TECHNISCHE UNIVERSITÄT
CHEMNITZ

Physical fitness and health status of sport students in Germany and Egypt

(A Comparative Study)

Doctoral Thesis

Submitted to the Faculty of Behavioural and Social Sciences of the Technische Universität Chemnitz to obtain the academic degree of *Doctor rerum naturalium* (Dr. rer. nat.) by

M.Sc. Tamer Mohamed Gamal

Supervisor: Prof. Dr. med. Henry Schulz

List of contents:

i. List of Abbreviations

%	Percentage
∑	Sum of all values.
ACSM	American College of Sports Medicine
AHA	American heart association
ASPA	After school physical activity
AVP	Arginine-vassopressin and
BMI	Body mass index
Ca	Calcium
cal	Calorie
CHD	Coronary Heart Disease
CI	Chloride ions
CI	Confidence interval
CRH	Corticotropin-releasing hormone
CUT	Chemnitz University of Technology
CVD	Chronic Vascular Diesease, cardiovascular disease
CYA	California youth authority
DEGS1	Gesundheit Erwachsener in Deutschland
Di2	The rank differences.
DNA	Deoxyribonucleic acid
e.g.	For example
EDHS	Egypt Demography Health Survey
Ei	An expected (theoretical) frequency, asserted by the null hypothesis
EPIC	European Prospective Investigation into Cancer and Nutrition
etc.	et cetera
FAO	Food and Agriculture Organization
FFQ	Food frequancy questionnaire
g	Gramm
GAD	Gender anxiety disorder
GNHIES	German National health Interview and Examination Survey
GDP	Gross domestic product
H_2O_2	Hydrogen peroxide

HDL	High-density lipoprotein
HPA	hypothalamic-pituitary-adrenal
IDF	International Diabetes Federation
IQ	Intelligence quotient
K +	Potassium
Kg	Kilogram
L	Log
LDL	Low-density lipoprotein
Mg	magnesium
min	Minimum
min	Minute
Mm	Millimeter
mmHg	Millimeter hydrargyrum
n	The pairs value number
N	Number of Sample
n1	number of sample 1.
n2	number of sample 2
NASPE	National Association for Sport and Physical Education
NHANES	National Health and Nutrition Examination Survey
OCD	Obsessive compulsive disorder
Oi	An observed frequency
OR	Odds Ratio
P	Phosphorus
PA	Physical activity
PC	Personal Computer
Rho	Population correlation coefficient
Rrdia	Blood pressure diastolic
Rrsys	Blood pressure systolic
S^1_2	Estimated variance of population 1.
S^2_2	The estimated variance of population 2.
SD	Standard deviation
SES	Socioeconomic status
Na +	Sodium
SPSS	Statistical Package for the Social Sciences

T	T-test
TV	Television
U.S.A.	United States of America
UK	United Kingdom
UN	United Nation
VO2max	Maximum Oxygen Consumption
WHO	World Health Organisation
$\bar{x}$	Sample mean
x	Unknown value to find.
$\bar{x}1$	Sample mean 1.
X2	Pearson's cumulative test statistic
$\bar{x}2$	Sample mean 2.
YRBS	Youth risk behaviour survey

ii. List of Figures

iii. List of Tables

1. Introduction

University students represent the future of families, communities, and countries. They face the stresses during the attempts of achieving success in their academic goals (El Ansari et al., 2013) and are likely to become future leaders in their society whether in economy, education or politics. It has been argued that health is an important factor for academic achievement at school and in higher education (El Ansari et al., 2010). In this context, implementing a student health survey programme during their academic development is important (El Ansari et al., 2013) which assists schools and universities in creating a healthier education environment.

During 1961- 1963 the first comprehensive study of students' health knowledge, attitudes and behaviours was undertaken in the U.S.A as part of a large ten-year research and curriculum effort. The result was the school health Education study which has had a tremendous impact on health curriculums and health instructions to the present day. 25 years later, the architects of the NASHS study had a similar goal in mind, namely to focus attention on areas of grave concern to adolescent health, and to provide data necessary to significantly improve school and community health education programmes and, ultimately, the health of America's youth (The National Adolescent Student Health Survey: 1990).

"According to the World Health Organization, health is not only the absence of disease but a state of complete mental and physical wellbeing in relation to the productivity and performance" by the intake of food and utilization of nutrients (Tontisirin K., 2004).

Malnutrition resulting from hunger and deficiencies of important nutrients can impact not only physical but also mental health of people, which in turn will result in lower performance in education. People suffering with malnutrition could ultimately result in wasting resources invested on them. Thus, proper nutrition is a vital aspect in individual development which will result in better physical and mental performance. The main target group of malnutrition are school children (FAO, 2004).

The main reason for this malnutrition is the deficiency of micronutrients, poor standard and quantity of food. All the development sectors like education and health suffer because of malnutrition. Vulnerability to various diseases can also be the outcome of malnutrition. This would in turn impede intellectual and physical development in the school children (Lal Bhomi A., 2011).

The behaviour and habits in childhood have a great effect on the future lifestyle of young adults and therefore their general health (mentaly, physically). Rutter M. (1989) showed that antisocial personality disorder in adulthood was always preceded by conduct disturbance in childhood, so that the inter-relationship between these two life phases is very strong indeed. The aspect of persistence of disorders into adult life was particularly great for boys who exhibited the combination of aggression, hyperactivity and poor peer relationships with increasing risk of persistent adult criminality associated with both hyperactivity and conduct disturbance in childhood compared to well adjusted boys.

When Children's health and potential are trapped in the vicious cycle of malnutrition and diseases, teaching- learning achievement of individual schoolchildren can be affected and has impacts on enrolment and continued participation as well. Basic education is the most powerful single intervention for improving the health and nutritional status of infants and young children (FAO/WHO, 1992). Policies that promote high quality universal education in Primary standards are one of the necessary condition for sustaining proper development with better quality of life with equity (FAO, 1989). Schools and universities play a spirited role in building the health knowledge (mentally and physically) and skills for their students when school teachers agree a more credible and nutritionally valuable school-feeding programme as a way to increase the simplistic performance of their students (Lal Bhomi A., 2011).

Regular physical activity among children and youth is important for normal growth. It also enhances the aerobic capacity and respiratory system. It is also necessary for muscle strength and other fitness elements. Its positive effect appears after a long time on bones strength, connective tissues and joints. From the psychological perspective, physical activity gives self-esteem and the motivation to learn new movement skills (Astrand et al., 2003).

So it is very important that children and youngsters are introduced to the principals of training and active participation in theory alongside with practice. Children, adolescence and youth should participate in physical activities for about one to two hours daily (Astrand et al., 2003).

Many of the behaviours that put adults at elevated risk for disease and mortality are initiated during adolescence including tobacco use, physical inactivity, poor dietary habits, and behaviours that can result in unintentional injuries and violence. Tobacco abuse, physical inactivity, and unhealthy diet contribute to heart disease, many cancers, and other chronic diseases (WHO, 2009). There are many differences between developed countries and developing countries in education, life style, health behaviour, but the studies in this area are rare - although it is very important to have knowledge of the negative and positive aspects in every culture to find the alternative potentials to improve students general health in this important age stage which normally impacts on future general health. So from here the idea was derived to choose Germany as a developed country and Egypt as a developing country to identify the effects of the standard of living in both countries on social and health aspects.

The sample has been selected from sport science students, because of the assumption that this population generally has a healthier lifestyle (healthy nutrition, physical activity...etc.) than the rest of the student population. Studying physical education or sport science requires them to pass some initial medical examinations and physical fitness tests which are only achievable with a certain active and healthy lifestyle. This degree then allows these students to learn extensively about all physical, medical, nutritional and psychological areas that can positively influence their health. The sample has been selected from young students also because they are the future elite of a country in business, education and culture aside with potentially chances to reach to leading positions in companies etc. and are therefore multiplicators.

This is therefore a cross-sectional comparative study referring to the differences in social-economic, health status variables and problems, health behaviour, nutrition, anthropometric variables and correlates physical activity between university students in Germany and Egypt (Health survey) using a standardised questionnaire. In this

questionnaire the students were asked about their physical and mental health, lifestyle, eating habits, sports and physical activity and dealing with alcohol and drugs. Furthermore, all subjects underwent a thorough physical examination and fitness test as part of the data collection process. Thus, the aim of this study is to investigate the differences in general health and some physical activity and fitness components in German and Egyptians students.

In this study the following questions were investigated:

- Are there differences between German students and Egyptian students in health status variables?
- Are there differences between German students and Egyptian students in fitness variables?
- Is there a correlation between some physiological, anthropometrical variables and health variables?
- Is there a link between nutrition and general health?
- Is there a link between physical activity and general health?

2. Literature Review

2.1 Physical activity:

Physical activity in ancient Egypt

Figure 1 shows that the ancient Egyptians invented many sports. This is evident based on paintings on monuments that they practiced wrestling, weightlifting, gymnastics, swimming, rowing, archery, shooting, fishing and some disciplines of athletics such as long jump, javelin throw and various kinds of ball games such as hockey and handball (Egyptian state information service).

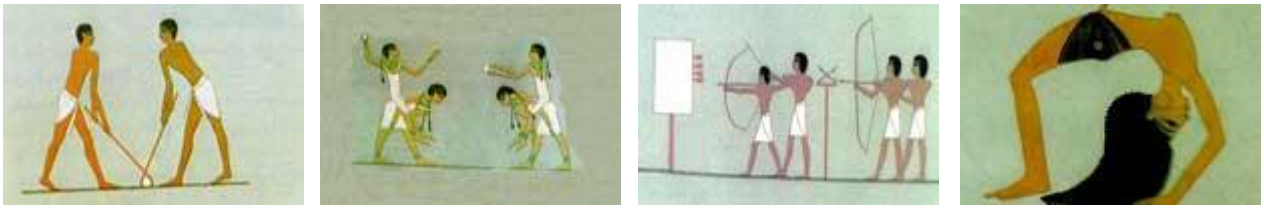

Figure 1: Sports in ancient Egypt – Hockey, Handball, Archery, and Gymnastics

According to Caspersen, physical activity can be categorized in several ways; the simplest categorization identifies the physical activity that occurs during sleeping, at work, at home, during leisure time, energy expenditure during physical activity, and during nutrition (Caspersen et al., 1985). Regarding the importance of exercise and physical activity, Pivarnik et al., (2002) state that aerobic fitness and physical activity exert preventative effects from heart diseases in adults, which are independent from other risk factors. They also mention that it is important to note that the people with the lowest physical activity/fitness levels and highest percentage of body fat are the most likely to develop other risk factors for cardiovascular disease (CVD), including elevated blood pressure and serum cholesterol levels. Furthermore, weight loss can occur and blood pressure can be lowered in obese children and adults when physical activity is a regular part of the health routine and daily life. Physical activity has been identified as one of our nation's leading health indicators.

2.1.2 Youth and physical activity statistics

Although the youth is a more active part of the population, two particular factors make it less likely for adolescents to carry an active lifestyle on into adulthood. Firstly, based on physical activity levels in both males and females during high school, they do not engage in regular physical activities that improve aerobic fitness, strength and flexibility. These trends are shown in the results of the 2001 national school based youth risk behaviour survey (YRBS) system. 9.5 % of the students had had no vigorous or moderate activity during the previous days to the survey date. Only 32.2 % of the high school students had daily physical education in USA (NASPE, 2005).

Recent questionnaire surveys in Australia, Canada, and the U.S.A. suggest that about 40% of adults are active enough in their leisure time to obtain a variety of health benefits. Ten percent of adults in these countries report exercising at least three times weekly for 20 min. or more at intensity considered sufficient to develop or sustain cardiorespiratory fitness. In Australia, Canada, Finland, Germany, and the U.S.A there has been a modest increase in the self-reported prevalence of healthy levels of exercise over at least the past decade. This increase does not extend to heavy exercise for all these countries (Bouchard et al., 1994).

There is a considerable consistency among nation in the relationship of self-reported, leisure time, physical activity levels to sex, age, and education. National surveys of physical activity consistently reveal that, by most definitions, including total active time or total energy expended per week, exercise prevalence declines steadily with age. Leisure-time physical activity is consistently more common among groups with more education. Recent surveys in Australia, Britain, Canada, and the U.S.A all reveal that the most educated group is 50 to 200% more likely than the least educated group to undertake deliberate exercise (Bouchard et al., 1994).

13.6 % of the students were at risk for becoming obese due to dietary and exercise behaviours, while 10.5 per cent were already overweight. In a possibly related area, male students (41.8 %) were more likely than female students (35 %) to have watched television for more than 3 hours per day.

This gender difference was identified for white students of grade nine. 53.4 per cent of students had done strengthening exercises on more than 3 of the 7 days prior to the survey. Male students were significantly more likely than female students to have participated in strengthening activities (NASPE, 2005).

The usual physical activity measurement is one of the most difficult aspects in epidemiological research and the assessment of the daily physical activity. A range of methods for evaluating the level of adult's physical activity has been developed and several of these methods have been used in the estimate of children's usual physical activity and do not take the differences between children and adults into account. Young people have low levels of physical activity. Many young people had rarely experienced the frequency, intensity and duration of the physical activity (Pasiakos, 2008).

The fact that boys have greater testosterone levels than girls, influences the skeletal muscle protein metabolsim, therefore increases muscle mass and bone density more than in females (Pasiakos, 2008).

This physiological pattern, results in greater muscle mass and haemoglobin concentration in male youths, leading to a higher transfer of oxygen to the muscle tissue and a higher VO_{2max} (Armstrong et al., 1998). Another reason for this gender specific difference lies in the greater physical activity levels of boys and/or male youths, which promotes this development even further.

2.1.3 Physical activity epidemiology

Physical activity considered as an important and essential element to improve public health and quality of life in many developed and developing countries. It is also important to know the mean aim of physical activity epidemiology where it explain where it is applied to determined weather physical activity appears causally linked with health and longevity (Dishman et al, 2012).

Epidemiology is the study of the distribution and determination of health-related states or events in specified populations and the application of this study to the prevention and control of health problems (Bonita et. al., 2006).

Physical activity epidemiology is the science that explains the role of PA in our modern civilization by analysing basic demands of exercise, diet, and other ways of life for good health. It presents a well-organised predictive and prognostic characteristic of health and longevity resulting from a physically active and fit way of life (Dishman et. al., 2004).

It's very important to know the role of physical activity and fitness in health and to focus on the factors in the context of the models used by epidemiologists to know and understand the independent and interactive causes of disease, injury, or death. The **physical activity epidemiology models** are divided into three types: First is the **epidemiologic triangle** represented in the host (person), the environment (physical, social) and agent (physical activity, fitness) this model is developed from the early day of infectious disease epidemiology and its application to chronic disease epidemiology (Dishman et. al., 2004).

The second is **web of causation.** This means that a disease has no signal. Wherefore a study of physical activity and fitness, as a risk factor for a disease must consider how they interact with other potential causes of the diseases. The third model **the wheel** is the most valid model of epidemiologic inquiry, it recognizes that the host (person) develop from agent (physical activity, fitness) core that is modifiable to varying degrees by the biological, physical and social environments to which the host exposed (Dishman et. al., 2004).

2.1.4 The epidemiology relevance of physical activity

Epidemiological studies indicate risk elements for variants of health problems. The major results of these epidemiological studies suggest that the high cholesterol and high blood pressure and smoking are related to heart disease. It is also indicated that physical inactivity is also a major risk factor for heart disease. The American College of Sports Medicine (ACSM), showed in experimental studies that high activity levels decrease the risk of heart diseases (American heart association., 1992) (National Institute of Health., 1996) (Howely et al., 2007).

“Epidemiological studies suggest that physically active individuals have a 30–50% lower risk of developing type 2 diabetes than sedentary persons and that physical activity confers a similar risk reduction for coronary heart disease" (Bassuk et al., 2005).

Epidemiological studies into physical activity gives one of many types of scientific evidence that is indispensable to assess the importance of physical activity for health. This evidence, when joined with pertinend experimental and clinical research, suggests that physical activity has the potential to favourably effect the development and progression of an assortment of chronic diseases and conditions that are an encumbrance to public health. Epidemiologists working aside with exercise scientists in the area of injury control can locate which activities are safe at specific levels of physical ability and functioning (Caspersen et al., 1994). Caspersen et al. (1998) also state that physical activity epidemiology is the basis to establishing the importance of physical activity to public health.

In another cross sectional epidemiological study Al Ansari et al, 2011 aimed to form a realization that perceived health status, a domain of physical and mental and psychological wellbeing variables, and in addition social support of students from seven universities in England, Wales and Northern Ireland. The study sample was about n = 3.706 students (765 males and 2.699 females with mean age 24.9 years, standard deviation 8.6). In the social demographic aspect the results shows that the males are more likely to be single. The females which married and had children achieved a higher percentage the results showed also that the females are more likely to live with parents or partner compared with the males. In the prevalence of physical and psychological health variables aspect, a higher percentage of female students than males had consulted a medical practitioner, particularly at 3 or more occasions. As well as this, women were more likely to record that in the last 12 months, they had been so ill that they had to stay in bed. Concerning of psychological health the results showed that the women felt less than men that their quality of life was good.

2.1.5 Physical activity and health

Adapted physical activity is accepted as an academic discipline or area of specialisation in many universities and countries. It is accepted as an independent science the same way as the other theoretical sciences. The term of *Adapted Physical Activity* has many meanings, partly because it has been associated with different populations over the ages. This has become an important science term, used worldwide regarding human science and practices of home school and community transfer systems that enable individuals of all levels, ages and capabilities to maintain good healthy (Sherril C., 1996).

It is not only eating which keeps the human body healthy. Doing sports is also one of the important means to keep the human body healthy. Participation in physical activity helps to burn and reduce the excrescence fats and calories in the human body. Many experimental studies have discovered the effects of regular physical activity on cardiovascular, cardiorespiratory, body composition, and on general health. These studies published by the American College of Sports Medicine and show what effect a small quantity of activity has on cardiorespiratory fitness (Haskell W. L., 1984).

Two of the major studies from Haskell had adequate data for analysing different levels of physical activity and different levels of cardiorespiratory fitness to estimate the causes and the risks of heart diseases, which showed that physical activity and cardiorespiratory fitness decreased the risk of heart disease significantly (Haskell W. L., 1984), (Howely et al., 2007). It is not possible to define or explain the biggest level of dynamic health without participating in a physical activity. Physical activity and health can be affected by lifestyle and on the other hand, life can be affected by physical activity. Physical activity causes excess mental and psychological wellbeing, energy and promotes physical development.

There is a difference in the meaning of wellness and overall fitness, where wellness means simply being without illness or diseases but the expression overall fitness is a state of a better life in all aspects such as social, mental, psychological and physical. There are some factors that effect on physical activity and health for example heredity and environment and the individual interests (Howely et al., 2007).

Heredity is represented in healthy or unhealthy lives regardless of their genetic type. Thus, the genetic background had a positive effect to determine the life quality from person to person, healthy or unhealthy. Environment is one of the important elements which affect human development where environment includes physical factors and social factors and some other elements which affect the human body physiologically, such as water, air, weather, and nutrition (Howely et al., 2007). “Evidence has been accumulating which indicates that humans and domestic and wildlife species have suffered adverse health consequences from exposure to environmental chemicals that interact with the endocrine system where it is known that the normal functions of all organ systems are regulated by endocrine factors. Small disturbances in endocrine function, especially during certain stages of the life cycle such as development, pregnancy, and lactation, can lead to profound and lasting effects. with decreases in the quantity of sperm production in humans over the last four decades and reported increases in incidences of certain cancers (breast, prostate, testicular) that may have an endocrine related basis have led to speculation about environmental etiologies” (Kavlock, 1996).

Another paramount aspect for maintaining health in humans is being sufficiently physically active. There is a difference between countries in the whole world in participating in physical activities. In the poorer countries, people don’t have enough time for physical activities because they must, for example, work in shifts, or work 2 or more jobs daily over a prolonged period to provide the optimal life for their families. They therefore do not think about any other factor until they have fulfilled these demands (US Department of Health and Human Services, 1996).

Individual interests mean the different opinions and aspects between men, women, boys and girls. Every person has his or her own interests. For example there are some people interested in reading or in watching television and other people are interested in physical activities. There is also a different mind-set between people in the selection of physical activities (US Department of Health and Human Services, 1996).

In the Surgeon Report on Physical Activity and Health, the result shows that physical activities delays the increase of health problems where it lowers the risk of increasing back pain, chronic lung diseases, diabetes, obesity and so many other diseases;

such as coronary heart beside developing the mental health (US Department of Health and Human Services, 1996).

Pelclová et al. (2010) conducted in a longitudinal study with the aim to monitor the pedometer-assess physical activity over a school-year for two groups of Czech high school pupils by using the pedometers. The first group participated in regular organised after-school physical activity and the second group did not participate in regular after school physical activity (ASPA) in with a sample size of 120 pupils. Those pupils who participate in the after school physical activity programme recorded significantly higher number of steps/day (18.008 ± 8.316) than the non after school physical activity participants (14,306 ± 6658).

The results also showed that there was a significant recorded average variability in steps completed on each day of the week in after school physical activity ($F = 20.25$, $p < 0.0001$) and non-ASPA pupils ($F = 25.02$, $p < 0.0001$). Over different months the results showed there were significant differences in the steps achieved per day in non after school physical activity pupils ($F = 7.67$, $p < 0.0001$).

Al Ansari et al, (2011), introduced in a cross sectional study with a sample of 3706 subjects and intended to determine the relation or the federation between depression and physical activity in university students (male and female) and to study the relationship between physical activity and depressive symptomatology through the role of body image perception As a potential effect modifier, only 12.4% of the subjects of students completed the ACSM and AHA's recommended guidelines, whereas 33.1% achieved the recommended levels of acute physical activity.

Al Ansari and Elashker (2011) refer to results from a quantitative study with 160 subjects from the secondary school in Egypt with the aim to determine, the relationships between health parameters in adolescent school students in Egypt and physical activity programme for description, the range of anthropometric and physiological parameters, and Egyptian secondary school students as subjects. Moreover, to discover the correlation between the physiological parameters and intervention physical activity. There were no significant differences between the intervention physical activity group and control groups through the physiological and anthropometric parameters at the baseline.

After three months the intervention physical activity group of boys and girls recorded a significant decrease in all anthropometric and physiological parameter stages, and a decrease of body fat percentage in girls. The control students in group, showed negative changes in all physiological and anthropometric parameters and significantly in BMI in boys and diastolic blood pressure and BMI in girls (Al Ansari et al., 2010).

Sigmund (2012) showed in a study aimed to estimate the influence of a school-based two-year; that the PA intervention decreasing obesity and overweight levels in 6 to 9 years old children over the course of the first to the third primary school years with 84 girls and 92 boys participating in the study.

One year after the start of the physical activity intervention, in the children involved, risk of less than three times for being overweight or obese than in the control children was found ($p < 0.005$), and these risks steadily decreased with the duration of the intervention.

Figure 2 shows the optimal weekly physical activity presented in lifestyle and daily activites, active and aerobic plays, sports and recreation, stretching and muscle building, according to physical activity pyramid modified after whaley (2007).

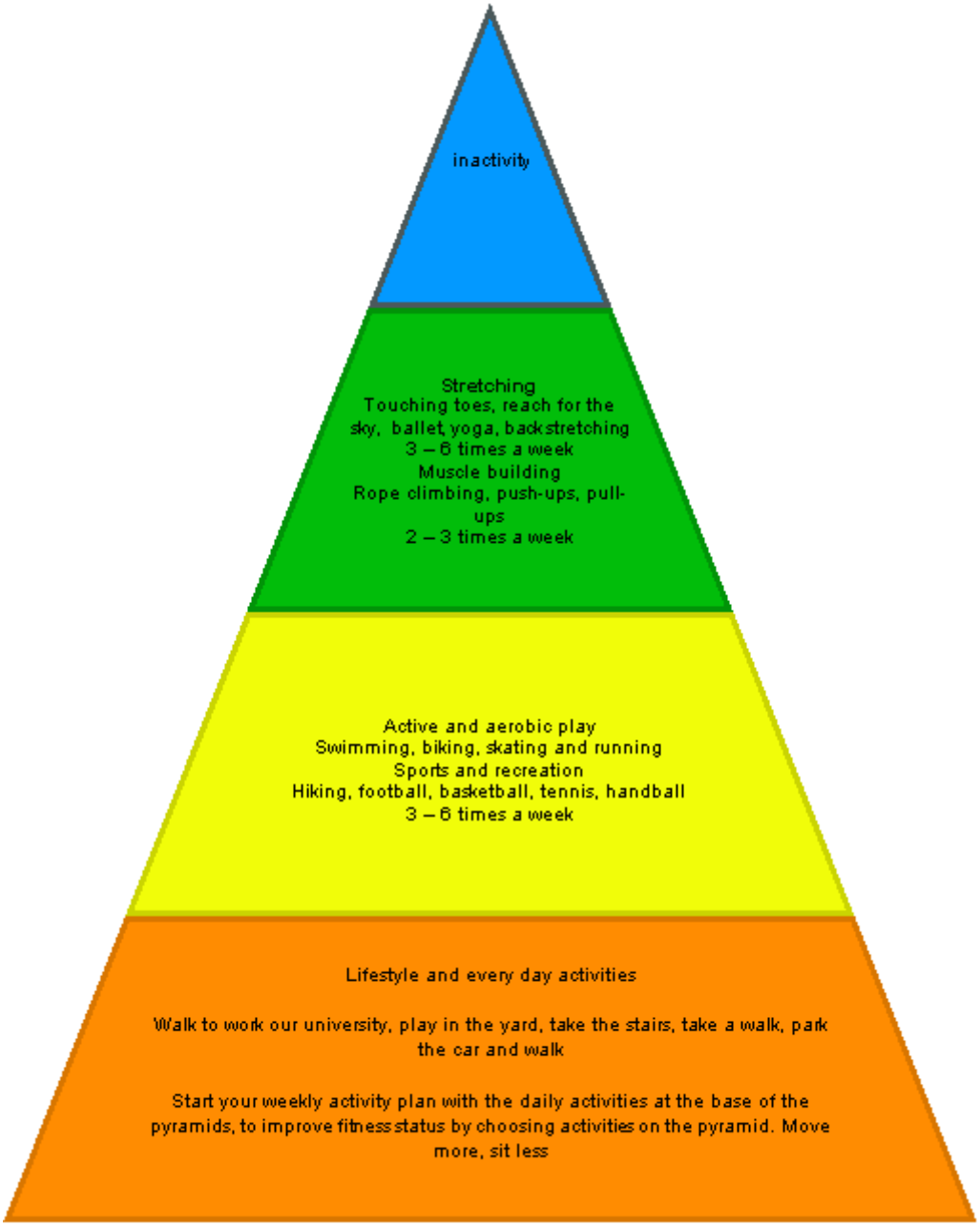

Figure 2: The physical activity pyramid (modified after Whaley, 2007)

2.2 Physical inactivity: computer and TV habits

The use of media from TV, computer and internet has become one of the most important things in our daily life because of its contents in all fields. However, at the same time it could be a reason for increasing aggression and aggressive behaviour between the people of different ages and gender. Mark (2005) state that in the mid-1980s; researchers already indicated that television viewing correlated to childhood obesity a result that has been confirmed by several other researchers.

