



## **Gynecological Problems, Health Behaviors and Health Promotion among Women: Does it Matters in Pakistan?**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author MM designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors SR and AH managed the analyses of the study. Author EJ managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** Poor socioeconomic status, lower education background, social stigma associated with sharing gynecological issues, paucity of early detection program, limited access to health care facilities, less number of qualified gynecologists and lack of technical equipment in Pakistan are the major factors affecting diagnosis, adequate control and prevention of gynecological problems in Pakistan. The importance of health promoting lifestyle and quality of life has been recognized in developed world for more than two decades, however, this concept is still in infancy in developing countries including Pakistan. Health promoting behavior especially among women is an unexplored area of research in Pakistan.

**Objective:** The present study was designed to assess health promoting lifestyle behavior among women with different gynecological problems in Pakistan.

**Methodology:** A descriptive cross-sectional study design was used. A pre validated questionnaires i.e. HPLP-II was self-administered to a sample of 383 women with different gynecological problems

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selected using convenience sampling technique. After data collection, data was cleaned, coded and entered in SPSS. Non-parametric tests Kruskal Wallis and Mann Whitney tests ( $p \geq 0.05$ ) were performed to find out the differences among different variables.

**Results:** Significant difference ( $p \geq 0.05$ ) in health promoting life style behavior was observed among patients of gynecological problems residing in different setting, having different marital status, different types of gynecological problem and educational background. Patients with gynecological problem residing in rural settings, married, who had ovary cyst and more educated had comparatively improved health promoting lifestyle behavior.

**Conclusion:** The results of this study revealed low health-promoting behaviors among women with gynecologic problems in Pakistan. Furthermore, the women's score of spiritual growth, stress management, and interpersonal relations was higher than that of nutrition and physical activity. Therefore, it appears necessary to perform health education programs emphasizing nutrition and physical activities and establish counseling centers for teaching the health-promoting behaviors to the women for improving their overall quality of life.

*Keywords: Gynecological problems; health promoting life style behaviors; HPLP-II; women; Pakistan.*

## 1. INTRODUCTION

Gynecological morbidity is a functional and structural disorder of the reproductive tract, which might not be identified with pregnancy, delivery and puerperal, having negative influence on women health related quality of life [1]. Such gynecological problems can cause pregnancy related complications, congenital infections and chronic pain which considerably affect female reproductive and emotional well-being [2]. Endometriosis is a typical gynecological condition that affects women and can lead to painful symptoms and infertility. It has a significant effect on women's quality of life affecting their lifestyle, regular activities, sexual & nonsexual relations and fertility [3]. Women with genetic bleeding disorders, such as platelet function defects and haemophilia are more prone to severe gynecological and obstetrical problems. Moreover, one of the most common endocrine disorder diagnosed within reproductive age is polycystic ovarian syndrome (PCOS) which negatively affect quality of life of women [4]. The common gynecological disorders symptoms include amenorrhea, oligomenorrhea, hirsutism, obesity, infertility, ovulation, acne, depression, social instability and affecting sexuality [4]. The diagnosis of gynecological problems may be delayed, leading to higher morbidity and poor health related quality of life among women [5]. Gynecological problems affect physical, social, psychological and emotional health of millions of women worldwide. They have the highest morbidity rate of all types of the female reproductive morbidities. Along with that therapy for management of gynecological disorders can lead to further worsen patient physical and emotional health [6]. Burden of

gynecological morbidity was reported higher among economically and culturally disadvantageous women in Ethiopia [2]. Risk factors associated with gynecological disorders were reported common among young girls in Turkey and nearly half of them had distinctive menstrual issues [7]. Moreover, polycystic ovary syndrome was reported to decrease patient's wellbeing with respect to physical and mental health in Poland (Drosdzol et al., 2007). Dysmenorrhea was reported to have adverse effects on the quality of life of young girls in India [8].

