

Determinants of Weight Increase and Menstrual Cycle Irregularities in KB Implant Acceptors in Pematang Cengal, Tanjung Pura District

Ria Julita Sari¹, Rini Susanti², Sudarianti³

^{1,2,3} Diploma III Midwifery Study Program, Akademi Kebidanan Langkat, Indonesia

Article Info

Article history:

Received May 10, 2023

Revised May 29, 2023

Accepted June 01, 2023

Corresponding Author:

Ria Julita Sari

Diploma III Midwifery Study
Program, Akademi Kebidanan
Langkat, Indonesia

Email: riajulita473@gmail.com

ABSTRACT

Based on data from the World Health Organization or WHO and the Central Statistics Agency, the use of contraceptives in 2022 will increase. It is recorded that in 2022 there are around 55.36% of fertile couples using these contraceptives, an increase of 0.30% from 2021. One of the commonly used contraceptive methods is the implant method which is included in the long-term contraceptive method. This method will be applied to the subdermal area containing progestin with a fairly long acting. In addition, the dose is low and reversible for women. The effectiveness of the use of implant contraception is quite high. And can be used in the long term and restore the fertility rate of women who will quickly return and affect the hormone estrogen. This research was conducted to find out and obtain data and information regarding the relationship between weight gain and changes in the menstrual cycle that occur in women using implant contraception in the Pematang Cengal area, Tanjung Pura District. The population in this study were KB Implant acceptors who were in the area. The research method used in this study used group data collection from a population of around 50 people. It is hoped that respondents and informants can obtain information regarding the relationship between weight gain and changes in the menstrual cycle.

Keywords:

Weight, Birth Control Implant, Menstrual Cycle

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1. INTRODUCTION

The government has efforts and programs to deal with the population in Indonesia which is experiencing considerable growth. One way is to control the population as well as the population by prioritizing the Family Planning or Family Planning program for Couples of Reproductive Age or PUS which can regulate the population in Indonesia. The program from Family Planning has the benefit of realizing access to reproductive health for all aspects contained in the SDGs, namely the Sustainable Development Goals which have 3 objectives which consist of ensuring a healthy life and also increasing the welfare of the population. Then another goal is to increase the Contraceptive Prevalence Rate or CPR.

The Hormolan KB method is one of the methods that is quite dominantly used by couples who use this KB. Meanwhile the use of MKJP or Long-Term Contraceptive Methods is still quite low among women from fertile couples. Family planning itself is one of the services in the health sector that is useful for couples, especially women, in managing the spacing of their children. Improving and also expanding services for family planning is one of the government's efforts to overcome the high maternal and child mortality rates. This is due to the fairly close spacing of pregnancies. Women of Reproductive Age Couples must choose several contraceptives which are quite limited in the number of methods available. In fact,

there are several methods that have not been accepted related to national family planning policies and also individual health and female sexuality to the point of cost [7].

One of the ways used to embody a quality family is of course to control population growth and also improve the quality of small families which is characterized by the use of effective, rational and efficient contraceptive methods. Of course, the contraceptive method must have several elements that are both effective and efficient where the contraceptive method of the IUD or Intrauterine Contraceptives, IUD or Intra Uterine Device to Implants and Male Operational Methods can work effectively in preventing pregnancy. Coupled with a low fee with a one-time payment but can be used for a long time. This is called the Long Term Contraceptive Method or MKJP [11].

Based on research [21], Implant is one of the MKJP methods where this method will be installed in the subdermal area which contains progesterin and also has a fairly long working life. In addition, low doses and also reversible for women are one of the advantages of this method. The effectiveness of the use of implant contraception is quite high. The level of female fertility will quickly be free from the hormone estrogen which affects it and also has a high enough power for a long time.

One health problem that is quite serious and gets attention is obesity. Especially for women who turned out to have a much greater risk level for obesity when compared to men. The use of hormonal contraception is one of the choices of mothers to regulate birth spacing. While weight gain is one of the side effects that arise as a result of using these contraceptives. Therefore, if researched about weight gain in mothers who use hormonal contraception.

Health problems and also the effects that can affect these women, of course, must receive special attention. The emergence of side effects as well as health problems makes it possible for acceptors of this implant contraception to experience drop out, namely increased body weight and blood pressure. Then there are changes in the menstrual cycle and also headaches to spotting. Weight gain and increased blood pressure in women are one of the side effects of using implant contraceptive acceptors.

