-8; 9-11; 12 or more);
  - marital status (does not have a partner; has a partner); and
  - family income (in BRL: up to BRL 1,500; above BRL 1,500).
- b) Experience of violence
  - sexual violence in childhood (yes; no);
  - controlling partner (yes; no);
  - intimate partner psychological, physical and/or sexual violence in the last 12 months (no type of violence; one type of violence; two types of violence; three types of violence).

### *Data source and measurements*

The data were collected with the help of a standardized and structured printed questionnaire, administered by the interviewers to obtain data on the participants' socioeconomic characteristics,

experience of violence and use of sleep-inducing medication.

The two study outcomes, current use and lifetime use of sleep-inducing medication, were established by asking the following questions: *have you taken sleeping pills at any time during your life?* and *are you currently taking sleeping pills?*, with the option of replying (yes or no).

In order to itemize experience of violence against women perpetrated by intimate partners, we administered a World Health Organization (WHO) questionnaire validated in Brazil: World Health Organization Violence Against Women.<sup>20</sup> This instrument contains questions about types of violence (psychological, physical and/or sexual) suffered in the last 12 months, classified as follows: no type of violence; one type of violence; two types of violence; three types of violence. In turn, the 'controlling partner' independent variable, also defined in accordance with the WHO, considered as behaviors intended to isolate the person from family and friends, control places and access to places and information.<sup>20</sup>

#### *Bias control*

The field team (interviewers and supervisors, all female) was trained to ensure interview standardization and best instrument administration. In the period prior to the collection, a pilot study was conducted in which 50 interviews were carried out with women using the eligible primary health care centers to observe the interviewers' posture and administration of the questionnaires. Those interviews were not included in this research. Daily, during data collection, supervisors monitored the interviews and performed quality control.

#### *Statistical analyses*

Analyses were performed using the Stata 13.0 statistical package. Descriptive data were presented as absolute and relative frequencies and 95% CIs. Pearson's chi-square test or linear trend chi-square test was performed for bivariate analysis. Poisson regression was used for analysis of association, calculating crude and adjusted prevalence ratios

(PR) and respective 95% CIs as a measure of effect. The adjusted analysis followed a hierarchical model, in which socioeconomic variables were considered as distal variables, and experiences of violence as proximal variables (Figure 1). We adopted a  $p$ -value  $< 0.20$  for inclusion in the model in the crude analysis, and a  $p$ -value  $< 0.05$  for keeping the variables in the model.

#### *Ethical aspects*

The study project was submitted for review and analysis, and approved by the Human Research Ethics Committee of Centro de Ciências da Saúde, Universidade Federal do Espírito Santo: Opinion No. 470.744/2013, issued on November 27<sup>th</sup> 2013.

