ISSN: 2318-8413 DOI: 10.18554/refacs.v4i2.1639

REFACS
Revista Família, Ciclos de Vida e Saúde no Contexto Social

Social vulnerability and self-care related to breast and cervical cancer prevention

Vulnerabilidade social e autocuidado relacionado à prevenção do câncer de mama e de colo uterino

Vulnerabilidad social y el autocuidado relacionado a la prevención del cáncer de mama y de cuello uterino

Received: 10/12/2015
Approved: 03/03/2016
Published: 01/05/2016

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The aim of this study was to analyze the association between social vulnerability and self-care through analyzing the accession to the actions of prevention programs for breast cancer and cervical in a closed community of women. A cross sectional study with cut in the period 2008 and 2014 years and sample of 495 women ≥ 40 years, living in the coverage area of a Family Health Unit in a city in southeastern Brazil. The average annual Pap smear and mammogram and / or ultrasound were 150.0 and 150.6, respectively. There was no significant association between adherence to preventive exams for breast and cervical cancer and two groups: without social vulnerability (77.8%) and in this condition (22.2%). In conclusion, the actions of the Family Health Strategy are reaching effectiveness in promoting equity of access and facilitate self-care for the health of the most vulnerable groups.
Descriptors: Health vulnerability; Breast neoplasms; Uterine cervical neoplasms; Women's health.

O objetivo do estudo foi analisar a associação entre vulnerabilidade social e o autocuidado através da análise da adesão às ações dos programas de prevenção do câncer de mama e de colo uterino em uma comunidade fechada de mulheres. Estudo transversal com corte no período de 2008 e 2014, com amostra de 495 mulheres ≥ 40 anos, moradoras da área de abrangência de uma Unidade de Saúde da Família em município do sudeste brasileiro. A média anual de Papanicolaou e mamografias e/ou ultrassonografias foi de 150,0 e 150,6, entre todas pesquisadas respectivamente. Não houve associação significativa entre adesão aos exames preventivos do câncer de mama e de colo uterino e os dois grupos: sem vulnerabilidade social (77,8%) e nesta condição (22,2%). Conclui-se que as ações da Estratégia de Saúde da Família estão alcançando efetividade em promover a equidade do acesso e facilitar o autocuidado com a saúde dos grupos mais vulneráveis.
Descritores: Vulnerabilidade em saúde; Neoplasias da mama; Neoplasias do colo do útero; Saúde da mulher.

El objetivo del estudio fue analizar la asociación entre la vulnerabilidad social y el auto-cuidado mediante el análisis de la adhesión a las acciones de los programas de prevención de cáncer de mama y de cuello de útero en una comunidad cerrada de mujeres. Estudio transversal hecho en el periodo de 2008 al 2014 con muestra de 495 mujeres ≥ 40 años, que viven en la zona cercana de una Unidad de Salud de la Familia en una ciudad en el sureste del Brasil. El promedio anual del Papanicolaou y mamografía y/o ecografía fue 150,0 y 150,6, respectivamente. No se encontró asociación significativa entre la adhesión a exámenes preventivos para el cáncer de mama y de cuello uterino y dos grupos sin vulnerabilidad social (77,8%) y en esta condición (22,2%). En conclusión, las acciones de la Estrategia Salud de la Familia están alcanzando eficacia en la promoción de la equidad de acceso y facilitar el auto-cuidado de la salud de los grupos más vulnerables.
Descriptores: Vulnerabilidad en salud; Neoplasias de la mama; Neoplasias del cuello uterino , Salud de la mujer.

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INTRODUCTION

Cancer is the name attributed to a group of more than 100 diseases that have as a common trait the sprawling invasion of cells inside tissues and organs. In Brazil, from 1,318,000 deaths recorded in 2014, 223,700 were caused by cancer, and of those, 104,100 (7.9%) were women. Breast and cervical cancer represented respectively 16.8% and 8.6% of cancer deaths in women, exceeding 25% of the total number of deaths caused by neoplasias[1].

In the 10 years between 2003-2013, the number of deaths caused by cancer in all parts of the body increased; specifically, cervical cancer grew 29.2%, and breast cancer, 52%. This growth indicates a higher number of cases of cancer in the population, and other factors as the delay in the discovery of the diagnosis or in the beginning of the treatment[2,3].

