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Reproductive autonomy associated with the use of contraceptive methods among reproductive aged women

Autonomia reprodutiva associada ao uso de métodos contraceptivos entre mulheres em idade reprodutiva

Autonomía reproductiva asociada al uso de métodos anticonceptivos en mujeres en edad reproductiva

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ABSTRACT

Objective: To assess the sociodemographic aspects associated with reproductive autonomy among urban women, with special regard to the relationship with the use of contraceptive methods.

Method: Cross-sectional study with 1252 women, conducted between April and June 2021, using the Brazilian version of the Reproductive Autonomy Scale. Data were analyzed using multiple linear regression.

Results: Mean scores for the subscales were 2.5 (SD=0.3) (Decision-making), 3.8 (SD=0.3) (Absence of Coercion) and 3.6 (SD=0.4) (Communication). Compared to women who reported no use of contraceptive methods, women using barrier or behavioral methods and those using LARC had higher level of reproductive autonomy on all dimensions of the Scale ($p<0.001$). Other aspects associated with reproductive autonomy were education, race/ethnicity, religion, socioeconomic status and cohabitation living with a partner, depending on each subscale.

Conclusion: The type of contraceptive method used was statistically associated with reproductive autonomy in all subscales.

Descriptors: Relational autonomy. Decision making. Family development planning.

RESUMO

Objetivo: Verificar os aspectos sociodemográficos associados à autonomia reprodutiva entre mulheres urbanas, em especial na relação com o uso de métodos contraceptivos.

Método: Estudo transversal realizado com 1252 mulheres, entre abril e junho de 2021, utilizando a versão brasileira da Escala de Autonomia Reprodutiva. Os dados foram analisados por meio de regressão linear múltipla.

Resultados: Os escores médios das subesacalas foram 2,5 (dp=0,3) (Tomada de decisão), 3,8 (dp=0,3) (Ausência de Coerção) e 3,6 (dp=0,4) (Comunicação). Comparadas às mulheres que relataram não usar métodos contraceptivos, mulheres que usavam métodos de barreira ou comportamentais e as que usavam LARC mostraram maior nível de autonomia reprodutiva em todas as dimensões da Escala ($p<0,001$). Outros aspectos associados à autonomia reprodutiva foram a escolaridade, raça/cor, religião, grupo socioeconômico e morar com o parceiro,a depender de cada subescala.

Conclusão: O tipo de método contraceptivo utilizado foi estatisticamente associado à autonomia reprodutiva em todas as subescalas.

Descritores: Autonomia relacional. Tomada de decisões. Planejamento familiar.

RESUMEN

Objetivo: Verificar los aspectos sociodemográficos asociados a la autonomía reproductiva entre mujeres urbanas, especialmente en relación al uso de métodos anticonceptivos.

Método: Estudio transversal realizado con 1252 mujeres, entre abril y junio de 2021, utilizando la versión brasileña de la Escala de Autonomía Reproductiva. Los datos se analizaron mediante regresión lineal múltiple.

Resultados: Las puntuaciones medias de las subescalas fueron 2,5 (DE=0,3) (Toma de decisiones), 3,8 (DE=0,3) (Ausencia de coerción) y 3,6 (DE=0,4) (Comunicación). En comparación con las mujeres que informaron no usar métodos anticonceptivos, las mujeres que usaron métodos de barrera o conductuales y las que usaron LARC mostraron un mayor nivel de autonomía reproductiva en todas las dimensiones de la Escala ($p<0,001$). Otros aspectos asociados a la autonomía reproductiva fueron la educación, la raza/color, la religión, el grupo socioeconómico y la convivencia, según cada subescala.

Conclusión: El tipo de método anticonceptivo utilizado se asoció estadísticamente con la autonomía reproductiva en todas las subescalas.

Descriptores: Autonomía relacional. Toma de decisiones. Planificación familiar.

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INTRODUCTION

It is estimated that between 2000 and 2014[1] 44% of pregnancies worldwide were unintended. Many women who experience an unintended pregnancy do not use contraceptive methods, especially in low- and middle-income countries[1]. Although women have the right to decide on issues related to reproduction, their decisions are often overridden or limited by various elements other than access to contraceptive methods, such as the desires and actions of partners or other members of their family/ community and the contexts of life and work[2]. These are barriers for some women to achieve their reproductive goals[3].