The health-promoting lifestyle is a multidimensional concept comprising several aspects of individual's daily life, including dietary pattern, recurrence of smoking, and cessation of alcohol, regular exercise and stress management. The health promoting lifestyle is associated with the aim of promoting wellbeing of patient [6]. Promoting healthy lifestyle standards is important during the reproductive years, especially to prevent pregnancy-related diseases and breast feeding issues [9]. A study conducted in China and Taiwan showed that health promoting lifestyle domains specifically health responsibility, physical activity and spiritual growth were reported as important indicators of quality of life [10]. Regular physical activity is positively associated with female patient's wellbeing [11]. Lifestyle interventions were reported to have the potential for improving patient's life as well as significantly decreasing body pain [12].

Nearly half of the population of Pakistan consist of women but unfortunately they have not been given due consideration in terms of equal rights

for health and education, especially those residing in tribal and rural setting [13]. High prevalence of gynecological morbidities including cervical infections, erosions or ulceration, utero-vaginal prolapse, vaginal discharge, pelvic inflammatory disease and UTI is a major public health threat to women health in Pakistan [14]. Poor socioeconomic status, lower education background, social stigma associated with sharing gynecological issues, paucity of early detection program, limited access to health care facilities, less number of qualified gynecologists and lack of technical equipment in Pakistan are the major factors affecting diagnosis, adequate control and prevention of gynecological problems in Pakistan [15]. The importance of health promoting lifestyle and quality of life has been recognized in developed world for more than two decades, however, this concept is still in infancy in developing countries including Pakistan. Health promoting behavior especially among women is an unexplored area of research in Pakistan. Therefore, the present study was designed to assess health promoting lifestyle behavior among women with different gynecological problems in Pakistan.

## 2. METHODOLOGY

A descriptive cross-sectional study design was used to assess health promoting lifestyle among women with different gynecological problems attending public and private healthcare facilities located in twin cities (Islamabad and Rawalpindi) of Pakistan. Study respondents included women aged between 18-65 years diagnosed with different gynecological disorders including ovary cyst, dysmenorrhea, PCOS were included. Approval was also taken from Medical superintendents of different healthcare facilities of Rawalpindi and Islamabad. Patients were briefed regarding nature and objectives of the study. The sample size was calculated by using Rao soft at 95% confidence interval and 5% margin of error which came to be 383. Convenience sampling technique was used for selection of respondents available and willing to participate at the time of data collection. Prospective data was collected from primary sources by self-administering a pre validated questionnaire i.e. health promoting lifestyle behavior (HPLP-II). It has total six domains namely health responsibility, physical activity, nutrition, and spiritual growth, interpersonal relations, and stress management. Moreover, it has 52 items, which are scored on a Liker scale of 1 to 4 (Never = 1, Sometimes = 2, Often = 3,

Always = 4). Each dimension is separately scored, and total score is calculated for the entire questionnaire (Hoseinzadeh et al., 2018). Pilot testing was performed on 10% of the sample size for assessing reliability of the tool. The value of Cronbach's alpha for HPLP-II was 0.75. After data collection, data was cleaned, coded and entered in SPSS. Descriptive statistics comprising of frequency and percentages were calculated. Non-parametric tests Kruskal Wallis and Mann Whitney tests ( $p \geq 0.05$ ) were performed to find out the differences among different variables.

## 3. RESULTS

### 3.1 Demographic Characteristics

Of the total respondents, 8.6 % (n = 33) were suffering from ovary cyst, 9.7 % (n =37) with dysmenorrhea, 12 % (n = 46) with PCOS and 69.7 % (n =266) with other gynecological problems. Nearly 72.8 % (n = 280) of the women were from urban while 27.2 % (n = 103) were resident of rural setting. Out of 383 respondents, 71.5% (n=274) were married and 23.2% (n=89) were single. Regarding the type of treatment patients treating through medications More than half of the patients (66.1%, n=253) were on medications while 19.6% (n=75) received surgery (Table 1).

