

**Knowledge, Attitude, and Practice on Cervical Cancer and Screening among Women living in Tirukalukundram, Kancheepuram District, India: A cross-sectional survey**

Master of Public Health Integrating Experience Project

Utilizing Professional publication framework

By

Karthiga Vasudevan MD, MPH (c)

**Advising team:**

Arin A. Balalian, MD, MPH, DrPH (c)

Nune Truzyan, DVM, MPH

Zaruhi Grigoryan, MPH

Gerald and Patricia Turpanjian School of Public Health

American University of Armenia

Yerevan, Armenia,

2018

## **Acknowledgment**

I would like to thank my family and my friend Sathiyaseelan for their constant support and care

I express my sincere gratitude to my advising team Arin Balalian, Nune Truzyan, and Zaruhi Grigoryan for their constructive feedback, motivation during the crucial situation which made this paper possible

I would like to thank our Dean of School of Public Health, Dr. Varduhi Petrosyan for her endless support for the primary data collection and her guidance throughout the MPH program

I thank Director of K.R hospital and other staffs for making the data collection process easier. I thank CHSR staffs for their timely help on my research project

Last but not the least; I would like to thank all my friends for their love, care, encouragement in the past 2 years

## Contents

Acknowledgment .....	i
List of Abbreviations .....	iv
Executive summary.....	v
1. Introduction.....	1
1.1 Background.....	1
1.2 Disparities among high-income vs. low and middle income countries.....	2
1.3 Situation in Tamilnadu.....	4
1.4 Knowledge, Attitude, and Practice (KAP) towards cervical cancer screening .....	4
1.5 Objectives of the study.....	5
2 Methods and materials .....	6
2.1 Study Design.....	6
2.2 Study Population.....	6
2.3 Sample size calculation and Sampling strategy .....	6
2.4 Study Instruments .....	7
2.5 Data Collection .....	8
2.6 Data Entry and Analysis .....	8
2.7 Ethical Considerations .....	11
3. Results.....	12
3.1 Descriptive Statistics.....	12
3.2 Predictors for the knowledge on cervical cancer screening .....	14
3.3 Predictors for the attitude on cervical cancer screening.....	15
3.4 Predictors for the practice on cervical cancer screening .....	16
4. Discussion.....	17
5. Conclusion and Recommendations .....	20
References.....	21
Tables.....	26
Table 1: Participants' socio demographic characteristics .....	26
Table 2: Correct knowledge about cervical cancer and its screening .....	28
Table 3: Attitude towards cervical cancer and its screening.....	29
Table 4: Practice on cervical cancer screening .....	30
Table 5: Barriers for never being screened .....	31

Table 6: Univariable logistic regression analysis for Knowledge category .....	32
Table 7: Multivariable logistic regression analysis for knowledge predictors.....	33
Table 8: Univariable linear regression analysis for attitude score .....	34
Table 9: Multivariable linear regression analysis for attitude score .....	35
Table 10: Univariable logistic regression analysis for cervical cancer screening practices .....	36
Table 11: Multivariable logistic regression analysis for practice predictors .....	37
Table 12: Association between “Knowledge on cervical cancer” and “Practice on screening” controlled for identified confounders among women living in Kancheepuram district.....	38
Appendix 1: Questionnaire .....	39
Appendix 2: Verbal Consent form.....	63
Appendix 3: Journal form .....	68
Appendix 4: Association of knowledge and practice on cervical cancer (Dagitty model) .....	69

## **List of Abbreviations**

HPV - Human Papilloma Virus

PAP - Papanicolaou test

VIA - Visual inspection using Acetic Acid

VILI - Visual inspection using Lugol's Iodine

THSP - Tamilnadu Health System Project

NICPR - National Institute of Cancer Prevention and Research

KAP - Knowledge, attitude, and practice

## **Executive summary**

**Background:** Cervical cancer is the fourth most typical cancer among Indian women. It is one of the leading public health problems in India where it holds 25% of the global burden on cervical cancer. Screening helps in detecting atypical cell changes in the cervix in prior they turn into cancer. **Objectives:** This study was aimed to identify the level of knowledge, attitude, and practice (KAP) on cervical cancer and its screening, the KAP predictors for cervical cancer, and the influence of knowledge on practice for cervical cancer screening among women aged 21 to 65 years in a private outpatient healthcare facility in Tirukalukundram, Kancheepuram district in 2018.

**Methods:** A cross-sectional survey was conducted among women who visiting the K.R. Hospital, Tirukalukundram for their regular checkups. Interviewer administered questionnaire was done with all the eligible women during the study period. The KAP questionnaire was adopted from other studies. Descriptive analyses were done to describe the socio-demographic characteristics, knowledge, attitude and practice of the study participants. For the predictors, logistic and linear regression were used. Multivariable logistic regression was done to find the association between knowledge and practice on cervical cancer screening

**Results:** Overall, 382 participants completed the survey with the response rate 91.1% and the mean age 41.1 years. The mean percent knowledge, attitude, and practice score for the surveyed women was 6.7%, 62.7% and 7.3% respectively. The significant predictors of knowledge were educational status, marital status, accessibility, gynecologist advice for screening, employment status, and maternal education ( $p<0.05$ ). Knowledge, age, gynecologist advice, maternal education, and father employment were identified as attitude predictors ( $p<0.05$ ). Knowledge, attitude, age, gynecologist advice, and employment were identified as practice predictors

( $p < 0.05$ ). The multivariable logistic regression analysis Practice on cervical cancer screening was highly statistically significant associated ( $p < 0.001$ ) with the cervical cancer knowledge after adjusting for confounders and attitude as the mediator.

**Conclusion and Recommendations:** The study identified that most of the participants had poor knowledge and poor practice on cervical cancer screening, however majority had a positive attitude towards screening. The influence of knowledge on practice of cervical cancer screening highlights the possibility of improving the screening practices by applying cervical cancer related awareness program in the communities.

## 1. Introduction

### 1.1 Background

Cervical cancer is the fourth most typical cancer of all the women related cancers worldwide with an estimation of 5,30,000 new cases and 2,65,700 deaths in the year 2012.<sup>1,2</sup> According to American cancer society, “Cervical cancer starts in the cells lining the cervix, the lower part of the uterus”.<sup>3</sup> In cervix, the site where the columnar cells transform into squamous cells, called the transformation zone and this zone is the most common site where precancerous cells could develop.<sup>3</sup> Different types of cancers could develop in the cervix such as squamous carcinoma, adeno-carcinoma, mixed and others (lymphoma, sarcoma, melanoma).<sup>4</sup> The most common type of cervical cancer among these are squamous cell cancer (80%) and the next being adenocarcinoma (20%).<sup>3</sup>

Human Papilloma Virus (HPV) infection, a sexually transmitted virus is the major risk factor in the development of cervical cancer.<sup>3-9</sup> Almost 99% of women diagnosed with cervical cancer have been found to be infected with HPV.<sup>3</sup> There are more than 100 serotypes of HPV; most of them are low risk for cervical cancer.<sup>3</sup> More than 70 % of cases of the cervical cancer were mainly due to HPV-16 and HPV-18 and found to be carcinogenic.<sup>3</sup> These two serotypes are considered as a high risk HPV serotypes.<sup>3</sup> The other risk factors are: smoking<sup>4-7,10-12</sup>, weak immune system<sup>4,5,11</sup>, Chlamydia infection<sup>4,11,13</sup>, a low diet in fruits and vegetables<sup>4,14,15</sup>, overweight<sup>4,16,17</sup>, long-term use of oral contraceptive<sup>4-7</sup>, family history of cervical cancer and having multiple pregnancies.<sup>4,6</sup> Furthermore, the incidence and mortality because of cervical cancer is known to be higher among women mainly from the low socio-economic backgrounds and due to poor knowledge on cervical cancer screening.<sup>18</sup>



Unlike other cancers, Cervical cancer is the world's deadliest disease but easily preventable disease among all the women related cancers.<sup>19</sup> Primary prevention is giving vaccination for the young girls' 9-13 years old against HPV before becoming sexually active.<sup>19</sup> Secondary prevention is screening of all women for HPV infection by the techniques: Papanicolaou test(PAP), Visual inspection using Acetic Acid (VIA), Visual inspection using Lugol's Iodine (VILI), and HPV DNA testing.<sup>20</sup> The recommended age for screening is from 21 to 65 years old. According to the guidelines women who are above 21 years old should undergo PAP test every three years and women above 30 to 65 years should screen for both PAP an HPV DNA test every 5 years.<sup>21</sup> Screening techniques helps to detect the abnormal cell changes in the cervix so that they can be treated earlier before they turns into cancer.<sup>22</sup> If women are screened routinely and the cellular abnormalities are detected in earlier stages, 5 year survival rate in localized stage would be about 91.5%. The survival rate in invasive stage drops to 17%.<sup>23</sup> Factors influencing the screening for cervical cancer prevention are the lack of awareness among women, insufficient number health facilities, lack of social support, psychosocial factors like fear of test procedure, and socioeconomic conditions.<sup>24-27</sup>

## **1.2 Disparities among high-income vs. low and middle income countries**

In the United States, from the year 2003 to 2012 the incidence rate of cervical cancer has decreased significantly by 1.3% per year, similarly the mortality rate also decreased by 0.9% per year among women.<sup>28</sup> The decrease in trends of incidence and mortality rates is largely due to an increase in women's regular uptake of screening.<sup>28</sup> However, in low and middle income countries, cancer survival is poorer due to detection of cervical cancer in the end stages.<sup>29</sup> Globally, in 2015, almost 90% of the cervical cancer deaths occurred in the low and middle-income countries.<sup>1</sup> In 2012, nine out of every ten compared to one out of every ten women with

cervical cancer, lived and died in low/middle-income countries and in high-income countries correspondingly.<sup>20</sup> The reason for this inequality might be the absence of prevention and treatment program for cervical cancer in low and middle-income countries.<sup>20,30,31</sup>

In India, cervical cancer is the second most typical cancer among women aged 15 years and older.<sup>32,33</sup> It is one of the leading public health problems in developing countries such as India where it holds 25% of the worldwide burden of cervical cancer.<sup>34</sup> About 17% of all cancer deaths was related to cervical cancer among women aged 30-69 years.<sup>35</sup> The risk of developing cervical cancer among women aged 15 years and older was about 436.76 million.<sup>32</sup> One out of every 53 women will have cervical cancer during their lifetime in India.<sup>32</sup> This is in contrast with the situation in most high income countries where it is estimated that one out of 100 women will have cervical cancer.<sup>18,35</sup> In the year 2012, India also had the highest incidence (age adjusted) of cervical cancer among south Asian countries which is 22 per 100,000 population.<sup>32</sup> The age adjusted mortality rate is 12.4 per 100,000 populations.<sup>32</sup> The possible reason for the higher mortality is mainly due to the fact that 70% of the cases were identified in the advanced stages of cancer.<sup>18,36</sup> According to National Institute of Cancer Prevention and Research (NICPR), “In India, every eight minutes one women dies from cervical cancer”.<sup>37</sup> More than 15 states are highly affected by cervical cancer.<sup>38</sup> Absence of nationwide programs for the screening results in disparities among states in screening uptake, treatment, and survival.<sup>39</sup> As estimated by the WHO, with the absence of screening program, up to 225,000 of new cervical cancer cases will occur annually by 2025; whereas in 2012 the number of new cases was 122,844.<sup>18</sup>

### **1.3 Situation in Tamilnadu**

Tamilnadu is one of the southern states of India. Among other states, cervical cancer in Tamilnadu state stands for the second most typical cancer in women population.<sup>38</sup> The age adjusted cervical cancer mortality rate in this state was 35.7 per 100,000 populations in 2010, quite higher compared to other southern states such as Karnataka (16.5 per 100,000 population) and Kerala (11.1 per 100,000 population).<sup>18</sup> To address this issue, Tamilnadu Health System Project (THSP) conducted a “Cervical cancer screening pilot program” in 2 districts: Theni and Thanjavur. This program offered services including screening, further evaluation & confirmation of the disease and treatment.

Kancheepuram is one of the second highest populated district in Tamilnadu.<sup>40</sup> According to 2011 census, the total population of this district is 3,998,252, out of which 1,985,294 are females.<sup>41</sup> The literacy rate of Kancheepuram district is 84.49% which is quite higher than the state level (80.09%), however the literacy rate among urban women (85.24%) and rural women (68.2%) in the district differs significantly.<sup>41</sup> Kancheepuram district has 13 panchayat (a village council) union and Tirukalukundram is one among them.<sup>42</sup> Tirukalukundram comprises of 54 village panchayat with around 151,950 population, among which 75,329 are females.<sup>42</sup> K.R Hospital, Tirukalukundram serves for the people from both rural and urban areas around and this is the only private hospital at Tirukalukundram which provides all the specialized services.

### **1.4 Knowledge, Attitude, and Practice (KAP) towards cervical cancer screening**

Over the past 10 years, several studies have been conducted to assess the knowledge, attitude, and practice on cervical cancer and its screening around the world, including India.

