RELATIONSHIP OF SUBCUTANEOUS FAT WITH RESTING HEART RATE AND BREATHING RATE AMONG INTER-UNIVERSITY LEVEL OF ATHLETES

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By

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CHAPTER I

INTRODUCTION

Subcutaneous fat which is circulated by hereditary qualities, hormonal impacts (take a few steroids in the event that you need to find out about this rapidly, and ruinously; so don't do this at home. sustenance, and medication impacts (non-hormones). Where fat is put away influences its powerlessness to these impacts, yet the area of fat just decides its defenselessness on a local level (distinctive body districts act in an unexpected way). Fat is dependably in cells. The adipocyte conveys fat, regardless of whether it is in muscle, the subcutaneous zone of the face, or your tummy. To be clear, even in muscle, fat is in its own particular cell and that has its own impacts. In this way, building muscle does not expand the subcutaneous fat. On the off chance that that were genuine every one of those muscle heads would be roly-poly

Subcutaneous fat a great part of the fat in the stomach region lies specifically under the skin. This is called subcutaneous fat. And is not really perilous to your wellbeing. The fat that is unsafe is the inconspicuous fat around your organs, generally known are instinctive stomach fat.

The subcutaneous tissue (from Latin subcutaneous, meaning 'underneath the skin'), in like manner called the hypodermis, hypoderm (from Greek, implying 'underneath the skin') sub cutis or shallow scarf, is the lowermost layer of the number money related structure cowardly animals. The sorts of cells found in the hypodermis are fibroblasts, fat cells, and macrophages. The hypodermis is gotten from the mesoderm, however not under any condition like the dermis; it is not gotten from the dermatome district of the mesoderm. In arthropods, the hypodermis is an epidermal layer of cells that secretes the chitin us fingernail skin. The term similarly suggests a layer of cells lying in a split second underneath the epidermis of plants.

The hypodermis is underneath dermis which is underneath epidermis. It is used generally for fat stockpiling. A layer of tissue lies rapidly underneath the dermis of vertebrate skin. It is consistently insinuated as subcutaneous tissue however this is a less correct and physiologically mixed up term. The hypodermis includes basically of free connective tissue and lobules of fat. It contains greater veins and nerves than those found in the dermis.

Subcutaneous fat is a layer of adipose tissue that is most broadly conveyed. It is made out of adipocytes, which are gathered together in lobules isolated by connective tissue. The quantity of adipocytes changes among various zones of the body, while their size shifts as indicated by the body's nourishing state. It goes about as cushioning and as a vitality save, and in addition giving some minor thermoregulation by means of protection. Subcutaneous fat is discovered just underneath the skin, instead of instinctive fat, which is found in the peritoneal cavity and can be measured utilizing muscle to fat ratio ratios calipers to give a harsh gauge of aggregate body adiposity. It is thickest in the posterior, palms, and soles.

Heart rate is a precise measure of your execution amid the high-impact session. Be that as it may, it is by all account not the only pointer of your wellness level. The resting heart rate is measured for three continuous mornings before you get up. Keep a watch or clock with a second hand to check the beats and mean 10 seconds then duplicate the aggregate 10 second tally by 6. The number you get your resting heart rate. As your cardiovascular framework ends up plainly more grounded the resting heart rate will progress toward becoming lower. Resting heart rate number of heart thumps per unit of time, as a rule for every moment. The heart rate depends on the quantity of constrictions of the ventricles (the lower councils of the heart). The heart rate might be too quick or too moderate. The beat is a lump of a vein from rushes of blood that course through the veins each time the heart pulsates. The beat is frequently taken at the wrist to gauge the heart rate.

The heart rate is one of our crucial signs - it is the quantity of times each moment that our heart contracts or thumps. Heart rate fluctuates - we have a resting heart rate, which does precisely what it says on the tin: it is the rate at which our heart thumps when we are casual. Our heart rate runs up with effort - the motivation behind which is to convey more oxygen and vitality for the movement.

Thump to-pulsate fluctuation in heart rate, heart rate changeability, and gives non-obtrusively determined data about cardiovascular autonomic action (1). Less levels of parasympathetic movement, as demonstrated by low heart rate, are intense indicators of mortality after myocardial dead tissue (2). The potential clinical significance of activity are outlined by a review in which puppies that activity prepared for a month and a half expanded their parasympathetic movement considerably, and were managed security against the ventricular fibrillation related

with intense myocardial ischemia (3).Some grown-up studies have demonstrated PSA to be moderately less in stout human being.

Breathing is the procedure that moves air all through the lungs, to permit the dispersion of oxygen and carbon dioxide to and from the outer condition into and out of the blood. "Breathing" now and again likewise alludes to the proportionate procedure utilizing other respiratory organs, for example, gills in fish and spiracles in specific arthropods. For creatures with lungs, breathing is additionally called pneumonic ventilation, which comprises of inward breath (taking in) and exhalation (breathing out).

