The Effect of Combined Oral Contraceptives on Sexual Function among Women of Reproductive Age in Jombang District, East Java

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ABSTRACT

Background: Sexuality is an important and inseparable part of a woman's life. Mood and sexual related side-effects are frequently expressed problems by women of reproductive age who use hormonal contraceptives. This study aimed to analyze the effect of combined oral contraceptives on sexual function among women of reproductive age in Jombang District, East Java.
Subjects and Method: This was an analytical observational study using cross-sectional design. The study was conducted at 5 community health centers (Mojoagung, Mojowarno, Jogoloyo, Jelak Ombo and Perak), Jombang District, East Java, from February to March 2017. A sample 120 women of reproductive age who use combined oral contraceptives was selected for this study. The dependent variable was female sexual function. The independent variables were combined oral contraceptives use, age, parity, menstrual cycle, depression, and body mass index. The data on depression was measured by Hamilton Depression Rating Scale. Body mass index was measured by anthropometry. Female sexual function was measured by female sexual function index. The data were analyzed by path analysis.
Results: Female sexual function was negatively influenced by age (b=-0.21; SE = 0.05; p<0.001), depression (b= -0.44; SE=0.12; p<0.001), body mass index (b=-0.16; SE= 0.09; p=0.063), and duration of oral contraceptive use (b=-0.20; SE=0.13; p=0.121). Depression was influenced by body mass index (b=0.14; SE=0.07; p=0.037), duration of oral contraceptive use (b=0.30; SE= 0.10; p=0.003), and age (b=0.09; SE=0.04; p=0.018). Body mass index was influenced by age (b= 0.10; SE=0.05; p=0.036), and duration of oral contraceptive use (b= 0.48, SE = 0.13; p<0.001). Menstrual cycle was influenced by duration of oral contraceptive use (b =-0.05, SE=0.13, p=0.007), age (b=-0.02; SE=0.01; p=0.002), and body mass index (b=-0.05; SE=0.11; p<0.001).
Conclusion: Female sexual function is negatively influenced by age, depression, body mass index, and duration of oral contraceptive use.

Keywords: bio-psychology factor, oral contraceptive, female sexual function

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BACKGROUND

Sexuality is an important and inseparable part of a woman's life, combined contraceptive pills may negatively influence the user's health and psychological status, and cause a decline in her sexual function (Pastor *et al.*, 2013). Mood and sexual related side-effects significantly generate problems to acceptor users of hormonal contraceptives in women of reproductive age due to hormonal change (Wiebe *et al.*, 2011).

Based on the Book of Profile of Jombang Regency 2015, the number of active birth control program participants is as follow: contraceptive injection (63.10%), pills (13.90%), IUD (7.50%), implant (7.70%), tubectomy (5.90%), vasectomy (0.50%) and others (1.40%). From the data above, it shows that combined contracep-

tive pills are still one of the most desirable by women of reproductive age. The result of interview and monthly reports of the birth control program of Jombang Health Office mentioned that there was 125 combined contraceptive pills acceptors that complained about headache, 50 acceptors complained about the change of menstrual cycle aged around 20-35 years old with more than one parity, and 40 acceptors complained about weight gain.

The study by Hassan *et al.,* (2015) states that the problems to female sexual functions related to the effect of the usage of contraceptive is still not much studied and considered trivial with the prevalence of 20%-50%. The prevalence numbers of each event of female sexual dysfunction could differ in every country. In Turkey there is 48.3%, in Chile 22%, in Morocco 27%, in Brazil 49% (Kariman *et al.*, 2016). Walwiener *et a.l*, 2010 mentions that the factors causing sexual dysfunction in women is related to the use of hormonal and non-hormonal contraceptive agents.

Ningsi *et al.*, 2012 study on the acceptors of 3 monthly contraceptive injection in Kasi-kasi Community Health Center Rapocini sub-district Makasar in which the result shows that there is an effect of 3 monthly contraceptive injection on (OR= 0.39; p=0.003), parity (OR=0.91; p= 0.002) and age (OR=3.36; p=0.001) to sexual dysfunction. A study done by Mozafari *et al,* 2015 states that over weight and obesity on women causes negative effect on the female sexual function which experience dysfunction (p<0.001). The use of combined oral contraceptive causing significant decline on intercourse frequency in one week and lessen the orgasm frequency while having sexual intercourse (Battaglia *et al.*, 2011).

