CHAPTER 1
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Physical Education is that integral part of total education which contributes to the development of the individual through the natural medium of physical activity-human movement. Condition the heart, lungs, muscles and other organic system of the body to meet daily and emergency demands. Acquire and appreciation of an respect for good physical conditions [fitness] a functional posture and sense of personal well being develop an interest and a desire to participate in lifetime recreational sports¹.

The word 'physical' refers to bodily characteristics such as physical strength and development, health and appearance. Physical education, therefore, refers to the process of education that goes on in the school through all activities in the development and maintenance of the human body. When an individual is playing, or marching, aiming or throwing a ball, education is taking place.

Objectives of the Physical Education Programme in schools:

Growth and development reveals four general directions namely, physical development, motor development, mental development, and human relations development. Physical education plays an important part in contributing to each of these phases of human growth and development.

Physical education can be a part of the study of health education physiology, general science, social studies, and many others in varying degree. And conversely, these areas can, if used properly, make physical education more meaningful to students who participate in the activities².

Developmental objectives of Physical Education

Organic development: Proper functioning of the body systems so that the individual may adequately meet the demands placed upon him by his environment a foundation for skill development – Muscle strength, muscle endurance, cardiovascular endurance, flexibility.

Neuromuscular Development: A harmonious functioning of the nervous and muscular systems to produce desired movements.

Interpretive: The ability to explore, to discover to understand, to acquire knowledge, and to make value judgments. A knowledge of how the body functions and its relationship to physical activity, an understanding of growth and developmental factors affected by movement. The ability to solve developmental problems through movement.

\(^3\)Robert Singer, Physical Education Foundation, Holt, Rinehart Winston. 1976, Pg. 52
Physical Education & Sports in school curriculum:

The schools of today are strengthening factors in the preparation of the greatest majority of tomorrow's citizen's. Consequently, secondary schools are obligated to develop and implement curriculum that contribute substantially to the general education of youthful students. History has recorded the importance of physical activity in the survival of nations and their cultures physical superiority coupled with mental ingenuity has been the determining factor in most human struggles. A tally of successes in the many conflicts reveals a positive correlation between physical excellence and mental superiority. It is imperative in education for survival that these two resources of mind and body be developed simultaneously.

Need of Physical Education:

There is a great need for physical education in the present era in the interest of total well-being of a child. This is an age of automation and industrial revolution. Life has become much more inactive than before which is detrimental to the health, growth and development of a child. Radio, T.V. and other devices have made our life sedentary. The Youth are inclined to be onlookers rather than participants in various activities. Physical activity in a planned manner is therefore essential to overcome the evils of modern era.

Physical education has also an important role to play to overcome the problem of juvenile delinquency. Diseases concerned with the heart, blood vessels, kidneys and the like are on the increase and physical education activities can contribute considerably in safeguarding the child from the tension of modern day living.

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And exercises are absolutely essential for a youth during the period of child-hood which is period of growth and development. Good health and wholesome experience through recreative games regardless of age will certainly contribute to make life worth living\(^5\).

The "unladylike" connotation frequently applied to physical exertion by the female is an historical and societal hangover form other times in certain cultures, and hopefully, is on its way out. If translated into gender influence, it has little scientific validity, since being female implies no inherent biological deterrent to physical activity. Closely allied to this rationale is the one which decries the lack of strength in women. If health and endurance are any criteria of strength, women have special advantages, which might be cultivated to enhance their eligibility for better sports programmes\(^6\).

From Domestic activities to the participation in decision-making processes women now, neglect this widely accepted ‘Myth’ that she is a weaker sex\(^7\).

In recent years, women have become more involved in physical activity and athletic competition. There has been an abundance of research in recent years concerning women in sports. It programs that works for men will also work for women.


The existing differences are those of magnitude not basic physiological function. The enzymes systems and cellular control mechanisms are the same in both men and women. In most cases, the female response to physical training is identical to the male responses. There are, however, few special problems common to women\(^9\).

A number of old wives' tales have percolated down the years on this subject: "My mother says I mustn't have a bath or go swimming while I'm like it,"..."My mother says I mustn't wash my hair during a period." Even the great physiologist, Olaf Astrand, wrote, "Women should not swim during menstruation because of the possibility of infection." We have come a long way from the time that Baron Pierre de Coubertin considered "women's sports against the laws of nature." At the 1996, Atlanta Games nearly 50% of the Australian Team were female. Women are now encouraged to participate in regular sporting activity. However, a number of health concerns specific to the female athlete have been described.\(^9\)

The menstrual problem is not new. From earliest antiquity, medial women have had to face the problem of relieving this periodic discomfort. Menstruation occurs every month from puberty to menopause\(^10\).


\(^{10}\) http://www.worldortho.com / sports med. 1997

\(^{10}\) Recent Investigation of the Menstrual Problem* Research Quarterly of, American Physical Education Association* Vol.-1. 1930. No 1. p.13
It is absent before puberty, during pregnancy, during lactation and after menopause. The flow lasts for 4-6 days without any appreciable pain. It is made up of blood, and discharge of blood carrying broken tissue materials through the vagina. This monthly flow of blood is called menstruation. Hence, the name ‘Menstrual Cycle’ for the cyclic changes in the reproductive tract of the primate female\textsuperscript{11}.

**MENSTRUATION**

**GYNECOLOGICAL CONCERNS**

Menstrual function is not completely understood. It is an orchestration of hormones in the hypothalamus, pituitary, ovaries, thyroid, and adrenal glands. Physical stress, emotional stress, weight loss, change in body fat, exercise, and dietary changes can affect the hormones produced by these glands and thereby alter menstrual functions. A normal menstrual cycle is measured from the first day of menstrual flow in one cycle up to, but not including, the onset of menstrual flow of the following cycle. The normal range is generally considered to be 21-to-36 days\textsuperscript{12}

*Menstruation*, which sometimes is known as Catamenia by doctors, seems to be caused by the withdrawal of both Estrogen and Progesterone hormones, which have a very similar effect on the uterus. A “Normal Menstrual period” may vary from two or three days to a full week, depending upon the individual and other factors, the average menstrual period slightly less than 5 days.


Some medical researcher to be about 13 years and six month has calculated the average age of menarche. Records kept at in situations for homeless girls show that some girls began menstruating at the age of 11, but others did not experience menarche until after their 16th birthday. The first menstruation of a girl does not necessarily mean she is fertile. In fact, the menstrual bleeding at menarche usually is due to hormonal effects to the new life alone and occurs without the release of an ovum.\(^{13}\)

The female reproductive system cannot function without maintenance functions of the circulatory, immune, respiratory, digestive, and urinary systems. The female reproductive system shares a special anatomical relationship with urinary system. These two systems develop in close proximity to each other and thus share a common structure: the vulva.\(^{14}\)


The first menstrual periods generally are irregular. A predictable pattern of menstrual cycles may not be established for several years. The average age at menopause is about 50 years, although earlier and later ages for the change of life, or climacteric as it is sometimes called, are common. The process generally is slow and may take several to complete. Fewer than 10% of menopausal women experience a sudden cessation of menstruation.

PHASES OF MENSTRUAL CYCLE

During a woman’s reproductive life the endometrium undergoes cyclic structural changes approximately every 28 days that prepares it to receive a fertilized ovum and cause it to slough off if implantation does not occur. The endometrial or menstrual cycle, which is correlated with the ovarian cycle through the ovarian hormones, is divided into the following three phases:

1. **The Menstrual Phase** (Days 1 to 4). This phase is chosen as the start of the cycle because it is the most outwardly visible of the three phases. It is characterized by the sloughing off of necrotic fragments of the functional layer and the discharge (menstruation) of bloody fluid and necrotic tissue from the vagina.

