

# Psychosocial burden differences between women of reproductive age and menopausal age due to abnormal Pap smear: A pilot study of the East Coast of Malaysia

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**ABSTRACT**

**Introduction:** Women with abnormal Pap smear results are facing psychosocial problems such as fear, anxiety, mental stress, and defaulted follow-ups. This study aims to identify psychosocial burden differences in mean score between reproductive age group and menopausal age group women with abnormal Pap smear results.

**Materials and Methods:** A total of seventy women with abnormal Pap smear results were recruited from three Ministry of Health, Tertiary Hospital on the East Coast of Malaysia (Kuala Terengganu, Kota Bharu, and Kuantan). The self-administered PEAPS-Q-14 questionnaire was answered by the participants and data were analyzed using descriptive and independent *t*-test.

**Results:** Mean age of respondents was 44.79; the majority were Malays (84.3%) and Muslims (88.6%). Only two domains are significant differences between the age groups of <45 years and more than 45 years. These two significant domains are beliefs, feelings, and changes in perception of self (*P* < 0.003), and worry about human papillomavirus (HPV) infectivity (*P* < 0.005).

**Conclusion:** Psychosocial burden due to abnormal Pap smear results in terms of mental stress, overwhelming beliefs, and feelings of guilt and worry of HPV infection and possibility of cervical cancer were noted more in reproductive age groups as compared to the menopausal age group. Health-care providers should be aware of these psychosocial effects whereby they can refer such patients to a gynecologic oncologist for proper counseling at the proper time so that the negative impact due to this psychosocial burden can be prevented.

**Key words:** Abnormal Pap smear, psychosocial burden, women’s health

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**How to cite this article:** Sheikh SA, Mansor M, Haque M. Psychosocial burden differences between women of reproductive age and menopausal age due to abnormal Pap smear: A pilot study of the East Coast of Malaysia. Arch Pharma Pract 2016;7:95-102.

Access this article online	
Quick Response Code: 	Website: www.archivepp.com
	DOI: 10.4103/2045-080X.186174

## INTRODUCTION

Cervical cancer is the second most common cancer among women worldwide and it has a significant impact on the lives of women particularly those in developing countries such as Malaysia.<sup>[1]</sup> Pap smear is a screening tool to detect the precancerous changes in the cells desquamated from the cervix. Call and recall system of Pap smear procedure was influenced by the marital status of women, counseling by health-care providers who must focus on women's previous experience with the Pap smear procedure, their beliefs, and perceptions about the Pap smear.<sup>[2]</sup> Abnormal Pap smear is caused by infection with human papillomavirus (HPV), which is a recognized cause of cervical cancer, and this virus is acquired by sexual transmission.<sup>[3]</sup> Two most common predisposing factors have been noted in women with cervical cancer are early sexual activities and having multiple sex partners.<sup>[4]</sup> Other factors associated with increased risk of this HPV infection are increasing age, high viral load, and a low socioeconomic status.<sup>[5]</sup> In Malaysia, the Pap smear procedure is conducted at health clinics and depending on the result the patient is referred for colposcopy. Colposcopy is the examination of the lower genital tract and cervix using magnification from a colposcope from a real light source which allows the directed biopsy, accurate diagnosis, localization, and grading of cervical intraepithelial neoplasia.<sup>[6,7]</sup> Colposcopy is a quick and safe investigation, however, may be associated with complications such as bleeding and infection. A study revealed that the women who needed colposcopy procedure had apprehension, feeling scared, and embarrassed.<sup>[8]</sup> Therefore, health-care givers must give a proper explanation for taking consent.