Studies report that in low-income countries the percentage of women who decide independently about the use of contraceptives is small. In South Africa, Ethiopia, Ghana and Senegal, only 41%[2], 35%[2], 25%[4], and 6%[2], of women of reproductive age use some type of contraceptive method, respectively. Another concern is that only 55% of married women worldwide had autonomy to decide about their reproductive life, including the decision to use contraceptive methods[2].

Broadly, reproductive autonomy is defined as the power to control and decide on issues related to the use of contraceptive methods, pregnancy and birth[1]. Although the literature has focused on women's individual choices in the sexual and reproductive sphere, the relational dimension that refers to decisions and behaviors in the field of contraception and motherhood cannot be ignored[5].

Recently, the Reproductive Autonomy Scale (RAS) has been used in studies that address the topic of reproductive autonomy in the USA[1] Ghana[6], and Vietnam[1], and has already been validated for the Brazilian context[7]. RAS is a 14-item scale organized into three subscales on "Decision Making", including items about who makes the final decision in different reproductive situations; "Absence of coercion", which consists of items related to situations in which women are coerced; and, finally, "Communication", which is made up of items related to the possibility of communication between women and their sexual partners, with regard to sexual relationships and reproductive decisions. RAS can be applied to women who report any type of heterosexual relationship (married, single, living with a partner or not)[5].

Some Brazilian studies that used this scale were conducted with quilombola women[8,9] or rural workers[10] and showed that women in stable unions, self-classified ethnicity as white, who had achieved higher levels of education, and who had participated in reproductive planning groups had greater reproductive autonomy. This group of women has cultural and gender singularities that certainly impact the relational dynamics that are the basis for reproductive autonomy.

In turn, it is already known that poor communication with sexual partners can negatively influence the use of contraceptive methods[1]. This is because more egalitarian relationships are associated with higher levels of reproductive autonomy[11] and marital communication about reproductive planning positively influences the use of contraceptives[12]. Therefore, it is crucial to understand how reproductive autonomy occurs and what determines it[2], particularly because little is known about how reproductive autonomy is established among urban Brazilian women, nor whether this autonomy is associated with the use of contraceptive methods.

Considering that reproductive autonomy is an essential component for achieving the highest levels of sexual and reproductive health[2], our study aimed to verify the sociodemographic aspects associated with reproductive autonomy among urban women, especially regarding the use of contraceptive methods.

METHOD

This is a cross-sectional quantitative study conducted in a virtual environment with women aged 18- 49 years. This is a subsample that participated in a broader study called "Reproductive intention and contraception: getting pregnant by choice and not by chance", whose objective was to validate a scale for measuring future intention to become pregnant in the Brazilian context.

The research was published in a virtual environment between April and June 2021 on social networks (Facebook and Instagram); on the website created by the researchers (http://www.ee.usp.br/escolha_engravidar/index.html); in a university newspaper; by email, to the contact list of the research host institution, which is made up of former students and participants of courses; and via WhatsApp, to the personal and professional contacts of the researchers involved. On WhatsApp, a text was also sent requesting wide dissemination of the research to contacts, as a snowball strategy. In addition to general information about the objectives and procedures of the study, a link with access to the instrument was also made available in the dissemination of the research. On Instagram and Facebook, specifically, the boost was carried out in two stages, one of them in the whole country (for 30 days) and the other focusing on the North and Northeastearn Regions (for 10 days), reaching approximately 65 thousand people, and this strategy resulted in 271 accesses to the website.

The study included women aged 18 to 49 years and not pregnant, who reported a current heterosexual relationship (married, single, living with a partner or not) and residing in all regions of the country. Our exclusion criteria were having undergone a hysterectomy, having had a tubal ligation or having a vasectomized partner.