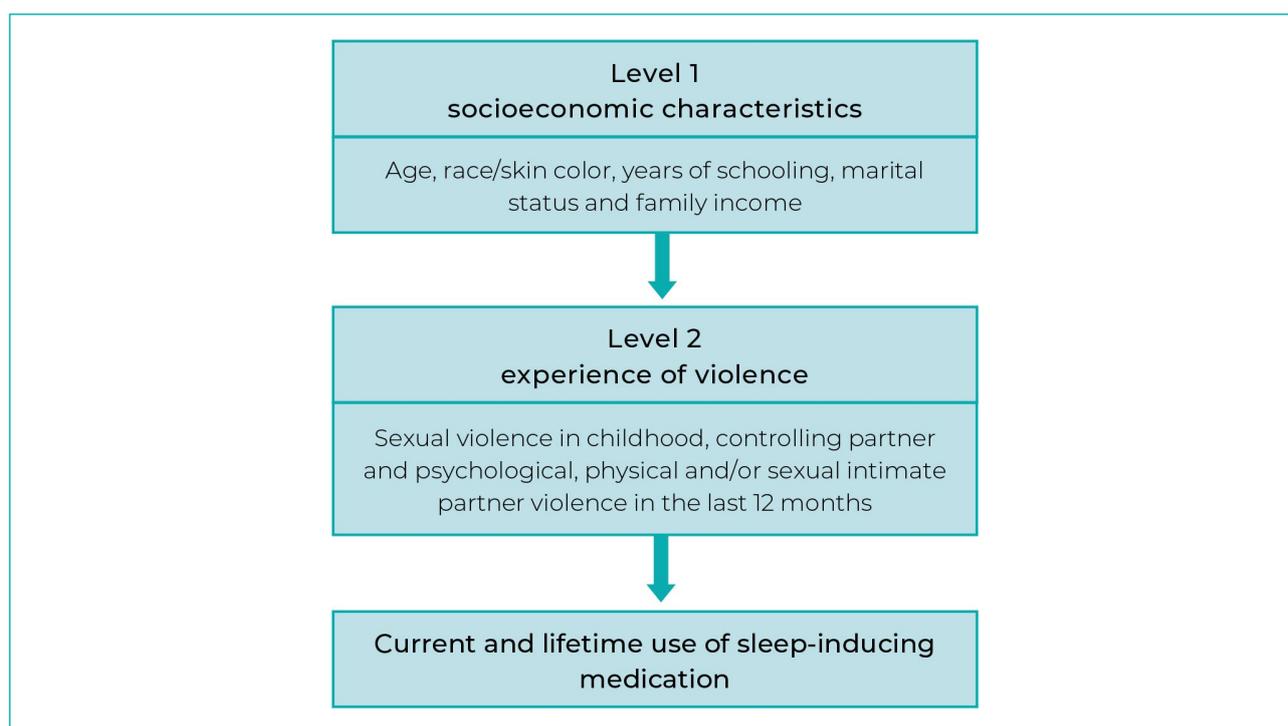
## RESULTS

Seven of the 998 women invited to take part in this study refused. The final study sample totaled 991 women, 18.5% (183) of whom were using sleep-inducing medication and 45.9% (455) had used this class of medication at some time in their lives.

Table 1 shows the characteristics of the participants. The majority were in the 40 to 59 age group (65.4%;  $n=648$ ), were of brown race/skin color (50.8%;  $n=503$ ), had 9-11 years of schooling (52.5%;  $n=521$ ), had a partner (74.0%;  $n=733$ ) and had family income above BRL 1,500 (65.4%;  $n=648$ ).

It is noteworthy that 48.2% (452) of the women interviewed stated that their partners were controllers, while 12.2% (121) stated that they had suffered sexual violence in their childhood. Furthermore, 16.8% (167) of the women had experienced one type of violence in the last year, 8.4% (83) had been victims of two types, and 2.4% (24) had experienced all three types of violence (psychological, physical and sexual).

The bivariate analysis showed that the highest percentage of users who had used sleep-inducing medication in their lifetimes or were using this type of medication at the time of the interview was related to age, schooling, having a controlling partner, as well as experiencing intimate partner



**Figure 1 – Hierarchical model of the relationships between socioeconomic characteristics and experience of violence and current and lifetime use of sleep-inducing medication by women receiving Primary Health Care, Vitória, Espírito Santo, Brazil, March-August 2014**

violence in the past 12 months. In addition, women with a history of sexual violence in their childhood had higher frequencies of lifetime use of sleep-inducing medication ( $p$ -value $<0.05$ ).

After adjustment for confounding variables, lifetime and current sleep-inducing medication use remained associated with age group, years of education and experiencing partner violence in the past 12 months, as presented in Table 2. Prevalence of lifetime sleep-inducing medication use in women aged 40-59 was 1.45 higher (95%CI 1.27;1.66) compared to prevalence of lifetime use among those aged 20-39. Current use of sleep-inducing medication was 1.82 time higher (95%CI 1.43;2.32) among older women (40-59 years old) compared to younger women (20-39 years old). Prevalence of lifetime use of sleep-inducing medication among women with higher levels of schooling (12 years or more of study) was 1.3 time higher (95%CI 1.03;1.64) when compared to those who had less than 5 years of study. With regard

to current use of sleep-inducing medication, lower prevalence rates were found in the group with 5 to 11 years of schooling compared to the group with less schooling ( $p$ -value $<0.05$ ).

Family income and partner profile were shown to be factors associated with current sleep-inducing medication use: prevalence increased 1.30 time (95%CI 1.03;1.64) among women with lower income (up to BRL 1,500) and 1.35 time (95%CI 1.08;1.69) among women whose partners were controllers.