A diverse nature of psychosocial effects was noted in women with abnormal Pap smear such as shock, anxiety, depression, fear, self-blame, hopelessness, and rage which is also influenced by other factors such as lower socioeconomic status, unable to understand thoroughly the information given about the Pap smear results, and thinking themselves in a higher risk of cervical cancer.<sup>[4,9,10]</sup> Furthermore, these women subsequently developed traumatic emotional experiences such as the impact on relationships and intimacy with their partners to a negative influence on sexual relations and self-esteem.<sup>[11-14]</sup> Besides that, it was noted that the psychological distress due to abnormal Pap smear was found to be significantly higher in women at reproductive age and with low levels of health literacy as compared to menopause

age women, especially when they were informed about the need of colposcopy and the risk of cervical cancer. The psychosocial effects were found to have a great impact not only on the quality of life and general health of reproductive age group women but also on productivity and development of community and the country.<sup>[15]</sup> In Malaysia, so far no study has been conducted to investigate the level of psychosocial burden among women with abnormal Pap smear results even though the incidence of abnormal Pap smear results and cervical cancer is increasing. Therefore, a pilot study was conducted in the East Coast of Malaysia to evaluate the psychosocial effects of having an abnormal Pap smear results which included four main domains: The experience of medical procedure, beliefs/feelings about cervical abnormality and changes in perception of self, worry about infectivity, and effects on sexual relationships. The objectives of this study are to identify the psychosocial burden differences in mean score between reproductive age group and menopausal age group women with abnormal Pap smear results at the East Coast of Malaysia. Malaysia has totally 14 states; among them Kelantan, Terengganu, and Pahang are situated on the East Coast of Malaysia.

## MATERIALS AND METHODS

The current study used the Psychosocial Effects of having an Abnormal Pap Smear Questionnaire-14 (PEAPS-Q-14), which was translated in Malay version.<sup>[16]</sup> The process of forward and backward translation is done based on the original version by two experts in English to assure the meaning of items has the same, thus preserving the standard of quality based on local words which were understandable since the target population is women with a various background in the community. Then, the content validity was examined by two specialists in obstetrics and gynecology, one specialist in community medicine, one psychologist, one specialist in public health, two nursing lecturers, and one head nurse. The four domains in PEAPS-Q-14 were still sustained within the 14 items. Domain 1: five items about the experience of a colposcopy procedure; domain 2: four items about beliefs/feelings and changes in perception of self; domain 3: two items about, worry about HPV infectivity; and domain 4: three items about an effect on the sexual relationship.<sup>[17]</sup> Each of item responses was preserved from original items with 5-point scale; score 1: not at all, score 2: a little, score 3: a fair bit, score 4: quite a lot, and score 5: very much. The range 1-5 was used in scoring the items

with a minimum score of 14 and the maximum of 70. Face validation was accomplished to evaluate the questionnaire and was answered by two groups of respondents. Improvement of the some questionnaire sentences was done based on subjective comments by respondents to make it readily understandable. The questionnaires internal coefficient was analyzed using Cronbach's alpha test; domain one to domain four were highly acceptable at 0.666–0.917.

### Data collection

This pilot study was conducted in Gynecology Departments of three general hospitals on the East Coast of Malaysia (Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan; Hospital Tengku Ampuan Afzan, Kuantan, Pahang; Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu), using a cross-sectional study design with universal sampling techniques for the first 3 months of data collection. A total of seventy women who underwent a colposcopy procedure at a gynecology clinic were recruited with inclusion criteria of women with abnormal Pap smear results, Malaysian citizens only, no psychiatric problem, able to read in the Malay language and completed the colposcopy procedure. The data were collected using self-administered questionnaire mentioning about respondents sociodemographic background, gynecology and obstetrics history, family history, and psychosocial effects of having abnormal Pap smear, and this questionnaire was answered by each respondent in about 15–20 min.<sup>[17]</sup>

### Statistical analysis

SPSS version 22 (SPSS Inc., Chicago, IL, USA) was used to analyze the data and independent *t*-test was used to identify the mean of each item for different age and a *P* < 0.05 was considered statistically significant.