A study conducted in Democratic Republic of Korea in 2008, aimed to compare the level of knowledge, attitude and practice among rural and urban women, found an insignificant difference in KAP level between the women living in rural or urban areas, however, the difference between awareness and behavior, in both groups, was significant.<sup>43</sup> Another study conducted in Pakistan for KAP among women visiting hospitals in 2007 found a gap between knowledge on cervical cancer and practice on screening with a lack of awareness as the major barrier.<sup>44</sup> Among the limited number of KAP studies conducted in India after 2014, one of the hospital based study in Bhopal, capital of Madhya Pradesh, India, found that more than 50% of the women had knowledge about cervical cancer, however, among them, only 9.5% undergone to the screening practices.<sup>26</sup> Another hospital based study (2015) in Perambalur, one of the districts of Tamilnadu, also showed that women, who visited the hospital were having good knowledge and attitude about cervical cancer and its screening, however, their screening practice was very low.<sup>45</sup> A study conducted in Neman, Kancheepuram district, identified as the major barriers for screening, a fear toward positive test result, possible high cost, and embarrassment for doing the test.<sup>46</sup> However, no hospital-based studies on measuring cervical cancer KAP were conducted in the Kancheepuram district.

### **1.5 Objectives of the study**

- 1) To assess the level on knowledge, attitude, and practice on cervical cancer and its screening among women aged 21-65 years, living in Tirukalukundram, Kancheepuram district, India in 2018
- 2) To find the predictors of knowledge, attitude, and practice on cervical cancer and its screening among women aged 21-65 years, living in Tirukalukundram, Kancheepuram district, India in 2018

3) To disclose the association between knowledge on cervical cancer and the cervical cancer screening practices among women aged 21-65 years, living in Tirukalukundram, Kancheepuram district, India in 2018.

## **2 Methods and materials**

### **2.1 Study Design**

We conducted a cross-sectional study with the interviewer-administered KAP survey to observe the current level of knowledge, attitude, and practice towards cervical cancer and its screening among 21-65 years old Indian women from Tirukalukundram.

### **2.2 Study Population**

This study included only women who visited the outpatient services of K.R private hospital at Tirukalukundram for their regular checkups, who meet all the following inclusion/exclusion criteria.

The inclusion criteria:

- 21-65 years old women
- Residents of Tirukalukundram Panchayat, Kancheepuram district, India
- Native language speakers (Tamil speakers)

The exclusion criteria:

- Women who had undergone a Hysterectomy surgery
- Women diagnosed with cervical cancer

### **2.3 Sample size calculation and Sampling strategy**

Sample size was calculated for one sample proportion

$$n = (Z_{\alpha/2})^2 P (1 - P) / d^2$$

Where,

n = Sample size

Z = 1.96, 95% Confidence Interval

P = Proportion of prevalence on the level of knowledge is 67% which was by taking the average of previous three studies knowledge on cervical cancer.<sup>25,26,46</sup>

d = Marginal error = 5%

The required sample size will be

$$n = (1.96 * 1.96 * 0.67 * 0.33) / (0.05)^2$$

$$n = 339.75$$

When taking into account of 11% non-response rate from the previous study,<sup>26</sup> the final sample size was 382.

All the eligible women visiting general practitioner during the study period (January-February, 2018) were included in the sample until the required sample size was achieved.

## **2.4 Study Instruments**

Student investigator developed the study instrument by adapting the questionnaire from previous studies that evaluated the KAP towards cervical cancer and screening in India<sup>45,47</sup> and added socio-demographic questions to the main part. The questionnaire was translated into Tamil, pre-tested, and modified accordingly before the survey.

The instrument consisted of 50 questions with five main parts having several questions in each (see Appendix 1).

1. Demographic Information
2. Knowledge on cervical cancer and screening
3. Attitude on cervical cancer and screening
4. Cervical cancer screening practices
5. Socio-economic status

## **2.5 Data Collection**

The data was collected during January-February, 2018. The student investigator collected data after approaching the head of the hospital for permission. As this was an interviewer-administered survey, the student investigator, at the beginning of each day, during data collection period had a list of patient's who potentially might participate in the study by extracting all women from the physician's appointment registry list. She approached all the potential participants asking the screening questions to identify their eligibility. If the participant was eligible, verbal consent (see Appendix 2) was obtained before administering the questionnaire. The data was collected in the private room, before the patients entered the general practitioner office. Journal form helped to calculate the response rate (see Appendix 3).

## **2.6 Data Entry and Analysis**

The student investigator carried out single data entry using the SPSS software. To check the accuracy of the data entered, 10% of the data was randomly cross checked with the completed questionnaires and the range check had been done to find the outliers.

Descriptive analyses were done to describe the socio-demographic characteristics, knowledge, attitude and practice of the study participants. Categorical variables were presented

by frequencies and proportions, while continuous variables by means and standard deviations. Cumulative mean scores for knowledge, attitude, and practice were calculated.

### *Calculation of knowledge score*

The knowledge on cervical cancer and screening was measured by calculating the cumulative mean score. Each correct response had carried one point and a wrong response -zero point, resulting to have the maximum cumulative knowledge score equal to 19, and the minimum to zero. One point was given to the questions measuring correct knowledge on availability of screening services, their eligibility criteria, and the frequency of utilization recommended. One to four points received questions measuring correct knowledge on two symptoms of cervical cancer (vaginal bleeding and vaginal foul smelling discharges), four correct risk factors (early sexual intercourse, having multiple sexual partners, cigarette smoking, acquiring HPV virus), four correct prevention techniques (avoid early sexual intercourse, avoid multiple sexual partners, through vaccination of HPV vaccine, quit smoking), two correct treatment options (surgery, chemotherapy), and four correctly identified methods for screening (VIA, VILI, pap smear).

Modified bloom's cut off was used for assessing the knowledge level. According to this approach a good-, satisfactory-, and poor knowledge were assigned to those who had cumulative mean percent knowledge scores leveled at 80-100%, 50-79%, and less than 50% respectively. Then, the overall cumulative mean score and the cumulative mean percentage score for knowledge were calculated.<sup>48</sup>

For the better understanding the predictors of knowledge and its effect on the cervical cancer practices and to fit into logistic regression, the student investigator categorized knowledge



into having any knowledge score from 1 to 19 as “Having knowledge” category, and zero score considered as “No knowledge” category.

### ***Calculation of attitude score***

The attitude toward the cervical cancer and the screening was assessed using Likert’s scale. There were seven statements measuring the respondents’ level of agreement (‘strongly disagree’, ‘disagree’, ‘neither agree nor disagree’, ‘agree’, ‘strongly agree’ by scoring them from one to four correspondingly. The responses for all the seven statements were finally added up and calculated for each respondent, resulting on having the maximum cumulative score equal to 28 and the minimum to 0. The overall cumulative mean score and the cumulative mean percentage score for attitude were calculated based on former values.

### ***Calculation of practice score***

Those respondents who never pass the cervical cancer screening were considered as having ‘no practice’. For those who ever passed the screening there were three questions for the practice score calculation. One point was assigned to each answer that matched a good practice resulting in the maximum cumulative practice score being equal to three, and the minimum to zero. Those who had any practice score from one to three were considered as “Having at least one Practice”. Overall cumulative mean score and the cumulative mean percentage score for practice were calculated subsequently.

### ***Predictors’ analysis***

The variables that initially had more than 2 categories were either dichotomized or treated as dummy variables. For knowledge and practice we used logistic regression analysis and for attitude linear regression, since only the attitude scores had linear distribution. Univariable

regression analysis was done to find the statistically significant predictors of the outcomes with p-value <0.1. The variables that had a significant relationship with the outcome were included to fit the multivariable regression. The variables that were not associated with the outcome were removed from the multivariable model until we reached the best model fit. The final models included all the theoretically and statistically significant predictors of KAP.

For logistic regression Hosmer-Lemeshow goodness-of-fit test was used to assess the model fit. For the linear regression the residual normality assumption was satisfied. We used the variance inflation factor to test for multi-co-linearity assumption, final- model for predictor identification. The final linear model included all the statistically and theoretically significant predictors of attitude that had the highest R<sup>2</sup> value.

### ***Association analysis***

To find associations between the knowledge on cervical cancer and the practice on its screening, the regression analysis was applied. To identify potential confounders, both the direct acyclic graphs (Appendix 4) and the statistical approach were used. Univariable logistic regression model was fitted to identify the level of significance between the outcome and all the covariates. The variables showing statistically marginal ( $0.05 < p \leq 0.1$ ) or significant associations ( $p \leq 0.05$ ) in the univariable regressions were fitted into the final multivariable logistic regression model. The final model for the association between knowledge and practice was adjusted for all the confounding variables and the mediator variable identified from DAG that were significantly associated with both knowledge and practice and had changed the effect estimate more than 5%. Only those variables that gave five or more percentage change in odds ratio of the association of interest were allowed in the final multivariable logistic regression.

## **2.7 Ethical Considerations**

The study protocol was submitted to the Institutional Review Board at American University of Armenia. An oral consent (see Appendix 2) had been obtained from each participant explaining the aim of the study, participant's rights and confidentiality of the study before starting the interview. To protect the respondent's anonymity and confidentiality, no identifiable information such as respondent's name or contact information were collected. No incentives were given to the respondents; the study participation was voluntary. Only the student investigator had the right to access the data and the completed questionnaires once the data collection was done.

### **3. Results**

#### **3.1 Descriptive Statistics**

Overall, 418 patients were approached for the study during January 28 - February 6, 2018 at K.R hospitals, Tirukalukundram. Out of all contacted, 28 refused to participate with the 91.4% response rate. The study participants and the people who refused to participate did not differ by their age and educational status characteristics. The average duration of face to face interviews was 14 minutes (ranging from eight to 21 minutes).

The socio-demographic characteristics of the 382 study participants, who successfully completed the survey, are presented in Table 1. The mean age of the study population was 41.1 years, one-fourth of them had no education, 81.9% were married, 78.3% belonged to Hinduism religion, and more than a half (56.3%) were unemployed. Almost 70% of study participants' parents were illiterate, while 42.1% of fathers and only 9.9% of mothers were employed. About half of the study participants' families had an annual income less than 88,800 INR (1,363 USD)

categorizing them as a middle/low incomes social group. Nearly 82% of the population who use private hospital also uses public hospitals for their regular checkups.

### ***Knowledge***

Among the study population, 62.2% never heard about cervical cancer. For those who heard about cervical cancer only 2.1 % had good knowledge, 3.9 % had a satisfactory knowledge and 94% had poor knowledge. The mean cumulative knowledge score for cervical cancer and its screening calculated based on nine items was 1.27 (SD=3.48) with a range from 0 to 19 (Table 2). The mean percent cumulative knowledge score for surveyed women was 6.7%.

### ***Attitude***

Detailed frequencies of responses for the items related to attitude score are provided in the Table 3. Overwhelming majority of women participated in the study believed that the cervical cancer can lead to death (91%) and that they should get screened (88%). Only 14% of women thought that screening procedures are not expensive in Tamilnadu, (Table 3). The mean cumulative attitude score for cervical cancer and its screening calculated on seven items was 17.56 (SD = 4.17) with a range from 4 to 28. The mean percent cumulative attitude score for surveyed women was 62.7%.

### ***Practice***

Detailed frequencies of responses related to cervical cancer screening practices are presented in Table 4. Nearly 90% of the participants had no practice. Among those who had any practice since had become sexually active, only 8.6% had regular practice for cervical cancer screening. The mean cumulative practice score for cervical cancer screening was 0.22 (SD=

0.51) with a ranges from 0 to 3. The mean percent cumulative practice score for surveyed women was 7.3% (Table 4).

The most frequently stated barriers for not practicing cervical cancer screening were: no information/ knowledge (65%), considering themselves healthy (31%), did not decided yet (28%), and feeling shy (13%). Nearly 10% of the participants refused to report the actual reason (Table 5).

### **3.2 Predictors for the knowledge on cervical cancer screening**

To identify possible associations between knowledge of the study population and their socio-demographic/clinical characteristics, the univariable logistic regression analysis was fitted, including the following variables: age of the participants, education, marital status, religion, accessibility towards cervical cancer screening, gynecologist advice on screening, employment status, maternal education, maternal employment, paternal education, paternal employment, and annual income of the family (Table 6).

In the final model, six variables: educational status of the participant, marital status, accessibility towards cervical cancer screening, gynecologist advice for screening, employment status, and maternal education were identified as knowledge predictors on cervical cancer screening (Table 7).

In the final model, after adjusting for all the others variables, the odds of having any knowledge on cervical cancer was 2.21 times higher for those who had education compared to uneducated participants (95% CI: 0.94, 5.18;  $p = 0.067$ ). The odds of having any knowledge on cervical cancer was 3.22 times higher among married compared to unmarried women (95% CI: 1.15, 8.99;  $p = 0.025$ ). Similarly, the odds of having knowledge was 10.81 times higher for those

survey participants who had screening accessibility compared to those who do not have the accessibility (95% CI: 1.13,103.29;  $p = 0.039$ ). Women who received advice from gynecologist for screening had 21.03 times higher odds of having knowledge as compared to those who did not have (95% CI: 4.18, 105.78;  $p < 0.001$ ). The odds of having knowledge about cervical cancer was 2.61 times higher for employed women compared to unemployed women (95% CI: 1.36, 5.00;  $p = 0.004$ ). Women with educated mother have the odds of having knowledge 1.78 times higher than those whose mothers had no education (95% CI: 0.96, 3.30;  $p < 0.064$ ).