A study by Sani *et al.*, (2014) finds a result that there is an effect of the duration

of hormonal contraceptive use on depression (p<0.005). This is due to the lack of serotonin in the brain. Serotonin functions as the mood and feelings regulator which gives impact on the sexual dysfunction on women. The etiology on sexual dysfunction on women is a multi factor which is affected by bio-psychosocial aspects such as menstrual cycle disorder that could affect the woman's psychological situation therefore lowering their sexual libido (Malary *et al.,* 2015). Psychological factors such as sex abuse, childhood trauma, puberty trauma, stress, anxiety, depression, body image concerns are not only directly affecting their sexual desire but they could also affect the mind causing sexual dysfunction which leads to lower self confidence and causing incompatibility towards their partner thus influencing their sexual desire. Whereas social factors such as social norms, religion, culture, social economy, educational level, financial-related stressor, life experience may influence the attitude related to sexual libido, sexual behavior, and sexual libido frequency. Partner-related factors are marriage duration, relationship satis-faction, couples' conflicts, sexual dysfunctions suffered by one of them. Sexual problems are still considered taboo in several countries (Malary *et al.*, 2015), therefore not all women would report their sexual difficulty to be measured when studying the effect of hormonal contraceptive. Sexual dysfunction in women is one of the most important reproductive health problems because it is related to the continuity of reproductive function and greatly affects the harmonious relationship of husband and wife (Saputra, 2013).

The purpose of this study was to analyze the bio-psychosocial factors of combined pills acceptors towards sexual function of women in Jombang Regency.

SUBJECTS AND METHOD

1. Design of the Study

The method of the study was analytical observational study using cross-sectional design. It was conducted in February – March 2017. The study was conducted in Mojoagung Community Health Center, Mojowarno Community Health Center, Jelak Ombo Community Health Center, Jogoloyo Community Health Center, and Perak Community Health Center, Jombang Regency, East Java.

2. Population and sample

The population on this study was all active combined pill acceptors in Jombang Regency as many 120 women had been chosen using fixed exposure sampling technique The subject of the study was chosen based on the exposure, while the exposure status varied following the "fixed" subject status (Murti, 2016).

The inclusion criteria of this study is women of reproductive age (20-35 years old or 36-45 years old), parity 1 or more, using combined pills for <3 or >3 years, experiencing disturbed or normal menstrual cycle and living in Jombang Regency.

3. Variable of the Study

The independent variables of the study included age, duration of combined contraceptive pill usage, parity, menstrual cycle, psychological, Body Mass Index. Independent variable is female sexual function.

4. Operational Definitions

Operational definitions of the duration of contraceptive use was the duration of the combined contraceptive pills use by acceptors in regular basis and continually measured by years.

Age was the age of the acceptor based on the date of birth on their birth certificate when data was collected and measured in years. Parity was the number of childbirths experienced by the combined pills accep-tors. Menstrual cycle was the regularity of menstrual cycle happened when acceptor was taking the combined contraceptive pills. Psychological factor was the acceptor's emotional condition when taking the com-bined contraceptive pills.

Body Mass Index is an indicator used to measure the nutritional status of the subject of a study based on weight (kg) divided the height in square meter (m²). Female sexual function is the sexual relationship done by husband and wife within the last one month.

5. Study Instruments

Data about depression were measured using the standard instrument, i..e: Hamilton Depression Rating Scale. Measuring female sexual function used Female Sexual Function Index.

6. Data Analysis

The subject characteristics of the subject of the study was in the form of a continuous data described in n, mean, standard deviation, minimum, and maximum. Categorical data was described as frequency (n) and percentage (%). Bivariate analysis was a continuous data using Pearson's correlation. Multivariate analysis used path analysis.

The steps of the path analysis consisted of :

1. Model specification
2. Model identification
3. Model compatibility
4. Parameter estimation
5. Model respecification

RESULTS

The characteristics of the subject of the study was presented in Table 1. Based on Table 1, there were 90.8% subjects with pervaginam childbirth history, most of them were unemployed (93.3%), length of marriage ≥10 years as many as 44.2%. Most of the subjects finished their senior high

school (68.3%), most of the subjects took their combined pills (74.2%) in regular basis.