2. **The Proliferative Phase** (Days 5 to 14). This phase occurs under the stimulus of estrogens secreted by the growing ovarian follicle. It is characterized by repair and rapid growth of the endometrium (days 7 to 14).

3. **The Secretory Phase** (Days 15 to 28). This phase follows ovulation and corpus luteum formation. It occurs under the stimulus of estrogens and progesterone secreted by an accumulation of glycogen-rich fluid in highly coiled uterine glands, an increase in tissue fluid in the endometrial stroma, and further growth of the coiled arteries (days 15 to 25).

The endometrium now provides a suitable environment for the implantation of a fertilized ovum. If implantation does not occur, the corpus luteum regresses and estrogen and progesterone levels drop precipitously.
Withdrawal of hormonal stimulus causes constriction of the coiled arteries and ischemia of the functionalis (days 26 to 28). Necrosis of the functionalis occurs, and the necrotic tissues begins to slough. Blood oozes out of the damaged arteries. The resulting menstrual flow marks the beginning of a new cycle.\textsuperscript{15}

SUMMARY OF EVENTS IN AN AVERAGE 28-DAY

MENSTRUAL CYCLE

Corpus luteum secreting progesterone. Final preparation of endometrium to receive fertilized ovum.
Days 15 to 28

Menstrual Period Breakdown of endometrium.
Days 1 to 5

Ovulation
Day 14th

Days 6 to 14.

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The bridge between childhood and adulthood is a period of growth and change called puberty. There seems to be no standard pattern for the physical changes of puberty. One girl may begin menstruating in her 11th year while a classmate will not experience her first menstruation until she is 16. But both girls can look forward to normal womanhood. Each has an nineteen individual pattern of development, and if there is any rule of thumb about puberty it is that each youngster has his or her own time schedule for the transformation into a mature man or woman.

The physical changes that occur in the female body during puberty probably are more dramatic than those associated with a boy progressing into manhood. One definite milestone for the girl is her first menstruation, commonly regarded as the first sign of puberty. Actually, the first menstruation, known as the menarche, is only one of several signs of puberty, along with the slimming of the waist, gradual broadening of the hips, the development of breasts, the appearance of hair about the genitals and in the armpits, and a change in the rate of growth.

**THE MENARCH** :-

Girl's first menstruation is called menarche. The age at which a girl first experiences menstruation generally varies over a period of ten years and depends upon the structural development of the youngster, her physical condition, the environment, and hereditary factor. Menarche can occur as early as the age of 7, and most physicians would not be overly concerned if a girl did not begin to menstruate until she was approaching 17. The age range of 9 to 16 usually is considered normal.

The median age for the start of menstruation is around 13/12 years, which means that 50% of all females are younger than 13 years and 6 months when they reach the menarche, and half are on the older side of that age when they first menstruate.
In general, the pubertal experiences of a girl follow a pattern like that of her mother and sisters; if the mother began menstruating at an early age, the chances are that her daughters will also. If the girl has not reached the menarche by the age of 18, gynecologist should examine her, a physician who specializes in problems related to the female reproductive system.

A medical examination also should be arranged for any girl who experiences menstruation before she reaches the age of eight or nine years. When menarche occurs on the early side of childhood, the condition is sometimes called precocious puberty. The child may suddenly begin menstruating before her mother has told her what to expect, a situation that can prove embarrassing to both child and parents. It may first be detected by a teacher at school; occasionally, a young girl may be aware of bleeding from the vagina but because of fear or false modesty does not report the event to her mother or teacher.

For this reason, parents should be alert for changes associated with early puberty and be prepared to explain the facts of life to their children. Also in the case of precious puberty parents should arrange for medical consultation to be certain the bleeding actually is the result of first menstruation and not the effects of an injury or tumor.

GROWTH SPURT BEFORE MENSTRUATION:

During the year or two preceding the menarche there is a growth spurt of two or three inches. This is because of the hormone changes of puberty. The hormones are chemical messengers secreted by glands in various parts of the body and carried rapidly through the blood stream to organs or other glands where they trigger reactions. The spurt in growth preceding menarch result from the secretions.

The spurt in growth hormone that is produced by the pituitary gland, and androgen, a hormone secreted by the adrenal glands. They produce rapid growth of the bones and muscles during puberty.
The girl who is first among her classmates to menstruate often is larger than those who are of the same age but have not yet reached the menarche. From numerous research studies of the menarche, it has been learned that poor nutrition and psychological stress sometimes delay the onset of menstruation, that girls reared in cities tend to menstruate earlier, and that climate is a factor, although both tropical and arctic climates seem to be related to early menarche. The first menstrual periods also are likely to occur during the school year, September to June, rather than during the summer vacation.

**THE FIRST MENSTRUAL CYCLE:**

The first menstrual cycles tend to be very irregular and have been known to be as short as 7 days and as long as 37 weeks. Even when regularity becomes established, the adolescent menstrual cycle usually is longer than the average for adult women.

The typical menstrual cycle of a young girl may be about 33 days, compared to an average of 28 days for an adult woman. About three years elapse before the menstrual cycles become regular. In the mean time, irregular menstrual patterns can be considered as normal for girls during puberty. The first menstrual cycles also are an ovulatory. In other words, the young girl’s ovaries have not matured sufficiently to produce an ovum, or egg cell, that can be fertilized by the sperm of a male. Delayed puberty probably causes as much anguish as precocious puberty. The last girl in a group of childhood chumps to develop breasts and experience the menarche may feel more self-conscious than the first girl in the class to menstruate.

If the signs that usually precede menarche have not appeared by the age of 17 or 18, a medical examination should be considered, even though the girl may be a late-late bloomer at the other end of the spectrum from the 7 or 8 year old child who has menstruated.
The absence of menstruation after a girl is 18 can be the result of a wide variety of factors. The cause sometimes can be as simple as an imperforate hymen, a membrane that blocks the opening of the vagina.

It can be the result of a congenital malformation of the reproductive organs, such as imperfect development of the ovaries. Accidents, exposure to carbon monoxide gas, or diseases like rheumatic fever or encephalitis in earlier years can result in brain damage that would inhibit the start of menstruation. The relationship between emotional upset and delayed menarche was vividly demonstrated during World War II when some girls who suffered psychological trauma also experienced very late signs of puberty. A mother's main responsibility is to convince her daughter at the beginning of puberty that menstruation is a perfectly normal body function. The mother should explain the proper use of sanitary napkins or tampons and encourage her daughter to keep records of her menstrual periods on a calendar.

The mother also should explain that menstruation usually is not a valid reason to stay in bed or avoid school or work. The girl should be advised that bathing and swimming should not be postponed because of menstruation. There are many old wives' tales about menstruation that are not true. But there may be some truth to stories that loss of menstrual blood can be weakening, particularly if the girl's diet does not replace the body stores of iron which may be lowered during menstrual flow. Iron is a key element of the red blood cell, and if iron-rich foods are not included in the meals of women during their years of menstruation they can eventually suffer a form of iron-deficiency anemia.17

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MENARCH AND PHYSICAL ACTIVITY -

The onset of the menstrual normally occurs between the tenth and seventh year, with the majority of girls usually entering it between 13 and 15 years. Menarche, like menstruation is regular in its maturity. Current scientific evidence is not in movement as to the effect of strenuous training and competition on menarche. Erdelyi found that athletes of national and international caliber had an even greater delayed menarche than athletes of lesser caliber. It would thus appear that there is an association between the level of performance and the onset of menarche. In and of itself, such danger to the young female athlete. Malina further suggests that the physique characteristics common to the late maturing girl [longer legged, more linear, narrow hipped, less fat, and less weight for height] are more conductive to success in athletics.

