

# **Knowledge, Attitude and Practice of Quilombola Women: A Multifactorial Analysis on The Preventive Examination of Uterine Cervical Cancer in Northern Brazil**

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## Abstract

O Cervical cancer is considered a persistent public health problem, the access to health services, as well as women's adherence to the Pap smear, is one of the main tools to change this scenario, favoring the early detection of the disease. When considering the morbidity and mortality rates, taking into account the color, it is evident that black women need a different look. Given the above, the objective of this work is to analyze the knowledge, attitude and practice of quilombola women in Amapá about the preventive examination for cervical cancer. The study has a quantitative approach, of an applied nature, of the Survey type, having as reference the Knowledge, Attitude and Practice Survey (KAP) on the PCCU exam. The field research was carried out in the Quilombo do Curiaú in the state of Amapá. The data were submitted to the SPSS version 25.0 program, for the description of the statistical results, being considered relevant the results with  $p < 0.05$ , which made it possible to trace the following socioeconomic and anthropometric profile: age from 18 to 33 years old (43.75%), Catholic (92.50%), single (52.50%), complete high school (31.35%), without paid activity (41.25%), month family income from 1 to 2 minimum wages (37.50%) and an average of five family members (36.25%). They present weight 69.34 (Me), height 161.06 (Me), Body Mass Index (BMI) 26.685 (Me), waist circumference (WC) 86.97 (Me), hip circumference (HC) 106.77 (Me) and CC/HC ratio index 0.8172 (Me). Thus, the study revealed that 42.50% meet the parameter considered normal for BMI and 68.75% have a low risk for the development of Chronic Non-Transmissible Neoplastic Diseases, according to CC/HC. Using the criteria proposed by the KAP survey as a reference, 26.25% had adequate knowledge, 30% had adequate attitude and 37.5% had adequate practice, demonstrating a negative proportional assessment in relation to the PCCU exam. The KAP survey was carried out, which showed that only 36.27% of the women were characterized with Adequate Knowledge, 30.00% with Adequate Attitude and 37.5% with Adequate Practice, highlighting the need for educational actions at this topic with the female quilombola population, with a view to increasing the adherence to the uterine cytopathological examination within these communities.

**Keywords:** Cervical Neoplasms; Pap smear test; Women's Health; African Continent Ancestries Group; Quilombola community.

## 1. Introduction

The Cervical Cancer (UCC), the theme of this research, is the leading cause of cancer death among women living in developing countries. The International Agency for Research on Cancer (IARC), which integrates the World Health Organization (WHO), estimated for the year 2019 the occurrence of 265,000 deaths from this cancer worldwide, 85% of them in less developed countries. In South America, in 2018, 570 thousand new cases of cervical cancer were reported, representing 84% of new cases worldwide (PAN AMERICAN HEALTH ORGANIZATION, 2018).

In Brazil, this disease has severely affected women of reproductive age, between 35 and 50 years. The disease evolves slowly and starts in a benign way, with lesions in the human body before being affected by cancer cells, and these are the lesions that, if detected early, have a high chance of treatment and cure. Thus, with the prevention of a malignant condition, it is necessary to carry out a gynecological exam, which

a large number of women do not perform and a considerable number are affected by this disease and has increased exponentially in the last decade (TSUCHIYA et al., 2017).

The Pap smear is the main way of early detection of cervical cancer, considered by many authors to be an extremely relevant tool offered in the country, to reduce the Brazilian morbidity and mortality. Brazil, in the mid-1940s, was one of the first countries to provide preventive examinations, yet there are millions of women in the age group of higher incidence who have never carried out the procedure (BRASIL, 2013; INSTITUTO NACIONAL DO CÂNCER, 2016).

The female Brazilian population has 40% of women who have never carried out a cervical cancer examination and, of all of them, only 7.7% are covered by government programs for the prevention and control of the CCU through the Pap smear test. there is a deficient adherence among black women, who are mostly the largest portion of the country, highlighting black quilombolas (ZANOTELLI, 2013; JACINTHO et al., 2018).

Considering the vulnerability of the black population, with a view to confronting the health inequities that affect this population, it is necessary for professionals to be aware of the specificity of this population group. The Ministry of Health emphasizes the need for a differentiated provision of health actions in territories with a predominance of black people, given the lack of specific actions for the remaining quilombola community (SILVA; SILVA; GONÇALVES, 2018).

Knowing the reasons that influence the non-performance of the preventive examination for cervical cancer is necessary to understand the preventive behaviors of these women. Assessing these factors is the first step to determine strategies that can efficiently and adequately intervene in the current needs of the female population. Therefore, it is observed how important it is for women to knowledge about the exam, as well as have the necessary attitude and practice to perform it, so that there is effective tracking and control of the UCC (FERREIRA, 2009; AGUILAR ; SOARES, 2015; BATISTA; CALDAS, 2017).

The evaluation through the Knowledge, Attitude and Practice Survey (KAP) of the female population, on the cervical cytopathological examination aims to identify the knowledge of women about the UCC and the examination that detects it, this can influence adherence and frequency with which it is performed. This is a methodology that was used by the Ministry of Health to investigate sexually transmitted infections in 2004, 2008 and 2013 (BRASIL, 2016; ROSA et al., 2018). To carry out the KAP Survey, knowledge means remembering specific facts or the ability to apply them to solve problems.

The attitude is, essentially, having opinions, feelings, predispositions and beliefs, relatively constant, directed to a goal, person or situation. Practice is decision making to perform the action –psychomotor dimension. These information can serve as a basis for health professionals and services, with regard to the adoption of measures that can ensure information and health of quilombola women (MARINHO et al., 2003; BORBA et al., 2019; GUTIERREZ et al., 2019). Thus, the objective of the present was to analyze the knowledge, attitude and practice of quilombola women about the preventive examination for cervical cancer.

## **2. Material and Methods**

The research began after verbal consent and the signing of the written informed consent form, as

approved by the Institution's Research Ethics Committee (CAAE: 24964519.10000.0003, nº 4.072.941), in accordance with Resolution 466/2012 of the National Health Council.