Breathing is one a player in physiological breath required to manage life.[1] Aerobic life forms (all creatures, most plants and numerous miniaturized scale living beings) require oxygen at cell level to discharge vitality by using vitality rich atoms, for example, unsaturated fats and glucose. This is regularly alluded to as cell breath. Breathing is just a single of the procedures that convey oxygen to where it is required in the body and evacuates abundance carbon dioxide. Subsequent to breathing, the following procedure in this chain of occasions is the vehicle of these gasses all through the body by the circulatory framework, [2] and afterward their take-up or discharge from the breathing cells. Breathing satisfies another fundamental capacity: that of managing the pH of the extracellular liquids of the body. It is truth be told, this homeostatic capacity which decides the rate and profundity of relaxing. The medicinal term for ordinary loose breathing is eupnoea. Your body typically utilizes oxygen to create vitality, with this oxygen provided through your circulatory system. These outcomes are in an immediate, positive connection between your heart, breathing and physical action rates. In any case, your physical action rate can surpass your greatest heart and breathing rates. These outcomes are in the transient generation of vitality without oxygen. By consolidating vigorous and anaerobic exercises, you can extraordinarily build your quality, stamina, preparing picks up and cardiorespiratory wellness.

Heart and Breathing Rates-Your pulse, it is amount of times your heart pounds in a minute. Dependent up your age and level of physical health, a run of the mill resting beat ranges from sixty to eighty beats for minute. Your breathing rate is measured similarly, with an ordinary resting rate of twelve to twenty breaths for one minute. Both your heart beat and breathing rate increased with exercise, keeping up an extent of around one breath for every four heart beats. The resting heart of the body (generally called RHR) is the quantity of withdrawals of the heart

that happen in a solitary moment while the body is at finished rest. This number will differ contingent on the age, sexual orientation, and general wellbeing of a man. There will in like manner be a broad assorted in the resting heart rate of contenders when appeared differently in relation to non-contenders at the point when all is said in done terms the resting heart rate of a man is a solid pointer of that individual's key level of wellbeing. The way of the heart can be measured on a very basic level by considering the resting heart rate. A solid heart can pump more blood each weight, recommending that a solid heart needs to throb less conditions each moment than a fragile one all together for the body to have pleasant dissemination frame work. Thusly, the people who have a high resting heart rate don't have a sufficient level of health. Contenders will have the slightest resting heart rate of anyone, as they have had a great deal of planning to strengthen the heart remembering the true objective to perform. The heart of a contender pumps a greater measure of blood per beat than that of an unfit person. Licenses the Resting pulse should be measured before whatever else with your fingers and a stopwatch. Put your inside and pointer to either of extended supply course on your wrist or your carotid passage in your neck. When you find your pulse, incorporate what number of throbs happen 20 seconds, and copy this number by 3. Edward R. Laskowski, M.D.A common resting heart rate for adult's ranges from 60 to 100 throbs a minute. All things considered, a lower heart rate still deduces more profitable heart limit and better cardiovascular wellbeing. For example, a particularly arranged contender may have an average resting heart rate more like 40 pounds a minute.

Your resting heart beat is the quantity of times your heart pulsates every second mean at end rest. Resting heart rate will diminish as your heart ends up plainly more grounded with oxygen consuming activity preparing. Breathing is the procedure that moves air in out of the lungs, to permit the dispersion of oxygen and carbon dioxide to and from the outside condition into and out of the blood. Breathing now and then likewise alludes to the proportional procedure utilizing other respiratory organs, for example, gills in fish and spiracles in specific arthropods. For creatures with lung, breathing is additionally called pneumonic ventilation, which comprises of inward breath (taking in) and exhalation (breathing out). To check your heartbeat at your wrist, put two fingers between the bone and the ligament over your outspread corridor — which is situated on the thumb side of your wrist. When you feel your heartbeat, include the quantity of pulsates 15 seconds. Increase this number by 4 to figure your beats a moment.

Factors Effecting of Heart rate:-

- Training Sehdual
- Physical Wellness
- Environment factor
- Body situation (standing up or lying down, for example)
- feeling
- Body size
- Concentration

In spite of the fact that there's an extensive variety of ordinary, a surprisingly high or low heart rate may demonstrate a fundamental issue. Counsel your specialist if you're resting heart rate is reliably over 100 pulsates a moment (tachycardia) or in case you're not a prepared competitor and you're resting heart rate is beneath 60 thumps a moment (bradycardia) — particularly in the event that you have different signs or side effects, for example, swooning, wooziness or shortness of breath.

Statement of the problem

The purpose of the study will be to "relationship of subcutaneous fat with resting heart rate and breathing rate among inters university level of athletes".

Delimitations

- The study will be delimited to 20 male athletes from Lovely Professional University only.
- The study will be further delimited to the subjects belonging to the age group of 20 to 25 years.
- The study will be delimited to Relationship of subcutaneous fat with resting heart rate and breathing rate among inters university level of athletes.
- Measurement of subcutaneous fat with heart rate and breathing rate.

Limitations

- Researcher have do not further control on diet habit of the subjects.

- Limitation regarding life style of the subjects.
- Limitation regarding subordinate training effect of the subjects

OBJCTIVE OF THE STUDY

1 To find out the relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.

2 To find out the difference between relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.

Definition and Explantion of terms

Subcutaneous fat is the best some bit of fat which is lays in stomach district especially under the skin. A sheet of tissue lies in a brief moment under skin of vertebrate skin. It is oftentimes suggested as subcutaneous tissue anyway it is a less correct and structurally off kilter term. The hypo-dermis includes essentially of free connective soft tissue and of oily lobules.

Resting heart rate (RHR) is the quantity of times our heart beats per minute while at complete rest. Resting heart rate will diminish as our heart winds up noticeably more grounded while doing vigorous exercise preparing. A low resting heart rate deprives is a marker of good wellness.