### Ethical consideration

The study protocol was approved by the National Medical Research Register (NMRR-14-938-21672) of Malaysia and also by the Ethics Committee of the Faculty of Medicine, UniSZA. Formal permission was also obtained from the original owner of PEAPS-Q-14.<sup>[17]</sup>

## RESULTS

Sociodemographic Data: Seventy respected ladies were kind enough to participated in this pilot study. Almost half of the respondents 37 (52.9%) were a menopausal age group, and another half of the respondents 33 (47.1%) were the reproductive age

group with the mean age of 44.79 years. The majority of respondents were Malay (84.3%), Muslims (88.6%), and married (85.7%), with 62.9% (*n* = 44) having secondary education levels. About half of these respondents were homemakers (57.1%) and from rural areas (55.7%) with mean family income per month of RM 2209.24 and all (*n* = 70) respondents were nonsmokers (100%) [Table 1]. From the obstetrics and gynecology history, it was found that there were only half of the respondents (52.9%) who had experienced their first sexual exposure below the age of 22 years, and furthermore, the majority (87.1%) had only a single partner with a mean frequency of sexual intercourse per week was 1.5 times [Table 2].

**Table 1: Sociodemographic data of respondents**

Characteristics	<i>n</i> (%)
Age	
<45	33 (47.1)
>45	37 (52.9)
Mean	44.79
Race	
Malay	59 (84.3)
Chinese	6 (8.6)
Indian	3 (4.3)
Others	2 (2.9)
Religion	
Islam	62 (88.6)
Hindu	1 (1.4)
Buddha	5 (7.1)
Christian	2 (2.9)
Area of residence	
Urban	14 (20)
Semiurban	17 (24.3)
Rural	39 (55.7)
Education level	
First degree and above	4 (5.7)
Certificate and diploma	10 (14.3)
Secondary education	44 (62.9)
Primary education	10 (14.3)
Never been to school	2 (2.9)
Marital status	
Married	60 (85.7)
Widowed	7 (10.0)
Divorce	2 (2.9)
Single	1 (1.4)
Occupation	
Not working	40 (57.1)
Working	30 (42.9)
Household income per month (RM)	
<2210	49 (70.0)
>2210	21 (30.0)
Mean	2209.24
Smoking	
Yes	0 (0)
No	70 (100)

**Table 2: Obstetrics and gynecology history**

Characteristics	n (%)
Age at first sex	
<22	37 (52.9)
>22	33 (47.1)
Mean	21.5
Number of sexual partners	
1	61 (87.1)
2	7 (10.0)
3	1 (1.4)
6	1 (1.4)
The frequency of sexual intercourse in a week	
0	13 (18.6)
1	25 (35.7)
2	17 (24.3)
3	14 (20.0)
4	1 (1.4)
Practicing family planning currently	
Practice	20 (28.6)
No practice	50 (71.4)
Sexually transmitted disease	
No	70 (100.0)
Yes	0 (0)
Number of pregnancy (mean)	4.63
Number of delivery (mean)	3.87
Number of abortion (mean)	0.71
Number of children (mean)	3.84
Family history of cervical cancer	
No	67 (95.7)
Yes	3 (4.3)
Family history of mental disorder	
No	67 (95.7)
Yes	3 (4.3)

Among the respondents, twenty women (28.6%) were practicing contraception and only three (4.3%) respondents were having a family history of cervical cancer, whereas none was found to have any sexually transmitted disease. Regarding obstetric history, the mean for a number of respondents had experienced pregnancies, delivery processes, and abortions were 4.63, 3.87, and 0.71 times, respectively.

### Domain 1: Experience of colposcopy procedure

The total mean score for this domain that was answered by all respondents was  $8.57 \pm 3.37$ . The highest mean score that was answered by respondents in this domain was  $2.26 \pm 1.22$  on the item "Did you find the colposcopy procedures uncomfortable?" On the other hand, the lowest mean scored by respondents was  $1.13 \pm 0.45$  on the item "Did you feel as though your body was invaded?" Although women of reproductive age were found to have a little higher mean score of  $8.70 \pm 3.26$  as compared to menopausal aged women ( $8.46 \pm 3.51$ ), there is no significant statistical ( $P = 0.771$ ) difference in this

domain of PEAPS-Q-14 between these two groups of women [Table 3].