Since there is also a constant argument that television viewing in children and adolescents is related to several other health and social problems, including violence and aggressive behaviour, physical inactivity, initiation of early sexual behaviours, body self-image issues, and drugs and alcohols use and abuse. 50 percent of the different sex and age groups recorded from 2.29 h to 2.71 h per day for television viewing, 1.00 h to 1.57 h per day for computer use, and 3.71 h to 4.71 h per day for total screen time. In a different representative survey of 8- to 18-year-old American children conducted in 1998/1999, it was recorded that boys and girls spend 5.8 h and 4.6 h of daily screen time respectively. The percentage of girls (41%) who watched 2 h or less television per day was higher than boys (34%). For the use of computers 72% of girls and 65% of boys spend 2 h or less per day and only 18% of girls and 14% of boys spend less total screen time (TV and computer) (Mark et al., 2006).

Regarding sleeping behaviour and its relation to television viewing, the parents were asked. In a study with 495 children between the ages of 4 and 10 years parents about presence of a television set in the child's bedroom and television viewing habits they found that these related with sleep disturbance and disorder, and if this behaviour stayed with children for a long time it may take years of psychological rehabilitation. There is another study that showed that computer use is related with sleeping disturbances, and yet another study showed that the sleep disorder or a partly sleeping or sleeping for a short duration is related with ownership of the mobile phones (Bulck et al., 2004).

Television usage is not the only reason for sleeping problems and disorders. There is another factor that plays an important role in the daily lives of the young people; that is the media through several entertainment channels such as internet and playing games which is related negatively to sleep aspects. It leads to the irregular use of leisure time which includes the participation in sports and other physical activity. Other studies found that reduced time in bed during the week leads to compensative behaviour during the weekend (Bulck et al., 2004).

In the age group eight- to eighteen-year-olds, more time was spent with media than in any other activity, except sleeping; where they spent between 7.5 to 9 hours in seven days a week. The viewing of TV and the usage of media with all its branches introduces more subjects on families, peers, relationships, gender roles, sex, violence, food, values, clothes, and a large numbers of other topics (Rideout, 2010).

Several years ago, it was recorded that young people spent 6.5 hours of viewing TV or using other types of media per day, these levels of using media has increased today and has reached 7.5 hours per day, including weekends. 51 minutes is spent on video games and computer. Listening to music and TV viewing was about one hour and 15 min. Young people spent more time on media than reading books which was recorded as being 38 to 43 min. per day. The mobile phones and online developments have affected the lives of the majority youth all over the world. For the last several years, the amount of 8- to 18-years olds who own their own mobile phone has increased from about four in ten (39%) to two-third (66%) of youngster (Rideout, 2010).

The young people spent the majority of their time viewing TV with a total mean of 3.51 hours per day in 2004, with a computer usage, amongst the young people (aged from 8 to 18 years old) of approximately 1.5 in this age group. Using the computer outside the school increased to 30 min. compared with the last few years (Rideout, 2010). Television viewing is the most popular undertaking for young people in industrialised countries and for many the most popular leisure time activity.

Researches indicate that many people are well over two hours per day of total screen time in front of the television alone (Pearson et al., 2011). Oblinger refers to the usage of media generally at the age of 6 in daily life at 40 min. compared to and two hours a day for playing outside. About 48% of children use computers, whereas 27% from age 4-6 years old use a computer daily and 39% use a computer several times a week. At the age of 21 the mean hours per person playing video games is 10.000 hours / year and that of using internet to write e-mails is 200.000 and talking on the mobile phones 20.000 and unfortunately less than 5.000 hours are spent on reading. Oblinger (2005) showed that 69% play games when they are in primary school and 77% played games at high school and 60% regularly play games at college.

The use of media has risen accordingly; where 6.20 hours are spent on viewing television and 8:30 spent using mobile phones or e-mails and that for using computer were only one hour. 26% of leisure activities are spent with media and a mean of 43 min. spent on reading.

2.2.1 Health effects of physical inactivity and using media

The physically inactive people are the most vulnerable to harmful changes in fluid and cardiovascular responses, and it negatively affects the maximal aerobic power. Physical inactivity leads to muscle atrophy and weakens the bones and joints. Physical inactivity is related to digestive problems and a reduced metabolism. It is a key factor for obesity and problems with blood pressure, a cause of high blood cholesterol which sometimes leads to thrombosis in the blood vessels and the heart. From the psychological point of view it is a factor for causing depression and concentration deficits (Astrand, 2003).

Long time spent watching television affects the somatic and mental health of a children and adolescents. Televisions viewing for many hours have negative effects on sleep, attention, aggression, sexual behaviour, substance abuse, disordered eating, academic difficulty unhealthy eating and overweightness. Like, children who watch television for a long time are associated with health risk factors and heart diseases (e.g. high BMI, poor cardiorespiratory fitness) in adulthood (Pearson N. et al., 2011).

Viewing violence on television at an early age, between 6 to 11 years old for example, has negative effects on human behaviour in general. Later on the behaviour will be more aggressive and is evident of the effects of low IQ. Television is one of the most important possibilities for spending leisure time. Since 1970 where television viewing has taken a majority of leisure time compared for example to physical activity, and it results in weak and poorer diets (Kaur et al., 2003) (Atherton et al., 2006).

While watching television few calories are used, and the metabolic rate is therefore decreases compared to physical activity (Tucker et al., 1991).Television viewing reduces time for leisure physical activity and a decrease in the quantity and quality of food or meals is observed. Thus, this may have an effect on BMI. As a result of the prolonged time of television viewing, several studies showed a significant relationship with overweight or obesity cases (Robinson, 1998).

Another study found that a high average BMI is related to more than two hours of television viewing per day and related to higher energy ingestion from light meals like snacks or dinner, than one hour of viewing television (Bowman et al., 2006). An Australian study shows that the physical activity was negatively related with the BMI and obesity in both genders; boys and girls and positively associated with watching television for boys and weak effect for girls (Bowman et al., 2006).

According to another study in 1998, television viewing is related to the prevalence of fatness between children and adolescents (Burke et al., 2006). The adult males who view television for more than three hours a day had twice the chance of being overweight than those who watched less than one hour per day.

The BMI in adults who watch television a minimum of an hour were higher than the adults who watched television for less than one hour. About the usage of computer, findings were observed that the BMI for adults who spend a minimum of one hour on the computer were more than who use the computer for less than an hour. The effect of viewing television is higher in males than in females (Doh et al., 2011).

The researchers discovered that the increase in viewing violent content on television, movies, videogames, and music increases the prospect of aggressive and violent behaviour. Some elements can also affect the levels of media violence which affect aggressive behaviour (such as determination with aggressive characters) social environments (parental affects), and media content (attractiveness of the aggressive personalities), but there are some contradictions in the findings of research (Anderson et al., 2003).

Body mass index in children and adolescents is associated with sedentary behaviours; viewing television, videos and playing video games. Several studies show that there is no relationship between physical activity levels and overweight in adolescents and children but physical activity is a significantly element of effective obesity treatments. Physical activity has been inconsistent across studies related with sedentary behaviours. Some studies have shown that the effective weight-loss strategy for youth, independent of changes in physical activity levels can be a reason for reducing time spent in sedentary behaviours. Sedentary behaviours, particularly TV viewing and playing computer games, are likely independent risk factors for children's overweight status (Norman et al., 2005).

The effect on overweight and energy balance is probably the same from TV viewing. One study of a big sample of seventh-graders found that increasing depressive symptoms and lower perceived academic rank were related with more sedentary behaviour for boys and girls. A study of university students found that psychosocial associated with physical activity were weak in comparison to TV viewing, suggesting that sedentary-specific psychological variables are needed. Physical activity is related to sedentary behaviours and environmental factors have different determinants (Norman et al., 2005).

Energy expenditure (less time being physically active) and energy intake (overeating while watching TV and exposure to commercials promoting less-than-healthy foods) both energy are affected with TV viewing. The time spent on television viewing and video games is the same between boys and girls. Although there is no difference, boys recorded spending more time playing computer games than girls, whereas girls spent more time sitting and listening to music and talking on the telephone than boys (Norman et al., 2005).

2.3 Health status

Patrick and Erickson refer to the health definition of the WHO which is “A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (1984), but Patrick and Erickson point out that this definition does not include the physiological phenomena, the habitual of health in the future, or the means for determining which states of well-being are more healthy or desirable than others (Hernandez L. M., 1999). The WHO’s definition include most of the habitual meanings given to health status, including a definition of health states or the prospect of movement to future states based on all the evidence.

The level of health of the individual group or population as subjectivity assessed by the individual takes more objective measures. Where the new threats to health and learning coined social morbidities, stream from behaviour and social environment are generally viewed to be preventable. For example the leading cause of the death in childhood, unintentional injury, is also one of the most preventable dangers to health (Bender, 1997).

2.3.1 Health status batteries, index and instrument

Patrick and Erickson defined health status batteries as a collection of different health status and quality of life measures that are recorded independently and reported as individual records or scores. They indicates that the health status index is an aggregation of 2 or more domains of health related quality of life into a single number that purports to introduce the health of either an individual or group of individuals.

The concept of the developing a health status index come through the desire to have an overall measure of health much as the gross national product which gives a summary of the economic and political status of a nation. Health status instrument is the constellation of questionnaires, interview schedules, administration procedures, and recording instruction for a measure of health-related quality of life (Patrick et al., 1993).

2.3.2 Health status of adolescents and young adults

More that 2.6 million young people aged 10 to 24 die each year world wide. A much greater number of young people suffer from illnesses which hinder their ability to grow and develop to their full potential. About two-thirds of deaths cases and one-third of the total disease burden in adults are associated with behaviours such as tobacco use where there is approximately 150 million young people use tobacco, a lack of physical activity, unprotected sex or exposure to violence, which began in their youth. There is another health cases that affects young people such as **malnutrition** where in both low – and high income countries the overweight and obesity are increasing among young people, **mental health** where about 20% of adolescents will be facing a mental health problems the problems is depression or anxiety and **alcohol abuse** where about 14% of adolescent girls and 18% of boys aged 13–15 years in low- and middle-income countries are reported to use alcohol (WHO, 2011).

There are numerous risk factors in adulthood for people like drugs, alcohol, tobacco, improper diet, lack of physical activity and safety concerns which are moderated by several factors like formal and informal support that a person can obtain. Preventable problems for this phase of life are detailed in the following overview (Bender et al., 1997).

Over the last decade, the percentage of teens completing high school has decreased. Hispanic teenagers are less likely to complete high school on time than either African American or white teens. There is a three times greater likely hood of dropping out of school for students from poor families as opposed to affluent families (Bender et al., 1997).

A large percentage of teens have no productive role in society in that they are not in school, nor the military, nor the labour force, nor are they homemakers. The three most preventable health problems are injuries, violence and adoption of unhealthy lifestyles. The leading causes of death are injuries, homicide, suicide, cancer, and heart disease. Unintentional injuries account for about 50 percent of all deaths, with three- quarters of these being motor vehicle accidents and one-half of those involving alcohol (Bender et al., 1997).

Suicide is the second leading cause of death among white males in U.S.A 15 to 25 years of age and the rate is increasing. The use of tobacco products, particularly snuff and chewing tobacco, is on the rise. The juvenile-crime arrest rate has increased dramatically over the last ten years. The most striking change in health status for 15 to 24 years old are compared to children is the escalation of violence. While the roots for such behaviour are no doubt established early on another very important issue is the increasing percentage of teenagers who fail to finish high school (Bender et al., 1997).

2.3.3 Health behaviour

In the 1978 and 1980 there was a revolution in the way people thought about health. As indicated in the unanimous acceptance of the Alma Ata Declaration of “Health for all by the year 2000 “(WHO,1978) and in the “Ottawa Charter 8 WHO,1988) there has been a keeping away from curing disease once it has occurred to the prevention of disease and even more fundamentally to the promotion of health. There was seen a possibility of guiding the development of healthy behaviours or changing unhealthy ones by or through public education, mass communication, and behaviour modification

In the analysis, improvement, and control of social and environmental conditions there was seen a way to prevent some major health problems. Medical technology has remained an important element in health, both in prevention and cure, but it is now a matter of “appropriate technology” which the local population can understand, use, and sustain the technology provided to them (Berry, 1992).

During this period not only was the approach to attaining health redefined, the actual definition of health was extended. In the Alma Ata Declaration health was defined as a “State of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. At the same time health was viewed as a prerequisite for human development, both individual and national and was construed as the responsibility of everyone, not just as a professional responsibility of medical specialists (Berry, 1992).

In a cross sectional study Al Ansari (2010) aimed to determine the association between health behaviour and subjective health status, health awareness and three educational accomplishment outcomes. With 380 subjects (195 males and 185 females) were included as a sample. After filling in a wellbeing questionnaire the findings showed in that in the general health and health awareness and health complaints axis the females were twice as more favourable to have excellent health in the questionnaire while males were about twice more favourable to feel that their health was fair.

In another study Al Ansari aimed to assess a range of health behaviors and lifestyle characteristics of 3.706 undergraduate students from seven universities in England, Wales and Northern Ireland, and compared the variation in these parameters between males and females. The participating universities showed that females generally recorded lower use of tobacco, illicit substances and alcohol and consumed more fruits and vegetables; male students had a higher level of physical activity, consumed fewer sweets and had more restful sleep (El Ansari et al., 2011).

2.4 Health complaints

In a study of health complaints conducted on 11, 13 and 15-year-old adolescents from Finland, Norway, Poland and Scotland with a total sample of 20.324 Haugland, (2001) defined Health complaints as an abnormal symptom that happened in the human body by the individual, with or without a defined diagnosis. The study showed that a large number of students reported a high level of symptoms (headaches, abdominal pain, backache, feeling low, irritability, nervousness, sleeping difficulties and dizziness). The scoring of most symptoms ascended with age. In this study girls scored more symptoms than boys and the gender or sex differences also ascended with age. The conclusion showed that this study indicates that students report a high level of subjective health complaints already at the age of 11 years.

In Finland, adolescents had more health problems and complaints in the late 1990s than those earlier (Vikat et al., 2000). This development is also influenced by the increase in health care, such as good drug use, in many countries (Karvonen et al., 2005). The following are hypotheses related to the processes that may lead to the deterioration of adolescents' perceived health.

The first hypothesis can be pointed out as the 'fragmentation of parenting' hypothesis. It is supported by studies suggesting that the changes pertinent to young people's well-being and psychosocial health has taken place in the sequence family performance and interaction as well as in the more complex patterns of transition from adolescence to adulthood (Karvonen et al., 2005). Another hypothesis; the educational requests hypothesis shows changes in young people's psychosocial environment outside the direct family context, especially in the education field. A modern Norwegian study found that 40% of differences in health complaints between school classes could be formed by the common psychosocial environment (Karvonen et al., 2005).

In a study for by Eriksen (1997) conducted in 1993 including 2.030 men and 2.016 women above 15 years of age in Denmark, Finland, Norway, and Sweden, a variety of individual illnesses with few or no goal results have appeared at regular breaks as epidemics and diseases in north European society. Patients diagnosed with these illnesses complain of muscle pain, tiredness, depression, fatigue, headaches, sleep disturbances, concentration problems, memory lapses, flu-like symptoms and 'allergies. Muscle pain and other kind of subjective health complaints without verifiable physical disease are responsible for as much as 50% of long-term sickness reparation and lasting disability in Norway.

The prevalence of subjectively recorded health complaints was significantly higher in women than in men, independent of severity. Women reported more health complaints and problems than men. Women were almost double as likely as men to complain of substantial headache, migraine, depressive mood, tiredness, neck pain and arm/shoulder pain, and 50-66% more prospect to complaints (Eriksen H. et al., 1997).

Ihlebæk showed In this cross-sectional study, n = 1.240 individuals (aged 15-84 years) from the normal population in Norway Shows that in Scandinavia over the last ten years, there has been a general rise in the prevalence of sickness leave and in particular days of sick leave and disability pensions due to back pain have increased tremendously. The same trend is reported from the UK where both outpatient attendances for back pain and number of days of incapacity due to back pain have increased (Ihlebæk et al., 2002).

2.5 Public health and physical education

For several years public health has shared a great part in physical education, where physical education has been investigated, by several scientific publications and professional organisations and authors, all the statements from the scientific publications and professional organisations and authors show the same results that the school's physical education programme can better contribute to public health through: - producing frequent exposure to entertainment and enhance appropriate physical activity, - and introduce students to a life of regular physical activity, through increasing the proportion of the nation public and private school that require daily physical education for all students and increasing at least 50% the percentage of adolescent who share in daily school physical activity and who spend 50% of school physical education class time being physical active (Trost, 2006).

There are some recommendations directly related to school's physical education programmes: - i.e. to provide extensive daily physical education programmes for students in school and universities; to demand that professionals like teachers of physical education take responsibility for teaching physical education to the students; to call for physical education instruction and programmes which suit the needs and interests of all students in the various class levels; to produce programmes and consecutive physical education curricula for the students to enhance entertainment and lifelong physical activity (Trost, 2006).

Other points are that physical education curricula are consistent with the national standards for physical education or to share active learning methods in order to promote the enjoyable participation in physical education classes. Furthermore, enhancing the students' proficiency and confidence in motor and behavioural skills

will increase their compliance to physical activity. Enhancing the substantial proportion of each student's recommended weekly amount of physical education classes will promote health (Trost, 2006).

2.6 The physiology of stress

Stress is a mandatory aspect of life it refers to what happens when an organism fails to respond appropriately to threats. Some stress can be necessary where the pressure it exerts can be an incentive to accomplish important goals, on the contrary it can cause chronic, harmful levels, and deleterious consequences from compromised immune function, to weight gain, to developmental impairment. The intensity of the stress response is adjusted largely by glucocorticoids where the stress hormone cortisol which is the primary hormone responsible for the stress response is a glucocorticoid hormone synthesized from cholesterol by enzymes of the cytochrome P450 family in the zona fasciculata, the middle area of the adrenal cortex. Stress response involves a complex of signalling pathways among neurons and somatic cell. Stress affects the human body through 3 basic elements corticotropin-releasing hormone (CRH), arginine-vassopressin (AVP) and hypothalamic-pituitary-adrenal (HPA) axis, where CRH is transported to the anterior pituitary, where it stimulates the secretion of corticotrophin. Corticotrophin leads to an increased production of corticosteroids including cortisol, vasopressin, a small hormone molecule, increases reabsorption of water by the kidneys and induces vasoconstriction, the contraction of blood vessels, thereby raising blood pressure. Together, CRH and vasopressin activate the hypothalamic-pituitary-adrenal (HPA) axis. The HPA axis comprises the system of feedback interactions among the hypothalamus, pituitary gland, and adrenal glands (Randall, 2010).

2.6.1 The affects of stress on general health

During the increaseing of stress, cortisol molecule repress the immune system and inflammatory pathways, rendering the body more susceptible to disease, it also contribute in increasing weight gain, hyperhydrosis, and hypercalcemia, cardiovascular and decreased thyroid function and the ability to overcome with vaccinations beside impaired cognition (Randall M., 2010).

In a study carried out on 80 subjects Watson showed correlation between perceived stress and level of physical complaints were due to individual differences in negative affect (Watson, 1988), in responding to stress a person's heart rate, respiratory rate, and blood pressure are increasing, on the contrary and at the same time, blood flow to the skin, digestive system, and kidneys decreases. Sweating increases during stressful situations, the chemical reactions happening in the body in response to stress generate a lot of body heat. “The pupils of a person's eyes dilate, or large, as response to stress. Stored glycogen is released of stored platelets and clotting factors, in a stress reaction large numbers of platelets, which are stored in the marrow of bones, are sent out into the circulating blood” (Bickerstaff, 2007).

There is another type of stress named **Oxidative stress** is a relatively new term in biology that was first introduced by Sies in 1991, it was defined as “a disturbance in the prooxidant-antioxidant balance in favour of the former, leading to potential damage”, it can grow for many reasons, including consumption of alcohol, medications, trauma, cold, air pollutants, toxins, and radiation and has a several harmful effects on human body such as cardiovascular morbidity, decreased lung function, increased hospital admissions, mortality, where human exposure chamber studies of specific pollutants have shown that short term exposure leads to an acute inflammatory effect on normal human airways in a small (10–20%) proportion of healthy individuals (Kelly, 2003).

2.8 Nutrition

Nutrition is the process by which living organisms obtain food and use it for growth, metabolism and repair, the stages of nutrition include ingestion, digestion, absorption, transport, assimilation, and excretion. Nutrition is very important for body metabolism where it fills a need and ingestion of materials necessary of body metabolism. These materials are energy content and energy releasing and body building materials. The daily food absorption in stomach is specified by individual needs to keep the functional effectiveness of the cells and cells system and disbursement according to physical activity (Beyer, 1987).

In another definition Jeukendrup defined nutrition as the processes of metabolism, ingestion, digestion, absorption, of food and the following absorption of nutrient materials into the tissue (Jeukendrup et al., 2004).

For growth and development, muscle, soft tissues and organs needs a large amount of protein aside with calcium, phosphorus for building blocks of the skeleton. The human body needs carbohydrates, fats and also protein to supply daily energy but protein contribution to energy expenditure is usually limited. Nutrients such as vitamins, minerals are used in metabolism regulation processes. Macronutrients (fat, protein, carbohydrate) are nutrients which are more than a few grams in daily intake. Micronutrients (vitamins, minerals, trace elements) are nutrients which are needed in only small amounts (less than 1g / day) (table 1) (Jeukendrup et al., 2004).

Table1: Optimal food intake (Cuthbertson, 1989)

Life essentials:	Common intake	Dangerous or inadvisable intake	
Oxygen	0.4 g/min	<0.2	>1.6
Water	1-4 Liters	<1	>10 Liters
Energy	2000 kcal/day	<1000	>4000 kcal
Protein	40-100 g/day	< 25	
Sodium (Na +)	2-7 g/day	<70 g/day	>16 g/day
potassium (K +)	2-6 g/day	<100 g/day	>18 g/day
chloride ions (CI-)	3-12 g/day	<100 g/day	>25 g/day
Calcium (Ca)	300-1500 mg/day	<400 mg/day <400 mg/day	
phosphorus (P)	1000-2000 mg/day		
magnesium (Mg)	200-300 mg/day	<250 mg/day	>5000 mg/day
Fat-Soluble Vitamins:			
A	0.5-2.0 mg/day	<0.5 mg/day	>25 mg/day
D	2-20 mg/day	<2.5 mg/day	>25 mg/day
E	3-20 mg/day	<3 mg/day	>1 mg/day
K	0.3-0.5 mg/day		
Water-Soluble Vitamins:			
scorbic acid	10-100 mg/day	<10	>1
Thiamine	0.4-2 mg/day	<0.3 <0.5	
Riboflavin	1-2 mg/day		
Niacin a	15-40 mg/day	<10	>300
Vitamin B_6	1-2 mg/day	<1	>50
Pantothenic acid	10-20 mg/day	<4	>10
Folic acid	0.1-2 mg/day	<0.1	>10
Vitamin B_{12}	5-15 mg/day	<1	
Biotin	50-300 mg/day		

2.8.1 Importance of eating fruits and vegetables

The high consumption of fruits and vegetables is confirmed to be healthy for human body. The increasing consumption of fruits and vegetables is very important for reducing or decreasing the CVD and cancer diseases whereas the relative risks of cancer is at a high value with low consumption of fruits and vegetables. If people raise the consumption of fruits and vegetables on mean by 150 g a day the esophageal cancer incidents will be reduced by 46% (Veer, 1999).

The increase in the consumption of fruits and vegetables of 150 g on average a day will ultimately reduce cancer incidents by 19%. Increasing consumption of fruits and vegetables in the prevention of major types of cancer and CVD, assessment that 6–28% of cancer incidence and 6–22% of CVD mortality may be preventable if the population adheres to the national properties of fruits and vegetables in the amounts and varieties as prepared by and consumed in the general population (Veer, 1999). People with low fruit and vegetable consumption have double the risk of cancer compared with those with high consumption, even after control for potentially confounding factors.

A clear evidence of a protective effect of fruit and vegetable intake was investigated in cancers of the pancreas and stomach, as well as in colorectal and bladder cancers. For cancers of the cervix, ovary, and endometrial layer, a significant protective effect was shown in 11 of the 13 studies, and for breast cancer a protective effect was found to be strong and consistent in a meta-analysis (Block, 1992). There is no effect of more than 300 g fruit and vegetables consumption, up till 600 g, or the similar amount of vitamins and minerals which are supplied as a supplement for 24 days on the strand, breaks level and on the oxidative DNA base damage, or H_2O_2 sensitivity in mononuclear blood cells.

Healthy eating style in midlife which used Fruit, vegetables, whole-meal bread, low-fat dairy face lower risks of incident; verified nonfatal myocardial infarction and coronary death and of diabetes more than those following higher than average consumption of meat and sausages, white bread, fries, and full-cream milk and average consumption of wine and beer and, very low consumption of fruit and vegetables (Brunner et. al., 2008). Consumption of fruits and vegetables, especially

green leafy vegetables and vitamin C–rich fruits and vegetables, seem to have a preventive effect against coronary heart disease (Joshipura, 2001).

The negative effects on health from eating red meat, sausage products, chicken, eggs, chips, sweets, fish, milk products, fast food and canned products are seen: Higher consumption of dietary protein has been inversely associated with blood pressure in several observational studies and animal experiments. The study into coronary artery risk development in young adults found that higher protein intake results in lower systolic and diastolic blood pressure in people of various ethnicity in a 7 year follow-up. Positive association of coronary heart disease death rates with animal protein consumption is suggested by ecological studies (Hu, 2005).

The countries with a higher protein intake also have higher intakes of saturated fat, cholesterol and lower intake of fiber (Hu, 2005). For women in the highest category of animal-fat intake and the lowest quintile of energy-adjusted crude-fiber intake, the risk of colon cancer was further increased with beef, pork, or lamb consumed as a main dish; women who reported daily consumption had 2 and a 1/2 times the risk of those who reported eating such meals less than once a month.

Women who reported eating chicken without skin two or more times a week had half the risk of colon cancer of women who ate it less than once a month, higher consumption of red meat and fat from animal sources increases the incidence of colon cancer independently of total energy intake (Willett, 1990). Primary sources of saturated fat and cholesterol are high-protein animal products like meat, high-fat dairy and eggs. Risk of CHD may be increased because of regular intake of foods that are high in saturated fat and cholesterol, like red meat and eggs. This is further suggested by a positive relationship between saturated fat, cholesterol and CHD (Hu, 2005).

Red meat: As per the California Seventh-Day Adventists study, increased risk of fatal ischemic heart disease only in men was postulated to be related with higher consumption of beef. In another study conducted in Italy, an increased risk of myocardial infarction in women was associated with higher butter and meat consumption. In prospective studies a higher consumption of processed meat

consistently resulted in an increased risk for diabetes, reason being Hemet Iron, which is present in high amounts in red and processed meats (Shin, 2002).

