

ORIGINAL ARTICLE

GENERAL HEALTH AND PSYCHOSOCIAL BURDEN AMONG WOMEN WITH ABNORMAL PAP SMEAR AFTER POST COLPOSCOPY

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ABSTRACT

The identification of psychosocial burden and general health among women with abnormal Pap smear results was fundamentally important because women play the significant role in the family and community. The purpose of this study was to determine the level of psychosocial burden, level of general health and relationship between psychosocial burden with general health among women with abnormal Pap smear after colposcopy. This cross-sectional study was done towards 218 women with abnormal Pap smear after colposcopy. Universal sampling at gynecology clinic from three tertiary hospitals in the East Coast of Malaysia was conducted. Respondents self-answered the validated Malay version of Psychosocial Effect of Abnormal Pap smear Questionnaire and General Health Questionnaire-12 in Malay version. Data were analyzed by using statistical software IBM-SPSS version 22, descriptive statistical method, Pearson and Spearman Correlation coefficient analysis were used. The results revealed that 43.1% and 16.5% of women with psychosocial burden were having distress due to abnormal Pap smear after colposcopy. The correlation coefficient showed a significant moderate correlation between psychosocial burden and general health ($r = 0.41$ and $p=0.000$). The women are facing psychosocial burden and distress in life after being diagnosed with abnormal Pap smear, because it is related to physical and psychological aspects. This shown that psychological aspect is important in health, therefore health care needs to perform the assessment of the psychosocial burden and general health among women with abnormal Pap smear in Malaysia.

Keywords: women's health, psychosocial burden, abnormal Pap smear, general health, distress.

Abstrak

Mengenalpasti bebanan psikososial dan kesihatan umum di kalangan wanita dengan keputusan Pap smear yang tidak normal adalah penting kerana wanita memainkan peranan penting dalam keluarga dan komuniti. Tujuan kajian ini adalah untuk menentukan tahap bebanan psikososial, tahap kesihatan umum dan hubungan antara bebanan psikososial dengan kesihatan umum dalam kalangan wanita yang memperolehi keputusan Pap smear tidak normal selepas menjalani kolposkopi. Kajian keratan rentas ini dilakukan kepada 218 wanita dengan keputusan Pap smear tidak normal dan selepas menjalani pemeriksaan kolposkopi. Persampelan universal di klinik ginekologi dari tiga hospital utama di Pantai Timur Malaysia telah dijalankan. Responden menjawab sendiri soalan kajian tentang Bebanan Psikososial Kesan daripada Pap smear tidak normal dan Soalan Kesihatan Umum-12 dalam versi Bahasa Melayu. Data telah dianalisis dengan menggunakan perisian statistik IBM-SPSS versi 22, secara deskriptif, analisis pekali korelasi Pearson dan Spearman. Hasil kajian menunjukkan bahawa 43.1% dan 16.5% wanita yang mempunyai bebanan psikososial mengalami tekanan disebabkan keputusan Pap smear yang tidak normal dan selepas menjalani kolposkopi. Pekali korelasi menunjukkan korelasi yang signifikan pada tahap sederhana antara bebanan psikososial dan kesihatan umum ($r = 0.41$ dan $p=0.001$). Wanita menghadapi bebanan psikososial dan tekanan dalam kehidupan selepas didiagnosis dengan Pap smear yang tidak normal, kerana ia berkaitan dengan aspek fizikal dan psikologikal. Ini menunjukkan aspek psikologi penting dalam kesihatan, oleh itu staf kesihatan perlu melakukan penilaian bebanan psikososial dan kesihatan umum dikalangan wanita yang tidak normal keputusan Pap smear di Malaysia.

Kekunci: Kesihatan wanita, bebanan psikologi, Pap smear tidak normal, kesihatan umum, tekanan.

INTRODUCTION

Psychology is defined as a science in which behavioral and other evidence (e.g., individual reports of their thoughts and feelings; patterns of brain activation) are used to understand the internal processes that lead people and members to behave as they do¹. Therefore, psychological

health is important among women for future mental health as they play significant role in the family and community. Currently, one of the most significant discussions regarding psychological effect among women with abnormal Pap smear questionnaire (PEAPS-Q) is related to general health questionnaire-12 (GHQ-12). GHQ-12 assesses the psychological status of

a person² which related with any conditions. However, women with abnormal Pap smear are having distress due to psychological and interpersonal impact^{3,4}. The psychosocial burden among women with abnormal Pap smear leads to mental problem and social problem⁵.

