



International Seminar of
Sport Culture and Achievement

ISSCA 2014 PROCEEDINGS

*“Global Issues of Sport Science &
Sport Technology Development”*



Diterbitkan Oleh:
Fakultas Ilmu Keolahragaan
Universitas Negeri Yogyakarta



International Seminar of Sport Culture and Achievement
“Global Issues of Sport Science & Sport Technology Development”

Proceedings

Publisher

Faculty of Sport Sciences
Yogyakarta State University

Reviewer

Dr. Lim Peng Han
Dr. Gunathevan A/L Elumalai
Dr. Achara Soachalerm
Dr. Panggung Sutapa
Dr. Siswantoyo
Erwin Setyo Kriswanto, M.Kes.
Bambang Priyonoadi, M.Kes.

Editor

Saryono, M.Or.
Soni Nopembri, M.Pd.
Nur Sita Utami, M.Or.
Satya Perdana, S.S.

Design & Lay Out

Sugeng Setia Nugroho, A.Md.

Secretariat:

Yogyakarta State University, Indonesia Telp: +62274 550307
Email: issca_2014@uny.ac.id - Website: seminar.uny.ac.id/issca2014

The paper published in the proceeding is not necessarily a reflection of the attitude or opinion of the editor and executive, editor, expert editors and the responsibility for the contents or effect of the writing, still lies on the author.

**Article published in the proceeding is considered valid
by the certificate included in the presentation.**



International Seminar of
Sport Culture and Achievement

ISSCA 2014 PROCEEDINGS

*“Global Issues of Sport Science &
Sport Technology Development”*



Diterbitkan Oleh:

Fakultas Ilmu Keolahragaan
Universitas Negeri Yogyakarta

24 April 2014

Preface

Salam Olahraga!

Praise and be grateful to the Lord, so that this proceeding can be issued. The International Seminar of Sport Culture and Achievement with "Global Issues of Sport Science & Technology Sport Development" theme is held on 23rd- 24th April 2014 at Yogyakarta State University Hotel. The seminar is conducted by Faculty of Sport Science, Yogyakarta State University.

The seminar was conducted in order to enliven the 50th anniversary of Yogyakarta State University. The Seminar aims at revealing any growing sport potentials and recent worldwide research results. There are three pillars of sport: recreational sports, physical education/ sports pedagogy, and elite sport that in common have one goal to form characters and support achievement.

Hopefully, the publication of this proceeding can bring benefits to the participants in particular and readers in general. Final words for all those who have helped this seminar, we thank you.



Dean of Faculty of Sport Science
Yogyakarta State University,

Drs. Rumpis Agus Sudarko, M.S.

Preface

Assalamualaikum Warrah Matullahi Wabarakatuh

The honorable speakers, Prof. Dr. Djoko Pekik Irianto, M.Kes. AIFO (Deputy of Achievement Improvement of Sport and Youth Ministry), Dr. Wayne Cotton (Australia), Dr. Jose Vicente Garcia Jimenez (Spain), Dr. Achara Soachalerm (Thailand), Dr. Lim Peng Han (Singapore), and Dr. Gunathevan A/L Elmulai (Malaysia). The distinguished guests.

First of all, on behalf of the committee of the International Seminar of Sport Culture and Achievement, let me express great thank to God Allah SWT who gives us opportunity and health, so that we can join this international seminar on sport culture and achievement. It is my pleasure to welcome you to the International Seminar of Sport Culture and Achievement in Faculty of Sport Science Yogyakarta State University.

The international seminar is in order to celebrate the 50th anniversary of Yogyakarta State University. In this opportunity, we invite five speakers from five countries; they are from Spain, Australia, Thailand, Singapore, and Malaysia. The participants of the seminar are 250 participants.

Finally, allow me to express my gratitude to all audiences, especially the honorable speakers and the distinguished guests for paying attention to this seminar. I hope that the seminar will run well and be successful.

Thank you very much.

Wassalamualaikum Warrahmatullahi Wabarakatuh

Yogyakarta, 24th April 2014

Chairman of ISSCA,



Dr. Pangung Sutapa, M.S.

CONTENT

Cover	i
Preface	ii
Content	iii
Keynote Speaker	iv
Guest Speakers	V
Manipulative Motions of 2010 Academic Year PJKR Students Ability of Net Teaching Lecturing	1
Amat Komari, Yogyakarta State University, Indonesia	
Ability of Physical Education Teachers in Implementing Learning Outdoor Education (Studies In Outdoor Education Trainees)	
Aris Fajar Pambudi, Yogyakarta State University, Indonesia	9
Designing Physical Education (PE) Learning Using Scientific Approach	
Aris Priyanto, Sport and Youth Department Yogyakarta, Indonesia	15
A Comparative Study on Sport Education Concept And Movement Education Concept in Physical Education Teacher Education: an Over View on Existencial Phenomenology	
BambangAbduljabar, Spehe University of Education, Indonesia	22
Playing Aids and Early Childhood Motor Skill in Kindergarten	
Banu Setyo Adi, Yogyakarta State University, Indonesia	33
The Effect of Traditional Games Toward Physical Fitness Elementary School Students	
DewiSeptaliza, Bina Darma University, Indonesia	40
The Human Resource Profile of Early Childhood Education (PAUD) Teacher for Motoric Aspect of Early Childhood Children	
Endang Rini Sukamti, Yogyakarta State University, Indonesia	46
Big Ball Game Modification for Learning Physical Education	
A Erlina Listyarini, Yogyakarta State University, Indonesia	53
School as Sport Health Promotion Place to Improve Students Health Level	
Erwin SetyoKriswanto, Yogyakarta State University, Indonesia	60
The Influence of Learning Pattern and Adversity Quotient towards the Achievement of Javelin-Throw Lesson after Controlling Student Previous Knowledge	
Ishak Aziz, Padang State University, Indonesia	68
Knowledge Level Students PJKR C Forces 2011 about Violations and Penalties in Football Game	
Nurhadi Santoso, Yogyakarta State University, Indonesia	76
Study of Information Systems Material Strength Training Program Fitness Activities for Elementary School Children	
Ranu Baskora Aji Putra, Semarang State University, Indonesia	84
Learning Model of Physical Education Using Multiple Intelegenscies Approaches and Influence on Creativity Development	
Roesdiyanto, State University Of Malang, Indonesia	91
The Theory of Achievement Motivation Elliot Model in A Physical Education	
Siti Hajar, Tunas Pembangunan University, Indonesia	98
Outcome-Based Evaluation of Kasetsart University Students Participated in Outdoor Education Camp Program	
Suvimol Tangsujjapoj, Kasetsart University, Thailand	104
The Performance of Health and Physical Education Teachers in Government Elementary Schools Graduated from Opened University of Indonesia in Purworejo	
Triyono, Open University of Indonesia, Indonesia	113
Analysis Factors Related to Overweight at Student of Junior High School	
WildaWelis, Padang State University, Indonesia	124
Designing Motor Learning in Physical Education at Schools	