Poultry and fish: Poultry and fish consumption have resulted in positive effects of reducing the risk of mortality due to coronary issues, which was confirmed from recent meta–analysis. Furthermore, increased fish consumption results in lower risk of ischemic stroke and reduces the risk of CHD significantly which was suggested by the recent data. These positive impacts on the health are due to the lower saturated fats and cholesterol present in fish and poultry items. (Shin, 2002).

Eggs: Moderate egg consumption i.e., up to one egg per day was suggested to not have a significant association with the risk of either stroke or CHD. These findings were produced by the *Nurses' Health Study and Health Professionals Follow-up Study*. However, the same study also showed that a significant increase in CHD risk, among diabetic patients, was due to consumption of even moderate quantity of eggs and cholesterol (Shin, 2002).

Dairy product: Studies suggest an insignificant impact of diary product consumption in the cause of premenopausal breast cancer. Moderate milk consumption showed a statically significant linear inverse association with premenopausal breast cancer. Calcium and vitamin D consumption was found to have no association with postmenopausal breast cancer risk, and moderate consumption of vitamin D was suggested to result in lower risk of premenopausal breast cancer (Shin, 2002).

2.9 Health reports

2.9.1 Egyptian health report for adults for some diseases

The major causes of adult morbidity and mortality in Egypt are diabetes and cardiovascular diseases. 7 % of the Egyptian population aged 20-79 years is affected by diabetes. World Health Organization refer that Egypt lost 21 years of productive life per 1,000 population as a result of premature mortality or disability due to heart disease. 4 % of women and 2 % of men from the study sample reported that they had diabetes, about 1 percent of both women and men discovered they had been told by a medical provider that they had had a heart attack (El-Zanaty, 2009).

According to the tobacco use report; women between the ages of 15-19, 0.3 % consume tobacco themselves and 56.2 % smoke passively through other household members. In the ages 20-29 0.6 % use tobacco products or smoking by themselves and 54.2 % through other household members.

Figure 3 shows that 30-39 0.7 % use tobacco products by themselves and 51.6 % from other household members. In the 40-49 years-old age group, 1.1 % by themselves and 57.6 % through other household members (El-Zanaty, 2009).

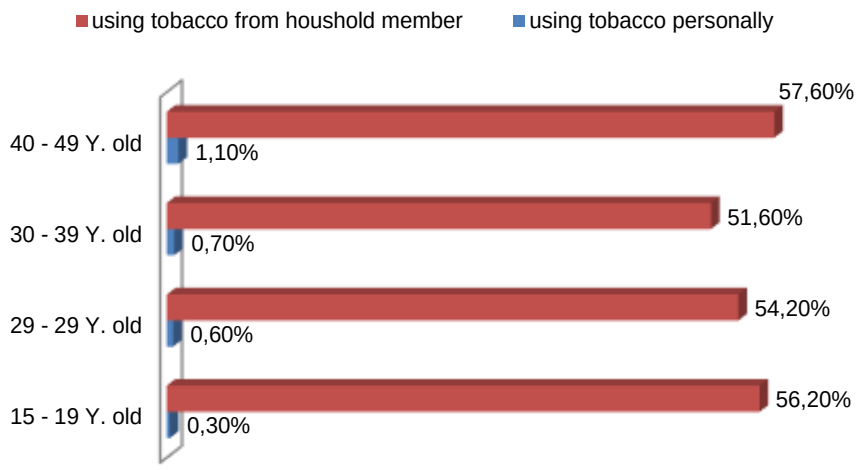

Figure 3: Percentage of Egyptian women using tobacco in different age groups (diagram modified after El-Zanaty, 2009)

In the males sample in the age group 15-19, 18.9 % are smoking or using tobacco products by themselves, 50.9 % from other household members. In ages 20-29 43.2% are smoking or using tobacco products and 41.9 % from other household members. Figure 4 presented that in ages 30-39 51.8 % use tobacco personally and 16.1 % from other family members. Among 40-49 year olds 55.4 % are smoking or using tobacco personally and 16.8 % from other persons. 13 % of women and 11 % of men were considered to be hypertensive from study sample, Hypertension levels for both gender increased fixedly with age. Women who used tobacco were much more likely than women who did not use tobacco to be hypertensive (22 percent and 13 percent, respectively) (El-Zanaty, 2009).

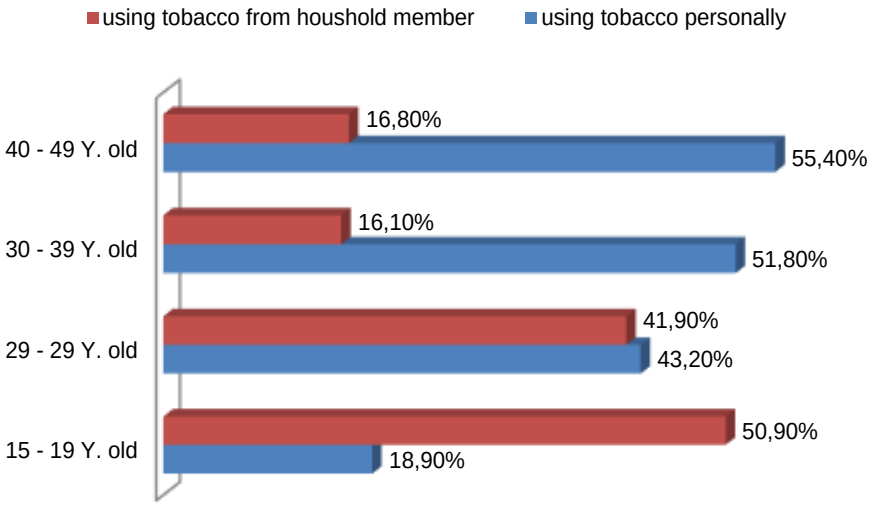

Figure 4: Percentage of Egyptian women using tobacco in different age groups (diagram modified after El-Zanaty F., 2009)

Among men, the hypertension rate was almost the same for those who used tobacco than forthose who did not (11 percent and 10 percent respectively). 32 % from female study sample were aware of hypertension but not treated, 14 % were aware and treated but not controlled, 27 % were aware with treated and controlled and 27 % were not aware and high. 21 % from the male study sample were aware of hypertension but not treated, 11% were aware and treated but not controlled, 15 % were aware, treated and controlled, 53 % were not aware and high (Ramadan, 2010).

Ibrahim M. M refers in a study conducted on 6733 people that the prevalence of hypertension in Egypt was 26.3% and increased progressively with age and it is more likely in women than men (26.9% for women, 25.7% for men), 37.5% of hypertensive individuals were aware that they had high blood pressure, 23.9% were being treated with antihypertensive medications, and 8.0% were under control (systolic pressure <140 mm Hg and diastolic pressure <90 mm Hg). The results are based on reports from a national likelihood survey of adults ≥25 years of age carried out in six Egyptian governorates (Ibrahim, 1995).

More than 50% of the people who have been reported to consume alcohol are of the age range from 18 to 24, and the majority of them are from middle class or lower class households (Ramadan, 2010).

Health Survey (EDHS) of 2008 has shown signs of obesity and overweight between married females aged 25-29 (66%) and between unmarried adolescents aged 10-19 (around 20%). Data from SYPE shows that young people are not concerned about this issue. About 75% of young females and 84% of young males believed that they had the right weight for their height. Socio-economic status correlates with the awareness about weight issues, with those in the highest wealth quintile having the highest level of awareness about their weight issues (Ramadan, 2010).

Obesity is higher among men than women. The increasing utilization of animal fat, carbohydrates and vegetable oil has resulted in an increase of daily dietary energy of about 1000 kcal per capita. The earlier consumption was about 2287 kcal per capita. More than half of all households consume more than 100% of their recommended daily allowance of energy (WHO, Cairo, 30 April − 2 May 2003).

2.9.2 German health report for adults in some diseases

In Germany it is estimated that about six million people suffer from diabetes. The International Diabetes Federation (IDF) estimates that by 2030 the number of people with diabetes will increase to 8 million, which corresponds to 13.5 %. (Deutsches Zentrum für Diabetesforschung, 2011). In another study Heidemann et al. (2009) did not observe an increasing prevalence of known diabetes in German adults in both genders for over 15 years.

There were indications of an increase in prevalence in some subgroups of women. Due to known risk factors–disease associations, diabetes prevalence was particularly elevated in subjects aged 50 years or older and in those with obesity, low physical activity or low education (Wolf-Maier et al., 2003).

Common occurrence of high blood pressure from above 30 to below 65 years age group was more than 50% in Germany. Among this population about 26% were taking treatment for their high blood pressure (Wolf-Maier et al., 2003).

48.6 % of the participants from a sample of 7,025 were sensitive to at least one allergen. Women compared to men were less allergic to any of the allergen. Almost 33% of the participants were sensitive to allergic agents, about 25% brought into contact with common food based allergic agents and almost 22% were sensitive to bee venoms. The occurrence of sensitivity increased from 29.8 to 33.6%, and was significantly higher in women (Haftenberger et al., 2013).

For both genders, the distribution of diagnosed depression and depressive symptoms is highest among 18- to 29-year-olds and decreases with age. In women, with increasing socioeconomic status (SES), occurance decrease (Busch et al., 2013). Kurg shows in study results that one third of adult claims to pay close attention to reaching a sufficient level of physical activity and one quarter participates in sports for at least 2 hours a week on a regular exercise, sports has increased compared to the previous “German National Health Interview and Examination Survey, 1998”.

Four out of every five adults do not achieve at least 2.5 hours a week of moderate-intensity physical activity (Krug et al, 2013). Mensink refers due to German Health Interview and Examination Survey for Adults DEGS1, that 67.1% of men and 53.0% of women are overweight. The prevalence of obesity, however, has risen substantially, especially among men: in The German National health Interview and Examination Survey (GNHIES 98), 18.9% of men and 22.5% of women were obese, in DEGS1; these figures were 23.3% and 23.9%, respectively. The increase in obesity occurred especially among young adults (Mensink, 2013).

Per day on average, men and women consume 2.4 and 3.1 portions of vegetables and fruits respectively, of which only 7% of men and 15% of women take the 5 portions of recommended vegetables and fruits amount and only 25% of men 39% of women utilize a minimum of 3 portions of vegetables and fruits per day. As compared to previous surveys the fruit intake has increased slightly (Mensink et al., 2013).

Almost 30% of 18 to 79 age group population smoke with smoker men 32.6% and smoker women 26.9%. About 10 and 6% of men and women population smoke minimum of 20 cigarettes per day. It is mostly common among young adults and lower social status people (Lampert et al., 2013).

Individuals of the 19-29 years age group are most common consumers of alcohol, with lower utilization for people aging more than 65 years. Drinking is less prevalent in women than men. Women are three times less likely to be heavy episodic drinkers than men (Hapke et al., 2013 (DEGS1).

3. Methods

In this chapter, the design of this study and different tests will be presented to show the steps which have been taken in the research procedures. The anthropometric and fitness tests will be discussed later in this chapter after the study design, samples, statistical processing and questionnaire.

3.1 Samples

Egyptian females from Menofia university (n= 168) had a mean height 163 cm, mean weight 60.19 kg and mean age 19 years old, while German females (n= 104) had a mean height 169.2 cm, mean weight 61.11 and mean age 20.5 years old. Egyptian males (n= 238) with mean height 176 cm, mean weight 72.66 kg and mean age 19 years old, while German males (n= 89) with mean height 180.5 cm, mean weight 74.6 kg and mean age 21 years old. Both students from Egypt and Germany have filled out the questionnaire. Furthermore, this study includes 163 sport science students from Chemnitz University of Technology from the total sample and 175 Egyptian sport science students from the total sample, who participated in the fitness tests.

3.2 Study Design

At the Chemnitz University of Technology this project was carried out for the first time as a comparative study between two countries including physiological measurements and/or fitness assessments. A fitness test and anthropometric data was recorded in October 2009 and from then till November, fitness tests and anthropometric data were recorded and carried out for the first time as a comparative study between sport students in Germany and in Egypt.

In this study the questionnaire was modified to be broader and more comprehensive to include some new questions about health problems, different stresses in life, the section on sports activity, nutrition, and use of motor transport, cycling and walking in daily life as well as television viewing and computer usage habits.

The plan of the physical fitness and health of sport students study is divided into two parts (see Fig. 5). The study has been carried out in Egypt and Germany. The student's health questionnaire firstly, was filled in by the sport science or physical education students in Germany and Egypt then they participate in anthropometric and fitness tests.

In October 2009 the sport science students of cut an average age of 21.6 years old in Chemnitz University of Technology participated in this study (two weeks). In November 2010 the second year (third and fourth term) sport science or physical education students had an average age 19.03 years old in Menofia University participated in this study (two weeks).

For the anthropometric tests the students in Germany and Egypt participated in measurements (Blood pressure and pulse, height and weight, skinfold and waist to hip) then after performing these tests they participated directly in eight fitness tests (Jump and reach, stand and reach, shoulder flexibility test, back extension, static pull-up, flamingo balance, sit up test and shuttle run test).

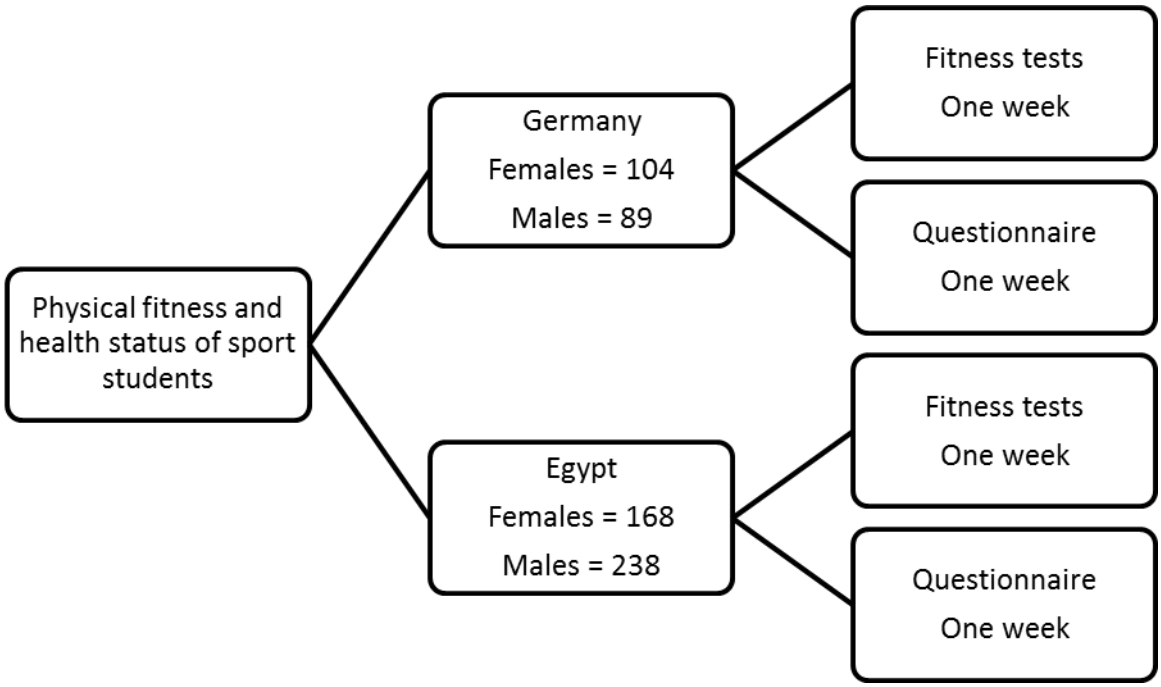

Figure 5: Study design

3.3 Material

In this study the students' health questionnaire was used**.** The anthropometric parameteres, physiological measurements and fitness were measured on the same day using various pieces of equipment. The data was recorded on a score sheet, this score sheet included a medical history questionnaire, body calliper measurements and fitness tests.

3.4 Questionnaire

The original questionnaire was developed by Walid Alansari (2009). The modified version which was used for this study can be found in the appendix and is divided into eight sections; the first section contains various questions about the general health. The second section presents the questions and discusses the health complaints, while the third section asks the questions, about the current outlook. The fourth section contains questions about the sport science student's nutrition and sport activity style, while the fifth section indicates the time spent on using PC and TV the questions in this section adapted from **television household questionnaire** and **making use of questionnaires** (Berman M. 1981).

The sixth section contains questions about smoking, drugs and alcohol consumption, the seventh asks about studying and study motivation. The last section consists of some personal questions.

In the health complaints section (question 7, 10a, 10b) the scoring values (table 2) have been identified and divided into groups to calculate the sum from the students answers (e.g. the point Difficulty breathing, and the point rapid heart rate / circulation problems / dizziness from question 7 has been added together to make a group) with the same method for (question 10a, 10b). In question 7 the items (stomach complaints/diarrhoea constipation heartburn) are summarized to (stomach complaints), (back pain/ or neck and shoulder pain) are summarized to (chronic pain). In question 10a (lack of practical relevence of the study/in general studies/ tests/assignments/presentations) are summarized to (problems during study), (anonymity at the university, isolation at the university, isolation in general) are summarized to (social isolation), (bad career prospects, workload in addition to studing, poor working conditions) are summarized to (work conditions), (problems with parents, problem with students colleges/ problem with friends/ other significant relationships) is summarised to (personal problems).

In the section of nutrition and physical activity, the values in the nutrition section were adapted from national health and nutrition examination survey: **food frequency questionnaire** quoting from (**cancer conical of Victoria**): That's where the expressions used in the food frequency questionnaire is identical to the terms used in the questionnaire which used in the research.

To calculate the score of the nutrition questions the mean value from the food frequency questionnaire notes will taken. These values were used in questionnaire questions: number 14, 15, and 41(tables 3, 4). In the physical activity question (Number 20). (Questions number 21, 22) The formulas from **International physical activity questionnaire** were used to determine the metabolic equivalent of the tasks:

- Moderate MET-minutes/week = 4.0 * moderate-intensity activity minutes * moderate days (for moderate activity). (Equation.1)
- Vigorous MET-minutes/week = 8.0 * vigorous-intensity activity minutes * vigorous-intensity days (for vigorous activity). (Equation.2)

The values which used in scoring questions 14, 15 and 41 are shown in the following tables 2, 3.

Table 2: Shows questions 7 (health complaints) section (4 boxes), 10a and (6 boxes) scoring.

Question 7	
Never	= 1
Rarley	= 2
More often	= 3
Very often	= 4
Question 10a	
Not at all	= 1
Sometimes	= 2
To some extent	= 3
Often	= 4
Strong	= 5
Very strong	= 7

Table 3: Question 14 scoring (eating fruits and vegetables) values where 1-2 portion = 1.5, 3-4 portion = 2.5, 5 or more portion = 5 (FFQ, Daily equivalent frequency) (Daly, 2011).

I do not eat fruits and vegetables	= 0
1-2	= 1.5
3-4	= 2.5
5 or more	= 4

Table 4: Question 15 (nutrition) scoring values (FFQ) (NHANES, 2008).

Several times a day	= 2
Daily	= 1
Several times in a week	= 0.64
1-4 in a month	= 0.08
Never	= 0

Table 5: Question 20 (Physical activity section) scoring values is due to mean value from the question options which were taken to calculate the metabolic equivalent of task, the values will be illustrated in the following tables (Barbosa N. et al, 2007)

<5	= 3
5-15	= 10
15-30	= 22.5
30-45	= 37.5
>45	= 82.5

Table 6: Shows question 41 (alcohol consumption) scoring values (NHANES, 2008).

Several times a day	= 4.66
1 Daily	= 1
Several times a week	= 0.5
1 time per week	= 0.21
Less than 1 time per week	= 0.106
Never	= 0

3.5 Anthropometric and physiological tests

The first step before performing the anthropometric and the fitness test for the students is to fill in the medical history sheet, the blood pressure and pulse were measured with a digital meter wrapped around the left arm with 2 or 3 cm over the elbow after filling the medical history sheet (Fig. 6). The blood pressure measurement was twice. If the blood pressure value systole was over 140 and the diastole was over 90, the tester had to repeat the measurement for the third time which was the final measurements. For the measurement of blood pressure and pulse, the digital meter BOSO MEDICUS UN (Bosch + Sohn GmbH & Co, Jungingen) was used, then the height and body weights were taken, for the body weight measurement, the electronic floor scale (SECA Company, Hamburg) with a resolution of 0.1 kg will be used.

Figure 6: Blood pressure and pulse measurement

Isolation rooms were used, e.g., one for girls and one for boys. The testers recorded the waist-hip measurement through (Wirth, 1997) method using tape measure of the company MENARINI (Fig. 7), and the waist measurement of two fingers (index and middle fingers) are used above the iliac crest.

Figure 7: Waist to hip measurement

The skin fold thickness was measured at the four measuring points (Durnin and Womersley 1974). The biceps brachii midway between the elbow and the acromion, the triceps brachii midway between olecranon and acromion, subscapular to the 45 ° fold below the angelus inferior of the scapula and supraliminal two fingers (index and middle fingers) and above the anterior superior iliac spine. The measurement was achieved according to the criteria of (Wirth, 1997) on the right side of the body.

The examiner Held the fold of skin with fingers using only a low pressure of about 1 cm away from the measuring point (Fig. 8). The Caliper was parallel to the fold of skin and positioned at right angles to the body surface and was held for 3-5 seconds. According to (Wirth, 1997), this time is not to be exceeded; otherwise the caliper may escape from the skin fold. For the skin fold thickness measurement, HARPENDEN-CALIPER apparatus was used, which is from the company Holtain. The instrument is calibrated to 0.1 mm.

The opening of branches can be read on a circular dial. The measurement was repeated on all four parts of the body twice. For calculating the body density, these equations were used:

Equation for males age 17-19 D = 1.1620 - (0.0630 X L) (Equation.3)

Equation for female D = 1.1549 - (0.0678 X L) (Equation.4)

Equation for males age 20-29 D = 1.1631 - (0.0632 X L) (Equation.5)

Equation for female D = 1.1599 - (0.0717 X L) (Equation.6)

(Durnin et al., 1974).

For calculating the body fat % density the equation Siri will be used:

Body Fat % = (495 / Body Density) – 450 (Equation.7)

(Siri, W. E., 1961).

Figure 8: Example of skin fold thickness measurement

The measuring point is measured by the investigator visually. For deviations greater than 0.2 mm, a fourth measurement was not made. The evaluation was done independently of the deviations from the average of three values.

3.6 Fitness tests

The fitness test was designed on the basis of two different well-known tests (e.g., Eurofit for adults and Japanese fitness test). The test is based on the experimental knowledge and the expert opinion in cooperation with the sport science institute of the Technical University of Chemnitz. The finding was used to enhance the test profile, which captures the current physical capacity of the subjects in the aspects of agility, flexibility, balance, strength and endurance. The objective was used to design a fitness test, which is temporally, materially and financially more economical.

In the summer of 2009, the sport students in the fifth term had performed these tests. It is important to note that there is no previous work has been done at Chemnitz University of tecnology and this is the first time that these tests were performed at here. The same tests were undertaken in 2009 for the second time for the first term sport students in the Technical University of Chemnitz and for the first time in Egypt 2010, the second year sport students (third and fourth term sport students) performed the same tests as the German students. The fitness test was explained as a field test under standard conditions in the sport hall at the Technical University of

Chemnitz. Following the same situation, and under the same conditions in Egypt in the sport hall at the physical education institute Menofia university.

3.6.1 Jump and reach test

This test was used for to measure the explosive strength of lower extremity and ability (Council of Europe, 1983).

Equipment required:

- Measuring tape or marked wall to take the exact height with complete extended raising hands.

- Chalk for marking wall or marked blackboard.

Description / procedure:

First of all, the subject stands facing the wall, so that the toes touched the wall with rising hands completely up to take the exact height from foot (the feet were not allowed to be lifted off the ground) to the last point till the middle finger using the measuring tape which fixed on the wall this process is called the standing reach, after recording the height from the tester, the subject use the chalk to mark his middle finger. Then the subject stands beside the marked blackboard which hangs on the wall or over the basketball board with the wide hip joint distance with parallel and flat feet on the ground (Council of Europe, 1983).

Swinging the arms forward and backward and at the same time bending the legs. The subject try to jump vertically with a maximum strength and with a completely extended arm as high as possible, to record the maximum height from the jump on the measuring blackboard (Fig. 9). At the end, the point of the fingertips is marked on the blackboard and recorded. Each student has three attempts (Council of Europe, 1983).

Scoring:

The scoring in this test is calculated by taking the measured distance, which the subject marked on the measured blackboard with his or her fingerprint. The best of the three attempts was taken to calculate the process in order to know the height of

the jump. The calculation process is as follows: The jump distance minus the height with complete extended arm. For example, if the best attempt was found to be 250cm and the height was 210cm, so that the jump height can be found as 40. Thus, the jump height is usually recorded as a distance score. The best attempt will be taken in the statistical process (Council of Europe, 1983).

Figure 9: Subject attempts jump during the jump and reach test.

3.6.2 Stand and Reach Test

This test is determine the flexibility of the spine and hamstring muscles (Council of Europe, 1983).

Equipment required:

To capture the motion, the trunk flexion meter equipment (company Takei, Japan) was used. The measuring ruler is provided with a scale from -20 to + 35.5 cm.

Description / procedure:

Firstly the subject would stand straight without shoes over the plate which was placed on the Swedish fixed seat, the toes were placed over the edge directly, and the measuring tape should be touched and placed between both the toes. The subject starts slowly with the upper body, bending it forward and pushing down the measuring tape with his or her finger (Fig. 10). In order to reach as far as possible,

the tester should watched that the subject did not bend his or her knees or arms and should also see that the test is performed completely and correctly. The subject had three attempts, in every attempt the subject should stay in the maximum stretching forward position with the upper body for three seconds (Council of Europe, 1983).

Scoring:

The score was recorded either to the nearest centimetres or the half inch as the distance reached by the hand. If the subject scored centimetres above zero, the tester records the result with a negative. On the other hand, if the results were shown to be below zero, the results scored with a positive, and if the attempt recorded zero, then the score was zero. The best attempt was taken in the statistical process (Council of Europe, 1983).

Figure 10: Stand and reach test performance.

3.6.3 Shoulder flexibility test

The shoulder flexibility test is used to measure the flexibility and mobility of the shoulder joint. However, this position is also a good flexibility exercise and is often used by swimmers and tennis players to improve flexibility for their sport (Williams L. et al, 2006).

Description / procedure:

To test the left shoulder flexibility, the subject stands straight with looking forward, and then the subject raises the right arm straight up overhead. The subject bends the right elbow and lets the right palm rest on the back of the neck and slides it down his back, between the shoulder blades. The subject tries to reach the left hand behind him so the back of the hand rests on the middle of the back, then the subject moves the right hand down and your left hand up to try to touch the fingers of both hands. With the same instructions the right shoulder flexibility process was tested (Fig. 11) (Williams L. et al, 2006).

Scoring:

If the subject reached the middle finger, for example, from the right hand over the middle finger of the left hand then, the tester measured the distance by measuring tape and the score is recorded with a positive and if the middle finger touch the other middle finger, the tester measures the distance by measuring tape the score recorded is zero. If the middle finger did not touch, the tester measures the distance between the two fingers and the scoring recorded are found to be negative. (Williams L. et al, 2006).