In total,2,089 women accessed the instrument, but data from only 1,252 were considered, as some did not meet the inclusion criteria, either because they had not had sexual intercourse (n=102), because they were hysterectomized (n=29), some were pregnant (n=41), for being outside the age range (n=10) or having had a tubal ligation/or having a vasectomized partner (n=4). Others did not complete the instrument (n=288) and were therefore not considered. Women who reported not being in a romantic relationship with men were also excluded (n=363), since the Reproductive Autonomy Scale concerns heterosexual relationships. The power of the post-hoc test[13] was calculated considering a type I error of 5% and a statistical power of 95%. It was found that a sample with at least 423 women was required. Therefore, the sample collected is about three times larger than the minimum required and is sufficient to draw the inferred conclusions.

The instrument was structured and built on the REDCap platform, having been pre-tested in person and remotely with women with the same profile as those who would be eligible. The first part of the instrument contained independent variables related to questions about the sociodemographic profile, namely, age; race/ethnicity (white, black, yellow – considered the Asians – and indigenous), education (up to high school, incomplete higher education, complete higher education); socioeconomic status (A, B, C/D/E)[14], religion (no religion, Catholic, Protestant, other); paid jobs (no, yes); region of residence (North, Northeast, Central-West, Southeast, South), cohabitation with a partner (no, yes); previous pregnancy (no, yes) and contraceptive behavior (use of barrier and behavioral methods, hormonal method and long-acting reversible methods – LARC). Regarding contraceptive behavior, women were grouped based on the efficacy duration of the contraceptive methods they were using at the time of the interview. Therefore, women who reported not using any type of contraceptive method were grouped into the "none" category; women who reported using condoms, diaphragm, coitus interruptus, table, Billings or symptothermal method, that is, methods of low to medium efficacy, were grouped in the "barrier and behavioral" category; women using hormonal methods, such as oral contraceptive pills, injectables, patches or vaginal rings, were grouped into the "hormonal" category, as these are highly effective but short-acting methods. Finally, women who reported using copper or hormonal intrauterine devices and subdermal implants were grouped into the "LARC" category (long-acting reversible contraceptives or long-acting contraceptive methods), as they are long-acting and highly effective.

The second part of the instrument consisted of the Reproductive Autonomy Scale, Brazilian version[7]. The three subscales of the Reproductive Autonomy Scale were considered as dependent variables separately. As all items in the "Absence of coercion" subscale are subjectively contrary to reproductive autonomy, it reverse coded. For each of the three subscales, an average score was calculated, with higher scores indicating higher levels of reproductive autonomy[8]. All variables were introduced simultaneously into the models.

The time spent filling out the instrument was around 15 minutes. To avoid multiple completions by the same woman, her full name, email and contact telephone number were also obtained, which were checked to ensure the internal validity of the data. Identification information was removed from the database for statistical analyses.

The data were analyzed on R and were described using absolute numbers and proportions, means and standard deviations. Our hypothesis is that women with greater reproductive autonomy use more effective contraceptive methods, such as LARC. To analyze the relationships between reproductive autonomy scores and sociodemographic variables, previous pregnancy and use of contraceptive methods, Mann-Whitney and Kruskal-Wallis tests were applied, depending on the nature of the variables (dichotomous or categorical with three or more categories). Multiple linear regression analyzes were conducted to evaluate which independent variables are determinants of the reproductive autonomy score, with the use of contraceptive methods being the main covariate. All variables were included simultaneously in the multiple model. The significance level adopted in the study was p-value ≤ 0.05.

The study was approved by the Research Ethics Committee under Protocol No 5.421.606 and CAAE 31401420.9.0000.5392. The Free and Informed Consent Form was made available on the instrument's home page and only women who had clicked on the "accept" icon could answer the questions. All procedures to guarantee the confidentiality of the data and the confidentiality of the respondents were carried out. Emails were also made available to contact the researchers, in case of doubts, and a website with all information about the research, as well as links to information on contraception and reproductive health.

RESULTS

The 1,252 women who completed the Reproductive Autonomy Scale were 29.5 years old, on average (SD=7.2), with one third being young (18-24 years). Most were self-classified as white (64.7%), reported having completed higher education (67.8%), were in socioeconomic status B (60.3%), cohabitated with their partner (60.2%) and had no history of previous pregnancy (68.9%). A quarter reported using a LARC-type method to prevent pregnancy (Table 1).