In relation to exposure to sexual violence in childhood, this was associated with lifetime use of sleep-inducing medication (PR=1.33; 95%CI 1.13;1.56), when compared to women who reported not having been victims of this type of violence. Regarding intimate partner violence, the results showed that lifetime use of sleep-inducing medication was 24% (95%CI 1.06;1.46) more prevalent among women who experienced violence in the last 12 months, when compared to those who were not victims of

**Table 1 – Prevalence of current and lifetime use of sleep-inducing medication among women receiving Primary Health Care (n=991), according to socioeconomic characteristics and experience of violence, Vitória, Espírito Santo, Brazil, March-August 2014**

Variables	n	%	Lifetime		Current use	
			% (95%CI <sup>a</sup> )	p-value	% (95%CI <sup>a</sup> )	p-value
<b>Socioeconomic characteristics</b>						
<b>Age group (in years)</b>				<0.001		<0.001
20-39	343	34.6	39.0 (35.3;42.9)		28.7 (23.3;34.7)	
40-59	648	65.4	57.6 (52.5;62.6)		55.4 (46.8;60.2)	
<b>Race/skin color</b>				0.287		0.939
White	215	21.7	51.6 (44.9;58.3)		43.2 (34.3;52.6)	
Black	239	24.1	43.5 (37.3;49.9)		38.5 (29.6;48.2)	
Yellow	23	2.3	34.8 (18.1;56.2)		37.5 (11.5;73.6)	
Brown	503	50.8	45.3 (41.0;49.7)		39.5 (33.3;46.0)	
Indigenous	11	1.1	36.4 (13.6;67.5)		50.0 (9.4;0.6)	
<b>Schooling (in years of study)</b>				0.007		<0.001
Less than 5	112	11.3	50.9 (41.7;60.0)		64.9 (51.6;76.2)	
5-8	191	19.3	49.2 (42.1;56.3)		43.6 (33.9;53.8)	
9-11	521	52.5	40.9 (36.7;45.2)		32.4 (26.4;39.0)	
12 or more	167	16.9	54.5 (46.9;61.9)		39.6 (30.0;50.0)	
<b>Marital status</b>				0.342		0.785
Has a partner	733	74.0	45.0 (41.4;48.6)		40.6 (35.4;46.0)	
Does not have a partner	258	26.0	48.5 (42.3;54.5)		39.2 (30.9;48.1)	
<b>Family income (in BRL)</b>				0.736		0.083
Up to BRL 1,500	343	34.6	46.6 (41.4;51.9)		45.6 (38.0;53.4)	
Above BRL 1,500	648	65.4	45.5 (41.7;49.4)		37.3 (31.9;43.0)	
<b>Experience of violence</b>						
<b>Controlling partner</b>				0.038		0.016
No	486	51.8	42.6 (38.3;47.1)		34.8 (28.6;41.6)	
Yes	452	48.2	49.3 (44.7;53.9)		46.2 (39.7;52.7)	
<b>Sexual violence in childhood</b>				0.003		0.364
No	870	87.8	44.1 (40.8;47.4)		39.3 (34.5;44.3)	
Yes	121	12.2	58.7 (49.7;67.1)		45.1 (33.9;56.8)	
<b>Types of intimate partner violence<sup>c</sup></b>				0.013 <sup>b</sup>		0.004 <sup>b</sup>
No type of violence	717	72.4	43.0 (39.4;46.6)		37.3 (32.1;42.9)	
One type of violence	167	16.8	55.1 (47.5;62.5)		40.2 (30.6;50.6)	
Two types of violence	83	8.4	50.6 (39.9;61.2)		46.7 (32.9;62.7)	
Three types of violence	24	2.4	54.2 (34.2;72.9)		84.6 (53.3;96.4)	

a) 95%CI: 95% confidence interval; b) Trend p-value; c) Psychological, physical and sexual intimate partner violence in the last 12 months.

violent acts. Also, current medication use was 2.4 times (95%CI 1.83;3.10) higher among women who had experienced the three types of violence (psychological, physical, and sexual) in the past 12 months compared with those who had no history of violence.

## DISCUSSION

Among women who used primary health care services in Vitória, Espírito Santo, being older, having a lower level of schooling and having suffered intimate partner violence in the past 12 months were associated with greater use of sleep-inducing medication, both currently and during lifetime. In addition, occurrence of

sexual violence in childhood was associated with lifetime use of sleep-inducing medication, while having lower income and a controlling partner was associated with current use.

In this study, prevalence of current use of sleep-inducing drugs was close to 20% among the women interviewed, while almost half of them had used these drugs at some time in their lives. A survey conducted in a Brazilian urban setting showed that 22.2% of the women interviewed were taking benzodiazepine anxiolytics.<sup>21</sup> A study conducted in the second half of 2012, in the city of Presidente Prudente, SP, identified that women reported greater difficulty in sleeping, which may induce use of sleep-inducing medication.<sup>6</sup>

**Table 2 – Crude and adjusted analyses of association of socioeconomic characteristics and experience of violence with current and lifetime use of sleep-inducing medication among women receiving Primary Health Care (n=991), Vitória, Espírito Santo, Brazil, March-August 2014**