Breathing rate (respiratory sinus arrhythmia (RSA)). it is a really happening assortment in heart rate that occurs in the midst of the breathing cycle, filling in as a level of parasympathetic tangible framework development that empowers "rest and process" responses. After that exhalation then declines heart rate as it makes vagal development proceed.

Hypothesis

The Alternative Hypothesis: H1

It is hypothesized that there will be relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes in significant physiological approach.

The Null Hypothesis: Ho

It is hypothesized that there will be relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes on significant physiological approach.

Significance of the Study

The modern age of sports is the Excellency so in every sports perfection and purification of skill has got its immense importance and research in the field has added allowed in excelling the performance of the present study in may be contributed the following way-

- The findings will be providing a model for the technique of relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.
- The findings of present study will be reveal the contributing factors to the performance of relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.
- The study will be help in drawing conclusion and generalization which may be used by physical education teachers and coaches for better teaching and coaching.
- The finding of the study will be also help relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.
- Similar kind of study will be undertaken in other kind of inter university sports persons to understand the scientific principles involved in it.

CHAPTER II

Review of related literature

Review of literature gives a path for clear understanding for the areas on which research has been already undertaken and make sure for the topics which are covered or not yet covered. It is most important to keep this view in mind, the attempts which are made to make a brief survey study on the field of occupational obesity for the work that has been undertaken. This chapter tells us about the reviews and study related to the literature. Many studies have been made. It shows the different situations of subcutaneous fat with resting heart rate and breathing rate. The reviews of some of the studies are presented below:

Ravussin et. al. (1988) This audit was depicted that dedication of diminished significance utilization to the advance of forcefulness has been a condition of verbal confrontation. We measured 24-hour centrality utilize (adjusted for body approach, age, and sex), in a respiratory chamber, in 95 southwestern American Indians. Criticalness utilize related with the rate of advance in body weight over a two-year follow-up period ($r = - 0.39$, $P<0.001$). The evaluated threat of developing more than 7.5 kg in body weight was opened up fourfold in individuals with a low adjusted 24-hour centrality utilize (200 kcal dependably underneath foreseen qualities) as rose and individuals from a high 24-hour significance utilize (200 kcal dependably above expected qualities; $P<0.01$). In another 126 subjects, the adjusted metabolic rate still at the disguised visit was in like path found to anticipate the placed on in body weight over a four-year follow-up period. Right when the 15 subjects who developed more than 10 kg were isolated and the remaining 111 subjects, the central mean (±SD) adjusted metabolic rate still was lower in the all inclusive community who put on weight (1694±103 versus 1764±109 kcal dependably; $P<0.02$) and extended to 1813±134 kcal dependably ($P<0.01$) after a mean weight get of 15.7±5.7 kg. In a gathering of 94 family from 36 families, values for adjusted 24-hour centrality use amassed in families (infraclass relationship = 0.48).

Bernard et. al. (1997) This review was depicted that devotion of decreased noteworthiness use to the progress of forcefulness has been a state of open thought. We gaged 24-hour centrality use (balanced for body technique, age, and sex), in a respiratory chamber, in 95 southwestern American Indians. Vitality use related with the rate of progress in body weight over a two-year

follow-up period (r = - 0.39, P<0.001). The studied danger of growing more than 7.5 kg in body weight was delivered fourfold in people with a low balanced 24-hour vitality use (200 kcal constantly underneath foreseen qualities) as rose and people from a high 24-hour criticalness use (200 kcal reliably above expected qualities; P<0.01). In another 126 subjects, the balanced metabolic rate still at the concealed visit was in like course found to anticipate the put on in body weight over a four-year follow-up period. Right when the 15 subjects who grew more than 10 kg were separated and the staying 111 subjects, the major mean (±SD) balanced metabolic rate still was lower in the general open who put on weight (1694±103 versus 1764±109 kcal constantly; P<0.02) and reached 1813±134 kcal reliably (P<0.01) after a mean weight get of 15.7±5.7 kg. In a social event of 94 family from 36 families, values for balanced 24-hour centrality utilize amassed in families (infraclass relationship = 0.48).

Freedman et. al. (2001) This audit reviewed the longitudinal relationship of youth body mass record (BMI, kg/m2) to grown-up levels of lipids, insulin, and circulatory strain among 2617 individuals. All individuals were at first examined at ages 2 to 17 years and were reexamined at ages 18 to 37 years; the mean follow-up was 17 years in this the overweight adolescents (BMI ≥95th percentile), 77% remained strong (≥3O kg/m2) as adults. Puberty overweight was related to unpleasant risk consider levels among adults, however affiliations were weak (r ~ 0.1–0.3) and were attributable to the strong relentlessness of weight status among youth and adulthood. Though weighty adults had negative levels of lipids, insulin, and heartbeat, levels of these risk factors did not contrast with pre-adulthood weight status or with the age (≤8 years, 12–17 years, or ≥18 years) of huskiness onse.