Yudanto, Yogyakarta State University, Indonesia	132
Game Volleyball Preparing Attack for Sport and Health Education Learning for First Class in Junior High School	
Yuyun Ari Wibowo, Yogyakarta State University, Indonesia	140
The Understanding Level of Tactic and Strategy of Basketball Game in PJKR Students of FIK UNY	
Tri Ani Hastuti, Yogyakarta State University, Indonesia	149
The Influence of Exercise the Barrier Hops on Crossing at Students Young Indonesian Soccer Football Club in Palembang	
Ahmad Richard Victorian, Bina Darma University, Indonesia	159
Validity and Reliability of Futsal Skill Test	
Agus Susworo Dwi Marhaendro, Yogyakarta State University, Indonesia	164
Physical Exercise for Tennis Athlete with Weight Training	
Ahmad Nasrulloh, Yogyakarta State University, Indonesia	172
A Review Nutrition Intake before Competition and Factors Influencing Women's Swimming Athletes in Swimming Club Padang	
Anton Komaini ¹ , Tika Sebrina ²	
Padang State University, Indonesia	179
Physical Exercise for Early Childhood Taekwondo	
Devi Tirtawirya, Yogyakarta State University, Indonesia	191
Correlation Between Protein, Fat and Carbohydrate with Arm Power and Leg Power in Pencak Silat Combative Pelatda DIY Athlete	
Dwi Wahyuningsih ¹ , B.M Wara Kushartanti ² , Arta Farmawati ³ , B.J. Istiti Kandarina ³ , Mirza Hapsari Sakti Titis Penggalih ⁵	
Gadjah Mada University ¹ , Yogyakarta State University ² ; GadjahMada University ^{3,4,5} ; Indonesia	201
Comparison of Body Composition and Somatotype Characteristics of Sprinter Athletes at AUE and YSU	
Eddy Purnomo ¹ , Norikatsu Kasuga ² , Hideki Suzuki ³	
¹ Yogyakarta State University, Indonesia; ^{2,3} Aichi University Of Education, Japan	209
Identification of Management Standards Infrastructure and Facilities Management Fencing Organization in Yogyakarta	
Faidillah Kurniawan, Yogyakarta State University, Indonesia	215
ACTN3 R577x Polymorphism and Body Composition Profile of Indonesian Karate Athletes	
Rachmah Laksmi Ambardini, Yogyakarta State University, Indonesia	230
Development of Learning Media Movement Rhythmic Activity Model for Students SD Form VCD	
Siti Nurrochmah, Tatok Sugianto, Sri Purnami, State University of Malang, Indonesia	235
Reutilizing Sepaktakraw Ninja Smash Using Hanging Ball and Mattress	
I Ketut Semarayasa, Education University of Ganesha, Indonesia	246
Menstruation and Female Athlete's Performance	
Indah Prasetyawati Tri Purnama Sari, Yogyakarta State University, Indonesia	253
Identification of Hydration Status with Urine Profile Measurement and Drink Consumption In PencakSilat Athlete In Yogyakarta State University	
Inna Rachmawati ¹ , Neni Trilusiana Rahmawati ² , Mirza Hapsari Sakti Titis Penggalih ³ , B.J. Istiti Kandarina ⁴ , GadjahMada University, Indonesia	261
Model of Mental Training for Swimming Athletes	
Juriana, Jakarta State University, Indonesia	273
The Implementation of Physical and Health Education in School	
Kamal Firdaus, State University Of Padang, Indonesia	280
The Factor That Affects Participants of Kasetsart University's Thai-Sword Competition	