Based on Table 1, most of the subjects aged 20-35 years old (67.5%). Percentage of the duration of the contraceptive use by the subject of the study was respectively <3 years 25% and ≥3 years 75%. Most of the subject had multipara parity (51.7%).

Menstrual cycle experienced by the subjects of the study who were users of combined contraceptive pills was normal (73.3%). As many as 55% subjects of the study experienced psychological changes towards depression. Subjects with normal Body Mass Index were 69.2%. Most of the subjects did not experience sexual dysfunction (51.7%).

Table 1. Subject characteristics and variables of the study

General data	Category	n	%
Childbirth history	Sectio cesaria	11	9.2
	Pervaginam	109	90.8
Occupation	Unemployed	112	93.3
	Employed	8	6.7
Marriage duration	1.5 years	15	12.5
	6-10 years	52	43.3
	≥ 10 years	53	44.2
Education	Basic education (primary and secondary)	35	29.2
	Middle education (senior high school)	82	68.3
	High education (college or equivalent)	3	2.5
Regularity in taking the combined contraceptive pills	Regular	89	74.2
	irregular	31	25.8
Age	20-35 years old	81	67.5
	36-45 years old	39	32.5
Duration of Combined pills use	Short term (< 3 years)	30	25
	Long term (≥3 years)	90	57
Parity	Primipara	58	48.3
	Multipara	62	51.7
Menstrual cycle	Normal	88	73.3
	Disturbed	32	26.7
Depression	Depressed (score HDRS >7)	66	55.0
	Not depressed (score HDRS 0-7)	54	45.0
Body Mass Index	Normal (18.5 to 25.0)	83	69.2
	Over (≥25.0)	37	30.8
Female sexual function	Normal (score FSFI>26.55)	62	51.7
	Disturbed (score FSFI ≥ 26.55)	58	48.3

The result of descriptive statistics on continuous data in the form of age, parity, menstrual cycle, combined contraceptive pills duration, Body Mass Index, and female sexual function could be seen in Table 2.

Table 2. Univariate analysis on the variables of the study

| Variables	n	Mean	SD	Minimum	Maximum
Age (year)	120	33.55	6.24	24	45
Parity	120	1.75	0.81	1	4
Duration of combined pills use (years)	120	4.29.	2.36	1	12
Menstrual cycle	120	0,73	0.44	0	1
Depression (HDRS score)	120	7.63	2.37	0	13
Body Mass Index (kg/m²)	120	24.02	3.07	18.07	30.17
Female sexual function (FSFI score)	120	25.86	3.58	16.40	32.50

Tabel 2 showed that each variable had very small data diversity. Mean described the average value while the standard devi- ation (SD) value showed how far the divers- ity of the data. Small SD value was an indicator that the data was representative.

Table 3. Bivariate Analysis on the effect of bio-psychosocial of combined pills acceptors on female sexual function

Independent variables	r	p
1. Age (year)	- 0.64	<0.001
2. Parity	-0.39	<0.001
3. Duration of combined pills use (years)	-0.58	<0.001
4. Menstrual cycle	0.49	<0.001
5. Depression (HDRS score)	-0.59	<0.001
6. Body Mass Index (kg/m²)	-0.48	<0.001