Environmental and socioeconomic influences also have a significant role in menarche. As interest and participation in girls and women's sports writing the grows, the various myths which have surrounded female participation and the effects of participation on menarche, menstruation, are gradually being dispelled. Although the effects of sustained and strenuous training and competition on the menstrual cycle and the effect of menstruation on performance still cannot be fully explained with any degree of certainly, continued and increasing research is slowly clearing away the veil. Some of the research in the past been contradictory and, on occasion, open to question although much needs still to be done. 16

The female gonads are the ovaries, situated on each side of and close to the uterus or womb. In addition to producing an ovum or egg each month, they manufacture the female hormones estrogen and progesterone, each making its special contribution to the menstrual cycle and to the many changes that go on during pregnancy.

Estrogen regulates the secondary sex characteristics such as breast development and the appearance of public domain and the governor the net is women and axillary’s hair. The periodicity of the menstrual cycle depends on a very complicated relationship between the ovaries and the anterior pituitary.

Changes in female hormone function are very often caused by emotional stress or by other unspecific circumstances. All women eventually develop spontaneous ovarian hypofuction. This usually happens between the ages of 45 and 50 and is called the climacteric or menopause. When it happens before the age of 35, it is called premature menopause. Normal menopause results from the gradual burning out of the ovaries so that estrogen is deficient or absent altogether. Most women experience very few changes or symptoms at this time other than the cessation of menstruation, usually preceded by progressive irregularity and reduction flow.

This is called functional bleeding and is caused by excess estrogen. The disorder is treated with progesterone, which slows down estrogen production. Some diseases of the ovaries, such as infections, cysts, and tumors, do not necessarily cause functional changes, but they may call attention to themselves by being painful, or a physician may discover them during a pelvic examination.

A rather common cause of short lived ovarian pain is connected with ovulation, which occurs about 14 days before the next expected menstrual period. This discomfort is called mittelschmerz, which is German for “middle pain”, and can be treated with aspirin or any other simple analgesic.\footnote{Richard J.Wagman, "Diseases of the Endocrine Glands," \textit{The New Complete Medical & Health Encyclopedia}, Vol-2, J.G. Ferguson Pub.Com. Chicago, Pp.505-506.}
SOME GYNECOLOGICAL FACT -

On the basis of extensive evidence, gynecologists agree that:

- Neither premenstrual changes in the body nor menstruation itself need interfere with a fitness program or ancillary activities. A woman should not assume that menstruation and its accompanying inconvenience need necessarily determine her participation or non-participation at any given time. The decision should, rather, be made with overall considerations of health and attitude in mind. Bear in mind that female Olympic athletes compete without regard to whether they are menstruating or not.
- Physically fit women appear to avoid many of the leg, back, hormonal, and other problems that seem to afflict women in general more than they do men. The problems thus need not be considered inevitable. They may be outgrowths of the state of "unfitness."
- Menopause need not involve a decrease in fitness activities. On the contrary, keeping fit means keeping normal, "doing your thing," and living and enjoying life. If menopause interferes seriously with the effort to keep fit, something may be complicating the situation, and a doctor should be consulted.²⁰

Water retention and body weight gain are frequent side effects of menstrual function. In about 25% of women these changes can lead to severe water retention, one of the clinical symptoms of premenstrual syndrome. It has been estimated that approximately 50% of women experience weight gain premenstrually, although often without clinical symptoms. Thorn et al. studied a group of 50 normal women and found that in the week before menses, 24 gained 1 or more kilograms that could not be attributed to dietary changes. A second period of weight gain was found to occur in 38 of the 50 women near the time of ovulation. The effect of the menstrual cycle on the vascular fluid compartment is less understood. Red cell mass is assumed to remain fairly constant during a menstrual cycle, and the loss of red cells in most women during menstruation averages only about 25 ml.  

MENSTRUAL DISORDER –

A menstrual disorder is a physical or emotional problem that interferes with the normal menstrual cycle, causing pain, unusually heavy or light bleeding, delayed menarche, or missed periods. Among the health concerns of women that specially belong to gynecology are menstrual period (menarche) occurs about age 12 or 13, or sometimes earlier or two, and then they tend to recur at intervals of 24 to 32 days. Each period begins about two weeks after ovulation, or the release of an egg cell (ovum) from the ovary – unless, of course, the ovum happens to be fertilized in the interval and pregnancy interrupts the whole process. The menstrual flow, which lasts from three to seven days, is composed mainly of serum, mucus, and dead cells shed from the lining (endometrium) of the uterus. The loss of blood is minimal, usually from two to four ounces. The volume of flow, as well as the time schedule, tends to be fairly regular for most women. When one’s menstrual pattern varies noticeably from the expected pattern, and in the absence of pregnancy, it may be a sign of a physical or emotional disorder.

DISORDER OF MENSTRUATION

- Amenorrhea
- Dysemmenorrhea
- Menorrhagia
- Metrorrhagia

Failure to menstruate is called Amenorrhea. Amenorrhea is natural effect of pregnancy and of nursing a baby. In an older woman, it may be a sign of menopause.

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22 http://www.myhealth24.com/Menstrual disorder

PRIMARY AMENORRHEA -

When menarche has not occurred by the age of 16 or 17, the absence of menstruation is called primary amenorrhea.

SECONDARY AMENORRHEA -

When menstrual periods cease after menarche, the condition is known as secondary, or acquired amenorrhea. Secondary amenorrhea may involve missing a single menstrual period or many periods in consecutive months. Among possible causes of interrupted menstruation are certain medications, drug of abuse, emotional stress, normal fluctuations in ovarian activity in the first few years after menarche, and a number of organic diseases.

MENORRHAGIA -

Almost the opposite of amenorrhea is menorrhagia, an excessive menstrual flow. The causes of menorrhagia are as varied as those associated with amenorrhea. They include influenza and other infectious diseases, emotional stress, polyps of the cervical or uterine tissues, hypertension, congestive heart failure, leukemia, and blood coagulation disorders. Menorrhagia may occur during the early stages of a young woman's reproductive life soon after reaching puberty, and medical treatment may be necessary to control the excessive loss of blood. In some cases, dilation and curettage is recommended in addition to the administration of hormones and other medications, such as iron tablets to correct anemia resulting from the loss of red blood cells.

METRORRHAGIA & POLYMEANORRHEA -

These medical terms refer to two other ways in which menstrual periods may depart from typical patterns.
Polymenorrhea is abnormally frequent menstruation, so that menstrual period occurs at intervals of less than 21 days. This short interval may be the natural established pattern for some women.

If it is not, the cause may be physical or emotional stress. Menstrual bleeding that occurs erratically at unpredictable time's marks metrorrhagia. It may be the result of a cyst in the lining of the uterus, a tumor in the reproductive tract, polyps, or some hormonal imbalance, including a disorder of the thyroid gland.

**DYSMENORRHEA -**

Dysmenorrhea (menstrual cramps) is caused by inadequacy of uterine blood flow during myometrial contractions, stimulated by prostaglandin, produced in the endometrium $^{24}$.

Characterized by menstrual cramps or painful periods, dysmenorrhea, which comes from the Greek words for "painful flow," affects nearly every woman at some point in her life. It is the most common reproductive problem in women, resulting in numerous days absent from school, work and other activities$^{25}$.

Abdominal or pelvic pain occurring just before or along with the onset of menstruation is known as Dysmenorrhea. The symptoms include severe colicky abdominal cramps, backache, headache, and, in some cases, nausea and vomiting$^{26}$.

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$^{24}$Morris, B. Melison, M.D. "The Athletic Woman", Surjeet Pub Delhi,1889. Pg. No-78.


Dysmenorrhea appears to be less prevalent among active women; however, it is inconclusive whether specific sports participation can alleviate or produce Dysmenorrhea. For girls and women with moderate to severe Dysmenorrhea, gynecological consultation is warranted to rule out a serious pathological condition. Painful menstruation is caused by a lack of normal blood flow to the pelvic organs or possibly by a hormonal imbalance. This syndrome, which is identified by cramps, nausea, lower abdominal pain, headache, and on occasion emotional liability, is the most common disorder.