### 3.2 Domains of Health Promoting Lifestyle Profile (HPLP-II)

The results highlighted that lowest scores for HPLP-II were observed in the domain of Physical activity (10.99, +3.69) followed by health responsibility (17.07,  $\pm 3.05$ ) whereas highest scores were observed in the domain of interpersonal relations (23.63,  $\pm 3.56$ ). A detailed description is given in (Table 2).

### 3.3 Health Responsibility (HR) and Spiritual Growth among Patients with Gynecological Problems

The results revealed that health responsibility of most of patients with gynecological problems was limited a lot especially in regard to never attended educational programs (n=287, 75.3%), get a second opinion from health professionals (n=213, 55.8%), and inspect my body monthly (n=211, 55.2%). On the other hand, health responsibility of patients of gynecological problems was not at all limited in terms of often

seek guidance when necessary (n=164, 43%), discuss health concerns (n=96, 25.1%) and report unusual signs to a health professional (n=91, 23.8%). The results of the present study highlighted that role spiritual growth among respondents was limited in regards to never finding each day interesting and challenging (n=73, 19.1%), exposing new experience and

challenges, (n=83, 21.8%) and working toward long term goals (n=97, 25.4%). On the other hand, role spiritual growth was not limited in terms of routinely look forward to the future (n=75, 19.6%), aware of what is important in life (n=52, 13.4%) and feeling content and peace (n=38, 9.9%). A detailed description is given (Table 3).

**Table 1. Demographic characteristics**

Indicator		n (%)	Indicator	n (%)	
<b>Hospital</b>	Public	274 (71.5)	<b>No of children</b>	None	118 (30.8)
	Private	109 (28.5)		One	54 (14.1)
<b>Age</b>	18-28years	143 (35.0)		Two	90 (23.5)
	29-39years	129 (33.7)		Three	50 (13.1)
	40-49years	78 (20.4)		Four	33(8.6)
	50-59years	30 (7.8)	More than four	38 (9.9)	
	>60years	12 (3.1)	<b>Settings</b>	Urban	280 (72.8)
<b>Marital Status</b>	Married	274 (71.5)		Rural	103 (27.2)
	Unmarried	89 (23.2)	<b>Type of gynecological Problems</b>	Ovary cyst	33 (8.6)
	Widow	19 (5.0)		Dysmenorrhea	37 (9.7)
<b>Education</b>	Illiterate	79 (20.6)		PCOs	46 (12.0)
	Primary	80 (20.9)		Others	267 (69.7)
	Secondary	134 (35)	<b>Type of therapy</b>	Surgery	75 (19.6)
	Masters	65 (17.0)		Medications	253 (66.1)
Postgraduate	4 (1.0)	Others		55 (14.1)	
<b>Income</b>	Less than Rs 20,000	131 (34.2)	<b>Type of Morbidity</b>	None	166 (43.3)
	Rs 21000-40,000	185 (48.3)		Hypertension	106 (27.7)
	Rs 41,000-60,000	58 (15.1)		Diabetes	49 (12.8)
	More than Rs 60,000	9 (2.3)		Others	62 (16.2)

**Table 2. Domains of Health Promoting Lifestyle Profile (HPLP-II)**

Indicator	Mean	Standard Deviation (±)
Health Responsibility	17.0735	± 3.05904
Physical Activity	10.9948	± 3.69423
Nutrition	18.8031	± 3.05573
Spiritual Growth	22.1789	± 4.54756
Interpersonal Relations	23.6342	± 3.56032
Stress Management	18.8661	± 3.17149