Table 3 showed the result of bivariate analysis on age (r= -0.64, p<0.001), parity (r= -0.39, p= 0.001), duration of combined pills use (r=-0.58, p<0.001), depression (r=-0.59, p< 0.001) and Body Mass Index (r=-0.48, p<0.001) had negative effect on the female sexual function. Normal mens- trual cycle (r=049, p=0.001) had positive effect on female sexual function.
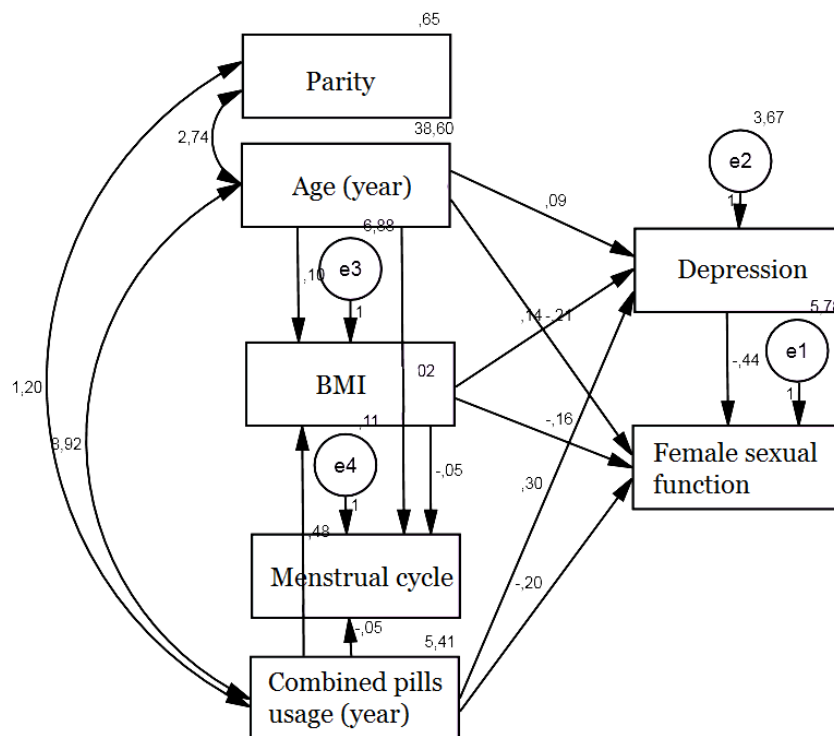
Picture 1. Path analysis structural model

Picture 1 showed the structural model by using IBM SPSS AMOS 20 estimation. The indicators that showed path analysis con- formity could be seen in Table 5. Goodness of fit measure value earned as the result of fit index CMIN that was 2.84; p=0.828 >0.05; GFI=0.98 ≥0.90 NFI= 0.99 ≥ 0.90; CFI= 1.00 ≥ 0.95; RMSEA <0.001 (≤0.08). The result showed that the model fit the criteria set and confirmed as in accordance with empirical data.

Table 4. Path analysis result

Independent Variables		Dependent Variables	b*	SE	p	β**
Direct effect						
Female sexual function	←	Age (year)	-0.21	0.05	0.001	-0.36
Female sexual function	←	BMI (kg/m²)	-0.16	0.09	0.063	-0.14
Female sexual function	←	Contraceptive pills usage (year)	-0.20	0.13	0.121	-0.13
Female sexual function	←	Depression (HDRS Score)	-0.44	0.12	0.001	-0.29
Indirect effect						
BMI	←	Age (year)	0.10	0.05	0.036	0.21
BMI	←	Combined pills usage (year)	0.48	0.13	0.001	0.36
Depression	←	BMI (kg/m²)	0.14	0.07	0.037	0.18
Depression	←	Combined pills usage (year)	0.30	0.10	0.003	0.30
Depression	←	Age (year)	0.09	0.04	0.018	0.23
Menstrual cycle	←	BMI (kg/m²)	-0.05	0.01	0.001	-0.32
Menstrual cycle	←	Combined pills use(year)	-0.05	0.02	0.007	-0.24
Menstrual cycle	←	Age (year)	-0.02	0.06	0.002	-0.27

CMIN = 2.84 p = 0.828 (>0.05)
GFI = 0.99 (≥ 0.90)
NFI = 0.99 (≥ 0.95)
CFI = 1.00 (≥ 0.95)
RMSEA <0.001 (≤ 0.08)

*: Unstandardized Path coefficient   **: Standardized path coefficient

On Table 4, it was known that the female sexual function was affected by direct variables such as psychological factor, aging, over body mass index, and the duration of combined pills usage.

Each increasing unit of depression, would decrease female sexual function by -0.44 unit (b= -0.44; SE= 0.11; p= 0.001)

Each increasing unit of age would decrease the female sexual function by -0.21 unit (b=-0.21; SE= 0.05; p= 0.001)

Each increasing unit of body mass index would decrease female sexual function by -0.16 unit (b=-0.16; SE= 0.09; p= 0.063).

Each increasing unit of usage of combined contraceptive pills use would decrease female sexual function by -0.20 unit (b=-0.20; SE= 0.13; p= 0.121).

Psychological depression was affected by body mass index and the duration of the combined pills use and age.

Each increasing unit of body mass index would increase depression by 0.14 (b=0.14; SE=0.07 p= 0.037),

Each increasing unit of combined pills use would increase depression by 0.30 (b=0.30; SE=0.10; p= 0.003).