The main factor of psychosocial burden among women with an abnormal Pap smear is due to worry on developing of precancerous genital disease such as cervical cancer⁶. An abnormal Pap smear caused by infection with human papillomavirus (HPV), which is acquired by sexual transmission diseases such as Syphilis, Chlamydia and Gonorrhea⁷. Whereby, women are worry that disease can be transmitted to couples during sexual intercourse⁸. Beside that, psychosocial burden among women is because of worry due to impact on their reproductive organ. In their perception, they will lose the "value" as a woman as they are expected to deliver and have children⁹. More recently, women with an abnormal Pap smear faced with emotional trauma because of worry, anxiety and fear for their future life^{4,10}. It is related with psychological aspects such as; fear, guilt, shame, distress anxious, surprised and depressed^{8,11}. This is when it affects their general health status causing psychosocial burden among women with abnormal Pap smear and post colposcopy as it is related with psychological and physiological aspect^{12,13}.

In Malaysia, those women with abnormal Pap smear will be referred to gynecologist at tertiary hospital for further investigation such as colposcopy or biopsy to identify in details about the abnormalities of cells present in their cervix. Almost every woman would be worried and in denial mode prior to colposcopy because of worry to pain and fear of instruments used during the procedure^{14,15}. Then, the women would avoid taking part in the Pap smear test due to psychological distress related to colposcopy¹⁶. Moreover, in Malaysia women who are with abnormal Pap smear facing with stigma by community such as negative perception and negative lifestyle. This condition develops psychosocial burden among women with abnormal Pap smear. Psychosocial is defined as psychological status of an individual within the context of their social environment¹⁷. Which, women faced with psychosocial burden due to potential cervical cancer¹⁸.

Therefore, one of the most significant current studies on the psychosocial burden used "Psychosocial effects of having an abnormal Pap smear Questionnaire" (PEAPS-Q) among women to detect psychosocial burden^{19,20,21,22,23}. However, there has been no study to analyze specificity the relationship between PEAPS-Q and

General Health Questionnaire-12 (GHQ-12) in Malaysia. Globally, there is lack of reports or formal study on the psychosocial burden relationship with general health among women with abnormal Pap smear and post colposcopy, even though there is an increasing number of abnormal Pap smear and cervical cancer in worldwide. Thus, psychosocial burden and general health are important to detect relationship between psychological aspect with distress condition among abnormal Pap smear after colposcopy procedure. The aim of this study is to determine the level of psychosocial burden, the level of general health status and relationship between psychosocial burden with general health status among women with abnormal Pap smear after done colposcopy.

METHODOLOGY

This study was a cross sectional study, which was conducted in three East Coast states of Malaysia to identify the level of psychosocial burden, general health and relationship between psychosocial burden with general health. Three tertiary government hospitals were involved in this study. This study used universal sampling technique to recruit the respondents who registered at Gynecology clinic purposely for colposcopy procedure due to an abnormal Pap smear from three tertiary hospitals in the East Coast of Malaysia. The term of universal sampling technique was used in this study due to involving all eligible respondents were included (fulfill the inclusion criteria). The inclusion criteria were women who were diagnosed with an abnormal Pap smear, done colposcopy procedure, Malaysian, no psychiatric problem, able to read in the Malay language and agreed to consent for current study. Exclusion criteria were women who were experiencing with severe bleeding and unable to cooperate in answering questionnaire after the colposcopy procedure. Sample size calculation was determined using single proportion formula. Level of statistical significant (α) was 0.05 with power of 80%. Total respondents are 238 after allowance of 10%. However only 218 respondents responded; with acceptable post-hoc power of 79.2%.