**Table 3. Health responsibility and spiritual growth among patients with gynecological problems**

Indicators		n (%)
Report any unusual signs or symptoms to a physician or other health professionals	<b>Health responsibility</b>	
	Never	50 (13.1)
	Sometimes	239 (62.4)
	Often	91 (23.8)
Read or watch TV programs about improving health	Routinely	3 (0.8)
	Never	154 (40.3)
	Sometimes	133 (34.8)
	Often	88 (23)
Question health professionals in order to understand their instructions	Routinely	8 (1.9)
	Never	68 (17.8)
	Sometimes	218 (57.1)
	Often	93 (24.3)
Get a second opinion when I question my healthcare providers advice	Routinely	3 (0.8)
	Never	213 (55.8)
	Sometimes	135 (35.3)

Indicators		n (%)
	Often	30 (7.9)
	Routinely	4 (1.0)
Discuss my health concerns with health professionals	Never	51 (13.4)
	Sometimes	233 (61.0)
	Often	96 (25.1)
	Routinely	3 (0.5)
Inspect my body at least monthly for physical changes/danger signs	Never	211(55.2)
	Sometimes	141 (36.9)
	Often	26 (6.8)
	Routinely	5 (1.1)
Ask for information from health professionals about how to take good care of myself	Never	74 (19.4)
	Sometimes	260 (68.2)
	Often	44 (11.5)
	Routinely	5 (0.9)
Attend educational program on personal healthcare	Never	287 (75.3)
	Sometimes	83 (21.8)
	Often	9 (2.4)
	Routinely	4 (0.5)
Seek guidance or counseling when necessary	Never	5 (1.3)
	Sometimes	185 (48.6)
	Often	164 (43)
	Routinely	29 (7.6)
<b>Spiritual growth</b>		
Feel I am growing and changing in positive ways	Never	38 (9.9)
	Sometimes	198 (51.7)
	Often	115 (30)
	Routinely	32 (8.4)
Believe that my life has a purpose	Never	3 (0.8)
	Sometimes	113 (29.6)
	Often	204 (53.4)
	Routinely	62 (16.2)
Look forward to the future	Never	6 (1.6)
	Sometimes	116 (30.4)
	Often	185 (48.4)
	Routinely	75 (19.6)
Feel content and peace with myself	Never	18 (4.5)
	Sometimes	191 (50.0)
	Often	136 (35.6)
	Routinely	38 (9.9)
Work toward long term goal in my life	Never	97 (25.4)
	Sometimes	134 (35.1)
	Often	134 (35.1)
	Routinely	18 (4.5)
Find each day interesting and challenging	Never	73 (19.1)
	Sometimes	208 (54.5)
	Often	81 (21.2)
	Routinely	21 (5.2)
Am aware of what is important to me in life	Never	3 (0.5)
	Sometimes	161 (42.3)
	Often	167 (43.8)
	Routinely	52 (13.4)
Feel connected with some force greater than myself	Never	49 (12.6)
	Sometimes	180 (47.2)
	Often	139 (36.5)
	Routinely	15 (3.7)
Expose myself to new experiences and challenges	Never	83 (21.8)
	Sometimes	140 (36.8)
	Often	133 (35)
	Routinely	24 (6.3)

### 3.4 Physical activity and Nutrition among Patients with Gynecological Problems

The results revealed that physical activity of most of patients with gynecological problems was limited a lot especially in regard to never follow planned exercise (n=267, 69.7 %), checking pulse rate (n=288, 75.6 %), and taking part in leisure-time activities (n=337, 88.2%). On the other hand, physical activity of patients of gynecological problems was not at all limited in terms of often doing stretching exercises (n=26, 6.8%), get exercised during usual daily activities (n=31, 8.1 %), and taking part in moderate physical activity (n=191, 47.75 %). The results showed that role nutrition in respondents was limited in terms of reading labels to identify nutrients (n=81, 20.25%) and eating 6-11 servings of bread etc (n=61, 15.25 %). On the other hand, role nutrition in respondents was not limited inters of often eating breakfast (n=157, 41.2%) and limiting sugar use (n=76, 19.9%). A detailed description is given (Table 4).