Figure 11: Shoulder flexibility test (exrx.net)

3.6.4 Back Extension Test

This test is to assess back strength (Heyward V. H., 2004) (Yaprak Y., 2013).

Equipment required:

In order to measure the force of the back extensor muscles, the BACK Strength Dynamometer (Japanese back extensor device, Company: Takei) was used (Heyward V. H., 2004) (Yaprak Y., 2013).

Description / procedure:

The subject stands on the dynamo meter plate with the feet and the shoulder width apart, straight with shoes. The legs are parallel with a wide hip joint and both toes are over the plate edge while looking forward, with straight shoulder, knee and with straight arms. Then, the subject holds the chain handle and bends forward (approximately a 30 ° angle) until the tester stop him / her. Then the tester adjusts and bends the chain with the equipment (Heyward V. H., 2004) (Yaprak Y., 2013).

Then, without bending the back or the knee, the subject attempts to pull the chain up slowly without convulsive or quick movements with the maximum strength and stop for 3-4 seconds to take the result (Fig. 12). Each subject had two attempts. The measurement is in kg. If the subject bended the back or knee, the attempt will be incorrect and the subject has to repeat this attempt (Heyward V. H., 2004) (Yaprak Y., 2013).

Scoring:

To read the results, the dynamometer was used. The best attempt will be taken in the statistical process (Heyward V. H., 2004) (Yaprak Y., 2013).

Figure 12: Back extension test performance

3.6.5 Static pull-up strength test

This test evaluate upper body endurance and strength (Council of Europe, 1983).

Equipment required:

- Stopwatch (digital stopwatch by BULK (Marburg)) Horizontal.

- Overhead bar, at an adequate height so that the participants can hang from with arms fully extended and feet not touching the floor.

Description / procedure:

Grip the bar overhead by underhand grip which implies palms facing to the body, whilst stretching the arms. The body is then raised till the chin rises more than the bar level and this position is held as long as the subject can (Fig. 13); if the chin begins to be lowered the subject stops the test. The test is without time limit (Council of Europe, 1983).

Scoring:

The total time will recorded by using the stop watch (council of Europe, 1983).

Figure 13: Static pull-up strength test.
.

3.6.6 Flamingo Balance Test

This total body balance test contains a part of the Eurofit Testing Battery. This test is to determine the ability to balance successfully on a single leg.

Equipment required:

- Stopwatch digital stopwatch by BULK (Marburg)

- Wood beam 50cm long, 5cm high and 3cm wide (the beam is stabilized by two supports at each end, and should have a non-slip surface)

Description / procedure:

First of all, the beam was placed on the floor and facing the wall. The subject stands on the beam without shoes facing the wall. After this the subject tries for some seconds to perform the test with both legs without scoring as an experience attempt. Then the subject chooses the preferred leg to perform the test. If the subject is right legged, he must bend the left leg backward and the foot of this left leg holds with the hand close to the buttocks (Fig. 14). The subject must not touch the wall in the front of him or her and must not leave the free leg and must not touch the floor with leg or hand during the test period.

If the subject makes any failure or fall or loses balance during the test period, the tester stops the time and counts the fall or the failure as one fall. After this the tester continues the test from the same time of the suspension, and the subject keeps balance by holding the free hand. If there are more than 15 fall in the first 30 seconds, the tester stops the test and the score will be zero.

Scoring:

For 1 minute the total number of loss in balance or falls are recorded. Eurofit manual can be used for table scores (council of Europe, 1983).

Figure 14: Flamingo balance test using the right leg.

3.6.7 Sit Ups

This test is to determine the endurance and strength of abdominal muscle.

Equipment required:

Sport mattress and stopwatch digital stopwatch by BULK (Marburg)_(Test of abdominal muscle after the CYA Fitness Field Test)

Description / procedure:

The subject lies flat on a mat; knees bent 90 degrees, set up the feet. The hands are placed on the thighs. The person under test should raise his torso as far to touch the hands to the knee (Fig. 15). Before each repetition, the shoulder blades touch the mat whereas; the feet were fixed by the tester.

Scoring:

The examiner counts the number of correctly executed repetitions in one minute. The result is invalid if the hands are on the thighs, contrary to the original test description (Unger C., 2009).

Figure 15: Sit ups performance.

3.6.8 Beep Test Instructions

This test is to assess respiratory endurance League and to calculate VO_{2max}.

Equipment required:

Digital stopwatch by BULK (Marburg, Germany) Flat, non-slip surface, marking cones, 20m measuring tape, CD tape recorder and recording sheets.

Description:

The tester puts the marker cones over the lines and then he or she explains the test for the subjects before beginning the test, the subjects then take their positions. The tester turns on the recorder. Firstly, there is an explanation for the test, which is taken from the CD, on how to perform the test, change levels and how many shuttles in every level. The test subject stands behind one of the lines facing the second line, and begins running, when instructed by the CD or tape.

This test involves continuous running between two lines 20m apart in time to recorded beeps (Fig. 16). At the beginning, the speed is quite slow of about 2.5 m/s and rises steadily every 20 m by 0.05 m / s. The subjects have to adapt their speed to the beep sounds and have reached 20 m line by the time of the beep. The subject continues running between the two lines, turning when signalled by the recorded beeps. After about one minute, a sound indicates an increase in the speed, and the beeps will be closer together.

This continuous for 60 seconds. The subject must run to the line and turn, when reaching the line and attempt to pace himself in a maximum of 2 beeps. However, he or she must wait till the beep sounds if they reach the line before the beep. The test is stopped, when the subject fails to reach the line (within 2 meters) in two consecutive attempts (council of Europe, 1983).

Scoring:

The testers recorded the level and the number of shuttles (20m) in each level as well as the time. The VO_{2max} level can be calculated by using this score as under:

VO_{2max} = 31.025 + (3.238 × velocity) - (3.248×age) + (0.1536 ×age × velocity) **(**Ahmaidi S et al., 1992) (Equation. 6)

VO_{2max} = (vel × 6.65 - 35.8) × 0.95 + 0.182 (A D Flouris et al. 2005) (Equation. 7)

Figure 16: shows a sport students group from CUT Germany during shuttle run or beeps test performance.

3.6.9 Fitness tests Z value transformation

The fitness test was converted to the z-value to have the sum of the movable fitness tests (the sum without hand to hand distance right and left hand and stand and reach tests) the converted formula was used according to Böes Formula: Z=100+10*(individually value-Mean)/Standard deviation)**,** then the tests compared between Germany and Egypt (males compared with males and females compared with females) the z-value from the tests was classified according to quintile table by Prof. Dr. Bös in Deutscher Motorik-Test project (Bös K., 2008).

3.7 Statistics

In order to process and analyse the data, the SPSS (Statistical Package for the Social Sciences) software was used. The following descriptive statistics and analytical methods were applied:

- Minimum/Maximum.

- **Mean**: The mean in statistics are divided into three kinds. The arithmetic mean is equal to the sum of the values divided by the number of values or sum of elements / number of elements (Spatz C., 2011).

$$\overline{x} = \frac{\sum x}{n}$$

$\bar{x}$ = sample mean. $\sum$ = Sum of all values. x = unknown value to find. n = number of samples

- **Standard deviation**: is used to show how much variation exists from the mean (Spatz C., 2011).

$$s = \sqrt{\frac{\sum (X - \bar{X})^2}{n - 1}}$$

S = standard deviation. $\sum$ = Sum of all values. x = unknown value to find. n = number of samples. $\bar{x}$ = sample mean.

- **T – test** is to examine two mean hypotheses (Reinard J. C., 2006).

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{(s_1^2 / n_1 + s_2^2 / n_2)}}$$

$\bar{x}_1$ = sample mean 1. $\bar{x}_2$ = sample mean 2. s_1^2 = estimated variance of population 1. s_2^2 = the estimated variance of population 2. n_1 = number of sample 1. n_2 = number of sample 2 (Baitz S., Eger K.-H., Einführung in SPSS II; Facukty of Mathematics, Chemnitz University of Technology).

- **Chi square test** was published by Karl Pearson 1900. It analyses the contradiction between the data and proposed model, it's called the null hypothesis in the hypothesis test (Qian H., 2009).

$$\mathrm{X}^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

X^2 = Pearson's test statistic, which asymptotically approaches X^2 distribution. O_i = an observed frequency associated to the ith frequency class. E_i = an expected (theoretical) frequency, asserted by the null hypothesis calculated from the theoretical distribution law for the ith frequency class. n = the number of cells in the table (Bolboacă S. D. et al, 2011).

- **Spearman correlation coefficient** method, used to analyse a non-linear relationship and non-parametric data (Borradaile G. J., 2003), (Well, Arnold D., 2003),

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}.$$

D_i^2 = the rank differences. n = the pairs value number (Weinberg L. et al., 2002).
ρ (Rho) = Population correlation coefficient (Clark L. J., 2001).

- **Odds ratio** (OR) is a measure of association between an exposure and an outcome. It is used to compare the relative odds of the occurrence of the outcome of interest, given exposure to the variable of interest and the magnitude of various risk factors for that outcome. It is used to determine a particular exposure to a risk factor for a particular outcome (Szumilas M., 2010).

$$OR = \frac{a / c}{b / d} = \frac{ad}{bc}$$

a = Number of exposed cases

b = Number of exposed non-cases

c = Number of unexposed cases

d = Number of unexposed non-cases

- **Kolmogorov–Smirnov test** to check whether a given sample from a continuous population with a certain distribution, e.g. normal distribution is derived (Baitz S., Eger K.-H., Einführung in SPSS II; Facukty of Mathematics, Chemnitz University of Technology).

$$F_n(x) = \frac{1}{n}\sum_{i=1}^{n} I_{X_i \leq x}$$

$F_n(x)$ = empirical distrbution function $I_{X_i \leq x}$ = indicator function

- In the present study for all statistics procedures the following significance barriers will be used:

P> 0.05 not significant

0.01 ≤ P ≤ 0.05 significant

4. RESULTS

In this chapter the results of the Health Questionnaire are presented in numerical order, beginning firstly with General Health section, secondly Health Complaints section divided into (mental and physical complaints), thirdly nutrition section divided into (unhealthy food, healthy food, medium food) fourthly physical activity section divided into (Vigorous, moderate physical activity, walking) fifth comes using media section followed by the results of the Fitness Test in Egypt and Germany. Finally the correlations of both results and the odds ratio calculations are presented. Each item is subdivided into sections which reflect the general content of the questions, i.e. Somatic Health, Mental Health.

4.1 General Health section comparison

In the ***General Health Section*** from the questionnaire "**Q.1 how would you describe your health in general?**" The results of German females show that 46 % describe their general health as "well" and only 5% describe their general health as "less well", while in the males 95.5% were either "very well" or "well" with 4.49% regarding their health status as "less well". In comparison 90 % in Egyptian females describe their general health as "very well" and "well" and 10 % feel that there general health is "less well". The results of the Egyptian males group show that 97 % consider their general health as "very well" and "well" and 3 % as "less well" (table 7).

Table 7: Differences among females and males both countries in general health description (%).

		Very well		Well		Less well	
		N	%	N	%	N	%
Germany (n = 193)	**Female**	51	49	48	46	5	5
	Male	59	66	26	29	4	5
Egypt (n = 405)	**Female**	58	35	93	55	16	10
	Male	143	60	88	37	7	3

In “**Q.2 how strongly do you look after your health?**” the results appeared that more than 50% in Egyptian females don’t look after their health, on the contrary, more than 85% in German females look after their health (table 8). In males the great percentages in the both groups look after their health. In comparing between Egypt and Germany the results shows that the percentages which don’t look after their health in Egypt were more than in Germany.

Table 8: Differences between females and males both countries about health care (%).

		Bad		Well	
		N	**%**	**N**	**%**
Germany	**Female**	12	12	92	88
(n = 193)	**Male**	15	17	74	83
Egypt	**Female**	90	54	77	46
(n = 405)	**Male**	71	30	167	70

4.2.1 Question 2 Health watching comparison among German females, Egyptian females and German males and Egyptian males.

In comparing between Germany and Egypt the result shows that females in Germany pay attention about their health more than females in Egypt but females in Egypt believe that there general health status is very well, these numbers are more than the German females. In males the results were as the same with females whereas German males keep an eye on their health more than Egyptian males but about describing general health the Egyptian males describe their general health status as very well more than the German males (table 9).

Table 9: Mean score values and SD between Egypt and Germany both genders in general health section.

	country	N	Mean	SD	Pearson's chi-square value	Sig. (2-sided)
(Females) General health question 1	**Germany**	104	1.56	0.58	6.266	p = .044
	Egypt	167	1.75	0.62		
General health question 2	**Germany**	104	1.88	0.31	48.980	p = .000
	Egypt	167	1.46	0.5		
(Males) General health question 1	**Germany**	89	1.39	0.57	1.988	p = .370
	Egypt	238	1.43	0.55		
General health question 2	**Germany**	89	1.83	0.37	5.629	p = .018
	Egypt	238	1.69	0.46		

4.2.2 Comparison among German group (females, males) and Egyptian group (females, males).

Obviously, it is observed in the following table 10 that no significant difference between German males and females appears in question 1, while it's noticed in both Egyptian genders that there are a high significant difference in both questions.

Table 10: Differences among German sample both genders and Egyptian sample both genders in general health section.

	Gender	N	Mean	SD	Pearson's chi-square value	Sig. (2-sided)
(Germany) General health question 1	**Females**	104	1.56	0.58	5.076[a]	p = .024
	Males	89	1.39	0.57		
General health question 2	**Females**	104	1.88	0.31	1.126[a]	p = .289
	Males	89	1.83	0.37		
(Egypt) General health question 1	**Females**	167	1.75	0.62	27.281[a]	p = .000
	Males	238	1.43	0.55		
General health question 2	**Females**	167	1.46	0.5	22.002[a]	p = .000
	Males	238	1.69	0.46		

4.3 Health complaints comparison among females and males both countries.

In question 7 **“which of the following symptoms you have during the past 12 months?”** (table 11) The Egyptian females feel depression and mood swings 5.04 ± 1.69 which, in turn, affect their concentration and on some of health complaints more than the German females. The results show that there are no significance in “back pain or neck and shoulder pain” (p = .119 n.s). In comparison between Egypt and Germany male groups Egyptian mean value in some of physiological status “stomach complaints, weight loss or weight gain” and some psychological status “depressed mood, anxiety” were higher compared to German mean value, with rapprochement mean value in another status. There is no significance in cross-back pain or neck and shoulder pain (p = .490).

Table 11: Physical and mental health complaints differences between both countries (females, males).

		Females					Males				
Items	**country**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**
Stomach complaints	Germany	104	4.538	1.276	59.216	.000	89	4.325	1.222	11.588	.003
	Egypt	167	6.177	1.865			238	5.008	1.802		
Chronic pain	Germany	104	4.375	1.352	4.259	.119	89	3.910	1.230	1.425	.490
	Egypt	167	4.627	1.646			238	3.899	1.543		
Cardiovascular problems	Germany	104	3.009	1.028	16.032	.000	89	2.404	0.749	8.725	.013
	Egypt	167	3.562	1.467			238	2.840	1.245		
Headache	Germany	104	2.240	0.743	37.110	.000	89	1.853	0.575	9.966	.007
	Egypt	165	2.784	0.994			237	1.957	0.847		
Difficulty in concentrating	Germany	103	1.960	0.643	6.646	.036	89	1.898	0.640	8.106	.017
	Egypt	165	2.553	0.887			233	2.126	0.930		
Abdominal discomfort	Germany	104	1.990	0.760	54.450	.000	89	1.134	0.375	25.640	.000
	Egypt	167	2.186	0.957			238	1.373	0.750		
Mood swings, depressed mood	Germany	104	3.461	1.165	62.805	.000	89	2.887	1.112	48.551	.000
	Egypt	167	5.041	1.695			238	3.953	1.591		
Speech disorders	Germany	104	1.145	0.354	77.132	.000	89	1.213	0.438	32.218	.000
	Egypt	167	1.538	0.797			238	1.430	0.719		
Weight and/or appetite problems	Germany	104	3.096	1.084	59.031	.000	89	2.692	0.830	28.244	.000
	Egypt	167	4.828	1.728			238	3.819	1.547		
Anxiety / phobia Nervousness / oppression	Germany	103	2.923	1.146	30.002	.000	89	2.584	0.735	10.485	.001
	Egypt	165	4.757	1.726			237	3.558	1.620		

4.3.1 Question 7 German group comparisons both gender, Egyptian group comparisons both genders.

Here the German males and females in **Q. 7** (table 12) demonstrated similar feelings in the following symptoms with no significant differences: “Stomach complaints / diarrhoea constipation heartburn”, “Abdominal discomfort”, “Weight loss/weight gain/loss of appetite” where there are significant differences in all another items ($p \leq 0.05$). In Egyptian samples the males and females have the same feeling about certain symptoms in the majority of these areas, and there are significant differences between males and females in all areas except in “Weight loss/weight gain/loss of appetite” ($p = .416$).

Table 12: Show results from physical and mental health complaints' comparison among German both genders and Egyptian both genders

		Germany					Egypt				
Items	**Gender**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**
Stomach complaints	Females	104	4.538	1.276	2.135	.344	167	6.177	1.865	32.978	.000
	Males	89	4.325	1.222			238	5.008	1.802		
Chronic pain	Females	104	4.375	1.352	6.797	.033	167	4.627	1.646	22.461	.000
	Males	89	3.910	1.230			238	3.899	1.543		
Cardiovascular problems	Females	104	3.009	1.028	20.489	.000	167	3.562	1.467	31.310	.000
	Males	89	2.404	0.749			238	2.840	1.245		
Headache	Females	104	2.240	0.743	12.232	.000	165	2.784	0.994	77.820	.000
	Males	89	1.853	0.575			237	1.957	0.847		
Difficulty in concentrating	Females	104	1.960	0.643	8.014	.018	167	2.553	0.887	30.682	.000
	Males	89	1.898	0.640			238	2.126	0.930		
Abdominal discomfort	Females	104	1.990	0.760	.059	.809	166	2.186	0.957	12.869	.002
	Males	89	1.134	0.375			237	1.373	0.750		
Mood swings, depressed mood	Females	104	3.461	1.165	74.472	.000	164	5.041	1.695	92.814	.000
	Males	89	2.887	1.112			233	3.953	1.591		
Speech disorders	Females	102	1.145	0.354	15.027	.001	167	1.538	0.797	37.659	.000
	Males	89	1.213	0.438			238	1.430	0.719		
Weight and/or appetite problems	Females	104	3.096	1.084	1.075	.300	165	4.828	1.728	1.754	.416
	Males	89	2.692	0.830			237	3.819	1.547		
Anxiety / phobia Nervousness / oppression	Females	104	2.923	1.146	15.791	.000	167	4.757	1.726	32.452	.000
	Males	89	2.584	0.735			238	3.558	1.620		

4.4 Studying and university related problems comparison among females, males (both countries).

In Question 10a “**To what extend do you feel burdened in the following areas?**” (table 13). The Egyptian females feel significantly more burdened with “social isolation”, “working conditions”, “problems with parents or with friends” compared with German females. There is no significant difference in “problems during study” (p = .061). The Egyptian males feel that they are burdened and have some problems which can affect their education process such as fear of the future represented in “working conditions”. It is the same with German males but with less intensity, the results show that the German males mean values in major areas were significantly less than the Egyptian mean values except for the item of “problems during study” where no significant difference was found (p= .076).

Table 13: Results from (Studying and university related problems) among females, males bouth countries.

		Females					Males				
Items	**Country**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**
Problems during study	Germany	104	10.019	3.204	5.601	.061	89	9.977	2.692	5.166	.076
	Egypt	167	10.834	3.734			238	9.357	3.465		
Social isolation	Germany	104	5.317	2.482	18.302	.000	89	5.179	2.678	14.601	.001
	Egypt	167	7.674	4.211			238	7.100	4.015		
Work conditions	Germany	104	6.653	2.935	34.082	.000	89	6.483	2.820	33.035	.000
	Egypt	167	9.248	4.061			238	8.697	3.745		
Personal relationship problems	Germany	104	6.471	2.889	73.445	.000	89	6.303	2.901	44.073	.000
	Egypt	167	11.585	5.561			238	10.277	5.280		
Sexuality	Germany	103	1.442	0.879	28.273	.000	89	1.808	1.286	30.590	.000
	Egypt	165	2.503	1.975			235	3.195	2.125		
Accommodation	Germany	104	1.815	1.311	22.768	.000	89	1.662	1.043	26.088	.000
	Egypt	159	2.839	1.920			237	2.708	1.711		
Health problems	Germany	104	2.211	1.171	17.018	.000	89	1.977	1.177	9.467	.009
	Egypt	160	2.938	1.670			238	2.231	1.495		

4.4.1 Studying and university related problems comparison between genders in both countries.

According to this result, the German group have the same feelings and expectations in all areas in **Q. 10a** where there are no significant differences in all variables (table 14). Both genders have a mutual believe that they face “social isolation”, and same prospects about “working conditions”.

Table 14: Differences in both genders in the German and Egyptian sample regarding studying and university related problems.

		Germany					Egypt				
Items	**Gender**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**	**N**	**Mean**	**SD**	**Pearson's chi-square value**	**Sig. (2-sided)**
Problems during study	Females	104	10.019	3.204	1.128	.569	167	10.834	3.734	15.547	.000
	Males	89	9.977	2.692			238	9.357	3.465		
Social isolation	Females	104	5.317	2.482	.144	.931	167	7.674	4.211	2.474	.290
	Males	89	5.179	2.678			238	7.100	4.015		
Work conditions	Females	104	6.653	2.935	3.581	.167	167	9.248	4.061	4.451	.108
	Males	89	6.483	2.820			238	8.697	3.745		
Personal relationship problems	Females	104	6.471	2.889	.869	.648	167	11.585	5.561	7.124	.028
	Males	89	6.303	2.901			238	10.277	5.280		
Sexuality	Females	104	1.442	0.879	3.532	.171	159	2.503	1.975	13.753	.001
	Males	89	1.808	1.286			235	3.195	2.125		
Accommodation	Females	104	1.815	1.311	.878	.645	160	2.839	1.920	9.178	.010
	Males	89	1.662	1.043			237	2.708	1.711		
Health problems	Females	104	2.211	1.171	3.827	.148	160	2.938	1.670	15.641	.000
	Males	89	1.977	1.177			238	2.231	1.495		

4.5 Comparison of dietary habits

Comparison between Egypt and Germany (females and males).

The results from the Pearson's chi square test (table 15) shows that there is a significant difference between Germany and Egypt in the three types of the nutrition questions in the questionnaire for both gender females (n= 271), males (n= 327) whereas (p= .000). The Egyptian students consume more "unhealthy food" and "lower healthy" and "neutral food" in both genders compared to Germany.

Table 15: Appears the differences in nutrition style between Germany and Egypt in both genders.

		country	N	Mean	SD	Pearson's chi-square value	Sig. (2-sided)
Females	**Unhealthy food %**	Germany	104	28.540	6.477	187.334	.000
		Egypt	167	49.773	11.611		
	Healthy food %	Germany	104	44.726	6.441	70.230	.000
		Egypt	167	33.487	9.234		
	Neutral Food %	Germany	104	26.734	6.408	97.403	.000
		Egypt	167	16.740	7.165		
Males	**Unhealthy food %**	Germany	89	30.865	7.808	139.108	.000
		Egypt	238	46.541	10.381		
	Healthy food %	Germany	89	38.671	9.927	16.815	.000
		Egypt	238	34.139	7.722		
	Neutral Food %	Germany	89	30.464	8.113	73.888	.000
		Egypt	238	19.320	6.818		

Nutrition comparison between German group (both genders) and Egyptian group (both genders).

Table 16 shows that all the students in Germany and Egypt (both genders) consume unhealthy food more than neutral and healthy food, while the healthy food is less consumed in quantity consumption than unhealthy and neutral food. There is no significant difference in “healthy food” in Egyptian group (p= .441), while there is significant differences in all food types in the German group.

Table 16: Nutrition comparison between German students (both gender) and Egyptian students (both gender).

		Gender	N	Mean	SD	Sig. (2-sided)
Germany	Unhealthy food %	Females	104	28.540	6.477	.025
		Males	89	30.865	7.808	
	Healthy food %	Females	104	44.726	6.441	.000
		Males	89	38.671	9.927	
	Neutral Food %	Females	104	26.734	6.408	.000
		males	89	30.464	8.113	
Egypt	Unhealthy food %	Females	167	49.773	11.611	.004
		Males	238	46.541	10.381	
	Healthy food %	Females	167	33.487	9.234	.441
		Males	238	34.139	7.722	
	Neutral Food %	Females	167	16.740	7.165	.000
		Males	238	19.320	6.818	

4.6 Comparison of physical activity

Questions comparison between Egypt and Germany (females, males)

In the *physical activity section* questions (table 17), the Pearson's chi-square test shows in females group that there is no significant difference between Egypt and Germany in "vigorous activity" (n= 158) (p= .869), "moderate activity" (n= 150) (p= .884). However, there is a significant difference in "walking" (n= 169), (p= .002), in the males groups there is a significant difference between Egypt and Germany in "walking" (n= 181) (p= .038), but no significant difference in "vigorous activity" (p= .203) and "moderate activity" (p= .134).

Table 17: Physical activity comparison among females (Germany, Egypt), males (Germany, Egypt).

		country	N	Mean	SD	Pearson's chi-square value	Sig. (2-sided)
Females	**Vigorous Normal hours / week.**	Germany	87	4.88	4.94	.280	.869
		Egypt	71	5.82	6.78		
	Moderate Normal hours / week.	Germany	83	4.07	4.86	.247	.884
		Egypt	67	3.94	4.17		
	Walking min. / week	Germany	104	125.82	94.50	12.148	.002
		Egypt	65	173.86	189.73		
Males	**Vigorous Normal hours.**	Germany	82	5.42	4.49	3.193	.203
		Egypt	174	6.54	6.16		
	Moderate Normal hours.	Germany	71	4.12	4.12	4.024	.134
		Egypt	151	5.68	7.84		
	Walking min. / week	Germany	89	126.64	125.12	6.529	.038
		Egypt	92	203.38	200.28		

Physical activity questions comparison between German group (both genders) and Egyptian group (both genders).

There is a tendency of more vigorous exercise among the German students than moderate exercise and walking, and the same applies to the Egyptian students except they practice more vigorous exercise either than their counterparts. There are no distinguishable differences in the German group nor the Egyptian group (table 18).

Table 18: Physical activity comparison Germany (females, males), Egypt (females, males).