Kanlapruk Polsorn ¹ and Dr. Achara Soachalerm ² Kasetsart University ^{1,2} , Thailand	286
Measuring Service Satisfaction in TirtaKirana's Swimming Pool Kurnia Tahki ¹ And Juriana ² , Jakarta States University, Indonesia	291
The Effects of Isotonic Drink, Coconut Water, and Plain Water on Hydration Status of Football Athlete by Urine Profile Viewing Mirza Hapsari Sakti Titis Penggalih, Arta Farmawati, Retno Sutomo, Muhammad Nurhadi, Wiryatun Lestariana, Muhammad Juffrie, Lisandra Maria Goretti, Hamam Hadi, Gadjah Mada University, Indonesia	298
Relationship Between Percentage of Body Fat and <i>Somatotype</i> Athletes of Pencak Silat Combative Class Regional Training (PELATDA) Daerah Istimewa Yogyakarta Nadia Hanun Narruti ¹ , B.J. Isti Kandarina ² , Arta Farmawati ³ , Mirza Hapsari Sakti Titis Penggalih ⁴ , Gadjahmada University, Indonesia	304
The Analysis of the Physical Condition, Will Pencak Silat Construction Training Center Students (PPLP) of West Sumatra Nurul Ihsan, Padang State University, Indonesia	314
Understanding "Sports Hernia" (Athletic Pubalgia) as A Chronic Groin Injury in Athletes Sendhi Trisanti Puspitasari State University of Malang, Indonesia	319
A Study on Achievement Motivation by Gymnastics Floor Athlete's in Sijunjung Regency Sri Gusti Handayani, Padang State University, Indonesia	330
Effect of Stress and Anxiety Swimming Performance Athletes Sungkowo, Semarang State University, Indonesia	341
Effect of Sensitivity Proprioceptive and Plyometric Training for Jump Serve Success on Volleyball Syarif Hidayat, Ganesha Education University, Indonesia	349
Analysis of the Grand Strategy of National Sport Performance Development of 2014 - 2024 Wawan S. Suherman, Yogyakarta State University, Indonesia	356
"No Practice, Watch Only": Sport in Consumer Society Anirotul Qoriah, Semarang State University, Indonesia	363
The Field of Lecturers Expertise Based on Sport Science Development Bambang Priyonoadi ¹ , Saryono ² , & Soni Nopembri ³ , State University Of Yogyakarta ^{1,2,3} , Indonesia	372
Correlation of Nutrition Status and Dysmenorrhea Painful to Female Students Sports Science Departemet Faculty of Sport Science Yogyakarta State University Cerika Rismayanthi, Yogyakarta State University, Indonesia	378
Warming-Up Exercises for Mini-Volleyball DanangWicaksono, Yogyakarta State University, Indonesia	389
Gateball as An Alternative Sport to Maintain Physical Fitness of Elderly Fatkurahman Arjuna, Yogyakarta State University, Indonesia	398
Survey of the Understanding Level of Physical Education Teachers to Design Games in Elemantary Schools in Malang Febrita P. Heynoek ¹ , Sri Purnami ² , Dona Sandy Y ³ , State University Of Malang, Indonesia ^{1,2,3}	407
Changes in Blood Lactic Acid Levels after Active, Corstability, and Passive Recovery Hajar Danardono, Tunas Pembangunan University Surakarta, Indonesia	413
The Role of <i>Branched Chain Amino Acids</i> as Dietary Sports Supplements I Made Satyawan ¹ , I Wayan Artanayasa ² , Ganesha Education University, Indonesia ^{1,2}	423
The Effect of Side Jump Sprint Training with 1:3 and 1:5 Work: Rest Relief Ratio on Leg Muscle Power I Nyoman Sudarmada, Ganesha Education University, Indonesia	430

CORRELATION OF NUTRITION STATUS AND DYSMENORRHEA PAINFUL TO FEMALE STUDENTS SPORTS SCIENCE DEPARTEMET FACULTY OF SPORT SCIENCE YOGYAKARTA STATE UNIVERSITY

Cerika Rismayanthi

**Yogyakarta State University, Indonesia
cerika@uny.ac.id**

Abstract

Dysmenorrhea is a collection of symptoms of pain before and during menstruation. Generally, it happens to young girls who have the age ranged between 15-25 years. Nutrition and exercise are the factors that influence the emergence of dysmenorrhea. This study aims to analyze the relationship between nutritional status by index TB/U and the incidence of dysmenorrhea. One that affects dysmenorrhea is abnormal nutritional status and family history of dysmenorrhea. This research used mixed research methods because the retrieval and processing of data was done by two methods, both qualitative and quantitative. The data of nutritional status was collected by using the Body Mass Index (BMI), whereas dysmenoreia complaint data by using questionnaires. The study population was the entire student Sports Science Departement totaling 30 people. Sampling used the population sampling methods. The analysis used quantitative analysis techniques and statistical methods. Nutritional status from female students of Sports Science Departement Yogyakarta State University is in a normal majority (70.0%). Of the 30 female students of Sports Study Yogyakarta State University; 13.3% had underweight nutritional status; 70.0% of normal; 16.7% overweight. The dysmenorrhoea complaints of female students of Sports Science Departement Yogyakarta State University are at the level of 70.0% from the total. From the 30 female students of Sports Science Departement Yogyakarta State University, the complaint rate was 20.0% is in intermediate level; 70.0% complaint rate is in normal level; and 10.0% is in lower level. There was a significant negative relationship between the nutritional status and the dysmenorrhoea complaint on female students of Sports Science Departement Yogyakarta State University in 2013. The better nutritional status, the lower the dysmenorrhoea complaints on female students of Sports Study in 2013, and vice versa. Nutritional status is able to reduce the level of dysmenorrhoea complaints on female students of Sports Science Departement Yogyakarta State University at 17.5%.

Keywords: Nutritional Status, Dysmenorrhea Painful, Female Students of Sports Science Departemen.

BACKGROUND

Dysmenorrhea is defined as a great menstrual pain that forces people to take a break and leave their work for a few hours or a few days (Azzahra, 2009). Painful menstruation or dysmenorrhea occurs because of differences in the threshold of pain stimuli on everyone. Menstrual pain tends to occur more often and more severe, in adolescent girls who experience anxiety and tension. If it is not anticipated, these menstrual pains will often interfere with the activities of women (Qittun, 2008). Menstrual pain is one among the four menstrual abnormalities which are irregular menstrual cycle, menstrual bleeding more than 10 days old, the amount of blood clots, and lots of pain with menstruation. Generally, menstrual pain is not a single, but in combination with these disorders. The focus of attention is actually how low or high threshold of pain in the body in response to increased levels of prostaglandin (PG) is (Yusi, 2009). Dysmenorrhea is pain during menstruation caused by uterine muscle spasms (Sylvia Anderson, 2005). Menstruation was very painful, mainly in the lower abdomen and back, and usually feels like cramps, known as dysmenorrhea or menorrhagia (Helen Varney et al, 2006).

