

The Effect of Physical Activity on the Menstrual Cycle at Martial Art Putri at the University of Muhammadiyah Makassar

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Abstract

Menstruation is a factor that reflects a woman's functional potential which can be influenced by a number of variables including age, family history, socioeconomic status, education, physical activity, personality, exercise, weight, height, stress, infection, percentage of fat distribution and hormonal. Physical exercise or sports affect the menstrual cycle of the participants of martial art Muhammadiyah. This study aims to determine the effect of physical activity on the menstrual cycle, namely female combatants in the martial art Muhammadiyah arts education. According to research conducted in a number of countries, including other developing countries, it is said that menstrual disorders are quite a problem faced by Hillard women and found that female students show more frequent problems with irregular menstruation.

Keywords: Menstruation, Martial Art, Physical Exercise

Introduction

In childhood, the ovaries are still at rest, not yet functioning or functioning properly. After puberty, there are major changes in the entire body of a woman. Puberty is reached at the age of around 12-16 years, but this is influenced by heredity, nation, climate and environment. Characteristics of human maturity are characterized by changes in cyclic changes in the uterus as preparation for pregnancy. This important event is marked by the arrival of menstruation, namely the discharge of blood every month from the uterus.

Menstruation is a factor that reflects a woman's functional potential which can be influenced by a number of variables including age, family history, socioeconomic status, education, physical activity, personality, exercise, weight, height, stress, infection, percentage of fat distribution and hormonal. Currently there are many problems experienced by women, one of which is disruption of the menstrual cycle or menstrual abnormalities, where this menstrual disorder is a physical or mental problem that affects the menstrual cycle, causing pain, unusual bleeding that is more or less, delayed menarche or loss of menstrual cycles. certain. Menstrual abnormalities often cause anxiety in women because of concerns about the influence of menstrual abnormalities on fertility and women's health in general. Menstruation or irregular menstruation is a process of hormonal imbalance in the female reproductive system where the hormones estrogen and progesterone must be in the appropriate composition. A normal menstrual cycle occurs every 21-35 days. The normal menstrual blood count ranges from 30-40 mL. According to the calculations of experts, women will experience 500 menstrual times during their lifetime. In Indonesia, currently there are many female athletes who are talented and able to steal the world's attention in the field of sports, therefore to continue to exist in their field, women are required to look attractive to support their career or work in any field. Apart from that, there are many women who force

themselves or are forced to do physical activities that are not in accordance with their body conditions to get what they want, such as having an athletic body or an ideal body and recognition, in this case many who do strenuous physical activity, mostly from women do not know that strenuous physical activity or that is not in accordance with the ability of the body can cause disturbances in the existing systems in the body, one of which is disruption of the menstrual cycle

The early years of menstruation are a period that is prone to menstrual disorders. Seventy-five percent of women in the late adolescence stage experience problems related to menstruation. Delayed menstruation, irregularity, pain, and profuse bleeding.

According to research conducted in a number of countries, including other developing countries, it is said that menstrual disorders are quite a problem faced by Hillard women and found that female students show more frequent problems with irregular menstruation. Research in Japan found 63% of female students who experienced irregular menstruation.

Menstrual Cycle

Castelo-Branco et al, (2016) Menstruation is peridodic bleeding from the uterus that begins about 14 days after ovulation periodically due to the detachment of the uterine endometrial lining. menstruation is blood that comes out of a woman's genitals naturally, without a specific reason and time. Menstruation or menstruation is the process of removing blood from the uterus of an adult woman every month as part of her biological life cycle. In the dictionary of health terms, menstruation or menstruation is an event of monthly menstrual discharge, which accompanies the release of an egg from the ovary from the womb (womb or uterus) of a woman. Menstruation is said to be normal if a menstrual cycle is obtained, not less than 24 days, but not more than 35 days, the length of menstruation is three to seven days, with the amount of blood during menstruation not exceeding 80 mL, change sanitary napkins two to six times per day.

Describing the menstrual cycle is a complex process that includes both reproductive and endocrine. The menstrual cycle is a complex series of events that influence each other and occur simultaneously. The menstrual cycle is the distance between the start date of the last menstruation and the start of the next menstruation. The normal menstrual cycle length or considered the classic menstrual cycle is 28 days plus or minus 2-3 days.