The emergence of side effects from the use of implant contraception on average is an increase in body weight that will occur continuously which can cause obesity or overweight in women. Excessive body weight can certainly provide an increased relative risk for women who are diagnosed with diabetes mellitus and also cardiovascular diseases such as high blood pressure or hypertension. In addition, the risk of getting coronary heart disease is also one of the risks that can be obtained. Other side effects that can be obtained from this implant contraception are menstrual cycle disturbances, headaches and bleeding during menstruation.

Obesity that occurs when using contraception is of course caused by increasing fat in the body and not due to retention of body fluids. Obesity is an increase in the amount of fat, water, protein and minerals in bone tissue. According to the thoughts [14] that changes in body weight or obesity occur if there is an increase in the results of weighing which is quite fast and large when compared to the previous body weight. In addition, the comparison between weight and height is also not ideal. This is caused by an increase in the fat that is located and stored under the skin as a result of excessive food consumption and other aspects.

Implant contraception is a contraceptive device that will be installed under the skin which contains progesterin in it and is encased in a polydimetric silicon silastic capsule. The installation of this implant contraceptive will be used at least 4 weeks after giving birth. And there are various kinds of benefits, especially for women when using this type of contraception. Starting from long-term use, fertility will appear quickly after withdrawal of contraception and also does not require repeat visits on other contraceptive use. According to [8] that the negative side or side effects of contraception can increase body weight quite drastically, causing menstrual bleeding to disrupt the menstrual cycle.

Based on the narrative from the BKKBN that the use of implant contraception can cause changes in menstrual patterns such as spotting or spotting, increased menstrual blood, hypermenorrhea and amenorrhea. In efforts and also efforts to reduce the rate of population development, of course contraceptives can be very helpful in regulating this population. From data from The Alan Guttmacher Institute from New York that there are about 85% of women who are active in sexual activities who do not use methods and tools. any contraception at the time.

BKKBN or the Population and Family Planning Agency stated that Indonesia's population has the potential to become the largest and most numerous and equal to China and India if the rate of population growth or birth rate is not maintained and suppressed significantly. With a fairly rapid population increase, this is of course due to the relatively high fertility rate and can be a source of poverty and hampered economic growth according to the narrative [8].

According to data from the Ministry of Health of the Republic of Indonesia in 2018 it was stated that there are around 38,343,931 couples of reproductive age or PUS in Indonesia, of which around 24,258,532 are active users of family planning contraceptives. Meanwhile, there were around 1,724,796 users of KB implants. From these data, of course this research can be a way to find out and also obtain information about the relationship between increased body weight or obesity and also changes in the menstrual cycle in the use of implant contraception for couples of childbearing age.

Literature Review

Implant is a method of hormonal contraception that is quite effective in regulating and also reducing birth rates and maternal and child mortality. This method is not permanent and can also space pregnancy up to 3 to 5 years. The implant was first discovered and also created by The Population Council which is an international organization that aims to develop a contraceptive method that was established in 1952. The implant itself is a contraceptive device that has a way of attaching it under the skin of the upper arm. The implant has a shape like a silastic capsule with flexible properties. Inside the capsule contains the hormone levonorgestrel which can be used as a prevention of pregnancy.

The contraceptive implant will work by inhibiting the process of fertility or ovulation. And also this tool will make the endometrial mucous membrane not ready to get the fertilization process. This tool will thicken mucus and also make the endometrial lining thin out. According to the BKKBN, this contraceptive device has an effectiveness rate of 97% to 99% in regulating and reducing pregnancy rates in women.

This implant contraceptive device can work very effectively for up to 5 years in reducing birth rates for devices with the norplant type. As for the types of jadena, indoplat and implanton, they can work effectively for up to 3 years. Usually, women of active reproductive age can use these contraceptives. And this has no effect on breastfeeding or lactation when mothers who have just given birth are still breastfeeding their child.

Meanwhile, the installation and removal of implanted contraceptives requires training and training so as not to harm the mothers who use them. Training to release the tool can help women's ovulation or fertility levels to reappear. One of the side effects of using this device is weight gain and irregular menstrual cycles that cause blood spots to appear.