The study had a quantitative, cross-sectional approach, applied nature, with a descriptive character and a field research type, associated with the Knowledge, Attitude and Practice Survey (KAP). The population of this research consisted of black women residing in the Quilombo do Curiaú (Curiaú de Dentro, Curiaú de Fora, Extrema and Mocambo), located in the State of Amapá, a black community, descendants of Afro-Brazilians from an ancient quilombo formed in the century XVIII.

Data collection was carried out in two moments, the first with application of the structured questionnaire, in person or remotely, that was used due to the pandemic moment by the new Corona virus, when data were collected on socioeconomic conditions, life habits, gynecological aspects and applied the methodology of the Knowledge, Attitude and Practice Survey (KAP) on the preventive examination for cervical cancer.

Data collection in the second moment was related to anthropometry, using the guidelines of the Brazilian Institute of Geography and Statistics (2013) for the survey of height, weight, waist circumference and hip circumference measurements. These measurements were also necessary to establish the Body Mass Index (BMI), which is an indicator of body density determined by the relationship between body, weight and height.

### **2.1 Anthropometric measurements**

Height and body mass were measured using a scale with a stadiometer with a maximum capacity of 150 kg and a variation of 0.5 kg for body mass and a variation of 0.1 cm for height. The woman was kept standing, with legs and feet parallel, weight distributed on both bare feet, wearing light clothes, with arms relaxed at her sides and palms facing the body and the head was positioned in the plane of Frankfurt.

As for the waist circumference, the anatomical reference used was the 10th rib, being measured with the interviewee in an orthostatic position. The measuring tape with an accuracy of 0.1 mm passed around the evaluated from back to front, taking care to keep it in the horizontal plane, reading done after the assessed person performs a normal expiration.

With regard to hip circumference, the largest proportion of the gluteus region (buttock) was used as an anatomical reference, which is located by looking at the pelvis laterally, and was performed with the woman standing, spine erect, thighs together and arms along the body.

### **2.2 KAP Survey**

Data collection was anchored in the Knowledge, Attitude and Practice Survey (KAP), which is described by Kaliyaperuma (2004), author responsible for the Guideline of technique recommendations, as an instrument that can help in the description of attributes in a community and it serves as a situational diagnosis of the same specific situation. The KAP levels are a path traditionally used by public health and over which there is greater familiarity and technical mastery.

Knowledge, attitude and practice were evaluated according to the following criteria: Adequate Knowledge, Inadequate Knowledge, Adequate Attitude, Inappropriate Attitude, Adequate Practice, and Inappropriate Practice. Adequate knowledge: when the woman reported having heard about the exam, she

knew that it was to detect cancer in general, or specifically of the uterine cervix, and knew how to cite at least two necessary care that she should take before performing the exam; Inadequate knowledge: when the woman reported never having heard about the exam or having heard it, but did not know that it was to detect cancer; or when she did not know how to cite at least two necessary care that she should have before taking the exam.

Appropriate attitude: when the woman presented the reason for having a pap smear to prevent cervical cancer. When she mentioned as a reason the fact that it was a routine exam or the desire to know if everything was ok with her. It will only be considered an appropriate attitude when, at the same time, she has adequate knowledge about the exam; Inappropriate attitude: when the woman presented other motivations para for taking the exam instead than the prevention of cervical cancer.

Adequate practice: when the woman had performed her last preventive exam, at most, three years ago; returned to receive the last test result performed and/or sought to make an appointment to show the test result; Inappropriate practice: when the last preventive exam had been performed for more than three years or had never performed the exam; or has not returned to receive the last result and/or has not sought to make an appointment to show the exam result.

### **2.3 Data analysis**

Data were compiled and organized using the Statistical Package for Social Sciences (SPSS) version 25.0. Continuous variables expressed as mean  $\pm$  Standard Deviation (SD) and categorical variables expressed as frequencies and percentages. The predictor variables: age, education, marital status, income, menarche, sexarche, knowledge, attitude and practice in relation to the preventive examination for cervical cancer. Data were organized through tables and graphs using the Microsoft Excel 2016 program.

Descriptive analysis was performed based on graphs and frequency distributions. Since age and income data were collected at intervals, the mean of these variables could not be estimated given the existence of open intervals, so only the median could be estimated. All discussions about the significance tests were carried out considering a maximum significance level of 5% (0.05), that is, the following decision rule was adopted in the statistical tests: rejection of the null hypothesis attesting to a significant association whenever the p-value associated with the test is less than 0.05.

## **3. Results And Discussion**

The results were based on the sample of 80 women, where it was possible to characterize the socio-economic profile of the participants through the responses of the main frequencies, thus, it can be said that the interviewees in this research have the following profile: aged between 18 and 33 years (43.8%), Catholic religion (92.5%), single (52.6%), completed high school (31.3%). As for the economic situation, 33 (41.2%) have no paid activity, 31 (38.8%) do not work and have their expenses paid by the family, 30 (37.5%) having a month family income of 1 to 2 salaries minimum and 29 of them (36.2%) have five family members living on this income.

Figure 1. Frequency distribution of socioeconomic data for women from the Quilombo do Curiaú.