Among the items that make up the "Decision Making" subscale (items 1 to 4), it is noteworthy that most women reported that the decision to use contraceptive methods would mostly be their own (items 1 and 2), but the decision about getting pregnant or terminating a pregnancy was joint (items 3 and 4). Among the items that make up the "Absence of Coercion" subscale (items 5 to 9), responses to the "totally disagree" category stood out in all of them. In turn, responses to the items that make up the "Communication" subscale were, more frequently, in the "agree" and "completely agree" categories (Table 2).

Table 1 – Sociodemographic characteristics, previous pregnancy and use of contraceptive methods of women (n = 1252). Brazil, 2021

Variables	n	%
Age		
18-24	382	30.5
25-34	567	45.3
35-49	303	24.2
Race/ethnicity		
White	810	64.7
Black	396	31.6
Yellow and indigenous	46	3.7
Education		
Up to high school	82	6.5
Incomplete higher education	321	25.6
Complete higher education	849	67.8
Religion		
No religion	498	39.8
Catholic	394	31.5
Protestant	186	14.9
Other	174	13.9

Table 1 – Cont.

Variables	n	%
Socioeconomic status		
A	248	19.8
B	755	60.3
C/D/E	249	19.9
Paid jobs		
No	332	26.5
Yes	920	73.5
Region of residence*		
North	41	3.6
Northeast	129	11.1
Central-West	99	8.6
Southeast	744	60.2
South	146	12.6
Cohabitationwith a partner		
No	498	39.8
Yes	754	60.2
Previous pregnancy		
No	860	68.9
Yes	392	31.3
Contraceptive method in use		
None	294	23.4
Barrier and behavioral methods	419	33.5
Hormonal method	235	18.8
LARC	304	24.3
Total	**1252**	**100.0**

Source: Research data, 2021.
*Not all women responded to this item

Table 2 – Frequency of responses to each item of the Reproductive Autonomy Scale (n=1252). Brazil, 2021

Item	n	%
Decision Making Subscale		
1. Who has the most say about whether you use a method to prevent pregnancy?		
My sexual partner or someone else	1	0.1
Both	556	44.4
Me	695	55.5
2. Who has the most say about which method you would use to prevent pregnancy?		
My partner or someone else	7	0.6
Both	368	29.4
Me	877	70.1
3. Who has the most say about when you have a baby in your life?		
My sexual partner or someone else	5	0.4
Both	758	60.5
Me	489	39.1
4. If you became pregnant but it was unplanned, who would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion?		
My sexual partner or someone else	2	0.2
Both	673	53.7
Me	577	46.1
Freedom from Coercion Subscale		
5. My partner has stopped me from using a method to prevent pregnancy when I wanted to use one.		
Strongly agree	4	0.3
Agree	16	1.3
Disagree	109	8.7
Strongly disagree	1123	89.7

Table 2 – Cont.

Item	n	%
6. My partner has messed with or made it difficult to use a method to prevent pregnancy when I wanted to use one.		
Strongly agree	8	0.6
Agree	41	3.3
Disagree	116	9.3
Strongly disagree	1087	86.8
7. My partner has made me use a method to prevent pregnancy when I did not want to use one.		
Strongly agree	13	1.0
Agree	44	3.5
Disagree	129	10.3
Strongly disagree	1066	85.1
8.If I wanted to use a method to prevent pregnancy my partner would stop me.		
9. My partner has pressured me to become pregnant.		
Strongly disagree	3	0.2
Agree	23	1.8
Disagree	122	9.7
Strongly disagree	1104	88.2
Communication Subscale		
10. My partner would support me if I wanted to use a method to prevent pregnancy.		
Strongly disagree	30	2.4
Disagree	25	2.0
Agree	234	18.7
Strongly agree	963	76.9

Table 2 – Cont.