Physicians usually prescribe mild to vigorous exercises that help alleviate painful menstruation. Physicians generally advise a continuance of the usual sports participation during the menstrual period, provided the performance level of the individual does not drop below her customary level of ability. Among athletes, swimmers have the highest incidence of painful menses, quite probably as the result of strenuous sports participation during the menses. Generally, a decrease in flow appears more common in sports that require strenuous exertion over a long period, for example long-distance running, rowing, cross-country skiing, basketball, tennis, and field hockey.

Since great variation exists among female athletes in respect to the menstrual pattern, is effect on physical performance, and the effect of physical activity on the menstrual pattern, each individual learn to make adjustments to her cycle that will permit her to function effectively and efficiently with minimum of discomfort or restriction. The use of pills, devices, and other methods to alter or stop the menstrual cycle is inadvisable. Evidence to date indicates that top performances are possible in all phases of the cycle.  

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PRIMARY DYSMENORRHEA

Primary, or normal cramps, affects up to 90 percent of all women, usually occurring in women about three years after they start menstruating and continuing through their mid-twenties or until they have a child. About 10 percent of women who have this type of dysmenorrhea can't work, attend school, or participate in their normal activities. It may be accompanied by backache, dizziness, headache, nausea, vomiting, diarrhea and tensioness. The symptoms typically start a day or two before menstruation, usually ending when menstruation actually begins. This type includes all cases in which no organic disorder is associated with the symptoms, which are presumed to be a result of uterine contractions and emotional factors. More than 75% of all cases are of this type. Primary Dysmenorrhea generally begins before age 25, but it may appear at any time from menarche to menopause. It frequently ends with the birth of the first child.

Causes of Primary Dysmenorrhea:

- Production of prostaglandins, natural chemicals the body makes that cause an inflammatory reaction. They also cause the muscles of the uterus to contract, thus helping the uterus shed the lining built up during the first part of a woman's cycle.
- In some women, prostaglandins can cause some of the smooth muscles in the gastrointestinal tract to contract, resulting in the nausea, vomiting and diarrhea some women experience.

http://www.myhealth24.com menstrual disorder.htm
- Prostaglandins also cause the arteries and veins to expand, so that blood collects in them rather than flowing freely through them, causing pain and heaviness. Yet another reason for severe cramps, particularly in women who haven't yet had a baby, is that the flow of the blood and clots through the tiny cervical opening is painful.29

Since Primary Dysmenorrhea by definition occurs in the absence of organic disease, the diagnosis can be made only after a careful medical history is compiled and a special study of the reproductive organs is made to ensure that no disorder has been overlooked. Medication is often less beneficial, however, than emotional support-including the easing of any stress at home, school, or work, and reassurance about the worries sometimes associated with menstruation.

SECONDARY DYSMENORREA

Secondary dysmenorrhea has an underlying physical cause and primarily affects older women, although it may also occur immediately after a woman begins menstruation, however. This condition comprises all menstrual pain that is a result of or associated with an organic disease of the reproductive organs, such as endometriosis, to cite just one example. Secondary Dysmenorrhea can occur at any age.

29http://www.mvhealth24.com 2004
The Causes of Painful Periods Include:

- **Tipped uterus or retroverted uterus** – A tipped uterus may also cause pain during intercourse.
- **Endometriosis** – The tissue lining the uterus – the endometrium – may grow outside the uterus causing pain during periods.
- **Hormonal changes and imbalances** – A hormone produced by cells in the uterine lining called prostaglandin causes uterine contractions. Women with severe dysmenorrhea have higher prostaglandin levels in their menstrual fluid than other women.
- **Adenomyosis** – A condition where the lining of the uterus (endometrial) grows into the muscle of the uterus.
- **Fibroids** – Non-malignant growths in the uterus can cause pain during periods.
- **Pelvic inflammatory disease (PID)**
- **Intrauterine device (IUD) -** Some women may experience increased bleeding, cramping and backache with their periods.\(^30\)

**MINOR MENSTRUAL PROBLEMS\(\rightarrow\)**

**BLOOD CLOTS** = There is usually any cause for alarm if blood clots are expelled during menstruation. Ordinarily, the menstrual flow is completely liquefied, but a few clots tend to appear when the flow is profuse. However, if many cots appear and the flow seems excessive, medical advices recommended, since these conditions may be a sign of fibroid tumors in the uterus.

**ODOR** = The menstrual flow of a healthy women generally has a mild odor that develops when it is exposed to the air or to the vulva. Some women are concerned about this odor, although it usually is not offensive. When it is, it tends to be associated with inadequate bathing.

\(^30\)http://www.dyspareunia.org/ html 2003
Detergents are added to some commercial tampons and pad products, and special deodorants have been developed to mask the odor. However, such materials produce allergic reactions in some women, and they can have the unfortunate effect of an odor that may be the sign of an abnormal condition.

**POSTMENOPAUSAL BLEEDING** = Bleeding that occurs after the final cessation of menstrual activity should be seen as an urgent signal to seek medical advice. The bleeding may be painless or painful and may range from occasional spotting that is brownish or bright red to rather profuse bleeding that continues for several days or more. The various signs and symptoms should be noted carefully because they can help suggest to a physician the menopause is often a sign of cancer of the cervix or the lining of the uterus, but there is a wide variety of other possible causes, including polyps, ulcers, hypertensive heart disease, an ovarian tumor, or infection. In many cases, the problem can be treated by dilation and curettage or withdrawal of any hormone medications, such as estrogens prescribed for menopausal symptoms or both.

**CHRONIC EXERCISE AND MENSTRUAL FUNCTION**

Chronic intense exercise in some woman may result in a disruption of the menstrual cycle. When menstrual cycles fail to begin by age 16, the normal one is a disorder is classified as “Primary Amenorrhea”. If the menstrual cycles suddenly become irregular or stop in a previously cycling woman, the disorder is classified as “Secondary Amenorrhea.” Inconsistent menstrual cycles occurring at interval of 39-90 d are termed as “Oligomenorrhea” Lack of cycle or cycles occurring at intervals greater than 90d is termed “Amenorrhea”.

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"Athlete's amenorrhea" is the term used to indicate the cessation of menstrual cycles that sometimes accompanies severe exercise training and is therefore a form of secondary amenorrhea. The reported incidence of athlete's amenorrhea varies greatly and is confounded by the lack of consistent criteria for the disorder. Most studies refer vaguely to a menstrual irregularity in athletes. Athlete's amenorrhea is reported most frequently in younger women, who have not had children, who had a late onset of menarche, and who have a relative level of body fat less than 22%. Its occurrence is also related to the frequency or duration of training sessions, the percentage of protein in the diet, the mode of training, and the degree of psychological stress associated with the exercise.

Amenorrheic athletes have depressed levels of circulating estrogen-progesterone and even "normally cycling" athletes may have a shortened luteal phase with a smaller rise in serum progesterone levels. The body fluid responses to those occurring during the early follicular phase of a normal menstrual cycle. A positive effect reported in amenorrheic athletes is an increased hematocrit and total body hemoglobin that could result in an increased aerobic capacity.32

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OVARIAN MENSTRUAL CYCLE AND HORMONAL RESPONSES TO EXERCISES.

The dynamics of female sex hormone production during the ovarian-menstrual cycle cause different ratios between sex and other hormones in various phases of the cycle. Therefore, a possibility exist that in various phases of the cycle the hormonal responses to exercises may differ. The question arises are there any changes in the hormone-receptor interrelation during the ovarian-menstrual cycle?