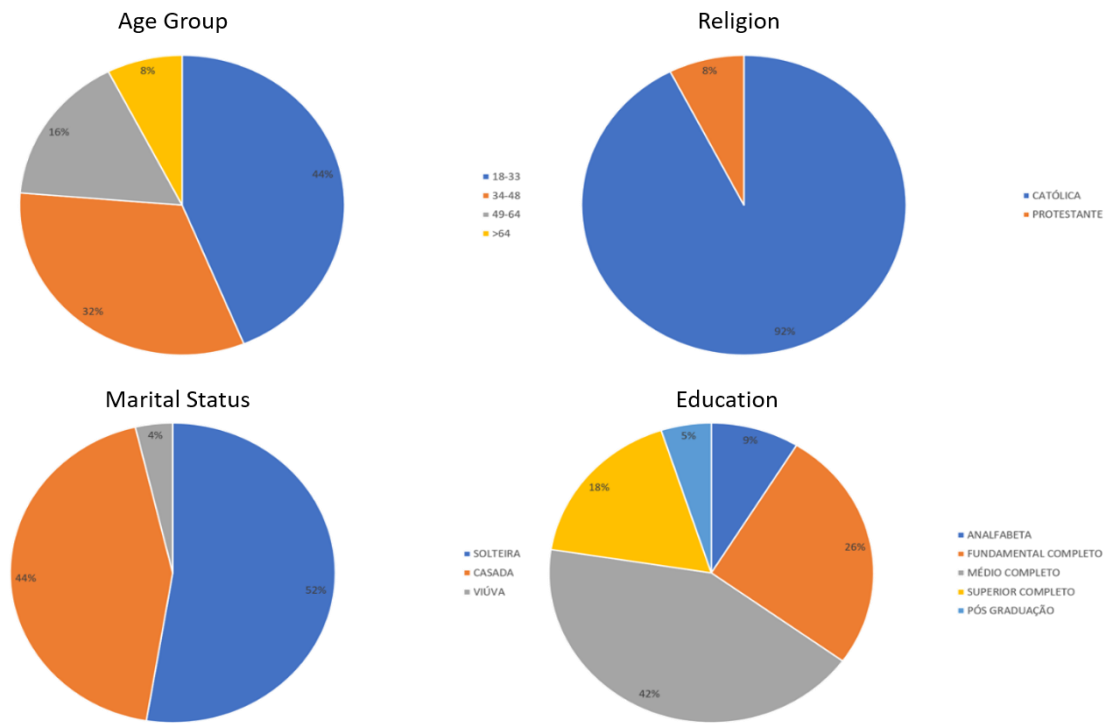


Table 1 - Presentation of descriptive statistics of anthropometric data of quilombola women, Macapá, Amapá, 2020.

	N	Minimum	Maximum	Mean	Deviation error
<b>WEIGHT</b>	80	46,0	110,0	69,34	11,85
<b>HEIGHT</b>	80	148,0	173,0	161,06	6,57
<b>BMI</b>	80	19,4	47,0	26,68	4,42
<b>CC</b>	80	62,0	126,0	86,97	15,36
<b>WC</b>	80	81,0	141,0	106,77	12,74
<b>CC/WC</b>	80	0,64	1,06	0,81	0,07

As for the anthropometric data, there was a Body Mass Index (BMI) between 19.4 and 47.0 (mean=26.68; sd=4.42), the mean being considered above normality. The data also revealed that 42.5% were within the parameter considered normal, 35% overweight and 22.5% obese (grade I, II and III), totaling 57.5% overweight. The study by Vieira et al., (2019) also highlights the high prevalence of overweight and obesity in the female population of the Adelaide Maria da Trindade Batista quilombola community located in the state of Paraná. The results suggested that overweight women have up to 67 times more chance of increased risk than eutrophic women, in relation to chronic non-communicable diseases, especially neoplastic ones.

In agreement with this finding, Mussi, Queiroz and Petróski (2018) conducted a survey in the Quilombola community of Tomé Nunes in the state of Bahia, identifying that there is an important prevalence of overweight among the population, being represented by almost a third of adults quilombolas, especially females, who presented this considerable increase in BMI, also associated with health status and factors indicative of comorbidities, such as higher mean arterial pressure. In line with the study in question,



Soares and Barreto (2014) showed that the adult quilombola population in the south of the state of Bahia has a prevalence of 42% overweight, mostly women.

Other studies carried out with quilombola communities also corroborated the statement about overweight and obesity as an important finding for the public health of this population, especially women living within these places. The increase in BMI among quilombolas was associated with female gender, negative self-rated health and higher mean blood pressure levels. They also highlighted that the high prevalence of these events justifies the need for specific actions to control this risk factor. Knowing that CNCs have an increased number of cases in the most vulnerable and poor groups in Brazil (ALVES, 2011, KRUGER et al., 2012, MOTALA et al., 2011).

Regarding the measurement of the relationship between CC/QC, there was a record between 0.64 and 1.06 (mean=0.81; sd=0.07) and it was found that 68.75% women have a low risk for development of Chronic Non-Communicable Neoplastic Diseases, while 31.25% had a high risk of being affected by these diseases. This result was very similar to that of Vieira et al., (2019) in which the waist/hip ratio (WHR) had a mean of 0.8338, where the authors explained this finding through the parameters of CC, WC, Weight and Mass body fat.

Table 2 concerns the assessment of knowledge regarding the preventive examination for cervical cancer.

Table 2 - Description of questions related to knowledge about the CCU preventive exam, Macapá, Amapá, 2020.

Knowledge Assessment	N	%
<b>Have you ever heard about the UCC prevention exam?</b>		
Yes	80	100,0
No	00	0,0
<b>Do you know what this exam is for?</b>		
Prevent UCC	38	47,6
Other purposes	31	38,7
Do not know	11	13,7
<b>Could you say two care necessary to perform this exam?</b>		
Yes, at least two care	44	55,0
No, just a care	20	25,0
Do not know	16	20,0

According to the methodology adopted, the assessment of knowledge about the preventive examination of the UCC showed that 51 (63.75%) interviewees did not meet the established criteria and, therefore, the assessment of knowledge was considered inadequate. Although 100% of the participants knew or had already heard about the exam, not all of them were able to highlight the care needed to perform it, nor the purpose for their own health.

This finding is consistent with the study that aimed to identify, in a municipality in the interior of the State of Goiás, the knowledge of women who were assisted by the family health strategy teams, regarding to the preventive examination for cervical cancer. The authors found that 100% of the women

who participated in the study and were aged between 18 and 50 were aware of the test, however when questioning the purpose, this rate dropped, not all of them could report that it is used for screening of percussive lesions of cervical cancer (SILVA et al., 2015).