### **3.3 Predictors for the attitude on cervical cancer screening**

To identify the potential predictors between attitude and socio-demographic/clinical characteristics the univariable linear regression was fitted with the following independent variables: knowledge score, age of the participants, education, marital status, religion, family history of cervical cancer, accessibility towards cervical cancer screening, gynecologist advice on screening, employment status, maternal education, maternal employment, paternal education, paternal employment, and annual income of the family (Table 8). The variables that were associated with attitude score ( $p < 0.1$ ) were included in the multivariable linear regression model

In the final model, five variables: knowledge score, age of the participants, gynecologist advice for screening, maternal education, and father employment were identified as attitude predictors on cervical cancer screening (Table 9). After adjusting for all other variables, every unit increase in knowledge score resulted in 0.42 points increase in the attitude score (95% CI: 0.30, -0.55;  $p < 0.001$ ). One year increases in age, resulted in 0.60 points decrease in the attitude score (95% CI: -0.09, -0.22;  $p = 0.002$ ). Women with gynecologist advice had 2.94 times attitude score increases compared to those with no advice (95% CI: 1.04, 4.84;  $p = 0.003$ ). Women with educated mothers had 0.98 times attitude score increases when compared with women who had

uneducated mothers (95% CI: 0.86, 1.87;  $p=0.032$ ). Women with employed fathers had 0.98 times decrease in the attitude score as compared to women who had unemployed fathers (95% CI: -1.92, -0.53;  $p=0.038$ )

### **3.4 Predictors for the practice on cervical cancer screening**

To identify the potential predictors between practice (Yes/No) and socio-demographic/clinical characteristics the univariable logistic regression was fitted with variables such as knowledge score, attitude score, age of the participants, education, marital status, religion, accessibility towards cervical cancer screening, gynecologist advice on screening, employment status, maternal education, maternal employment, and paternal education, paternal employment, and annual income of the family (Table 10). Variables with  $p<0.1$  was added into multivariable logistic regression.

In the final model, six variables knowledge score, attitude score, age of the participants, gynecologist advice for screening, employment status were identified as practice predictors on cervical cancer screening (Table 11).

After adjusting for all other variables, for every year increase in age of women the odds of having practice decreased by 7% (95% CI: 0.90, 0.97;  $p<0.001$ ). Each unit increases in knowledge score, led to having 1.21 times higher odds of practicing cervical cancer screening (95% CI: 1.09, 1.36;  $p<0.001$ ). Each unit increases in attitude score, led to having 1.12 times higher odds of practicing cervical cancer screening (95% CI: 1.02, 1.23;  $p=0.012$ ). The odds of having practice on cervical cancer screening was 16.49 times higher for those who had gynecologist advice for screening comparing to those who did not had any screening (95% CI: 3.03, 89.68;  $p<0.001$ ). The odds of having practice on cervical cancer screening was 2.74 times

higher among employed mother compared to unemployed mother (95% CI: 1.27, 5.91; p =0.010).

### **3.5 Association between Knowledge on cervical cancer and Practice on screening.**

The confounders were identified based on Directed acyclic graphs (DAG) (Appendix 4) and univariable regression analysis for outcome (Practice) and independent (Knowledge) variables. The identified confounders between knowledge and practice on cervical cancer were age, education, marital status, accessibility, gynecologist advice, employment, paternal education, paternal employment, maternal education and income (Tables 6 and 10). Model A shows the crude association between outcome (Practice) and the independent variable (Knowledge) reporting the highly significant association with OR= 12.01 (95% CI: 6.60, 21.85; p <0.001). Model B shows the association between knowledge and practice after adjusting for the mediator (Attitude), resulting in significant association OR= 6.66 (95% CI: 3.47, 12.78; p <0.001). Model C shows the association between Practice on cervical cancer screening and Knowledge on cervical cancer after adjusting for the confounders (Gynecologist advice for screening, accessibility for screening, employment, marital status) and mediator (Attitude), resulting in highly significant association: the odds of having practice was 4.45 times higher among those who had knowledge when compared to those who had no knowledge on cervical cancer (95% CI: 2.13, 9.28; p <0.001)

## **4. Discussion**

In this study, we identified the knowledge, attitude and practice on cervical cancer screening, association between knowledge and practice on screening and predictors for knowledge, attitude and practice. The socio-demographic characteristics of the study participants were somewhat similar to the studies conducted across India.<sup>25, 26, 49, 50</sup>



In our study, nearly 62% of the participants reported that they haven't heard about cervical cancers which were found to be similar to Bhopal (66%) study, but varied from the Kerala and Salem findings (72% and 98% respectively). From those who ever heard about cervical cancer, 24% stated abnormal vaginal bleeding as a symptom of cervical cancer which was similar to the study findings in Bhopal.<sup>26</sup> In our study, about 25% of the participants stated having multiple sexual partners as the major risk factor, which was consistent with other Indian studies.<sup>25,26</sup> Only 5% of our study participants were aware about HPV vaccination, whereas in Salem 18% of the participants knew about the vaccination prevention.<sup>51</sup>

The proportion of women having a poor level of knowledge about cervical cancer from Tirukalukundram was similar to studies conducted in Bhopal and Nepal<sup>26,52</sup> and comparably positive attitude showed consistency with women from Salem, Kathmandu, Nepal.<sup>51,52</sup> Similarly, having less than 10% women who had practice on screening was in parallel with several studies conducted in India.<sup>26,51,52</sup> Such lack of screening practice might be due to the absence of nationwide screening programs and insufficient knowledge on cervical cancer screening.

Unlike other studies, where the most common barriers for screening were fear of procedure and cost for screening, for women from our study the major obstacles included the lack of information/knowledge and believe of being healthy.<sup>51</sup>

The study identified several predictors for knowledge, attitude, and practice on cervical cancer, among which gynecologist advice had highly predictive for all three outcomes, and this was found to be similar with other studies conducted in Kerala and hospital based study from Nigeria.<sup>25,53</sup> Age, marital status, and employment status of the participants were found to be significant predictors of the knowledge on cervical cancer screening which like the findings from

a similar study in Kathmandu, Nepal.<sup>52</sup> However, other knowledge predictors such as education was found to be inconsistent with the study findings from Eastern Uganda.<sup>54</sup>

Knowledge and attitude were identified as predictors for practice of the cervical cancer screening which was similar to a study conducted in Venezuela.<sup>55</sup> For practice, age was identified as a predictor and found to be consistent with the study from University of Botswana students<sup>54</sup> but inconsistent with study from Uganda.<sup>56</sup> Similarly, in our study, age of the participants was identified as a significant predictor for attitude on cervical cancer screening, unlike the study finding from Eastern China.<sup>57</sup> We did not find any study suggesting that maternal education and paternal employment could be predictors for attitude towards cervical cancer and screening.

This study identified that knowledge was significantly associated with cervical cancer screening practices after adjusting for confounding variables in Model C (Table 12). The OR of knowledge attenuated after adjusting for attitude suggesting that attitude is influenced by knowledge which in turn influences the cervical cancer practices (Model B, Table 12). These findings were consistent with the studies from Nepal, Niger, and Salem, where it was found that the participants with poor knowledge tended to have poor practice.<sup>51,58,59</sup>

This was the first study carried out in Tirukalukundram to understand the KAP on cervical cancer screening, their predictors and the effect of knowledge on cervical cancer screening practices. However, the study was limited to a single private healthcare facility; though 82% of study participants mentioned also using the public healthcare facilities. Since people who utilize private healthcare facilities tend to have higher socio-economic status, the study participants might not have been representing all the women at risk of cervical cancer at Tirukalukundram. The changes in the study instrument after translation were not validated.

Male partner related factors were not included in the questionnaire, these factors might confound the relationship between knowledge and practice outcome as more than 80% of participants were married (Table 1). The cross-sectional nature of the study constrained observation of a causal or temporal relationship. . Social desirability bias could potentially influence the reported result as this was interviewer administered survey.

## **5. Conclusion and Recommendations**

In conclusion, we identified most of the participants had poor knowledge and poor practice on cervical cancer screening; however, their majority showed good attitude towards screening. Education, marital status, accessibility, gynecologist advice, employment status and maternal education were identified as knowledge predictors. Knowledge, age, gynecologist advice, mother's education and father's employment were spotted as attitude predictors. Knowledge, attitude, age, gynecologist advice and employment were found to be practice predictors. However, further studies are needed to be conducted in order to have the comprehensive understanding on the prevalence of cervical cancer in a representative population of Tirukalukundram and barrier for screening.

Community based awareness program about cervical cancer and its screening through organizing mass media campaigns, advertising cervical cancer prevention campaigns in social networks, distributing educational information through brochures and pamphlets and promoting screening awareness through healthcare providers especially gynecologist need to be done. The results of this study may be used to develop targeted intervention strategies on improving knowledge and awareness regarding prevention on cervical cancer that might result in practice change with further reduction of the morbidity and mortality rates due to cervical cancer among the targeted population.

## References

1. WHO | Cervical cancer. *WHO*. 2017. <http://www.who.int/cancer/prevention/diagnosis-screening/cervical-cancer/en/>. Accessed November 4, 2017.
2. Fact Sheets by Cancer. [http://globocan.iarc.fr/Pages/fact\\_sheets\\_cancer.aspx](http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx). Accessed November 4, 2017.
3. Cervical Cancer Causes, Diagnosis and Symptoms : NCCN. <http://www.nccn-online.org/hpvcervical-cancer/cervical-cancer-overview/>. Accessed December 3, 2017.
4. What Are the Risk Factors for Cervical Cancer? <https://www.cancer.org/cancer/cervical-cancer/causes-risks-prevention/risk-factors.html>. Accessed November 4, 2017.
5. Cervical Cancer: Risk Factors | Cancer.Net. <https://www.cancer.net/cancer-types/cervical-cancer/risk-factors>.
6. CDC - What Are the Risk Factors for Cervical Cancer? [https://www.cdc.gov/cancer/cervical/basic\\_info/risk\\_factors.htm](https://www.cdc.gov/cancer/cervical/basic_info/risk_factors.htm). Accessed December 2, 2017.
7. Cervical cancer risk factors | Cancer Research UK. <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/cervical-cancer/risk-factors>. Accessed December 2, 2017.
8. Bosch FX, de Sanjose S. Chapter 1: Human Papillomavirus and Cervical Cancer-Burden and Assessment of Causality. *JNCI Monogr*. 2003;2003(31):3-13. doi:10.1093/oxfordjournals.jncimonographs.a003479.
9. Schiffman MH, Bauer HM, Hoover RN, et al. Epidemiologic Evidence Showing That Human Papillomavirus Infection Causes Most Cervical Intraepithelial Neoplasia. *JNCI J Natl Cancer Inst*. 1993;85(12):958-964. doi:10.1093/jnci/85.12.958.
10. Brinton LA, Schairer C, Haenszel W, et al. Cigarette Smoking and Invasive Cervical Cancer. *JAMA J Am Med Assoc*. 1986;255(23):3265. doi:10.1001/jama.1986.03370230071033.
11. Waggoner SE. Cervical cancer. *Lancet*. 2003;361(9376):2217-2225. doi:10.1016/S0140-6736(03)13778-6.
12. Contributions O. Journal of Epidemiology. *Public Health*. 1983;118:945-957.
13. Silva J, Cerqueira F, Medeiros R. Chlamydia trachomatis infection: implications for HPV status and cervical cancer. *Arch Gynecol Obstet*. 2014;289(4):715-723. doi:10.1007/s00404-013-3122-3.
14. Block G, Patterson B, Subar A. Fruit, vegetables, and cancer prevention: A review of the epidemiological evidence. *Nutr Cancer*. 1992;18(1):1-29. doi:10.1080/01635589209514201.
15. Tomita LY, Filho AL, Costa MC, et al. Diet and serum micronutrients in relation to cervical neoplasia and cancer among low-income Brazilian women. *Int J Cancer*. 2010;126(3):703-714. doi:10.1002/ijc.24793.

16. Maruthur NM, Bolen SD, Brancati FL, Clark JM. The Association of Obesity and Cervical Cancer Screening: A Systematic Review and Meta-analysis. *Obesity*. 2009;17(2):375-381. doi:10.1038/oby.2008.480.
17. Lee JK, So KA, Piyathilake CJ, Kim MK. Mild Obesity, Physical Activity, Calorie Intake, and the Risks of Cervical Intraepithelial Neoplasia and Cervical Cancer. Anderson ML, ed. *PLoS One*. 2013;8(6):e66555. doi:10.1371/journal.pone.0066555.
18. Krishnan S, Madsen E, Porterfield D, Varghese B. Advancing cervical cancer prevention in India: implementation science priorities. *Oncologist*. 2013;18 Suppl(Special Collection):13-25. doi:10.1634/theoncologist.18-S2-13.
19. WHO | New WHO guide to prevent and control cervical cancer. *WHO*. 2014. <http://www.who.int/mediacentre/news/releases/2014/preventing-cervical-cancer/en/>. Accessed December 10, 2017.
20. Comprehensive Cervical Cancer Control A guide to essential practice. [http://apps.who.int/iris/bitstream/10665/144785/1/9789241548953\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/144785/1/9789241548953_eng.pdf). Accessed November 4, 2017.
21. CDC - What Can I Do to Reduce My Risk of Cervical Cancer? [https://www.cdc.gov/cancer/cervical/basic\\_info/prevention.htm](https://www.cdc.gov/cancer/cervical/basic_info/prevention.htm). Accessed December 10, 2017.
22. Can Cervical Cancer Be Found Early? <https://www.cancer.org/cancer/cervical-cancer/detection-diagnosis-staging/detection.html>. Accessed November 4, 2017.
23. Cancer of the Cervix Uteri - Cancer Stat Facts. <https://seer.cancer.gov/statfacts/html/cervix.html>. Accessed December 10, 2017.
24. Senthil Kumar M, Chandrasekar Shanmugapriya P, Kaur P. Acceptance of cervical and breast cancer screening and cancer awareness among women in Villupuram, Tamil Nadu, India: A cross sectional survey. 2015. doi:10.1016/j.cegh.2015.10.007.
25. Aswathy S, Quereshi MA, Kurian B, Leelamoni K. Cervical cancer screening: Current knowledge & practice among women in a rural population of Kerala, India. *Indian J Med Res*. 2012;136(2):205-210. <http://www.ncbi.nlm.nih.gov/pubmed/22960886>. Accessed November 5, 2017.
26. Bansal AB, Pakhare AP, Kapoor N, Mehrotra R, Kokane AM. Knowledge, attitude, and practices related to cervical cancer among adult women: A hospital-based cross-sectional study. *J Nat Sci Biol Med*. 2015;6(2):324-328. doi:10.4103/0976-9668.159993.
27. Singh S, Badaya S, Badaya S. Factors Influencing uptake of Cervical Cancer Screening among Women in India: A Hospital based Pilot Study. *J Community Med Health Educ*. 2012;2(6). doi:10.4172/2161-0711.1000157.
28. CDC - Cervical Cancer Statistics. <https://www.cdc.gov/cancer/cervical/statistics/index.htm>. Accessed November 4, 2017.
29. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. *CA Cancer J Clin*. 2011;61(2):69-90. doi:10.3322/caac.20107.

