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THE CORRELATION BETWEEN MENOPAUSAL SYMPTOMS AND SEXUAL FUNCTION IN MENOPAUSAL WOMEN

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Abstract

*Sexual function is important issue in women health. Sexual function could be affected by several factors in menopausal women. This study aimed to investigate correlation between menopausal symptoms and sexual function. Cross sectional study design was used in this study. This study conducted among 372 menopause women aged 45-65 years. The Stages of Reproductive Ageing Workshop (STRAW +10) was used to identified participant who were in pre, peri and post-menopausal stages. The instrument used for data collection were the Female Sexual Function Index (FSFI), the Menopause Rating Scale (MRS) and demographic questionnaire. Chi-square and Spearman correlation was used to analyze correlation between variables. The result showed the was 88.7 % of the participants had female sexual dysfunction (FSFI≤*26.55). *A significant correlation was observed between menopausal symptoms (somatic, psychology and urogenital) and sexual dysfunction (P<0.001). the results of spearman correlation analysis showed significant negative correlation between urogenital symptoms and desire (r=-0.12,p=0.020), all subscale of menopausal symptoms and lubrication (somatic* [*r=-0.30,p<0.001*], *psychology* [*r=-0.29,p<0.001*] *dan urogenital* [*r=-0.27,p<0.001*]*), urogenital symptoms and orgasms (r=-0.17,p=0.024),urogenital and somatic with satisfaction (somatic* [*r=-0.11,p<0.027*], *urogenital* [*r=-0.11,p<0.034*] *and all of menopausal symptoms subscale with pain (somatic* [*r=-0.15,p=0.002*], *psychology* [*r=-0.21,p<0.001*] *dan urogenital* [*r=-0.16,p=0.002*]*). We conclude the importance of assessing menopausal symptoms as part of sexuality in menopausal women and need to be considered in the design health initiatives at menopause's sexual function*

Keywords: *Menopause, sexual dysfunction, Female*

Introduction

Menopause well known as the end of menstruation period and considered a scourge in a woman's life. Women spend a third of their lives in the period of menopause. The world's population of menopausal women reaches 894 million people and is expected to increase to 1.2 billion by 2030 (WHO, 2009). In Indonesia, the average age of women entering menopause period is 50 years with a life expectancy of 70 years. It is estimated that 50 million women in Indonesia will experience menopause with accompanying health problems (Yohanis, 2013). The increasing number of menopausal population and the increasing life expectancy of women's lives, there is a great responsibility in improving their quality of life.

Menopause is stated as an important period for a woman and becomes a major issue of women's health. At that time women complain of their physical changes, psychology and the decrease of sexual function. Sexual dysfunction in women could arise at any age, but research found the decrease in sexual function is more commonly reported when entering menopause period (Bachmann &Leiblum, 2004). The woman's age, the decreased hormone levels and the transition to menopause are factors that influence the decrease in sexual function (Jamali, Rahmanian, &Javadpour, 2016; Nazarpour, Simbar, Tehrani, Tohidi, &Majd, 2015). The decreased levels of estrogen hormones are closely related to decreased sexual desire, vaginal dryness that subsequently causes pain when sexually intercourse (Woods, Mitchell, &Smith-Di Julio, 2010; Zhang, Cui, Zhang, Shi, &Zang, 2017).

The decrease of sexual function negatively affects women's quality of life as well as women's health (Holmberg, Blair, &Phillips, 2010; McCool et al., 2016). There is a significant correlation between quality of life, menopausal symptoms and female sexuality (Alder, Pinkerton, & Utian, 2002; Levine, Williams, &Hartmann, 2008). Giving opportunity to women to express their sexual dysfunction could improve their quality of life (Nappi &Lachowsky, 2009).

Hormonal is stated as one of the causes of the decrease of sexual function (Vale, Coimbra, Lopes, & Geber, 2017). Psychological changes which experienced by menopausal women becomes another factor that affect the sexual function (Hayes et al., 2008). Besides psychological changes, women who enter menopause period are also experience other symptoms such as somatic symptoms, urogenital symptoms. After conducting literature studies, there were few studies that examine the correlation between sexual function and menopausal symptom, especially in Indonesia. Therefore it is necessary to conduct research on the correlation between sexual function and menopausal symptoms.