### Domain 2: Beliefs/feelings and changes in perception of self

The total mean score for this domain was  $11.54 \pm 3.75$  and found as the highest mean score value compared to other domains. In this domain, the highest mean score was recorded on item "How worried are you that cancer will appear in your body?" with a mean of  $3.74 \pm 1.29$ . The second highest mean score was item "Have you been worried that you may have cancer?" which was  $3.71 \pm 1.34$ . Nevertheless, the least mean score in this domain was the item "How worried are you that you would lose your chance to have a baby?" which was  $1.84 \pm 1.25$ . In this domain, women of reproductive age were found to have a significantly higher ( $P = 0.003$ ) mean score of  $12.91 \pm 3.47$  as compared to menopausal aged women of  $10.32 \pm 3.61$ , especially one item "How worried are you that you would lose your chance to have a baby?" with a mean score of  $2.61 \pm 1.39$  ( $P = 0.000$ ), whereas the other items in this domain show no significant differences between these two groups of women [Table 3].

### Domain 3: Worry about human papillomavirus infectivity

The total mean score for this domain was  $4.61 \pm 2.60$  and recorded as the least mean score value compared to other domains. The item "Have you been worried that you could give the HPV infection to a sexual partner?" was found higher in the mean score of  $2.40 \pm 1.36$  as compared to  $2.21 \pm 1.35$  in item "Have you been worried whether a sexual partner will think he can catch the HPV infection from you?." Women of reproductive age were found to have significantly higher ( $P = 0.005$ ) mean score value in this domain compared to menopausal aged women. Both items in this domain show a significant difference in the mean score between two age groups. Women aged <45 years old have higher mean scores for both items ( $P = 0.002$ )/( $P = 0.021$ ), respectively, as compared to women aged >45 years [Table 3].

### Domain 4: Effect of sexual relationship

In this domain, the total mean score recorded was  $5.91 \pm 2.91$ . The highest mean score on the item "Have you been worried whether having sex will make the problem worse?" was  $2.37 \pm 1.37$  and the least mean score was on the item "Have you been worried whether others think you have had more sexual partners than you should?" was  $1.44 \pm 0.94$ . Again, women of reproductive age were noted to have a higher mean

**Table 3: Mean differences in psychosocial effects of having an abnormal Pap smear using Psychosocial Effects of having an Abnormal Pap Smear Questionnaire-14**

Items	Mean (n=70)	Mean (SD)		t statistic (df) <sup>b</sup>	P
		<45 years (n=33)	≥45 years (n=37)		
Domain 1: Experience of colposcopy procedure	8.57 (3.37)	8.70 (3.26)	8.46 (3.51)	0.292 (68)	0.771
1. Did you find the colposcopy procedures uncomfortable?	2.26 (1.22)	2.12 (1.05)	2.38 (1.36)	-0.876 (68)	0.384
2. Did you find the colposcopy undignified?	1.51 (0.85)	1.55 (0.79)	1.49 (0.90)	0.289 (68)	0.774
3. Did you feel tense after colposcopy procedure?	1.73 (0.96)	1.85 (1.03)	1.62 (0.89)	0.976 (63.669)	0.333
4. Did you feel as though your body was invaded?	1.13 (0.45)	1.18 (0.53)	1.08 (0.36)	0.939 (68)	0.351
5. Did you feel in a helpless or vulnerable condition?	1.94 (1.23)	2.00 (1.32)	1.89 (1.15)	0.366 (68)	0.716
Domain 2: Beliefs/feelings and changes in perception of self <sup>a</sup>	11.54 (3.75)	12.91 (3.47)	10.32 (3.61)	3.048 (68)	0.003*
1. How worried are you that cancer will appear in your body?	3.74 (1.29)	3.91 (1.04)	3.59 (1.48)	1.036 (64.648)	0.304
2. How worried are you that you would lose your chance to have a baby? <sup>a</sup>	1.84 (1.25)	2.61 (1.39)	1.16 (0.50)	5.647 (39.362)	<0.0001*
3. How worried are you that you might die?	2.19 (1.34)	2.48 (1.48)	1.92 (1.16)	1.762 (60.598)	0.083
4. Have you been worried that you may have cancer?	3.71 (1.34)	3.82 (1.24)	3.62 (1.44)	0.609 (68)	0.545
Domain 3: Worry about HPV infectivity <sup>a</sup>	4.61 (2.60)	5.52 (2.61)	3.81 (2.34)	2.878 (68)	0.005*
1. Have you been worried that you could give the HPV infection to a sexual partner? <sup>a</sup>	2.40 (1.36)	2.91 (1.36)	1.95 (1.20)	3.154 (68)	0.002*
2. Have you been worried whether a sexual partner will think he can catch the HPV infection from you? <sup>a</sup>	2.21 (1.35)	2.61 (1.44)	1.86 (1.18)	2.368 (68)	0.021*
Domain 4: Effect on sexual relationship	5.91 (2.91)	6.52 (2.84)	5.38 (2.90)	1.653 (68)	0.103
1. Have you been worried whether you should continue having sex?	2.10 (1.24)	2.30 (1.24)	1.92 (1.23)	1.299 (68)	0.198
2. Have you been worried whether having sex will make the problem worse?	2.37 (1.37)	2.52 (1.28)	2.24 (1.46)	0.824 (68)	0.413
3. Have you been worried whether others think you have had more sexual partners than you should? <sup>a</sup>	1.44 (0.94)	1.70 (1.19)	1.22 (0.58)	2.112 (45.451)	0.040*