Kizilbash et. al. (2006) This survey was settled that cardio is a longitudinal audit proposed to look at the beginning stages of cardiovascular contamination in young adulthood. Point by point depictions of study blueprint, procedures, and test appraise have been heretofore reported.14 Beginning in 1985, a partner of 5115 sound American-African and Caucasian individuals [American-African (54.4%) and women (52%))] developed 18–30 were chosen from: Birmingham, AL; Chicago, IL; Minneapolis, MN; and Oakland, CA. Five follow-up examinations were driven at years 2, 5, 7, 10, and 15. Of the primary partner, 3672 (72%) were dissected at year 15. Clarifications behind not returning included weakness to contact part

(n=1029), part refusal (n=292), or downfall (n=122), the bigger piece of which have been non-cardiovascular-related.

P. BARBEAU et.al. we decided how much variety in heart autonomic adjustment was clarified by race, sex, direct fiery Physical movement (MVPA), cardiovascular wellness (CVF), percent muscle to fat quotients (%BF), midriff bigness, subcutaneous stomach fat tissue(SAAT) and instinctive fat tissue (VAT).

Luigi et. al. (2007) this survey found that though excess natural fat is connected with noninfectious exacerbation, it is dubious whether intuitive fat is essentially associated with or truly causes metabolic affliction in individuals. So to survey the hypothesis that instinctual fat sponsorships systemic irritation by emanating provocative adipocytes into the passageway stream that channels intuitive fat, that chose adipocyte arteriovenous concentration differentiates transversely over natural fat, by obtaining portal vein and extended course blood tests, in 25 to an extraordinary degree bulky subjects (mean ± SD BMI 54.7 ± 12.6 kg/m2) in the midst of gastric avoid surgery at Barnes-Jewish Hospital in St. Louis, Missouri. Mean plasma interleukin (IL)- 6 center was ∼50% more vital in the passage vein than in the extended course in powerful subjects (P = 0.007). Entrance vein IL-6 obsession related particularly with systemic C-responsive protein centers (r = 0.544, P = 0.005). Mean plasma leptin obsession was ∼20% acquire down the portal vein than in the extended course in strong subjects (P = 0.0002). Plasma tumor debasement compute α, contradicting, macrophage chemo attractant protein-1, and adiponectin obsessions were near in the passageway vein and winding hall in fat subjects. These data suggest that intuitive fat is a basic site for IL-6 emanation and give a potential foolish association between instinctual fat and systemic irritation in people with stomach chubbiness.

Martin et. al. (2009) The goal of the review was to examine if diminishes in resting metabolic rate (RMR) occur ahead of schedule in the weight reduction handle and in the event that it stay all through the span of the weight reduction mediation. Twenty stout postmenopausal ladies (61.8 ± 5.9 years) taken an interest in a 15-week health improvement plan. After that on the fifth week, subjects were described as having an expanded (>5%) or a diminished (<5%) Resting heart rate in light of standard qualities. A short time later, they were taken after for an extra 10 weeks. Result measures were as per the following: fat mass ([FM] add up to, trunk), fit body

mass (aggregate, trunk), RMR, resting heart rate , and physical action level. Following 5 weeks, huge abatements were watched for slender body mass, FM, and resting heart rate ($P < .05$), though no general changes in physical movement level and RMR were watched. However, on an individual premise, huge varieties in RMR were watched (running from −320 to +330 kcal/d). Examines demonstrated that subjects described as either having an expanded or a reduced RMR after the fifth week maintained these adjustments toward the finish of intercession. At long last, subjects uncovering a lessened RMR amid weight reduction had an essentially higher RMR and lower FM collections at pattern (aggregate and trunk) contrasted and those with an expanded RMR. Bury singular varieties in RMR occurred ahead of schedule in the weight reduction handle and were kept up over the term of the get-healthy plan in our accomplice of hefty postmenopausal ladies. Gauge RMR, changes in RHR, and FM gradual additions (aggregate and trunk) appear to be important variables to consider when concentrate the impacts of weight reduction on RMR.

Karl Peltzer ; et al(2011) This review survey the overweight and heftiness and related calculates school-going teenagers in low wage African nations (Ghana, Uganda). The aggregate example included 5,613 school youngsters matured 13 to 15 years from broadly illustrative specimens from two African nations. Vicariate and multivariable examinations were led to evaluate the connection between dietary conduct, substance utilize, physical action, psychosocial elements and overweight or stoutness. The inescapability of overweight and stoutness was resolved in light of self-announced stature and weight and the global kid body mass record principles. Comes about demonstrate a pervasiveness of overweight or heftiness of 10.4% among young ladies and 3.2% among young men, and 0.9% and 0.5% corpulence just among young ladies and young men, separately.

Staiano ; et al(2012) The survey of this review was analyzes the variety in pediatric aggregate muscle to fat ratio ratios (TBF), instinctive AT (VAT) and subcutaneous AT (SAT) because of age, sex, maturational status and ethnicity. TBF, VAT and SAT regularly increment as a tyke ages, however extraordinary patterns develop. Young ladies have a tendency to gather more TBF and SAT amid and after adolescence, keeping fat especially in the gynoid and furthest point locales. Interestingly, pubertal and postpubertal young men tend to store more fat in the stomach area, especially in the VAT stop. Sexual development altogether impacts TBF, VAT and SAT. Ethnic contrasts in TBF are blended. VAT has a tendency to be higher in white and Hispanic

youth, though SAT is regularly higher in African American youth. Asian youth regularly have less gynoid fat however more VAT than whites. Obesity per se may lessen sex and ethnic contrasts. Specific wellbeing dangers are related with high measures of TBF, VAT and SAT, including insulin resistance, hepatic steatosis, metabolic disorder and hypertension. These dangers are influenced by hereditary, organic and way of life elements including physical action, sustenance and stress. Incorporating proof is troublesome as there is no steady philosophy or definition to assess and characterize terminal particular adiposity, and many examinations think about SAT and VAT without controlling for TBF. Future research ought to incorporate longitudinal examinations of adiposity changes after some time in delegate tests of youth to make speculations to the whole pediatric populace and analyze variety in organ-particular muscle to fat quotients.