Each increasing unit of age would increase depression by 0.09 (b=0.09; SE= 0.04; p= 0.018)

Menstrual cycle was affected by body mass index, age, and duration of combined contraceptive pills use.

Each increasing unit of body mass index would lead to menstrual cycle disorder by -0.05 (b=-0.05; SE=0.01; p= 0.001).

Each increasing unit of duration of contraceptive pills use would lead to normal menstrual cycle by -0.05 (b=-0.05; SE= 0.01; p= 0.007).

Each increasing unit of age would lead to menstrual cycle disorder by -0.02 (b=-0.02; SE= 0.01; p= 0.002).

DISCUSSION

1. The effect of age factor toward female sexual function

There was a negative effect of age toward sexual function and statistically significant. Age is related to progressive decline of human physical and cognitive function, the age effect greatly depends on the changes of endocrine system managed by the central

nerve systems which will also influence sexual behavior, the hormones that affect sexual function and reproductive system, i.e.: the deterioration of the ovarian function that is the lessening of estrogen and progesterone hormones that would influence the change in menstrual cycle (Nurmalina, 2011)

As one gets older, it would also lead to increasing of Body Mass Index because generally body fat will increase at the age of 20-40 years old, the addition of body fat mentioned is related to the reduction of physical activity as one gets older, besides lack of physical activity, is it also known that women entering menopause period will also experience an increase in body fat distribution, this is due to the lessening of estrogen, based on a study on women facing estrogen lessening will also experience body fat gaining thus influence their BMI.

Aging process, body metabolism will naturally slows down and low mobility will speed up the replacement of muscle mass with body fat. The lessening of muscle mass helps reducing the calorie consumption and causing almost every food consumed turns into fat, which would make women more susceptible to obesity. Overweight in middle-aged women is due especially to age and lifestyle as well as menopause. A lot of women would gain weight around menopause period and gain more fat around the waist more than before especially if they lack of activities (Nurmalina, 2011).

Hormonal disturbance is related to obesity and followed by reproductive dysfunction. The excess of adipose tissue increases the peripheral aromatization of an-drogens to estrogen. Sex hormone binding globulin (SHBG) damage could increase the testosterone and estradiol bioavailability (E2). Negative feedback center on estrogen excess contributes on the lessening signal of hypothalamus-

pituitary. Androgen bio-availability excess will also have damaging effect on oocyte, follicle and endometrium (Gosman, 2009).

Obesity understanding from the side of endocrinology is developing rapidly by the finding of adipocyte which is secreted by fat and enterokinase secreted by the intestines, which widely affecting the metabolism including appetite, energy metabolism, blood pressure, and coagulation, almost all adipokines and enterokines are identified as having receptor in the hypothalamus believed to be an important destination tissue by this hormone, therefore, the receptor of the signal has a big role in outlining the tissue followed by specific tissue effects. Several signals are also influencing the menstrual cycle variation in several concentrations in the blood circulation (Gosman, 2009).

According to Wolfenden (2010) in Harahap (2013) the factors that mostly influences the menstrual cycle regularity is hormonal imbalance. There are a lot of factors that could cause disturbance in hormone regulation, some of them are stress, illness, change in routine, lifestyle, and body weight.

The adverse effect of obesity on health is related to varieties of serious illness such as hypertension, heart disease, diabetes mellitus, and respiratory disease. Someone suffering from obesity is usually would increase the risk of suffering from other illness and sickness, one of them is disorder in menstrual cycle (Runa, 2010 in Harahap, 2013).

Hupitoyo (2011) in Harahap (2013) mentions that there are several factors that could influence the menstrual cycle. One of the hormones that has a role in the menstrual process is estrogen.

Estrogen is synthesized in the ovaries, in the adrenals, placentas, testis, fat tissues and central nervous system According to

the analysis on the cause of longer menstrual cycle, it is due to an increase of estrogen in the blood due to the increasing of body fat. Over weight could influence menstrual cycle Harahap (2013).

Aging could also affect depression Dewi *et al.*, 2015 stated that there is a relation between age and depression tendency with significance p<0.001 and correlation coefficient by 0.541, which means that there is an influence of hormonal acceptor's age towards depression tendency. Older people experiencing decline in neuropsychology control including decreased attention, memory processing, information processing speed and overall cognitive function thus linked to losing of motivation, lack of passion, and energy, hard to concentrate, and tendency to suffer from depression.

