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Parity pattern among rural workers and association with sociodemographic factors

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ORIGINAL ARTICLE

Parity pattern among rural workers and association with sociodemographic factors

Padrão de paridade entre trabalhadoras rurais e associação com fatores sociodemográficos

Patrón de paridad entre los trabajadores rurales y asociación con factores sociodemográficos

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ABSTRACT

Objective: Analyzing parity among female rural workers and its association with sociodemographic factors. **Methodology:** A cross-sectional study with 346 rural women workers in Pernambuco/Brazil. The National Health Survey questionnaire was used to verify sociodemographic characteristics and data on the number of children. **Results:** Most women are between 23-27 years old (25%), have primary education (34%) and non-white skin color (88%). There were statistically significant differences in fertility for age ($p<0.01$), education level ($p<0.10$) and age at first pregnancy ($p<0.01$). In the adjusted analysis with demographic and socioeconomic variables, age and level of education were significantly associated with the number of children. With the addition of reproductive variables, there was a significant association only for the various types: first pregnancy and contraceptive method. **Conclusion:** Age, age at first pregnancy and level of education may be related to parity levels in female rural workers.

DESCRITORES: Paridade; Direitos Sexuais e Reprodutivos; Vulnerabilidade Social.

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RESUMO

Objetivo: Analisar a paridade entre mulheres trabalhadoras rurais e sua associação com fatores sociodemográficos. **Metodologia:** Estudo transversal com 346 mulheres trabalhadoras rurais em Pernambuco/Brasil. Utilizou-se o questionário da Pesquisa Nacional de Saúde para verificar características sociodemográficas e dados sobre número de filhos. **Resultados:** A maioria das mulheres tem entre 23-27 anos (25%), ensino fundamental (34%) e cor da pele não branca (88%). Houve diferenças estatisticamente significativas na fecundidade para idade (p<0.01), grau de instrução (p<0,10) e idade da primeira gravidez (p<0.01). Na análise ajustada com variáveis demográficas e socioeconômicas, idade e grau de instrução apresentaram associação significativa com número de filhos. Com adição das variáveis reprodutivas, houve associação significativa apenas para os vários tipos: primeira gravidez, primeira gravidez e método contraceptivo. **Conclusão:** Idade, idade da primeira gestação e grau de instrução podem ter relação com os níveis de paridade em trabalhadoras rurais.

DESCRIPTORS: Parity; Reproductive Rights; Social Vulnerability.

RESUMEN

Objetivo: Analizar la paridad entre trabajadoras rurales y su asociación con factores sociodemográficos. **Metodología:** Estudio transversal con 346 trabajadoras rurales de Pernambuco/Brasil. Se utilizó el cuestionario de la Encuesta Nacional de Salud para verificar las características sociodemográficas y los datos acerca del número de hijos. **Resultados:** La mayoría de mujeres de 23 a 27 años (25%), primaria (34%) y color no blanca (88%). Hubo diferencias estadísticamente significativas en la fecundidad por edad (p<0,01), escolaridad (p<0,10) y edad al primer embarazo (p<0,01). En el análisis ajustado con variables demográficas y socioeconómicas, la edad y el nivel educativo se asociaron significativamente con el número de hijos. Con la adición de las variables reproductivas, hubo asociación significativa solo para los diversos tipos: primer embarazo y método anticonceptivo. **Conclusión:** La edad, la edad al primer embarazo y el nivel educativo pueden estar relacionados con los niveles de paridad de las trabajadoras rurales.

DESCRIPTORES: Paridad; Derechos Sexuales y Reproductivos; Vulnerabilidad Social.

INTRODUCTION

Overall, population trends are driven by fertility variations, mainly by the average number of live births per woman over a lifetime. However, it has fallen significantly in several countries over the past few years, so that a reduction in fertility level of 0.60 live births per woman is expected between 2019 and 2100[1]. In this scenario, it is pointed out that in Brazil there is a tendency of reduction of the fertility levels rapidly, which varied from 6.28 to 1.7 children between 1960 and 2015, due to various social, economic and development circumstances[2,3]. Recent projections indicate another gradual decline, which could reach 1.66 children per woman in 2060[4].

This country draws attention in the search for information on fertility because it is the largest in Latin America, due to its rapid decline in fertility, the socioeconomic heterogeneity between regions, as well as for presenting progress in the systems for data collection and alternative methods of analysis sources for researchers about the fertility profile[5].