Item	n	%
11. It is easy to talk about sex with my partner.		
Strongly disagree	34	1.9
Disagree	67	4.2
Agree	323	23.5
Strongly agree	827	63.4
12.If I didn't want to have sex I could tell my partner.		
Strongly disagree	1	0.1
Disagree	18	1.4
Agree	368	29.4
Strongly agree	865	69.1
13. If I was worried about being pregnant or not being pregnant I could talk to my partner about it.		
Strongly disagree	2	0.2
Disagree	10	0.8
Agree	249	19.9
Strongly agree	991	79.1
14. If I really did not want to become pregnant I could get my partner to agree with me.		
Strongly disagree	13	1.0
Disagree	78	6.2
Agree	419	33.5
Strongly agree	742	59.3
Total	**1252**	**100.0**

Source: Research data, 2021.

The mean score for the "Decision Making" subscale was 2.5 (SD=0.3), for "Freedom from Coercion" was 3.8 (SD=0.3) and for "Communication" was 3.6 (SD =0.4). In the "Decision Making" subscale, there was a statistically significant difference between the mean scores regarding race/ethnicity (p=0.200), socioeconomic status (p=0.010), religion (p<0.001), paid

activity (p=0.045), cohabitation with a partner (p<0.001) and type of contraceptive method used (p<0.001). In the "Freedom from Coercion" subscale, statistically significant differences were observed in relation to the variables education (p<0.001), race/ethnicity (p<0.001), socioeconomic status (p=0.001), previous pregnancy (p=0.012) and type of contraceptive method (p<0.001). In the "Communication" subscale, the statistically significant differences in the mean scores were observed for the variables education (p=0.002), religion (p=0.014), previous pregnancy (p=0.040) and contraceptive method in use (p<0.001) (Table 3).

Multiple linear regression analysis was performed separately for subscales of the RAS. For the "Decision Making" subscale, women self-classified as yellow or indigenous had less autonomy when compared to white women (p=0.012); women from the C/D/E socioeconomic status demonstrated greater autonomy than women from status A (p=0.003); Protestant women had less autonomy than women without religion (p=0.001); women who cohabitades with a partner compared to those who did not live with a partner had less autonomy (p=0.001); finally, compared to women who did not use contraceptive methods, women who used barrier and behavioral methods had less autonomy (p=0.001), but those who used LARC had greater autonomy (p=0.009). In turn, in the "Communication" subscale, age (p=0.020), education (p=0.006), religion (p=0.012), paid jobs (p=0.004), and type of contraceptive method (p<0.001) showed statistically significant differences between their mean scores (Table 4).

Table 3 – Means, standard deviations and p-values of the Reproductive Autonomy Scale subscale scores per subscale, according to sociodemographic variables, previous pregnancy and use of contraceptive methods (n=1252). Brazil, 2021

Variables	Reproductive Autonomy Scale								
	Decision Making			Freedom from Coercion			Communication		
	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Education									
Up to high school	2.6	0.3		3.7	0.5		3.5	0.4	
Incomplete higher education	2.5	0.3	0.071	3.9	0.3	<0.001	3.7	0.4	0.002
Complete higher education	2.5	0.3		3.9	0.3		3.6	0.4	
Race/ethnicity									
White	2.5	0.3		3.9	0.3		3.7	0.4	
Black	2.5	0.3	0.020	3.8	0.4	<0.001	3.6	0.4	0.730
Yellow and indigenous	2.4	0.4		3.8	0.3		3.7	0.4	
Socioeconomic status									
A	2.5	0.3		3.9	0.3		3.7	0.4	
B	2.5	0.3	0.010	3.9	0.3	0,001	3.6	0.4	0.247
C/D/E	2.6	0.3		3.8	0.4		3.6	0.4	

Table 3 – Cont.

Variables	Reproductive Autonomy Scale								
	Decision Making			Freedom from Coercion			Communication		
	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Religion									
No religion	2.6	0.3		3.9	0.3		3.7	0.4	
Catholic	2.5	0.3		3.8	0.4		3.6	0.4	
			<0.001			0.183			0.014
Protestant	2.4	0.4		3.8	0.4		3.6	0.4	
Other	2.5	0.3		3.9	0.3		3.7	0.3	
Paid jobs									
No	2.6	0.3		3.8	0.3		3.6	0.4	
			0.045			0.873			0.141
Yes	2.5	0.3		3.8	0.3		3.7	0.3	
Cohabitation with a partner									
No	2.6	0.3		3.9	0.3		3.7	0.4	
			<0.001			0.468			0.120
Yes	2.5	0.3		3.8	0.3		3.6	0.4	
Previous pregnancy									
No	2.5	0.3		3.9	0.3		3.7	0.4	
			0.118			0,012			0.040
Yes	2.5	0.3		3.8	0.4		3.6	0.4	
Contraceptive method in use									
None	2.5	0.3		3.8	0.4		3.5	0.4	
Barrier/behavioral	2.4	0.3		3.9	0.2		3.7	0.3	
			<0.001			<0.001			<0.001
Hormonal	2.6	0.3		3.8	0.3		3.6	0.4	
LARC	2.6	0.3		3.9	0.3		3.7	0.3	
Total	**2.5**	**0.3**		**3.8**	**0.3**		**3.6**	**0.4**	