Cervical cancer has one of the highest rates of cure, reaching 100% if diagnosed and treated in early or previous phases; its frequency is higher in people older than 30 years of age[4]. Breast cancer, too, has a good prognosis and high chance of cure if precociously diagnosed[5].

Those are the two types of cancer whose preventive policies are better defined, their tracking measures are systematized and they are widely reported in campaigns for raising the awareness of the people[6,7].

Cervical cancer tracking actions aim at women who have already began their sexual lives, especially those between 25 and 64 years. Two exams in consecutive years, are recommended and if the two results are negative, the interval between exams becomes trhee years, as long as the results are still negative[7]. Nontheless, young women also undergo examinations; in 2010, about 18% of Pap smear tests were made with women under 25 years[8,9].

Today, the basic method used for the tracking of breast cancer is the mammography, an exam of the highest quality level, thanks to its potential to detect most type of cancers even before they can be perceived through breast self-examination. It is recommended that women between 50 and 69 years of age undergo this exam every two years, with the exception of those belonging to risk groups, such as: family with disease history, early menarche, first pregnancy after age 30, late menopause (after age 50), and nulliparity; in this cases, it is recommended that women start undergoing mammographies at 35 years of age[10].

Between the months of January and October 2013 en Brazil, 4.1 million women of all age groups submitted to both tracking and diagnostic mammographic examinations, and records indicated a growth of 25% in the number of mammograms conducted by the years between 2010 and 2012[11].

The great regulation of preventive measures against breast and cervix cancers allowed for a monitoring system to be created in the country. The Information System of Cervical Cancer, SISColo, and the Information System Breast Cancer Control - SISMama are computer systems that gather information regarding prevention programs of the two types of cancer that most affect the female population, although they still need complete records on all of the actions conducted by the services, especially those in the private sector of health[12,13].

The existence of these computerised systems, the clearly defined regulation of ontological public policies, and the ease of access to the actions of both programs in basic health care are the main reasons that lead us to choose them to carry out an analysis of self-care with women's health, influencing in the realization of this research.

Several studies conducted in Brazil were devoted to the evaluation of the adherence to measures of prevention and control of breast and cervix cancers, but their attention is especially focused to one or another tracking program, which leads to a gap in their assessment of the main aspects that involve adhesion to the programs, particularly regarding the sociodemographic factors that go beyond personal, financial, and educational

characteristics, and that can also influence in the access to the actions offered in the scope of primary attention[4,5,14].

The development of our research was guided by a question that raised from that gap in their knowledge: "do the women who practice self-care actions regarding breast and cervix cancer belong to the most vulnerable segment of the female population?" In other words: do women who, thanks to special conditions brought by the compromised health of one or more of her family members, live in families in which the disease risk is greater, devote less time to their own health?

The decision to investigate the connection between self-care and social vulnerability emerged from the concept of this last expression, according to which more vulnerable people have more difficulty in the confrontation of high-risk situations and in important decision-making.

Due to the commonly established relationship between social vulnerability and the processes of exclusion, discrimination, weakening of social groups and their ability to react, the relationship between this vulnerability and risks to health also becomes narrow[15].

In order to produce a response to the proposed question, this study has recovered records of mammography and/or ultrasound, and the Pap smear exams, and analyzed the pattern of adhesion of a certain female population to preventive measures against breast and cervical cancer, trying to characterize the preventive actions of these women into two distinct groups: women whose families are socially vulnerable, and women who are not subject to that condition.

Thus, the objective of our study was to analyze the relationship between social vulnerability and adhesion to prevention programs against breast and cervical cancer in women of a community, in a period of seven years (from 2008 to 2014).

The hypothesis considered in this study, was that non-vulnerable women practice self-care and undergo mammography, ultrasound, and Pap smear exams more frequently, in order to track breast and cervical cancers.

METHOD

This is a cross-sectional study, carried out with women who inhabit the area of reach and make use of a Family Health Unit (USF) in a city in the interior of São Paulo, in the southwest of the Brazil, over a period of seven years, between 2008 and 2014.

The sample was defined from a list of 657 women whose age is equal to or greater than 40 years, inhabitants of the six micro-areas that make up the region attended by the family health unit being investigated. The list in question is a register used by community health workers to schedule the annual mammographies for breast cancer tracking, and to actively search for the women who missed their date. The city oriented primary care units to conduct breast cancer tracking for women over 40 years.