The questionnaire was divided to three parts. Part one of questionnaire included of personal background, part 2: PEAPS-Q and part 3: GHQ-12. Part 1: personal background included age, race, religion, area of resident, education level, marital status and occupational. Second part of questionnaire is PEAPS-Q consists of four domains and 14 items, whereby domain 1, the experience of a colposcopy procedure (five items), domain 2, beliefs / feelings and changes in perception of self (four items), domain 3, worry about Human Papilloma Virus (HPV) infectivity (two items)

and domain 4, effect on sexual relationship (three items). The scales for each item were 1 to 5 and total score was 70. The permission to use the adapted questionnaire was obtained by the authors from Australia and translated to Malay language version was based on local study^{19,24}. The validity process was done for PEAPS-Q, whereby created by Bennetts et al in year 2005 to measure the psychosocial effect among women with abnormal Pap smear¹⁹. Then, the translation to the Malay language version of PEAPS-Q was done prior to this study²⁴. The backward English translation to Malay language was done. Verification for content validity by eight expert persons was done to validate the PEAPS-Q in Malay language. Researchers have done face validation among ten women. The second verification for content validity was done by expert persons to review the results and improved the language in a questionnaire, based on results of face validation. After that, pilot study was done in three tertiary hospitals. The reliability of pilot study showed that Cronbach's alpha was acceptable with the overall internal consistency of PEAPS-Q of 0.75. Exploratory factor analysis (EFA) in the Malay language version of PEAPS-Q: Bartlett's Test of Sphericity was significant (Chi-square= 404.640, p -value<0.001) and the Kaiser-Meyer-Olkin (KMO) was 0.561. Then, confirmatory factor analysis (CFA), demonstrated that the standardized factor loading for 14 items of PEAPS-Q using the CFA range from 0.47 to 0.96, with an acceptable factor loading, domain to domain correlation and best fit (Chi-squared/degree of freedom=2.200, Goodness of Fit Index=0.901, Tucker-Lewis Index=0.936, Comparative Fit Index=0.950, Root Mean square Residual=0.073 and Root Mean Square Error of Approximation=0.074).

Third part of questionnaire is GHQ-12, which consists of 12 items were, item 1: 'Lost much sleep over worry?', item 2: 'Felt constantly under strain?', item 3: 'Been able to concentrate on what you are doing?', item 4: 'Felt that you are contributing a useful part in things?', item 5: 'Been able to face your problems?', item 6: 'Felt capable of making decisions in case of problems?', item 7: 'Felt you could not overcome your difficulties?', item 8: 'Been feeling reasonably happy, all things considered?', item 9: 'Been able to enjoy your normal daily activities?', item 10: 'Been feeling unhappy or depressed?', item 11: 'Been losing confidence in yourself?' and item 12: 'Been thinking of yourself as a worthless person?'. The score was based on total score acquired after recording the first two least symptomatic answers as 0 and the two most symptomatic answers as 1 (0-0-1-1)²⁵. A score of 4 and above indicated distress and score lower than 4 was less distress based on previous study²⁵.

This study had obtained approval from National Medical Research Register (NMRR-14-938-21672) and UniSZA for approval. Data collection was conducted between Jun 2015 until April 2016 at gynecology clinic in a tertiary hospital in East Coast of Malaysia. The questionnaires were distributed to three tertiary hospitals simultaneously and at the gathering after the patient responded. Each of the hospital has a different gynecology clinic time and day. Then, the researcher approached eligible respondents during registration at the counter for consent. Then after consenting to participate in this study, respondents underwent colposcopy procedure. After completing the colposcopy procedure, respondents answered and completed the questionnaire in 15 to 20 minutes.

Descriptive analysis was used for personal background, level of psychosocial burden and general health status. Running correlation analysis to assess the association between PEAPS-Q and GHQ-12, included Pearson and Spearman Correlation coefficient analysis was conducted. The strength of the association was shown by the correlation coefficient (r) and indicator r value ranges from 0.00 to 0.25, it was considered as having little association, r value in the range from 0.26 to 0.49 would indicate that the variables have low association, r value ranges from 0.50 to 0.69 showed that the variable has moderate association, r value from 0.70 to 0.89 indicated that the variable has high association and the r value ranges from 0.90 to 1.00 indicated a very high association²⁶.

RESULTS

In this study, 218 respondents with abnormal Pap smear participated, with age ranging from 19 to 78 years. Respondents were from three tertiary hospitals; Hospital Raja Perempuan Zainab II (Kelantan) (81.7%), Hospital Sultanah Nur Zahirah (7.3%) and Hospital Tengku Ampuan Afzan (11%). The mean age for women with abnormal Pap smear was 41 years old and standard deviation (SD)=10.80. The majority of the respondents were Malay women (87.2%) and Muslim (90.4%). Half of the respondents lived in rural areas (53.7%) and completed secondary school (62.8%). In total, 92.2% of respondents were married, divorced (4.1%) and widow (3.7%). Housewife comprised 59.2% of participants and 40.8% were working women.