In the Northeast Region of Brazil, considered the most vulnerable and least developed region of

the country[5], there was a marked decline in the fertility rate from 2010, reaching 1.84 children/women in 2013[6]. Some of the factors responsible for this fall may be high infant mortality rates, social disabilities, low Human Development Index, exorbitant illiteracy rate and unequal distribution of income and opportunities[7].

Given this, it is noted that fertility levels, as well as fertility, can undergo changes that go beyond the biomedical aspect, representing social, economic and demographic phenomena[8,9], impacting on population growth rates. Analyzing the specific situation between women and work, it is observed that their participation in the labor market causes a greater decline in the fertility rate, since it seems to be extremely challenging to manage the career and raising children[10].

In the context of work in rural areas, women workers are part of a category surrounded by socioeconomic, demographic and cultural particularities[11]. These situations can be seen as barriers to reproductive decision-making[12]. Among the rural territory, in a specific region, there is the São Francisco Valley, which stands out for the high number of producing and exporting companies in the field of fruit production, especially vineyards, and also for the large hiring of female labor[13].

Research on reproductive behavior and fertility would not be possible if there were no surveys on sexual and reproductive health, because through them it is possible to describe the reality about the reproductive behavior and profile among women of childbearing age[14]. In Brazil, one of the ways to provide data on sexual and reproductive behavior and on fertility pattern until the date of the interview of the woman is through the household-based research, the National Health Survey (NHS). But even so, there are few studies that discuss this perspective of women in the rural context and that can subsidize researchers, evaluators, managers and health professionals in the development of strategies for improving health care, according to your needs.

This study aimed to analyze the parity among working women associated with sociodemographic and reproductive characteristics.

METHODOLOGY

Design, study location and period

A cross-sectional study involving rural workers of reproductive age and residents in the municipalities of Petrolina, Lagoa Grande and Santa Maria da Boa Vista, both covered by the Straw Hat Woman - Pernambuco Program in February 2018.

The irrigated fruit crop pole in the São Francisco Valley region presents periods of idleness, which can cause seasonal unemployment. Thus, the federal government, to minimize this problem and social consequences, created the Straw Hat Program that has been timely to adjust the rural workers/ s/ new with training in order to generate new income and work opportunities[15].

The government of Pernambuco resumed the Straw Hat Program incorporating the female segment in 2007, due to the instability regarding the maintenance of employment in fruit farming. This program is undoubtedly important among rural workers/women/men focused on fruit production in the state of Pernambuco, being considered a milestone in public policies to support these workers[16].

This program was timely for implementing public policies involving rural women workers, thus emerging the Straw Hat Woman Program contemplating, soon after, working women in two more segments, anglers and sugarcane[17]. The workers of the fruit-growing sector in the São Francisco Valley benefited from the program in 2009 due to the expansion of the labor market in the sector.

Population

For the sample estimate was used total population of 3,454 women registered in the Straw Hat Woman - PE program, information is passed by the Secretary of Women of Pernambuco (SecWoman-PE), of which were used maximum percentage of 50%, 5% sampling error and 95% confidence level in the finite population formula. For this type of sample, the population was divided into strata according to the registration of rural workers by municipality: 2760 in Petrolina, 656 in Lagoa Grande and 38 in Santa Maria da Boa Vista. A random sample was then selected from each stratum. Thus, 276 women from Petrolina, 66 from Lagoa Grande and 4 from Santa Maria da Boa Vista were analyzed proportionally, totaling 346 women.

Inclusion and exclusion criteria

Among these women, those who fit the following inclusion criteria were selected: to perform the job of rural worker, in reproductive age (being the minimum age of 18 years old according to the principles of the Consolidation of Labor Laws), have at least one pregnancy with a live born child and be resident in any of the participating municipalities. Rural workers with comorbidities that could make it difficult to understand the data collection tool, such as cognitive or psychiatric diseases, in addition to those who, for any reason, did not complete the interview.

Data collection

The data collection occurred during the registration of workers by the program in each municipality already mentioned, through individual interview using the NHS questionnaire. This is a national domain survey, carried out together with the Brazilian Institute of Geography and Statistics (IBGE), with several themes, being subdivided into three parts: the household, the relative to all residents of the household and the individual[2]. As the objective of this research was related to identify the sociodemographic profile and parity, we used the individual, focused on Women's Health/Reproductive Health, which has information on the sociodemographic characteristics of women and live-born children up to the time of the interview.

The sociodemographic variables analyzed were: age, education level, marital status, religion and

color/race. In the reproductive variables, among the women of the sample, we sought to identify those who reported having had live-born children until the date of the interview and the use of contraceptive methods. The fertility measure used was parity, considering the number of children born alive to resident mothers until the interview date.