		Gender	N	Mean	SD	Pearson's chi-square value	Sig. (2-sided)
Germany	**Vigorous Normal hours / week.**	Females	87	4.88	4.94	2.351	.309
		Males	82	5.42	4.49		
	Moderate Normal hours / week.	Females	83	4.07	4.86	.134	.935
		Males	71	4.12	4.12		
	Walking min / week	Females	104	125.82	94.50	2.626	.269
		Males	89	126.64	125.12		
Egypt	**Vigorous Normal hours / week.**	Females	71	5.82	6.78	3.453	.178
		Males	174	6.54	6.16		
	Moderate Normal hours / week.	Females	67	3.94	4.17	2.968	.227
		Males	151	5.68	7.84		
	Walking min. / week.	Females	65	173.86	189.73	1.588	.452
		Males	92	203.38	200.28		

4.7 Comparison of media usage

TV, internet, personal computer use comparison between Egypt and Germany

In the *using media section* of the questionnaire (table 19), the results show a significant difference between Egypt and Germany in females (n= 271) (p= .000), the Egyptian females spend more time using media 36.08 ± 26.42 than German females 26.88 ± 15.03 . In males (n= 327) there is also a significant difference between (p= .000) Egypt 58.32 ± 37.63 and Germany 35.95 ± 17.15.

Table 19: Country comparison of media usage.

		country	N	Mean	SD	Pearson's chi-square value	significance (2-sided)
females	**Total media usage hours / week**	Germany	104	26.888	15.030	19.350	.000
		Egypt	167	36.084	26.426		
Males	**Total media usage hours / week**	Germany	89	35.959	17.154	22.327	.000
		Egypt	238	58.325	37.639		

Media usage between the German and Egyptian sample (both genders).

Table 20 shows that the students Egyptian utilise multimedia significantly more than their German counterparts, while differences exist between the two groups for both genders.

Table 20: Comparison of media usage between both genders in same country.

		country	N	Mean	SD	Pearson's chi-square value	significance (2-sided)
Germany	**Total TV all week**	Females	104	26.888	15.030	11.531	.003
		Males	89	35.959	17.154		
Egypt	**Total TV all week**	Females	167	36.084	26.426	38.317	.000
		Males	238	58.325	37.639		

4.8 Anthropometric parameters and blood pressure comparison

In table 21 there are no significant differences between females compared to males in all measurements except in the diastolic blood pressure of males in Egypt and Germany (p= .000)

Table 21: Country comparison of anthropometric parameters and blood pressure

	Country	N	Mean		SD		Pearson's chi-square value		sig. (2 sided)	
			Rrsys	Rrdia	Rrsys	Rrdia	Rrsys	Rrdia	Rrsys	Rrdia
Females	Germany	79	120	79	9.88	7.76	2.465	4.661	.292	.097
	Egypt	51	123	80	9.62	7.18				
Males	Germany	82	132	78	11.36	8.41	5.349	15.519	.069	.000
	Egypt	110	128	82	8.203	6.39				
	BMI						T-test			
Females	Germany	79	21.88		2.15		-1.393		.166	
	Egypt	59	22.47		2.83					
Males	Germany	81	22.98		2.165		-1.146		.189	
	Egypt	110	23.34		2.164					
	Fat %						T-test			
Females	Germany	79	24.00		3.27		.271		.786	
	Egypt	52	23.83		3.65					
Males	Germany	81	14.02		4.69		1.838		.068	
	Egypt	110	12.83		4.20					

4.9 Comparison of fitness test

Results in the female samples of both countries in table 22 prove of that the German females have significantly results better than the Egyptian females in the overall test results except for “stand and reach”. There are significant differences between Germany and Egypt in all fitness tests whereas in the best attempt in “stand and reach” test (p = .048) and at the rest of the tests (p = .000) with high mean for German students (n = 79) for all tests except in “stand and reach” compared with Egyptian students (n = 51).

Table 22: Differences between Germany and Egypt (females) in fitness test results.

Fitness tests comparison between Germany and Egypt (Females)					
Country		**N**	**Mean**	**SD**	**Sig. (2 sided)**
Stand & reach (cm)	Germany	79	4.99	11.481	.048
	Egypt	51	8.44	5.606	
Hand to Hand L (cm)	Germany	79	7.475	5.8658	.000
	Egypt	51	1.843	1.7535	
Hand to Hand R (cm)	Germany	79	4.09	7.277	.000
	Egypt	51	.11	2.432	
F. Balance (number of falls)	Germany	79	4.23	3.320	.000
	Egypt	51	2.12	2.628	
Jump & reach (cm)	Germany	79	.4249	.05121	.000
	Egypt	51	.2468	.05192	
Back extension (kg)	Germany	79	96.608	16.0996	.000
	Egypt	51	75.569	17.5909	
Sit up (Rep. in 1min.)	Germany	79	41.49	5.742	.000
	Egypt	51	35.08	7.020	
Static pull up (time in sec.)	Germany	79	42.80	18.690	.000
	Egypt	51	24.16	17.882	
VO_{2max} (mL/kg/min.)	Germany	79	37.73	5.502	.000
	Egypt	51	24.85	4.322	

Comparison of fitness test results in the male samples of both countries.

The results show in table 23 that there are differences between German students and Egyptian students in fitness levels whereby German students scored better degrees. There is no significance between Germany and Egypt in “static pull up test”. There is a high significance in “jump and reach”, “back extension”, “sit up hand to hand” right and left and “VO_{2max}” (p = .000 s) and with significance in “F. Balance”.

Table 23: Shows result from comparing process between Egypt and Germany

Fitness tests comparison between Germany and Egypt (males)					
Country		**N**	**Mean**	**SD**	**Sig. (2 sided)**
Stand & reach (cm)	Germany	81	4.33	9.104	.034
	Egypt	114	6.99	7.742	
Hand to Hand L (cm)	Germany	81	2,95	8.438	.003
	Egypt	114	6.12	5.327	
Hand to Hand R (cm)	Germany	81	-1.39	10.218	.000
	Egypt	114	3.25	7.413	
F. Balance (number of falls)	Germany	81	6.20	3.922	.026
	Egypt	114	4.89	4.106	
Jump & reach (cm)	Germany	81	.5270	.09028	.000
	Egypt	114	.4152	.09468	
Back extension (kg)	Germany	81	144.049	22.8302	.000
	Egypt	114	125.474	22.7612	
Sit up (Rep. in 1min.)	Germany	81	49.09	4.575	.000
	Egypt	114	46.13	5.732	
Static pull up (time in sec.)	Germany	81	61.79	16.976	.064
	Egypt	114	67.69	24.693	
VO_{2max} (mL/kg/min.)	Germany	81	50.01	4.841	.000
	Egypt	114	44.47	6.473	

R = right, L = left, Rep. = repetition, F = Falamingo

4.10 Correlation of health relevant parameters

There is a significant correlation between “unhealthy food” and “BMI” (correlation coefficient = .242**); (p= .006) in all females (Germany, Egypt n= 127). No significant correlation was shown for the male populations.

The results show that there is a significant correlation between “Weight loss, weight gain or loss of appetite” and “BMI”, (correlation coefficient = .245**); (p= .005) in both females samples (Germany, Egypt) (n= 129) whereas there was no significant correlation between both parameters in males.

In German females (n= 69) the results show that there is a significant correlation between “weight loss, weight gain and loss of appetite” and “BMI”, where (correlation coefficient = .240*); (p= .047) which to be expected as bodyweight is a key factor in the calculation of the BMI.

A significant correlation was observed between the item physical activity “Moderate hours / week” and “Fat %” in all males (Germany, Egypt n= 113), (correlation coefficient = -.195*); (p= .038). These results proof that the participation in sports activities affect the percentage of body fat.

A significant correlation was found in German female sample between “Problems with parents, Problems with fellow students, Problems with friends, Other significant relationships” (n= 72) (correlation coefficient = -.239*) (p= .043) and systolic blood pressure , “Sexuality” (n= 67) (correlation coefficient = -.300*) (p= .014) and systolic blood pressure and “Health problems” (n= 67) (correlation coefficient = -.411); (p= .001). This means that the students may face some physiological and psychological problems in daily life which could affect the blood pressure.

“Health problems” item are one of the main factors which affect the blood pressure. This is also demonstrated by statistical correlation of diastolic blood pressure and “Health problems” (correlation coefficient = -.287*), where a significant correlation (p= .018) was found in the German female sample (n= 67).

Predominantly consuming unhealthy food affects the blood pressure negatively which is also shown by these results where a significant correlation between unhealthy food and diastolic blood pressure in female sample in both countries (Germany, Egypt n= 192) was found (correlation coefficient = .165*); (p= .037).

Training for several days a week and over a longer time, enhances the maximum oxygen consumption, and on the contrary without physical activity Vo_{2max} would not improve which is also demonstrated by the correlation analysis between physical activity and VO_{2max} in the female samples of both countries (Germany, Egypt) (VO_{2max} n= 128), (physical activity n= 106), (correlation coefficient = .236*); significant correlation (p= .014). At the same statistical analysis a significant correlation between physical activity and VO_{2max} in German females (VO_{2max} n= 78), (physical activity n= 66), where (correlation coefficient = 310*); (p= .011) was found.

4.11 Odds ratio

The odds ratio calculation of the two variables *health consciousness* and *healthy nutrition* showed no significant link between the two variables as presented in table 24.

Table 24: Odds ratio calculation of two variables – *health consciousness* and *healthy nutrition*.

Health conscious -ness	percentiles	Healthy nutrition		OR	95 % CI-below	95 % CI-top	Yule´s Q
		Yes	No				
Germany	Less good	7	1	1.04	0.12	9.12	0.02
	Good	62	12	0.77	0.33	1.77	-0.13
	Very good	94	14	1.00			
Egypt	Less good	7	30	0.46	0.19	1.10	-0.37
	Good	50	109	0.90	0.58	1.41	-0.05
	Very good	70	138	1.00			

The odds ratio calculation of the two variables *own health assessment* and *healthy nutrition* showed a significant link between bad dietary habits in regards to healthy food consumption and their own health assessment. All other variables in the odds ratio calculation were not significant. This is presented in table 25.

Table 25: Odds ratio calculation of two variables – *own health assessment* and *healthy nutrition*.

Own health assess-ment	percentiles	Healthy nutrition		OR	95 % CI-below	95 % CI-top	Yule´s Q
		Yes	No				
Germany	Bad	17	8	0.27	0.10	0.71	-0.57
	Very good	150	19	1.00			
Egypt	Bad	29	133	0.56	0.35	0.92	-0.28
	Very good	68	176	1.00			

The odds ratio calculation of the two variables *health consciousness* and *sufficient physical activity* presented a significant link between a reduced health consciousness and insufficient physical activity. All other variables in the odds ratio calculation were not significant as presented in table 26.

Table 26: Odds ratio calculation of two variables – *health consciousness* and *sufficient physical activity* in a positive context.

Health conscious-ness	percentiles	Sufficient physical activity		OR	95 % CI-below	95 % CI-top	Yule´s Q
		Yes	No				
Germany	Less good	5	4	0.24	0.06	0.99	-0.61
	Good	53	21	0.49	0.24	1.00	-0.34
	Very good	93	18	1.00			
Egypt	Less good	12	12	0.71	0.30	1.66	-0.17
	Good	89	92	0.69	0.46	1.03	-0.18
	Very good	118	84	1.00			

The odds ratio calculation of the two variables *own health assessment* and *sufficient physical activity* showed no significant link between the two variables as presented in table 27.

Table 27: Odds ratio calculation of two variables – *own health assessment* and *sufficient physical activity* in a negative context.

Own health assess-ment	percentiles	Sufficient physical activity		OR	95 % CI-below	95 % CI-top	Yule´s Q
		Yes	No				
Germany	Bad	18	9	0.49	0.20	1.19	-0.34
	Very good	134	33	1.00			
Egypt	Bad	79	84	0.78	0.53	1.17	-0.12
	Very good	133	111	1.00			

5. DISCUSSION

The different culture, customs and traditions and economic power, may have a significant effect on the standard of living and the extent of its relevance in the provision of basic needs. The extent of high-level cultural, economic and social terms play an important role in the awareness in all areas such as in economic, social, medical and physical terms. A higher economic standard/power as indicated by the GDP per capita can directly affect the community by creating jobs and reducing unemployment and thereby in turn affect all social areas as represented by education, occupation family structures and last but not least medical standards Exercise levels and sports acitvities are represented in the construction of sports facilities and the provision of equipments and preparation of physical education teachers and coaches to influence the physical activity and exercising habits of generations which stands in an inter-relationship with health and therefore economic aspects, i.e. reduced sick days, work efficiency etc..

The survey, which considered the health problems of Germans and Egyptians, showed a great difference in all variables general health (physical, mental), problems during studing levels, nutrition style, physical activity, media usage).

According to the results of this study the Egyptian students face more problems in studying, university and health than German students in both genders. A difference could also be observed between German males and females in their health complaints and Egyptian males and females. Egyptian females face more problems in studing and university in comparing with males.

General Health section

The females in both countries show less per cent in answering “very well” compared with males in both countries because females are more likely to have depression, anxiety and somatic complaints. This is consistent with World Health Organization mental health report (Gender and women's mental health, 2013) because of various biological and social characteristics specific to women.

The health problems they face in their lives may vary from those faced by men. Women have a higher likelihood of developing a chronic health disorder with age comparative to men because of their higher life expectancy (Turcotte et al., 2011).

German females show more care regarding their health in comparison to males because females have the ability to complete their education and participate equally, which is compromised of competing with males as their job chances, access to comprehensive reproductive health care have an effect (Graham, 2005). Egyptian males, however, pay more attention to health care because males are responsible for the principal income for the family as the Egyptian women often do not work at difficult jobs.

Salama (2007) confirms that a person who has good health; is free from diseases, has the ability to learn and gain experience which allows him or her to work and produce and at the same time enjoying the psychological stability than he or she has the ability to face life problems and this corresponds to the definition of health, which was approved by the World Health Organization.

The explanation for these results are according to tables 7,8, which demonstrates that German females are more likely to describe their health as “very well” and care about their health with answering as “well” than Egyptian females. This is because German females participate equally in financing the family and can also share hard work and are interested in sports, unlike major of Egyptian females who often depend on financial support from family or spouses and often do not perform sports due to some traditional habits in some of Egyptian families.

Health complaints (physical and mental)

Table 11, shows that there are significant differences in all health complaints variables (physical or mental) between German group and Egyptian group in both genders except in “Chornic pain”. Where there are several health problems in Egyptian group as compared to the German group and this is due to traditional Egyptian food characterised by poor organisation of nutrition planning, reliance on carbohydrates, with large quantity of spices and this was confirmed by Salama (2007) that excessive intake of carbohydrates leads to the increase of fermentation in the intestines and the emergence of the gases. The Egyptian group eat little portion, which lead to constipation, does not filling needs of the body of vitamins and effect negatively on health generally.

Spicy food may stimulate acid secretion and cause spasms of the oesophagus and may also aggravate pre-existing digestive disorders such as esophagitis; the most spices linked to gastric distress are black pepper, mustard seed and chili pepper. Spices are unhealthy if eaten on an empty stomach. Using high spice regimen can be expected to lead to heartburn and ulcers (Peikin, 1999).

These differences in mental and physical complaints between Egypt and Germany might be due to the air pollution whereby the pollution in Egypt is greater than in Germany (air pollution in Egypt = 138 (mg/m3) with ranking 85 on the world ranking and Germany = 25 (mg/m3) with 22 in world ranking (WHO, 2003-2010). The air pollutants affect different organs and systems in human body’s respiratory system; such as nose and throat irritation.

Increased levels of sulphur dioxide, lung inflammation, asthma and difficulty in breathing and effect on cardiovascular system such as increasing blood pressure, epidemiologic studies have found a connection between increasing deaths caused by ischemic heart diseases and dioxin exposure. Effects on the nervous system include memory disturbances, sleep disorders, anger, fatigue, hand tremors, blurred vision, speech disorders, nervousness and depressed mood (Marilena et al., 2007).

Indoor air pollution also contributes negatively to public health. It is a reason for many diseases people face in developing countries; such as wheezing, exacerbation of asthma, respiratory infections chronic bronchitis and chronic obstructive pulmonary disease, exacerbation of chronic obstructive pulmonary disease, low birth weight and lung cancer (Bruce et al., 2002).

The World Health Organization (WHO) mentioned that higher income and social status, high standards of education, physical environment (safe and good water and food, clean air, healthy and good work places, good infrastructure, social support networks – greater support from families, friends and communities) is related to better health, health services – easy payment of medical care is related to access to good health. All these are more common in Germany than Egypt (Health impact assessment: The determinants of health, 2013).

In developing countries the health care provision is usually low and widely varies (Peabody et al., 2006). For example Egypt has a weak health care system compared to countries of similar level of economic development. Other countries in the area have better public health care infrastructure. It has slowly enhanced from 5.9% in 1997 to 7.4% of total public disbursement in 2001. Only half of the population is covered by health insurance which includes government retired employees, civil servants, students and pubils from primary to higher grades. Those covered with health insurance can choose to go to private or public hospitals for services. Approximately 50%, pay for themself at the point of service in public and private health facilities (Country Cooperation Strategy for WHO and Egypt 2010–2014).

This is why there are differences between developing and developed countries in improving health, where better health is the byproduct of better quality in either developing or developed countries (Peabody et al., 2006). In Egypt according to Ghanem et al (2004) almost 17% (11% to 25.4% in different governorates) of adults had mental disorders, with the common ones being mood disorders (6.4%), anxiety disorders (4.9%) and somatoform disorders (0.6%).

According to Okasha et al (2001) 51.7% suffer from psychiatric morbidity and 19.6% suffer from obsessive compulsive disorder whereas girls, younger adolescents and first-borns were more probable to be affected from psychiatric morbidity and obsessive compulsive disorder. Okasha et al (1985) indicate that almost 14% of students faced academic difficulties. 42% of male students with academic problems have been diagnosed with mental disorders in comparison to 9% of students with no mental problems.

In a study conducted on 14,656 of male secondary school students in Egypt, Soueif found that 8% (for alcohol) and 21.4% (for synthetic drugs) of the sample continued their drug usage between 12-16 years. About using tobacco, alcohol and cannabis greater percent from the users were urban students (Soueif et al., 1982, 1990). Soueif found in a study carried out on 2.711, that university students were more probable to use stimulants and continue with drug usage (10% - 31% for different drugs) compared to male secondary school students, but the starting of drug use was later from age in this sample which lead to some other mental diseases such as (depression) (Soueif et al., 1986, 1987). Most of students who use drugs came from a higher socioeconomic background.

There is a budget share for mental health. Egypt spends 9% of the total health budget on mental health. Private insurances, social insurances, tax based expenses directly by the patient or his/her family are the main sources of financing for the mental health. The country has disability benefits for persons with mental disorders (WHO, 2004). In Germany mental health financing is 10.3 % of the total health budget (WHO, 2008). In a study conducted on 4181 with sample age of 18 - 65 years. Jacobi (2001) found that one third of the population is affected by an obsessive compulsive disorder (OCD) (DSM-IV) anxiety disorders, somatoform disorders and depressive disorders (see figure 17).

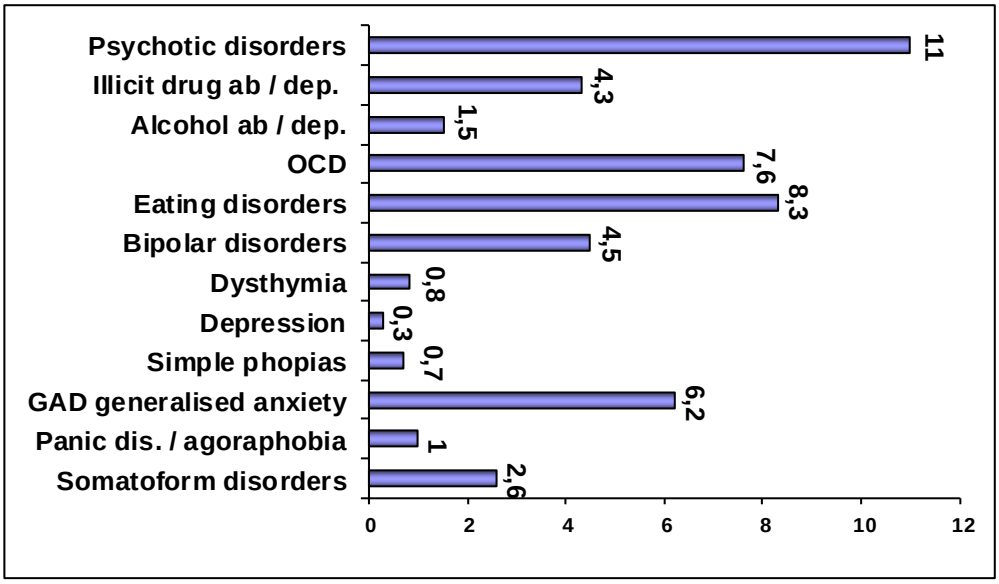

Figure 17: German National Health Interview and Examination Survey, Mental Health Supplement (GHS) of selected diagnoses (DSM-IV) diagram modified after Jacobi et al., 2001)

Table 28 shows that there are great differences in psychiatric beds rates between Egypt and Germany, where Germany has more psychiatric beds and psychiatrists than Egypt per population, this in turn provides the care, diagnosis, time and new treatment for psychiatric patients.

Table 28: Psychiatric Beds rates of Egypt and Germany (modified after WHO 2004)

	Egypt	Germany
Total psychiatric beds per 10 000 population	1.3	7.5
Psychiatric beds in mental hospitals per 10 000	1.1	4.5
Psychiatric beds in general hospitals per 10 000 population	0.1	2.9
Psychiatric beds in other settings per 10 000 population	0.1	
Number of psychiatrists per 100 000 population	0.9	11.8
Number of neurosurgeons per 100 000 population	0.2	1.5
Number of psychiatric nurses per 100 000 population	2	52
Number of neurologists per 100 000 population	0.5	3.4
Number of psychologists per 100 000 population	0.4	51.5
Number of social workers per 100 000 population	0.1	477

Health complaints (physical and mental) comparison in same countries between both genders

Table 12 shows that there are significant differences between German females and males in “Chronic pain”, “Cardiovascular problems”, “Headache”, “Difficulty in concentrating, “Speech disorders” and, Anxiety / phobia Nervousness / oppression”.

The significant differences between females and males are due to the physiological gender differences including the menstrual cycle, which can lead to psychological changes such as tension, anxiety, depression, vigor and total Mood disturbance and physiological changes such as abdominal discomfort ,back pain ,fatigue which leads to negative influence on performance (Isherwood et al., 2001).

Mental health is affected and associated with gender where it appears more likely in females with marital status (divorced etc.) (Ghanem et al., 2004) although one might argue that a marriage has a different depth and quality than the average relationship of a student to their partner. However, this situation is often different for female students in Egypt as a significant number if these are already married when attending higher education. Occupation (part time work, housewife, and unemployed), housing (overcrowding) and physical illnesses also might lead to gender specific mental health effects (Ghanem et al., 2004).

In Valerie et al., (1963) there was a study conducted on 500 women aged 18 – 45 years old which showed that 1 in 9 suffered acute pain and headaches, 1 in 16 suffered depression and tension. Valerie investigates that menstrual cycle affects negatively on performance and fitness elements such as strength, speed and accuracy.

WiklundI et al., (2012) indicated in a study carried out with average 16–18 year olds with n = 1027, boys and girls, in Sweden, that girls are more likely to report health complaints in comparison to boys where health complaints rate, such as pain, sleeping problems, anxiety, and various stress-related problems seem to become high over time between older adolescents, especially in girls.

Approximately 63.6% of the girls and 38.5% of the boys “often” or “always” perceived themselves as stressed and 37% of the girls and 22% of the boys considered themselves as being “very often” stressed under high pressure and demands from school. There are no significant differences in “Stomach problems”, “Abdominal discomfort”, “Weight loss/weight gain/loss of appetite” because they have the same nutrition culture although in cross sectional study survey aimed to realize the differences in body image perception between students from a British and a Danish university with 816 students participating in the study as subjects from UK and 548 students from Danish university participating in the study as subjects, Al Ansari (2012) shows in findings that the percentage of the students that see themselves as too thin, just right or too fat were 8.6%, 37.7%, 53.7%, respectively whereas the female students older than 30 years old from UK university see themselves too fat, in another aspect UK students reported lesser in the index of high calorie diet score and higher at the healthy diet score than the Danish students.

In table 12 there are significant differences between Egyptian males and females in all variables except in “Weight loss/weight gain/loss of appetite”, the significant differences between males and females are due to the gender differences in the distributions of chronic conditions, driven by biological, behavioural or psychosocial factors. Women may be more likely than men to suffer from health conditions such as arthritis or headaches that result in poorer self-rated health. Men are less psychologically distressed than women (Case et al, 2004). Women tend to be less satisfied with their life than men, and this may make them more susceptible to stress-related illnesses. For facing and solving these psychological problems such as stress, they resort to medical drugs and other people (Lois et al., 1985).

Labeeb S. shows that more females watched and rated their health positively, they were more probable to feel psychosomatic/physical health problems, to have seen a medical practitioner or been so ill that they had to stay in bed. Females were permanently more likely to feel burdened overall, and across several aspects apart from financial problems.

A normal BMI was only found in few females, who were satisfied with their instant weight, and perceived the image of their body as almost fine, or were not self consious and were not concerned about their shape. More males rated their quality of life in a positive way. About 25% of males and 32% of females were obese. Most of them complained about scarcity of time for studying, or some other important activities. Comparing health indexes through out the faculties who took part supported some proof of clustering: Positive indexes would cluster at some faculties; and on the contrary less favourable variables would cluster at other faculties (Al Ansari et al., 2013).

Employed women are believed to have excessive demands of their time and attention, since they give up few responsibilities for childcare or home management when they work. Thus, because of too little social participation or too much, modern women are frequently confused. Overall, there are those who say that modern women lead more stressful lives than men (Lois et al., 1985). There are no significant differences in “Weight loss/weight gain/loss of appetite” because of the same life style. Rettner (2012) states that man feel lesser pain as compared to women when then fall ill. Their pain are less intense than women’s, which as per the study was due to number of ailments and diseases which women are more prone to than men, women in the study reported feeling more pain than men

A recent study which was performed on about eleven thousand patients registered and recorded the pain scores at Clinics and Stanford Hospital from the year 2007 to 2010. This included almost all cases and men on average recorded lower pain scores than women. Women's scores were, on average, 20 % higher than men's scores, according to the study, Women with lower back pain, and knee and leg strain consistently reported higher scores than men. Women also reported feeling more pain in the neck than men (Rettner et al., 2012).

Underlying reasons for health problems in Egypt and Germany

Table 13, shows that the significant difference between German students and Egyptian students regarding “health problems” is possibly due to shortage of budget which may provide the full health care to the students. Aside from a lack of general health insurance, which provides the full health care to the students including medical detection and treatment especially as the World Health Organisation confirmed by the global health expenditure database that the total health expenditure in Egypt in 2007 was 4.9 % of the gross domestic product (GDP) compared to a German total health expenditure of 10.8 % of the gross domestic product (GDP).