Samantha ;**et al** (2012) Greenish blue BMI was essentially and contrarily identified with RMSSD ($r=-0.23$, $p=0.001$) and pNN50 ($r=0.20$, $p=0.008$) however not recurrence area measures of HRV ($p>0.05$). Overweight/corpulent youngsters exhibited bring down HF control contrasted with ordinary weight kids ($p=0.02$). RMSSD and pNN50 were essentially lower in overweight/corpulent kids contrasted with typical weight kids ($p<0.05$). Age was related with changes in Mean R–R and RMSSD ($p<0.05$).

Wilks D C et; al (2012) The investigation of this review was incorporated 429 people (169 young men) matured 13.9 ± 2.3 years who taken an interest in an inpatient health improvement plan for four to a month and a half. At benchmark and the finish of the program clinical examinations were performed, including blood investigations, circulatory strain, anthropometry and maximal cycle ergometer practice testing with nonstop heart rate (HR) observing. HRR was figured as the contrast between the most noteworthy practicing HR and HR at one, three and five minutes post-exercise.in which normal body weight diminished from 90.7 ± 22.5 kg to 81.9 ± 20.0 kg and top exercise limit expanded from 1.66 ± 0.38 W/kg to 2.05 ± 0.45 W/kg ($p < 0.001$). Cardio-metabolic hazard variables enhanced (midriff outline, LDL-cholesterol, HOMA insulin proportion, blood pressure; $p < 0.05$). HDL-cholesterol and triglyceride levels stayed unaltered. Contrasted and gauge, at follow-up the decrease in HR was more articulated (+32%, +18% and +11% for HRR1, HRR3 and HRR5; $p < 0.001$). Enhancements in HRR1 were

pitifully associated with changes in exercise limit ($p < 0.05$; $r < 0.13$), however not with changes in body weight and cardio-metabolic hazard components.

Peltzer .et al (2014) This review survey the inescapability of overweight and weight and its related element among an arbitrary specimen of college understudies from 22 colleges in 22 low, center wage and developing economy nations. This cross-sectional overview included of a self directed survey and gathered anthropometric estimation. The investigation of populace was6773(43.2%) guys and 8913(56.8%)females, matured 16 to 30 years.BMI was utilized for weight status. among men, the commonness of underweight was 10.8%, typical weight 64.4%, overweight 18.9% and corpulence 5.8%, while14.1% and heftiness 5.2%. in general, 22% were overweight or fat (24.7%)men and (19.3%)women.

Turpentine (1981) investigated the relationship between obesity and self-concept in pre-adolescents and adolescents. There was also an examination of the relationship that these two variables had with academic achievement. Data was collected from 85th sixth graders and 168 ninth graders on socio economic status, race, sex, and body mass, self-concept and academic achievements. The anthropometrics indices of body mass (quetelet index, triceps skin fold, biceps skin fold and arm circumference) were significantly correlated with the teacher rating of body mass. These high correlations validation the use of teacher ratings of body mass as a method for classifying the subjects into categories of below normal body mass, normal body mass, and greater than normal body mass. The status of the self-concept was determined by scores from multidimensional NTS self-observation scales (SOS). The academic achievement was assessed according to the results of the California achievements test (CAT). The pre-adolescents demonstrated significant negative correlation between greater than normal body mass and self-concept dimensions of self-acceptance, self-security, social maturity, social confidence and peer affiliation. The obese pre-adolescents had significant lower scores in these dimension than their non-overweight classmates. For the adolescent sample, the body mass influenced significant differences in the self-concept mean scores for school affiliation and social confidence were significantly lower for obese adolescents than those of the non-overweight adolescents. Research results showed significant positive correlation between self-concept and academic achievement for both pre-adolescents and adolescents. A significant negative

correlation existed between the pre-adolescent levels of body mass and the CAT scores for spelling, mathematics, and total battery. The adolescent levels of body mass significantly and negatively correlated with all of the CAT scores. Those subjects with greater than normal body mass demonstrated poorer academic achievement. The finding of this study provides evidence that preadolescent and adolescent obesity correlated strongly with poor self-concept and low academic achievement.

Cureton, et al (1975) studied the relationship between body composition measures and AAHPER fitness test performance. Relationship between total density, total body potassium, skin fold thickness measurements and AAHPER youth fitness test performance were determined on 49 boys of 8 to 11 years of age. Zero order correlation between body composition measures and performance scores were low or moderate. In general body density, body potassium and skin fold thickness predicted performance equally well with age. Analysis of relationship between AAHPER test items and the physical development variables demonstrated that there was a large proportion of common variance between the two sets of variables and significant relationships existed along two independent dimensions. It was concluded that not only variations in body size but also variations in body composition should be considered, when interpreting results of the AAHPER test for individual children and for comparison of groups of children who differ in body composition.