Teenagers or "Adolescence" (UK), is derived from the Latin "adolescere" which means to grow towards maturity. Maturity in this case is not just physical maturity, but also social and psychological maturity. Adolescent age limit according to WHO is between 12 to 24 years. According to the Indonesian's Ministry Of Health it is ranged between 10 to 19 years old and unmarried. According to BKKBN it is 10 to 19 years (Yani Widyastuti, et al, 2009). Adolescence is a period of transition characterized by a change in the aspects of physical, emotional and psychological. Adolescence, ie, between the ages of 10-19 years, is a period of maturation of the human reproductive organs and is often called puberty. The occurrence of sexual maturation or reproductive organs related to the reproductive system is an important part in the lives of adolescents that required special attention (Yani Widysatuti, et al, 2009).

Nutritional status is a state of equilibrium in the form of a particular variable (Nyoman I Dewa, 2002). Nutrition is a process by which organisms use food normally consumed by the process of digestion, absorption, transport, storage, metabolism, and release of unused substances to sustain life, growth, and normal functioning of the organs, as well as generating energy (Setiyabudi, 2007). Nutritional status is an expression of a state of equilibrium in the specific form, or the embodiment of nutriture in the particular form, endemic goiter is an example of unequal circumstances of the intake and release of iodine in the body (Setiyabudi, 2007). The Measurement of body mass index (BMI) includes: Height is a common indicator of body size and bone length. Weight is an anthropometric measure most widely used. $BMI = \frac{\text{Weight (kg)}}{\text{Height}^2 \text{ (m)}}$. Based on the background of the problem, in order to provide an overview of this dysmenorrhea complaint that these female students of Sports Study have, therefore it is crucial to do some research about the relationship of nutritional status and dysmenorrhea complaint to the female students of Sports Study of Faculty of Sports Yogyakarta State University.

Definition of Dysmenorrhea

Some definitions of dysmenorrhea are:

- a. Dysmenorrhea is pain during menstruation until it can interfere with daily activities - day (Manuaba, 2001).
- b. Dysmenorrhea is pain in the lower abdomen or in the lower backs as a result of the movement of the uterus squeeze - squeeze (contraction) in an attempt to remove the shifted uterine lining (Faizah, 2000).
- c. Dysmenorrhea is menstrual pain that is felt in the lower abdomen, and it appears before, during or after menstruation. The pain may be colicky or continuously. Dysmenorrhea arises due to irregular contraction of the myometrium layer that displays one or more symptoms ranging from mild to severe pain in the lower abdomen, buttocks area and the medial side of the thigh (Badziad, 2003).
- d. Dysmenorrhea or menstrual pain is the usual gynecologic symptoms to find. Even women with dysmenorrhea tend to receive recurrent menstrual pain periodically that causes the patient to seek some kind of emergency treatment.

Classification of Dysmenorrhea

Menstrual pain can be classified based on the type of pain and the presence or absence of abnormalities that can be observed. Based on the type of pain, menstrual pain can be divided into spasmodic dysmenorrhea and congestive dysmenorrhea.

a. Spasmodic Pain

Spasmodic pain is felt in the lower abdomen before and during menstruation begins or it occurs shortly after menstrual periods begin. Many women are forced to lie down because it was too suffering so she cannot do anything. Some of those women even getting unconscious, felt very nauseous, and some of them even have to vomit. Most sufferers are young women although it also happens to 40 years old women or even older. Spasmodic dysmenorrhea can be treated or at least reduced with the birth of the first baby although there are many women who have not experienced anything like it.

b. Congestive Pain

Patients with congestive dysmenorrhea usually will notice it from the previous days that her menstrual period will soon arrive. She may experience stiffness, pain in breasts, abdominal bloating, bra feels too tight, headache, back pain, stiffness in the thigh, feeling tired or difficult to understand, sensitive, loss of balance, sloppy, disturbed sleep, or bruises are seen on thigh and upper arm. These are the symptoms of sore torture that occur between 2 and 3 days until less than 2 weeks. The process of menstruation may not be too painful if it is already going on. Even after the first day of the menstrual period, people who suffer from congestive dysmenorrhea will feel better.

While based on the presence or absence of abnormality or other cause to be observed, the menstrual pain can be divided into primary dysmenorrhea and secondary dysmenorrhea.

1) Primary Dysmenorrhea

Primary dysmenorrhea is menstrual pain that is found with no abnormalities in the genital organs. Primary dysmenorrhea occurs simultaneously or some time after menarche usually after 12 months or more, because of the cycle - the menstrual cycle in the month - the first month after menarche generally has such anovulator which is not accompanied by pain. The pain arises shortly before or together with the emergence of menstruation and lasts for several hours, although in some cases it can last a few days. The nature of this pain is spasm, usually it is only found on the lower abdomen but it can spread to the waist and thighs. Along with the pain, it can be found nausea, vomiting, headache, diarrhea, and irritability (Wiknjastro, 1999).

2) Secondary Dysmenorrhea

Secondary dysmenorrhea is menstrual pain that is accompanied by anatomical abnormalities of the genital (Manuaba, 2001). Meanwhile, according to Hacker (2001) clinical signs of secondary dysmenorrhea are endometriosis, pelvic inflammation, fibroids, adenomyosis, ovarian cysts and pelvic congestion. Generally, secondary dysmenorrhea is not limited to menstruation; it is less associated with the first day of menstruation, it occurs to older women (usually women at thirties or forties) and it can be accompanied by other symptoms (dyspareunia, infertility and abnormal bleeding).

Symptoms of Dysmenorrhea

Dysmenorrhea causes pain in the lower abdomen which may spread to the lower back and legs. Pain is felt as intermittent cramps or as a continuous dull pain there. Usually the pain began to arise just before or during menstruation, which reaches a peak within 24 hours and after 2 days it will be gone. Dysmenorrhea is also often accompanied by headache, nausea, constipation or diarrhea, and frequent urination. Sometimes the vomiting occurs as well. According to Maulana (2008), he said that signs and symptoms of dysmenorrhea is pain on the bottom that can spread to the lower back and legs. Pain is felt as an intermittent cramping or as such continuous dull pain. It began to arise just before or during menstruation, then it reached a peak within 24 hours and later after 2 days the pain is going to disappear. It is often followed by headache, nauseous, constipation, diarrhea and frequent urination as well. Even dysmenorrhea forces some women to vomit.