\**P*<0.05; <sup>b</sup>Independent *t*-test difference age between <45 with >45 of women with abnormal Pap smear results. HPV=Human papillomavirus, SD=Standard deviation

score in this domain rather than menopausal aged women. However, there is no significant difference between these groups (*P* = 0.103). On the other hand, in one item, “Have you been worried whether others think you have had more sexual partners than you should?” Women of reproductive age have a significantly higher mean score as compared to menopausal aged women (*P* = 0.040). However, the results of the other two items were not statistically significant between these two groups of women [Table 3].

## DISCUSSION

Cervical cancer prevalence was reported higher in the East Coast of Malaysia, and therefore, this study was carried out in these states to determine the psychological burden in women with abnormal Pap smears results. The peak age for women at which the prevalence of high-risk HPV infection was reported in 20–24-year-olds (49.1%) and the second peak of 50–54-year-old women (30%).<sup>[18]</sup> The first analysis used was descriptive to identify the mean of all respondents using a PEAPS-Q-14 questionnaire, which is a tool used to detect psychological burden among women with abnormal Pap smear results. The overall mean

scores for domain-1, domain 2, domain 3, and domain 4 were 8.57 ± 3.37, 11.54 ± 3.75, 4.61 ± 2.60, and 5.91 ± 2.91, respectively. The second analysis was done using an independent *t*-test to identify psychosocial effects in women with abnormal Pap smear results, and it was demonstrated that a menopausal group of women did not worry about the chances to have further pregnancies, but they were found quite feared about the potential for cervical cancer. On the other hand, reproductive age women were found to be apprehended regarding chances to have a baby and cervical cancer. The previous study used similar tools and reported the almost similar results.<sup>[19]</sup>

### Domain 1: Experience of colposcopy procedure

Generally, women with abnormal Pap smear results referred to colposcopy procedure show significant anxiety and distress.<sup>[20]</sup> This study results not only demonstrated “no significant difference” in the overall mean score of reproductive age women and a menopausal group of women but also found no significant difference in the mean score of all five items in this domain, which represents “no distress” related with experience of colposcopy procedure. These results are not consistent with a study where

older women were reported to show less distress on the experience of colposcopy procedure.<sup>[21]</sup> Our results are also inconsistent with other studies where it was reported that the distress on colposcopy procedure was twice as high among young women (<40 years) compared with older women.<sup>[19,21]</sup> The reported reasons for worry, fear, and anxiety of a colposcopy procedure were pain during the procedure,<sup>[22]</sup> not being comfortable, shameful, and feeling of being invaded.<sup>[19]</sup> In addition to that, lack of privacy during the pelvic examination also contributes to “distress” in these women.<sup>[12,23]</sup>