Due to the low annual income per capita approximately 2.780 US dollar, the increasing poverty of 22 % (World Bank, Egypt arab republic, 2012) and the economic slowdown which contributes to a rise in unemployment, which stood at 13 % at end of 2012 (World bank Egypt overview, 2013) and with the lack of material support for students, this has a negative impact on the “sexuality interests”, “accommodation”, “bad career prospects”, “workload in addition to studying”, “poor working conditions”, “Anonymity at the university, isolation at the university, isolation in general” and “problems with parents, problems with fellow students colleges, problems with friends” (Linn et al., 1985). Unlike people in Germany where the annual income per capita is approximately 44.230 US dollar with an unemployment rates of 5.9 % (World Bank research Germany, 2011). Also from that the unemployed people in Germany social support and an unemployment salary from the government and the students can receive material support form vocational training promotions. In table 14 there are no significant differences between German males and females because they have the same life style conditions. In comparison Egyptian samples of genders concerning studying and university related problems table 14 there are significant differences in items “Lack of practical relevance of the study, In general studies, Tests, assignments, presentations” “Problems with parents, Problems with students colleges, Problems with friends, other significant relationships”, “Sexuality”, “Accommodation” and “Health problems” these significant differences are most likely due to Egyptian tradition and habits.

Nutrition culture in Egypt and Germany

The Egyptian group consumed more unhealthy food compared to healthy and neutal food because of the reasons explained in tables 11, such as consuming or eating great quantity of carbohydrates, economic slowdown and low income tables 15, 16 and rising living requirements compared to the German group, the same which Stock refers in his cross sectional study on developing countries in europe aimed to explain and investigate differences by gender and university between countries of food consumption habits of students, and to investigate the relationship between food consumption and students in living arrangements during university term at home with their parents, or residing outside of their family home. Bulgarian students frequently consumed unhealthy food snacks, chips fast food whereas Polish students consumed low amounts of vegetables and lower amounts of fruits. In all nationalities except Bulgarian, males consume more snacks than the females. Students living with family (father, mother) consumed more fruit, vegetables, and meat than those who live outside of their family home in all studied countries (Al Ansari et al., 2012) (table 19). The nutrition comparison results in tables 15, 16, will discuss in **Egyptian and German nutrition style and behaviour.**

Egyptian nutrition style and behaviour

The results of this study showed that females estimated that 49.77 % consume unhealthy food compared with healthy food 33.48 % and neutral food 16.74 % from total food consumption. In the male sample 46.54 % consumed unhealthy food and 34.13 % eat healthy food and 19.32 % consumed neutral food from the total food consumption.

Galal, (2002) refer that first three major national food consumption surveys were from 1981, 1998 (simply a repetition of the first) and the third is planned as a continuous controlling system that began in 1994, with a second round in 1999 and with a focus on children. Early studies of food were carried out during 1939 and 1946 in the Nile Delta villages concerning food of individuals in communities affected with pellagra a disease cause by a deficiency of nicotinic acid (vitamen B3) (Harman et al., 2002), which was endemic in Egypt at that time and on workers in urban Alexandria. The findings in these studies showed that energy intake for adults was 2500 kcal/day, protein intakes was about 100 g/day.

Corn bread mixed with a little fenugreek (3%), or with wheat flour (30%). At the same time lower-income groups consumed fewer milk products and fruits than higher-income households. In another way the urban sample had a more variety of food in terms of meat, fish, and milk products (Harman et al., 2002).

In studies carried out from 1959 and 1978 the results showed sufficient energy and protein intakes, advantages for urban inhabitants in terms of food diversity and quality. The first organised national food intake survey was published in 1981 by the National Nutrition Institute. The study carried on 35.334 persons in 6.300 households from six of Egypt's 24 governorates, the survey tells that 24% of urban and 15% of rural households reported consuming ready-made food. On a daily basis the urban households ate wheat bread, while rural households ate mostly wheat/corn mixture in their daily bread. Urban households eat meat more (about 25.3% of days) than rural families (about 3.6% of days) (Galal, 2002).

In 1998 a national food consumption survey was conducted on three-hundred households in each district; urban and rural households. Results showed that at least 50% of the entire sample utilized the balanced diet of milk, sugar, vegetable oil, wheat bread, and tea daily. Subsidised wheat bread was the most common bread, comes second mixed wheat–maize, home-baked bread in rural areas. The majority of households depended on meat/fish/chicken as the main source of nutrition, consuming an average of 65.8 g per day, an average regular consumption of 30.7 g of eggs per person per day. Fresh vegetable and fruit consumption was an average of 51.5 g per day.

The average energy intake decreased according to the 1981 and the 1998 surveys (from 2843 kcal to 2619 kcal), the proportion of households consuming increased from 11.2% to 17.1%. In comparing the 1981 and 1998 food consumption surveys there is an increase in meals eaten outside the home (45.8% of all meals in 1998 in comparison with 20.4% in 1981) (Galal, 2002).

In 2000 the per capita wheat consumption decreased from 164.4 kg/year in 1987 to 145.8 kg/year. In year 1997 the per capita consumption of maize decreased from 91.56 kg/year to 79.41 kg/year. From 1988 the per capita consumption of rice has varied from a low quantity of 27.2 kg/year to 52.9 kg/year in 1999, potato consumption has decreased by 0.73 kg/year, tomato consumption has increased by only 0.54 kg/year, broad bean consumption has increased from 4.7 kg/year in 1987 to 6.3 kg/year in 2000 (Dawoud, 2005).

The per capita citrus consumption declined by 0.07 kg/year, the consumption of grapes increased from 10.3 kg/year in 1988 to 14.76 kg/year in 2000. Red meat consumption increased by 0.32 kg/year. The per capita consumption of fish has increased by 0.36 kg/year. Sugar increased by 1.27 kg/year per capita. Consumption of fats and oils increased by 0.69 kg/year per capita (Dawoud, 2005).

Abdel Fattah H., (2003) refers to nutrition country profiles through food and agriculture organization of the united nation, carried out on 9,134 from urban and rural that energy intake = 2300.4 kcal per person in urban and 2700.4 kcal in rural per person whereas urban nutrient intake were 15.3% protein, 27.7% fat, 87.7g protein, 34.8% animal products, 70.8g fat. Rural nutrient intake was 13.4% protein, 23.7% fat, 91.2g protein, 24.5% animal products, 71.0g fat.

In figure 18 El Sayed N. refers according to Egypt nutrition landscape analysis report 2012 that the major energy source of Egyptian people depended on cereals, tubers, and pulses with decreases in dairy products, meat, vegetables and fruits.

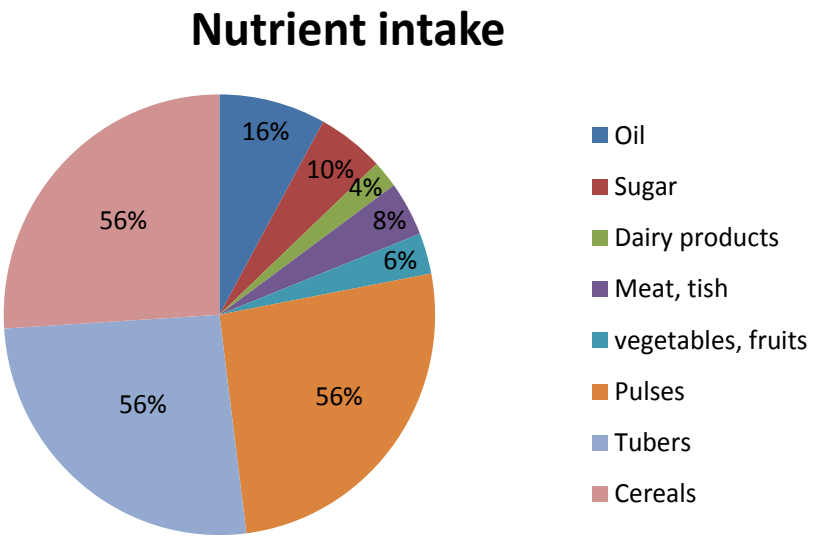

Figure 18: The average food energy supply (diagram modified after landscape analysis report, 2012)

German nutrition style and behaviour

The results of this study indicate that German females and males are more likely to consume healthy food than unhealthy and neutral food, whereas female consume 44.72 % from healthy food in comparing with unhealthy food 28.54 % and neutral food 26.73 %. Similar results were recorded for males where the major consumption from total food types was healthy food 46.54 % compared to 30.86 % for unhealthy food and 30.46 % for neutral food.

In the last years there has been a salient increase in consuming grain, poultry and fish, besides the increase in the consumption of vegetables, sugar, as well as cheese and dairy products. On the contrary, there is continuous decrease in rye, potatoes, alcohol, eggs, animal fats, margarine total fat consumption. There has been a stronger decline in vegetable oil usage than in animal fat consumption. The increased mineral water and declined beer consumption can be noted positively.

Only a very small quantity (fruit: 16 % of the boys and 26 % of the girls, vegetables: 19 % of the boys and 30 % of the girls) of adolescents reached the recommended intake of fruit and vegetables. A great quantitative of girls, 89 %, and 83 % of boys

did not achieve the reference values for carbohydrate containing foods (German Nutrition Society, 2008).

Mean energy intake was a little more than the reference values among boys and a little less than the reference values among girls. Protein intake was clearly higher than the reference values. However, intake of mono- and disaccharides was higher than polysaccharide intake in approximately all subgroups. Fat intake was in the range of the reference value of 30 % to 35 % of total energy intake. Carbohydrate intake as a portion of total energy intake was in the domain of the reference values. The reference value for dietary fiber was not achieved. The reference values for potassium, calcium, magnesium, phosphorus and zinc were attained while some even exceeded the recommendations considerably. Calcium intake was more than 25 % below the recommended intake for 12 % of the boys and 23 % of the girls

The calculated median intakes for the vitamins A, B1, B2, B6, B12, C, E and niacin were above the age-specific reference values. As seen in the younger age groups, intakes of vitamin D and folate fell much less the recommended intakes (German Nutrition Society., 2008). In a study conducted on 2,121 (1,033 men (mean age = 52.1), 1,088 women (mean age = 50.3) were obtained in Heidelberg and 2.173 (1.163 from men (mean age = 55.0), 1.010 from women (mean age = 52.9) collected from Potsdam, Schulze et al., (1999) indicated that both men samples from both cities were close in food intake: (see table 29). Women results were also close among both cities in food intake (see table 30).

Table 29: Mean food intake in g/day (men) table modified after (schulze et al., 1999)

	Potsdam	**Heidelberg**
Potatoes	108.8 g/day	78.4 g/day
Vegetables	153.5 g/day	169.4 g/day
Fruits	224.8 g/day	163.5 g/day
Dairy products	216 g/day	212.1 g/day
Cereal and cereal products	198.4 g/day	241.1 g/day
Meat and meat products	165.5 g/day	163.6 g/day
Vegetables oils	2.4 g/day	3.7 g/day
Sugar and confectionery	32.7 g/day	39.8 g/day
Non-alcoholic beverages	1504.4 g/day	1881.6 g/day
Alcoholic beverages	491.3 g/day	545.6 g/day

Table 30: Mean food intake in g/day (women) table modified after (Schulze et al., 1999)

	Potsdam	Heidelberg
Potatoes	76.7 g/day	62.8 g/day
Vegetables	177.1 g/day	171 g/day
Fruits	227.9 g/day	199.1 g/day
Dairy products	234.1 g/day	230.3 g/day
Cereal and cereal products	148.3 g/day	174.5 g/day
Meat and meat products	87.9 g/day	93 g/day
Vegetables oils	2 g/day	3.4 g/day
Sugar and confectionery	30.7 g/day	37.5 g/day
Non-alcoholic beverages	1535.3 g/day	1982.8 g/day
Alcoholic beverages	126.2 g/day	204 g/day

It was evident from the findings that men in both cities consume alcoholic beverages, meat products and potatoes more than women (Matthias et al., 1999).

Richter refers in a study carried out on 1.272 adolescents aged 12 to 17 years that food styles were related with differences in nutrient intake, socioeconomic status and lifestyle qualities, with presence of higher scores for food styles differentiated by higher consumption of fast food, meat, confectionary and soft drinks (’western’ and ‘traditional and western’) were found particularly between 16- to 17- years old boys and between adolescents with decent socioeconomic status (Richter A. et al., 2011). Mensink et al., (2013) in figure 19 shows in a study conducted from October 1997 until March 1999, with total of 7,124 German adults, aged 18–79 y shared in German National Health Interview and Examination Survey (GNHIES) that the East German men reported 2.693 kcal mean daily energy intake, where west men reported mean kcal 2,619.

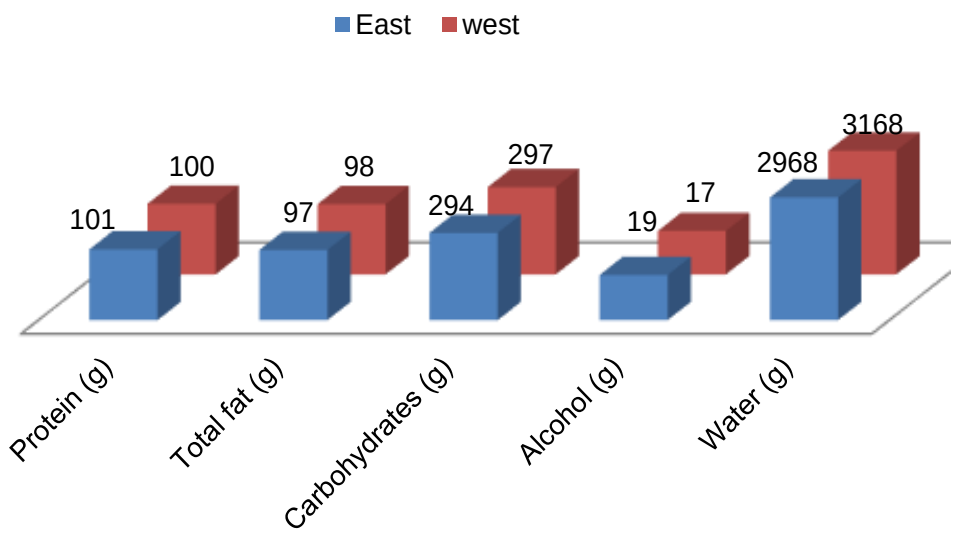

Figure 19: Comparison of nutrient intake between West and East German men (diagram modified after Mensink et al., 2013).

From the women's aspect the results showed that the East German women reported 1.867 kcal mean of daily energy, whereas West German women reported 1.921kcal mean of daily energy. There are only minimal differences regarding the daily nutrient intake between east and west (see figure 20).

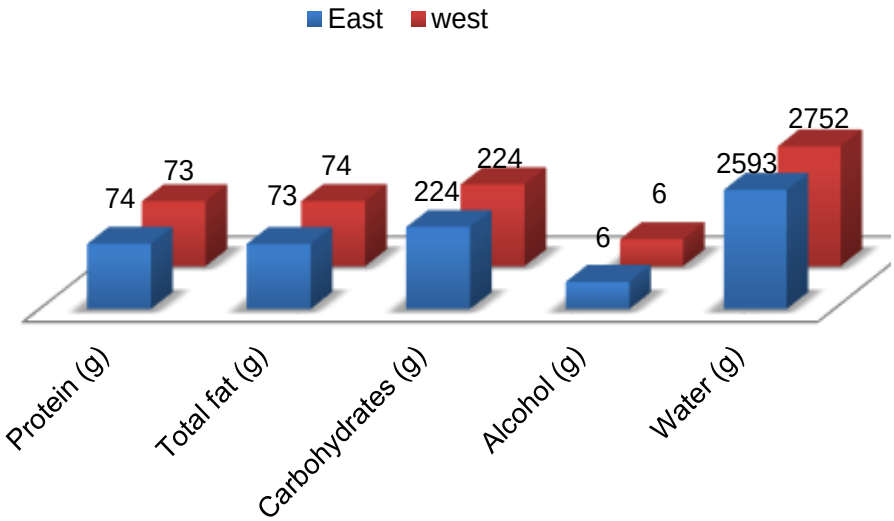

Figure 20: Nutrient intake women (diagram modified after Mensink et al., 2013)

Media usage in Egypt and Germany

There are no significant differences between German females and males and Egyptian females and males. This is probably due to a similar life style in respect to media of both genders. Overall Egyptian students spend more time using media than the German group (table 19, 20) as this is one of the few options to spend their leisure time while German students have a variety of different leisure activities available.

While a statistical analysis refers that German group watch TV only 23 hours per person per week approximately, whereas the mean value in females is 26.88 and in males 35.95 comparing with current statistics, this is due to the fact that the sum of total media usage are taken not only for watching the TV (Germany madia, 2013).

The differences between males and females are because males use or spend more time on playing video games than females (the males in both countries) where O'Callaghan in "Time magazine" health and family department presents in a study of 562 people between the ages of 19 – 90 living in Seattle that males play video game more than females (55.9% of those who reported playing regularly in this survey were men) (O'Callaghan, 2009).

Physical activity and fitness test comparison

In tables 17, 18, the Egyptian group use walking more than the German group. The reasons for this are that the Egyptian students don't have term ticket or cars like German group. They have to pay every time they use the internal connections which represent a financial burden on students that generally affects monthly income, as stated in tables 13, 14.

In this study the results show that the German students are more likely participating in physical activity than the Egyptian students which led to the superiority of the Germans in fitness tests performance, where the German females recorded better results in all tests which required strength and endurance compared to Egyptian females, the same can be said for German males with Egyptian males (table 21, 22).

In this context El-Gilany showed in a study conducted on 1,708 students from Mansoura University that 11.3% of participants were physically inactive, the reasons were high socioeconomic standard of the family, non-membership in sports clubs, limited time and lack of suitable and accessible sporting places (El-Gilany et al., 2011).

Montasser showed (2011) in a study, carried out on 500 freshmen students, that the participation of vigorous activity among the students was 9.8% (N=49) against 90.2% (N=451) for mild and moderate activity.

Due to the Egyptian cabinet (information and decision support center) and population council, in a survey was carried out on Egyptian young people and the results show that 28.3% of young people both gender reported doing no physical activities either for leisure or as part of their daily tasks whereas 28.8% were doing regular physical activity, 8.7% very frequent physical activity and the work of 34.3% involves physical activity (Ramadan et al., 2010).

Figure 21 presented that in males 14.5% do no physical activity, 23.3% do regular physical activity, 16.3% very frequent physical activity and the work of 46.0% involves physical activity. In females 42.7% do no physical activity, 34.5% do regular physical activity, 0.8% very frequent physical activity and the work of 22.1% involves physical activity. At the age of 18-24 in both genders 35.8% do no physical activities, 37.7% do regular physical activity, 10.3% very frequent physical activity and the work of 16.3% involves physical activity (Ramadan et al., 2010).

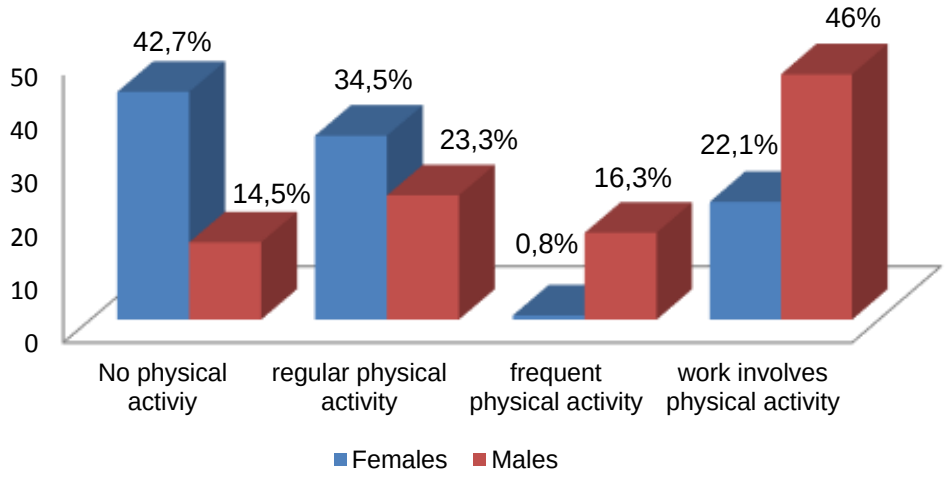

Figure 21: Physical activity practitioners in Egypt (females, males) (diagram modified after Ramadan et al., 2010).

One of the reasons that the Egyptian students didn't participate in physical activity was because they spend more time in using media in comparison with German students (table 19, 20).

In an EU study conducted in 2002 (European Commission: Physical activity 2003) asked in a questionnaire for vigorous physical activities over the last 7 days and found that approximately 45 % recorded none, 30 % recorded 1-3 days, and 20 % recorded 4 – 7 days from a German sample.

In another question asked about the vigorous physical activities participation days and time spend at it approximately 20 % recorded up to 60 minutes and 21 % recorded more than 60 minutes and more than 50 % recorded no vigorous physical activity.

On the question which asked about moderate physical activity participation at the last 7 days, besides cycling at a normal pace or doubles tennis without including walking (see figure 22). (28.6%) from German sample reported non-participation in moderate physical activity in the last 7 days showing lower rates in comparison with France (52.8%), Spain (51.3%), and Italy (50%) Denmark (30.6%), Luxembourg (33.9%), and Finland (35.9%).

The answer to the question asked about walking for at least 10 minutes at a time, and time usually spend in walking approximately 60 % from German sample walking up to 60 min and 12.5 % not walking (European Commission: Physical activity 2003).

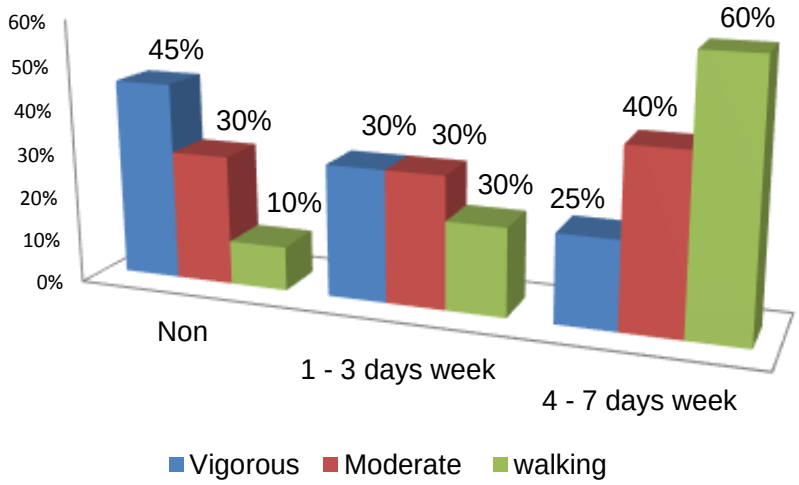

Figure 22: Physical activity practitioners in Germany % (Both gender) (diagram modified after European Commission: Physical activity, 2003)

From a researcher's perspective, the German Government has more interested than the Egyptian Government in physical health, which is evident from the fact that physical education subject is compulsory in Germany from primary school to high school but it is not compulsory in Egypt which leads to increase in physical activity interests for the students from an early age to improve their physical fitness because of its useful effect on general health, beside the availability of stadiums and sports arenas, Dissemination of sports culture in the media and competitions for different age stages.

In a study conducted on 17,641 children and adolescents (8656 girls and 8985 boys) Lampert found through parents' interviews that 76.6% between 3 - to 10-year-old boys and 75.0% girls of the same age participate at least one time a week in physical activity, from 1 to 10 years old 43.1% of boys and 36.2% of girls participate 3 or more times a week in physical activity (Lampert et al., 2007).

Correlation of health relevant parameter discussion

In this study there is a significanct correlation between appetite, weight and/or appetite problems and BMI whereby the loss of weight and loss of appetite can therefore decrease the BMI, but weight gain on the contrary leads to an increase of the BMI, This means that the excessive consumption of unhealthy food can affect the BMI.

In this context Shin-Yi Chou (2005) refer in a study carried out in U.S.A that there is a strong positive affect of consuming fast-food on the body mass index. According to innovations in agricultural production technology, the price of food relative to income has decreased significantly, causing higher quantity of food being consumed per capita, leading to increase in individuals' Body Mass Index (BMI) (Zheng et al., 2008). Hansen states that the duration of training forms a more important indicator for loss of fat-mass than training intensity. The types of exercise (e.g. walking, cycling, and swimming) are another important predicator for fat-mass loss in intervention programmes. The implementation of resistance training in such programmes does not increase fat-mass loss but to enhance body composition by increasing fat-free mass (Dendale et al., 2007).

Alfawaz shows that the frequency of eating fast food was positively related with weak belief in a diet cancer relationship, low self-efficacy for healthy eating, weight dissatisfaction, poor self-rated health and it is one of the main factors for high intake of saturated fatty acid and trans fatty acids which come from hydrogenated vegetable oil, these fatty acids have a damaging affect like insulin resistance and predispose to type 2 diabetes. The results show in the same study that the increasing of BMI is related positively with increasing of the size of fish sandwich meal (Alfawaz, 2012).

The results of this study indicate that there is a significant correlation between "personal problems", "sexuality", "health problems", unhealthy food and systolic, diastolic blood pressure. In this context, consuming unhealthy food can lead to several diseases such as heart diseases (Goldsteen, 2011). There is a positive relation between consumption of Tran's isomers of fatty acids and risk of coronary heart disease (Willett et al., 1993). Unhealthy foods, such as red or processed meats or high-fat, refined-grain foods, result in high serum cholesterol concentrations which lead to some of the arteries and heart disease (Steffen et al., 2003).

Fat intake leads to obesity and obesity is one of the most vital causes of cardiovascular disease. Heidenreich showed that reduction in fat intake improves the blood lipid levels which contribute to a decrease in cardiovascular disease death rates through decline in risk factors of the population (Heidenreich et al., 2011).

A higher intake of total and saturated fat is one of the major reasons which contribute to the development of CHD, where (5 %) of energy from saturated fat, compared with equivalent energy from carbohydrates, was associated with a 17 % greater risk of CHD, this in turn helps to increase plasma HDL concentration in blood which is produced by saturated fat and somewhat compensates for its adverse effect on LDL level (Frank et al., 2001).

A higher intake of trans fat (stick margarine, commercially baked products, and deep fried fast food) participate in increasing the risk of CHD through multiple mechanisms, through a rise in LDL cholesterol levels and lower HDL cholesterol, increase in lipoprotein (a) levels, raised plasma triglyceride levels and increased triglycerides which are positively associated with risk of CHD (Frank et al., 2001).

Dallongeville states that smokers consume more energy, total fats, saturated fats, cholesterol and alcohol and lower intakes of antioxidant vitamins and fiber, compared to nonsmokers. Such a nutrient profile may exacerbate the risk of coronary heart disease and cancer associated with smoking (Dallongeville et al., 1998).

Vrijkotte et al., (2000) agreed that psychological factors such as stress, anger, anxiety, depression variables have been associated with an increased risk for blood pressure.

Interventions and psychological problems such as depression and anxiety symptoms can have a direct effect on the physiological functions of the body. Thinking and feelings disordered is related with depression, and the resulting anxiety, leads to disordered function of our body systems, the risk of coronary heart disease increases fourfold in depressed people (Bambling, 2006).

From here Markovitz (1991) refers in the introduction of his study that feeling of anger and anxiety increase the risk for hypertension. There are some psychological factors that help to raise high blood pressure, between these variables, anger, anxiety, and depression (Rutledge et al., 2002).

Hildrum found that symptoms of anxiety and depression predicted lower blood pressure 11 years later, where level of anxiety and depression was linked with decrease in mean systolic blood pressure in both genders, men and women. Age and other risk factors are usually related to high blood pressure (Hildrum et al., 2008).