Cureton et al (1977) investigated the relative importance of body size, body composition, cardio-vascular capacity and running speed in determining individual differences in performance on 600 yards run and 1 mile run test, using data on 196 children, aged 7 to 12 years. A multivariate, multistage path model was developed in which height, percent fat, vo2 max and 50 yards dash time was postulated running tests. These four independent variables accounted for 71% to 66% of the variance in 600 yards run and 1 mile run respectively. All four independent variables had significant associated with two distance runs. When the influence of other independent variable was taken into account, the 50 yards dash time and percent fat were found to be most important determinates of both distance runs.

Fisher (1986) investigated a self-concept construct in overweight and non-overweight elementary school age children. Self-concept was defined as attitudes toward the self and others. Overweight

was defined as weight above the 75th percentile by height and age on the national centre for health statistic growth curve charts. The experiment comprised of seven variables (body esteem, attitudes towards others, autonomy, physical appearance, interpersonal adequacy, academy adequacy, and teacher school relations) derived from scores on the body esteem scale, the how I see myself scale, and the paired hands test. The hypothesis was tested by one-way multivariate analysis of variance procedure. The sample was comprised of 70 Caucasian elementary school children from a school district in north-eastern Oklahoma. The age range of the sample was 8-11 years. Data were gathered by means of group test administrations. A significant difference was found on 0.05 level of confidence. Based on the findings, inference was made that self-concept was affected by overweight.

However, examination of the variables by unvaried analysis revealed that the strongest support for the construct was found for body esteem. No differences were found for the other variables.

CHARPTER-III

METHODOLOGYAND PROCEDURE

METHODOLOGY

The method and procedure are important pre-requisite of any study. It is necessary to give detail of gathering the material and technique follows in a particular study. in this investigation, an attempt will be made to find out the prevalence and factor influencing Relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes.

METHODOLOGY OF RESEARCH

The study was conducted through descriptive method of research. The method required selection of sample, selection of tools, selection variable and set of research tool for conducted of the are given here under.

SAMPLING

According to the necessity of the review twenty male competitors were chosen these subjects were the understudies who were enlisted in the Department of physical training, dazzling proficient college. The normal age of the understudies was extended 18 to 20 years. The choice of the subject was done on the premise of purposive irregular examining procedure.

SAMPLING SIZE

Twenty students were selected of this study. The study was conducted on relationship of subcutaneous fat with resting heart rate and breathing rate among LPU athletes in these twenty.

Selection of the subjects

In this review the arbitrarily inspecting method was received by the agent for the gathering of the information. The aggregate specimen of the review 20 understudies matured 20-25 years in four distinctive district of LPU (Inter college level of competitors).

Selection of variables

On the basis of available literature and in consultation with the expert of the field and considering the entire feasibility, following variable has selected.

Dependent variable

- resting heart rate
- breathing rate

Independent variable

- subcutaneous fat

Research tools

Breathing rate measured by manual method.

Resting heart rate measured by Radial pulse rate.

Subcutaneous fat measured by skin fold caliper

Administration of test

Breathing rate

Equipment:-stop watch, pen, and copy

Procedure: - (Include the breaths). Breathing is measured breaths every moment or bpm. To get an exact estimation, the subject must be very still. It implies subject is not breathing quicker than normal because of working out. Here he ought to be still for no less than 10 minutes before specialist tally his breath.

Have the student sit straight forward. (If you are measuring a child, lay the infant level on her back on a stable surface).

Use a stop watch for calculate one moment and check the quantity of times the subject trunk upsurges and wrong among moment.

In the event that you tell the subject that you will quantify her breathing, they are probably going to change her breathing rate without acknowledging it. Instruct them to inhale typically. To enhance the exactness of our outcome, examiner then can take the estimation three times and normal the appropriate responses.

On the off chance that we are in a rush, include the breaths a fifteen second, then enhance the level of breaths by four. Due to this it gives a near approximation of breaths per minute and is useful for comfortable measurement.

Resting heart rate

Equipment: - Radial pulse rate

Procedure:-

- Use your index finger and middle finger when finding your pulse.
- Check and record your heart rate.
- Establish your normal heart rate.
- Check the strength of the pulse to see if it is strong or weak.

- Check the rhythm of your pulse.
- Count the pulse in a minute.
-

Subcutaneous fat

Equipment: - skin fold caliper

Procedure: - Hang your right arm alongside you, and have some individual find the point somewhere close to your shoulder and elbow, on the back (triceps side) of your arm.

With his thumb and fore finger have mumble punch a felt go skin and fat a long way from the muscle.

Have him measure the thickness of the skin punch (don't lean the ruler against the skin).

Have him/her do steps 2 and 3 a couple times and get the typical scrutinizing.

Find your muscle to fat proportion by using the layout underneath.

Body mass index (BMI) for obesity

The body mass record (BMI) is a diagnostic estimation gotten from the stature and weight. On the off chance that a stout individual having abundance muscle to fat quotients that can prompt negative consequences for his/her wellbeing. A man having body mass record (BMI) is <18.5 you are considered in underweight. In the event that a man having body mass file (BMI) is in the vicinity of 18.5 and 24.9 it ought to be, he or she is dealt with as normal weight. In the event that your body mass index (BMI) is in the vicinity of 25 and 29.9 you are dealt with as overweight .If your BMI is 30 or over you are dealt with as stout.