The result of the study shows that of all the factors affecting sexual desire, aging is the most important one because it is linked to escalation of body mass index and causing depression that would lead to the declining of female sexual function (Malary *et al.*, 2015).

2. Depression factor influence on the women's sexual function

There was a negative influence between depression to female sexual function, depression is a psychological disorder that could lower their sexual function because depression could influence one's mood and feeling. Depression caused by the duration of combined pills usage is in accordance to the study done by Sani *et al.*, 2014 that states that there is an influence of how long hormonal contraceptive agent is used to level of depression due to the continuous lack of serotonin level in the brain, which one of serotonin function is to regulate one's mood/feeling, on women using combined pills, there is also a finding of the loss of libido. The losing of libido could be in the form of losing to desire to make love,

or the lessening of natural lubricant in the intimate organ and difficulty in reaching sexual satisfaction. One of the cause of this is the hormones (estrogen and progesterone) in the pills could bind testosterone, the hor-mone responsible to how big the libido is. Progesterone is responsible to the loss of humidity in the vagina, this is caused by the fat as the result of progesterone could not absorb water therefore humidity level is down. Water retention on the vagina would cause the vagina to be dry and uncomfortable during intercourse. This water retention is also caused by the fat reserve on vagina where it would obstruct water absorption and leading vaginal dryness (Sani *et al.*, 2014)

Headache is also felt by some combined pills users where the headache is caused by liquid retention that would increase the blood pressure. Estrogen is also causing sore on the breasts that would disappear on the next cycle and the Progesterone content also causing mood changes that would lead to depression and loss of sexual desire on combined pills users (Saifuddin, 2011).

Depression could also be influenced by the increasing of BMI because more BMI or women who are suffering from obesity will cause body image perception that would influence the woman's psychological side that would affect their sexual desire (Mozafari *et al.*, 2015).

Depression is also influenced by age because as the age gets older, there would be a decline in the neuropsychological control including decreased attention, memory processing, information process-sing speed and overall cognitive function thus linked to losing of motivation, lack of passion, and energy, hard to concentrate and depression (Dewi *et al.*, 2015).

3. Body Mass Index effect on the women's sexual function.

There is a negative influence of Body Mass Index towards sexual functions. More Body Mass Index will lead to sexual dysfunction this is in accordance to the study done by Mozafari *et al.,* 2015 that studies on the relation of body weight and female sexual function using Female Sexual Function Index Score. It is found that there is an inverse upside relation between BMI and *Female Sexual Function Index Score*. High Body Mass Index is linked to low Female Sexual Function Index score with value $p<0.05$ which means that obese women shows sexual dysfunction, this is due to three mechanism that is linked to obesity that affects sexual decline, i.e.: 1) insulin resistance and hormonal changes that might due to hormonal contraceptive use. 2) Dysiplidemia and the use of medicine, dysiplidemia is a lipid metabolism disorder marked by the increasing or decreasing of lipid fraction in the plasma. Major lipid fraction disorder is the increasing of total cholesterol level, Low Density Lipoprotein cholesterol that produces hormone and vitamin D on the cell wall membrane and triglyceride and the decreasing of High Density Lipoprotein cholesterol level that functions as the cleaner of the arterial blood vessels. 3) Psychological problem (Mozafari *et al,* 2015).

Body Mass Index is also influenced by the age. Body fat will increase on the age of 20-40 years old, the increasing of body fat is due to lack of physical activities as one gets older, besides lacking in physical activities, women entering menopause period is also having an increase in body fat distribution, due to the lessening of estrogen, based on a study on women entering menopause, there is an increase in body fat that directly influence the BMI value (Uji-ani, 2015) and weight gain on

middle aged women is not only due to age, lifestyle, but menopause also plays a role, a lot of women in menopause gain weight and have excess fat on the waist more than before especially if they are not active (Nurmalina, 2011).

Depression is also influenced by how long the combined pill is used. Sani et al., (2014) stated that the longer the use of the hormonal contraceptive, the heavier the depression that could be inflicted, there are several studies that shows that there is a disorder in the use of hormonal contraceptive one the biogenic amines such as MHPG (5 methoxy-o-hydroksi phenyl glycol), 5 HIAA (5-Hidroksi indole acetic acid), HVA (Homovanillic acid), in the blood, urine, and cerebrospinal liquid. The use of oral combined hormonal contraceptive pills of more than two years causes somatic disorders by 77.3% and psycho-logical disorder by 96.3% (Noprisanti, 2012).