### 3.5 Interpersonal Relations and Stress Management among Patients with Gynecological Problems

The results showed that role interpersonal relations were limited in regards to never discuss problems (n=51, 13.4%) needs for intimacy (n=256, 67.0%) showing concern and love (n=61, 15.7%). On the other hand ,role interpersonal relations was not limited in terms of often touched by people caring about (n=212, 55.5%), praising others (n=205, 53.5) and maintaining relationship with others (n=185, 48.4). The result of present study reported that stress management was limited in regard to never get enough sleep (n=32, 18.4%), balance time (n=59, 15.4%) and using specific method to control stress. On the other hand role stress management was not limited in terms of often accept those things which cannot be change (n=212, 55.5%) and taking time for relaxation (n=162, 42.4).A detailed description is given (Table 5).

**Table 4. Physical activity and nutrition among patients with gynecological problems**

Indicators		n (%)
	<b>Physical activity</b>	
Follow a planned exercise	Never	267 (69.7)
	Sometimes	75 (19.6)
	Often	37 (9.7)
	Routinely	4 (1.0)
Exercise vigorously for more minutes at least three times a week	Never	252 (66)
	Sometimes	99 (25.9)
	Often	25 (6.5)
	Routinely	7 (1.6)
Take part in moderate physical activity (such as, sustained walking 30-40 minutes 5 or more times a week	Never	236 (61.8)
	Sometimes	106 (27.7)
	Often	34 (8.9)
	Routinely	7 (1.6)
Take part in leisure time (recreational) physical activities (such as swimming, dancing and bicycling)	Never	337 (88.2)
	Sometimes	33 (8.6)
	Often	9 (2.4)
	Routinely	4 (0.8)
Do stretching exercise at least three times per week	Never	298 (78)
	Sometimes	57 (14.9)
	Often	26 (6.8)
	Routinely	2 (0.3)
Get exercised during usual daily activities (such as walking during lunch, stairs instead of elevators, parking car away from destination and walking)	Never	232 (60.7)
	Sometimes	110 (28.8)
	Often	31 (8.1)
	Routinely	10 (2.4)
Check my pulse rate when exercising	Never	288 (75.6)
	Sometimes	73 (19.2)
	Often	20 (5.0)
	Routinely	2 (0.2)
Reach my target heart rate when exercising	Never	274 (71.9)
	Sometimes	77 (20.2)
	Often	26 (6.8)
	Routinely	6 (1.0)

Indicators		n (%)
	<b>Nutrition</b>	
Choose a diet low in fats, saturated fats and cholesterol	Never	130 (33.9)
	Sometimes	164 (42.8)
	Often	79 (20.6)
	Routinely	10 (2.6)
Limit use of sugars and food containing sugar (sweets)	Never	125 (32.7)
	Sometimes	166 (43.5)
	Often	76 (19.9)
	Routinely	16 (3.9)
Eat 6-11 servings of bread, cereals and pasta each day	Never	193 (50.5)
	Sometimes	145 (38)
	Often	39 (10.2)
	Routinely	6 (1.3)
Eat 2-4 servings of fruits each day	Never	112 (29.3)
	Sometimes	211 (55.2)
	Often	54 (14.1)
	Routinely	6 (1.3)
Eat 3-5 servings of vegetables each day	Never	62 (16.2)
	Sometimes	209 (54.7)
	Often	90 (23.6)
	Routinely	22 (5.5)
Eat 2-3 servings of milk, yogurt or cheese each day	Never	135 (35.)
	Sometimes	210 (55)
	Often	33 (8.6)
	Routinely	5 (1.0)
Eat 2-3 servings from the meat, poultry, fish, dried beans, eggs and nuts group each day	Never	135 (35.3)
	Sometimes	210 (55.0)
	Often	33 (8.6)
	Routinely	5 (1.0)
Read labels to identify nutrients, fats and sodium content in packaged food	Never	164 (43)
	Sometimes	97 (25.5)
	Often	94 (24.7)
	Routinely	28 (6.8)
Eat breakfast	Never	6 (1.6)
	Sometimes	76 (19.7)
	Often	157 (41.2)
	Routinely	143 (37.5)