In the study by Sena, Sousa and Gradelha (2018), it is possible to identify that, in relation to the level of knowledge about the Pap smear of 360 women assisted in basic health units in the north of the State of Espírito Santo, 98.89% knew of the existence of the exam. However, when performing the assessment of this knowledge in relation to the parameters of the KAP survey, only 78.06% had adequate knowledge, although almost all of them already knew of the exam, not all of them knew its main objective.

The research carried out by Melo et al., (2019), according with the present study identified that only 35.2% of women were classified as having adequate knowledge, which is very similar to what was found in the quilombola community of Curiaú, where only 36.25% of women obtained adequate knowledge. The authors also justified that although the participants have already heard about the exam, they are unaware of its purpose, the care taken before its performed and/or its frequency. Some of the participants reported that they only performed the exam, because at some moment it was requested by a health professional, the study also highlights that healthcare professional should use this time to promote knowledge through health education, but they do not do it because they only had the goal of reaching the county's test goal to ensure the value to health financing.

Following the same line of results, the study by Vasconcelos et al., (2011) carried out in the city of Fortaleza-CE, which aimed to investigate through the KAP survey, the reality of users assisted in a basic health unit, obtained a similar finding, it was observed that only 40.4% achieved the classification of adequate knowledge. Most participants answered that the purpose of the exam was to detect STIs, HIV and vaginal discharge, the authors also argue that educational activities were non-existent and emphasized the distancing of professional nurses from these activities, because they prioritized care in individual consultations.

In conducting a qualitative study preventive cervical screening among women in Nepal, Andersen et al., (2020) noted that a common opinion among participants was that cervical cancer is “dangerous, uncommon and requires surgery”. However, it was evident that some participants had never heard of it, and lack of awareness of symptoms meant that women sought medical care only when physical symptoms arose that prevented them from early attending clinics for regular checkups. Consequently, if they did not present any type of symptoms, did not experience difficulties during sexual intercourse or had an abnormal discharge, they did not feel the need to seek medical attention.

The authors Silveira et al. (2016) aimed to find the distribution of the KAP assessment on the Pap smear test and to verify whether there was an association between this reality and age group. Therefore, it was identified that the group of adolescents was what stood out the most, with high percentages of inadequacy. Although inadequate knowledge had high rates in all age groups, it was significantly higher among adolescents ( $p=0.000$ ), reaching approximately 100% of this group, this was possible using Pearson's chi-square statistical test.



Table 3 - Description of the questions regarding the attitude about the UCC preventive exam, Macapá, Amapá, 2020.

Attitude Assessment		
Why do you take this exam?	N	%
Prevent UCC	32	40,0
other purposes	29	36,3
Do not know	19	23,7

Regarding the attitude towards the preventive examination of the UCC, 60% of quilombola women performed the examination without the main objective, which is to detect early cervical cancer precursor lesions, they highlighted other objectives such as: “check STI” “to know if everything is fine with the uterus” or they just didn't know what it was for (Table 3). Therefore, after the evaluation that followed the methodological criteria established by the KAP survey, 30% of the participants had their attitude considered adequate, and 70% of the interviewees did not meet the necessary parameters and therefore they had their evaluation inadequate.

Melo et al (2019) identified that as to attitude, women have 98% adequacy, observed that many, despite not having adequate knowledge, have correct attitudes towards the exam. According to the authors, adequate attitude can positively interfere in good health practice, because it reflects what women think about the exam, and finding it important predisposes their adherence. Mesquita et al. (2020) showed in their study that (97.5%) had an appropriate attitude, because they thought it was important to carry out the preventive examination for cervical cancer. In opposition to this finding, Silveira et al. (2016) found that despite the percentages of inadequate attitude were lower than those of knowledge, as these are high during adolescence and decrease with advancing age ( $p=0.000$ ).

For the study by Oliveira (2017), there were significant differences between the variable adequate attitude and education ( $p < 0.001$ ). The study carried out identified that among older women with higher levels of education, attitude adequacy indices were considerably higher than those with lower levels of education. In the other factors (age, marital status, residence close to the health unit and beginning of sexual activity), no significant differences were observed.

It is then noticed that, differently from the studies found, the present research has mostly women classified as having an inadequate attitude, going against the existing literature. This can be explained by the fact that within the evaluation of the KAP survey, it was methodologically established that for the adequacy of the attitude the research participant should have concomitantly the knowledge assessment being considered adequate, this considerably reduced the proportion of the percentage found.

Table 4 - Description of questions referring to the practice of preventive examination at the UCC, Macapá, Amapá, 2020.

<b>Practice evaluation</b>		
<b>How often do you take the exam?</b>	<b>N</b>	<b>%</b>
<1 year	16	20,0
Annually	30	37,5
2/2 years	07	8,8
3/3 years	08	10,0
>3 years	00	0,0
I never performed	19	23,7
<b>When did you last take this exam?</b>		
3 years	30	37,5
> 3 years	25	31,3
don't know/don't remember	06	7,5
I never performed	19	23,7
<b>Have you returned to receive your last exam result?</b>		
Yes	45	57,25
No	13	16,25
Don't know / Don't remember	03	3,75
<b>Did you show the result to a health professional?</b>		
Yes	40	50,0
No	05	6,25
Don't know / Don't remember	00	0,0

Regarding the practice of preventive examination of the UCC, it was noted that 30 (37.5%) of the women take the examination annually, for those who had already carried out the examination, it was asked when the examination was performed for the last time, and remained the same amount of 30 (37.5%) who had carried out it less than 3 years ago, it was also asked if there was a return to receive the result of the last exam, and 16 (20%) respondents said they did not or did not remember if they had returned, of those who returned, it was asked if they showed the result to a health professional in which 5 (6.25%) said no (Table 4).

Therefore, 30 (37.5%) respondents had their practice considered adequate, because they met the following pre-established criteria: 1. They had performed his last preventive exam, at most, three years ago; 2. Returned to receive the last exam result performed and/or sought to make an appointment to show the test result. On the other hand, 50 (62.5%) had an inadequate evaluation, because they did not reach the necessary parameters.