The Degrees of Dysmenorrhea

Each menstruation causes pain, especially at the beginning of menstruation, but the levels of pain vary. Cyclic dysmenorrhea is divided into three levels of severity. According to Manuaba (2001), dysmenorrhea is divided into three degrees:

- a. Lightweight dysmenorrhea. Dysmenorrhea that occurs only for a while and women can continue to work everyday.
- b. Medium dysmenorrhea. At this moderate dysmenorrhea, patients need some pain medication, so that they do not need to leave the work.
- c. Weight dysmenorrhea. Severe dysmenorrhea requires the patient to rest a few days and it is followed by headache, weary waist, diarrhea, and stress.

Meanwhile, according to Potter (2006), the relative characteristics of this pain are in its severity or intensity of the pain. Clients often asked to describe the pain as mild, moderate or severe. Descriptive scale is a severity measurement tool that is more objective. Verbal Descriptor Scale (VDS) is a line consisted of 3-5 words. These descriptors are ranked from "no pain" to "unbearable pain". VDS tool allows clients to describe the pain. Pain scale should be designed so that the scale is easy to use and does not consume a lot of time when clients complete. If the client can read and understand the scale, then the pain would be more accurately described. This descriptive scale is very useful as it is not only able to assess the severity of pain, but also, evaluate the client's condition changes. Nurses can use the after therapy or when symptoms become much worse, they can assess whether the pain has decreased or increased (Perry and Potter, 2005).

The Nature of Nutritional Status

Nutritional status is an expression of a state of equilibrium in the form of particular variable or it can be said that nutritional status is a good indicator of poor provision of daily meals (Djoko Pekik Irianto, 2006: 65). According Soeharjo and Hadi Riyadi (1989: 27), the nutritional status is the signs or appearance caused by the balance between nutrient intake and energy release in one hand, on the other hand it is seen through indicators of weight and height. Djoko Pekik Irianto (2006: 65-66), wrote down that the nutritional status is the study that can be done directly and indirectly. As it can be done directly, it can be divided into four kinds that are anthropometric, biochemical, clinical, and biophysics. While it is done indirectly, it includes the examination of consumption surveys, vital statistics, and ecological factors. According to Djoko Pekik Irianto (2006 : 67), the measurements of nutritional status based on anthropometric criteria is considered as the most commonly used because it has certain advantages, among others, as it is the most convenient and practically done and it can be justified scientifically.

From the description above, it can be concluded that nutritional status is a state of a person as a result of consuming some foods and the process in the body and suitability of food nutrients consumed and needed by the body. The health condition of the child as an overview of the consumption of food substances that enter the body and its benefits, as a result, it can be seen from the height and weight of children, which is the best indicator for determining nutritional status. Assessment of nutritional status using the Body Mass Index (Body Mass Index) is the determination of a healthy weight that is widely used and applies to adults over the age 18. The calculations are as follows : Body weight (BW) Ideal BMI are at an interval of 20-25 , were overweight (overweight) have a BMI between 25-30 , while a BMI over 30 is called obesity. Having gained the BMI, then its nutritional status is categorized based on the BMI calculation results by means of tables consulted on the nutritional state of the body. Nutritional state of the body can be seen in the following table:

Table 1. Body Nutrition Circumstances (Djoko Pekik Irianto (2006: 74)

No.	Nutritional Status	Male	Female
1	Petite	<20.1	<18.7
2	Normal	20.1 to 25.0	18.7 to 23.8
3	Overweight	25.1 to 30	23.9 to 28.6
4	Obese	> 30	> 28.7
	Average	22.0	20.8

Research Design

This research is a research with the Mixed methods design because the data retrieval and data processing is done by two methods, both qualitative and quantitative conducted continuously. Quantitative calculation method performed on Nutritional status, whereas qualitative methods undertaken to explore complaints include dysmenorrhea complaints in particular level, kind of perceived complaints, how to overcome the dysmenorrhea complaints, and other things related to dysmenorrhea.

Research Subject

The subject of this study of relationship between nutritional status and the incidence of dysmenorrhea is conducted on female students of Sports Science Departemet Sports Science Yogyakarta State University. The sampling technique used is the overall female student who is still registered as a student of Sports Science Departemet Sports Science Yogyakarta State University (the sampling population) who were 30, which consists of: student class of 2009 consists of 3 people, class of 2010 are 7 people, class of 2011 are 5 people, class of 2012 amounted 10 people, and class of 2013 consists of 5 people.

Research Instrument

In quantitative research, the calculation of the nutritional status is done by collecting the data for the height and weight then it is converted into the calculation formula of Nutritional status using BMI (Body Mass Index). Assessment of nutritional status using the Body Mass Index (Body Mass Index) is the determination of a healthy weight that is widely used and applies to adults over 18 years old.

Data Analysis Techniques

1. Testing Requirements (Assumption Data Analysis)

In this study, the data were analyzed by parametric statistics, namely multiple regression analysis, there are several prerequisites that must be met, which are;

a. Normality test

Normality test is intended to show that the samples are drawn from normally distributed populations. There are several techniques that can be used to test for normality, which are: Chi -square Test, Liliefors Test, and Kolmogorov - Smirnov Test (Sulistyo, 2010). In this study, the test for normality using Kolmogorov - Smirnov test , with the criterion if $p > 0.05$ then the data inferred normal , and vice versa if $p < 0.05$ then the data is not normal .

b . Linearity Test

Linearity test is done by finding the regression line equation for the independent variable X on the dependent variable Y. Based on the regression line which has been created, then it is tested the significance of the coefficient of the regression line and its linearity. (Sulistyo, 2010). This study used FBeda (Deviations from Linearity), with the criteria obtained indicates if the price of F with $p > 0.05$, means that it does not deviate from linearity, which means that it is in the linear relationship .