The way this implant works is by making cervical mucus thick. This can interfere with the process of forming the endometrium. And this process will make implantation and will also reduce sperm transport. Then ovulation will be suppressed and also reduced by drasits. This method has proven to be very effective and can also reduce the pregnancy rate to failure at 0.3 per 100 years. Then the mechanism of action of the implant itself consists of several ways, namely:

1. Prevent Ovulation

This type of implant norplant will carry out distribution by passing through the silastic membrane in a slow but constant way. After 24 hours of use and insertion, the hormone levels that occur in the blood plasma are high enough so that ovulation can be prevented quickly. Then the level of levonorgestrel in the body is maintained where the norplant system will suppress the soaring LH levels and also the ovulation process will be partially suppressed. The secretion of FSH as well as LH was within normal limits.

2. Changes in cervical mucus

Cervical mucus will change and thicken so that it will create obstacles to the movement of spermatozoa. In addition, suppression of endometrial cyclic proliferation caused by the presence of estrogen will be in an atrophic condition.

3. Inhibiting Cyclic Development

Implant contraception, especially the Norplant type, will be very effective in the first 5 years, the rest can make acceptors get pregnant around 3%. As for the Adena type itself, it is only effective in the first 3 years. This is due to reduced effectiveness caused by reduced release of these hormones

The use of implant type contraception can provide its own advantages. The advantage that women can get is the high efficiency and long-term protection. In addition, the fertility of women will be active quickly after the removal of the contraception. Another advantage that women can get is the pleasure they get when having sex with a partner even though they are using the contraception.

Another advantage that can be obtained is that it does not interfere with the milk production process even when using implant contraception. Women only need to control if they experience complaints during the use of contraception. No need to carry out routine checks. If you want to withdraw the contraception, you can remove it at any time without a certain period of time.

According to the narrative of [28] that the use of implant contraception has the same other advantages as non-contraception, such as reduced pain and reduced menstrual blood. Protecting from endometrial, breast cancer and also reducing the risk of pelvic inflammation to anemia is an advantage of using the contraceptive implant.

In the use of implant contraception, there are several indications based on the [8], which consist of:

1. Being in the reproductive period
2. Already have children or not
3. Prevent pregnancy in the long term
4. Are breastfeeding and need contraception
5. After having a miscarriage
6. Do not want to have offspring
7. Have a history of ectopic pregnancy
8. Stable blood pressure and below 180/110.

There are some patients or women who use the contraceptive implant which have side effects in the form of weight gain and also changes in the patient's menstrual pattern. For example, there are spotting or spotting, hypermenorrhea, which is also an increase in menstrual blood, then amenorrhea. While the complaints that can be obtained by patients who use this method are:

1. Headache
2. Pain in the breast area
3. Nauseous
4. Dizziness or lightheadedness
5. Increased weight
6. Moods or emotions that often change
7. The occurrence of an ectopic pregnancy

In addition to the complaints experienced by patients, there are also side effects that patients can get from using the contraceptive implant which consists of:

1. Amenorrhea

This side effect is that patients who get this contraceptive implant do not experience menstruation at all even though they have entered their menstrual period. And this is not due to pregnancy, but a side effect of the contraceptive. If the patient has these side effects, it is necessary to consult a doctor or midwife to determine whether he is pregnant or not. If you don't need special treatment, just consult a medical professional or doctor. However, if there is a pregnancy process, the patient can choose to remove the implant. And if an ectopic pregnancy occurs, the patient can make a referral so that bleeding does not occur during the pregnancy process.

2. Spotting

Spotting is bleeding in the form of spotting during menstruation. If this happens to patients, they can handle it by consulting and explaining it to patients. And usually occurs during the first year of using the contraception. Usually giving combination pills is done to reduce the bleeding.

3. Expulsion

Expulsion is contraceptive material that comes out of its place, especially during menstrual periods. If these side effects occur, then the patient must be treated by removing the expulsion capsule and checking whether there is an infection in the insertion area or not. If an infection occurs, it must be removed all the capsules and put a new capsule.

4. Infection at the insertion site

One of the side effects that can occur is infection that occurs at the insertion site. If there is an infection without pus coming out, it can be done using soap to clean or water as well as other antiseptics. Then instruct the patient to consult. And if the infection gets worse, implant removal can be done.