The study by Mesquita et al. (2020) showed that 94 women (58.8%) obtained adequate practice, because they had carried out an examination in the last 3 years. These findings corroborate the study by Mapanga, Girdler-Brown and Singh (2019) which also sought to highlight the knowledge, attitudes and practices of women in Zimbabwe in the Sub-Saharan African region on cervical cancer and HPV, current

methods of screening and vaccination, where they identified it should be noted that they demonstrate having the appropriate KAP survey about the exam, but they were not aware of the risk factors for the development of the disease.

Melo et al. (2019) identified that among the women investigated, 70.6% practiced cancer prevention actions. And describing the process related to preventive examination, 94.6% have adhere to this early detection instrument, 67.4% practice it annually, 87% do not exceed the three-year period to retake the examination. It was also possible to verify that 61.2% of the interviewees had taken the exam in the last year; 85.8% of those who performed returned to receive the result and 10.4% did not; the vast majority showed the result to a health professional. The authors highlighted the main causes for not taking the exam among the participants: lack of interest, shame, lack of time and absence of a sexual partner.

In the research by Sena, Sousa and Gradelha (2018), 96.67% of the participants had already carried out the PCCU exam at least once during their lifetime, however, of these, only 39.72% performed the procedure every one year. In the authors' assessment, women who had undergone the last exam within three years at most were considered as having adequate practice, and for this reason, the total resulted in 95.00% with adequate practice. Even though the majority of the sample had already carried out the preventive examination at one time, the authors identified some barriers that hinder the practice and access to the examination, they are: shame, difficulty in making an appointment and neglect or forgetfulness.

In line with what this evidenced, it is possible to highlight that shame is considered one of the biggest difficulties that interferes with the periodic performance of the PCCU exam. The exposure of the genitalia and the negative image/taboo that this involves may be directly linked to this reality, especially when the procedure is performed by male health professionals. The malaise and discomfort of the gynecological position must be solved by whoever is carrying out the exam, in order to build a relationship of trust and a welcoming environment between the professional/patient, this happens when, if informed about the procedure, the purpose, benefits, and other aspects that can resolve women's doubts. It was highlighted the need for attention from managers to make an appointment and this procedure, avoiding as much as possible that these women wander in seeking this service, which is extremely essential for women's health (SENA; SOUSA; GRADELHA, 2018).

Silveira et al., (2016) related the failure to undergo the exam periodically to socioeconomic aspects and low education, absence of a sexual partner, extremes of age (younger and older women), incompatibility of time, difficulty of access, and factors related to structural issues such as: distance from health units, lack of materials, transportation difficulties and bureaucratic aspects directly interfere with adherence or not –adherence to the uterine cytopathological examination. It was also evidenced that misinformation about the exam, such as: only performing it when the woman has gynecological symptoms or experiencing pain during sexual intercourse, are frequent barriers to broader coverage of this tool for early detection of UCC (SILVEIRA et al., 2016).

The study by Darj, Chalise and Shakya (2019) carried out in Nepal noted that the main barriers to not performing UCC screening were also related to sociocultural issues, including distrust, negative experiences in previous exams, geographic influence and financial limitations, thus, interfering in their decisions to perform or not the preventive exam.

Table 6 – Association of factors with variables from the KAP survey, Macapá, Amapá, 2020.

VARIABLE	Factor*	Frequency of the factor				p-value of the chi-square test	OR	IC <sub>95%</sub> da OR
		In the group where the factor is absent		In the group where the factor is present				
KNOWLEDGE	Obesity	36	58,1%	15	83,3%	0,049	3,61	1,05-13,77
	High Neoplastic Risk	30	54,5%	21	84,0%	0,011	4,34	1,33-14,44
ATTITUDE	Obesity	39	63,9%	16	88,9%	0,043	4,51	1,05-21,48
	Have you already taken the UCC exam	19	100%	36	60,0%	0,001	-	-
PRACTICE	Have you already taken the UCC exam	19	100%	31	50,8%	<0,001	-	-
	Did more than one UCC exam	25	75,8%	25	53,2%	<0,001	2,75	1,03-7,35

Inadequate knowledge and inadequate attitude are significantly associated with obesity, it is estimated that the chance of an obese woman having inadequate knowledge about the UCC exam is 3.61 times the chance of a non-obese woman having inadequate knowledge about the UCC exam (p-value=0.049; 95%CI OR: 1.05 -13.77).

This finding in the study is a relevant point, since the research by Okoro et al., (2020) who performed a comparison between obese and non-obese women at the Cervical- Uterine Cancer Screening Clinic, in the city of Enugu (Nigeria) among years 2012 and 2013. It highlighted 76% of obese women had negative results for intraepithelial lesion or malignancy (NILM), and 24% had cervical epithelial cell abnormalities (CEA). While among non-obese women 91% had NILM and only 9% had CEA. Therefore, the authors highlighted that the prevalence of CEA among all study participants was 16.5% and there was an association between obesity and CEA [OR (95% CI) = 1.353 (1.013–1.812); P value = 0.04], highlighting the need for a positive change in behavior among women with regard to overweight.

Highlighting an even closer look at this reality presented here, Paiva (2018) indicates the existing association between obesity and cancer, and explains that this situation may be related to metabolic changes in endogenous hormones, including insulin and its anabolic factors, thus , contributing to the development of neoplasms, through the growth-promoting effect and sex steroids that lead to an imbalance between cell proliferation, differentiation and apoptosis, however, emphasized that the understanding of these relationships of pathophysiological and biological mechanisms are under construction of associations and

even at the beginning of studies on their correlations.

Another factor associated with the knowledge identified in this study is the high risk of neoplastic development, assessed by the CC/HC ratio, where the chance of a woman at high risk has inadequate knowledge about the UCC exam is 4.34 times the chance of a woman who is not at high risk to express this condition. (p-value=0.011; 95%CI OR: 1.33-14.44).