162 women who did not frequent the unit were excluded from the study, resulting in a sample of 495 women, 75.3% of those registered.

The generalization of the results of this research is limited by the fact that the sample consists only of women who are at least 40 years old - option adopted because of the opportunity presented in the existence of the registers, which do not distinguish the population who participated in the Pap smear test; the difference in age group between the target population was considered to be low as a confounding factor, since our study sought to observe the practice of self-care by means of the frequency of the examinations that public health policies recommended, and not establish the prevalence of such diseases.

The sources of information were the Informatized Information System of the City (SIIM), the medical records of the women, the Breast Cancer Information System (SISMama) and the Cervical Cancer Information System (SISColo), records of the unit and the reports produced by community health workers.

A structured script was elaborated, which included sociodemographic variables relevant to this study: age, education, marital status, income, profession, number of children and family risk; the variables regarding self-care were: date of the undergone mammograms and/or ultrasound examinations, and of the cell collection for the Pap test.

In order to define whether a family was in a condition of social vulnerability, the Coelho-Savassi scale (ERF-CS) was used, as it is the scale adopted by the Brazilian Ministry of Health, in order to classify social risk in its strategy for the health of the family. This scale is an instrument of stratification of familial vulnerability, developed in the city of Contagem, Minas Gerais, and crafted from the register model A, from the Primary Attention Information System (SIAB). The data is written in the scale by the Communitary Health Agent, as they register families to determine their social and health risk, and that data reflects the potential of each familial nucleae. The scale attributes "points" of familial risk to families that have among their members: bedridden people, people with motor or mental deficiency, low conditions of hygiene, malnutrition, vices (smoking/drug addiction/alcoholism), unemployment, illiteracy, children younger than 1 year, people older than 70 years, people with hypertension and diabetics[16].

Data was collected between the months of March and April 2015, and entered into a spreadsheet for further analysis through the use of the SAS (Statistical Analysis System) software version 9.2.

The statistical analysis was conducted by means of absolute (n) and relative (%) frequencies, measures of central tendency (mean and median) and measures of dispersion (standard deviation) for the quantitative variables. In order to assess the degree of dependence between the groups with and without social risk and the variables, the chi-squared and Odds Ratio tests have been used, being the control group women without social risk. The significance level considered for these analyses was 5%.

The research protocol was approved by the Ethics Committee under the no. 42499215.8.0000.5412, and research followed the recommendations of the CNS resolution No. 466/12 and of the Declaration of Helsinki.

RESULTS

The average age of the 495 women in the research were 55.8±10.89 years (40-90); being 34% between 50 and 59 years, 21.9% between 60 and 69 years and 12.0% 70 years old or higher. The ages of two of them were not discovered. The greater majority are Caucasian (92.7%); 3.5% are Afro-descendant, and the other 3.9% are Indian or Asian. It was not possible to identify the ethnicity of six women.

70.3% of the women lived with a partner, to whom they were either married or living in a stable union; 9.4% were single, 8.6% divorced and 9.0% were widows, unable to identify the civil status of seven women.

The majority of women (62.4%) did not work, 31.7% had a defined profession, and 5.9% were retired. The analysis of education indicated that 80.8% have begun basic education, although not all of them have completed it; the same is true for the 8.5% who started secondary education, and the 2.5% who began their higher education; 8.4% were illiterate. The education level of six women could not be found in the reports.

In table 1, one can see that between 2008 and 2014, the inclusion of women in programmes of cervix and breast cancer prevention grew steadily. Until 2010, the number of women who received the Pap test was slightly above 30% of the study population. From 2011 on, the number of participants increased significantly, reaching 44% of women treated in 2012.

The percentage of women treated for breast cancer tracking was greater than for cervix cancer in four of the seven investigated years, also reaching a maximum of 51% in 2012 - year with the best result in those programs. The annual average of tests carried

out by the 495 women was similar: 150.0 Pap smears and 150.6 mamograms (MMG) or ultrasound (US) (Table 1).

Among the participants, regarding the social risk indicated by the Coelho-Savassi scale, 385 (77.8%) women were in families with no social vulnerabilities and the families of 110 (22.2%) had some vulnerability. From the families that suffer some risk, 57 (51.8%) were at risk level 1; 33 (30.0%) at risk level 2; and 20 (18.2%) at risk level 3 (Table 2).