The background for this question is the competition between progesterone and glucocorticoids as well as between estrogen and other steroid hormones at the receptor level. A high level of progesterone, typical for the luteal phase of the ovarian-menstrual cycle, may change the sensitivity of carbohydrate metabolism to hormonal influence. In the luteal phase after an oral glucose load (1g/kg b.w.) the insulin increase as well as the insulin/glucose ratio were bigger than in the follicular phase. No significant phase differences were found for the glucose response.

In the luteal phase at maximal exercise duration (at 80%Vo2max) glycogen depletion during exercise and glycogen repletion rate after exercise were greater than in the follicular phase. In regard to the influence of high levels of estrogens it may be indicated that ovulation may induce a decrease in physical working capacity.

At 30-to 60-min exercise the ratings of perceived exertion were higher in the ovulatory than in the mid follicular or mid luteal phases. The ovulatory phase was characterized by enhanced fat utilization and the mid-follicular phase by preferred carbohydrate utilization.
Menstrual disorders were also found in female weight-lifters and competitive body-builders. By the view of H.A. Keizer and A.D. Rogol the amenorrhea is a result of short-term over training. A well-known result of training at an early age is delayed menarche.\(^{33}\)

The women by virtue of her special role in the process of reproduction exhibits not only changes in the distribution or character of the general body tissue but also peculiarities of form and function strictly her own which are relevant to the context of sports and physical reaction. Physical activity has frequently been shown to improve the woman's capacity to cope with physiology changes in menstruation and indeed it has in some series been shown that physical training is a valuable means in the treatment of Dysmenorrhea. It has been taken for granted that the menstrual function reduces woman's efficiency and ability to carry on her normal activities. This opinion is very much popular in the minds of the people today\(^{34}\).

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\(^{34}\) The Periodic Fluctuation in Physical Efficiency During the Menstrual Cycle*, *Research Quarterly*, Vol.-III 1932 No.3, Pg.137.
It is generally known that the body and how it functions is the underlying basis behind any athletic performance and be this male or female body the functioning efficiency of it must be improved for good performance. It's not the human body of female composed of the same basic nine body systems as there of the male. Its muscle's nerves, lungs, heart and blood vessels that must be made to function at maximum level when competing.

There is a general trend toward advocating normally of behavior during the menstrual period. Only within the last twenty years has the function of menstruation been studied scientifically and the result is an attitude on the part of physicians that moderate exercise is more beneficial than rest during menstrual cycle, but also for some cares of abnormal phase, especially dysmenorrhea.

For many years, dysmenorrhea was treated as psychosomatic, as the response of a neurotic women or as something that was "the woman's lot in life", often the complaining women was simply told that a pregnancy would solve her menstrual pain is not normal and need not be tolerated.

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Years ago, some thought that shortening of the pelvic nerves or ligaments was the cause of Dysmenorrhea, and stretching exercise to lengthen these structures were prescribed. Although mild exercise sometimes helps in Dysmenorrhea, there is little clinical evidence to suggest that the stretching exercise actually "Cured" or prevented Dysmenorrhea.

Cogestion may be the cause of Dysmenorrhea, it is well known that blood vessels of the pelvic organs, particularly those of the uterus, are very thin walled. The veins in this region and those into which they drain, are as a rule, devoid of valves and form a most intricate and complex network known asplexises. Thus, is individuals with poor muscles tone as revealed by reduction in the size of the thoracic cage, narrowing of the costal angle, lowering of the diaphragm, relaxation of the abdominal wall and tendency to ptosis of the abdominal organs, there is loss of tone and synchronous relaxation of the blood vascular system as well with the loss of tone, the complex vascular system of the pelvis undergoes dilation permitting congestion or the accumulation of venous blood in this dependent portion of the body.

Dysmenorrhea is a symptom that arises from disturbances of the contractions of the uterus. The uterine motility may be affected by stimuli that come through the hogs her centre of the way of the presacral nerve of form the pelvic ganglia. The immediate mechanism which stimulates there cramp-like pains is not as easily explained. Constitutional factors and Psychogenic factors are recognized in the explanation of these.

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A large group in relieved of pain through psychotherapy and other constitutional measures. Endocrine therapy directed to anterior Pituitary abd Ovary and Secondarily to the thyroid and possibly even to the adrenal, will relieve a large proportion of cases.\textsuperscript{41}

Gynecological data indicates that exercises is beneficial in relieving pain and also in improving and preventing Dysmenorrhea.\textsuperscript{42}

There is no doubt that the trainability and work output capacity of a women are connected to end dependent upon her specific hormone situation. The menstrual cycle can have very variable effects on her output, and the Psychic component may very often be the deciding factor. This means that in spite of the subjective sensation of pain or discomfort the objectives readiness for effort can be normal or only marginally diminished. Even so during competition self-confidence and therefore the autosygestive compound of the Psychophysical condition is effectively reduced by the understandable feelings of inferiority in the face of an opponent who is not menstruating. During menstruation there is a reduced work output as compared with a for better performances post menstrually. Even so during menstruation heavy impacts as in jumping or landing from high apparatus (e.g. Asmmetrical bars) overcooling (as in swimming and ice skating) and also endurance efforts in middle and long distance training so definitely be reduced. Painful menstruation or Dysmenorrhea, as it is called in medical parlance, is a very common occurrence these days. This disorder is traceable to a debilitating and toxic condition of the system in general and of the sex organs in particular due to a wrong diet, wrong style of living and nervous exhaustion. The pain may be felt either two or three days before or immediately before or during the flow.


Pain starting two or three days before the flow usually shows that the ovaries are not functioning properly. This is a glandular mis-function and a carefully planned natural diet will usually put matters right. For local treatment, hot hip baths on alternate nights for a week before the period is due will be highly beneficial. Between periods, cold hip baths will increase the tone of the ovaries.

Pain immediately before the flow commences is indicative of uterine flexion, which means that the position of the womb is abnormal. A professional examination should be arranged to ascertain the position of the womb and corrective exercises undertaken under professional advice. Uterine flexion often occurs in women who are so thin that they have lost internal fat and the ligament, on which the womb is suspended. General treatment along dietetic lines is essential along with corrective exercises. When the pain occurs during menstruation it usually means that the womb itself is inflamed. This condition can be relieved by proper attention to diet and hot hip baths just before the period is due and cold hip baths between the periods\textsuperscript{43}

Other simple measures to help relieve menstrual cramps include the use of a heating pad, hot baths, hot drinks, massage, or other stress reduction techniques. Exercise is another effective method of treatment. Going for a run, swimming, or taking an aerobics class will increase blood circulation and relax the teen's abdominal muscles. Exercise will also promote general body fitness\textsuperscript{44}.


\textsuperscript{44}http://www.kidsGrowth.com/resources 2004.
MENSTRUATION AND PHYSICAL ACTIVITY:--

The approach that has taken toward participation in physical activities during menstruation and has changed drastically during recent years. The years ago it was not uncommon for a female to be excused from a physical education class or from team practice during her menstrual period regardless of how she was feeling. As female participation physical activity and competitive sport continues to grow, many of the myth have been disregarded. Today it is generally accepted that there is no real reason to restrict physical activity during the menstrual period. However, it must be mentioned that there is considerable variability in female response to the menstrual period and individual problems must be taken into account. Menstruation is a normal biologic event that does not pose any significant threat to the active female.

Varying degrees of pain during the menstrual cycle are common in virtually all females. It is generally accepted that this pain results from strong muscle contractions in the uterus. Pain may be localized in the area of the pelvic or it may be associated with various other bothersome symptoms during the menstrual period. It is extremely common for the female to feel mild cramping type pain in the abdomen with the beginning of menstruation. These abdominal cramps begin several hours before the onset of the period and generally last for about 12 hours after the menstrual flow has begun, although pain may persist for a full day. Mid abdominal cramping may be accompanied by pain in the lower back, buttocks, and upper thigh. For some the cramps are mild and not terribly painful.