30. Sherris J, Herdman C, Elias C. Cervical cancer in the developing world. *West J Med.* 2001;175(4):231-233. <http://www.ncbi.nlm.nih.gov/pubmed/11577044>. Accessed December 2, 2017.
31. Catarino R, Petignat P, Dongui G, Vassilakos P. Cervical cancer screening in developing countries at a crossroad: Emerging technologies and policy choices. *World J Clin Oncol.* 2015;6(6):281-290. doi:10.5306/wjco.v6.i6.281.
32. Cervical cancer | National Health Portal Of India. <https://www.nhp.gov.in/disease/reproductive-system/female-gynaecological-diseases-/cervical-cancer>. Accessed November 4, 2017.
33. Cervical Cancer - Incidence. <http://www.medindia.net/patients/patientinfo/cervicalcancer-incidence.htm>. Accessed November 4, 2017.
34. Kga M. Global Burden of Cancer in Women. 2014;10:74-75.
35. Bobdey S, Sathwara J, Jain A, Balasubramaniam G. Burden of cervical cancer and role of screening in India. *Indian J Med Paediatr Oncol.* 2016;37(4):278-285. doi:10.4103/0971-5851.195751.
36. Papillomavirus H, Cancers R, Sheet F. Human Papillomavirus and Related Cancers, Fact Sheet 2017 (2017-07-27) ICO Information Centre on HPV and Cancer,India. 2017;2017:6-7.
37. Statistics - India Against CancerIndia Against Cancer. <http://cancerindia.org.in/statistics/>. Accessed December 2, 2017.
38. Ali I, Wani WA, Saleem K. Cancer Scenario in India with Future Perspectives. *Cancer Ther.* 2011;8(8):56-70. doi:10.1016/B978-0-7020-2797-0.00001-1.
39. Sreedevi A, Javed R, Dinesh A. Epidemiology of cervical cancer with special focus on India. *Int J Womens Health.* 2015;7:405-414. doi:10.2147/IJWH.S50001.
40. Census of India 2011 Tamil Nadu series-34 part xii-b district census handbook Kancheepuram village and town wise Primary Census Abstract (PCA) directorate of census operations Tamil Nadu. [http://www.censusindia.gov.in/2011census/dchb/3303\\_PART\\_B\\_DCHB\\_KANCHEEPURAM.pdf](http://www.censusindia.gov.in/2011census/dchb/3303_PART_B_DCHB_KANCHEEPURAM.pdf). Accessed December 10, 2017.
41. Kancheepuram District Population Religion - Tamil Nadu, Kancheepuram Literacy, Sex Ratio - Census India. <http://www.censusindia.co.in/district/kancheepuram-district-tamil-nadu-604>. Accessed December 10, 2017.
42. Census of India 2011 Total population and population of Scheduled castes and Scheduled tribes for village panchayats and panchayat unions Kancheepuram district directorate of census operations Tamilnadu. [http://www.tnrd.gov.in/databases/census\\_of\\_india\\_2011TN/pdf/01-Kancheepuram.pdf](http://www.tnrd.gov.in/databases/census_of_india_2011TN/pdf/01-Kancheepuram.pdf). Accessed December 10, 2017.
43. Tran NT, Choe S Il, Taylor R, Ko WS, Pyo HS, So HC. Knowledge, Attitude and Practice (KAP) Concerning Cervical Cancer and Screening among Rural and Urban Women in Six

- Provinces of the Democratic People's Republic of Korea. *Korea Asian Pacific J Cancer Prev.* 2011;12.  
<https://pdfs.semanticscholar.org/036b/aa5f341f69a909c9b55f13d0694ca36c1c04.pdf>.  
 Accessed December 10, 2017.
44. Sardar Zakariya Imam, Fatima Rehman, Malik Muhammad Zeeshan B, Maqsood, Sameen Asrar, Noor Fatima, Fawad Aslam MR, Khawaja H. Perceptions and Practices of a Pakistani Population Regarding Cervical Cancer Screening. *Asian Pacific J Cancer Prev*, 9, 42-44.  
<https://pdfs.semanticscholar.org/d9cc/46dffce98925296c75c01b6a621138858e49.pdf>.
  45. Varadheswari T, Dandekar RH, Sharanya T. A Study on the Prevalence and KAP Regarding Cervical Cancer Among Women Attending a Tertiary Care Hospital in Perambalur. 2015;1(3):71-78.
  46. Anuradha .R Ruma Dutta Dinesh Raja .J Sivaprakasam .P. Cervical Cancer And Screening -Knowledge And Attitude Among Married Women in Rural Areas ,Tamilnadu. *Natl J Res Community Med.* 2017;6(1):082-087.
  47. John J. the Knowledge, Attitude, Practice and Perceived Barriers Towards Screening for Premalignant Cervical Lesions Among Women Aged 18Years and Above, in Songea Urban, Ruvuma. 2011:15.
  48. Makornkan S, Saminpanya P, Toomsan A, Intachai P, Saengproa P, Marerngsit D. Knowledge , Attitude and Practice of Dengue Fever Prevention Among the Villagers of Moo 1 Baan Klongsai , Nhongyangsuea Subdistrict , Muaklek District , Saraburi Province , Thailand. 2015;12(2):56-62.
  49. Sabeena S, Bhat P V, Kamath V, Aswathyraj S, Arunkumar G. Knowledge, Attitude and Practice Concerning Human Papilloma Virus Infection and its Health Effects among Rural Women, Karnataka, South India. *Asian Pac J Cancer Prev.* 2015;16(12):5053-5058.  
<http://www.ncbi.nlm.nih.gov/pubmed/26163640>. Accessed May 21, 2018.
  50. Kumar YS, Mishra G, Gupta S, Shastri S. Level of cancer awareness among women of low socioeconomic status in Mumbai slums. *Asian Pac J Cancer Prev.* 2011;12(5):1295-1298. <http://www.ncbi.nlm.nih.gov/pubmed/21875285>. Accessed May 21, 2018.
  51. Roy P. Knowledge, attitude and practice related to cervical cancer and screening among women: Community based cross- sectional study.  
[http://sphinxsai.com/2017/ch\\_vol10\\_no6/2/\(793-804\)V10N6CT.pdf](http://sphinxsai.com/2017/ch_vol10_no6/2/(793-804)V10N6CT.pdf). Accessed May 21, 2018.
  52. Shrestha J, Saha R, Tripathi N. Knowledge, Attitude and Practice regarding Cervical Cancer Screening Amongst Women visiting Tertiary Centre in Kathmandu, Nepal. *Nepal J Med Sci.* 2013;2(2):85-90. doi:10.3126/njms.v2i2.8941.
  53. Okunowo AA, Daramola ES, Soibi-Harry AP, et al. Women's knowledge of cervical cancer and uptake of Pap smear testing and the factors influencing it in a Nigerian tertiary hospital. *J Cancer Res Pract.* February 2018. doi:10.1016/J.JCRPR.2018.02.001.
  54. Mukama T, Ndejjo R, Musabyimana A, Halage AA, Musoke D. Women's knowledge and

- attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda. *BMC Womens Health*. 2017;17(1):9. doi:10.1186/s12905-017-0365-3.
55. Núñez-Troconis J, Tulliani E, Gabriela Martínez M, Fernández N. Knowledge and attitudes as predictors of cervical cancer screening among women in a Venezuelan urban area. *Invest Clin*. 2013;54(1):20-33. <http://www.ncbi.nlm.nih.gov/pubmed/23781710>. Accessed May 23, 2018.
  56. Waiswa A, Nsubuga R, Muwasi M, et al. Knowledge and Attitude towards Cervical Cancer Screening among Females Attending out Patient Department in Health Centre IIIs in Oyam District. *Open J Prev Med*. 2017;7(4):55-62. doi:10.4236/ojpm.2017.74005.
  57. Liu T, Li S, Ratcliffe J, Chen G. Assessing Knowledge and Attitudes towards Cervical Cancer Screening among Rural Women in Eastern China. *Int J Environ Res Public Health*. 2017;14(9). doi:10.3390/ijerph14090967.
  58. Ranabhat S, Tiwari M, Dhungana G, Shrestha R. Association of knowledge, attitude and demographic variables with cervical Pap smear practice in Nepal. *Asian Pac J Cancer Prev*. 2014;15(20):8905-8910. <http://www.ncbi.nlm.nih.gov/pubmed/25374227>. Accessed May 23, 2018.
  59. Owoye IOG, Ibrahim IA. Knowledge and attitude towards cervical cancer screening among female students and staff in a tertiary institution in the Niger Delta. *Int J Med Biomed Res*. 2013;2(1):48-56.



## Tables

**Table 1: Participants' socio demographic characteristics**

<b>Characteristics</b>		<b>n (%)</b>
<b>Age, years</b>	Mean (SD)	41.10 (12.6)
<b>Marital status</b>	Single/ unmarried	19 (5.0%)
	Married	313 (81.9%)
	Divorced	10 (2.6%)
	Widowed	40 (10.5%)
<b>Religion</b>	Hindu	299 (78.3%)
	Muslim	54 (14.1%)
	Christian	29 (7.6%)
<b>Education status of the participants'</b>		
	No education/illiterate	90 (23.6%)
	Primary education (1-5 years)	43 (11.3%)
	Middle-school education (6-8 years)	49 (12.8%)
	Secondary education (9-10 years)	38 (9.9%)
	Higher secondary education (11-12 years)	40 (10.5%)
	Undergraduate	105 (27.5%)
	Graduate/Post graduate	17 (4.5%)
<b>Father's education Status</b>		
	No education/illiterate	260 (68.1%)
	Primary education (1-5 years)	27 (7.1%)
	Middle-school education (6-8 years)	32 (8.4%)
	Secondary education (9-10 years)	36 (9.4%)
	Higher secondary education (11-12 years)	14 (3.7%)
	Undergraduate	12 (3.1%)
	Graduate/Post graduate	1 (0.3%)
<b>Mothers' educational Status</b>		
	No education/illiterate	264 (69.1%)
	Primary education (1-5 years)	51 (13.4%)
	Middle-school education (6-8 years)	29 (7.6%)
	Secondary education (9-10 years)	15 (3.9%)
	Higher secondary education (11-12 years)	16 (4.2%)
	Undergraduate	7 (1.8%)
<b>Employment status</b>	Employed	167 (43.7%)
	Unemployed	215 (56.3%)
<b>Employment status of the father</b>		
	Employed	161 (42.1%)
	Unemployed	131 (34.3%)
	Retired	14 (3.7%)
	Others	76 (19.9%)

<b>Characteristics</b>	<b>n (%)</b>
<b>Employment status of the mother</b>	
Employed	38 (9.9%)
Unemployed	256 (67.0%)
Retired	17 (4.5%)
Others	71 (18.6%)
<b>Family annual income</b>	
1000 to 33000 INR	35 (9.2%)
33001 to 55000 INR	58 (15.2%)
55001 to 88800 INR	81 (21.2%)
88801 to 150,000 INR	137 (35.9%)
above 150,000 INR	71 (18.6%)

**Table 2: Correct knowledge about cervical cancer and its screening**

<b>Items</b>	<b>Number N = 145</b>	<b>Percentage %</b>
<b>Symptoms</b>		
Vaginal bleeding	35	24.1
Vaginal foul smelling discharges	32	22.1
<b>Risk factors</b>		
Having multiple sexual partners	36	24.8
Early sexual intercourse	18	12.4
Acquiring Human PapillomaVirus infection	15	10.3
Cigarette smoking	4	2.8
<b>Prevention</b>		
Avoid multiple sexual partners	35	24.1
Avoid early sexual intercourse	18	12.4
Quit smoking	3	2.1
Through vaccination of HPV vaccine	6	4.1
<b>Cervical cancer can be treated in its earliest stages</b>	39	26.9
<b>Cervical cancer treatment</b>		
Surgery	53	36.6
Radiotherapy	21	14.5
<b>Screening procedures are available</b>	44	30.3
<b>Screening procedures frequency*</b>		
Once every three years	33	75.0
<b>Eligibility age (21 – 65)</b>	41	93.2
<b>Knowledge about screening method*</b>		
Visual Inspection of Acetic Acid	17	38.6
Visual Inspection of Lugol's Iodine	16	36.4
Pap Smear	27	61.4