2. Correlation and Regression Analysis

The hypothesis is a temporary answer to the formulation of research problems. To prove the truth of the hypothesis, then it is done a hypothesis testing. Hypothesis testing is done after doing the analysis testing. This study which deals with the relationship between nutritional status and the female student's dysmenorrhoea complaints, then it is included in the hypothesis criteria. The data of this study is the empirical data, while according to its classification of the characteristic it is called interval data, since the interval of its scaling distance is just the same. This study is a quantitative data so that analysis using quantitative analysis techniques by using a statistical method. Product moment correlation analysis is done to answer and test the hypothesis in this study; while the regression analysis is used to strengthen the results. Product moment correlation analysis and regression analysis in this study used the help of computer software, named SPSS (Statistical Package for the Social Science).

Research Result

In this study, there is one independent variable and the dependent variable. The independent variable is the nutritional status, in this case is the BMI (Body Mass Index), while the dependent variable is the complaint of dysmenorrhea were measured using a questionnaire. Data obtained from the questionnaire is then coded, edited, scored, tabulated, and analyzed.

1. **Characteristics of Respondents**

Characteristics of female students of Sports Science Departemet Sports Science Yogyakarta State University as research subject are summarized in Table 4 below.

Table 4. Characteristics of study respondents (n = 30)

No.	Respondents Characteristic	Category	Frequency	
			f	%
1.	Age	• 17 – 18	7	23,3
		• 19 – 20	13	43,3
		• 21 – 22	7	23,3
		• >22	3	10,0
2.	Pain	• No Pain	1	3,3
		• Lightweight Pain	15	50,0
		• Moderate Pain	9	30,0
		• Heavy Pain	5	16,7
		• Unbearable Pain	0	0,0

2. **Variable Description Research**

a. **Nutritional Status**

The value of nutritional status from female students of Sports Science Departemet Sports Science of Yogyakarta State University in this study uses the Body Mass Index (Body Mass Index), which is the determination of a healthy weight that is widely used and applies to adults over 18 years old. From the analysis of the data with the help of computer software, it is gained central tendency values as follows: the average (mean) of 21.48; median 21.30; 20.3 mode; and a standard deviation of 2.288; and the lowest score of 16.0 and the highest 25.9.

Frequency distribution of the nutritional status of female students of Sports Science Departemet Sports Science of Yogyakarta State University based on the categorization scores are presented in Table 5. Below.

Table 5. Distribution Data Female Students of Sports Science Departemet Sports Science of Yogyakarta State University

No.	Weight Category	Interval	Frequency	
			f	%
1.	Skinny	< 20,1	4	13,3
2.	Normal	20,1 – 25,0	21	70,0
3.	Overweight	25,1 – 30,0	5	16,7
4.	Obesity	> 30,0	0	0,0
Total			30	100,0

Based on the frequency distribution above, it is noted that of the 30 female students of Sports Science Departemet Sports Science of Yogyakarta State University as research subjects; 4 (13.3%) were on the nutritional status of skinny categories; 21 (70.0%) normal; 5 (16.7%) are overweight; and none (0.0%) were obese student. Judging from the mean score obtained, amounting to 21.48 being the norm in the interval (20.1 to 25.0) normal category; as well as when viewed from the majority (70.0%) were in the normal category; thus it can be said that the nutritional status of female students of Sports Science Departemet Sports Science of Yogyakarta State University are in the normal category.

b. **Dysmenorrhoea Complaints**

Dysmenorrhoea complaints of female students of Sports Science Departemet Sports Science of Yogyakarta State University in this study was measured with a questionnaire instrument with 63 item questions with a score of 1 to 4; in order to obtain the ideal range of scores between 63 to 252. From the analysis of the data with the help of computer software central tendency values obtained as follows: the average (mean) of 138.27; median 139.00; 153 mode; and a standard deviation of 23.199; the lowest score is 97 and the highest one is 179. Distribution frequency of dysmenorrhoea complaints of female students of Sports Science Departemet Sports Science of Yogyakarta State University based categorization scores are presented in Table 6 below.

Table 6. Distribution Data of Dysmenorrhoea Complaints on Female Students of Sports Science Departemet Sports Science of Yogyakarta State University

No.	Category	Interval	Frequency	
			f	%
1.	High	206 – 252	0	0,0
2.	Medium	158 – 205	6	20,0
3.	Less	110 – 157	21	70,0
4.	Low	63 – 109	3	10,0
Total			30	100,0

Based on the frequency distribution of the table above, it is noted that of the 30 female students of Sports Science Departemet Sports Science of Yogyakarta State University as research subjects; no students (0.0%) who reported a high dysmenorrhoea; 6 (20.0%) had moderate complaints; 21 (70.0%) less; and 3 (10.0%) low complaint. Judging from the mean score obtained, amounting to 138.27 are the norm interval (110-157) less category; as well as when viewed from the majority (70.0%) were in the poor category; thus it can be said that the complaint of dysmenorrhoea experienced by female students of Sports Science Departemet Sports Science of Yogyakarta State University is in the category of less.

Requirements Analysis Testing (Assumption Test)

Data analysis in this study used parametric statistics, a product moment correlation analysis and regression analysis; therefore, it must meet several assumptions or requirements analysis, which are: (1) normal distribution of data, and (2) the relationship between the independent variables with dependent linear.

1. Distribution Normality Test

Testing for normality distribution of the data in this study used the Kolmogorov-Smirnov method. The results of the calculation of the distribution normality test can be seen briefly in Table 7 below.