The fat located in the abdominal region is associated with an increased risk for the development of cancers, in women endometrial and breast cancers have evidence stating that excess weight tends to increase exposure to progesterone and estrogen (LOPES; CHAMMAS; IYEVASU, 2013). Pinheiro et al. (2015) corroborated this statement when are showed that obesity is a risk factor for the development of cancer, but a modifiable factor and therefore the need to emphasize the existing association with neoplastic diseases in order to be understood as a danger to women's health. Knowing then that when comparing overweight/obese women and eutrophic women undergoing cancer treatment, women who are overweight have a high risk of developing metastases and a higher mortality rate.

The authors Figueiredo et al., (2016) in their study showed that overweight and obesity are related to a poor prognosis during the treatment of breast cancer, because they identified that women who had this condition since the diagnosis of disease and throughout the treatment, had a worse survival with the disease as for the overall survival. In their article, they analyzed a total of 50 participants in the treatment of breast cancer, and found that 92% of the patients had a waist circumference above 80 cm, which is a characteristic finding of central adiposity and 38% of them had a BMI indicative of obesity (> 30 kg/m<sup>2</sup>).

Inadequated practice is significantly associated with the fact that the woman has never carried out a UCC exam. The odds ratio in this case is not calculable due to the existence of this 100% frequency. But the prevalence ratio is equal to 1.97, that is, the proportion of women with inadequate practice among those who have never taken the exam is 1.97 times the proportion of women with inadequate practice among those who have already taken the exam (p -value<0.001). Inadequate practice is also significantly associated with the fact that a woman has not had more than one UCC exam. It is estimated that the chance of a woman who has not taken more than one UCC exam presenting inadequate practice is 2.75 times the chance of a women who carried out more than one UCC exam present inadequate practice (p-value<0.001; 95%CI OR: 1.03-7.35).

Table 7- Association of BMI and ordinal variables with the KAP survey, Macapá, Amapá, 2020.

Factor	Variable	Response in the group with adequate factor			Response in the group with inadequate in appropriate factor			p-value of the Mann-Whitney test
		Min	Median	Max	Min	Median	Max	
KNOWLEDGE	<b>BMI</b>	<b>19,0</b>	<b>25,0</b>	<b>34,0</b>	<b>21,0</b>	<b>27,0</b>	<b>47,0</b>	<b>0,018</b>
	Age Group	1,0	2,0	4,0	1,0	2,0	4,0	0,945
	Education	1,0	5,0	7,0	1,0	5,0	8,0	0,296
	N° of Children	0,0	2,0	4,0	0,0	2,0	4,0	0,612
	Monthly Family income	1,0	2,0	5,0	1,0	2,0	5,0	0,073
ATTITUDE	<b>BMI</b>	<b>19,0</b>	<b>25,0</b>	<b>34,0</b>	<b>21,0</b>	<b>27,0</b>	<b>47,0</b>	<b>0,029</b>
	<b>Age group</b>	1,0	2,0	4,0	1,0	2,0	4,0	0,716
	<b>Education</b>	1,0	5,5	7,0	1,0	5,0	8,0	0,108
	<b>Number of Children</b>	0,0	2,0	4,0	0,0	2,0	4,0	0,743
	<b>monthly family income</b>	1,0	2,0	5,0	1,0	2,0	5,0	0,141
PRACTICE	<b>No variable was related</b>							

The analysis of Table 7 investigates the existence of quantitative variables or those with ordinal distribution significantly associated with the participants' KAP survey. To this end, the distribution of each of these variables in the group with adequate KAP was compared with the respective distribution in the group with inadequate KAP. The table shows the minimum, median and maximum response in each group and the significance of the difference between the two distributions is assessed using the Mann-Whitney test.

The results show that of all the variables evaluated, BMI is the only variable associated with knowledge and inadequate attitude (p-value=0.018 of the Mann-Whitney test). Comparing the parameters of the BMI distribution of the two groups (minimum, median and maximum), it is concluded that the BMI



of women who have inadequate knowledge and attitude about the UCC exam is, in median and general terms, higher than the BMI of women who have adequate knowledge. This result corroborates the result in Table 6, which showed a significant association between obesity and high neoplastic risk given by the CC/HC ratio and inadequate knowledge.

This finding is worrisome because, according to Paiva (2018), the concentration of obese adipose tissue can result in a chronic inflammatory process that negatively influences the formation of tumors, because this is responsible for the recruitment of defense cells called macrophages. The author also states that the adipose tissue is responsible for a diverse amount of enzymes that metabolize steroid hormones, thus becoming the main site of estrogen synthesis (sex hormone) in postmenopausal women.

The study by Rezende et al., (2018) carried out in partnership with the National Cancer Institute, using data available from the Global Cancer Observatory, brought extremely important findings in relating excess weight and obesity to cancer cases in the country. Thus, it was possible to identify that 3.8% of cases in 2012 were linked to high BMI, with an even greater amount in females. It was identified that most of the places where the tumors were found were: breast, uterus and colon, estimating that in the year 2025 the cases of neoplasms associated with high BMI will reach 29,490 new cases and will represent 4.6% of all cancers of the country, prevailing with the highest rates in women Bhaskaran et al., (2014), investigated in their work in the country of the United Kingdom, through a population-based cohort study with 5.24 million adults and showed that 22 types of neoplasms studied, 17 of them were directly related to the body mass index, and found that each 5 kg/m<sup>2</sup> increase in BMI also proportionally increased the risk of developing non-communicable neoplastic chronic diseases, especially cervical cancer, and highlighted that 41% of cases of uterine tumors were attributed to excess weight. And he emphasized that every 1 kg/m<sup>2</sup> increase in population BMI would result in 3790 new annual cases of cancer related to high BMI.

In the present study, it was possible to identify that none of the variables evaluated in Table 7 has a significant association with inadequate practice (all p-values are greater than 5%). Therefore, inadequate practice with the UCC exam occurs independent of the woman's BMI, her age group, education, number of children and month family income.