5. Weight gain

One of the side effects that is often found besides changes in menstrual patterns. Usually the weight gain is about 1 to 2 kg. However, it is not uncommon for more than 2 kg of increase and change in body weight. If this happens, then a medical consultation should be carried out.

For patients who want to use implant contraception, of course there are right times to use the contraception. This can start when entering the menstrual cycle on the 2nd to 7th day. And do not need other additional contraception to install the implant. If the client is not menstruating, the insertion can be done at any time provided that she is not pregnant. And it is also not recommended to have sexual intercourse or are using other contraceptive methods.

The insertion process itself can be done if the patient is believed to be not pregnant. And this process is carried out on the 7th day during the menstrual cycle. If the process is carried out after the 7th day, the patient cannot have sexual intercourse and also use other contraception after installing the contraceptive implant. If you are breastfeeding from 6 weeks to 6 months after delivery, the insertion process can be done at any time.

There are several factors in the selection of contraceptive implants for patients. And these factors can be a consideration for women who want to use them, these factors are:

1. Age

Age is a factor in choosing implant contraception. The average age of 20 to 35 years is the right age to use the tool. And this is to reduce the fertility rate of couples of childbearing age, namely the age range of 15 to 49 years where a woman's age is a very important variable for the effect of using implant contraception. Age is indeed a determinant of choice because women have influence and desire regarding the number of children desired. And the average young woman has a much higher desire to have children.

In contrast to women with old age, on average they think it will be easier or more susceptible to getting pain and pain when giving birth than women at a young age. Age is also a variable in the epidemiological investigation process where the difficulty rate and mortality rate are the main sources of the investigation. The Ministry of Health classifies the ages of family planning acceptors as less than 20 years old and more than 35 years old. In addition, the age classification of 20 to 35 years also determines this age.

2. Education

Education is one of the factors in choosing implant contraception. Education itself is a process of learning from individuals in achieving higher and specific knowledge. And the level of education of the patients turned out to have a considerable influence in presenting a response to what happened to their body. For patients with higher education and also have good and large knowledge, of course they can provide a rational response in receiving incoming information. Meanwhile for patients with low education, have mindsets and also perceptions in making decisions that are less rational. So it is necessary to explain the information regarding the use of the contraceptive implant.

3. Parity

Parity is one of the determining factors. Parity itself has a meaning as the number of live and dead births that occur in a pregnancy from 28 weeks of age. Parity of about 2 to 3 times is parity that is quite safe from the point of view of maternal mortality. A high parity of more than 3 is a parity with a high maternal mortality rate. High parity means a high mortality rate as well. And this risk to parity could be managed with much better obstetric care. There are 2 types of parity consisting of:

- a. Primipara

Primipara is parity where a mother gives birth to a baby for the first time

- b. Multipara

Multipara is the parity of a mother who gives birth several times, ranging from 2 to 5 times

- c. Grand multipara

This type of parity is a mother who gave birth more than 5 times. And it usually happened to mothers in ancient times who had dozens of children.

4. Work

The occupation of a patient or woman is one of the determining factors in the lifestyle and habits of each individual. Work has a very important role and also has a close relationship with one's thinking in determining the type of contraception. There are various kinds of research which

state that women who work and are a source of family income can regulate their fertility levels by having only 1 child or not wanting to have children. Especially if they are competing in their careers and jobs. Practically makes women do not want to have children. And this makes them choose to use contraception so that it becomes an effective and long-lasting method. Long-term contraception is the choice of career women because they do not need to make repeated visits and consultations. Practically making them not have to leave their workplace.

5. Knowledge

In addition to education, knowledge is one of the factors that can be the basis for determining individual health behavior. Knowledge will usually emerge if individuals use their reason and logic to recognize certain events. And also become a symptom that arises from the observation of their reason and logic. One of the knowledge about how to control birth and family planning is a condition in choosing an efficient and also effective contraceptive. And knowledge becomes a very important thing in building action on the situations and conditions of each individual. Knowledge about contraceptives certainly has influences from various factors such as education, experience, information to the measurable socio-economic sector.