Micro-area four is the one which contains most of the women in the sample, and micro-area five is the one with more families under health risks, with 30.2% of the total of families presenting some kind of social factor that includes them among the vulnerable ones. However, inhabiting one or other micro-area did not represent a meaningful difference in social risk (p=0.8634), having a greater or lesser degree of risk (R1, R2, R3) was also not relevant (p=0.9666), as was the case regarding living in the different micro-areas, although some presented a greater concentration of families at social risks, as indicated by table 2.

The average age of women in the groups was similar, 55.9±10.64 (40-88) for those without social risk and 55.8±11.76 (41-90) for those who had it.

The percentage of women who performed the MMG/US and the Pap test was higher among the families without social risk in every year; but as these constitute the vast majority of the sample (77.8%), that was already expected.

Table 1. Examination of PAP and MMG and/or US, according to the year they were performed, of women aged 40 or older, who are users of a primary healthcare unit of a city in the interior of São Paulo, 2008-2014.

YEAR	Pap smear		MMG/US	
	n	%	n	%
2008	102	20.6	4	0.8
2009	88	178	114	23.0
2010	122	24.6	143	28.9
2011	178	36.0	214	43.2
2012	218	44.0	248	50.1
2013	171	34.5	166	33.5
2014	171	34.5	165	33.3
Total	1050		1054	

According to the Coelho-Savassi scale, 385 participants (77.8%) belonged to families with no social risk, and 110 (22.2%) families were at risk of some degree. Among those with social risks, 57 (51.8%) were at risk of grade 1, 33 (30%) of grade 2, and 20 (18.2%) grade 3 (table 2).

Table 2. Women according to their micro-area (MA) of residence and social risk, of a primary health care unit in a city in the interior of São Paulo, 2014.

Micro-area	Women		Without risk		With risk				
	N	%	R 0	%	n	%	R 1	R 2	R 3
MA 1	56	11.3	49	87.5	7	12.5	3	3	1
MA 2	92	18.6	73	79.3	19	20.7	10	7	2
MA 3	58	11.7	49	84.5	9	15.5	5	1	3
MA 4	115	23.2	86	74.8	29	25.2	13	8	8
MA 5	86	17.4	60	69.8	26	30.2	13	9	4
MA 6	88	178	68	79.1	20	22.7	13	5	2

The results presented in tables 3 and 4 indicate that, analyzing data from a perspective that takes into account their condition of vulnerability and social risk, there is no significant difference in the access of women to programs of prevention against breast and cervical cancer. That suggests that, even though some women may have some sort of deficiency or dependence, or may live with a family member without a job, and that may commit their routine and require more dedication from their part, that does not interfere in their self-care annual schedules, at least with respect to MGM and Pap tests.

DISCUSSION

Social vulnerability can be understood as a reflection of the conditions of social welfare, and is related to socio-political and cultural aspects, such as access to information, educational level, access to material resources and the power of confrontation of cultural barriers, among other factors. This combination of these aspects intensifies the relationship between vulnerability and risk [14].

The risk is used by epidemiologists, who associate it with groups or populations[17]. It can be immediate or cause a decrease in the quality of life due to the absence of preventive actions, resulting in social risk, that is, in the inability of individuals to ensure their own social independence[18,19].

Regarding women, social vulnerability, as suggested by the scale of Coelho-Savassi, may make it more difficult for them to find time to perform actions that have themselves as the center, such as their own health care, and that could increase the risk brought by diseases such as breast and uterine cancer, since its detection would take more time[5].

Self-care is defined as the practices carried out by someone to maintain their own health and well-being. It is the various actions which aim at improving all the aspects which are necessary for one to have a healthy life[20].

On healthcare, self-care is necessary both to attend the needs that come from a pathological state, and to diagnose and treat the pathologies themselves[21].

Table 3. Pap tests, depending on the year and social risk in women who are at least 40 years old, and make use of the family health unit in a city in the interior of São Paulo, 2008-2014.