For other, cramps may be so severe that the female is incapacitated for hours or perhaps a couple of days. In addition to menstrual cramps, many females may also experience periods of nausea, tenderness of the breasts, abdominal gas, and feeling of depression or irritability both prior to and during menstrual bleeding.
These symptoms may be minimal or may be severe enough to affect the woman's efficiency during physical activity. The average woman will be most efficient in the postmenstrual period.

The breast also may become tender and exhibit fullness in the premenstrual period. Various factors such as breast size will influence the severity of symptoms. Breast support as well as protection may be helpful, and medical evaluation is advised for severe symptoms. Recent medical knowledge of the relationship between exercise and the menstrual cycle make it possible to conclude that there are no harmful effects of one on the other.

Various published studies lead to the following conclusions:-

1. Menarche does not occur earlier in physically active girls. It may in fact be delayed to some extent.
2. Physical performance in general seems best in the immediate postmenstrual period. This fact is not absolute, however, and there after some reported incidents in which record-breaking events occurred during the menstrual flow.
3. Hormonal balance may affect the woman's desire and motivation toward physical activity at various times during the performance, especially if there are associated depression, irritability, or mood changes.
4. The feelings of well-being from exercise tend to minimize certain menstrual symptoms such as cramps.
5. Physically active females should chart the menstrual cycle to determine changes in the pattern, as this may signify physical or psychological problems such as fatigue, pregnancy, systematic illness, or mental tension. If irregularity is noted, the cause should be investigate.
6. Exercise does not disturb the menstrual cycle [if may have a beneficial effect in some gynecological disorders.
7. It is unusual for a physically active female to experience changes in her menstrual cycle. Oligomenorrhea refers to irregular menstrual periods that generally involve diminished blood flow.
Amenorrhea indicates that menstruation disappears altogether. Some females involves in endurance activities such as distance running, swimming and cycling tend to report change in menstruation of either the Oligomenorrhea or amenorrhea varieties. Normal menstruation seems to return participation in the activity ends.

Physical benefits of exercises

- Cardiovascular endurance
- Muscular endurance
- Muscular strength
- Improved posture & body mechanics
- Body counteracting
- Proper body growth
- Reverses aging process
- Body Composition
- Healthy Blood
- Easy handling of emergency & routine tasks
  - Emergency & routine tasks

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Female athletic competitions and participation in physical activities has increased marked over the past few years, as antiquated social mores regarding woman’s involvements in sports and exercise have fallen away. Because female participation is relatively recent, research on the effects of exercise on the female is scare.

RIGOROUS EXERCISE AND MENSTRUATION:-

While a variety of misconceptions and taboos have had women believe otherwise, no research indicates that exercise causes serious health problems during menstruation. Many women do have pain with menstruation, called Dysmenorrhea, with the degree of discomfort varying from one individual to another. Normally however, this discomfort should not prevent women from participating in physical activity. As a matter of fact evidence indicates that physical activity may in some cases reduce the symptoms of menstrual pain.

Some physicians believe that certain exercises, such as skiing, tennis, gymnastics, and rowing, carry greater incidence of menstrual disorder, and they support reduced competition in these areas when woman are menstruating. However, little evidence support this concept. Recent evidence has shown that approximately one third of competitive female long distance runners between the ages of twelve and forty five experience Amenorrhea [cessation of menstruation] or Oligomenorrhea [irregular menstruation] for brief periods.

The incidence is usually related to the number of run, the distance, the higher the incidence of irregularity. These problems also are found in some gymnasts, swimmers, and dancers, and typically are more common in women who have not given birth or who began menstruating late. The cause of exercise amenorrhea is still unknown. Some of the theories include increased testosterone levels decreased ovarian function, loss of fat, and altered pituitary functioning. Presently there is a strong indication that a change in hypothalamic functioning may be responsible sufficient calcium replacement is essential for individuals encountering amenorrhea.
The prevalence of exercise-related menstrual changes depends on age, previous menstrual cycle, and the exercise status of the women. Any woman who is concerned about her menstrual cycle should be evaluated, but the extent of the evaluation will depend on the content of the patient's history. The two most common causes of amenorrhea are pregnancy and situational stress.\footnote{George Mcglynn, "Special Consideration," Dynamics of Fitness, A Practical Approach, III\textsuperscript{rd} Edition, 1993. Pp.245-247.}
The pathogenesis of exercise related oligomenorrhea correlates with exercise intensity, exercise duration and type [mileage in runners but not in swimmers or cyclists] weight loss & thinness, body composition, [%of body fat] age, previous menstrual irregularity, physical stress, emotional stress, & dietary factors\textsuperscript{48}

**FEMALE AND PHYSICAL ACTIVITY:**

Over the past decade, the participation of women in physical activity has increased dramatically. Women of all ages are exercising, and increasing numbers are training intensively for endurance events. This has raised a unique set of issues, any of which relate to reproductive endocrine function.

**Menstrual cycle disturbances -**

*Delayed Menarche* - Menarche, the onset of menstrual periods, is one of the final stages of pubertal development, occurring some 2 years after the beginning of breast development and pubic and axillary's hair growth. Regular ovulatory menstrual cycles may take 1 to 3 years to become established. However, the onset of menses is a point that is more amenable to retrospective analysis than other aspects of pubertal development and has been used in a number of studies comparing athletes and ballet dancers with non-exercising females.

Olympic volleyball players were found to have a later age of menarche than high school and college athletes, who in turn had a later menarche than non-athletes. Later menarche was also reported in a group of adult women running more than 48 km a week compared with a non-running controls.

Bearing in mind that international competitors are selected for characteristics that differ by 3 to 4 standard deviations from the mean, one should expect such as gymnasts or ballet dancers. However, late maturation also encourages a large adult height, so that in their later teens, later matures may have a body build well adapted to volleyball or basketball. Nevertheless, there is evidence that some factor menarche.

**Altered Menstrual cycle**

Although most women can exercise without menstrual changes, there is an increased prevalence of amenorrhea and oligomenorrhea among athletes. Shortened luteal phases have been documented in swimmers and marathon runners. When menarche is delayed beyond 10 to 12 years in the absence of breast and pubic hair development, or beyond 16 years in their presence, medical advice should be sought. Initial evaluation should include and exercise and growth history as well as a careful family history with particular reference to pubertal development.

Gain of body mass or a decrease in physical activity for several months may be suggested. This will usually be sufficient to produce pubertal progression or menstruation if there is any concern on the part of the patient, her parents or the physician. Further evaluation depends on the individual circumstances and responses to these simple maneuvers.49

**WOMEN AND MEDICAL ASPECT OF SPORTS**:- Repeatedly, in the furor, information and misinformation are “legitimatzied” with so-called “medical” reasons without adequate study has significantly he helped to determine some of the past and present trends in girl’s and women’s sports.

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The physiological disadvantages so frequently described as deterrents to woman's physical activity, are the subject of many papers pro and con on the effect of the menstrual cycle on women in sports. Much of the recent literature and numbers of studies have indicated that we have been over-protective about this phenomenon for years.

Facts about this phenomenon for years. Facts about menstruation, though well documented and understood, have been colored by the folklore of the female subculture and the influence of women on men. Men of science have had to weight their knowledge of scientific fact against living with women—their mothers, wives and daughters. Physicians have been further influenced by patients' complaints and reactions about their own menstrual style.

In the more recent literature, in a number of articles and studies, it is generally concluded that participation in all sports activities before, during, or after menstruation, causes no deleterious effect on the normal menstrual cycle. This is as fare as the conclusions may go. Very few of them provide more fundamental analysis on long-range beneficial or harmful effects.

The coach's comment on fingernails and hairdos was included because it reflects the readiness with which we invent excuse for being indifferent to physical activity and sports for girls. Perhaps these feminine gimmicks were devised by the girls as a defense against the indifference. There might be parents who request "excuses" for their daughters for absence from intramural sports, swimming, and other team activities, who may not have a positive conviction about girls' physical activities and fitness and who has also been worn down by an aggressive over-solicitous parent. The medical excuse sometimes adds substance to an indifferent attitude.