Mean Score Each Domains, Total Mean Score and SD of Psychosocial Burden Among Respondents

Table 1 shows the mean score of each domains, the total mean score and SD of PEAPS-Q. In domain 1: 'Experience of a colposcopy procedure', total mean: 7.62 ± 2.95 was the second highest among the four domains. Second

domain 'Beliefs/feelings and changes in perception of self' had the highest total mean compared to other domains which was 10.28 (± 4.67). Furthermore, domain 3, 'Worry about HPV infectivity', was the lowest with total mean:

3.76 (± 2.39). Last domain 4, 'Effect on sexual relationship' total mean=5.67 (± 3.18), was the third with the highest mean among the 4 domains. Total mean score and SD were 27 (± 10) of PEAPS-Q.

Table 1: Mean score each domains, total mean score and SD of psychosocial burden among respondents (n=218)

Items	Mean	SD
Domain 1: Experience of colposcopy procedure	7.62	2.95
Domain 2: Beliefs / feelings and changes in perception of self	10.28	4.67
Domain 3: Worry about Human Papilloma Virus (HPV) infectivity	3.76	2.39
Domain 4: Effect on sexual relationship	5.67	3.18
Total Mean score and SD	27	10

Mean Total Score of General Health

Table 2 shows that total mean score for general health questionnaire was 8.15 (± 5.86) among women with abnormal Pap smear result.

Correlation between psychosocial burden and general health

Table 3 shows the correlation coefficient for each domain in PEAPS-Q with general health. The results showed that 'Experience of colposcopy procedure' has a moderate significant correlation with general health based on correlation coefficient (*r*) value of 0.37 and *p* value of 0.000. The domain of 'Beliefs / feelings

and changes in perception of self' was moderate significant correlation with GHQ-12, whereby *r* = 0.30 and *p* value = 0.000. However, there was a weak significant correlation between domain of 'Worry about Human Papilloma Virus (HPV) infectivity' with general health based on *r* value of 0.19 and *p* value of 0.004. Meanwhile, fourth domain 'Effect on sexual relationship' a moderate significant correlation with general health, whereby *r* = 0.32 and *p* value = 0.000. The Spearman correlation value of the total score of PEAPS-Q with GHQ-12 was 0.41 and *p* value of 0.000, indicated a moderate significant correlation.

Table 2: Mean total score of general health questionnaire-12(n=218)

Item	Mean	SD
General health questionnaire-12	8.15	5.86

Table 3: Correlation coefficient for each domains and total score of PEAPS-Q with general health (n= 218)

Domains in PEAPS-Q	Total score of GHQ-12	
	<i>r</i>	<i>p</i> -value
Domain 1: Experience of colposcopy procedure	0.37 ^b	<0.001
Domain 2: Beliefs / feelings and changes in perception of self	0.30 ^a	<0.001
Domain 3: Worry about Human Papilloma Virus (HPV) infectivity	0.19 ^b	0.004
Domain 4: Effect on sexual relationship	0.32 ^b	<0.001
Total score of PEAPS-Q	0.41^b	<0.001

^aPearson correlation ^bSpearman correlation

DISCUSSION

The current study shows that the total mean score of PEAPS-Q was 27 among women with abnormal Pap smear. Which, the respondents reported that the feeling of uncomfortable

during the colposcopy was the main concern in domain 1 in PEAPS-Q. Other study reported that women with abnormal Pap smear faced with psychosocial burden because of unfavorable experience with colposcopy procedure²⁷. Another study mentioned that, feeling uncomfortable

following the procedure because they feel shy to expose their intimate and personal part of their body to others, even to doctors who conducted the procedure¹⁴. Previous study also reported that women with abnormal Pap smear were distressed of having cancer and risk of dying¹². Furthermore, feeling worry of infertility or worry that would lose chance to have a baby is the barrier of Pap smear screening among Mexican women²⁸. The possible explanation for this was probably because these women were aware that HPV infection could be transferred to their partner as it was a common sexually transmitted infection²⁹. Women were also worried if their sexual partner thinks that he could get the HPV infection from them, which then made the women disclose their abnormal Pap smear from their sexual partners or others^{5,30}.