Year	Pap test						
2008		Yes	Not	Total	OR*	IC 95%	P Value
	With risk	23	87	110	1.024	(0.6076-1.7257)	p=0.9645
	Without risk	79	306	385			
	Total	102	393	495			
2009							
	With risk	19	91	110	0.9562	(0.5469-1.6720)	p=0.9875
	Without risk	69	316	385			
	Total	88	407	495			
2010							
	With risk	27	83	110	0.993	(0.6070-1.6245)	p=0.9223
	Without risk	95	290	385			
	Total	122	373	495			
2011							
	With risk	38	72	110	0.9236	(0.5922-1.4405)	p=0.8120
	Without risk	140	245	385			
	Total	178	317	495			
2012							
	With risk	52	58	110	1.1828	(0.7731-1.8096)	p=0.5058
	Without risk	166	219	385			
	Total	218	277	495			
2013							
	With risk	37	73	110	0.9094	(0.6068-1.4855)	p=0.9095
	Without risk	134	251	385			
	Total	171	324	495			
2014							
	With risk	40	70	110	1.108	(0.7121-1.7238)	p=0.7331
	Without risk	131	254	385			
	Total	171	324	495			

* No risk control

Table 4. Tests of MMG or US, depending on the year and social risk in women at least 40 years old, users of family health unit in a city in the state of São Paulo, 2008-2014.

Year	MMG e/ou US					
2008		YES	NOT	Total	OR*	IC 95%	P Value
	With risk	0	110	110	the program does not calculate with house 0		
	Without risk	4	381	385			
	Total	4	491	495			
2009							
	With risk	24	91	115	0.8498	(0.5113-1.4126)	p=0.6158
	Without risk	90	290	380			
	Total	114	381	495			
2010							
	With risk	28	68	96	1.1137	(0.6797-1.8248)	p=0.7642
	Without risk	105	284	389			
	Total	133	352	485			
2011							
	With risk	35	67	102	0.6245	(0.3965-0.9838)	p=0.0538
	Without risk	179	214	393			
	Total	214	281	495			
2012							
	With risk	51	57	108	0.8629	(0.5630-1.3228)	p=0.5701
	Without risk	197	190	387			
	Total	248	247	495			
2013							
	With risk	33	80	113	0.7723	(0.4890-1.2195)	p=0.3188
	Without risk	133	249	382			
	Total	166	329	495			
2014							
	With risk	33	72	105	0.8958	(0.5642-1.4224)	p=0.7265
	Without risk	132	258	390			
	Total	165	330	495			

* No risk control

The two groups studied, the women whose families do not suffer any social vulnerability (77.8%) and those whose families suffer (22.2%) them, had equal access to undergo exams for the tracking of breast and cervical cancer, as no significant correlation between the variables social risk and MMG/US or PAP could be found, suggesting that the two groups adhere similarly to preventive measures — whi contradicts the usual propositions regarding increased risk and social vulnerability[18,19,22].

In spite of that, the apparent contradiction that our results at first glance suggest, points at an issue which is very important for an appropriate collective healthcare, which proposes specific conditions of vulnerability as a basis for actions and professional practices, and the development of tools and technologies that can meet the needs of specific social groups[23].

The use of the scale of Coelho-Savassi in the family health strategy clearly aims at identifying vulnerable families and, through

actions planned by a team, at intervening strategically to reduce inequality in access to services, and increase the power of these families to cope with everyday situations, reducing exclusion and discrimination by means of the reception and of partial responsibility for the health of the population[5].

This study found that women from the two groups participated equally in measures of tracking breast and uterine cancer, which can be the result of the work of the local ESF (Family Health Strategy), which could be considered effective in their actions, by offering healthcare equally, investing more effort in the population group that most needs it: the one with the greater social vulnerability.

A study of the Brazilian population has shown that mammographies were performed for 60% of women with age between 50 and 69 years, and the Pap test, by the 84.5% of the same population. The study also pointed as difficulties to the acces of the mammography, the geographical distance between the women and the offered services, their familial structure — characterized by economic conditions and lack of stimuli to healthcare —, not to mention their low perception regarding the importance of the healthcare[22,24].

Regarding the female population of our research, the Pap test was conducted at the USF, next to the women's residence, and was conducted at the moment of consultation, but the mammography requires the scheduling in a specialty center, which later requires that the women go to another neighborhood, probably hindering their access to the test, especially for those whose families are in a situation of social risk.

However, the results of our study contradict others that claim that the adherence to the MMG/US is greater than that of the Pap test, since the annual average of the two tests in the seven-year period annalysed was similar, the variation being of only six tenths.