On the other hand, the study by Sena, Souza and Gradelha (2018), found that the practice of the exam was statistically associated with the following factors: age and initiation of sexual activity. The authors also stated that women aged 45 to 64 years had a higher percentage of adequate practice than younger women, as well as knowledge. It is also evident that the early initiation of sexual activity promotes a great influence on the practice of women, since the earlier the beginning of sexual life, the lower the frequency of adequate practice.

With regard to age, education and family income found, similar studies such as Silva et al., (2015), Silveira et al., (2016), Sena; Sousa; Gravelha (2018) and Mesquita et al. (2020) presented compatible results, demonstrating that the quilombola population does not differ in this aspect from the other population when asked about the preventive exam. Oliveira, Guimarães and França (2014) found in their study a prevalence of 27.3% for not carried out the Papanicolaou test among quilombola women from Vitória da Conquista, who was independently associated with the age group between 18-29 years old, 50 -59 years old and not having any level of education, among these, 45.3% (n=43) were between 18 and 24 years old and claimed to be sexually active.

## 4. Conclusion

The quilombola women in this study have some sociodemographic characteristics that are risk factors for the development of UCC and in highlighted is overweight or obesity as a relevant finding that should be given special attention. The participants had a low prevalence of knowledge, attitude and practice with regard to the preventive exam for cervical cancer, although most of them know about the exam or had already done it once in their lives, it does not know its main purpose, the necessary care or do not have quality health care practices. Therefore, health education more effectively within the quilombola community can transform this reality, knowing that educational actions can promote better adherence to the exam and can promote better health conditions for these women.

## 5. References

- R.P. Aguilar and D.A. Soares, “Barreiras à realização do exame papanicolau: Perspectivas de usuárias e profissionais da estratégia de saúde da família da cidade de Vitória da Conquista-BA”, *Physis*, v. 25, n. 2, 2015, p. 359–379. Available in: <https://doi.org/10.1590/S0103-73312015000200003>
- J.G. Alves, et al., “Obesity patterns among women in a slum area in Brazil. *Journal of health, population, and nutrition*”, v. 29, n.3, 2011, p. 286. Available in: <https://doi.org/10.3329/jhpn.v29i3.7876>
- J.G Andersen, et al., “Barriers and facilitators to cervical cancer screening uptake among women in Nepal - a qualitative study”, *Women Health*, v.60, n.9, 2020, p.963-974. Available in: <https://doi.org/10.1080/03630242.2020.1781742>
- A.F.C. Batista and C.P. Caldas, “Fatores que interferem na adesão da mulher idosa a programas de prevenção do câncer ginecológico”, *Nursing of Journal*, v. 25, n. 1, 2017, p. 1–6. Available in: <https://doi.org/10.12957/reuerj.2017.21839>
- K. Bhaskaran, et al., " Body-mass index and risk of 22 specific cancers: a population-based cohort study of 5·24 million UK adults", *The Lancet* 384.9945, 2014, p. 755-765. Available in: <https://pubmed.ncbi.nlm.nih.gov/25129328/>
- Brasil, “Controle dos cânceres do colo do útero e da Mama”, 2. ed, Editora do Ministério da Saúde, 2013.
- Brasil, “Pesquisa de Conhecimentos, atitudes e práticas na população brasileira.” Ministério da Saúde. Brasília, 2016, p.170.
- A.K.O. Borba, et al., “Conhecimento sobre o diabetes e atitude para o autocuidado de idosos na atenção primária à saúde”, *Ciencia e Saude Coletiva*, v. 24, n. 1, 2019, p. 125–136.
- P.V.J. Dantas, et al., “Conhecimento das mulheres e fatores da não adesão acerca do exame Papanicolau”, *Nursing of journal UFPE On Line*, v. 12, n. 3, 2018, p. 684-91.
- E. Darj, P. Chalise and S. Shakya, “Barriers and facilitators to cervical cancer screening in Nepal: A qualitative study”, *Sex Reprod Healthc*, v20, 2019, p. 20-26.
- M.L.S.M. Ferreira, “Motivos que influenciam a não-realização do exame de papanicolaou segundo a percepção de mulheres”, *Escola Anna Nery*, v. 13, n. 2, 2009, p. 378–384. Available in: <https://doi.org/10.1590/S1414-81452009000200020>
- A.C.D.S. Figueiredo, et al., “Prevalence of obesity in women treated from breast cancer in an UNACOM in Juiz de Fora city” *Rev. bras. Mastologia*, v. 4, n.26, 2016.