The comment about "shaking up some-thing" has surely arises from the patients' translation of gynecological jargon about "tipped uteri" and the position of female organs.
Some sociological studies on what the doctor thinks he told the patient what the patient thinks the doctor told her, and what the patient tells her neighbor she thinks the doctor told her, already reveal a lack of understanding of what we learn about ourselves. If this is applied to gynecological discussions, the errors, exaggerations and fantasy, are compounded dangerously. Unfortunately, this type of "medical information" travels quickly—often picked up by the popular press to become "medical fact" before we know it.

Both patients seldom discuss among themselves their patients who are "normal"—it is case with "findings" which receives all the discussion and publication. The woman who had no problem with her yearly pelvic check-up has nothing to discuss with anyone as compared to the girl or women with a diagnosis of mild anatomical dis-functioning or pathology.

The effect is one which would lead us to believe that defects are common that normal uncomplicated female functioning is rare. Realistically, there are patients with menstrual disorders and with gynecological pathology who do require medication surgery or special prescriptions or precautions pertaining to exertion, but these patients are a very small segment of the general population.

Many studies conclude that regular exertion and competitive athletics will not have a harmful effect on pregnancy. They demonstrate that women athletes experience no more complications than non-athletes. Others have indicated that increased musculature of the athlete increases complications of pregnancy. None of these studies, as with those on menstruation, has provided analytical comparative data with control groups to indicate a more accurate picture. In the matter of menstrual studies it can be shown that the occurrence of these same improvements enhance the integrity of the menstrual physiology. There are less of the hemorrhagic abnormalities, cramping and associated symptom when general muscle tone is maintained at an optimum level—providing other medical conditions do not exist.
The emphasis on girls' and women's sports need not be centered on competition alone. More there is need to dispel the medical folklore of women for their own benefit and for the furthering of scientific investigation.

Through these methods, the attitude of teachers, parents, physicians and students can be altered by creating a climate of acceptance of regular physical exertion for women. This group of conditioned youngsters will produce some gifted athletes. Some girls inspired by the programs will make a special effort in athletics, but more important, all women will benefit in their roles as women - athletes or not.\(^50\)

Research in exercise physiology involves immediate and long term effects of exercise and training on various physiological systems. It is an established fact that improved performance in sports has a close relation with increased efficiency of different body systems. As a result of constant research in the area, a wide variety of procedures both direct and indirect have been established for the solution of problems pertaining to improved performance in sports. In India this field of study has been very widely explored. However, the efforts have been confined mainly to applied research utilizing simple instruments. Exercise physiology will also help to understand of effectiveness of training methods and assist study their implications in the context of our climate conditions and adaptability of sports-person to such method.\(^51\)


\(^{51}\) Dr. A.K. Uppal, "Measurement for Promotion of Research in Physical Education and Sports, Trends and Practices in Physical Education in India," friends pub. New Delhi, 1996, Pg. 82.
Dysmenorrhea is the pain associated with menstruation. Approximate menstruating women live with this disorder, and those are incapacitated for several days each period. It usually begins just before or right at the start of menarche. The pain of dysmenorrhea, or cramps, can be from pelvic inflammation, excessive fluid in the pelvis, or severe spasmodic dysmenorrhea accompanied by the passage of a cast or partial cast of the uterine cavity. Most women complain of the pain being located in the lower abdomen, but many also feel it deeply in the lower back and thighs. Occasionally, cramps are accompanied by nausea, diarrhea, headache, and dizziness.

While dysmenorrhea is common among most menstruating women, there are steps that can be taken to relieve the discomfort and pain. Using a calendar, keep track of your periods by marking the first day of each period. The week before your period begins, it is a good idea to eat moderately and try to limit your intake of salt. This help reduce water retention, bloating, and headaches. Keeping active, do exercises especially during the first few days, is helpful, as is resting with your feet up, taking warm baths, and using a heating pad on your abdomen. Exercises are helpful to alleviate pain, and other symptoms of dysmenorrhea.\(^{52}\)

\[^{52}\text{http://www.bloodrootsproducts.com}\]
1.1 STATEMENT OF THE PROBLEM:

There was a question in Researcher’s mind from childhood that why girls are afraid of participating in sports activities as researcher had asked this question of her colleagues, she came to know that, during menstruation girls were afraid of participating and also they were forced by parents not to participate in sports activities during menstruation. Researcher herself was forced by her mother not to participate in sports, during menstruation.

Research scholar had never faced or never experienced any type of pain in the body during menstruation, and menstruation never affected on researcher’s sports performance during menstrual cycle. No disturbances in cycling, walking, attending school, college, working in home were affected due to menstruation but researcher had always found her colleagues absent in the school during menstruation and they were preferred bed rest during first & second day of menstrual cycle. During the training period of Physical Education & Sports researcher found that trainees faces the menstrual cramp and also found them discussing with teacher or coaches about not participating in Physical activities, and also found many girls residing near home having pain due to menstrual cycle and had never participated in any type of physical activities. Some girls found going to the doctors and being admitted in the hospitals.

To know about the menstruation, menstrual disorders, causes of menstrual cramp and therapeutic exercises for prevention from menstrual cramp, degree of pain and symptoms of Dysmenorrhea in female players and Non-players, associated symptoms of Dysmenorrhea occur prior, during the cycle, to know the effect of Dysmenorrhea on their sports participation and general physical activity. As exercises can be helpful to prevent the pain, occur due to menstruation.
With a view to realize the outcomes of these burning problems the scholar had made up her mind to look into the causes, degree of pain and symptoms of Dysmenorrhea among female players and non-players of Central School of Maharashtra state. Hence, Research scholar states the problem entitled as “Comparative Study of Female Players and Non-Players of Central Schools of Maharashtra State in Regards to Symptoms of Dysmenorrhea.”

1.2 PURPOSE OF THE STUDY –

The purpose of the study was to compare players and non-players in regards to symptoms of Dysmenorrhea. Although there is a wealth of published material on menstrual function there is a little which directly related to this investigation. No previous studies have been reported of the “Comparative Study of Female Players & Non-Players of Central schools of Maharashtra State in Regards to Symptoms of Dysmenorrhea”

1.3 SIGNIFICANCE OF THE STUDY:

The present study may be significant in following ways:-

1. The misconceptions regarding Dysmenorrhea will be clarified.
2. The findings of the study may be helpful to the physical education Teacher, coaches to run their programme successfully.
3. The study will facilitate in motivating female non-player, and players for taking greater interest in participating exercises, sports competitions, achieving higher level of sports performance.
4. The study will be helpful for creating or motivating non-players And to participate in physical and sports activities regularly.
5. Findings of the study will also help parents to allow their children to involve in sports and physical activities during menstruation.

6. The study will impart lesson to the female participants to know the causes of Dysmenorrhea.

7. This study will enlighten the symptom of Dysmenorrhea as a Whole.

8. The study will help players, physical education students and the Non-players to be acquainted with psycho-physical stress and strain relief.

1.4 HYPOTHESIS:--

It was hypothesized that moderate & severe category of symptoms of Dysmenorrhea may be found more in female non-players of central schools.

1.5 DELIMITATIONS OF THE STUDY:--

The scopes of the recent study was delimited the following aspects:--

1. The study was delimited to the Female players and Non-players of Central Schools of Maharashtra State.

2. The study was delimited to the Female players and Non-Players Learning 9th & 10th Classes in Central Schools.

3. Fifty percent (50%) schools of each district of Maharashtra state was covered in the study.

4. The study was delimited to unmarried female players and Non-players.

5. The study was conducted by using the set of questionnaire method and personal interview.
6. The contents of questionnaire was delimited to symptoms of Dysmenorrhea.