ESF teams are essential for the families to have access to self-care, especially in vulnerable groups, which require more guidance and care, and it is necessary for the teams to be prepared to act according to the particularities of each situation, adapting their actions to the specific needs of them - especially those related to people with education levels low enough to hinder the understanding of the information. The level education can influence the taking of measures to prevent breast cancer, and therefore, it can retard the identification of a tumor[25-27].

In this study, the majority of women (80.8%) had no basic education, i.e., the population had a low education level.

In the United States, women who never did mammography have lower education and greater economic vulnerability[26]. In Brazil, 36.8% of women without regular education, and older than 24 years of age have already had a mammography, against 90% of those who, at the same age group, studied for at least 15 years[28].

Once again, the role of the ESF intervention in specific situations should be remarked. It is impossible to neglect the importance of their aducation, dynamic and playful approach, aiming at especific groups with women who have lower regular education, with the objective of improving their knowledge regarding actions that should be developed in order to promote practices of health self-care.

If we add the semi-literate to the relative vulnerabilities, we perceive that the majority of women (62.4%) are not active workers, and therefore do not have their own income source, and are financially dependent on their partners, as 70.3% of them are married or live a stable union. For this reason, a whole group of women are subjected to a social vulnerability situation, independent of that indicated by the scale of Coelho, as shown by studies that associated lower coverage of Pap smear and mammography to women with low economic conditions and education[,30].

The results of that investigation did not confirm the hypothesis that self-care is greater among women without family vulnerabilities, since there was no statistically significant difference between the existence or not of

social vulnerability. However, our research concurs with the studies which associated social vulnerability, characterized by low income and schooling, with the coverage of programs for the prevention of breast and cervical cancer, since the number of women with this vulnerability does not reach 50% of the sample, whether or not such they are considered vulnerable according to the Coelho-Savassi scale.

It is necessary to note that the World Health Organization (WHO) and the Ministry of health set as a goal that 70% of women between 50 and 69 years of age and 80% of those between 25 and 64 years old do the Pap smear every three years[24,31]. The number of women performing the test every year continues to grow in the primary unit studied, but it is still very far from what is considered ideal: the totality of the women of the area.

Adherence to the preventive measures of cervical and breast cancer programs evolved along the seven years of monitoring and both programs showed similar annual averages. A statistically significant difference between self-care and social vulnerability, according to the scale of Coelho-Savassi, among women in the research community could not be found.

The actions carried out by the family health strategy are being effective to promote equality in the access of women, facilitating self healthcare for the most vulnerable groups, even though their adhesion might be low, not reaching 50% in women who are 40 years old or older.

CONCLUSION

The social vulnerability as understood by the Coelho-Savassi scale has not justified the adoption of tracking programs for breast and cervical cancers.

The actions developed by the Family Health Strategy are being effective as they are promoting equal access for women, and making it easier for the most vulnerable groups to practice self-care, even though their adhesion to the programs might still be low, being even lower than 50% for women who are at least 40 years old.

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CONTRIBUTIONS
Joquebede Luchetti Cristina participated in the study design, collection and analysis of data and preparation of the article. **Marcia Regina Campos Costa da Fonseca** participated in the data analysis and in the critical review of the article. **Maria Cristina Traldi** guided the research its design, data analysis, and the critical review of the article.

Disponível

How to cite this article (Vancouver):
Luchetti JC, Fonseca MRCC, Traldi MC. Social vulnerability and self-care related to breast and cervical cancer prevention. REFACS [Online]. 2016 [cited in: *(insert day, month and year of access)*]; 4(2). Available in: *(access link)*. DOI: 10.18554/refacs.v4i2.1639.

How to cite this article (ABNT):
LUCHETTI, J. C.; FONSECA, M. R. C. C.; TRALDI, M. C. Social vulnerability and self-care related to breast and cervical cancer prevention. **REFACS**, Uberaba, MG, v. 4, n. 2, p. 74-85, 2016. Avaliable in: *(access link).* DOI: 10.18554/refacs.v4i2.1639. Access in: *(insert day, month and year of access)*.

How to cite this article (APA):
Luchetti, J. C., Fonseca, M. R. C. C. & Traldi, *M. C.* (2016). Social vulnerability and self-care related to breast and cervical cancer prevention. *REFACS*, 4(2), 74-85. Recovered in: *(day), (month), (year) from (access link)*. DOI: 10.18554/refacs.v4i2.1639.