\*N = 44

**Table 3: Attitude towards cervical cancer and its screening**

<b>Items</b>	<b>Strongly agree n (%)</b>	<b>Agree n (%)</b>	<b>Neither agree nor disagree n (%)</b>	<b>Disagree n (%)</b>	<b>Strongly disagree n (%)</b>
<b>The cervical cancer can lead to death</b>	130 (34.0%)	216 (56.5%)	35 (9.2%)	1 (0.3%)	0 (0%)
<b>Any adult woman including you can acquire cervical cancer</b>	65 (17.0%)	156 (40.8%)	117 (30.6%)	35 (9.2%)	9 (2.4%)
<b>Cervical cancer cannot be transmitted from one person to another</b>	43 (11.3%)	101 (26.4%)	165 (43.2%)	59 (15.4%)	14 (3.7%)
<b>Screening helps in prevention of cervical cancer</b>	45 (11.8%)	81 (21.2%)	178 (46.6%)	68 (17.8%)	10 (2.6%)
<b>Screening causes no harm to the client</b>	54 (14.1%)	96 (25.1%)	158 (41.4%)	65 (17.0%)	9 (2.4%)
<b>Screening for premalignant cervical lesions is not expensive</b>	16 (4.2%)	36 (9.4%)	132 (34.6%)	134 (35.1%)	64 (16.8%)
<b>If screening is free, accessible and causes no harm, do you believe you should get screening</b>	222 (58.1%)	115 (30.1%)	32 (8.4%)	9 (2.4%)	4 (1.0%)

**Table 4: Practice on cervical cancer screening**

<b>Items</b>	<b>Number N=382</b>	<b>Percentage %</b>
<b>Ever screened for cervical cancer</b>	37	9.7
<b>Screened adequately since sexually active</b>	33	8.6
<b>Ever asked for cervical cancer screening services from healthcare providers</b>	14	3.7

**Table 5: Barriers for never being screened**

<b>Items</b>	<b>Numbers, n</b>	<b>Percentage %</b>
It may be painful	11	3.2
I feel shy	44	12.8
I am healthy	108	31.3
My husband would not agree	18	5.2
I am afraid a screening test would reveal cervical cancer	15	4.3
The screening is expensive	11	3.2
I am not informed/knowledge	225	65.2
I haven't just decided	96	27.8
The healthcare facility is far from the place I live	23	6.7
The healthcare facility that I visit most frequently does not provide screening services	45	13.0
I cannot afford the financial costs of cervical cancer screening	18	5.2
Others	31	9.0
Refuses to answer	33	9.6

**Table 6: Univariable logistic regression analysis for Knowledge category**

<b>Variables</b>	<b>Odds ratio ( 95%CI)</b>	<b>P-value</b>
<b>Age, Years</b>	0.95 (0.93, 0.97)	<0.001
<b>Education status of the participants'</b>		
<i>No and primary education</i>	1.00	
<i>Secondary and college education</i>	4.96 (2.38, 10.34)	<0.001
<b>Marital status</b>		
<i>Others</i>	1.00	
<i>Married</i>	2.45 (1.07, 5.61)	0.033
<b>Religion</b>		
<i>Christian</i>	1.00	
<i>Hindu</i>	0.49 (0.21, 1.13)	0.096
<i>Muslim</i>	0.63 (0.23, 1.75)	0.380
<b>Accessibility towards screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	52.59 (6.67, 414.62)	<0.001
<b>Gynecologist advice for screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	25.33 (7.11, 90.22)	<0.001
<b>Employment status</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	3.77 (2.19, 6.49)	<0.001
<b>Maternal education</b>		
<i>No education</i>	1.00	
<i>Educated</i>	1.30 (0.59, 2.89)	<0.001
<b>Maternal employment</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	3.77 (2.19, 6.49)	0.509
<b>Paternal education</b>		
<i>No education</i>	1.00	
<i>Educated</i>	2.64 (1.57, 5.66)	<0.001
<b>Paternal employment</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	3.77 (2.19, 6.49)	<0.001
<b>Annual income of the family</b>		
<i>High income</i>	1.00	
<i>Low and middle income</i>	0.41 (0.23, 0.74)	0.003

**Table 7: Multivariable logistic regression analysis for knowledge predictors**

<b>Variables</b>	<b>Odds ratio ( 95%CI)</b>	<b>P-value</b>
<b>Education status of the participants'</b>		
<i>No and primary education</i>	1.00	
<i>Secondary and college education</i>	2.21 (0.94, 5.18)	0.067
<b>Marital status</b>		
<i>Others</i>	1.00	
<i>Married</i>	3.22 (1.15, 8.99)	0.025
<b>Accessibility towards screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	10.81 (1.13, 103.29)	0.039
<b>Gynecologist advice for screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	21.03 (4.18, 105.78)	<0.001
<b>Employment status</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	2.61 (1.36, 5.00)	0.004
<b>Maternal education</b>		
<i>No education</i>	1.00	
<i>Educated</i>	1.78 (0.96, 3.30)	0.064

Hosmer and Lemeshow Test - 0.880



**Table 8: Univariable linear regression analysis for attitude score**

<b>Variables</b>	<b><math>\beta</math> coef. (95% CI)</b>	<b>P-value</b>
<i>Knowledge score</i>	0.57 (0.46, 0.67)	<0.001
<i>Age, years</i>	-0.80 (-0.11, -0.04)	<0.001
<i>Secondary or college education</i>	2.16 (1.30, 3.01)	<0.001
<i>Married</i>	1.30 (0.21, 2.38)	0.019
<i>Being Muslim</i>	0.56 (-0.65, 1.77)	0.365
<i>Being Christian</i>	-0.18 (-1.78, 1.41)	0.821
<i>Having family history of cervical cancer</i>	4.88 (2.15, 7.61)	<0.001
<i>Having access towards screening</i>	5.27 (2.92, 7.62)	<0.001
<i>Having gynecologist advice for screening</i>	6.23 (4.35, 8.11)	<0.001
<i>Employed participants</i>	1.81(0.98, 2.64)	<0.001
<i>Mother educated</i>	2.41 (1.53, 3.29)	<0.001
<i>Mother employed</i>	1.27 (-0.12, 2.67)	0.073
<i>Father educated</i>	1.97 (1.09, 2.85)	<0.001
<i>Father employed</i>	0.953 (0.10, 1.80)	0.027
<i>Family with middle income</i>	-1.54 (-2.61, -0.41)	0.005

**Table 9: Multivariable linear regression analysis for attitude score**

<b>Variables</b>	<b><math>\beta</math> coef. (95% CI)</b>	<b>P-value</b>
<i>Knowledge score</i>	0.42 (0.30, 0.55)	<0.001
<i>Age, Years</i>	-0.60 (-0.09, -0.22)	0.002
<i>Having gynecologist advice for screening</i>	2.94 (1.04, 4.84)	0.003
<i>Mother educated</i>	0.98 (0.86, 1.87)	0.032
<i>Father employed</i>	-0.98 (-1.92, -0.53)	0.038

**Table 10: Univariable logistic regression analysis for cervical cancer screening practices**

<b>Variables</b>	<b>Odds ratio ( 95%CI)</b>	<b>P-value</b>
<b>Knowledge score</b>	1.42 (1.28, 1.57)	<0.001
<b>Attitude, score</b>	1.30 (1.21, 1.41)	<0.001
<b>Age, Years</b>	0.92 (0.89, 0.95)	<0.001
<b>Education status of the participants'</b>		
<i>No and primary education</i>	1.00	
<i>Secondary and college education</i>	7.16 (3.01, 17.06)	<0.001
<b>Marital status</b>		
<i>Others</i>	1.00	
<i>Married</i>	2.18 (0.95, 5.01)	0.064
<b>Religion</b>		
<i>Christian</i>	1.00	
<i>Hindu</i>	0.78 (0.30, 2.03)	0.623
<i>Muslim</i>	1.09 (0.36, 3.30)	0.872
<b>Accessibility towards screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	15.50 (4.07, 58.93)	<0.001
<b>Gynecologist advice for screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	28.70 (8.03, 102.50)	<0.001
<b>Employment status</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	5.78 (3.15, 10.58)	<0.001
<b>Maternal education</b>		
<i>No education</i>	1.00	
<i>Educated</i>	4.48 (2.60, 7.74)	<0.001
<b>Maternal employment</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	3.06 (1.49, 6.29)	0.002
<b>Paternal education</b>		
<i>No education</i>	1.00	
<i>Educated</i>	3.88 (2.26, 6.67)	<0.001
<b>Paternal employment</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	3.72 (2.13, 6.50)	<0.001
<b>Annual income of the family</b>		
<i>High income</i>	1.00	
<i>Low and middle income</i>	0.36 (0.20, 0.65)	0.001

**Table 11: Multivariable logistic regression analysis for practice predictors**

<b>Variables</b>	<b>Odds ratio ( 95%CI)</b>	<b>P-value</b>
<b>Knowledge score</b>	1.21 (1.09, 1.36)	<0.001
<b>Attitude, score</b>	1.12 (1.02, 1.23)	0.012
<b>Age, years</b>	0.93 (0.90, 0.97)	<0.001
<b>Gynecologist advice for screening</b>		
<i>No</i>	1.00	
<i>Yes</i>	16.49 (3.03, 89.68)	0.001
<b>Employment status</b>		
<i>Unemployed</i>	1.00	
<i>Employed</i>	2.74 (1.27, 5.91)	0.010

Hosmer-Lemeshow Test - 0.937

**Table 12: Association between “Knowledge on cervical cancer” and “Practice on screening” controlled for identified confounders among women living in Kancheepuram district**

Variables	Model A n= 382		Model B n=382		Model C n=382	
	Odds ratio ( 95%CI)	P-value	Odds ratio (95%CI)	P-value	Odds ratio (95%CI)	P-value
<b>Knowledge on cervical cancer screening</b>						
<i>No Knowledge</i>	1.00		1.00		1.00	
<i>Yes Knowledge</i>	12.01 (6.60, 21.85)	<0.001	6.66 (3.47,12.78)	<0.001	4.45 (2.13, 9.28)	<0.001
<b>Attitude, score</b>			1.21 (1.11, 1.31)	<0.001	1.14 (1.04, 1.25)	0.003
<b>Age, years</b>					0.92 (0.88, 0.96)	<0.001
<b>Gynecologist advice for screening</b>						
<i>No</i>					1.00 Reference	
<i>Yes</i>					32.38 (4.84,216.25)	<0.001
<b>Accessibility towards screening</b>						
<i>No</i>					1.00 Reference	
<i>Yes</i>					0.39 (0.06, 2.45)	0.319
<b>Marital status</b>						
<i>Others</i>					1.00 Reference	
<i>Married</i>					1.91 (0.64, 5.65)	0.239
<b>Employment status</b>						
<i>Unemployed</i>					1.00 Reference	
<i>Employed</i>					3.33 (1.53, 7.23)	0.002

**Appendix 1: Questionnaire (English version)**

**Screening Question:**

1. What is your age? \_\_\_\_\_
2. Which Panchayat do you live in? \_\_\_\_\_
3. What is your native language? \_\_\_\_\_

*If the answer to any of the below mentioned questions is “Yes”, then thank the participant and finish the interview.*

**4. Have you had total hysterectomy?**

- Yes
- No

**5. Are you diagnosed with cervical cancer?**

- Yes
- No

**American University of Armenia**

**Gerald and Patricia Turpanjian School of Public Health**

*Knowledge, Attitude and Practice on Cervical Cancer and Screening among Women living in  
Tirukalukundram, Kancheepuram District, India: a cross-sectional survey*

ID \_\_\_\_\_ Start Time (hh/mm) \_\_\_\_\_

Date (DD/MM/YY) \_\_\_\_/\_\_\_\_/\_\_\_\_

**Section A: Demographic Information**

1. What is your age? \_\_\_\_\_
2. Which Panchayat do you live in? \_\_\_\_\_
3. What is the highest level of education you have attained?
  1. No education/illiterate → skip to 5
  2. Primary education (1-5 years) → skip to 5
  3. Middle-school education (6-8 years) → skip to 5
  4. Secondary education (9-10 years) → skip to 5
  5. Higher secondary education (11-12 years) → skip to 5
  6. Undergraduate
  7. Graduate/Post graduate

**4. If educated (under/post/graduate), do/did you studied in biological/health related courses?**

- 1. Yes
- 0. No

**5. What is your marital status?**

- 1. Single/ unmarried
- 2. Married
- 3. Divorced
- 4. Widowed

**6. What is your religion?**

- 1. Hindu
- 2. Muslim
- 3. Christian
- 4. Others → Please specify \_\_\_\_\_

**7. In your family (father, mother, grandfather, grandmother, siblings, children) was anyone diagnosed with cancer?**

- 0. Yes
- 0. No → skip to 9

**8. In your family (mother, grandmother, sisters, and daughter) was anyone diagnosed with cervical cancer?**

- 1. Yes
- 0. No

**9. Have you ever been pregnant?**

- 1. Yes
- 0. No → Skip to 14

**10. How many alive births you had? \_\_\_\_\_**

**11. How many abortions did you have? \_\_\_\_\_ (if none, write '0')**

**12. How many miscarriages did you have? \_\_\_\_\_ (if none, write '0')**

**13. How many children you have? \_\_\_\_\_ (if none, write '0')**

**Section B: Knowledge on cervical cancer**

**Instructions:** *The following are several questions about your current knowledge on cervical cancer and screening methods.*