Note: Mann-Whitney Test; Kruskal-Wallis Test
Source: Research data, 2021.

Table 4 – Multiple linear regression analysis of the level of the Reproductive Autonomy Scale by subscale, according to sociodemographic characteristics, previous pregnancy and use of contraceptive methods (n=1252). Brazil, 2021

Variables	Decision Making			Freedom from Coercion			Communication		
	β	CI 95%	p-value	β	CI 95%	p-value	β	CI 95%	p-value
Age	0.02	-0.01;0.06	0.167	-0.004	-0.008;-0.001	0.019	-0.005	-0.009;-0.001	0.020
Education									
Up to high school	-	-		-	-	-	-	-	
Incomplete higher education	-0.04	-0.12;-0.11	0.291	0.14	0.06-0.22	<0.001	0.13	0.04;0.23	0.006
Complete higher education	-0.03	-0.11;0.04	0.394	0.16	0.08-0.24	<0.001	0.12	0.03;0.21	0.011
Race/ethnicity									
White	-	-		-	-	-	-	-	
Black	0.01	-0.02;0.05	0.531	-0.05	-0.09;-0.01	0.009	-0.006	-0.05;0.04	0.788
Yellow and indigenous	-0.12	-0.21;-0.03	0.012	-0.03	-0.12;0.07	0.559	-0.002	-0.11-0.11	0.974
Socioeconomic status									
A	-	-		-	-		-	-	
B	0.03	-0.02;0.08	0.199	-0.03	-0.08;0.02	0.194	-0.04	-0.09;0.02	0.189
C/D/E	0.09	0.03;0.15	0.003	-0.09	-0.14;-0.03	0.003	-0.01	-0.08;0.05	0.732
Religion									
No religion	-	-		-	-		-	-	
Catholic	-0.03	-0.08;0.01	0.116	-0.04	-0.08;0.07	0.105	-0.06	-0.12;-0.01	0.012
Protestant	-0.11	-0.16;-0.05	<0.001	-0.02	-0.07;0.03	0.483	-0.03	-0.10;0.03	0.334
Other	-0.04	-0.09;0.02	0.169	-0.02	-0.07;0.04	0.551	-0.005	-0.07;0.06	0.883

Table 4 – Cont.

Variables	Decision Making			Freedom from Coercion			Communication		
	β	CI 95%	p-value	β	CI 95%	p-value	β	CI 95%	p-value
Paid jobs									
No	-	-		-	-		-	-	
Yes	-0.03	-0.08;0.01	0.123	0.01	-0.03;0.05	0.581	0.07	0.02;0.13	0.004
Cohabitation with a partner									
No	-	-		-	-	-	-	-	
Yes	-0.09	-0.13;-0.05	<0.001	0.02	-0.02;0.07	0.279	0.01	-0.04;0.06	0.620
Previous pregnancy									
No	-	-		-	-		-	-	
Yes	-0.02	-0.07;0.02	0.363	-0.01	-0.06;0.03	0.573	0.006	-0.5;0.06	0.817
Contraceptive method in use									
None	-	-		-	-		-	-	
Barrier and behavioral	-0.13	-0.18;-0.08	<0.001	0.11	0.06;0.16	<0.001	0.14	0.09;0.20	<0.001
Hormonal	0.02	-0.03;0.08	0.373	0.06	0.01;0.11	0.043	0.03	-0.03;0.09	0.345
LARC	0.07	0.02;0.12	0.009	0.09	0.04;0.14	<0.001	0.14	0.07;0.19	<0.001

Source: Research data, 2021.