Table 7. Summary of Distribution Normality Test Results

Variable Data Distribution	Kolmogorov-Smirnov Z	p-Value	Conclusion
Nutritional Status (X)	0,479	0,976	Normal
Dysmenorrhoea Complaints (Y)	0,570	0,902	Normal

Based on the above table, it is known Kolmogorov-Smirnov Z all $p > 0.05$, it is concluded that there was no difference in the frequency of observation (result) with the frequency of normal expectancy; it means that all of the data in this study are normally distributed. Thus all the data in this study met the assumptions of normality distribution.

2. Linearity Testing

Linearity testing is done with the help of computer software SPSS. Overall, the price of F (Deviations from Linearity) obtained indicates the price of F with $p > 0.05$, which means it does not deviate from linearity. Linearity test results can be seen briefly in Table 8 below.

Table 8. Summary for the Results of Linearity Relationship Test

Fungsional Relationship	F Deviation	p Value	Conclusion
Relationship between the nutritional status (X) and the dysmenorrhea complaints on female students of Sports Study of Yogyakarta State University in 2013 (Y)	2,486	0,139	Linear

Notes: F is F Deviation from Linearity, which means the deviation from linearity, if $p > 0.05$ means it does not deviate or linear.

Data Analysis and Hypothesis Testing

The hypothesis in this study is: "there is a relationship between the nutritional status and the dysmenorrhea complaint of female students from Sports Study of Yogyakarta State University in 2013". The hypothesis is the alternative hypothesis (H_a), for the purposes of hypothesis testing is converted into a null hypothesis (H_0), becomes: "there is no relationship between the nutritional status and the dysmenorrhea complaint of female students from Sports Study of Yogyakarta State University in 2013".

The above hypothesis was tested by using Product Moment relations and regression analysis. Data analysis used a computer software program SPSS for Windows. The calculation results obtained from table 9. Following:

Table 9. Coefficient Product Moment Correlation between Nutritional Status and Dysmenorrhoea Painful

Tested Variable	r_{XY}	p (sig.)	Specification
Nutritional Status (X) and Dysmenorrhea Complaints (Y)	-0,418	0,021	Significant

From the table above, it is noted that the product moment correlation coefficient (Pearson Correlation) between the nutritional status and the dysmenorrhea complaint of female students from Sports Science Departemet Sports Science of Yogyakarta State University in 2013 amounted $r_{xy} -0.418$ with p (sig.) at = 0.021. Turns $p < 0.05$; and negative direction (-) ; thus H_0 is rejected and H_a is accepted ; and concluded that there is a significant negative relationship between the nutritional status and the dysmenorrhea complaint of female students from Sports Study of Yogyakarta State University in 2013.

The significant negative correlation means the better the nutritional status, the lower the dysmenorrhea complaint of female students from Sports Study of Yogyakarta State University in 2013; and conversely the increasingly poor nutritional status (underweight), the higher the dysmenorrhea complaint of female students from Sports Study of Yogyakarta State University in 2013. To further corroborate these results, the data was also analyzed by regression analysis, regression analysis where the dependent variable is able to predict the top independent variables. Summary of the regression analysis can be seen below, as it can be seen in the attachment.

Table 10. Summary of Regression Analysis, Nutritional Status of Dysmenorrhoea Painful of Female students from Sports Science Departemet of Yogyakarta State University

Variable	Coefficient B	Std Error	Std. Coef Beta	t	p
Constant	229,396				
Nutritional Status (Y)	-4,242	1,741	-0,418	-2,437	0,21
R =	0,418				
R ² =	0,175				
F _{Regressi} =	5,937				
p =	0,021				

Description:

R² = Coefficient of Determination

R = Coefficient of Correlation

From the regression analysis table above, it is gained the value of F at = 5.937 with p < 0.05; significant concluded. The regression equation that can be set are as follows:

$$Y = 229.396 + (-4.242 X)$$

The regression coefficient has such meaning that if the nutritional status of the unit increased highly, the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University will decrease (negative) equal to 4.242 ; by assuming that the other variables remain unchanged or not (*ceteris paribus*).

Contributions or donations effectively to dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University can be seen from the determinant coefficient (r^2). In this study, the determinant coefficient (r^2) of = 0.175; meaning that 17.5 % of dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University is determined by the nutritional status of 17.5 %; or 82.5 % and the rest is determined by factors outside of the study.

Research Result Discussion

The results of the analysis on the characteristics of respondents note that the majority of respondents in this study aged 19-20 years (43.3%); and the pain level of the majority of respondents feel "mild pain" (50.0%). Descriptive analysis on the study variables, it is known that the daughter of 30 female students from Sports Study of Yogyakarta State University; 4 (13.3%) had a lean nutritional status; 21 (70.0%) normal; 5 (16.7%) are overweight; and no one was in the obese category. The majority of nutritional status of female students from Sports Study of Yogyakarta State University was normal (70.0%).

The results of the analysis on the dependent variable of dysmenorrhoea complaints is known that the 30 female students from Sports Study of Yogyakarta State University; no student who reported a high dysmenorrhoea; 6 (20.0%) level of the complaint being; 21 (70.0%) level of less complaint; and 3 (10.0%) is in low level. This hypothesis testing concluded that there is a significant negative relationship between the nutritional status and the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University in 2013. Significant negative relationship means the better the nutritional status, the lower the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University in 2013; and conversely the increasingly poor nutritional status (underweight), the higher the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University in 2013.

Gained from regression analysis of determinant coefficient (r^2) of = 0.175; this means that 17.5% of dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University is determined by the nutritional status of 17.5%; or 82.5% and the rest is

determined by factors outside of the study. Due to the negative relationship, then the effect is the decrease in complaints of dysmenorrhoea, meaning that the better nutritional status, the complaints are getting down.

CONCLUSION

Dysmenorrhea is pain due to menstruation and the prostaglandin production on pelvic areas. It is often initiated immediately after a first period (menarche). The pain is reduced after menstruation, but in some women may continue to experience pain during the menstrual period. The cause of the pain comes from the muscles of the uterus. Like all other muscles, the muscles of the uterus start to contract and relaxation. The contractions are getting stronger during menstruation. Contraction that occurs is caused by a substance named prostaglandins. Prostaglandins are made by the inner lining of the uterus. Before menstruation occurs, the substances are increased and when menstruation occurs, it gets the decreasing prostaglandin levels.