According to WHO, menopause is permanent discontinuation of menstruation due to the loss of ovarian follicular activity (WHO, 2009). Clinically, after 12 consecutive months of amenorrhea, the last menstrual period is retrospectively established as the time of menopause (Greendale, Lee, &Arriola, 1999).

Menopause usually occurs at the age of 51-52 years (Freeman, Sammel, &Sanders, 2014). The age of women entering menopause are varied in one country to other countries. In Western countries, the age of menopause in American woman is 51 years old while in Asian women the end of menstruation is close to the age of 50 years (Palacios, Henderson, Siseles, Tan, &Villaseca, 2010; Santoro &Chervenak, 2004). In Indonesia, the average age of women entering menopause is 49.9 years (Yohanis, 2013).

The menopause symptoms of women are related to physical changes include vaginal dryness, vasomotor instability (vasodilation and vasocontriction such as redness due to heat (flashes) and sweating at night, sleep patterns disorders and weight gain (Minkin, Reiter, &Maamari, 2015). In addition, the other physical changes experienced by the women are sexual dysfunction, pain in muscles and fatigue (Makara-Studzińska, Kryś-Noszczyk, &Jakiel, 2014).

Besides the physical changes, other menopausal symptoms are also changes. Entering menopause is the time when vulnerability to emotions occurs (Clayton &Ninan, 2010). Menopausal women are easily to mood swings and even depression (Bromberger et al., 2011). Other research mentions that irritability, anxiety and mental fatigue are other psychological changes that accompany menopause of women (Sharma &Mahajan, 2015). Moreover women who are menopause also complaining about urogenital symptoms such as vaginal dryness, bladder complaint and also sexual problem.

Menopausal women often complain of sexual function decrease. Research showed that sexuality function decreases as women enter climacteric or menopausal period. The study which conducted using DSM IV, showed that 51.3% of women in Chile and 78.4% of women in Ecuador experienced sexual dysfunction. Other studies in menopausal women showed that 69.73% of menopausal women experienced sexual dysfunction (Dąbrowska-Galas, Dąbrowska, &Michalski, 2019). DSM IV of the American Psychiatric Association and ICD-10 of the WHO classify sexual dysfunction into four categories namely: desire disorders, arousal disorders, orgasmic disorders, sexual pain disorders.

Desire disorders are reduced thoughts, sex delusions and an desire in having sexual intercourse. Arousal disorder is the inability to achieve or maintain subjective sexual pleasure and pleasure.Orgasmic disorder is difficulty to reach orgasm. Sexual pain disorder is the discomfort of pain during intercourse
(Elvira, 2006)

The decrease of sexual function in women are often associated with decreased levels of estrogen hormones. Decreased estrogen hormone causes the vagina becomes atrophy so that it is thinner, drier and less elastic. This vaginal dryness appears pain during sexual intercourse (Woods et al., 2010). Besides hormones, other factors are considered as triggers in sexual dysfunction in women including age, education, sociodemographic and lifestyle. Furthermore, the symptoms that appear in menopause are said to be independent factors in the decrease of menopausal sexual function (Dąbrowska-Galas et al., 2019).

Methods

This research employed cross sectional design research. The sample in this study were 372 women aged 45-65 years who lived in Denpasar Bali and they were asked to complete a questionnaire. The inclusion criteria include women aged 45–65-year-old who were active in doing intercourse and who were willing to be participants to this study.