**14. Have you ever heard about cervical cancer?**

1. Yes
0. No → Skip to 26

**15. Where did you first learn about cervical cancer?** *(Don't read the options below, check all answers)*

1. News Media
2. Brochures, posters and other printed materials
3. Health workers
4. Family, friends, neighbors and colleagues
5. Religious leaders
6. Teachers
7. Others → Please specify \_\_\_\_\_

**16. What are the symptoms of cervical cancer?** *(Don't read the options below, check all answers)*

1. Vaginal bleeding
2. Vaginal foul smelling discharges
3. Others → Please specify \_\_\_\_\_
77. Do not know/Do not remember

**17. What are the risk factors for cervical cancer?** *(Don't read the options below, check all answers)*

1. Having multiple sexual partners
2. Early sexual intercourse
3. Acquiring Human Papilloma Virus infection
4. Cigarette smoking
5. Others → Please specify \_\_\_\_\_
77. Do not know/Do not remember

**18. How can a person prevent getting cervical cancer?** *(Don't read the options below, check all answers)*



1. Avoid multiple sexual partners
2. Avoid early sexual intercourse
3. Quit smoking
4. Through vaccination of HPV vaccine
5. Papanicolaou test (PAP test)
6. Other → Please specify \_\_\_\_\_
77. Do not know/Do not remember

**19. Can cervical cancer be treated in its earliest stages?**

1. Yes
0. No
77. Don't Know

**20. How can someone with cervical cancer be treated?** (*Don't read the options below, check all answers*)

1. Herbal remedies
2. Surgery
3. Specific medications prescribed by a physician
4. Radiotherapy
5. Other → Please specify \_\_\_\_\_
77. Do not know/Do not remember

**21. How expensive do you think cervical cancer treatment is in this country?** (*Don't read the options below, check only one answer*)

1. It is free of charge
2. It is reasonably priced
3. It is somewhat/moderately expensive
4. It is very expensive
5. Other → Please specify \_\_\_\_\_
77. Don't know/Do not remember

**22. Are there screening procedures to detect premalignant cervical lesion?**

1. Yes
0. No → Skip to 26

**23. How frequent is screening for premalignant cervical lesion done?***(Read the options below, check only one answer)*

1. Once every year
2. Once every three years
3. Once every 5 years
77. Don't know/Do not remember

**24. Who should be screened?***(Read the options below, check only one answer)*

1. Women below 20 years of age
2. Women from 21 to 65 years of age
3. Women above 65 years of age
77. Don't know/Do not remember

**25. About what screening method for cervical cancer have you heard about?***(Read the options below, check all answers)*

1. Visual Inspection of Acetic Acid (VIA)
2. Visual Inspection of Lugol's Iodine (VILI)
3. Pap Smear
4. Other → Please specify \_\_\_\_\_
77. Don't know/Do not remember

**Section C: Attitude on cervical cancer**

*Instructions: Please describe to what extent you agree or disagree with the following statements regarding cervical cancer and screening by choosing from the following options: ('Strongly agree', 'Agree', 'Neither agree nor disagree', 'Disagree', and 'Strongly disagree').*

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
<b>26. The cervical cancer can lead to death</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>27. Any adult woman including you can acquire cervical cancer</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>

<b>28. Cervical cancer cannot be transmitted from one person to another</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>29. Screening helps in prevention of cervical cancer</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>30. Screening causes no harm to the client</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>31. Screening for premalignant cervical lesions is not expensive</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>32. If screening is free, accessible and causes no harm, do you believe you should get screening</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>

***Section D: Cervical Cancer Screening practices***

***Instructions: Please answer the following questions about your history of practices for cervical cancer prevention and the access to screening procedures'***

**33. Have you ever been screened for cervical cancer?**

- 1. Yes
- 0. No → skip to 37

**34. If yes, how many times since you become sexually active? \_\_\_\_\_**

**35. When was the last time you were screened for cervical cancer?(Read the options below, check one answer)**

- 1. Within the past three years
- 2. Within the past five years
- 3. More than five years ago

**36. Where was the last time you were screened by a healthcare provider for the cervical cancer? \_\_\_\_\_**

**37. If you never had screening, why?(Don't read the options below, check all answers)**

- 1. It may be painful
- 2. I feel shy
- 3. I am healthy

4. My husband would not agree
5. I am afraid a screening test would reveal cervical cancer
6. The screening is expensive
7. I am not informed/knowledge
8. I haven't just decided
9. The healthcare facility is far from the place I live
10. The healthcare facility that I visit most frequently does not provide screening services
11. I cannot afford the financial costs of cervical cancer screening.
12. Other → Please specify \_\_\_\_\_
77. Refuses to answer

**38. Does the hospital/primary healthcare facility that you most frequently visit provide cervical cancer screening services?**

1. Yes
0. No
77. Don't Know/Refuse to answer

**39. Did your primary healthcare provider (such as your General Practitioner (GP) or your family physician) ever advised you to screen for cervical cancer?**

1. Yes
0. No
77. Don't Know/Refuse to answer

**40. Did your gynecologist have at least once advised you to screen for cervical cancer?**

1. Yes
0. No
77. Don't Know/Refuse to answer

**41. Have you ever asked your healthcare provider if s/he provides cervical cancer screening services?**

1. Yes
0. No

**42. Do you also use service from Government Hospital, Tirukalukundram for your treatment services?**

1. Yes
0. No

***Section E: Socio-economic status***

***Instructions: Please answer the following questions regarding socio-economic conditions of your family***

**43. What is your current employment status?**

1. Employed
2. Unemployed

**44. What was the highest level of education your mother has attained?**

1. No education/illiterate → skip to 46
2. Primary education (1-5 years) → skip to 46
3. Middle-school education (6-8 years) → skip to 46
4. Secondary education (9-10 years) → skip to 46
5. Higher secondary education (11-12 years) → skip to 46
6. Undergraduate
7. Graduate/Post graduate

**45. If educated (under/post/graduate), did your mother studied in biological/ health related courses?**

1. Yes
0. No

**46. What is the current employment status of your mother?**

1. Employed
2. Unemployed
3. Retired
4. Others → Please Specify \_\_\_\_\_

**47. What was the highest level of education your father has attained?**

1. No education/illiterate → skip to 49
2. Primary education (1-5 years) → skip to 49
3. Middle-school education (6-8 years) → skip to 49
4. Secondary education (9-10 years) → skip to 49

5. Higher secondary education (11-12 years) → skip to 49
6. Undergraduate
7. Graduate/Post graduate

**48. If educated (under/post/graduate), did your father studied in biological/health related courses?**

1. Yes
1. No

**49. What is your current employment status of your father?**

1. Employed
2. Unemployed
3. Retired
4. Others → Please Specify \_\_\_\_\_

**50. What is your family annual income?**

1. 1000 to 33000 INR
2. 33001 to 55000 INR
3. 55001 to 88800 INR
4. 88801 to 150,000 INR
5. above 150,000 INR

**Thank you for your participation.**

**End Time (hh/mm) \_\_\_\_\_**

கேள்வித் தாள்(தமிழ்)

பரிசோதனை கேள்விகள்:

1. உங்களுடைய வயது என்ன? \_\_\_\_\_
2. நீங்கள் எந்த பஞ்சாயத்தில் வசிக்கிறீர்கள்? \_\_\_\_\_
3. உங்களுடைய தாய் மொழி எது? \_\_\_\_\_

பின்வரும் கேள்விகளில் ஏதேனும் ஒன்றிற்கு “ஆம்” என்ற பதில் இருந்தால், பங்கேற்பாளருக்கு நன்றி கூறி நேர்காணலை முடிக்கவும்.

4. நீங்கள் கர்ப்பப்பை நீக்கம் அறுவை சிகிச்சை செய்து உள்ளீர்களா?

- ஆம்  
இல்லை

5. உங்களுக்கு கர்ப்பப்பை வாய்ப்புற்றுநோய் உள்ளது என்பது பரிசோதனை மூலம் கண்டறியப்பட்டுள்ளதா?

- ஆம்  
இல்லை

ஆர்மேனிய அமெரிக்கன் பல்சுலைக்கழகம்

ஜெரால்ட் மற்றும் பாட்ரிசியா துர்பான்ஜியன் பொது சுகாதாரப் பள்ளி

ஆராய்ச்சி திட்டத்தின்தலைப்பு:

இந்தியாவின் காஞ்சிபுரம் மாவட்டத்தில் கிராமப்புற பெண்கள் மத்தியில் கர்ப்பப்பை வாய்ப்புற்றுநோய் மற்றும் பரிசோதனை பற்றிய அறிவு, அணுகுமுறை மற்றும் பழக்க வழக்கங்கள்: ஒரு குறுக்கு வெட்டு ஆய்வு.

அடையாள எண்: \_\_\_\_\_ ஆரம்பிக்கும் நேரம் (hh:mm) \_\_\_\_\_

தேதி (MM/DD/YY) \_\_\_\_/\_\_\_\_/\_\_\_\_

பிரிவுஅ: மக்கள்தொகையில் தகவல்

1. தங்களின்வயது என்ன? \_\_\_\_\_
2. தாங்கள் வசிக்கும் பஞ்சாயத்து எது? \_\_\_\_\_
3. தங்களின்மிகஉயர்ந்தகல்வி நிலை? \_\_\_\_\_
  1. கல்வி பயின்றதில்லை /  
படிப்பறிவில்லை→என்றால்5க்குசெல்லவும்
  2. ஆரம்பக் கல்வி (1-5 வகுப்பு)→என்றால்5க்குசெல்லவும்
  3. நடுநிலைப்பள்ளி (6-8 வகுப்பு)→என்றால்5க்குசெல்லவும்
  4. உயர்நிலைப்பள்ளி(9-10 வகுப்பு)→என்றால்5க்குசெல்லவும்
  5. மேல்நிலைப்பள்ளி(11-12 வகுப்பு)→என்றால்5க்குசெல்லவும்
  6. இளங்கலை பட்டப்படிப்பு
  7. முதுகலை பட்டப்படிப்பு
4. நீங்கள் படித்தவர் (இளங்கலை பட்டம்/முதுகலை பட்டம்)  
என்றால் உங்கள் கல்வி உயிரியல் / சுகாதாரம் சார்ந்த  
துறையா?
  1. ஆம்
  0. இல்லை
5. தங்களின் திருமணநிலை என்ன?
  1. மணமாகாதவர்
  2. திருமணமானவர்
  3. விவாகரத்து பெற்றவர்



4. விதவை

6. நீங்கள் எந்த மதத்தைச் சார்ந்தவர்?

1. இந்து மதம்
2. இசுலாமிய மதம்
3. கிறிஸ்தவ மதம்
4. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

7. உங்கள் குடும்பத்தில் (தந்தை, தாய், தாத்தா, பாட்டி, உடன்பிறந்தவர்கள், குழந்தைகள்) உள்ள எவருக்கேனும் புற்றுநோய் உள்ளது என்று கண்டறியப்பட்டுள்ளதா?

0. ஆம்
0. இல்லை→என்றால்9க்குசெல்லவும்

8. உங்கள் குடும்பத்தில் (தாய், பாட்டி, சகோதரிகள், மற்றும் மகங்கள்) உள்ள எவருக்கேனும் கர்ப்பப்பை வாய் புற்றுநோய் உள்ளது என்று கண்டறியப்பட்டுள்ளதா?

1. ஆம்
0. இல்லை

9. இதற்கு முன் எப்போதாவது கர்ப்பம் தரித்து உள்ளீர்களா?

1. ஆம்
0. இல்லை →என்றால்14க்குசெல்லவும்

10. உயிருடன் பிறந்த குழந்தை எண்ணிக்கை எத்தனை?\_\_\_\_\_ (இல்லை என்றால் '0'எழுதவும்)

11. எத்தனை முறை கருகலைப்பு செய்து உள்ளீர்கள்?

\_\_\_\_\_ (இல்லை என்றால் '0'எழுதவும்)

12. எத்தனை முறை கருசிதைப்பு செய்து உள்ளீர்கள்?

\_\_\_\_\_ (இல்லை என்றால் '0'எழுதவும்)

13. தங்களுக்கு இப்போது எத்தனை குழந்தைகள் இருக்கிறார்கள்?

\_\_\_\_\_ (இல்லை என்றால் '0'எழுதவும்)

**பிரிவு ஆ: கர்ப்பப்பைவாய்ப்புற்றுநோய்பற்றி**

**வழிமுறைகள்:பின்வரும் கேள்விகள் கர்ப்பப்பைவாய்ப்புற்றுநோய்மற்றும் அதன்பரிசோதனைமுறைகளைபற்றிநீங்கள் அறிந்ததை தெரிந்து கொள்வதற்காக.**

14. கர்ப்பப்பைவாய்ப்புற்றுநோய்பற்றிநீங்கள் எப்போதாவது கேள்விப்பட்டிருக்கிறீர்களா?