The findings of present study shows that the total mean score was 8.15 of general health due to abnormal Pap smear after colposcopy. The other studies found that the reason of women faced with suffering with abnormal Pap smear was referral to gynecologist for colposcopy, fear of pain, anxiety pre-colposcopy, shy and other negative feeling^{3,12,17,25,31}.

Through statistical analysis of the correlation coefficient found that a moderate significant correlation between psychosocial burdens with general health was depicted. The results were similar with previous study done in Australia, whereby general health was found to be correlated with psychosocial burden¹⁹. 'Experience of colposcopy procedure', showed that the significant correlation with general health, because of related with colposcopy and worry with uncomfortable such as feeling of embarrassment and pain¹⁴. Other than that, among Muslim women raised up the issue of culture belief and reported feeling of undignified to colposcopy³². Furthermore, women with abnormal Pap smear were suffering due to physical effect after colposcopy such as pain, vaginal bleeding and vaginal discharge³³. 'Beliefs / feelings and changes in perception of self' between general health was moderate significant correlation. It was consistent with study done in Australia, showed strength of the correlation with general health, due to majority of respondents in fertility age¹⁹. Among younger women might worry about infertility which is losing chance to have a baby^{3,34,35}. However other studies, with difference of analysis found that younger women were more worried on cervical cancer after receiving the abnormal Pap smear compared to older women^{36,37}. The third domain showed that weak significant correlation, which 'Worry about Human Papilloma Virus (HPV) infectivity' between general health. It is related that women were less suffering with the thought

that they could transfer the infection to their husbands or sexual partners. Other study found that, women might think that being loyal to their husbands or sexual partners reduced the risk of transmitting the HPV infection^{38,39}. Parallel with study in Australia, the results showed that there are correlations among the four domains of PEAPS-Q with general health¹⁹. The last domain showed moderate significant correlation; 'Effect on sexual relationship' with general health. Which, women were worried about continuity of having sex, due to reasons such as worry of post-coital bleeding, foul-smelling of the vagina and vaginal discharge^{40,41,42,43}. Moreover, in our culture women that diagnosed with any diseases related with reproductive, were assumed to have multiple sexual partners and provoke with negative perception from community^{7,30,44}. Overall, the total mean score of PEAPS-Q with mean score of general health shown that moderate significant correlation. In the other word, women with abnormal Pap smear were faced with disturbed psychology and relate with activity daily living.

LIMITATION

The limitation of this study was collecting data on the month of Ramadan cannot be run as a routine colposcopy because of fasting month for Muslim. Besides, it only involved respondents that registered and done colposcopy in tertiary hospital, those registered and done colposcopy in private hospital were excluded even though they fulfilled the inclusion criteria.

CONCLUSION

This study has shown a significant correlation between psychosocial burden with general health among women with abnormal Pap smear. It found that an alarming percentage of women in east coast of Malaysia was having distress conditions with abnormal Pap smear results. Therefore, it is essentials for a health care to perform an assessment in the psychosocial burden and general health among women in Malaysia. Which, can use PEAPS-q and GHQ-12 to detect psychosocial burden and general health among women with abnormal Pap smear.

RECOMMENDATION

The recommendation from this study is health care providers should be involved in the assessment on psychosocial burden and general health among women with abnormal Pap smear, in order for early detection and prevent any psychological problem in the early stage. The recommendation for further study is to include respondents from all states in Malaysia that would make the result more significant and could

be applied generally. Besides that, future research could introduce intervention to the respondents such as psychoeducation since it could increase patients' knowledge and insight of the illness and the related treatment

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Competing Interest

The authors have no conflict of interest to declare.

Authors' contribution

All of the authors in this article have contributed significantly to this article, including application proposal for grant, sampling study, data collection, data analysis, interpretation and written manuscript. Then all involved with preparation and approval of the final draft of the article purposely to submit.