Statistical analysis

The statistical analysis initially consisted of presenting the description of the sample by calculating the frequency, proportion and average of children (parity) for all variables. The relationship between parity and demographic, socioeconomic and reproductive variables were evaluated through crude and adjusted analyses. In the adjusted analysis, two models were estimated, the first with socioeconomic and demographic variables and the second with the addition of reproductive variables. These analyses were estimated by means of Poisson regressions, considering the different exposure times of each observation in the estimates. The results are presented in incidence rate ratios (IRT) and 95% confidence intervals (95%CI). The data analysis was performed in the software Stata, version 15.

Ethical aspects

This study is part of the research on "Reproductive autonomy among rural women workers" - doctoral thesis completed by the School of Nursing of the Federal University of Bahia, Salvador, BA, funded by the Foundation for Support to Research of the State of Bahia, Grant FAPESB, in 2017. The research was approved by the Research Ethics Committee of the Federal University of Vale do São Francisco, opinion number 2.339.422, 27/10/2017.

RESULTS

Of the total of 313 women studied, most are in the age range of 23-27 years old (25%), have a primary school education degree (34%) and reported having non-white skin color (88%). About 68% of the sample reported being married or having a partner and 88% declared having a religion. Regarding reproductive variables, 86% of women did not participate in family planning groups in the last 12 months, 78% used contraceptive methods and 67% had their first pregnancy in the age group 15-19 years old, according to table 1.

In relation to the average number of children, according to table 1, there is a higher average parity among women of higher age group, with lower education degree, in union (married/with partner) and those who started working earlier. According to the reproductive variables, higher parity (3.95) was found in women who became pregnant for the first time before age 15, did not use contraceptive method (2.85), and did not participate in family planning groups (2.35).

Table 1. Proportional distribution and average parity of rural workers of reproductive age, according to sociodemographic and reproductive characteristics. Petrolina, Lagoa Grande and Santa Maria da Boa Vista, PE. n= 313.

Variable	N	%	Average parity
Age			
18-22 years	50	15.97	1.88
23-27 years	79	25.24	2.10
28-32 years	78	24.92	2.10
33-37 years	51	16.29	2.67
38-42 years	39	12.46	3.02
43-47 years	16	5.11	3.18
Education level			
< Elementary	92	29.39	2.60
Elementary	70	22.36	2.58
Fundamental	107	34.19	2.18
≥ Average	44	14.06	1.70
marital status			
Single/no partner	100	31.95	2.27
Married/with partner	213	68.05	2.35
Skin color			
Not White	277	88.50	2.30
White	36	11.50	2.52
Religion			
No religion	37	11.82	2.27
With religion	276	88.18	2.33
Age when you started working			
7-18 years	221	70.61	2.37
19-32 years	92	29.39	2.22
Family planning			
No	272	86.90	2.35
Yes	41	13.10	2.17
Age first pregnancy			
< 15 years	23	7.35	3.95
15-19 years	210	67.09	2.31
20-29 years	77	24.60	1.93
≥ 30 years	3	0.96	1.00
Contraceptive method			
No	67	21.41	2.85
Yes	246	78.59	2.18

Source: Self-made.

In table 2, the results show statistically significant differences in parity for the variables: age ($p<0.01$), education level ($p<0.10$) and age of first pregnancy ($p<0.01$). There is a tendency to reduce the number of children according to the age of the first pregnancy - women who had their first child at 30 years old or older have 75% fewer children compared to those who had their first child before 15. Women who had their first child between 20 and 29 years old have an incidence rate 56% lower than those in the younger age group.

Table 2. Crude analysis for the association between demographic, socioeconomic and reproductive variables and the number of children of rural workers of reproductive age. Petrolina, Lagoa Grande and Santa Maria da Boa Vista, PE. n= 313

Variable	IRT	95% CI	*p-value*
Age			<0.001
18-22 years	1		
23-27 years	0.77	(0.60-0.99)	
28-32 years	0.59	(0.46 -0.77)	
33-37 years	0.60	(0.46-0.78)	
38-42 years	0.58	(0.44-0.76)	
43-47 years	0.54	(0.38-0.75)	
Education level			0.060
< Elementary	1		
Elementary	1.06	(0.88-1.29)	
Fundamental	0.91	(0.76-1.09)	
≥ Average	0.75	(0.58-0.98)	
Marital status			0.642
Single/no partner	1		
Married/with partner	1.04	(0.88-1.21)	
Skin color			0.396
Black	1		
White	1.10	(0.88-1.37)	
Religion			0.393
No religion	1		
With religion	0.90	(0.72-1.13)	
Age when you started working			0.346
7-18 years	1		
19-32 years	0.92	(0.78-1.08)	
Family planning			0.273
No	1		
Yes	0.88	(0.70-1.10)	
Age first pregnancy			<0.001
< 15 years	1		
15-19 years	0.58	(0.47-0.73)	
20-29 years	0.44	(0.34-0.57)	
≥ 30 years	0.25	(0.08-0.79)	
Contraceptive method			0.105
No	1		
Yes	0.87	(0.74-1.03)	

Source: Self-made.