Exclusion criteria in this study include women who use Hormone Replacement Therapy (HRT) or other drugs that may eliminate menopausal symptoms, women who were using contraceptives, women who had health problems such as stroke, Alzheimer's, epilepsy or head injuries) and those with mental disorders. This research has received an ethics from the Research Ethics Commission of the Institute of Technology and Health Bali. Instruments used in this study were included the Stages of Reproductive Aging Workshop 2001" (STRAW) was used to identify pre-menopause, peri-menopause and post-menopause, general questionnaires consisting of: age (in years), number of children, marital status, education, occupation, menopause status (pre, peri or postmenopausal), body mass index (kg/m2), hypertension (yes/no), diabetes mellitus (yes/no), exercise habits (yes/no). The symptoms of menopause were measured by using the Indonesian version of the Menopause Rating Scale questionnaire that has been tested previously with a Value of Cronbach alpha 0.87 (Heinemann et al., 2004) while sexual function was measured by using the Indonesian version of female sexual function index (FSFI) with an alpha Cronbach value of 0.84 (Nuring, Iman, Denny, &Ova, 2018).

SPSS for IBM Windows 18.0 was used to analyze the data. The data were analyzed by using univariate analysis for the description and distribution of each variable. Then the researcher used a bivariate analysis of rho and chi-square spearman correlations test to analyze the correlation between menopausal symptoms and sexual function

Results

Table 1. Respondents Characteristics Data (n=372)

Characteristics	n (%) / Mean ± S
Age	53.01± 10.00
Number of Children	2.92 ±1.44
Marital Status	
Have Spouse (married)	342 (91.9)
No Spouse (divorced, widowed and unmarried)	30 (8.1)
Education	
Not in School	14 (3.8)
Informal School	8 (2.2)
Elementary School	34 (9.1)
Junior High School	56 (15.1)
Senior High School	136 (36.6)
College	124 (33.3)
Occupation	
Work	134 (36.0)
Housewives	238 (64.0)
Menopause Status	
Pre-menopause	78 (21)
Peri-menopause	103 (27.7)
Post-menopause	191 (51.3)
Body Mass Index	
Under (<18,5)	17 (4.6)
Normal (18,5-24,9)	256 (68.8)
Overweight (25,0-30)	85 (22.8)
Obesity (>30,0)	14 (3.8)
Exercise	
Yes	136 (36.5)
No	236 (63.4)
Hypertension	
Yes	66 (17.7)
No	306 (82.3)
Diabetes Mellitus	
Yes	28 (7.5)
No	344 (92.5)

Three hundred and seventy-two respondents were willing to participate in this study. From the analysis in table 1 showed that the average age of respondents in this study was 53.01±10.00 with an average number of children

2.92±1.44. Most of the respondents had spouse (91.9%) and most of the participants were high school educated (36.3%). More than half of the total respondents were housewives (64%) and has entered the post-menopausal period (51.3%). The majority of respondents in this study were classified as having a normal Body Mass Index (BMI) (68.8%), having no exercise habits (63.4%), and no hypertension (82.3%) and diabetes mellitus (92.5%)

Table 2. Frequency Distribution of Menopausal Symptoms of Respondents with MRS (n=372)

Menopause Symptom	No/Little		Less		Moder		Severe	
	n	%	n	%	n	%	n	%
Somatic	152	40.9	50	13.4	99	26.6	71	19.1
Psychology	122	32.8	46	12.4	58	15.6	146	39.2
Urogenital	113	30.4	34	9.1	66	17.7	159	42.7
Total	131	35.2	30	8.1	85	22.8	126	33.9

The distribution of menopausal symptoms experienced by respondents is seen in table 2. The majority of the respondents felt no symptoms or few symptoms felt (40.9%) (45.7%) symptoms from moderate to severe. On psychological symptoms most of the respondents felt severe symptoms (39.2%). While in urogenital symptoms the majority of respondents felt severe symptoms (42.7%).

Table 3. Distribution of Respondents' Sexual Function Disorders with FSFI (n=372)

Domain of Sexual Function	Score		Min-max
	Mean	SD	
Desire	2.93	1.45	1.2-6.0
Arousal	2.52	1.12	0.0-.6.0
Lubrication	3.72	1.00	0.0-6.0
Orgasm	3.47	1.10	0.0-6.0
Satisfaction	3.13	1.33	0.8-6.0
Pain	4.01	1.30	0.0-6.0
Total	19.74	4.87	4.0-34.0
FSFI ≤26.55 (88.7%)			

There were 88.7% of respondents of this study had an FSFI score of ≤26.55, indicating that most of the respondents of this study had sexual dysfunction. The mean score of each FSFI domain is visible in table 3. The mean higher scores on FSFI domains showed better sexual function. Pain was the domain of FSFI where respondents obtained the highest score (4.01±1.30) which indicates the minor disorders in the pain domain. However, lower scores indicated major sexual function disorders that respondents experienced in the domain of sexual desire (2.93±1.45) and arousal (2.52±1.12).