### Domain 2: Beliefs/feelings and changes in perception of self

Women with age <45 years old were found to have a significantly higher in mean score of 12.91 compared to women with age >45 years, especially in one item of this domain “How worried are you that you would lose your chance to have a baby?” demonstrating young women with abnormal Pap smear results were aware and knew that abnormal Pap smear results can have an impact on the ability to get pregnant. The results of this domain are consistent with the study in which women with abnormal Pap smear results also showed distress with an item of “Are you worried you would lose your chance to have a baby?” However, in this study, majority of the respondents were single and more concerned about fertility issues.<sup>[22]</sup> One study reported significant distress on all items in this domain among younger women.<sup>[19]</sup> Moreover, some other studies also reported significant distress, anxiety, and worries among young women with abnormal Pap smear results about losing chances to have a baby in the future and perceived the risk of cervical cancer.<sup>[10,21]</sup> Inconsistent with our results, one study was done in Nottingham reported significant anxiety about this domain among older women, especially who had children already as compared to women who never had children.<sup>[24]</sup> Moreover, some other studies in the United States reported no anxiety and distress among older women as some showed refutation of the results, and some perceive cervical cancer as a matter of fate and have fatalistic beliefs with the lack of personal susceptibility to cervical cancer.<sup>[9,25]</sup> Overall, the main reasons reported contributing to the psychosocial burden among women (anxious, fearful, self-blame, powerlessness, disbelief, depression, and anger) in this domain were lack of understanding of abnormal Pap smear results and higher perceived risk of developing cervical cancer which also have negative impact on perception of self.<sup>[10,11,26]</sup>

### Domain 3: Worry about human papillomavirus infectivity

Women of reproductive age were found to have a significantly higher mean score not only in general but also in both individual items of this domain “worry about HPV infectivity” compared to a menopausal group of women. Our results were quite similar to the study conducted in the United States which reported that women with abnormal Pap smear results were distressed due to a sense of shame or guilt when they came to know that these cervical changes are associated with HPV and which is a sexually transmitted infection.<sup>[22]</sup> Besides that it was reported that these women are also anxious due to the fear of cervical cancer because of this HPV infection.<sup>[23]</sup> Moreover, it was also reported a negative impact on a sexual partner when they knew about abnormal Pap smear result, and this was associated with depression in some women and even some partners showed a negative reaction on abnormal Pap smear results.<sup>[4,9,11]</sup> Therefore, abnormal Pap smear results can have a psychosocial effect on the woman’s life.<sup>[27]</sup>

### Domain 4: Effect of sexual relationship

The effect on a sexual relationship due to abnormal Pap smear results has shown no significant difference of this factor between these two groups of women. However, among the three of the subdomain only in one item “Have you been worried whether others think you have had more sexual partners than you should?” Women of reproductive age have a significantly higher mean score as compared to menopausal aged women, the reason might be, the majority of the respondents were Malay Muslims, who are usually very much worried about stigma related to the undue scandal. These study results are not consistent with the findings of studies where women with abnormal Pap smears results were found apprehensive about their sexual relationship.<sup>[10,24]</sup> Similarly, in another study in the United States found that women with abnormal Pap smear results and postcolposcopy procedure had the negative impact on the sexual relationship because partners felt guilty as these Pap smear abnormalities were related to sexually transmitted HPV infection and some women felt lowered self-esteem and even lost intimacy with their partners.<sup>[9,11,12,21]</sup> In contrary to that, the current study results were consistent with other study findings where some women after obtained the abnormal Pap smear results continued to have safe sexual behaviors, and Pap smear results were being accepted by their couples and no problem with the sexual relationship.<sup>[28]</sup>

## CONCLUSION

Psychosocial burden levels were found to be higher in women of reproductive age in terms of distress, especially about overwhelming beliefs and feelings of guilt, HPV infectivity, losing chances to have a baby in the future, and perceived the risk of cervical cancer which can have a further impact on continuing treatment and motivation. However, there was minimal distress noted related to colposcopy procedure and sexual relationship. Health-care providers should be aware of these psychosocial effects whereby they can refer such patients to a gynecologic oncologist for proper counseling at the appropriate time so that the adverse impact due to this psychosocial burden can be prevented.