Table 3 shows the adjusted analyses for two models. In model 1, only the variables age and education level showed a statistically significant association with the number of children. According to this model, the parity tends to be higher in early adulthood (18-22 years old, comparison group) and has a tendency of reduction for older age groups - being in the age group of 33-37 years old represents an incidence rate 42% lower than the comparison group. Meanwhile, women in the age groups of 38-42 and

43-47 years old have 44% and 50% fewer children respectively than women in the younger age group. There is also a reduction in the number of children among women with higher education - women who have completed high school have an incidence rate 31% lower than those with lower education.

In model 2, with the addition of reproductive variables, a statistically significant association was observed for the variables age, age of first pregnancy and contraceptive method. Age presents the same behavior as model 1, with a tendency to decrease according to age groups. Women in the 43-47 age group have a 51% lower incidence rate of having children than those in the younger age group. The same trend of reduction over the categories is presented by the age variable of the first pregnancy - women who had their first pregnancy later have lower rates of having children compared to the comparison group (first pregnancy before 15 years old). The use of contraceptive method also showed positive, statistically significant associations for women who use some type of method have incidence rates of having children when compared to those who do not use, as can be seen in table 3.

Table 3. Adjusted analyses for two models: model 1, with demographic and socioeconomic variables, and model 2, with demographic, socioeconomic and reproductive variables and the number of children of rural workers of reproductive age. Petrolina, Lagoa Grande and Santa Maria da Boa Vista, PE. n= 313.

Variable	Model 1			Model 2		
	IRT	95% CI	P	IRT	95% CI	*p-value*
Age			<0.001			<0.001
18-22 years	1			1		
23-27 years	0.75	(0.58-0.97)		0.78	(0.60-1.02)	
28-32 years	0.57	(0.44-0.74)		0.60	(0.46-0.77)	
33-37 years	0.58	(0.44-0.75)		0.61	(0.46-0.80)	
38-42 years	0.56	(0.42-0.74)		0.59	(0.44-0.78)	
43-47 years	0.50	(0.35-0.71)		0.49	(0.34-0.70)	
Education level			0.016			0.167
< Elementary	1			1		
Elementary	1.04	(0.85-1.26)		1.10	(0.90-1.34)	
Fundamental	0.88	(0.73-1.06)		0.94	(0.78-1.13)	
≥ Medium	0.69	(0.53-0.90)		0.82	(0.63-1.07)	
Marital status			0.527			0.447
Single/no partner	1			1		
Married/with partner	1.05	(0.89-1.23)		1.06	(0.90-1.29)	
Skin color			0.365			0.320
Not white	1			1		
White	1.11	(0.88-1.38)		1.12	(0.89-1.40)	
Religion			0.958			0.762
No religion	1			1		
With religion	0.99	(0.78-1.25)		1.04	(0.82-1.31)	
Age when you started working			0.91			0.390
7-18 years	1			1		
19-32 years	0.93	(0.79-1.09)		0.93	(0.79-1.09)	
Family planning						0.517

No	1		
Yes	0.92	(0.73-1.16)	
Age first pregnancy			<0.001
< 15 years	1		
15-19 years	0.58	(0.46-0.73)	
20-29 years	0.48	(0.37-0.63)	
≥ 30 years	0.31	(0.09-1.01)	
Contraceptive method			0.023
No	1		
Yes	0.81	(0.68-0.97)	

Source: Self-made.

DISCUSSION

The analysis of the results suggest that social factors may interfere in the pattern of parity among women in the study, with significant associations between the number of children and the characteristics of the mother, such as: age, education degree, age of the first pregnancy and contraceptive method. Similar results were observed in the study conducted in Brazil, in which the increase in the number of children born was positively associated with being between 20 and 24 years old, having less schooling, have their first sexual intercourse before the age of 16 and have their first child before the age of 20[18].