Table 4. Correlation Between Respondents' Characteristics and Sexual Function

Characteristic	Sexual Dysfunction
	p-value
Age	<0.001
Number of Children	<0.001
Marriage	0.578
Education	0.005
Occupation	0.165
Menopause Status	<0.001
Body Mass Index	0.005
Exercise	0.730
Hypertension	0.022
Diabetes Mellitus	0.558

Table 4 showed the correlation between respondent characteristics and sexual dysfunction. Significant characteristics related to sexual function disorders include age (p<0.001), number of children (p<0.001), education (p=0.005), body mass index (p=0.005) and hypertension (p=0.022).

Table 5. Correlation between Menopause Symptom and Sexual (n=372)

Menopause Symptoms	Sexual Dysfunction p value
Somatic	<0.001
Psychology	<0.001
Urogenital	<0.001

p-value was obtained from correlation analysis $\chi 2$

Table 5 showed the correlation between menopausal symptoms and sexual dysfunction. Symptoms of menopausal symptoms both somatic, psychological and urogenital significantly correlated with sexual dysfunction (p<0001).

Table. 6 Correlation Between Menopause Symptoms and FSFI Items (n=372)

Menopausal symptoms (Score)	Female Sexual Function Index											
	Desire		Arousal		Lubrication		Orgasm		Satisfaction		Pain	
	r	p	r	p	r	p	r	p	r	p	r	p
Somatic	-0.10	.052	-0.80	.123	-0.30	<.001**	-0.09	.064	-0.11	.027*	-0.15	.002*
Psychology	-0.08	.103	-0.01	.814	-0.29	<.001**	-0.06	.244	-0.06	.242	-0.21	<.001**
Urogenital	-0.12	.020*	-0.08	.119	-0.27	<.001**	-0.17	.024*	-0.11	.034*	-0.16	.002*
Total	-0.09	.064	-0.05	.311	-0.30	<.001**	-0.08	.119	-0.09	.069	-0.18	<.001**

p-value was obtained from spearman-rho correlation analysis; * p<.05, **p<.001

Table 6 showed the analysis of the correlation between menopausal symptom and sexual dysfunction. There was a negative correlation between urogenital symptoms and sexual desire (r=-0.12,p=0.020), negative correlation with sufficient correlation strength between all menopausal symptoms with lubrication (somatic [r=-0.30,p<0.001], psychology [r=-0.29,p<0.001] and urogenital [r=-0.27,p<0.001]), negative correlation between urogenital and orgasm (r=-0.17,p=0.024), negative correlation with sufficient strength between somatic symptoms and urogenital symptoms with satisfaction (somatic [r=-0.11,p<0.027], urogenital [r=-0.11,p<0.034] and negative correlation with weak correlation strength between all menopausal symptoms with pain (somatic [r=-0.15,p=0.002], psychology [r=-0.21,p<0.001] and urogenital [r=-0.16,p=0.002]).

Discussion

Various aspects of women's life were affected by menopause. Many changes occur while entering menopause both biologically, psychologically and socially and these changes may be related to female sexual function (Dennerstein, Randolph, Taffe, Dudley, &Burger, 2002). The study was conducted on women aged 45-65 years who were still active in sexual intercourse within the last 4 weeks. The results showed that 88.7% of women aged 45-65 years experienced sexual dysfunction problems. These results were consistent with the findings of previous studies such as the results of research conducted by Afiyanti (2019) on 360 menopausal women aged 45-60 years in Indonesia mentioned that the majority of respondents experienced sexual dysfunction with a total mean FSFI score of <26.55. Research which conducted on post-menopausal women at Dr Soetomo Surabaya also obtained the same results that a total of 78.4% of respondents experienced sexual dysfunction (hurahmi, 2017). Another study conducted on Turkish women found that as many as 68.8% of menopausal women aged 40-65 years experienced sexual dysfunction (Ozerdogan, Sayiner, Kosgeroglu, &Unsal, 2009). The prevalence variation of this incidence of sexual dysfunction caused by differences in a person's race, religion, culture, and subjective perceptions (Beigi, Fahami, Hassanzahraei, &Arman, 2008; Lin, 2013).