Variables	Lifetime				Current use			
	Crude		Adjusted		Crude		Adjusted	
	RP <sup>a</sup> (95%CI <sup>b</sup> )	p-value						
<b>Socioeconomic characteristics</b>								
<b>Age group (in years)</b>		<0.001		<0.001		<0.001		<0.001
20-39	1.00		1.00		1.00		1.00	
40-59	1.48 (1.29;1.68)		1.45 (1.27;1.66)		1.87 (1.48;2.36)		1.82 (1.43;2.32)	
<b>Schooling (in years of study)</b>		0.006		0.011		<0.001		0.007
Less than 5	1.00		1.00		1.00		1.00	
5-8	0.97 (0.77;1.21)		1.05 (0.83;1.32)		0.67 (0.50;0.91)		0.73 (0.54;0.98)	
9-11	0.80 (0.65;0.99)		0.98 (0.79;1.22)		0.50 (0.38;0.66)		0.62 (0.46;0.82)	
12 or more	1.07 (0.85;1.35)		1.30 (1.03;1.64)		0.61 (0.44;0.84)		0.83 (0.58;1.17)	
<b>Family income (in BRL)</b>		0.647				0.079		0.029
Up to BRL 1,500	1.02 (0.94;1.11)		–	–	1.22 (0.98;1.53)		1.30 (1.03;1.64)	
Above BRL 1,500	1.00		–		1.00		1.00	

To be continued

Continuation

**Table 2 – Crude and adjusted analyses of association of socioeconomic characteristics and experience of violence with current and lifetime use of sleep-inducing medication among women receiving Primary Health Care (n=991), Vitória, Espírito Santo, Brazil, March-August 2014**

Variables	Lifetime				Current use			
	Crude		Adjusted		Crude		Adjusted	
	RP <sup>a</sup> (95%CI <sup>b</sup> )	p-value						
<b>Experience of violence</b>								
<b>Controlling partner</b>		0.039		0.056		0.018		0.009
No	1.00		1.00		1.00		1.00	
Yes	1.16 (1.01;1.33)		1.14 (0.99;1.31)		1.33 (1.05;1.68)		1.35 (1.08;1.69)	
<b>Sexual violence in childhood</b>								
No	1.00	0.001	1.00	0.001	–	–	–	–
Yes	1.33 (1.12;1.57)		1.33 (1.13;1.56)		–		–	
<b>Types of intimate partner violence<sup>c</sup></b>								
No type of violence	1.00	0.015	1.00	0.041	1.00	<0.001	1.00	<0.001
One type of violence	1.28 (1.09;1.50)		1.24 (1.06;1.46)		1.08 (0.81;1.44)		1.08 (0.82;1.40)	
Two types of violence	1.18 (0.94;1.48)		1.18 (0.93;1.48)		1.28 (0.90;1.80)		1.22 (0.89;1.66)	
Three types of violence	1.26 (0.86;1.84)		1.25 (0.87;1.81)		2.27 (1.72;2.98)		2.39 (1.83;3.10)	

a) PR: Prevalence ratio; b) 95%CI: 95% confidence interval; c) Psychological, physical and sexual intimate partner violence in the last 12 months.

Standing out among other issues capable of influencing sleep is the important role that women play in different activities, both in society and in caring for the home, which can interfere with their mental health.<sup>22</sup> In general, women have higher levels of anxiety and depression, and their sleep is disturbed by personal or professional worries.<sup>23</sup>

In this study, prevalence of lifetime and current use of sleep-inducing medication was higher among women in the 40-59 age group, when compared to women in the 20-39 age group. In the interior region of the state of Minas Gerais, higher prevalence of tranquilizer use was also

found in the 40-59 age group (44.6%). Use of this medication with advancing age may occur due to work overload, daily stress, as well as body transformations that occur in this stage of life, due to the menopause.<sup>24</sup>

Research conducted in 2013 in a medium-sized municipality in the western region of Minas Gerais indicated that insomnia and anxiety affect women with lower levels of schooling more,<sup>12</sup> which could justify the higher frequency we found in our study of current use of sleep-inducing medication among women with lower levels of schooling. Higher schooling levels may have a positive

effect on self-care health behaviors, promoting better quality sleep<sup>6</sup> and, as such, may contribute to the lower frequency of current sleep-inducing medication use in this group.