7. Fifty percent (50%) female players from IXth & Xth standards.

8. The subjects was selected by simple random sampling method.

9. Female Player of 9th & 10th Standard were participated at School to National Level competitions.

10. The study was delimited to the following games: Basket-ball, Kho-Kho, Kabbadi, Badminton, Handball, (Athletics-Running Event) Football, Hockey, Volley-ball.

1.6 LIMITATIONS :

The study had further limitations.

1. Authenticity of the responses of the questionnaire was depend upon the honesty of subjects.

2. No special motivational techniques was used to collect data which might be affects the result during the collection of data.

3. There were no limitations on their (subjects) living habits.

4. There was 45 min. Class period time limitations given for receiving duly filled up questionnaires.

5. The general health of the subject did not considered.
1.7 OPERATIONAL DEFINITION OF TERMS:

1. Abdomen – The largest body cavity, immediately below the thorax, from which it is separated by the diaphragm. It is enclosed largely by muscles and fascia, and is therefore capable of change in size and shape. It is lined with a serous membrane, the peritoneum, which is reflected as covering over most of the organs.\(^{52}\)

2. Cramp- A sudden, uncoordinated, prolonged spasm or titanic contraction of a muscle, causing it to become taut and painful.\(^{53}\)

3. Central School - The Central schools are Centrally administered and beyond schools affiliated to C.B.S.E. (Central Board of Secondary Education)

4. Comparative Statistics- By using comparative statistical concepts it may be possible compare and contrast the performance of two or more groups. Comparative statistics may consist of a) comparison of paired – individual scores and b) comparison of grouped scores – description of the whole population.\(^{54}\)

5. Dizziness- A Mental condition which results in unsteadiness when god one standing with a tendency to stagger and fall.\(^{55}\)

6. Dysmenorrhea – (Dys- Difficult; men, month; rhein, to flow.) Painful menstruation Dysmenorrhea –(dis" men-or-e'ah) painful menstruation\(^{56}\)

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\(^{54}\) Dr. M. L. Kamlesh, *Methodology of Research and in Physical Education & Sports* 2nd edition, Metropolitan, New Delhi, 1994 P.205-207


7. Depression - A feeling of hopelessness, or an attitude of dejection. Depression can seriously affect the motivation to train and compete.\textsuperscript{57}

8. Fatigue - Exhaustion of muscle resulting from prolonged exertion or over stimulation. Unable to do more work or unable to keep continue physical activities --.

Physiological fatigue - Reduction in the capacity of the neuromuscular system to carry out its functions as the result of physical overwork and strain.

Psychological fatigue - A condition characterized by a need for rest which is caused by psychological factors (such as boredom or mental stress) not Physical ones.\textsuperscript{56}

9. Gynecologist - A doctor who specializes in disease of the female reproductive system.\textsuperscript{59}

10. Gynecology - (G. syne, woman; logos, discourse) The science dealing with the diseases which are peculiar to women.\textsuperscript{60}

11. The Hormones - are chemical messenger secreted by glands in various parts of the body and carried rapid through the blood stream to organs or other glands where they trigger reactions.\textsuperscript{61}


\textsuperscript{60}Ibid P.99

\textsuperscript{61}Ibid P.137
12. **Hormone** - A Chemical substance produced by in the body which a specific regulatory effect on the activity of certain cells or a certain organ or organs.\(^{62}\)

13. **Hypothesis** – A shrewd guess of inference that if formulated and provisionally adopted to explain observed facts or conditions and to guide in further investigation.

Chamber’s Twentieth Century Dictionary defines hypothesis as a “supposition; a proposition assumed for the sake of argument; a theory to be proved or disproved by reference to facts; a provisional explanation of anything.

“A preliminary tentative organization of facts in meaningful way to be tested, accepted or discarded on the basis of critical observation or experimentation.”

**Null Hypothesis** – It is merely a negative statement; in fact, states that no relationship exists between the variables concerned. In stating a null hypothesis, one starts with the assumption that there is no difference between the variables when tested initially and finally.\(^{63}\)

12. **Irritability** - The responsiveness of an organism to changes in its immediate environment\(^{64}\)


\(^{63}\) Dr. M. L. Kamlesh, *Methodology of Research in Physical Education & Sports* 2nd edition, Metropolitan, New Delhi, 1994, Pg no. 113, 119

13. **Kendriya Vidyalaya** - The Govt. of India approved the scheme of Kendriya Vidyalaya Sangathan in 1962 on the recommendations of the second pay commission. Initially, 20 regimental schools in different states were taken over as central schools. In 1965 an autonomous body objectives of setting up and monitoring transferable Central Govt. employers including defense personal by providing common programme of education. At present there are 874 Kendriya Vidyalayas out of which one each is in Kathmandu and Moscow. All Kendriya Vidyalayas follow uniform syllabus.\(^{65}\)

14. **Menstruation** – Cyclical discharge of blood mucus and certain other substances from the uterus is the reproductive life of the female at an average interval of 28 days (24-32 days) is called Menstruation.\(^{66}\)

15. **Menstrual Cycle** - The menstrual cycle is the out word visible sign of the periodic activity of ovaries.\(^{67}\)

16. **The menstrual cycle** - is usually one of 28 days measured by time between the first day of one period and the first day of the next.\(^{68}\)

17. **Nausea** - Nausea can be brought about by some irritant or a heightened emotional state, such as that of an athlete prior to competition.\(^{69}\)

\(^{65}\) India 2001 A Reference Annual, Director, Publication Division, Ministry of Information and Broadcasting, New Delhi, P-90.


\(^{67}\) Ibid P. 526


17. **Non-Players** - In this research the female players means the female student not participant of track and field event. Learning in 9th and 10th standard in Central Schools.

18. **Player** - In this research the female players means the female student participant of track and field event. Learning in 9th and 10th standard in Central schools.

19. **Psychological Symptoms** - Refers to the symptoms i.e. irritations, depression fatigue.

20. **Physiological Symptoms** - Refers to the symptoms i.e. bloatedness of abdomen Nausea, headache, fainting or dizziness, fatigue.

21. **Questionnaire** - A questionnaire is a tool or device for obtaining answer to a bunch of question by the respondent or informant who fills in the form of questionnaire himself.\(^{70}\)

22. **Research** - "Is systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles and theories, resulting in prediction and possible ultimate control of events."\(^{71}\)

23. **Spasmodic d** comes on during the first day or a period, often within an hour or tow of the start of bleeding. It comes in spasms of acute colicky pain in the lower part of the abdomen, and some times in the back and inner parts of the thighs.\(^{72}\)

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\(^{71}\) Dr. M. L. Kamlesh, *Methodology of Research and in Physical Education & Sports*, 2nd edition, Metropolitan, New Delhi, 1994, Pg12

24. **Spasm** - A sudden, violent, involuntary muscular contraction. A sudden transitory constriction of a passage, canal, orifice\textsuperscript{73}

25. **"Statistics", Best (1969) says;** "is a body of mathematical techniques or processes for gathering, organizing, and interpreting numerical data\textsuperscript{74}

26. **Uterus** – Accessory organ of reproduction in female; hollow, muscular organ where offspring develops until birth\textsuperscript{75}

27. **Vomiting** - A reflex ejection of the stomach contents through the mouth. It is a common symptoms of gastrointestinal, abdominal disorders and a number of diseases\textsuperscript{76}


\textsuperscript{74} Dr. M. L. Kamlesh, *Methodology of Research and in Physical Education & Sports*, 2nd edition, Metropolitan, New Delhi, 1994. Pg205-207

\textsuperscript{75} Kevin T. Patton, "Disorders of female reproductive System", *Anthony's Textbook of Anatomy & Physiology*, Mosby – Year Book, 1994 Pg.788