**Table 5. Interpersonal relations and stress management among patients with gynecological problems**

Indicators		n (%)
	<b>Interpersonal relations</b>	
Discuss my problems and concerns with people close to me	Never	51 (13.4)
	Sometimes	233 (61.0)
	Often	96 (25.1)
	Routinely	3 (0.5)
Praise other people easily for their achievement	Never	8 (2.1)
	Sometimes	36 (9.4)
	Often	205 (53.5)
	Routinely	134 (35.0)
Maintain meaningful and fulfilling relationships with others	Never	11 (2.6)
	Sometimes	56 (14.7)
	Often	185 (48.4)
	Routinely	131 (34.3)
Spend time with close friends	Never	10 (2.4)
	Sometimes	180 (47.1)
	Often	155 (40.6)
	Routinely	38 (9.9)

<b>Indicators</b>		<b>n (%)</b>
Find it easy to show concern, love and warmth to others	Never	61 (15.7)
	Sometimes	153 (40.1)
	Often	107 (28.0)
	Routinely	62 (16.2)
Touch and I am touched by people I care about	Never	10 (2.4)
	Sometimes	119 (31.2)
	Often	212 (55.5)
	Routinely	42 (11.0)
Find ways to meet my needs for intimacy	Never	256 (67.0)
	Sometimes	101 (26.4)
	Often	21 (5.5)
	Routinely	5 (1.0)
Get support from a network of caring people	Never	11 (2.6)
	Sometimes	119 (31.3)
	Often	157 (41.3)
	Routinely	96 (24.7)
Settle conflicts with others through discussion and compromise	Never	12 (2.9)
	Sometimes	154 (40.4)
	Often	183 (48.0)
	Routinely	33 (8.7)
<b>Stress Management</b>		
Get enough sleep	Never	32 (8.4)
	Sometimes	140 (36.6)
	Often	160 (41.8)
	Routinely	51 (13.3)
Take some time for relaxation each day	Never	17 (4.2)
	Sometimes	158 (41.4)
	Often	162 (42.4)
	Routinely	46 (12.0)
Accept those things in my life which I cannot change	Never	10 (2.4)
	Sometimes	116 (30.4)
	Often	212 (55.5)
	Routinely	45 (11.8)
Concentrate on pleasant thought at bedtime	Never	23 (6.0)
	Sometimes	251 (65.7)
	Often	98 (25.7)
	Routinely	11 (2.6)
Use specific methods to control my stress	Never	109 (28.5)
	Sometimes	186 (48.7)
	Often	80 (20.9)
	Routinely	8 (1.8)
Balance time between work and play	Never	59 (15.4)
	Sometimes	181 (47.4)
	Often	134 (35.1)
	Routinely	9 (2.1)
Practice relaxation or meditation for 15-20 minutes daily	Never	37 (9.4)
	Sometimes	218 (57.2)
	Often	115 (30.2)
	Routinely	13 (3.1)
Pace myself to prevent tiredness	Never	59 (15.2)
	Sometimes	211 (55.4)
	Often	104 (27.3)
	Routinely	9 (2.1)