- E.B. Gutierrez, et al., “Fatores associados ao uso de preservativo em jovens - inquérito de base populacional”, *Brazilian journal of epidemiology*, v. 22, 2019.
- Instituto Brasileiro de Geografia e Estatística, *Pesquisa Nacional de Saúde*, 2013, Rio de Janeiro, 2013.
- Instituto Nacional do Câncer, “Diretrizes brasileiras para o rastreamento do câncer do colo do útero, 2. ed, Rio de Janeiro, 2016.
- K.S. Jacintho, et al., “Factores que influyen en la prevención del cáncer de cuello uterino en la comunidad quilombolas”, *Cultura de los Cuidados Revista de Enfermería y Humanidades*, n. 50, 2018, p. 151–157. Available in: <https://doi.org/10.14198/cuid.2018.50.14>
- K. Kaliyaperuma, “Guideline for Conducting a Knowledge, Attitude and Practice (KAP) Study.”, *Community Ophthalmology*, v. 4, n. 1, 2004, p. 7–9.
- A. Kruger, et al., “Sex differences independent of other psycho-sociodemographic factors as a predictor of body mass index in black South African Adults.” *J Health Popul Nutr*, v.30, 2012, p.56-65.
- A. Lopes, R. Chammas and H. Iyeyasu, “Oncologia para a Graduação”, 3. ed, São Paulo: Lemar, 2013.
- W. Mapanga, B. Girdler-Brown and E. Singh, “Knowledge, attitudes and practices of young people in Zimbabwe on cervical cancer and HPV, current screening methods and vaccination” *BMC Cancer*, v. 19, 2019, p. 845. Available in: <https://doi.org/10.1186/s12885-019-6060-z>
- L.A. Marinho, et al., “Conhecimento, atitude e prática do auto- exame das mamas em centros de saúde.”, *Revista de Saude Publica*, v. 37, n. 5, 2003, p. 576–582.
- E.M.F. Melo, et al., “Cervical cancer: knowledge, attitude and practice on the prevention examination.”, *Revista Brasileira de Enfermagem [online]*, v. 72, suppl 3, 2019, p. 25-31. Available in: <https://doi.org/10.1590/0034-7167-2017-0645>
- A.D. Mesquita, et al., “Knowledge, attitudes and practices of women in the face of preventive cervical cancer test.”, *Journal Health NPEPS*, v.5, n.1, 2020, p. 261-275.
- A.A. Motala, et al. “The prevalence of metabolic syndrome and determination of the optimal waist circumference cutoff points in a rural South African Community”, *Diabetes Care*, v.34, 2011, p.1032-7.
- R.F.F. Mussi, B.M. Queiroz and E.L. Petróski. “Overweight and associated factors in Quilombolas from the middle San Francisco, Bahia, Brazil”, *Ciência & Saúde Coletiva [online]*, v. 23, n. 4,2018.
- S.O. Okoro, et al. “Association between obesity and abnormal Papanicolau(Pap) smear cytology results in a resource-poor Nigerian setting”. *BMC Womens Health*. v.9, n.20, 2020, p.119. Available in: <https://doi.org/10.1186/s12905-020-00984-w>
- C.M. Oliveira. “Knowledge, attitudes, and practices related to the Pap smear among women with cervical cancer”, (Master in Gerontology). Universidade Católica de Brasília, 2017.
- M.V. Oliveira, M.D.C. Guimarães and E.B. França, “Factors associated with failure to take a Pap smear test among Quilombola women”. *Ciência & Saúde Coletiva [online]*, v. 19, n. 11, 2014.
- Organização Pan-Americana de Saúde. “Folha informativa - HPV e câncer do colo do útero”. 2018, p. 1–7.
- J.R. Paiva. “O panorama brasileiro da obesidade: a estreita relação entre o ganho de peso e os principais tipos de cancer”. Monografia (Graduação) – Faculdade de Ciências da Educação e Saúde, Centro Universitário de Brasília, Brasília, 2018.
- A.B. Pinheiro., et al., “Associação entre índice de massa corpórea e câncer de mama em pacientes de

- Salvador, Bahia”. *Revista Brasileira de Mastologia*, Salvador, v. 24, n. 3, 2015, p. 76-81. Available in: <https://pesquisa.bvsalud.org/portal/resource/pt/lil-782260>
- L.F.M. Rezende, et al., “The increasing burden of cancer attributable to high body mass index in Brazil.” *Cancer Epidemiology*, v. 54, 2018, p. 63-70.
- A.R.R, Rosa, et al., “Exame Citopatológico Do Colo Do Útero: Investigação Sobre O Conhecimento, Atitude E Prática De Gestantes”. *Cogitare Enfermagem*, v. 23, n. 2. 2018.
- L.X. Sena, N.A. Souza and D.B.T. Gradella. “Conhecimento, atitude e prática do exame papanicolaou por mulheres do Norte do Espírito Santo”. *Enciclopédia Biosfera, Centro Científico Conhecer*. Goiânia, v.15, n.27, 2018, p.102. Available in: <https://www.conhecer.org.br/enciclop/2018a/sau/conhecimento.pdf>
- A.B. Silva, et al. “Accession of women to citopathological examination for the prevention of cervical cancer.” *Revista Ciência Plural*, v. 4, n. 3, 2019, p. 69-81.
- E.C.A.S. Silva, et al., “Conhecimento das mulheres de 18 a 50 anos de idade sobre a importância do exame de papanicolaou na prevenção do câncer de colo uterino no município de Turvânia-GO”. *Revista Faculdade Montes Belos (FMB)*, v. 8, n. 4, 2015, p. 99-202.
- K.S. Silva, T.J.P. Silva and W.L. Gonçalves. “PLANEJAMENTO ESTRATÉGICO SITUACIONAL: um recurso para a saúde sexual e reprodutiva de comunidade quilombola”. *Trabalho de Conclusão de Curso (Graduação em Enfermagem) – Universidade Federal do Amapá, Macapá*. 2018.
- N. Silveira, et al. “Conhecimento, atitude e prática sobre o exame colpocitológico e sua relação com a idade feminina.” *Revista Latino-Americana de Enfermagem*, v. 24. 2016.
- D. A. Soares and S.M. Barreto. “Sobrepeso e obesidade abdominal em adultos quilombolas, Bahia, Brasil.” *Cadernos de Saúde Pública [online]*, v. 30, n. 2, 2014, pp. 341-35 Available in: <https://doi.org/10.1590/0102-311X00004613>
- C. Tsuchiya, et al. “O câncer de colo do útero no Brasil: uma retrospectiva sobre as políticas públicas voltadas à saúde da mulher.” *Jornal Brasileiro de Economia da Saúde*, v. 9, n. 1, 2017, p. 137–147.
- C.T.M. Vasconcelos, et al. “Knowledge, attitude and practice related to the Pap smear test among users of a primary health unit.” *Rev. Latino-Am. Enfermagem*. v. 19, n.1, 2011, p.9.
- V.K. Vieira, et al. “Prevalência e preditores do excesso de peso e do risco cardiovascular em mulheres quilombola de palmas, PR.” *Curitiba: Brazilian Journal Of Development*, v. 5, n. 12, 2019. Available in: <https://doi.org/10.34117/bjdv5n12-301>
- T.A. Zanotelli. “A percepção de mulheres sobre o exame citopatológico.” *Trabalho de Conclusão de Curso (Graduação em Enfermagem) – Centro Universitário Univates, Lajeada*. 2013.

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