In this study the results found that VO_{2max} significantly correlates with physical activity, where Vo_{2max} is increased with increasing physical activity (Gormley et al., 2008). Physical activity both leisure and occupational were linked to VO_{2max}. This parameter was changed not by occupational physical activity, however, by leisure time physical activity (Kishida et al., 1997). Walking at 4-5-6 km/h is equal to 47-59% and 71% of VO2max respectively, in free-living conditions. Moderate physical activities and sports produced 52% vs. 35%, and 39% vs. 51% of VO_{2max}, in obese and non-obese adolescents respectively. VO_{2max} % varies according to the physical activity type (Lazzer et al., 2005).

Odds ratio results

The two variables *own health assessment* and *healthy nutrition* showed a significant link between bad dietary habits in regards to healthy food consumption and their own health assessment, whereas bad dietary habits might lead to health problems such as obesity, diabetes, cardiovascular diseases and various types of cancer (Vaston et al., quoting from Jansen J. D., 2011). Other health relevant consequences of this inter-relationship could be raised blood sugar and cholesterol levels, eventually causing high blood pressure (Bauer et al., 2008).

The two variables *health consciousness* and *sufficient physical activity* presented a significant link between a reduced health consciousness and insufficient physical activity whereby physical inactivity can affect health not only on a somatic level, but also psychological well-being is potentially at risk through physical inactivity, i.e.

higher risk of depression. It also increases the risk of many adverse status , including the world's main non-communicable diseases of coronary heart disease (CHD), type 2 diabetes, and breast and colon cancers, and shortens life expectancy (lee et al., 2012).

Conclusions

The differences in traditions, habits, cultures and monthly income between countries have their effects on peoples' behaviours in all aspects such as health care, choosing food, participating in physical activity etc., where for example the low monthly income in Egypt do not give the chance for Egyptian students to participate in physical activity regulary through fitness centres and go regular health check-ups, because it is very expensive. Therefore, socio-economic and culture specific lifestyle and qualitiy of life differences are the major reasons, which directly affect general health (physically and mentally) and nutrition.

As a results from these reasons a signifcant correlation was found between "poor nutrition" aside with "health problems", "sexuality", "personal problems" and BMI and blood pressure. Some difficulties had to be faced during the implementation of the study procedures, such as data collection and analysis, where i.e there are some questions in the questionnaire that were adapted for analysis in order to comply with the study aims and procedures these questions found in general health section, health complaints and nutrition.

6. Summary

There are significant differences between developed countries and developing countries in education, life style and health behaviour to identify the effects of the standard of living in both countries on social and health aspects. Information on the negative and positive aspects of every culture is essential in the overall health context to enable policy makers to improve the populations' general health.

The aim of this study was therefore to determine the health and fitness status of sport science students in Germany and Egypt and to identify any relevant differences in these two populations in order to derive possible strategies to promote health in a higher education setting in both countries.

The sample of this study was selected from university students as they represent the future elite of companies, communities and countries. 193 students were selected from Germany as a developed country - females (n = 104) and males (n = 89) and 406 were selected from Egypt as a developing country - females (n = 167) and males (n = 238). Sport science students firstly filled in a health questionnaire, and then they participated in anthropometric and fitness tests. The data collection was first contucted on German sport science students at Chemnitz University of Technology in October 2009 (one week). In November 2010 the second year (third and fourth term) sport science students of Menofia University (two weeks).

In the comparison between Germany and Egypt in the **General health section** the results showed that there are significant differences between the German group and the Egyptian group in **describing their health status** ($p = .044$) and in **looking after their health** ($p = .000$) in females. However, in the male group of both countries no significant difference was found regarding the item **looking after their health** ($p = .370$). The overall comparison between the German sample (both genders) and the Egyptian sample (both genders) show that there are significant differences in the items **describing their health status** ($p \leq 0.05$) as well as in **looking after their health care** ($p = .000$).

In the **physical and mental health** comparison there is no significance difference in the "chronic pain" section in German females and Egyptian females and German and Egyptian males ($p \geq 0.05$), while there are significant differences in all other items (p

≤ 0.05). In the German sample comparison of both genders there are no significant differences in: “Stomach problems”, “Abdominal discomfort”, “Weight loss/weight gain/loss of appetite” whereas there are significant differences in all another items (p≤ 0.05). In the Egyptian group there are significant differences in all another items (p≤ 0.05) except for “Weight loss/weight gain/loss of appetite”.

In **study and university related problems** between Germay and Egypt in both genders, there is no significant difference in the item “problems during study” while there are significant differences in all other items (p≤ 0.05). In the Egyptian group, both gender comparisons show no significant differences in the items: “social isolation”, and the same prospects about “working conditions”. However, there are significant differences in all another items (p≤ 0.05). In the German group in the same context no significant differences were found (p ≥ 0.05).

The comparison between Germany and Egypt in the **nutrition section** showed significant differences in all food types (p≤ 0.05), whereas in the German group there is a significant difference between females and males (p≤ 0.05), and in the Egyptian group there is no significant difference in **Healthy food** consumption (p ≥ 0.05). The results in the **media usage section** show a significant difference regarding the media usage behaviour between the German group and the Egyptian group and in the comparison between German group of both genders, and the Egyptian group comparison of both genders where (p ≤ 0.05). Regarding the **fitness tests section** the results prove that there are significant differences in all tests among the German and the Egyptian group (p≤ 0.05), except in the **static pull ups** test between German males and Egyptian males (p ≥ 0.05).

Significant correlations were found between one of the **food types** (unhealthy food), some between **physical and mental health problems** and **BMI**. There are significant correlations between some items of **study and university related problems,** and **food types** and **blood pressure**, and between **fat %, VO_{2max}**, and **physical activity**.

A significant link between bad dietary habits in regards to *healthy food consumption* and students’ *own health assessment* in Germany was found (95% CI below = 0.10, 95% top = 0.99) with OR = 0.10 and in Egypt (95% CI below = 0.35, 95% CI top =

0.92) with OR = 0.56. Another significant link between a reduced *health consciousness* and *insufficient physical activity* in Germany (95% CI below = 0.06, 95% CI top = 0.99) was proven with OR = 0.24.

The key results from this study can be summarised in the following points:

1) There is a significant difference between German and Egyptian students in health parameters.
2) Egyptian students have significantly more physical and mental health problems than their German counterparts.
3) The Egyptian students present significantly more study and university related problems compared to German students.
4) The Egyptian students show a significantly higher media usage.
5) Egyptian students participate significantly less in physical activity and therefore perform significantly less well in most fitness test parameters.
6) A high correlation was found between the anthropometric data and some physical and mental health problems as well as study and university related problems and food types. Furthermore, a high correlation between VO_{2max} and physical activity could be identified.
7) Significant link between bad dietary habits in regards to healthy food consumption and their own health assessment.
8) Significant link between a reduced health consciousness and insufficient physical activity.

It is evident from this study that there are significant differences between the developed country Germany and the developing country Egypt in regards to general well-being, health problems, which in some parameters is also gender specific in Egypt, physical activity and fitness. The aim of this study was to identify these differences in order to direct future interventional studies in this area as a next step in improving the health of students in different countries. This information could potentially aid policy makers in improving the infrastructure in health care and physical activity and thereby change and/or develop society.

Zusammenfassung

Es gibt signifikante Unterschiede zwischen Industrieländern und Schwellenländern bzgl. Bildung, Lebensstil und gesundheitsbezogenes Verhalten. Daher sind Informationen über die negativen und positiven Aspekte jeder Kultur im Gesundheitskontext essentiell, um Entscheidungsträger in die Lage zu versetzen die allgemeine Gesundheit der Bevölkerung zu verbessern.

Die Zielsetzung dieser Studie war in diesem Zusammenhang den Gesundheits- und Fitnessstatuts von Studenten der Sportwissenschaft in Deutschland und Ägypten zu bestimmen und relevante Unterschiede in den beiden Populationen aufzudecken, um daraus mögliche Strategien abzuleiten, Gesundheit im univesitären Bereich in beiden Ländern zu födern.

Die Stichprobe für diese Studie rekrutierte sich aus Universitätsstudenten, da diese die zukünftige Elite von Firmen, Gemeinden und ganzen Ländern darstellen. 193 Studenten aus Deutschland, als Industrieland, wurden eingeschlossen – 104 weibliche und 89 männliche. Weitere 406 Studenten wurden in Ägypten, als Schwellenland, rekrutiert – wovon 167 Frauen und 238 Männer waren. Die Probanden füllten zuerst einen Gesundheitsfragebogen aus und nahmen dann an anthroprometrischen Messungen und Fitnesstests teil. Die Datenerhebing wurde zuerst an den Sportstudenten der TU-Chemnitz in Deutschland im Oktober 2009 duchgeführt. Im November 2010 wurden dann die Sportstudenten an der Menofia Univesität in Äypten getestet.

Die Ergebnisse im Vergleich des ***Allgemeinen Gesundheitsteils*** zwischen Deutschland und Ägypten zeigte signifikante Unterschiede zwischen der deutschen und der ägyptischen Gruppe bzgl. des Items ***Beurteilung des eigenen Gesundheitszustandes*** ($p = 0.44$) und in ***Auf seine Gesundheit achten*** ($p = 0.000$) bei den Frauen. Allerdings konnte kein signifikanter Unterschied bei den Männern beider Länder nachgewiesen werden ($p = 0.370$). Der Gesamtvergleich der deustchen und der ägyptischen Stichprobe (beide Geschlechter) wiesen signifikante Unterschiede auf bzgl. der Items ***Beurteilung des eigenen Gesundheitszustandes*** ($p \leq 0.05$) und auch ***Auf seine Gesundheit achten*** ($p = 0.000$).

In der Sektion ***körperliche und geistige Gesundheit*** konnte kein signifikanter Unterschied festegestellt werden in den Items „Rücken-, Nacken- und Schulterschmerzen zwischen der ägyptischen und deutschen Population (beide Geschlechter) ($p \geq 0.05$), aber dafür in allen anderen Items ($p \leq 0.05$). In der deutschen Gruppe wurden keine Unterschiede gefunden bei „Magenbeschwerden/ Gewichtszunahme/ Appetitlosigkeit“ – allerdings wurden signifikante Unterschiede in allen anderen Items gefunden ($p \leq 0.05$) – in der ägyptischen Gruppe verhielt es sich ebenso.

In der Sektion ***Studium und universitätsbezogene Probleme*** wurde zwischen Ägypten und Deutschland, auβer bei „Mangelnde praktische Relevanz des Studiums, Tests und Seminararbeiten“, in all anderen Items signifikante Unterschiede nachgewiesen ($p \leq 0.05$). Der Geschlechtervergleich der ägyptischen Stichprobe zeigte keine signifikanten Unterschiede in den Items „Anonymität und Isolation an der Uni, und generelle Isolation“ wie auch „Schlechte Karriere, Arbeitslast zusätzlich zur Uni, schlechte Arbeitsbedingungen“. Jedoch sind signifikante Unterschiede zwischen den Geschlechtern in allen anderen Items zu verzeichnen ($p \leq 0.05$). Dies traf jedoch nicht auf die deutsche Stichprobe zu ($p \geq 0.05$).

Der Vergleich zwischen den deutschen und ägyptischen Studenten in der Sektion ***Ernährung*** zeigte signifikante Unterschiede in allen Nahrungstypen ($p \leq 0.05$) und zusätzlich in der deutschen Gruppe noch signifikante Unterschiede in der Ernährungsweise zwischen Män und Frauen ($p \leq 0.05$). Die Ergebnisse in der Sektion ***Mediennutzung*** zeigten signifikante Unterschiede zwischen der gesamten deutschen und ägyptischen Stichprobe – wie auch innerhalb deutschen und ebenso ägyptischen Geschlechtervergleich ($p \leq 0.05$). Bzgl. der **Fitnessektion** zeigten die Ergebnisse signifikant bessere Ergebnisse in der deutschen Kohorte im Vergleich zur Ägyptischen ($p \leq 0.05$), mit der Ausnahme der „Statischen Klimmzüge“ bei den männlichen Studenten in Deutschland und Ägypten ($p \geq 0.05$).

Des Weiteren wurden signifikante Korrelationen gefunden zwischen dem ***Nahrungstypus*** „ungesundes Essen“ und einigen Parametern der ***körperlichen und geistigen Gesundheitsprobleme*** wie auch ***BMI***. Es gibt ebenfalls signifikante Korrelationen zwischen weiteren Items der Sektion ***Studiums und universitätsbezogenen Problemen***, und ***Nahrungstypen*** und ***Blutdruck*** – wie auch ***Körperfett %***, ***VO_{2max}*** und ***körperlicher Aktivität***.

Eine signifkante Verbindung der Wahrscheinleichtkeiten wurde zwischen schlechten Ernährungsgewohnheiten bzgl. *Konsum von gesundem Essen* und der *Selbsteinschätzung der Gesundheit der Studenten* wurde festgestellt (95% CI below = 0.10, 95% top = 0.99) mit einer OR = 0.10 und in Ägypten (95% CI below = 0.35, 95% CI top = 0.92) mit einer OR = 0.56. Ein weiterer signifikante Wechselbeziehung konnte zwischen einem *reduzierten Gesundheitsbewußtsein* und *unzureichender körperlicher Aktivität* in Deutschland nachgewiesen werden (95% CI below = 0.06, 95% CI top = 0.99), mit einer OR = 0.24.

Die Kernergebnisse dieser Studie lassen sich in folgenden Punkten zusammenfassen:

1) Es gibt einen signifikante Differenz zwischen deutschen und ägyptischen Studenten bzgl. Gesundheitsparameter.
2) Ägyptische Studenten haben signifikant mehr körperliche und mentale Gesundheitsprobleme als die deutsche Stichprobe.
3) Die ägyptischen Studenten zeigten signifikant mehr Studiums- und universitätsbezogene Probleme als die deutschen Studenten.
4) Die ägyptischen Studenten hatten einen signifikant höheren Medienkonsum als die deutsche Stichprobe.
5) Ägyptische Studenten wiesen signifikant weniger körperliche Bewegung auf als die deutschen Studenten und schnitten daher auch mit einer signifkant geringeren Leistung in den Fitnesstests ab.
6) Eine hohe Korrelation konnte nachgewiesen werden zwischen den anthropometrischen Daten und einigen körperlichen und psychischen Gesundheitsproblemen. Des Weiteren wurde erwartungsgemäß auch eine hohe Korrelation zwischen VO_{2max} und körperlicher Aktivität gezeigt.
7) Es gibt einen signifikantnten Zusammenhang zwischen schlechten Ernährungsgewoheiten bei dem Konsum von gesunden Nahrungsgewohnheiten bei dem Konsum von gesunden Nahrungsmitteln und der eingenen Gesundheitseinschätzung.
8) Des Weiteren gibt es einen signifikanten Zusammenhang zwischen einem reduzierten Gesundheitsbewusstsein und unzureichender körperlicnher Aktivität.

Es ist durch die Ergebnisse dieser Studie evident, dass es signifikante Unterschiede zwischen Industrieländern und Schwellenländern gibt bzgl. des allgemeinen Wohlbefindens, Gesundheitsproblemen, von denen einige Parameter in der ägyptischen Population auch geschlechtsspezifisch sind, körperlicher Aktivität und Fitness. Das Ziel dieser Studie war es diese Unterschiede zu identifizieren und damit zukünftigen Interventionsstudien Anhaltspunkte zu liefern, um im nächsten Schritt die Gesundheit von Studenten in verschiedenen Ländern zu verbessern. Diese Informationen kann potentiell Entscheidungsträgern helfen, die Infrastruktur bzgl. Gesundheitsversorgung und die Rahmenbedingungen für körperlicher Aktivität zu verbessern und dadurch die Gesellschaft zum positiven zu verändern bzw. weiterzuentwickeln.

7. References

1. Abdel Fattah H. H, Moussa W., Tawfik A., Ghobrial M., Youssif A., Abd El Hady A. (2003): Nutrition Country Profile – Egypt. *FAO, Rome, Italy*
2. A Survey on Health and Nutrition Status of Students (2006): www.cdc.gov/nchs/nhanes/about_nhanes.htm access 12:30 PM 10.11.2007
3. Ahmaidi S, Collomp K, Caillauce C, Prefaut C (1992): Maximal and functional aerobic capacity as assessed by two graduated field methods in comparison to laboratory exercise testing in moderately trained subjects; *International Journal of Sports Medicine 13(3):243-248*
4. Al Ansari W, Stock C, John J, Deeny P, Phillips C, Snelgrove S, Adetunji H, Hu X, Parke S, Stoate M, Mabhala A (2011): Does the Association between Depressive Symptomatology and Physical Activity Depend on Body Image Perception? A Survey of Students from Seven Universities in the UK; *Int J Environ Res Public Health. February; 8(2): 281–299*
5. Al Ansari W., Clausen S. V., and Mabhala A., Stock C. (2010): How Do I Look? Body Image Perceptions among University Students from England and Denmark; *Int J Environ Res Public Health. February; 7(2): 583–595*
6. Al Ansari W., Labeeb S., Moseley L., Kotb S., and El-Houfy A. (2013): Physical and Psychological Well-being of University Students: Survey of Eleven Faculties in Egypt; *Int J Prev Med. Mar;4(3):293-310*
7. Al Ansari W., Stock C, Mikolajczyk RT (2012): Relationships between food consumption and living arrangements among university students in four European countries - a cross-sectional study; *Nutr J. 2012; 11: 28. Published online April 24*
8. Al Ansari W., Stock C. (2010): Is the Health and Wellbeing of University Students Associated with their Academic Performance? Cross Sectional Findings from the United Kingdom; *Int. J. Environ. Res. Public Health, 7(2), 509-527.*
9. Al Ansari W., Stock C., the UK Student Health Group, Snelgrove S., Hu X., Parke S., Davies S., John J., Adetunji H., Stoate M., Deeny P., Phillips C., Mabhala A. (2011): Feeling Healthy? A Survey of Physical and Psychological Wellbeing of Students from Seven Universities in the UK; *Int. J. Environ. Res. Public Health, 8(5), 1308-1323*
10. Berman M. (1981): Making Use of Questionnaires and Surveys; *ELT J (2): 126-130*

11. Al Ansari, Ashker S.E., Moseley L. (2010): Association between physical activity and health parameters in adolescent pupils in Egypt; *Int. J. Environ. Res. Public Health, 7(4), 1649-1669*
12. Alfawaz H. A. (2012): The relation between fast food consumption and BMI among university female students Pakistan; *journal of nutrition 11(5):406-410,*
13. American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription, 7th Edition. Lippincott Williams and Wilkins: Philadelphia; (2006): Sportsmedicine.about.com access 9:00 AM 1.12.2007
14. American heart association (1992): Statement on exercise; Circulation, internal medicine 103:994-995; Howley E.T., Franks B.D. (2007): Fitness Professional's Handbook, *Human Kinetics U.S.A.*
15. Armstrong N., Welsman J., Kirby B. (1998): Aerobic fitness and physical activity Patterns of young people 1996; *Physical education: a reader* Aachen: *Meyer & Meyer Verlag (PP.105-115).*
16. Anderson C. A., Berkowitz, Donnerstein, L. E. Huesmann L. R., Johnson J. D., Linz D., Malamuth N. M., and Wartella E. (2003): The influence of media violence on youth; *Psychological Science in the Public Interest December 2003 vol. 4 no. 3 81-110*
17. Astrand P.O., Rodahl K., Dahl H. A., Stromme S. B. (2003): Text book of work physiology; Physiological bases of exercise: fourth edition; *Human Kinetics Pub Inc. U.S.A.*
18. Baecke J. A. H., Burema J., Frijters E. R. (1982): A short questionnaire for the measurement of habitual physical activity in epidemiological studies. *Am J Clin Nutr.; 36: 936-942.*
19. Baitz S., Eger K.-H.: Einführung in SPSS II; Chemnitz university of technology
20. Bambling M. (2006): Psychotherapy and the Relationship between Mental and Physical Health; *Psychotheraby in Australia • Vol 12 No 2 • February*
21. Barbosa N., Sanchez E. C., Vera A. J., Perez W., Thalabard C. J., Rieu M. (2007): A physical activity questionnaire: Reproducibility and validity; *Journal of Sports Science and Medicine vol 6. 6,505-518*
22. Bassuk S. S. and Manson J. E. (2005): Epidemiological evidence for the role of physical activity in reducing risk of type 2 diabetes and cardiovascular disease; *J Appl Physiol 99: 1193–1204,*

23. Bauer M. S., Kilbourne M. A., Greenwald D. E. (2008): Overcoming bipolar disorder a comprehensive workbook for managing your symptoms and achieving your goals; *New Harbinger Publications U.S.A.*
24. Bean A. (2006): The complete guide to sports nutrition 5th edition; *A&C Black Publishers Ltd London.*
25. Bender S.J., Neutens J.J., Hardin S.S., and Sorochan W.D.: Teaching Health Science (1997); *Jones and Bartlett Publishers Canada.*
26. Berman M. (1981): Making Use of Questionnaires and Surveys; *ELT J (2): 126-130*
27. Berry J. W. (1992): Cross-Cultural Psychology; *Campridge University Press UK*
28. Beyer E. (1987): Dictionary of sport science; *K. Hofmann Germany*
29. Bickerstaff L. (2007): Stress; *the Rosen Publishing Group New York U.S.A.*
30. Block G (1992): Fruit, vegetables, and cancer prevention: a review of the epidemiological evidence; *Nutr Cancer; 18(1):1-29.*
31. Bolboacă S. D., Jäntschi L., Sestraş A. F. Sestraş R. E. and Pamfil D. C. (2011): Pearson-Fisher Chi-Square Statistic Revisited; *Information, 2, 528-545.*
32. Bonita R., Beaglehole R., Kjellström T. (2006): Basic epidemiology; *World Health Organisation, chapter 1, 2.*
33. Borradaile G. J. (2003): Statistics of Earth Science Data; *Springer Berlin Heidelberg Germany.*
34. Bouchard C., Shephard R.J., Stephens T. (1994): Physical Fitness, And Health *Human Kinetics U.S.A.*
35. Bös K., 2008: DMT Deutscher Motorik-Test, Deutsche vereinigung für Sportwissenschaft; *Feldhaus Germany.*
36. Bruce N., Perez-Padilla R., Albalak R. (2000): Indoor air pollution in developing countries a major environmental and public health challenge; *Bulletin of the World Health Organization, 78 Ref. No. 00-0711*
37. Brunner E. J., Mosdøl A., Witte D. R., Martikainen P., Stafford M., Shipley M. J., and Marmot M. G. (2008): Dietary patterns and 15-y risks of major coronary events, diabetes, and mortality; *Am J Clin Nutr; 87:1414–21.*
38. Bulck J. V. (2004): Television Viewing, Computer Game Playing, and Internet Use and Self-Reported Time to Bed and Time out of Bed in Secondary-School Children; *SLEEP;27(1):101-4*

39. Burke V., Beilin L., Durkin K., Stritzke W., Houghton S. and Cameron C. (2006): Television, Computer Use, Physical Activity, Diet and Fatness in Australian Adolescents; *International Journal of Pediatric Obesity. 1, 248-255*
40. Busch, M. A., Maske U.E., Ryl L., Schlack R., Hapke U. (2013): Prevalence of depressive symptoms and diagnosed depression among adults in Germany. Results of the German Health Interview and Examination Survey for Adults (DEGS1); *Bundesgesundheitsblat Gesundheitsforschung Gesundheitsschutz; 56(5-6):733-9*
41. Cancer Conical of Victoria: www.cancervic.org.au/research/behavioural/research-papers. access 11:10 AM 7.4.2009
42. Case A., Paxson C (2004): Sex Differences in Morbidity and Mortality; Center for Health and Wellbeing Princeton University: *R01 AG20275-01. Corresponding author: Christina Paxson, cpaxson@princeton.edu.*
43. Cash T. F., Pruzinsky T. (2004): Body Image A Handbook Of Theory, Research, And Clinical Practice: *N Engl J Med 2003; 348:1415-1416*
44. Caspersen C.J., Kriska A.M., Dearwater S. R.: Physical activity epidemiology as applied to elderly populations; *Baillieres Clin Rheumatol. 1994 Feb;8(1):7-27*
45. Caspersen C. J., Nixon P. A., Durant R. H.: Physical activity epidemiology applied to children and adolescents; *Exerc Sport Sci Rev. 1998;26:341-403*
46. Caspersen C J, Powell K E, and Christenson G M (1985) : Physical activity, exercise and physical fitness: definitions and distinctions for health-related research; *Public Health Rep. Mar-Apr; 100(2): 126–131*
47. Chou S.-Y., Inas Rashad, Michael Grossman (2005): Fast-Food Restaurant Advertising on Television and Its Influence on Childhood Obesity; *National Bureau of Economic Research (NBER) Working Paper No. 11879*
48. Clark L. J. (2001): The essentials of business statistics, band 2; *Research and Education Association Chapter 11, 164-168.*
49. Council of europe (1983): Testing physical fitness, Eurofit Experimental Battery Provisional Handbook, Strasbourg, *The Council Australia*
50. Country Cooperation Strategy for WHO and Egypt (2010–2014)
51. Cuthbertson W. F. J. (1989): what is a healthy food; *Food Chemistry 33 (1989) 53-80 Elsevier Ltd. ScienceDirect.*

52. Dallongeville J., Marécaux N., Fruchart J.-C., and Amouyel P. (1998): Cigarette Smoking Is Associated with Unhealthy Patterns of Nutrient Intake: *a Meta-analysis J. Nutr. September 1, vol. 128 no. 9 1450-1457*
53. Daly M. A., Parsons E. J., Wood N. A., Gill K. T., Taylor A. W. (2011): Food consumption habits in two states of Australia, as measured by food frequancy questionnaire; *Daly et al. BMC Research Notes 2011, 4:507*
54. Dawoud S. (2005): An analysis of food consumption patterns in Egypt Dissertation *Kiel University.*
55. Dendale P, Berger J, van Loon LJ, Meeusen R. (2007): The effects of exercise training on fat-mass loss in obese patients during energy intake restriction; *Sports Med.;37(1):31-46*
56. Deutsch Zetrum für Diabetesforschung (2011): www.dzd-ev.de/en/diabetes-the-disease/statistics/index.html access 10:00 AM 3.3.2012
57. Dishman R. K., Heath G. W., and Lee I-M. (2012): Physical Activity Epidemiology; *Human Kinetics U.S.A. Part one, 1*
58. Dishman R. K., Heath G. W., and Washburn R. (2004): Physical Activity Epidemiology; *Am. J. Epidemiol. 159 (9): 910-911.*
59. Doh Y. Rodolfo M., Nayga Jr.: A note on the effect of television viewing and computer use on adult obesity (2011): *Texas A & M University College Station, TX 77832-212*
60. Durnin, Womersley J.V.G.A. and, J. (1974): Body fat assessed from the total body density and its estimation from skinfold thickness.Measurements on 481 men and women aged from 16 to 72 years; *British Journal of Nutrition 32, 77-97*
61. Edlin G., Golanty E. (2006): Health And Wellness 3-548 Jones and Bartlett U.S.A
62. Eisenmann J. C., Bartee R. T., Wang M. Q., (2002): Pysical activity, viewing, and weight in U.S. youth: 1999 youth risk behaviour survey; *Obes Res. 2002 May; 10(5):379-85.*
63. El-Gilany A. - H., Badawi K., El-Khawaga G., and Awadalla N. (2011): Physical activity profile of students in Mansoura University, Egypt; *East Mediterr Health J. Aug;17(8):694-702*
64. El – Sayed N., (2012): Egypt nutrition landscape analysis report. 31-52 Unicef Egypt; www.unicef.org/mena/Landscape_Anaylsis_Report_January_2013(1).pdf
65. El-Zanaty F., Way A. (2009): Demographic and Health Survey dhsprogram.com/pubs/pdf/FR220/FR220.pdf