Procedure

University administration, teacher, and the students were informed regarding the data collection, the instrumentation and the purpose of the survey before the conducting the survey. All subject, were informed about the objective of the study, give their consent to participate in the study. The

subjects were assembled and a group, clear instruction was specifically given that all the items in the questionnaire must be attempted.

STASTICAL TECHNIQUES

In order to find out the relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes was calculated by using Pearson's product moment correlation.

For testing hypothesis level of significance was set at 0.05 levels.

ANALYSIS OF DATA

Person product moment will be applied for data analysis at 0.05 levels.

The Table No. 4.1 Show The Correlation Of Subcutaneous Fat With Resting Heart Rate Among Inter-University Level Of Athletes.

Method of teaching	N	Mean	Std. Deviation	Df	Correlation
Subcutaneous Fat	20	62.2	1.42	18	0.24
Resting Heart Rate	20	70.9	3.07		

Tabulated value at df 18= 0.24 *** significant at 0.05 level**

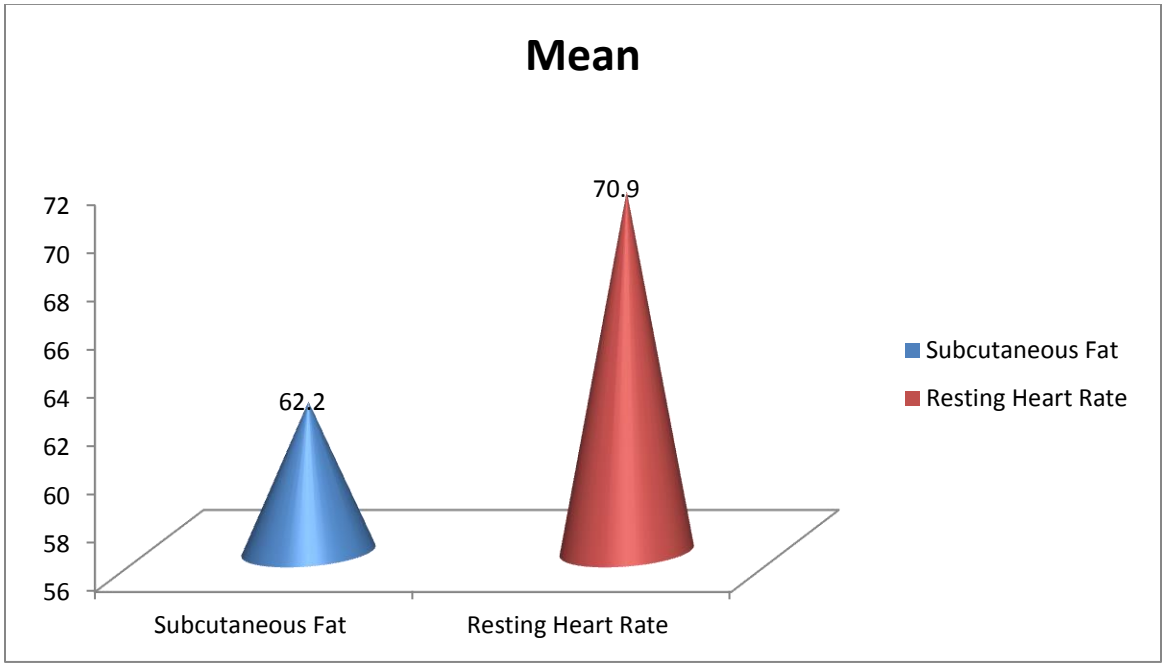
And breathing rate

The table no. 4.1 shows the correlation of Subcutaneous Fat and Resting Heart Rate among inter-university level of athletes the mean score of the Subcutaneous Fat and Resting Heart Rate,

which was 62.2 and 70.9 respectively and standard deviation was 1.42 and 3.07 respectively. The value of 'r' is 0.24 which shows positive correlation and significant relationship between Subcutaneous Fat and Resting Heart Rate.

The table above shows that the r value for Subcutaneous Fat and Resting Heart Rate 0.24, whereas the table value for the same is found to be 0.24 at 0.05 level of significant. The calculated value of being more than the table value, correlation product movement is significant.

The Graph No. 4.1 Show The Correlation Between Subcutaneous Fat with Resting Heart Rate Among Inter-University Level Of Athletes



The Table No.4.2 The Show Correlation Of Subcutaneous Fat With Breathing Rate Among Inter-University Level Of Athletes