4. The effect on the usage duration of the combined pills to the women's sexual function

There was a negative effect on the duration usage of the combined pills on the female sexual function and is statistically insign-ificant. This is due to the fact that most of the subject are around 20-35 years old and have used the pills for ≥3 years having normal sexual function, the sexual function decline happened on combined pills acceptor age 36-45 years old with more than one parity. The study on combined pills correlated with the sexual function showed mixed result. The result of the study by Pastor *et al.,* (2012) on women in Europe using combined contraceptive pills results in that the majority of combined oral contraceptive does not show significant changes in the libido due to the low dose of estrogen and progesterone in the combined pills (20-35 ug) and sexual function is dynamic and influenced by complex factors

such as physical, cognitive, emotional, and interpersonal character as well as lifelong changes with transition such as the first sexual encounter, pregnancy, having children, and existence of partners.

Age factor is finally influencing the female sexual through process such as menopause and health status decline mixed with length of relationship and number of children. As one gets older, the quality of relationship will add up and if there are more children involved with the age, it would lead to psychological stressor to women.

Graham *et al.*, 2007 in Amra *et al.*, (2012) study on the total testosterone level, free and *dehydroepiandrosterone sulfat* while taking oral contraceptive that used the same progestine, there is a significant decline after 3 months, the found that there is a statistical correlation between low total testosterone and free testosterone level and frequency of sexual desire. Some women showed that they did not lose their sexual function even though they have low testosterone. The study result by Amra, 2012 showed that the correlation test with Pearson's test between total testosterone level and FSFI showed meaningful correlation (p<0.05) with correlation coefficient by r=0.74 but there was no meaningful correlation (p>0.05) between testosterone correlation with age and duration being combine pill acceptor

Female sexual functions could be indirectly influenced by the usage duration of the combined pills through menstrual cycle disorder, BMI increasing, and depression. Saifuddin, 2011 states that the use of combined pills could cause hormonal changes in the women's body which lead to the risk of disturbance in their menstrual cycle due the progesterone content and it could cause minor side-effects such as bleeding spots that usually happens on the

first three months but it would stop bit by bit. However, if the pills are not taken regularly it could actually disturb the period from the cycle, the length, and the amount of menstrual blood.

More body mass index or women facing obesity will cause body image perception that influences their psychological side and influence their sexual desire (Mozafari *et al.,* 2015).

Sani *et al.*, 2014 states that there is an influence in the use of hormonal contraceptive agent towards the level of depression due to the lack of serotonin level, where one of the functions of serotonin is to regulate mood/feelings, on women who use combined pills, there is also a finding on libido declining that will disturb their sexual functions.

There is a relation of the hormonal contraceptive agents usage that the respondents used and weight gaining. The respondent that uses hormonal contraceptive agent for more than one year is at risk by 4.25 times more to gain weight than respondents taking the contraceptive agent in less than a year, usually the weight gain is not a lot. It varies from 1-5 kg in the first year (Sriwahyuni et al., 2012).

The obesity is due to constant weight gain. It is due to the estrogen component in the hormonal contraceptive agent that has a weight gaining effect owing to the liquid retention. The progestin component makes it easier to change carbohydrate and sugar into fat and stimulate appetite and the decreasing of physical activity that triggers weight gain (Sriwahyuni *et al.,* 2012).

Contraceptive pills acceptors would usually have normal and regular menstrual bleeding, the bleeding that is considered as menstrual bleeding in its true meaning, i.e.: namely that which occurs from a normal endometrium (secretory phase). The combined pills could trigger bleeding but it

is not from normal endometrium because gestagen already exists early in the proliferative phase, as it is known that normal menstruation happened when the level of progesterone drops, while when taking the combined pills menstruation happens because of the drop of the synthetic hormones. Menstruation will take place after the use of combined pills or sequential pills or more properly called pseudo menstruation.

Based on the study, it can be concluded that the female sexual function is negatively influenced by depression factor, age, body mass index, and the duration of combined contraceptive pills use. *Body mass index* is positively influenced by age and the duration of combined contraceptive pills use. Depression is influenced by body mass index, age and the duration combined contraceptive pills use, while menstrual cycle is negatively influenced by the body mass index, age, and the duration of combined contraceptive pills use.

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