Dysmenorrhea typically occurs in adolescence, which is about 2-3 years after the first period. Secondary dysmenorrhea often begins to emerge at the age of 20 years old. Other factors that can aggravate dysmenorrhea are: 1) the uterus is facing backwards (retroverted), 2) lack of exercise. 3) psychological stress or social stress.

There was a significant negative relationship between the nutritional status and the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University in 2013. Increasingly good nutritional status, the lower the dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University in 2013, and vice versa. Nutritional status is able to reduce the level of dysmenorrhoea complaint on female students from Sports Study of Yogyakarta State University at 17.5%; The low incidence and severity of symptoms of dysmenorrhea are also low in athletes and it can be caused by low levels of prostaglandins, which are caused by the high anovulatory cycles or changes in patterns of endocrine (reduction of LH, short luteal phase, estradiol/progesterone is low). In addition, athletes may have a high pain threshold. But psychological factors should also be taken into account regarding this dysmenorrhea. (Harzuki 2003, Fox 1993).

REFERENCE

- [1] Anamika S, Devender T, Pragya S, Renuka S. Problems related to menstruation and their effect on daily routine of students of a medical college in Delhi, India. *Asia Pac J Pub Health*. 2008 [disitasi 21 Januari 2009] 20(3):234-41. Diunduh dari: <http://aph.sagepub.com/cgi/content/abstract/20/3/234>
- [2] Arikunto, 2005, *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: PT. Rineka Cipta.
- [3] Arifin, 2009. *Nyeri Haid*. *Majalah Dokter Kita Edisi 7- th II-2009*.
- [4] Arisman. 2002. *Gizi Dalam Daur Kehidupan*. Palembang: Direktorat Jendral Pendidikan Tinggi Departemen Pendidikan Nasional.
- [5] Calis KA, Popat VP, Dang DK, Kalantaridou SN. Dysmenorrhea [disitasi 21 Januari 2009]. Diunduh dari: <http://emedicine.medscape.com/article/253812-overview> 6. Bieniasz J, Zak T, Laskowska-Zietek A, Noczyska A. Causes of menstrual disorder in adolescent girls – a retrospective study. *Endokrynol Diabetol Chor Przemiany Materii Wieku Rozw*. 2006 [disitasi 21 Januari 2009] 12(3):205-10. Diunduh dari: <http://www.ncbi.nlm.nih.gov/pubmed/17020657>.
- [6] Dahono. 2001. *Gizi Dasar*. Bandung. Alfabeth.

- [7] Djoko Pekik Irianto. (2006). *Panduan Gizi Lengkap Keluarga dan Olahragawan*. Yogyakarta: Andi Offset.
- [8] Genie, 2009, Kurangi Nyeri Haid dengan Terapi Energi Cair lewat <http://m.okezone.com>. yang direkam pada 11 Mar 2009 19:53:36 GMT
- [9] I Dewa Nyoman Supariasa, dkk. 2001. *Penelitian Status Gizi*. Jakarta: Kedokteran EGC.
- [10] Ibnu Fajar. 2001. *Ilmu Gizi*. Jakarta: Bumi Aksara
- [11] Isaacs, 2004. Konsep dan Penatalaksanaan Nyeri. Jakarta: EGC.
- [12] Junizar, 2009, Pengobatan Dismenore secara Akupunktur, Cermin Dunia Kedokteran No. 133, 2009: 53 yang direkam pada 11 Mar 2009 19:53:36 GMT.
- [13] Lee LK, Chen PCY, Lee KK, Kaur J (2006). Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Med J*. 2006 [disitasi 21 Januari 2009] 47(10):869. Diunduh dari: <http://www.sma.org.sg/smj/4710/4710a6.pdf>.
- [14] Logue CM, Moos RH. Perimenstrual symptoms: prevalence and risk factors. *Psychosom Med*. 1986 [disitasi 21 Januari 2009] 48(6):388-414. Diunduh dari: <http://www.psychosomaticmedicine.org/cgi/reprint/48/6/388>.
- [15] Mediastore, 2009, Penatalaksanaan Fisioterapi Pada Nyeri Haid, <http://mediastore?newsid1059624784,96412>, yang direkam pada 11 Mar 2009 19:53:36 GMT.
- [16] Soekirman. 2000. *Ilmu Gizi dan Aplikasi Untuk Keluarga dan Masyarakat*. Jakarta: Direktorat Jenderal Pendidikan Tinggi.
- [17] Sugianto. 2001. *Metodologi Penelitian*. Jakarta: Gunung Agung.
- [18] Suharsimi Arikunto. 1991. *Prosedur Penelitian Suatu Pendekatan Prektek*. Jakarta: Rineka Cipta.
- [19] Vegas A, Juraini N, Rodiah, Rahayu N, Fajarini D, Annisa, *et al.* (2004) Pengetahuan, sikap, dan perilaku mahasiswi tentang dismenorea dan faktor-faktor yang berhubungan pada mahasiswi tingkat satu dan dua universitas "X" di Jakarta [laporan penelitian]. Jakarta: Fakultas Kedokteran Universitas Indonesia.
- [20] Warner P, Hilary ODC, Lumsden MA, Campbell-Brown M, Douglas A, Murray G. (2001). Referral for menstrual problems: cross sectional survey of symptoms, reasons for referral, and management. *Br Med J*. [disitasi 21 Januari 2009] 323:24-8. Diunduh dari: <http://www.bmj.com/cgi/content/abstract/323/7303/24>.
- [21] Widayanto, 2009. Dismenorhoe. widayanto.com, direkam pada 21 Juli 2009 18:43:16 GMT20. sumber: The Merck Manual Of Medical Information, ed 1997, hal 1086-1087, medicastore.com