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REFERENCES

1. Marich J. *The Psychology of Women: Diverse Perspectives From the Modern World*. Hauppauge, N.Y: Nova Science Publishers, Inc: 2013.
2. Khan A, Shah IM, Khan F, et al. Reliability and validity assessment of 12 items general health questionnaire (GHQ: 12) among Pakistani University Teachers. *World Applied Scien J*. 2013; **24**(5):603-8.
3. Sharp L, Cotton S, Carsin AE, 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**(2):368-80.
4. Kahn JA, Slap GB, Bernstein DI, et al. Psychological, behavioral, and interpersonal impact of human papillomavirus and Pap test results. *J Womens Health*. 2005;**14**(7):650-9.
5. Mccaffery K, Waller J, Nazroo J, et al. Social and psychological impact of HPV testing in cervical screening: a qualitative study. *Sex Transm Infect*. 2006;**82**(2):169-74.
6. Dominiak-Felden G, Cohet C, Atrux-Tallau S, et al. Impact of human papillomavirus-related genital diseases on quality of life and psychosocial wellbeing: results of an observational, health-related quality of life study in the UK. *BMC Public Health*. 2013; **13**(1):1065-76.
7. Tomas-Aragones L, Castillo-Amores A, Rodriguez-Cerdeira, et al. Psychological Aspects Associated with the Acquisition and Development of HPV Infection and its Repercussion on Quality of Life. *Open Derm J*. 2009;**3**:133-6.
8. Drolet M, Brisson M, Maunsell E, et al. The psychosocial impact of an abnormal cervical smear result. *Psychooncology*. 2012;**21**(10):1071-81.
9. Ashford L. Collymore Y. Preventing cervical cancer worldwide. Population Reference Bureau. *Economic Rev* 2005; **5**/6:29-31.
10. Maissi E, Marteau TM, Hankins M, et al. Psychological impact of human papillomavirus testing in women with borderline or mildly dyskaryotic cervical smear test results: cross sectional questionnaire study. *BMJ*. 2004;**328**(7451):1293.
11. Phonrat B, Ruengkris T, Naksrisook S, et al. Psychosocial burden of women with abnormal pap smears. *Southeast Asian J Trop Med Public Health*. 2009;**40**(3):593-01.
12. Valdini 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**(1):25-32.

13. Shinn E, Basen-Engquist K, Le T, et al. Distress after an abnormal Pap smear result: scale development and psychometric validation. *Prev Med.* 2004;**39**(2):404-12.
14. Bosgraaf RP, De Jager WC, Servaes P, et al. Qualitative insights into the psychological stress before and during colposcopy: a focus group study. *J Psychosom Obstet Gynaecol.* 2013;**34**(4): 150-6.
15. Tiwari A, Kishore J. Perceptions and concerns of women undergoing Pap smear examination in a tertiary care hospital of India. *Indian J Cancer.* 2011;**48**(4):477-82.
16. Baser E, Togrul C, Ozgu E, et al. Effect of pre-procedural state-trait anxiety on pain perception and discomfort in women undergoing colposcopy for cervical cytological abnormalities. *Asian Pac J Cancer Prev.* 2013;**14**(7):4053-56.
17. Rosenfeld, JA. (2009). *Handbook of Women's Health (Second Edi)*. Cambridge University Press.
18. Baze, C, Monk, BJ, Herzog, TJ. The impact of cervical cancer on quality of life: A personal account. *Gynecol Oncol.* 2008;**109**(2):12-S14.
19. Bennetts A, Irwig L, Oldenburg B, et al. PEAPS-Q: a questionnaire to measure the psychosocial effects of having an abnormal pap smear. *J Clin Epidemiol.* 1995;**48**(10):1235-43.
20. James D, Yates J, Ferguson E. Can the 12-item general health questionnaire be used to identify medical students who might 'struggle' on the medical course? A prospective study on two cohorts. *BMC Med Educ.* 2013;**13**(1):48.
21. Romppel M, Braehler E, Roth M, et al. What is the General Health Questionnaire-12 assessing?: Dimensionality and psychometric properties of the General Health Questionnaire-12 in a large scale German population sample. *Compr Psychiatry.* 2013;**54**(4):406-13.
22. Ibrahim N, Osman ZJ, Jan K, et al. Reliability and factor structure of the general health questionnaire-12 among university students. *Malay J Med Health Sci.* 2014;**10**(2):53-60.
23. Umi AS, Marhani M, Salina A, et al. Prevalence of psychological distress and depressive disorders among married working women in Malaysia. *Malaysian J Psych.* 2011;**20**(1).02-05-11.
24. Mansor M, Abd Aziz A, Ahmad Sheikh S, et al. Validation of Peaps-Q-14 (Malay Version) among women with abnormal Pap smear results: a reliability and exploratory factor analysis. *Malaysian J Pub Health Med.* 2016; **16**(3):45-51.
25. Yusoff MSB, Yee LY, Wei LH, et al. A study on stress, stressors and coping strategies among Malaysian medical students. *Inter J Student's Research.* 2011;**1**(2):45-50.
26. Rao KV. *Biostatistics in Brief Made Easy*. New Delhi: Jaypee Brothers Medical Publishers Ltd; 2010.
27. Korfage IJ, Essink-Bot ML, Westenberg SM, et al. How distressing is referral to colposcopy in cervical cancer screening?: a prospective quality of life study. *Gynecol Oncol.* 2014;**132**(1):142-8.
28. Agurto I, Bishop A, Sanchez G, et al. Perceived barriers and benefits to cervical cancer screening in Latin America. *Prev Med.* 2004;**39**(1):91-8.
29. Ratanasiripong NT. A review of human papillomavirus (HPV) infection and HPV vaccine-related attitudes and sexual behaviors among college-aged women in the United States. *J Am Coll Health.* 2012;**60**(6):461-70.
30. Bertram CC, Magnussen L. Informational needs and the experiences of women with abnormal Papanicolaou smears. *J Am Acad Nurse Pract.* 2008;**20**(9):455-62.
31. Kola S, Walsh JC, Hughes BM et al. Attention focus, trait anxiety and pain perception in patients undergoing colposcopy. *Eur J Pain.* 2012;**16**(6):890-900.
32. El-Hammasi K, Samir O, Kettaneh S, et al. Use of and attitudes and knowledge about pap smears among women in Kuwait. *J Womens Health.* 2009;**18**(11):1825-32.