6. Partner support

Support from a partner or husband is one of the factors that can make the choice of contraceptives used. Especially contraceptive implants. This can be one of the factors that can influence behavior where patients need support and participation from their partner or husband. This is because it is related to the reproductive organs. And there are several types of husband's support in the use of contraceptives which consist of:

a. Instrumental support

This support can be given directly as encouragement. This is in the form of facilities as well as materials. Husbands can be a source of concrete as well as practical help.

b. Emotional support

This support is in the form of trust where the partner is willing to hear all complaints and also requires attention. And in this case every patient needs empathy in order to grow self-confidence that makes them feel accepted and also valued by their partners. And a sense of security and comfort and peace is one of the things patients can get for the support they get.

c. Informational support

Support from the husband can provide information and also an explanation of the problems faced by the wife. The information presented can be related to advice, instructions and suggestions obtained by the wife. Especially information about the use of implant contraception and also the risks that can be prevented if you use the contraception.

d. Assessment support

The husband has a role as a guide and also a facilitator as well as providing support to his wife. Apart from that attention and presentation of information to opinions and suggestions can help the wife to recognize and also understand to make decisions from solving problems.

7. Side effects

One of the factors that can influence the selection of contraceptives needed. As mentioned that the contraceptive implant has some side effects. And the patients will choose contraception with low side effects. Knowledge of the side effects presented by medical personnel is very helpful for women to use these contraceptives. With the information presented and understood by women, the use of contraceptives can be carried out properly.

8. Cost

The use of contraception as well as fertility is sometimes closely related to the level of economic well-being. The higher the wealth index, the higher the acceptance and use of contraception. A clear indicator is that the desire to use a family planning device is the level of independence measured according to the proportion of the use of the device and also the services received.

9. Availability of contraceptive implants

The availability of contraceptives is one of the factors that must be owned by a family planning service post. And must be in accordance with the contraceptive method that will be given to the patients. The success of family planning services is determined by the condition of the service and also the infrastructure in accordance with service standards. And this service itself is a part

of family planning services which has been integrated with other component services in reproductive health.

10. Culture

Culture is one of the factors that determine the process. Medical and nursing services in this process have not met all the standards and expectations of patients. This is because there are still problems in terms of the professionalism of the medical profession in the community. Moreover, public trust in family planning services is one of the principles that is closely related. Especially on the side of spirituality or religion. This must be created and also transmitted via mechanisms that are closely related to the socio-cultural side of a social unit.

2. METHODS

The research method used in this study was to use analytic research with cross sectional where this research was carried out with an important objective to answer various problems regarding the situation of how the relationship between weight gain and menstrual cycles on the use and use of implant contraception in the family planning acceptor. This research was conducted in Pematang Cengal, Tanjung Pura District.

The population used in this study were all KB Implant acceptors in Pematang Cengal with a total of 50 respondents or informants. Then the data or sample collection technique in this study will use the Cluster Sampling method where the collection is taken in groups from the respondent or population. The types of data used in this study are primary and secondary data. Data processing methods and data analysis are the final results of the research process.

3. RESULT AND DISCUSSION

Table 1. Characteristics of Respondents

Characteristics	F	%
Age		
20 – 35 Years	33	66
Over 36 years	17	34
Education		
Elementary school	4	8
Secondary school	21	42
High School	25	50
Status		
Work	21	42
Doesn't work	29	58

From these characteristic data, it was found that out of a total population of 50 respondents, around 66% or 33 people were in the age range of 22 to 35 years. While a number of 34% or 17 respondents who are above the age of 36 years. Meanwhile, if viewed from the characteristics of education, there are around 8% or 4 respondents who have elementary school education. Then about 21 people or a percentage rate of 42% have education up to high school, either junior or senior high school. While the remaining 50% or 25 respondents had a high school education such as D3 or Strata.

Occupational status is one of the characteristics obtained in the population of the respondents. There are around 21 respondents who are already working with a percentage level of around 42%. Meanwhile for the respondents who did not work there were around 29 people or 58%. These data were obtained from the respondents who became the sampling data in the research process.