**Table 6. Comparison of HPL behavior domains by demographic characteristics**

Demographic	n	Health responsibility			Physical activity			Nutrition			Spiritual growth			Interpersonal relation			Stress management		
		Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value
<b>Hospital</b>	Publi=273	173.58	9973.500	.001	173.58	9690.000	.001	181.49	12146.500	.007	174.84	10429.500	.001	183.32	12734.500	0.42	176.28	10723.000	.001
	Private=108	235.15			235.15			215.03			229.93			208.59			228.21		
<b>Age</b>	18-28yers=134	212.37	34.216	0.001	234.37	52.406	0.001	199.73	6.828	0.145	222.74	31.794	.001	201.75	17.365	.002	228.87	35.908	0.001
	29-39years=127	213.75			190.41			193.29			196.33			185.40			193.03		
	40-49years=78	146.56			161.03			166.03			159.22			155.60			148.74		
	50-59years=30	143.55			113.72			189.97			134.78			226.91			140.55		
	>60 years=12	119.13			101.04			234.21			114.17			257.71			147.50		
<b>Marital status</b>	Married=272	172.30	9737.500	.004	156.61	5471.000	.001	173.55	10076.500	.017	162.66	7114.500	.001	173.46	10152.500	.024	162.45	7059.000	.001
	Single=89	207.59			255.53			203.78			235.65			01.93			237.69		
<b>Level of education</b>	Illiterate=79	123.55	85.864	.001	115.47	123.067	.001	162.29	45.663	.001	130.06	65.468	.001	189.34	14.620	.012	146.12	44.450	.001
	Primary=78	151.60			146.24			138.83			176.61			169.71			166.73		
	Secondary=134	203.72			199.70			204.31			187.34			181.82			192.63		
	Bachelors=65	255.47			273.98			235.64			246.78			209.85			238.85		
	Masters=21	284.36			301.12			249.26			298.02			259.21			278.85		
	Postgraduate=4	327.75			337.50			298.25			281.00			234.25			259.00		
<b>Number of Children</b>	None=118	233.59	32.320	.001	265.78	93.528	.001	217.39	12.165	.033	238.57	35.902	.001	208.84	26.640	.001	242.31	44.399	.001
	one=52	189.19			187.10			189.63			188.70			209.88			200.16		
	Two=90	175.03			166.32			172.64			164.36			154.02			157.83		
	Three=50	181.06			146.85			171.36			162.06			161.39			150.05		
	Four=33	131.17			121.06			171.44			152.00			179.64			162.33		
	>4=	164.08			141.39			197.25			176.41			240.39			176.49		
<b>Income</b>	20,000=131	179.91	16.484	.001	177.73	9.981	.019	183.25	11.357	.010	183.21	3.283	0.350	189.71	2.305	0.511	189.37	3.455	0.327
	21000-40,000=183	181.62			189.07			182.25			187.92			190.14			184.39		
	41,000-60,000=58	232.31			214.63			224.72			213.27			200.95			209.62		
	61000-80,000=9	277.00			271.17			264.39			202.06			142.00			229.06		
<b>Settings</b>	Urban=278	204.64	9690.500	.001	209.92	8224.500	.001	200.71	10782.500	.001	203.26	9899.000	.001	190.71	13285.500	.615	202.78	10207.000	.001
	Rural =100	147.41			132.75			158.33			149.49			184.20			152.57		
<b>Type of gynecologic problem</b>	Ovary cyst=33	210.88	10.493	.015	170.17	29.799	.001	178.29	0.775	.855	171.02	25.432	.001	222.75	13.812	.003	27.248	27.248	.001
	Dysmenorrhea=37	189.80			229.34			199.62			252.55			238.05			263.99		
	PCOs=46	234.50			259.35			196.01			236.38			202.34			228.40		
	Others=265	181.14			176.38			190.51			176.24			177.91			176.02		
<b>Type of Therapy</b>	Surgery=74	214.32	7.282	.26	183.93	1.560	.459	203.98	4.308	.116	181.25	5.207	.074	200.68	2.747	.253	176.61	4.464	.107
	Medications=252	179.81			188.99			182.31			185.88			183.49			188.87		
	Others=54	207.77			206.56			210.25			221.12			205.94			217.15		

Demographic	n	Health responsibility			Physical activity			Nutrition			Spiritual growth			Interpersonal relation			Stress management		
		Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value	Mean rank	Test stats	P value
Type of comorbidity	None	207.92	11.489	.009	226.32	35.292	.001	193.79	1.621	.655	222.99	29.142	.001	205.79	13.115	.004	217.85	17.786	.001
	Hypertension	181.56			174.03			184.67			178.95			177.03			170.31		
	Diabetes	149.60			140.81			205.70			149.78			212.74			174.34		
	Others	193.23			163.48			183.23			153.94			155.51			167.11		