The frequency of use of this type of medication was also higher among women with lower family income. This finding is similar to that of another study, in which the highest frequency of benzodiazepine use was reported among low-income women. Lower income groups may resort to the use of medication to solve the psychosocial difficulties of life.<sup>25</sup>

Having a controlling partner increased the prevalence of current sleep-inducing medication use. Occurrence of sexual violence in childhood also increased lifetime prevalence of use of this medication. Research with 613 Chinese women revealed that among the various forms of intimate partner violence, controlling actions had the most detrimental consequences for women's mental health.<sup>21</sup> Moreover, the onset of drug abuse is related to the occurrence of vital events, such as childhood sexual violence.<sup>12</sup>

Among the participants analyzed, prevalence of use of sleep-inducing medication was higher among women who had experienced some type of violence in the last 12 months, whether psychological, physical or sexual. A study conducted in 2016, in the municipality of Serra, also in the state of Espírito Santo, aimed at characterizing women in situations of violence, found that the main complaint of 69.1% of the victims was inadequate sleep, while some 39% had used tranquilizers in the last four weeks.<sup>26</sup> A study conducted in 2007 on violence and use of psychoactive substances in the cities of São Paulo and Recife, showed that 62.8% of women who suffered psychological violence took tranquilizers, 37.2% of those exposed to physical violence took tranquilizers and 20.9% of those who suffered sexual violence also used these drugs.<sup>27</sup>

Women who are victims of intimate partner violence may have sleep disorders.<sup>16</sup> According to a cross-sectional study conducted in Spain between December 2009 and January 2010,

frequency of tranquilizer and anxiolytic use is around 180% higher among women who recognize that they are experiencing intimate partner violence, compared to those who do not recognize that they are in this situation. That study also found greater use of other classes of medications, such as antidepressants, analgesics and anti-inflammatory drugs.<sup>28</sup>

In this context, healthcare professionals have a relevant role in relation to users of sleep-inducing drugs, as they are responsible for promoting the rational use of these drugs, guiding and warning about their harmful effects when used improperly.<sup>29</sup> Screening of sleep patterns is still not systematic. Thus, quality of sleep is constantly neglected, causing women to be treated and medicated in response to their complaints rather than in response to the source of the problem, which may be a result of violence suffered at home.<sup>27</sup>

The composition of this study's sample – women who use public health services – can be mentioned as a limitation, as it limits the scope of the results, which are not representative of the female share of the general population. Users of public health services tend to present more sleep disorders<sup>13</sup> and so prevalence of medication use may be overestimated. On the other hand, the question used to ask women directly about use of sleep-inducing medication had a dichotomous answer option (no or yes), i.e., no medical records or prescriptions were consulted, which may have led to underestimated prevalence. Similarly, no information was collected on the type of medication, which could be pharmaceutical or herbal, nor on how the medications were acquired, which could have been self-medication resulting from it being indicated by someone close to them, a medical prescription given by Family Health Strategy services or by a psychiatrist working in public or private services. Another point to be considered is the absence of behavioral characteristics regarding use of alcohol, cigarettes and drugs as variables. The 'sexual violence' in childhood variable was obtained by asking a direct question, with a dichotomous answer, equally subject to underestimation.

It is possible to conclude that use of sleep-inducing medication was frequent among women users of PHC services in the municipality of Vitória. Socioeconomic aspects and experiencing violence were associated with higher intake of these medications. As such, it is of the utmost importance for health professionals to be aware of use of this medication, as well as to investigate possible factors associated with this practice. It is therefore essential that these professionals offer

women attentive listening and holistic care, in order to be able to unveil the factors associated with use of this medication, such as experiencing violence – often omitted by women – in order to enable its cycle to be broken. Finally, it is important to develop further studies on the impact of violence on use of sleep-inducing drugs. We hope that the results presented here will contribute to the expansion of the debates about the impacts that violence can have on women's health.

#### **AUTHORS' CONTRIBUTION**

Leite FMC was responsible for the study concept. Leite FMC and Xavier JCS were responsible for developing the study, gathering and analyzing data and drafting the article. Silva RP, Wandekoken KD, Tavares FL and Amorim MHC contributed to data analysis and interpretation, drafting and critically reviewing the manuscript. All the authors have approved the final version and declare themselves to be responsible for all aspects thereof, including the guarantee of its accuracy and integrity.

#### **CONFLICTS OF INTEREST**

The authors declared that they have no conflicts of interest.

#### **ASSOCIATE ACADEMIC WORK**

This manuscript was derived from the final degree course assignment entitled 'Use of sleeping pills: prevalence and association with intimate partner violence', defended by Jasmine Cristina Soares Xavier at the Department of Nursing of the Universidade Federal do Espírito Santo, in 2019.

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