Anatomy of the Female Reproductive Organs

According to Bender, J. C. (1943) the female reproductive organs consist of external reproductive organs and internal reproductive organs which have different functions. The external reproductive organs function as a way for sperm to enter the woman's body and as a way of protecting the body's internal reproductive organs from various organisms that cause infection. Meanwhile, the reproductive organs form all reproductive pathways consisting of the ovaries (ovaries) to produce eggs, the fallopian tubes (ovidak) as the place for fertilization to take place, the uterus (uterus) where the embryo develops into a fetus and the vagina which is the way for the fetus.

Menstrual Cycle Physiology

Ferin, Jewelewicz, & Warren (1993) The menstrual cycle is regulated by hormones. Luteinizing Hormone (LH) and Follicle-Stimulating Hormone (FSH), which are produced by the pituitary gland, trigger ovulation and stimulate the ovaries to produce estrogen and progesterone. Estrogen

and progesterone will stimulate the uterus and breast glands to become competent to allow fertilization to occur.

The menstrual cycle consists of three phases, namely: the follicular phase (before the egg is released), the ovulation phase (releasing the egg) and the luteal phase (after the egg is released). The menstrual cycle consists of three phases, namely the menstrual phase, proliferation and secretion.

Menstruation is closely related to the factors that affect ovulation, if the ovulation process is regular, the cycle is regular. The follicular phase starts on the first day of menstruation. At the beginning of this phase, the endometrium is thick and rich in fluids and nutrients designed for nutrition for the embryo. If there is no fertilized egg, the levels of estrogen and progesterone are low, so that the upper lining of the uterus, which is the endometrium, sheds and menstrual bleeding occurs.

According to the American Congress of Obstetricians and Gynecologists, the normal menstrual cycle length is 21-35 days, usually 28 days. The cycle is permanent and regular at the age of 18-40 years. Mean blood loss is 40-50ml, of which 70% is lost in the first 48 hours, and contractions are strongest in the first 24-48 hours. At the same time, the pituitary gland slightly increases FSH production. This hormone then stimulates the growth of 3-30 follicles, each follicle contains an egg. The end of the phase. Usually only one follicle develops, called a de Graaf follicle. These follicles then immediately produce estrogen and estrogen which suppress the production of FSH. So that the anterior pituitary lobe releases the second gonadotropin hormone, namely LH.

The mature de Graaf follicles contain lots of estrogen and cause the endometrium to grow and proliferate. In some references this is called the proliferation phase. The follicular to proliferation phase lasts 13-14 days and is the longest phase of this phase to shorten as menopause approaches. This phase ends right at LH increased suddenly. The ovulation phase begins when de Graaf's follicles become more mature, approaching the ovaries under the influence of LH. After that the follicle develops and an egg (ovum) is released from the ovary (ovulation). In this ovulation sometimes there is a slight bleeding that stimulates the peritoneum in the pelvis, so that There is pain called intermenstrual pain (Mitteoxhmerz). Here, the endometrium continues to proliferate to form indentations.

The ovulation phase usually lasts 16-32 hours, ending after the release of the ovum. About 12-14 hours later, there is a surge in LH production which can be measured from the urine. This measurement can simultaneously determine whether a woman is fertile. The eggs can be fertilized for only up to 12 hours after release. Fertilization is more if sperm is in the reproductive tract before the ovum.

Neuroendocrine Regulation during Menstruation

Yen, S. S. (1979) Nerve activity causes the release of GnRH (gonadotropin releasing hormone) in a pulsatile manner, especially in the hypothalamus mediobasal, especially in the archaic nucleus. Many nerve centers in the limbic system of the brain transmit signals to the arctic nucleus to modify GnRH intensity and pulse frequency. The hypothalamus secretes GnRH pulsatile for several minutes which occurs every one to three hours. Pulsatile release of GnRH causes pulsatile release of LH and FSH as well.