DISCUSSION

Our study used the Reproductive Autonomy Scale to assess the relationship between reproductive autonomy and the use of contraceptive methods among women of reproductive age. The results showed that there were significant differences in the levels of women's reproductive autonomy, depending on the type of contraceptive method used, even when the models were adjusted for variables such as age, education, race/ethnicity, socioeconomic group, religion, paid jobs, cohabitation with the partner, previous pregnancy experience and use of contraceptive methods.

Compared to women who reported not using contraceptive methods, women who used methods had higher scores on reproductive autonomy in all subscales. However, women who used hormonal methods did not differ in terms of decision-making or communication, which needs to be further explored in future studies.

It is known that barrier methods and some behavioral methods require the participation and acceptance of partners, which uptake denotes a certain horizontality in the relationship and may have been made explicit in the responses to the subscales. LARC methods are underused in the country[15] because there are still persistent barriers to a broad and unrestricted access, as in the well-illustrated case of the copper IUD[16]. These methods are available to specific groups of vulnerable women in the Unified Health System or at high prices in private health services. Additionally, it has already been described that women with greater reproductive autonomy are more favorable to using long-term methods, such as LARC[17].

Our results provide advances in the knowledge on the topic by considering contraceptive preferences and behaviors and their relationship with levels of reproductive autonomy because we analyzed the use of methods in a stratified manner by type of method, instead of simply analyzing the occurrence of unprotected sexual intercourse, as in studies conducted in the United States, Vietnam or Ghana, for example[1,5,6]. This is because the occurrence of unprotected sexual intercourse does not necessarily mean a lack of reproductive autonomy, but rather an option made by the woman or the couple when switching methods, dissatisfaction due to side effects and even because of the intention to become pregnant[18].

In all items of the subscales of RAS, women showed that they make their decisions individually or together with their partners, they seemed to be rarely subject to coercion from their partners to use/not use contraceptive methods and they were open to talking and discussing with their partners about sexuality, contraception and motherhood. The mean scores obtained in this study are higher in each of the three subscales than those obtained in the population of North American women in the original study[5], in the population of rural and quilombola women workers in Brazil[7] and in other studies in which the same scale was used, such as in Vietnam[1] and Ghana[6]. This difference can be explained by the different profiles of women in each study, considering that women participating in our study were highly educated, in addition to differences in cultural and gender norms in each of these contexts and in the availability of contraceptive supplies.

Specifically regarding the "Decision Making" subscale, our results showed that women who lived with their partners had less autonomy in this dimension compared to those who did not live with their partner, contrasting with a study carried out in Madagascar[19]. It should be noted that cohabitation with a partner did not show any statistical significance with reproductive autonomy in the other subscales. The role of the couple's coexistence/bond in establishing women's reproductive autonomy in these partnerships needs to be better investigated in the Brazilian context, including through qualitative research.

Interestingly, women classified as belonging to economic status C/D/E showed greater reproductive autonomy for the "Decision-making" and "Absence of coercion" subscales when compared to women in group A. This result is relevant, as the literature has shown precisely the opposite[20]. Financial limitations can inhibit women's ability to know and decide about their rights, including making contraceptive decisions[21]. Although our results showed that this relationship is not linear, it seems that social or gender norms can, in fact, have greater impact when decisions about reproduction are made[3]. Furthermore, the use of contraceptive methods may also be associated with self-esteem, confidence, level of education and occupation and this is also linked to the ability to make decisions[22].

Regarding age, a positive association was found with reproductive autonomy in the "Freedom from coercion" subscale, which is consistent with the results of the original study that validated the scale among North American women[5]. A reason for this would be the fact that younger women are precisely those who suffer the most coercion and experience lack of autonomy in decision-making about their reproductive lives and the use of contraceptive methods[23]. In this same subscale, the level of education was inversely associated with reproductive autonomy. This result corroborates others observed in studies carried out in Ghana[24], South Africa[3] and Ethiopia[2] and confirms that enabling girls and women to

reach high levels of education strengthens them to broaden their horizons and educational and professional possibilities, which, in turn, has a positive effect on reproductive autonomy and use of contraceptive methods, mainly LARC[3–15]. It should be stressed that age and education also showed statistical significance in the "Communication" subscale, probably for the same reasons previously exposed[6]. It should be added that women with lower educational levels may come to believe that their partners have the power to decide on their reproductive lives[10].