Table 2. Contraception Data Analysis

Contraception Implants	Weight Gain				Amount	
	Yes		No		F	%
	F	%	f	%		
New	7	14 %	5	10 %	12	24 %
Long	13	26%	25	50%	38	76%

Contraception Implants	Menstrual cycle changes				Amount	
	Yes		No		F	%
	F	%	f	%		
New	9	18 %	13	26 %	22	44 %
Long	11	22%	17	34%	28	56%

In the data analysis above, the respondents who took part in this study stated that the majority of the respondents who used contraceptive implants were only about 13 respondents who had used the contraceptive for a long time who experienced weight gain. While about 50% of the total population, namely 25 respondents, did not experience weight gain. Then for new contraceptive users, there were around 7 respondents who experienced weight gain. Then there are about 5 respondents or 10% who do not experience weight gain.

For changes in the menstrual cycle, the respondents who had used implant contraception for a long time recorded that there were around 11 respondents who experienced changes in the menstrual cycle or around 22% of the total respondents. Then there were around 17 respondents who did not experience these changes or around 34%. While there were only 9 new users who stated that they experienced changes in the menstrual cycle. And there were about 13 respondents who did not experience a change in the menstrual cycle.

From the data obtained on the cross-test regarding the use of long-standing implant KB, it was stated that 26% of the respondents experienced changes in body shape. This is a theory that shows the side effects of increased body weight caused by obesity and contraception. Weight gain that leads to obesity provides the possibility to increase a relative risk for women to get diabetes and other diseases such as high blood pressure and also risk factors for heart attack, especially coronary heart disease.

Routinely weighing birth control acceptors, especially implants, must of course be carried out in conjunction with Posyandu activities which are held at the Community Health Center and also the Hospital. This is of course as a way to detect earlier the possibility of changes in body weight in women who use this type of implant contraception.

Family planning acceptors who experience side effects such as weight gain, of course, must get information about ways to prevent weight gain by doing physical activities that can support the body to stay fit and also to have a stable weight and not increase. In addition, regular exercise is also a way to prevent weight gain so that there is no risk of obesity occurring and having an impact on the health of women who use family planning acceptors [30].

The connection between weight gain and the use of KB implants was caused by the respondents using the KB for quite a long time. Practically the body's adaptation to contraception is one of the main factors. From these respondents stated that in the early days of using the body weight had increased although not too drastic. By managing their diet and also the diet and the portions they consume, they can prevent drastic weight gain.

Meanwhile, the relationship between the use of contraception and changes in the menstrual cycle has data that is in line with the theory conveyed by [20] that the side effect of this implant contraception is that the menstrual cycle changes and is also influenced by the device. And there are about 22% of old users and 18% of new users who experience this cycle change.

From the process of changing the menstrual cycle that often occurs are days of bleeding that continue to increase during the cycle then *spotting* or the appearance of bleeding in the form of blood spots to the reduced length of the menstrual cycle. There is also amenorrhea, although this effect is quite rare. Meanwhile, for long-term users of the implant contraception, dryness will appear in the vaginal area or vagina to the mental sector, such as emotional disturbances as well as acne and vulgarity.

Spotting is one of the effects that appears on KB Implant users for less than a year. And this spotting usually occurs often, although not all users will always display these side effects. This is due to the influence of hormones in the body which of course has an effect on menstrual disorders. Levels of FSH that are high enough can result in high ovarian stimulation or also called hyperstimulation. This can be found with the hormone estrogen which is quite high. Usually caused by unbalanced hormones that make the endometrium occur histological process. Meanwhile, the respondents who did not experience spotting did not have endometrial disease that did not experience histology.

There is a relationship between changes in the menstrual cycle and also the use of implanted contraceptives where this is one of the side effects of using these contraceptives. Apart from that, various side effects where there were irregular patterns and also bleeding to complaints related to the menstrual cycle from the respondents. The hormone content contained in the body and also the implant capsule can be one of the causes of this change in the menstrual cycle.

4. CONCLUSION

According to the data that was obtained in this study, it was concluded that there was a fairly close relationship between the use of these implanted contraceptives and significant weight gain. Likewise with the relationship between the use of implant contraception and changes in the menstrual cycle received by users of the implanted contraception. From this research, of course, it can be information for respondents to continue to be active and also wish to find more complete and complete information about contraceptive implants at the health center and hospital. With this research, of course, respondents do not need to worry about the side effects that can be obtained and also arise from this use. By maintaining a lifestyle and also a diet, of course these side effects can be avoided and also maintained.

ACKNOWLEDGEMENTS

Author thanks to all of my team so that this article can be written and published.

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