33. Okonkwo C, Ezeanochie M, Olagbuji, B. Physical after effects and clients satisfaction following colposcopy and cervical biopsy in a Nigerian population. *Afr health sci.* 2013;**13**(2):402-6.
34. Wang KL, Jeng CJ, Yang YC, et al. The psychological impact of illness among women experiencing human papillomavirus-related illness or screening interventions. *J Psychosom Obstet Gynaecol.* 2010;**31**(1):16-23.
35. Gray N, Sharp L, Cotton S, et al. Psychological effects of a low-grade abnormal cervical smear test result: anxiety and associated factors. *Br J Cancer.* 2006;**94**(9):1253-62.
36. Tribe KL, Knight V, Pell C. A prospective descriptive study of women attending a colposcopy clinic. *Contemp Nurse.* 2008;**31**(1):80-5.
37. Abotchie PN, Shokar NK. Cervical cancer screening among college students in Ghana: knowledge and health beliefs. *Int J Gynecol Cancer.* 2009;**19**(3):412-6.
38. McMullin JM, Alba ID, Chavez LR, et al. Influence of beliefs about cervical cancer etiology on Pap smear use among Latina immigrants. *Ethn Health.* 2005;**10**(1):3-18.
39. Montgomery K, Bloch JR, Bhattacharya A, et al. Human papillomavirus and cervical cancer knowledge, health beliefs, and preventative practices in older women. *J Obstet Gynecol Neonatal Nurs.* 2010;**39**(3):238-49.
40. Ideström M, Milsom I, Andersson-Ellström 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**(8):756-61.
41. Singla S, Mathur S, Kriplani A, et al. Single visit approach for management of cervical intraepithelial neoplasia by visual inspection & loop electrosurgical excision procedure. *Indian J Med Res.* 2012;**135**(5):614-20.
42. Wong L, Wong Y, Low W, et al. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. *Singapore Med J.* 2009;**50**(1):49-53.
43. Pak SC, Martens M, Bekkers R, et al. Pap smear screening history of women with squamous cell carcinoma and adenocarcinoma of the cervix. *Aust N Z J Obstet Gynaecol.* 2007;**47**(6):504-7.
44. Twinn S. Balancing uncertainty and acceptance: understanding Chinese women's responses to an abnormal cervical smear result. *J Clin Nurs.* 2006;**15**(9):1140-8.