Additionally, also in the "Freedom from coercion" subscale, it was found that black, yellow and indigenous women showed less autonomy in reproductive decision-making when compared to white women. This effect was also observed in the original study for the validation of the scale[7] and reinforces the research findings that aimed to explore racial/ethnic differences among women who had difficulties exercising their reproductive autonomy in the USA, of which 37% were black, 29% multiracial, 24% were Hispanic/Latino and only 18% were white[25]. In this study, it is not possible to state how much these difficulties are linked to the greater vulnerability of black women to gender-based violence, including violence perpetrated by sexual partners[26], but this group undeniably needs to be prioritized in actions aimed at strengthening and guaranteeing their sexual and reproductive rights, precisely because of the persistent racial inequities in reproductive health care in Brazil[27].

This study also identified religion as an individual factor that significantly influences women's decision-making autonomy regarding the use of contraceptives, with Protestant women having less autonomy for the "Decision Making" subscale compared to women without religion. This finding is consistent with other studies[3–28]. This can be explained by the different expectations of religious segments regarding gender roles established in life with partners with greater or lesser reproductive autonomy[2,3]. The fact that the evangelical religious segment is growing in Brazil[29] highlights the need to consider this religious group when formulating specific policies and programs that aim to promote their sexual and reproductive health.

Another variable statistically associated with reproductive autonomy was paid jobs, which was also observed among African women[3,30]. Maybe the income and financial resources generated by paid jobs increase women's autonomy, including in the reproductive sphere[30], for example, in the ability to buy contraceptive methods that are not accessible in public health services.

Finally, regarding reproductive experiences, women who reported previous pregnancies reached higher reproductive autonomy scores on the "Freedom from coercion" subscale, in contrast to what was observed in a different context[28]. It is possible that this result is related to the effects of age, explained above, as women who have already become pregnant tend to be older than nulliparous women. However, the mechanism by which experiencing pregnancy can positively or negatively impact the reproductive autonomy of women in heterosexual relationships still needs to be further elucidated.

study has some limitations. First, this is a non-probabilistic sample, so it is not possible to generalize the results to the population of Brazilian women in general, including women who do not have access to the internet, as the research was carried out in a virtual environment. Another limitation is that it is possible that women who answered all the items on RAS are those who perceive themselves as having greater autonomy in their reproductive life, which may have overestimated the observed scores. We also did not collect data about the study participants' partners or relationship dynamics. However, the use of a scale validated for the Brazilian context with adequate psychometric properties allowed us to approach a very complex phenomenon, which is reproductive autonomy, as well as compare the scores with the population of Brazilian rural women and with other contexts, including other countries. Furthermore, women who participated in this study also had a higher level of education compared to women who participated in studies that used the RAS in other contexts, which can help them have a broader perspective and greater understanding of their rights, with an emphasis on the decision-making process regarding the use of contraceptive methods.

CONCLUSION

Compared to women who reported not using contraceptive methods, women who used barrier or behavioral methods and those who used LARC showed a higher level of reproductive autonomy in the dimensions "Decision making", "Freedom from coercion" and "Communication". However, women who used hormonal methods did not differ from those who did not use methods regarding "Decision Making" or "Communication". Other aspects associated with reproductive autonomy were education, race/ethnicity, religion, socioeconomic status and cohabitation with a partner.

The results of this study provide contributions to the area of Nursing and Health as they allow us to glimpse the profile of women with greater reproductive autonomy, and thus, can support specific actions and programs aimed at expanding women's autonomy, since reproductive autonomy is intrinsically related to the highest level of sexual and

reproductive health. Moreover, as this is a relevant topic closely linked to women's health, further studies are needed to assess the nature of decision-making and the extent to which women are satisfied with this process, considering that women must be active participants in decision-making about their own reproductive health, including the use of contraceptive methods.

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