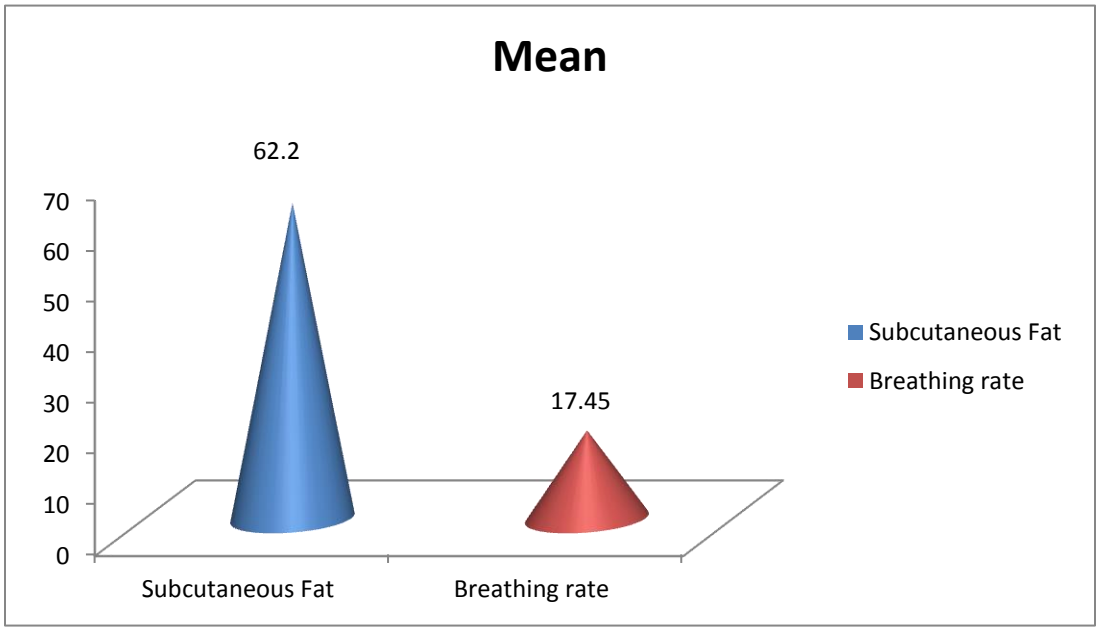
Method of teaching	N	Mean	Std. Deviation	Df	Correlation
Subcutaneous Fat	20	62.2	1.42	18	0.63
Breathing rate	20	17.45	1.43		

Tabulated value at df 18= 0.24 *** significant at 0.05 level**

The table no. 4.2 shows the correlation of Subcutaneous Fat and Breathing rate among inter-university level of athletes the mean score of the Subcutaneous Fat and breathing rate, which was 62.2 and 17.45 respectively and standard deviation was 1.42 and 1.43 respectively. The value of 'r' is 0.63 which shows positive correlation and significant relationship between Subcutaneous Fat with Resting Heart Rate.

The table above shows that the r value for Subcutaneous Fat and Breathing rate 0.63, whereas the table value for the same is found to be 0.24 at 0.05 level of significant. The calculated value of being more than the table value, correlation product movement is significant.

The Graph No. 4.2 The Show Correlation Between Subcutaneous Fat With Breathing Rate Among Inter-University Level Of Athletes



Chapter-IV

Discussion

The findings mean score of the Subcutaneous Fat and Resting Heart Rate, which was 62.2 and 17.45 respectively and standard deviation was 1.42 and 1.43 respectively as well as findings mean score of the Subcutaneous Fat and breathing rate 62.2 and 17.45 respectively and standard deviation was 1.42 and 1.43 respectively.

The value of 'r' is 0.24 which shows positive correlation and significant relationship between Subcutaneous Fat and Resting Heart Rate as well as value of 'r' is 0.24 which shows positive correlation and significant relationship between Subcutaneous Fat and breathing rate and value of 'r' is 0.63 which shows positive correlation and significant relationship between Subcutaneous Fat and Resting Heart Rate and Subcutaneous Fat and breathing rate among inter-university level of athletes.

On the basis of the results, the hypothesis I also accepted and a positive relationship significant between Subcutaneous Fat and Resting Heart Rate among inter-university level of athletes was found. Again the hypothesis II also accepted and a positive relationship significant between Subcutaneous Fat and Breathing rate among inter-university level of athletes.

The relation of Subcutaneous Fat with Resting Heart Rate and Breathing rate among inter-university level of athletes were analyzed by the Product movement correlation. The level of significance chosen to test the hypothesis was 0.05 levels.

Conclusion

- Significant and positive relationship between Subcutaneous Fat and Resting Heart Rate among inter-university level of athletes.
- Significant and positive relationship between Subcutaneous Fat and Breathing rate among inter-university level of athletes.

Chapter-V

Conclusion

- Significant and positive relationship between Subcutaneous Fat and Resting Heart Rate among inter-university level of athletes.
- Significant and positive relationship between Subcutaneous Fat and Breathing rate among inter-university level of athletes.

Suggestions and recommendations

The present investigation was conducted on relationship of subcutaneous fat with resting heart rate and breathing rate among inters university level of athletes the effect of menstruation on psychological and physical efficiency. The finding of this study would be helpful and provide a direction for future researcher in the field of psychological and physical behaviour as related to sports and games, following suggestion are being put forward for future research.

1. The similar study can be conducted on male and female subjects.
2. The study can be conducted on All India Inter University level.
3. The similar study can be conducted on different age groups.
4. The similar study can be conducted by increasing number of subjects.
5. This study will be also conduct in future on the players of athletics event.

SUMMARY

The purpose of the study was to compare and assess the relationship of subcutaneous fat with resting heart rate and breathing rate among inters university level of athletes. It is hypothesized that there will be relationship of subcutaneous fat with resting heart rate and breathing rate among inter university level of athletes in significant physiological approach. Twenty students were selected of this study.

In order to analyses the score of selected physiology parameters descriptive analysis was used. Further to find out significant relationship was between the scores of subjects on selected

physiological parameters of athletes, the Pearson product moment co-efficient was relationship employed For test of the hypothesis; level of significance be set at 0.05 levels.

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