Mann-Whitney test ( $p \geq 0.05$ )<sup>a</sup>;Kruskal-Wallis test ( $p \geq 0.05$ )<sup>b</sup>

### **3.6 Comparison of Health Promoting Lifestyle Behavior Domains among patients with Gynecological problems by Demographic Characteristics**

Significant difference ( $p \leq 0.05$ ) in health promoting life style behavior was observed among patients of gynecological problems residing in different setting, having different marital status, different types of gynecological problem and educational background. Patients with gynecological problem residing in rural settings, married, who had ovary cyst and more educated had comparatively improved health promoting lifestyle behavior. While no significant difference ( $p \geq 0.05$ ) among health promoting life style behavior was observed in relation to other demographic characteristics (Table 6).

## **4. DISCUSSION**

Gynecological problems are greatly affecting women health worldwide and especially in developing countries due to lack of advanced reproductive health facilities and poor health promoting lifestyle behavior that have negative impact on health related quality of life of women [2]. Due to prolonged treatment patients, physical, social and emotional discomfort is common among patients which tend to reduce treatment outcomes. Improved HPL behavior has a direct positive impact on patient's quality of life [10]. The results of the present study reported low health promoting life style behavior was low among women. Lowest scores for HPLP II were observed in the domain of physical activity followed by the domain of health responsibility. Health responsibility among the women was quite low and they did not report unusual signs and symptoms to physicians or health care professionals and often did not follow planned exercise. The findings are in line with a study conducted in Iran which reported low mean score for physical activity domain of HLPL [16]. Furthermore, the current study reported that nutrition pattern was not limited in terms of often eating breakfast and limiting sugar use. These findings are in concordance with the study findings from Korea which reported that unhealthy dietary patterns is identified among major risk factors for poor QoL [17]. HPLP II is a prominent predictor of health and has been widely used tool for providing useful information regarding health promoting lifestyle impact on

patient's quality of life. The role spiritual growth among patients of gynecological problem was reported highest among other domains. Similar findings were reported from a study conducted in Iran which showed highest score related to spiritual growth [18]. The results of the present study showed highest mean score for interpersonal relations as compared to other domains but their relations were limited in regards to never discuss problems, needs for intimacy, showing concern and love to others. The findings are consistent with as study from Iran which reported highest interpersonal relation score [19]. The results of the present study showed mean score for Stress management was moderate. These findings are in consistent with a study conducted in Korea which reported highest score for stress management [20]. Furthermore, the results of the present study revealed that the overall health promoting life style behaviors were found poor among unmarried, younger and women with poor socioeconomic & educational background and those from urban areas. This might be due to decreased support, increased societal pressure, and poor dietary & physical activity patterns. These findings are consistent with studies conducted in Korea, Iran and India [8,19,20].

## **5. CONCLUSION**

The results of this study revealed low health-promoting behaviors among women with gynecologic problems in Pakistan. Furthermore, the women's score of spiritual growth, stress management, and interpersonal relations was higher than that of nutrition and physical activity. Therefore, it appears necessary to perform health education programs emphasizing nutrition and physical activities and establish counseling centers for teaching the health-promoting behaviors to the women for improving their overall quality of life. Unfortunately, women health has not been the prime concern in Pakistan for the last few decades especially in rural and tribal areas. However, it is high time for all the stakeholders to prioritize women health and devise special policies and interventions for promoting healthy life style behaviors among them to uplift their living standards as being majority of the country's population.

## **CONSENT AND ETHICAL APPROVAL**

Study approval was taken from the Ethical Committee of Hamdard University (BASR-84-

5.2). Verbal and written consent were obtained prior to data collection. Respondents were ensured of the confidentiality of their responses along with full right to withdraw from the study at any time.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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