### Recommendation

Psychological screening and psychoeducation is recommended for women with abnormal Pap smear result in an effort to reduce the level of psychosocial burden. A further study is also recommended to be conducted in all the private hospitals on the East Coast of Malaysia so that it can be generalized to all populations of the East Coast and thus can provide us a better understanding of this vulnerable group of women.

### Limitation

This study was conducted only tertiary hospital under governments and excluded the private hospitals as some patients preferred to do the colposcopy at private institutions due to less waiting time for procedures and results are faster as compared to government hospitals.

### Acknowledgment

We would like to thank the Ministry of Education Malaysia for the grant RAGs (grant no. RR101) as well as the National Medical Research Register (NMRR-14-938-21672) and Universiti Sultan Zainal Abidin for giving approval for this study to be conducted. Special thanks to Ms. Anna Bennette (the original author of PEAPS-Q-14) for giving permission to use the questionnaire. Authors' express their heartfelt gratitude to all the staff of Obstetrics and Gynecology Clinic at HTAA, HSNZ, HRPZ II of Malaysia for their kind cooperation.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Ashford L, Collymore Y. Preventing Cervical Cancer Worldwide. Population Reference Bureau. 1875 Connecticut Ave., NW, Suite 520, Washington, DC 20009 USA; 2005. Available from: [http://www.prb.org/pdf05/preventcervcancer-brief\\_eng.pdf](http://www.prb.org/pdf05/preventcervcancer-brief_eng.pdf). [Last accessed on 2016 Mar 01].
2. Ackerson K. Personal influences that affect motivation in pap smear testing among African American women. *J Obstet Gynecol Neonatal Nurs* 2010;39:136-46.
3. Tomás-Aragonés L, Castillo-Amores AB, Rodríguez-Cerdeira C, Marrón-Moya SE. Psychological aspects associated with the acquisition and development of HPV infection and its repercussion on quality of life. *Open Dermatol J* 2009;3:133-6.
4. Drolet M, Brisson M, Maunsell E, Franco EL, Coutlée F, Ferenczy A, *et al.* The psychosocial impact of an abnormal cervical smear result. *Psychooncology* 2012;21:1071-81.
5. Hawkins JW, Matteson PS, Mersha G. Abnormal Papanicolaou smears, genital tract infections, and contraception. *Health Care Women Int* 1999;20:17-27.
6. Bentley J; Society of Canadian Colposcopists. Colposcopic management of abnormal cervical cytology and histology. *J Obstet Gynaecol Can* 2012;34:1188-206.
7. Dawson S, Bradbury M. Medical investigations 7: Colposcopy. *Br J Nurs* 1997;6:771-2.
8. Jolley S. Quality in colposcopy. *Nurs Stand* 2004;18:39-44.
9. Kahn JA, Slap GB, Bernstein DI, Kollar LM, Tissot AM, Hillard PA, *et al.* Psychological, behavioral, and interpersonal impact of human papillomavirus and pap test results. *J Womens Health (Larchmt)* 2005;14:650-9.
10. Maissi E, Marteau TM, Hankins M, Moss S, Legood R, Gray A. Psychological impact of human papillomavirus testing in women with borderline or mildly dyskaryotic cervical smear test results: Cross sectional questionnaire study. *BMJ* 2004;328:1293.
11. Baze C, Monk BJ, Herzog TJ. The impact of cervical cancer on quality of life: A personal account. *Gynecol Oncol* 2008;109 2 Suppl: S12-4.
12. Idestrom M, Milsom I, Andersson-Ellstrom A. Women's experience of coping with a positive pap smear: A register-based study of women with two consecutive pap smears reported as CIN 1. *Acta Obstet Gynecol Scand* 2003;82:756-61.
13. Lyons P, Shelton MM. Psychosocial impact of cancer in low-income rural/urban women: Phase II. *Online J Rural Nurs Health Care* 2012;4:6-24.
14. Tribe KL, Knight V, Pell C. A prospective descriptive study of women attending a colposcopy clinic. *Contemp Nurse* 2008;31:80-5.
15. Sharp LK, Zurawski JM, Roland PY, O'Toole C, Hines J. Health literacy, cervical cancer risk factors, and distress