1. ஆம்

0. இல்லை → என்றால் 26 க்கு செல்லவும்

15. கர்ப்பப்பைவாய்ப்புற்றுநோயைப்பற்றிமுதலில் எங்கே தெரிந்துகொண்டீர்கள்? (பதில்களை படிக்கவேண்டாம், விடைகளை மட்டும் குறிப்பிடவும்)

1. செய்திஊடகங்கள்

2. பிரசுரங்கள், சுவரொட்டிகள் மற்றும் பிற அச்சிடப்பட்ட பொருட்கள்

3. சுகாதார தொழிலாளர்கள்

4. குடும்பம், நண்பர்கள், அக்கம்பக்கத்தில் உள்ளவர்கள் மற்றும் உடன்பணியாற்றுபவர்கள்

5. மதத்தலைவர்கள்

6. ஆசிரியர்கள்

7. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

16. கர்ப்பப்பைவாய்ப்புற்றுநோயின் அறிகுறிகள் யாவை?(பதில்களை படிக்கவேண்டாம், விடைகளை மட்டும் குறிப்பிடவும்)

1. பெண் இனப்பெருக்க உறுப்பில் இரத்தப் போக்கு  
இரத்தப்போக்கு

2. துர் நாற்றத்துடன் கூடிய வெள்ளை படுதல்

3. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

77. எனக்குதெரியாது / நினைவில்இல்லை

17. கர்ப்பப்பைவாய்ப்புற்று ஆபத்து காரணிகள் யாவை?(பதில்களை படிக்கவேண்டாம், விடைகளை மட்டும் குறிப்பிடவும்)

1. பலருடன்பாலியல்உடலுறவுகொள்ளுதல்

2. சிறுவயதில்பாலியல்உடலுறவு கொள்ளுதல்

3. ஹூயூமன் பாபிலோமா வைரஸால் பாதிக்கபடுதல்

4. புகைபிடித்தல்

5. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

77. எனக்குதெரியாது / நினைவில்இல்லை

18. ஒருவர்கர்ப்பப்பைவாய்ப்புற்று நோயைப் பெறாமல் எவ்வாறு தடுக்கமுடியும்? (பதில்களை படிக்கவேண்டாம், விடைகளை மட்டும் குறிப்பிடவும்)

1. பலருடன்பாலியல்உடலுறவுதவிர்க்கவும்

2. சிறுவயதில்பாலியல்உடலுறவுதவிர்க்கவும்

3. புகை பழக்கத்தை கை விடுதல்

4. HPV தடுப்பூசிபோடுவதன் மூலம்

5. பாபனிக்கோலோசோதனை (PAP சோதனை)

6. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

77. எனக்குதெரியாது / நினைவில்இல்லை

19. கர்ப்பப்பைவாய்ப்புற்றுநோயைஅதன் ஆரம்பகட்டங்களில்குணப் படுத்தமுடியுமா?

1. ஆம்

0. இல்லை

77. தெரியவில்லை

20. கர்ப்பப்பை வாய் புற்றுநோயால் பாதிக்க பட்ட ஒருவருக்கு எவ்வாறு சிகிச்சை அளிக்கப்படுகிறது? (பதில்களை படிக்கவேண்டாம், விடைகளை மட்டும் குறிப்பிடவும்)

1. மூலிகைமருந்துகள்

2. அறுவைசிகிச்சை

3. மருத்துவர் ஆலோசனைப்படி வழங்கப்படும் மருந்துகள்

4. கதிரியக்கசிகிச்சை

5. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

77. எனக்குதெரியாது / நினைவில்இல்லை

21. இந்தநாட்டில்கருப்பைவாய்ப்புற்றுநோயைசரிசெய்யஎவ்வளவுசெ லவாகும்என்றுநினைக்கிறீர்கள்?(பதில்களை படிக்கவேண்டாம், ஏதேனும் ஒன்றை குறிப்பிடுக)

1. இதுஇலவசமே

2. இதுநியாயமானவிலை

3. இதுஓரளவு / மிதமானவிலை

4. இதுமிகவும்விலைஉயர்ந்தது

5. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

77. எனக்குதெரியாது / நினைவில்இல்லை

22. கர்ப்பப்பைவாய்ப்புற்றுநோய்க்கு முந்தைய நிலை கண்டறியபரிசோதனைமுறைஉள்ளதா?

1. ஆம்
0. இல்லை→என்றால்26 க்குசெல்

23. கர்ப்பப்பைவாய்ப்புற்றுநோயை ஆரம்ப நிலையிலே கண்டறியஎத்தனைமுறைபரிசோதனை செய்யப்படுகிறது??(பதில்களை படிக்கவும், ஏதேனும் ஒன்றை குறிப்பிடுக)

1. ஆண்டுக்கு ஒரு முறை
2. ஒவ்வொருமூன்றுஆண்டுகளுக்குஒருமுறை
3. ஒவ்வொரு 5 ஆண்டுகளுக்குஒருமுறை
77. எனக்குதெரியாது / நினைவில்இல்லை

24. யாரெல்லாம் பரிசோதனைக்கு உட்படுத்தப்பட வேண்டும்?(பதில்களை படிக்கவும், ஏதேனும் ஒன்றை குறிப்பிடுக)

1. 20 வயதுக்கும்குறைவாகஉள்ளபெண்கள்
2. 21 வயதுமுதல் 65 வயதுவரைஉள்ளபெண்கள்
3. 65 வயதுக்குமேற்பட்டபெண்கள்
4. மற்றவை→தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

25. கர்ப்பப்பைவாய்ப்புற்றுநோய்க்கானபின்வரும்பரிசோதனைமுறைகள்பற்றிநீங்கள்கேள்விப்பட்டிருக்கிறீர்களா?(பதில்களை படிக்கவும், விடைகளை குறிப்பிடவும்)

1. அசிட்டிக்அமிலத்தின்பரிசோதனைஆய்வு (VIA)
2. லுகோல்அயோடினின்பரிசோதனைஆய்வு (VILI)
3. பாப்ஸ்மியர் டெஸ்ட்

4. மற்றவை→தயவுசெய்துகுறிப்பிடவும் \_\_\_\_\_
77. எனக்குதெரியாது / நினைவில்இல்லை

**பிரிவுஇ:** கர்ப்பப்பைவாய்ப்புற்றுநோயின்மனப்பான்மை  
 வழிமுறைகள்:கர்ப்பப்பைவாய்ப்புற்றுநோய்மற்றும்அதன்பரிசோதனை  
 முறைகள்பற்றிநீங்கள்எந்தஅளவிற்குஏற்றுக்கொள்கிறீர்கள்அல்லது  
 ஏற்றுக்கொள்ளவில்லைஎன்பதைகீழேகொடுக்கப்பட்டுள்ளஅறிக்கை  
 கள்மூலம்விவரிக்கவும்:  
 (வலுவாகஏற்றுக்கொள்கிறேன், ஏற்றுக்கொள்கிறேன், ஏற்கவும் இல்லை  
 நிராகரிக்கவும் இல்லை, நிராகரிக்கிறேன்  
 மற்றும்வலுவாகநிராகரிக்கிறேன்)

அறிக்கை	வலுவாகஏற்றுக்கொள்கிறேன்	ஏற்றுக்கொள்கிறேன்	ஏற்கவும் இல்லை நிராகரிக்கவும் இல்லை	நிராகரிக்கிறேன்	வலுவாக நிராகரிக்கிறேன்
26. கர்ப்பப்பைவாய்ப்புற்று நோய்மரணத்திற்குவழி வகுக்கும்	4	3	2	1	0
27. நீங்கள் உட்பட எந்த வயது முதிர்ந்தபெண்ணிற் கு வேண்டுமானாலும்	4	3	2	1	0

கர்ப்பப்பைவாய்ப்புற்றுநோய் வரலாம்?					
28. கர்ப்பப்பைவாய்ப்புற்றுநோய்ஒருவரிடமிருந்துமற்றொருவருக்குபரவாது	4	3	2	1	0
29. ஆரம்பகால பரிசோதனைகர்ப்பப்பைவாய்ப்புற்றுநோயில் இருந்து பாதுகாக்கும்	4	3	2	1	0
30. பரிசோதனைவாடிக் கையாளருக்குள்வ்விதஆபத்தையும் உண்டாக்காது	4	3	2	1	0
31. கர்ப்பப்பை வாய்ப்புற்றுநோய்க்கு முந்தைய நிலையை கண்டறிய செய்யப்படும் ஆரம்பகால பரிசோதனைக்கு மிகவும் குறைந்த செலவே ஆகும்	4	3	2	1	0

32. ஆரம்ப கால பரிசோதனைஇலவச மாகவும், எளிதான வாய்ப்புடன் நடத்தப்பட்டால்நீங்க ள்பரிசோதனைசெய் துகொள்ளவேண்டும் என்றுநம்புகிறீர்களா	4	3	2	1	0
--	---	---	---	---	---

**பிரிவு A: கர்ப்பப்பைவாய்ப்பு புற்றுநோய்பரிசோதனை சார்ந்த பழக்க வழக்கங்கள்**

**வழிமுறைகள்: கர்ப்பப்பைவாய்ப்பு புற்றுநோயை தடுப்பதற்கு நீங்கள் எடுத்துக்கொண்ட முன்னெச்சரிக்கை நடவடிக்கைகள் பற்றியும் பரிசோதனை அணுகுமுறைகள் பற்றியும் பின்வரும் கேள்விகளுக்கு பதிலளிக்கவும்.**

33. கர்ப்பப்பைவாய்ப்பு புற்றுநோய் கண்டறிய தாங்கள் இதற்கு முன் எப்போதாவது பரிசோதனை செய்யப்பட்டு உள்ளீர்களா?

1. ஆம்
0. இல்லை → என்றால் 37 க்கு செல்வும்

34. ஆம் என்றால், நீங்கள் பாலியல் உடலுறவு கொள்ள ஆரம்பித்ததில் இருந்து எத்தனை முறை? \_\_\_\_\_

35. நீங்கள் கர்ப்பப்பைவாய்ப்பு புற்றுநோய்க்கான பரிசோதனைகளை சரியாக எப்போது செய்தீர்கள்? (பதில்களை படிக்கவும், ஏதேனும் ஒன்றை குறிப்பிடுக)



1. கடந்தமூன்றுஆண்டுகளில்
2. கடந்தஐந்துஆண்டுகளில்
3. ஐந்து ஆண்டுகளுக்குமுன்பு

36. கடைசியாநீங்கள்எங்கே, ஒருசுகாதாரப் பணியாளர்களால்பரிசோதிக்கப்பட்டீர்கள்?\_\_\_\_\_

\_\_\_\_\_

37. இதுவரைஒருபோதும்பரிசோதிக்கவில்லை எனில், ஏன்?

1. வலி மிகுந்த பரிசோதனையாக இருக்கலாம்
2. எனக்கு கூச்சமாக இருக்கும் என்பதினால்
3. என் உடல் நிலை ஆரோக்கியமாக உள்ளது
4. என்கணவர்ஏற்றுக்கொள்ளமாட்டார்
5. பரிசோதனை முடிவு,கர்ப்பப்பை வாய் புற்றுநோய் உள்ளது என்று காட்டிவிடும் என்ற அச்சப்படுகிறேன்
6. பரிசோதனைவிலைஉயர்ந்தது
7. எனக்குபரிசோதனைபற்றியாரும்சொல்லவில்லை / அறிவுஇல்லை
8. நான்இதை குறித்து இன்னும் முடிவுசெய்யவில்லை
9. மருத்துவமனைநான்வசிக்கும்இடத்திலிருந்துவெகுதூரமாகஉள்ளது
10. நான்அடிக்கடிசெல்லும் மருத்துவமனையில்பரிசோதனைசேவைகளைவழங்குவதில்லை
11. கர்ப்பப்பைவாய்ப்புற்றுநோயின்பரிசோதனையைசெய்யஎனக்கு போதுமானபணவசதிஇல்லை.
12. மற்றவை →தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_
77. பதில்சொல்லவிருப்பம்இல்லை

38. நீங்கள் அடிக்கடி செல்லும் மருத்துவமனை /

ஆரம்ப சுகாதாரமையத்தில் கர்ப்பப்பைவாய்ப்புற்றுநோயை பரிசோதனை செய்ய வசதி உள்ளதா?

1. ஆம்

0. இல்லை

77. தெரியாது / பதில் சொல்ல விருப்பம் இல்லை

39. உங்களுடைய ஆரம்ப சுகாதார மருத்துவ பணியாளர் (பொது

மருத்துவர் அல்லது குடும்ப மருத்துவர்)

குறைந்தபட்சம் ஒரு முறையாவது கர்ப்பப்பைவாய்ப்புற்றுநோய் பரிசோதனைக்கு ஆலோசனை கூறியிருக்கிறாரா?

1. ஆம்

0. இல்லை

77. எனக்கு தெரியாது / நினைவில் இல்லை

40. உங்களுடைய மகப்பேறு மருத்துவர்குறைந்தபட்சம் ஒரு முறையாவது

கர்ப்பப்பைவாய்ப்புற்றுநோய் ஆரம்ப கால

பரிசோதனைக்கு ஆலோசனை கூறியிருக்கிறாரா?

1. ஆம்

0. இல்லை

77. எனக்கு தெரியாது / நினைவில் இல்லை

41. உங்கள் மருத்துவரிடம்

கர்ப்பப்பைவாய்ப்புற்றுநோய்க்கான பரிசோதிப்பு சேவைகளை வழங்குகிறாரா என நீங்கள் எப்போதாவது கேட்டிருக்கிறீர்களா?

1. ஆம்

0. இல்லை

42. உங்கள் சிகிச்சைக்காக திருக்கமுகுன்றம் அரசு மருத்துவமனை சேவையையும் பயன்படுத்துவீர்களா?