Regarding the age factor, this study showed a higher average parity in women of older age group. This is corroborated by the trend of birth concentration around a reduced and increasingly older age group, despite the fact that the fertility pattern is still higher among adolescents and young women[19]. In this sense, a research[20] that analyzed the demographic censuses and the between 1980 and 2010, it was found that there is a context in which the postponement of the birth of the first child and the increase of the proportion of women who complete the reproductive period without having children, resulting in a multifactorial and complex public health problem, as cultural and socioeconomic discrepancies can influence the parity patterns[19].

In this study, the average rate of parity varied according to education level, women with lower education had more children. Similar results on the influence of educational level on this pattern were found in Brazil[21] and other countries such as Saudi Arabia[22] and China[23]. Thus, schooling can have a great impact on parity, especially in developing countries.

Similarly, women surveyed in the present study with higher level of education, that is, those who completed high school, had an incidence rate of number of children 31% lower than those with less education. This can be explained by the fact that higher levels of education help women make more conscious choices, and therefore decide to reduce the number of children. Also, research suggests that the decline in the parity pattern occurred due to the increasing schooling of women[24].

The women who had their first child at 30 years old tend to have fewer children compared to

those who had it before 15 years old and literature suggests that having more children during adolescence may be related to many biomedical variables or not. It may also result in several consequences for mothers, such as intense mental suffering, negative self-worth, low expectations about the future, high economic dependence and low reproductive autonomy[25].

It was observed in this study that the variety of behaviors and profiles of women can influence differently the average fertility and parity rates. Work, from this perspective, is one of the conditions that has been highlighted in recent years due to the impacts resulting from the increase in female participation in the professional market[3,21,26]. This, coupled with the control of parity and the practice of contraception, became women's aspirations, thus reducing their desire for motherhood[27], possibly delaying the project to have a child[28], however, these factors were not consistent with the results of this study, because here 18 years old was the average age for the first pregnancy.

Regarding the marital status, there was no statistically significant association for fertility or parity in our results, contrary to a study that verified the prevalence of unplanned pregnancy among mothers who planned or did not plan pregnancy in the city of São Paulo[29]. The authors suggest in their research that marital status can regulate the pattern of parity among women, since having a partner during pregnancy may bring benefits to psychological and emotional health, as well as contributing to better financial stability in the family[21,29].

Another important statistical association was that related to some contraceptive method, in which women who use them have lower rates of parity. On the other hand, the highest parity was found in women who became pregnant for the first time before age 15, and this data is possibly a reflection of the non-use of contraceptive methods or participation of family planning groups, in dialogue with another study[30].

In Brazil it is a reality that many women do not have their demands for contraceptive methods met. This unequal and deficient condition results in increased public health expenditures, as well as social and human losses, since unplanned pregnancies can lead to adverse events such as clandestine abortions, maternal mortality, and changes in the health of mothers and children[31]. The average prevalence of family planning has been around 41% among women aged 18 to 49[32], and research also showed a low prevalence of about 33% of oral and injectable contraceptive use in Brazilian women aged 15 to 49 living in urban areas[33]. These rates may be even lower in the rural population.

Although this study shows a higher proportion of parity among women with religion, but without significant statistical association, in this analysis on fertility and religion to consider the behavior of the family in which the woman is inserted and not particularly religiosity, there being a need for greater joint observations between these three variables for the appropriate conclusions[34].

Finally, the results represent the reality of a certain population group of women at the time of

information collection and not at the time of birth of children. Thus, current socioeconomic transformations compared to the previous moment may cause changes in the average rate of the current parity pattern[35]. Thus, this rate is affected according to the variation of time and reproductive behavior[8].

Study Limitations

The limitations of this study are related to its transversal nature, where information and data collection refer to a single cut in time, not allowing reflections about causality. The use of longitudinal data would be a breakthrough in the analysis of the determinants of parity. In addition, it is important to consider the presence of women who have not completed their reproductive cycle in the sample. The analysis of a sample of women who completed their reproductive cycle would generate more accurate estimates on the total number of children.

Contributions to the Area of Nursing, Health or Public Policy

This study provides subsidies to assist researchers, evaluators, managers and health professionals in the development of strategies for promoting reproductive health among rural women due to their social vulnerability, It also provides the reduction of inequalities in parity patterns, for example, with educational actions and reproductive planning, in order to improve living conditions and avoid the adverse effects related to high parity.

CONCLUSION

The literature, in recent years, has highlighted several social, economic, political and cultural factors as conditioning of the decline or increase of parity and parity pattern. In this context, the present study contributes to this discussion, making visible these characteristics in the context of rural women. It is suggested that fertility and parity levels may be associated with the age, level of education and age of the first pregnancy of the mother.

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