Sexual dysfunction experienced by menopausal women aged 45-65 years in this study include disorders of sexual desire, arousal, lubrication, orgasm, satisfaction and pain. The severe disorder was in sexual desire and arousal. Sexual desire and arousal were two of the most commonly complained about sexual problems compared to lubrication, orgasm, satisfaction and pain (Çayan et al., 2016). Research conducted by Afiyanti (2019) also found that the main sexual problems lie in the domain of sexual desire and arousal. Furthermore, research conducted by Magdalena (2019) stated that sexual desire is the hard sexual problem felt by women aged 40-65 years.

The symptoms of menopause had a correlation with sexual dysfunction in women. The results of this study showed that sexual function in women had a negative correlation with the menopausal symptoms level. The domain scores in MRS (somatic, psychological and urogenital) increased in women who experienced sexual dysfunction. Somatic symptoms sweating/flusher, hearth discomfort, sleeping disorder and joint and muscle complaint. Psychological symptoms included depressive mood, irritability, anxiety and physical and mental exhaustion. While urogenital symptoms included sexual, bladder complaint and vaginal dryness. Previous research conducted by Dąbrowska-Galas et al. (2019) in which in his research found that in women with sexual problems (FSFI ≤26.5) the score on the domain of MRS both somatic, psychological and urogenital increased. Consistent with the results of a study conducted by Perez-lopez (2012), in his study involved 179 women who were still active in sexual intercourse found the results of increasingly severe perceived menopausal symptoms correlated with decreased sexual function. Urogenital MRS was an important factor in the decrease of sexual function in menopausal women (Chedraui et al., 2011). In this study lubrication and significant pain correlated with urogenital MRS (sexual problems, bladder problems and vaginal dryness). The decrease of estrogen levels in menopausal women lead to a decrease in the blood supply to the vagina and this has an impact on lubrication fluid as well as an increase in dyspareunia. Women with urogenital discomfort usually refuse to have sex (Woods et al., 2010; Zhang et al., 2017)

Besides menopausal symptoms, the study also found the correlation between the decrease of sexual function in women with age, number of children, education, menopause status, body mass index and hypertension. Low sexual function is associated with menopause status, age, number of children and education (Verit, Verit, &Billurcu, 2009). Although some previous studies have found no correlation between age and decreased sexual function (Dhillon, Singh, &Ghaffar, 2005; Laumann, Paik, &Rosen, 1999) but consistent with research conducted by (Dennerstein, Dudley, &Burger, 2001) age correlated with decreased sexual function in women. Health conditions such as hypertension and body mass index were also associated with decreased sexual function (Lianjun et al., 2011; Nazarpour, Simbar, &Tehrani, 2016; Pérez-López et al., 2012).

The limitation of this study is the occurrence of potential responses that are different from the reality which experienced by respondents, because of sensitive questions and this causes bias in the study. Another limitation is this study may not be generalized in communities because this study took place in Bali, Indonesia with differences in cultural culture and lifestyle. This study used a cross sectional design so that it is impossible to find causal correlation.

Conclusion

Sexual dysfunction in menopausal women is an important issue for health practitioner to pay attention to. Many women experienced sexual dysfunction when entering menopause period. The symptoms of menopause have a role in the severity of sexual dysfunction experienced. Overcoming the symptoms of menopause experienced by the women could relieve sexual dysfunction in menopausal women. The results of this study can be used as a basis for health practitioner to be more concerned about the changes experienced by women when entering menopause period that negatively impacts their quality of life. The results of this study also encourage women's health to be an issue that should be considered and encourage the creation of appropriate strategies which help to relieve the symptoms of menopause prevent the occurrence of sexual dysfunction in menopausal women.

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