1. ஆம்
0. இல்லை

பிரிவு உ: சமூக பொருளாதார நிலை

*வழிமுறைகள்:* உங்கள் குடும்பத்தின் சமூக-பொருளாதார நிலைமைகள் குறித்த பின்வரும் கேள்விகளுக்குப் பதிலளிக்கவும்

43. தங்களின் தற்போதைய தொழில் என்ன?

1. ஊழியர்
2. வேலையற்றோர்

44. உங்கள்தாயின் மிகஉயர்ந்தகல்வி நிலைஎன்ன?

1. கல்வி பயின்றதில்லை/ படிப்பறிவில்லை → என்றால் 8க்குசெல்லவும்
2. ஆரம்பக் கல்வி (1-5 வகுப்பு) → என்றால் 46க்குசெல்லவும்
3. நடுநிலைப்பள்ளி(6-8 வகுப்பு) → என்றால் 46க்குசெல்லவும்
4. உயர்நிலைப்பள்ளி(9-10 வகுப்பு) → என்றால் 46க்குசெல்லவும்
5. மேல்நிலைப்பள்ளி (11-12 வகுப்பு) → என்றால் 46க்குசெல்லவும்
6. இளங்கலை பட்டப்படிப்பு
7. முதுகலை பட்டப்படிப்பு

45. உங்கள் தாயார் படித்தவர் (இளங்கலை பட்டம் / முதுகலை பட்டம்) என்றால் அவர்களின் கல்வி உயிரியல் / சுகாதாரம் சார்ந்த துறையா?

1. ஆம்
0. இல்லை

46. உங்கள் தாய்என்ன தொழில் செய்கிறார்?

1. ஊழியர்
2. வேலையற்றோர்
3. ஓய்வுபெற்றோர்
4. மற்றவை →தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

47. உங்கள்தந்தையின்மிகஉயர்ந்தகல்விநிலைஎன்ன?

1. கல்வி பயின்றதில்லை /  
படிப்பறிவில்லை→என்றால்49க்குசெல்லவும்
2. ஆரம்பக் கல்வி (1-5 வகுப்பு) →என்றால்49க்குசெல்லவும்
3. நடுநிலைப்பள்ளி (6-8 வகுப்பு) →என்றால்49க்குசெல்லவும்
4. உயர்நிலைப்பள்ளி (9-10 வகுப்பு) →என்றால்49க்குசெல்லவும்
5. மேல்நிலைப்பள்ளி (11-12 வகுப்பு) →என்றால்49க்குசெல்லவும்
6. இளங்கலை பட்டப்படிப்பு
7. முதுகலை பட்டப்படிப்பு

48. உங்கள் தந்தை படித்தவர் (இளங்கலை பட்டம் /முதுகலை பட்டம்)என்றால் அவர்களின்கல்வி உயிரியல் / சுகாதாரம் சார்ந்த துறையா?

1. ஆம்
1. இல்லை

49. உங்கள்தந்தை என்னதொழில்செய்கிறார்?

1. ஊழியர்
2. வேலையற்றோர்
3. ஓய்வுபெற்றோர்
4. மற்றவை →தயவுசெய்துகுறிப்பிடவும்\_\_\_\_\_

50. குடும்பவருடாந்திரவருமானம்:

1. 1000 முதல் 33000 ரூபாய் வரை
2. 33001 முதல் 55000 ரூபாய் வரை
3. 55001 முதல் 88800 ரூபாய் வரை
4. 88801 முதல் 150,000 ரூபாய் வரை
5. 150,000 ரூபாய் க்குமேல்

தங்கள்பங்கேற்புக்குநன்றி.

முடிவு நேரம்(hh:mm) \_\_\_\_\_

**Appendix 2: Verbal Consent form (English version)**

**American University of Armenia**

**Gerald and Patricia Turpanjian School of Public Health**

**Institutional Review Board #1**

**Principle Investigator:** Arin A. Balalian

**Co-Investigators:** Nune Truzyan

Zaruhi Grigoryan

**Student Investigator:** Karthiga Vasudevan

Title of Research Project: *Knowledge, Attitude and Practice on Cervical Cancer and Screening among Women living in Tirukalukundram, Kancheepuram District, India: a cross-sectional survey*

Hello, my name is Karthiga Vasudevan, I am a graduate student at Gerald and Patricia Turpanjian School of Public Health at the American University of Armenia and medical student at Yerevan State Medical University. As a part of my thesis project along with my advising team, I am conducting a study to investigate the knowledge, attitude, and practice regarding cervical cancer and its screening methods among women in Kancheepuram District.

You are one of the 382 participants selected for the study as you are taking service from the K.R hospital, Tirukalukundram. If you agree to participate in this study, you will take part in one-time interview and I will be asking you several questions about your knowledge of cervical cancer and your practice regarding screening procedures for the disease prevention. You will not be obligated to read or write anything. This interview will require about 15-20 minutes of your time.

There are no physical risks to participating in this study. And this study will not benefit you personally, but we hope that our results will be helpful to understand on how to improve the practice on cervical cancer screening to prevent this disease among women residing in Tirukalukundram, Kancheepuram district. Your participation in this study is voluntary.

You may refuse to participate or to answer any question that you do not want to answer, and you can end your participation at any time for any reason. Refusing to participate will involve no penalty or loss of benefits from the study and whether or not participating in the study will not affect your future treatment services at the K.R hospital, Tirukalukundram.

All of your responses will be confidential and only research team can access the data provided by you. No identifiable information will be collected and only general findings will be presented in the final report.

If you have any question about the study or you feel you have been not treated fairly/think you have been hurt by joining this study, please contact Dr. Arumugam (for Tamil language), Head of the K.R hospitals, at Tirukalukundram calling (+91 90 438 73 420) and for the further information please contact Arin Balalian, principal investigator of the study by contacting [arinbalalian@gmail.com](mailto:arinbalalian@gmail.com) (English language), and Varduhi Hayrumyan AUA Human participants protection administrator by emailing [AUAIRB@aua.am](mailto:AUAIRB@aua.am) (English language).

If you agree to participate, could we continue?

Thank you for your participation

இணைப்பு 2: வாய்மொழிஒப்புதல்வடிவம் (தமிழ்பதிப்பு)

ஆர்மேனியஅமெரிக்கன்பல்கலைக்கழகம்

ஜெரால்ட் மற்றும் பாட்ரிசியா துர்பான்ஜியன் பொது சுகாதாரப் பள்ளி

நிறுவனமதிப்பாய்வுரைவாரியம் # 1

முதன்மைஆராய்ச்சியாளர்: அரின்அ. பலலியன்

இணை-ஆராய்ச்சியாளர்கள்: நுனே த்ருழ்யன்

சருஹி க்ரிகோர்யன்

ஆராய்ச்சி மாணவர்: கார்த்திகா வாசுதேவன்

ஆராய்ச்சிதிட்டத்தின்தலைப்பு:

இந்தியாவின்காஞ்சிபுரம்மாவட்டத்தில்கிராமப்புறபெண்கள்மத்தியில்கர்ப்பப்  
பைவாய்ப்புற்றுநோய்மற்றும்பரிசோதனைபற்றியஅறிவு,  
அணுகுமுறைமற்றும்பயிற்சி: ஒருகுறுக்குவெட்டுஆய்வு.

வணக்கம் .என் பெயர் கார்த்திகா வாசுதேவன் .நான்ஆர்மேனியா

நாட்டில் உள்ள மருத்துவ கல்லூரியில் மருத்துவம் படிக்கிறேன்,

மேலும்ஆர்மேனியஅமெரிக்கன்பல்கலைக்கழக

ஜெரால்ட்மற்றும்பாட்ரிசியாதுர்பான்ஜியன்பொதுசுகாதாரப்பள்ளியில்

முதுகலைப்பட்ட படிப்பு பயில்கிறேன் .

எனதுஆய்வுதிட்டத்தின்ஒருபகுதியாக,

காஞ்சிபுரம்மாவட்டத்தில்கிராமப்புறபெண்களுக்குகர்ப்பப்பைவாய்ப்புற்று

நோய்மற்றும்அதன்பரிசோதனைமுறைகளைபற்றியஅறிவு,

அணுகுமுறைமற்றும்நடைமுறைபற்றிஎந்த அளவிற்கு அவர்கள் தெரிந்து

வைத்திருக்கிறார்கள் என்பதை அறிய என் ஆலோசனை குழுவுடன் சேர்ந்து ஒரு

ஆராய்ச்சி நடத்துகிறேன்

நீங்கள்திருக்கமுக்குன்றம்கேஆர்.மருத்துவமனையிலிருந்துசேவைபெற்று

க்கொண்டிருப்பதால்இந்த ஆய்வில் தேர்வாகி பங்குபெறும் 382



பேர்களில் நீங்களும் ஒருவர். இந்த ஆய்வில் பங்குபெற நீங்கள் விரும்பும் பட்சத்தில், நீங்கள் ஒரு முறை நடத்த படும் நேர்காணல் பேட்டியில் பங்கு பெறுவீர்கள். இதில் கர்ப்பப்பைவாய்ப்புற்றுநோய்பற்றிநீங்கள் தெரிந்துவைத்திருப்பதை பற்றியும், நீங்கள் இந்த நோயை தடுக்கும் பரிசோதனை சார்ந்த உங்களது பழக்க வழக்கங்கள் பற்றியும் உங்களிடம் நிறைய கேள்விகள் கேட்க உள்ளேன். எதையும் படிக்கவோ எழுதவோ அவசியம் இல்லை. இந்த நேர்காணலுக்கு நீங்கள் நிமிடங்கள் ஒதுக்கினால் போதுமானது 20 - 15

இந்த ஆய்வில் பங்கேற்பதனால் உங்களுக்கு உடல் ரீதியாக எந்த தீங்கும் இல்லை. இந்த ஆய்வு தனிப்பட்ட முறையில் எந்த ஒரு பயனும் அளிக்காது.

ஆனால் இதில் நீங்கள் பங்கேற்பதன் மூலம் உங்களுக்கு கர்ப்பப்பைவாய்ப்புற்றுநோய் மற்றும் அதன் பரிசோதனை முறைகளை பற்றி கிராமப்புற பெண்கள் தெரிந்துவைப்பதை அறிந்துகொண்டு அந்த நோயை தடுக்கும் வழிமுறைகளை மேம்படுத்த என்ன நடவடிக்கைகள் எடுக்கலாம் என்பது பற்றி நாங்கள் தெரிந்து கொள்ளலாம். இந்த ஆராய்ச்சியில் பங்கேற்பது உங்கள் சுய விருப்பம் சார்ந்தது.

நேர்காணலில் நீங்கள் பங்கு பெற மறுக்கலாம் அல்லது நேர்காணலின் இடையில் கேட்கப்படும் சில கேள்விகளை தவிர்க்கலாம் மற்றும் நேர்காணலை எந்த நேரத்திலும் எந்த காரணத்திற்காகவும் , நிறுத்திக்கொள்ளலாம்

இந்த ஆய்வில் பங்கேற்க மறுப்பதனால் உங்களுக்கு எந்தவித அபராதமோ , அல்லது நன்மைகள் இழப்போ கிடையாது. இதில் நீங்கள் பங்கேற்ப மறுப்பதனால் திருக்கழுக்குன்றம் கேஆர். மருத்துவ

மனையிலிருந்துநீங்கள்பெரும்எதிர்காலசிகிச்சைக்குஎந்தஒருபாதிப்பும்வராது.

இதில்நீங்கள்கூறும்விவரங்கள்அனைத்தும்பெயரில்லாதஒருவர்கூறியதாகவேபதியப்படும், ரகசியமாவேஇருக்கும்மற்றும் ஆய்வு குழு மட்டுமே புள்ளி விவரங்களை அணுக முடியும்.

எனவேஇதில்உங்கள்பெயரோஅல்லதுஉங்கள்முகவரியோதேவைப்படாது . உங்கள்பதில்கள்அனைத்தையும்ஆராய்ந்துஒருபொதுவானஇறுதி அறிக்கையில் வெளியிடப்படும்.

இந்தஆய்வுபற்றியஉங்களுக்கு சந்தேகங்கள் இருந்தாலோ ,அல்லது இந்தஆய்வில்உங்களையாரேனும்மனம்நோகும்படிநடத்திருந்தாலோ/நியாயமற்ற முறையில் நடத்தினாலோ நீங்கள் கேஆர் மருத்துவமனை . தலைமைமருத்தவரான, டாக்டர் ஆறுமுகம்அவர்களை (தமிழ் மொழியில்)தொடர்பு கொள்ளலாம் (90438 73420) மேலும் விபரம் அறிய முதன்மைஆராய்ச்சியாளர் அரின் பலலியானை (ஆங்கில மொழியில்)[arinbalalian@gmail.com](mailto:arinbalalian@gmail.com) என்ற மின் அஞ்சலுக்கு தொடர்புகொள்ளவும்மற்றும் ஆர்மீனியாவின்அமெரிக்கபல்கலைக்கழகத்தில்மனிதவளபாதுகாப்புநிர்வாகியானவர்ஓஹி ஹய்ரும்யன் (ஆங்கில மொழியில்)அவர்களைஇந்தமின் அஞ்சல் [AUAIRB@aua.am](mailto:AUAIRB@aua.am)மூலம் தொடர்புகொள்ளலாம்.

நீங்கள்இதில்கலந்துகொள்ளஒப்புக்கொண்டால், நாம்தொடரலாமா? தங்கள்பங்கேற்புக்குநன்றி.



**Appendix 4: Association of knowledge and practice on cervical cancer (Dagitty model)**