- in low-income African-American women seeking colposcopy. *Ethn Dis* 2002;12:541-6.
16. Mansor MB, Aziz AA, Sheikh SA, Ghazali S, Akhtar K. Validation of PEAPS-Q-14 (Malay version) among women with abnormal pap smear results: A reliability and exploratory factor analysis. *Malays J Public Health Med* 2016;16:45-51.
  17. Bennetts A, Irwig L, Oldenburg B, Simpson JM, Mock P, Boyes A, *et al.* PEAPS-Q: A questionnaire to measure the psychosocial effects of having an abnormal pap smear. *Psychosocial effects of abnormal pap smears questionnaire. J Clin Epidemiol* 1995;48:1235-43.
  18. Zaridah S. A review of cervical cancer research in malaysia. *Med J Malaysia* 2014;69 Suppl A: 33-41.
  19. Valdin A, Esielionis P. Measurement of colposcopy-associated distress using the psychosocial effects of having an abnormal pap smear-questionnaire in a Latina population. *J Low Genit Tract Dis* 2004;8:25-32.
  20. Korfage IJ, Essink-Bot ML, Westenberg SM, Helmerhorst T, Habbema JD, van Ballegooijen M. How distressing is referral to colposcopy in cervical cancer screening? a prospective quality of life study. *Gynecol Oncol* 2014;132:142-8.
  21. Sharp L, Cotton S, Carsin AE, Gray N, Thornton A, Cruickshank M, *et al.* Factors associated with psychological distress following colposcopy among women with low-grade abnormal cervical cytology: A prospective study within the trial of management of borderline and other low-grade abnormal smears (TOMBOLA). *Psychooncology* 2013;22:368-80.
  22. Shinn E, Basen-Engquist K, Le T, Hansis-Diarte A, Bostic D, Martinez-Cross J, *et al.* Distress after an abnormal pap smear result: Scale development and psychometric validation. *Prev Med* 2004;39:404-12.
  23. Bertram CC, Magnussen L. Informational needs and the experiences of women with abnormal Papanicolaou smears. *J Am Acad Nurse Pract* 2008;20:455-62.
  24. Gray NM, Sharp L, Cotton SC, Masson LF, Little J, Walker LG, *et al.* Psychological effects of a low-grade abnormal cervical smear test result: Anxiety and associated factors. *Br J Cancer* 2006;94:1253-62.
  25. Wong LP, Wong YL, Low WY, Khoo EM, Shuib R. Cervical cancer screening attitudes and beliefs of Malaysian women who have never had a pap smear: A qualitative study. *Int J Behav Med* 2008;15:289-92.
  26. Jiang J, Wei LH, Li YL, Wu RF, Xie X, Feng YJ, *et al.* Detection of TERC amplification in cervical epithelial cells for the diagnosis of high-grade cervical lesions and invasive cancer: A multicenter study in China. *J Mol Diagn* 2010;12:808-17.
  27. McCaffery KJ, Irwig L, Turner R, Chan SF, Macaskill P, Lewicka M, *et al.* Psychosocial outcomes of three triage methods for the management of borderline abnormal cervical smears: An open randomised trial. *BMJ* 2010;340:b4491.
  28. Wang KL, Jeng CJ, Yang YC, Chen CA, Cheng WF, Chen TC, *et al.* The psychological impact of illness among women experiencing human papillomavirus-related illness or screening interventions. *J Psychosom Obstet Gynaecol* 2010;31:16-23.



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