Menstrual Cycle Disorders

Dušek, T. (2001). After understanding the normal menstrual cycle with menarche as the starting point, several menstrual disorders can be identified, such as: (a) Impaired Blood Amount and Length of Menstruation: (1) Hypermenorrhea is a form of menstrual cycle disorder that remains regular, the amount of blood that is released is quite large and can be seen from the pads used and the blood clots. (2) Hypomenorrhea is a form of abnormality in the menstrual cycle that remains regularly in accordance with the menstrual schedule, the amount is small, with the fact that it does not bleed much. (b) Menstrual Cycle Pattern: (1) Eumenorrhea, namely regular menstrual cycles with bleeding intervals that occur between 21-35 days. (2) Polimenorrhea, namely menstruation that often occurs and is abnormal. (3) Oligomenorrhea, menstrual cycles with an interval of 35-90 days, the amount of bleeding may be the same, the cause is hormonal disorders. (4) Amenorrhea, namely delays in menstruation for more than three consecutive months or menstruation occurs. (c) Bleeding Outside Menstruation: Metrorragia can be caused by hormonal conditions and anatomical abnormalities. In hormonal disorders, there are disorders of the hypothalamus-pituitary axis, ovaries (ovaries), and stimulation of estrogen and progesterone in the form of bleeding that occurs outside menstruation, in the form of spotting and continuous, and prolonged menstrual bleeding. (d) Pathological Conditions related to Menstruation: It can be in the form of tension before menstruation (premenstrual tension), a complaint that starts about a week before and after menstruation occurs because of an imbalance of estrogen and progesterone before menstruation.

Menstrual Cycle in Athletes

Lebrun, C. M et al (1995) The presence of menstrual changes in female athletes is difficult to detect due to the appearance of various forms of menstrual disorders, from short luteal phases to amenorrhoea. Furthermore, the problem is further complicated by the variety of research methodologies and the absence of a definition of amenorrhoea, oligomenorrhoea or even irregular cycles that are regularly used. exact accepted by all researchers. Likewise, differences in the population of athletes are not always clear, for example anaerobic or aerobic athletes, recreational joggers or elite endurance runners.

Other studies have shown factors commonly found in athletes who experience menstrual changes in relation to physical activity ; age, previous menstrual irregularities, nulliparity (never given birth), weight loss, high intensity exercise, stress.

Physical Activity

Physical activity is the physical movement performed by the body and its support systems. Physical activity is any movement of the body produced by skeletal muscles that requires energy expenditure. Physical activities in everyday life, for example work (occupational), exercise, care (conditioning), do housework, or other activities. Inactivity (lack of physical activity) is an independent risk factor for chronic disease, and is an estimated overall cause of death globally.

Physical activity is divided into three levels, namely light, moderate and heavy physical activity. Mild physical activity is anything related to moving the body, for example walking, table tennis, golf, typing, cleaning rooms, and shopping. Moderate physical activity is movement of the body that causes a significant expenditure of exertion which causes breathing to be slightly faster than normal, for example cycling, skiing, dancing, tennis, and climbing stairs. Meanwhile, strenuous physical activity is body movement that causes considerable energy expenditure (calorie

burning) so that breathing is much faster than usual, for example basketball, soccer, swimming, and weightlifting.

Benefits of Physical Activity

Physical activity is the main key to expending energy, so it is the basis that must be done to maintain energy balance and control body weight. If done regularly, physical activity is very beneficial to avoid various diseases such as reducing the risk of suffering from coronary heart disease and stroke, diabetes, hypertension, colon cancer, breast cancer, depression, and maintaining a functional health of the body and preventing falls in the elderly.

Physical Activity Level

There are four main dimensions that are the focus of measuring physical activity, namely type, frequency, duration and intensity. Type is a type of physical activity that is performed such as sitting, standing, walking, cycling, and others; physical activity frequency refers to the number of physical activity sessions per unit time; duration of physical activity is the length of time spent doing physical activity; and the intensity of physical activity is often expressed in terms of light, moderate (moderate), or heavy (vigorous)

Physical Activity in Athletes

Exercise has many advantages, but it can also cause some harm to female athletes if done excessively. An ordinary athlete experiences various physical problems due to injury. Physical disorders can occur in male and female athletes, but female athletes often experience disorders that male athletes will not experience. According to KBBI, exercise is exercise to strengthen and nourish the body. But exercise, alone or in combination with weight loss, can cause menstrual disorders.

Several studies have noted that menstrual disruption occurs during championship or race periods when training load increases. Athletes who lose weight are significantly more at risk of delayed menstruation than athletes who maintain their weight during the testing period. Increasing such exercise affects menstruation only when accompanied by weight loss. A hypothetical mechanism by which exercise will affect the menstrual cycle by involving the hypothalamus-pituitary-adrenal axis (Carbon in Saadiah)

Conclusion

Women who participate in competitive sports have a higher risk of developing or developing eating disorders, menstrual cycle irregularities and osteoporosis, which is known as the female athlete triad.

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