66. Eriksen H., Svendsrod R., and Ursin G., Ursin H. (1997): Prevalence of subjective health complaints in the Nordic European countries; *Eur J Public Health* (1998) 8 *(4): 294-298.*
67. European Commission (2003): Physicalactivity; ec.europa.eu /public_opinion /archives/ebs/ebs_183_6_en.pdf
68. Flouris A D, Metsios G S, Koutedakis Y (2005): Enhancing the efficacy of the 20 m multistage shuttle run test; *Br J Sports Med 39:166–170*
69. National health and nutrition examination survey (2008): Food Frequency Questionnaire; cdc.gov /nchs /nhanes /nhanes20032004/ FFQDC_C.htm #Analytic_Notes
70. Frank B. Hu, Manson J. E., and Willett W. C. (2001): Types of Dietary Fat and Risk of Coronary Heart Disease: *A Critical Review J Am Coll Nutr February vol. 20 no. 1 5-19*
71. Food and agriculture organization of the united nations (FAO) (1989): Report of the Conference of FAO Twenty-fifth Session Rome, 11-29 November
72. Food and agriculture organization of the united nations (FAO) (2004): Policy Brief Incorporating Nutrition Considerations into Development Policies and Programmes; Brief for Policy-makers and Programme Planners in develping countries; Rome ftp://ftp.fao.org/docrep/fao/007/y5343e/y5343e00.pdf
73. Food and agriculture organization of the united nations (FAO) and World health organisation (WHO) (1992): Rome, December; http://whqlibdoc.who.int/hq/1992/a34812.pdf
74. Galal O. M. (2002): The nutrition transition in Egypt: obesity, undernutrition and the food consumption context; Public Health Nutr. *Feb; 5(1A):141-8.*
75. Germany media (2013): nationmaster.com/graph/med_tel_vie-media-television-viewing
76. German nutrition society (2009): The nutrition report 2008; 1thedition, *Art. No. 208510*
77. Ghanem M., Gadallah M., Mourad S., et al (2004): National Survey of Prevalence of Mental Disorders in Egypt. *WHO sponsored study (under publication).*
78. Goldsteen R. L., Goldsteen K., Graham D. G. Introduction to Public Health (2011)
79. Gormley SE, Swain DP, High R, Spina RJ, Dowling EA, Kotipalli US, Gandrakota R. (2008): Effect of intensity of aerobic training on VO2max; *Med Sci Sports Exerc. Jul;40(7):1336-43*

80. Graham A. (2005): Primary Health Care Reform and Women; National Coordinating Group on Health Care Reform and Women *ISBN: 0-9733117-4*
81. Haftenberger M., Laußmann D., Ellert U., Kalcklösch M., Langen, Schlaud U. M., Schmitz R., Thamm M. (2013): Prevalence of sensitisation to aeraoallergens and food allergens. Results of the German Health Interview and Examination Survey for Adults (DEGS1); Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz *May;56(5-6):687-97*
82. Hapke U., Lippe E. V. Der, Gaertner B. (2013): Alcohol consumption, at-risk and heavy episodic drinking with consideration of injuries and alcohol-specific medical advice. Results of the German Health Interview and Examination Survey for Adults (DEGS1); Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. *May; 56(5-6):809-13.*
83. Harman R. J., Mason P., (2002): Handbook of pharmacy health care: diseases and patient advice; *Pharmaceutical Press London UK.*
84. Haskell W. L. (1984): The influence of exercise on the concentrations of triglyceride and cholesterol in human plasma. Exercise and sport sciences Reviews 12:205-244, Howley E.T., Franks B.D.: Fitness Professional's Handbook (2007): *Human Kinetics U.S.A.*
85. Haugland S., Wold B., Stevenson J., Edvard L., Woynarowska B. (2001): Subjective health complaints in adolescence a cross-national comparison of prevalence and dimensionality; Eur J Public Health. *Mar;11(1):4-10*
86. Heidemann C., Kroll L., Icks A., Lampert T., Scheidt-Nave C. (2009): Prevalence of known diabetes in German adults aged 25-69 years: *Results from national health surveys over 15 years Diabetic Medicine, 26 (6), pp. 655-658*
87. Heidenreich Paul A., Trogdon Justin G., Khavjou Olga A., Butler Javed, Dracup Kathleen, Wilson and Khera Y. J. W., Lloyd-Jones D. M., Nelson S. A., Nichol G., Orenstein D., Ezekowitz P. W.F. M. D., Finkelstein E. A., Hong Y., Amit J. S. C.: from the American heart association forecasting the future of cardiovascular disease in the united states (2011); *A Policy Statement; 123:933-944*
88. Hernandez L. M., Durch J. S., Blazer D. G., and Hoverman I. V. (1999), Gulf War Veterans: Measuring Health: Committee on Measuring the Health of Gulf War Veterans, Institute of Medicine; *National Academy of Sciences, Rome*
89. Heyward V. H. (2004): Advanced Fitness Assessment & Exercise Prescription. 6th ed. Champaign, IL: *Human Kinetics.*

90. Hildrum B., Mykletun A., Holmen J. and Dahl A. A. (2008): Effect of anxiety and depression on blood pressure: 11-year longitudinal population study; *The British Journal of Psychiatry 193, 108–113*
91. Howley E.T., Franks B.D. (2007): Fitness Professional's Handbook; *Human Kinetics U.S.A.*
92. Hu F.: Obesity Epidemiology (2008): *Oxford University Press New York U.S.A*
93. Hu F. B. (2005): Protein, body weight, and cardiovascular health: *Am J Clin Nutr; 82(suppl):242S–7S*
94. Ibrahim M. M., Rizk H., Appel L. J., El Aroussy W., Helmy S., Sharaf Y., Ashour Z., Kandil H., and Roccella E., Whelton P. K., for the NHP investigation team (1995): Hypertension prevalence, awareness, treatment, and control in Egypt results from the Egyptian national hypertension project (NHP); *Hypertension; 26: 886-890*
95. International Physical Activity Questionnaire scoring (2005) : docs.google.com /viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnx0aGVpcGFxfGd4OjE0NDgxMDk3NDU1YWRlZTM
96. Ihlebaek C., Eriksen H. R., Ursin H (2002): Prevalence of subjective health complaints (SHC) in Norway 2002; Scand J Public Health. *2002;30(1):20-9*
97. Isherwood K., Fung L., Walker S., Cameron L. J. & Cotterrell M. (2001): The effect of menstruation on psychological and physiological correlates of endurance performance; fulltext.ausport.gov.au/fulltext/2001/acsms/papers/CAME.pdf
98. Jacobi F., Hölting C., Sommer S. & Wittchen H.-U. (2001): Prevalence and treatment status of mental disorders in Germany: Do behavior therapists play a measurable role? ; *European Association of Cognitive Behavioural Therapies, 11.-16.9.2001 in Istanbul.*
99. Jeukendrup A., Gleeson M. 2004: Sport nutrition (an introduction to energy production and performance, *Human Kinetics U.S.A.*
100. Joshipura K. J. (2001): The Effect of Fruit and Vegetable Intake on Risk for Coronary Heart Disease *June 19, 2001 vol. 134 no. 12 1106-1114*
101. Juniper E. F., Guyatt G. H, Epstein R. S., Ferrie P. J., Jaeschke R., Hiller T. K (1992): Evaluation of impairment of health related quality of life in asthma: development of a questionnaire for use in clinical trials; *Thorax ;47:76-83*

102. Kanny D., Powell KE. (2003): Georgia Student Health Survey Report. Georgia Department of Human Resources, *Division of Public Health*, *Publication Number: DPH03/144*

103. Karvonen S., Vikat A., Rimpela M. (2005): The role of school context in the increase in young people's health complaints in Finland; J Adolesc. *Feb;28(1):1-16.*

104. Kaur H., Choi W., Mayo M. and Harris K. (2003): Duration of Television Watching is Associated with Increased Body Mass Index; *The Journal of Paediatrics, 143 (4), 506-511*

105. Kavlock R. J. , Daston G. P. , DeRosa C. , Fenner-Crisp P., Gray L. E. , Kaattari S. , Lucier G. , Luster M. ,Mac M. J. , Maczka C. , Miller R. , Moore J. ,Rolland R. , Scott G. , Sheehan D. M. , Sinks T. , Tilson H. A., (1996): Research needs for the risk assessment of health and environmental effects of endocrine disruptors: a report of the U.S. EPA-sponsored workshop; *Environ Health Perspect. August; 104(Suppl 4): 715–740*

106. Kelly F. G., (2003): Oxidative stress: its role in air pollution and adverse health effects; Occup Environ Med; *60:612-616*

107. Kishida T, Inaba R, Iwata H. (1997): Relationships between maximal oxygen uptake (VO2max) and physical activity, blood pressure and serum lipids Nihon Eiseigaku Zasshi. *Jul;52(2):475-80*

108. Krug S., Jordan S., Mensink G.B.M., Müters S., Finger J.D., Lampert T. (2013): Physical activity. Results of the German Health Interview and Examination Survey for Adults (DEGS1); *Bundesgesundheitsbl 56:765–771*

109. Lampert T., Lippe E. V. D., Müters S. (2013): Prevalence of smoking in the adult population of Germany. Results of the German Health Interview and Examination Survey for Adults (DEGS1); *Bundesgesundheitsbl 56:802–808*

110. Lampert T., Mensink G. B. M., Romahn N., Woll A. (2007): Physical activity among children and adolescents in Germany. Results of the German health interview and examination survey for children and adolescents *(KiGGS) • 50:634–642*

111. Lal Bhomi A., Bajracharya, H. R., Luitel B (2011): Education and Development; Research Centre for Educational Innovation and Development (CERID) file:///C:/Users/ig/Downloads/1320741797%20(2).pdf

112. *Tribhuvan University, Balkhu, Kathmandu Nepal*

113. Lazzer S, Boirie Y, Bitar A, Petit I, Meyer M, Vermorel M. (2005): Relationship between percentage of VO2max and type of physical activity in obese and non-obese adolescents *J Sports Med Phys Fitness. Mar;45(1):13-9*

114. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT; Lancet Physical Activity Series Working Group. (2012): Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy; Lancet. *2012 Jul 21;380(9838):219-29.*

115. Linn M. W., Sandifer R., BS, and Stein S. (1985): Effects of Unemployment on Mental and Physical Health; *Am J Public Health; 75:502-506.)*

116. Lois M. Verbrugge Gender and Health (1985): An Update on Hypotheses and Evidenc; *Journal of Health and Social Behavior, Vol. 26 September: 156-182*

117. Marilena K., Elias C. (2007): Human health effects of air pollution: *Received 4 June 2007; accepted 10 June*

118. Mark A. E., Boyce W. F, Janssen I. (2006): Television viewing, computer use and total screen time in Canadian youth; *Paediatr Child Health. November; 11(9): 595–599*

119. Markovitz., Matthews, Karen A.; Wing, Rena R.; Kuller, Lewis H.; Meilahn, Elaine N. (1991): Psychological, biological and health behavior predictors of blood pressure changes in middle-aged women; *Journal of Hypertension, 9(5):399-406]).*

120. Martin A. J., James M. A. (2006): Does Gender Modify the impact of video game playing and television watching on adolescent obesity? ; *American Journal of Health Studies Source Volume: 21 Source Issue.*

121. Mendoza-Núñez V. M., Mecalco-Herrera C., Ortega-Ávila C., Mecalco-Herrera L., Soto-Espinosa J. L., and Rodríguez-León M. A.: A randomized control trial: training program of university students as health promoters; *BMC Public Health 2013, 13:162*

122. Mensink G.B.M., Schienkiewitz A., Haftenberger M., Lampert T., Ziese T., Scheidt-Nave C. (2013): 10 Overweight and obesity in Germany. Results of the German Health Interview and Examination Survey for Adults (DEGS1); *Bundesgesundheitsbl 56:786–794*

123. Mensink G.B.M., Truthmann J., Rabenberg M., Heidemann, C. Haftenberger M., Schienkiewitz A., Richter A. (2013): Fruit and vegetable intake in Germany. Results of the German Health Interview and Examination Survey for Adults

(DEGS1); *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 56(5-6):779-85.*

124. Meyer A-M, Couper D. J., Evenson K. R., Stevens J., Pereria M. A. and Heiss G., 2008 :Television, physical activity, deit, and body weight status: the ARIC cohort; *International Journal of Behavioral Nutrition and Physical Activity 2008, 5:68*

125. Midthjell K., Holmen J., and Bj0rndal A., Lund-Larsen P. G. (1992): Is questionnaire information valid in the study of a chronic disease such as diabetes? The Nord- Tr0ndelag diabetes study; *Journal of Epidemiology and Community Health 1992; 46: 537-542*

126. Montasser N., A. Fattah A. E. E., Helal R. M. (2011): Pattern of vigorous physical activity among Egyptian freshmen university students; *South African Journal of Sports Medicine SAJSM, vol 23 No. 4*

127. NASPE 'National Association for Sport and Physical Education': Physical Best Program (2005).

128. National health and examination survey (2008): http://www.cdc.gov/nchs/nhanes/nhanes2005-2006/FFQDC_D.htm

129. National institutes of health (1996): Physical activity and cardiovascular health; Howley E.T., Franks B.D. (2007): Fitness Professional's Handbook, *Human Kinetics U.S.A.*

130. Norman G. J., Schmid B. A., Sallis J. F., Calfas K. J. and Patrick K. (2004): Psychosocial and Environmental Correlates of Adolescent Sedentary Behaviours; *Pediatrics Vol.116 No.4 October 1, pp. 908 -916*

131. Oblinger D. G. (2005): Educating the net generation; Educause; chapter 2, 1-5

132. O'Callaghan T., (2009): Playing too many video games may be bad for you too, grown ups; Time magazine; healthland.time.com/2009/08/18/playing-too-many-video-games-is-bad-for-you-too-grown-ups/ access 2:12 AM 5.10.2013

133. Okasha A., Kamel M., Khalil A. H., et al (1985) Academic difficulty among male Egyptian university students. I. Association with psychiatric morbidity. *British Journal of Psychiatry, 146, 140-144.*

134. Okasha, A., Ragheb, K., Attia, A. H., et al (2001) Prevalence of obsessive compulsive symptoms (OCS) in a sample of Egyptian adolescents. *Encephale, 27, 8-14.*

135. Patrick D.L., Erickson P. (1993): Health status and health policy; Health care evaluation and resource allocation, *Oxford University Press New York U.S.A.*

136. Peabody John W., Taguiwalo Mario M., Robalino D. A., and Frenk J.: Improving the Quality of Care in Developing Countries Bookshelf ID (2006): *NBK11790PMID: 21250362*

137. Pearson, Salmon N. J., Crawford D., Campbell K., Timperio A. (2011): Are parental concerns for child TV viewing associated with child viewing and at home sedentary environment; Int J Behav Nutr Phys Act. *2011 Sep 27; 8:102.*

138. Pasiakos S. M., (2008): Skeletal muscle protein utilization and intrcellular signaling in physical active adults: the impact of an acute energy deficit and leucine intake; *ProQuest LLC U.S.A, 63-64.*

139. Peikin S. R.: Gastrointestinal Health Third Edition (1999); *Harper Perennial U.S.A.*

140. Pelclová J., Al Ansari W. E., Vašíčková (2010): Is Participation in After-School Physical Activity Associated with Increased Total Physical Activity? A Study of High School Pupils in the Czech Republic; *Int. J. Environ. Res. Public Health, 7(7), 2853-2865*

141. Pivarnik J. M., and Karin A., 2002: The Importance of Physical Activity for Children and Adolescents; *Michigan Governor's Council on Physical Fitness, Health and Sports. Published in 2002 by the Michigan Fitness Foundation.*

142. Plotnikoff R. C., Trink L., Kerry S., 2008: Predictors of aerobic physical activity and resistance training among canadianadults with type 2 diabetes: An application of the Protection motivation theory) (*Psychology of sport and Exercise: ELSEVIER: Volume 10, Issue 3, May, 320–328*

143. Poethko-Müller C., Zimmermann R., Hamouda O., Faber M., Stark, Ross K. R.S., Thamm M. (2013): Epidemiology of hepatitis A, B, and C among adults in Germany. Results of the German Health Interview and Examination Survey for Adults (DEGS1); *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz.; 56 (5-6): 707-15*

144. Qian H. (2009): On data-driven chi square statistics: *Proquest, Umi Dissertation.*

145. Ramadan M. A.Elghany, A.Aziz H. (2010): survey of young people in Egypt preliminary report; *The Population Council, Inc. ISSN: 3888/2010*

146. Randall M., (2010): The Physiology of Stress: Cortisol Hypothalamic-Pituitary-Adrenal Axis; *Dartmouth Ungergraduate Journal of Science dujs.dartmouth.edu/fall-2010/the-physiology-of-stress-cortisol-and-the-hypothalamic-pituitary-adrenal-axis#.U_Tymvl_shs*

147. Reinard J. C. (2006): Communication Research Statistics; *Sage Pubn Inc India.*

148. Rettner R. (2012): (http://www.scientificamerican.com/article.cfm?id=women-feel-pain-more-intensely)

149. Rideout J.R. , Foehr U. G., Roberts D. F. 2010: Generation M2 Media in the Lives of 8- to 18-Year-Old *A Kaiser Family Foundation Study*

150. Richter A., Heidmann C., Schulz M. B., Roosen J., Thiele S., and Mensink G. B. M., (2011): Dietary patters of adolescents in Germany-Associations with nutrient intake and other health related lifestyle characteristics. *BMC Pediatrics, Vol 12(35).*

151. Robinson, T., 1998. Does Television Cause Childhood Obesity?; *The Journal of the American Medical Association (JAMA), 279, 959-960*

152. Rutledge T., PhD and Hogan B. E., MAA (2002); Quantitative Review of Prospective Evidence Linking Psychological Factors With Hypertension Development; *vol. 64 no. 5 758-766*

153. Rutter M., (1989): Pathways from childhood to adult life; *J Child Psychol Psychiatry. 1989 Jan;30(1):23-51.*

154. Salama B. (2007): Health and health pedagogue; *dar elfakr elarabi*

155. Scott house employee travel survey – Draft October 2006

156. Sherril C. (1996): Individual differences , adaptation and creativity theory: *Applications and perspectives 1994: Physical education and sport changes and challenges: World congress physical education and sport*

157. Schulze MB, Brandstetter BR, Kroke A, Wahrendorf J, Boeing H. (1999): Boeing Quantitative Food Intake in the EPIC-Germany Cohorts; *Ann Nutr Metab.;43(4):235-45*

158. Shin M.-H. (2002): Intake of Dairy Products, Calcium, and Vitamin D and Risk of Breast Cancer; *Journal of the National Cancer Institute, Vol. 94, No. 17, September 4, 2002.*

159. Sigmund E., Al Ansari W., Sigmundová D. (2012): Does school-based physical activity decrease overweight and obesity in children aged 6-9 years? A two-year

non-randomized longitudinal intervention study in the Czech Republic; *BMC Public Health. 2012; 12: 570. Published online July 29*

160. Sinha V.C., Zacharia E.: Elements Of Demography: (1984)

161. Siri W. E. (1961): Body composition from fluid space and density: In J. Brozek & A. Hanschel (Eds.), Techniques for measuring body composition Washington, DC: *National Academy of Science (pp. 223-244).*

162. Soueif M. I., Darweesh Z. A., Hannourah M. A., et al (1986) The extent of drug use among Egyptian male university students; *Drug & Alcohol Dependence, 18, 389-403.*

163. Soueif M. I., el Sayed A. M., Darweesh Z. A., et al (1982): The extent of nonmedical use of psychoactive substances among secondary school students in Greater Cairo. *Drug & Alcohol Dependence; Impact Factor: 3.14. 03/1982; 9(1):15-41.*

164. Soueif M. I., Hannourah M. A., Darweesh Z. A., et al (1987): The use of psychoactive substances by female Egyptian university students, compared with their male colleagues on selected items; *Drug Alcohol Depend.; 19(3):233-47.*

165. Soueif M. I., Youssuf G. S., Taha H. S., et al (1990) Use of psychoactive substances among male secondary school pupils in Egypt: a study on a nationwide representative sample. *Drug & Alcohol Dependence, 26, 63-79.*

166. Spatz C.: basic Statistics (2011): Tales of distribution: *Cengage Learning U.S.A.*

167. St Clair Gibson A, Broomhead S, Lambert MI, Hawley JA. (1998): Prediction of maximal oxygen uptake from a 20-m shuttle run as measured directly in runners and squash players; *J Sports Sci. May; 16(4):331-5.*

168. Egyptian state information service: access 7:05 AM 2.7.2013 www.sis.gov.eg/En/Templates/Articles/tmpArticles.aspx?ArtID=1694

169. Steffen L. M, Jacobs Jr David R, Stevens J., Shahar E., Carithers T., and Folsom A. R: Associations of whole-grain, refined-grain, and fruit and vegetable consumption with risks of all-cause mortality and incident coronary artery disease and ischemic stroke (2003): the Atherosclerosis Risk in Communities (ARIC) Study; *Am J Clin Nutr September vol. 78 no. 3 383-390*

170. Stellman J.M.: Encyclopaedia Of Occupation Health And Safty: (1998)

171. Szumilas M. (2010): Explaining Odds Ratios; *J Can Acad Child Adolesc Psychiatry. August; 19(3): 227–229*

172. Television household questionnaire: researchexcellence.com /committees/nonresponse_RFBasic%20Meter%20Qn_English.pdf
173. Testing physical fitness, Eurofit Experimental Battery Provisional Handbook, Strasbourg (1983)
174. The European project G@ME (Gender Awareness in Media Education) questionnaire 2008.
175. The National Adolescent Student Health Survey (1990): their male colleagues on selected items. *Drug & Alcohol Dependence, 19, 233-247.*
176. Tontisirin K. (2004): Incorporating Nutrition Considerations into Development Policies and Programmes; Brief for Policy-makers and Programme Planners in Developing Countries; *FAO Rome Italy*
177. Trost S. G. (2006): Public health and physical education; Macdonald D. K., O'sullivan (2006): Handbook of physical education. *SAGE Ltd India 163-184*
178. Turcotte M.: Women in Canada (2011): A Gender-based Statistical Report Women and Health; *Published by authority of the Minister responsible for Statistics Canada Catalogue no. 89-503-X ISBN 978-1-100-17400-6*
179. Unger C., Schulz H., (2009): Zusammenhang zwischen subjektiver Gesundheit – physisch und mental – und körperlicher Fitness von Studierenden der Sportwissenschaft (im Rahmen des Students' Health Project); Chemnitz university of technology.
180. US Department of Health and Human Services 1996: Surgeon general's report on physical activity and health *MMWR 45(27); 591-2*
181. Valerie J. Marrian, M.B., M.R.C.P., M.R.C.P.E., D.C.H.: The effect of psychological and motor changes during the menstrual cycle on women athletes (1964); *Bull Br Assoc Sport Med.; 1(3-4): 54–61*
182. Vaston R. R., Gerald J. K., and Preedy V. R., (2011): Nutrition, dietary supplements, and nutriceuticals: Cost analysis versus clinical benefits; Jansen J. D. (2011): *Design of economic incentive instruments in nutrition policy P. 14.*
183. Veer P. V. (1999): Fruits and vegetables in the prevention of cancer and cardiovascular disease; *Public Health Nutrition: 3(1), 103–107*
184. Vrijkotte T. G. M., Doornen L. J. P. van, Eco J. C. de Geus (2000): Effects of Work Stress on Ambulatory Blood Pressure, Heart Rate, and Heart Rate Variability: *Hypertension.; 35: 880-886*

185. Watson D., (1988): Intraindividual and Interindividual Analyses of Positive and Negative Affect: Their Relation to Health Complaints, Perceived Stress, and Daily Activities; *Journal of Personality and Social Psychology, Vol 54(6), Jun, 1020-1030.*

186. Weinberg Sharon L., Abramowitz S. k. (2002): Data analysis for behavioural sciences using SPSS; *Cambridge University Press U.S.A. Chapter 5, 139.*

187. Well Arnold D. (2003), Research Design and Statistical Analysis (2nd Ed.); Chapter 18, page 563-566.

188. Wiklund M., Malmgren-Olsson E.-B., Öhman A., Bergström E. and Fjellman-Wiklund A. (2012): Subjective health complaints in older adolescents are related to perceived stress, anxiety and gender – a cross-sectional school study in Northern Sweden; *BMC Public Health, 12:993*

189. Willett W. C. (1990): Relation of Meat, Fat, and Fiber Intake to the Risk of Colon Cancer in a Prospective Study among Women; *N Engl J Med; 323:1664-1672*

190. Willett W. C., Stampfer M. J., Manson J.E., Colditz G.A.: Intake of trans fatty acids and risk of coronary heart disease among women (1993); *Lancet. Mar 6;341(8845):581-5*

191. Williams L. and Wilkins (2006): ACSM's Guidelines for Exercise Testing and Prescription, 7th Edition: *American College of Sports Medicine. Philadelphia*; Sportsmedicine.about.com

192. Wirth, A. (1997, 2008). Adipositas. *Springer-Verlag Berlin Germany*

193. Wolf-Maier K., Cooper R. S., Kramer H., Banegas J. R., Giampaoli S., Joffres M. R., Poulter N., Primatesta P., Stegmayr B., Thamm M. (2004): Hypertension Treatment and Control in Five European Countries, Canada, and the United States Hypertension.; *43: 10-17 Published online before print November 24, 2003*

194. World bank research (2011): access 3:00 AM 15.8.2012 search.worldbank.org/all?qterm=unemployment+rate+Germany&title=&filetype=

195. World bank Egyptian overview (2013): access 3:30 AM 15.8.2012 www.worldbank.org/en/country/egypt/overview

196. World bank Egypt, arab republic, (2012): data.worldbank.org/country/egypt-arab-republic) access 10:30 AM 15.8.2012

197. World health organization global strategy on diet, physical activity and health (Cairo, 30 April − 2 May 2003): Eastern Mediterranean regional consultation meeting report
198. World health organisation (2013): Gender and women's mental health: (www.who.int/mental_health/prevention/genderwomen/en/) access 11:30 AM 15.9.2012
199. World health organisation (2013): Health impact assessment: The determinants of health. www.who.int/hia/evidence/doh/en/index.html access 11:30 AM 15.9.2012
200. World health organisation (2004): Mental health atlas 2005: profiles countries
201. World health organisation (2008): Policies and practices for mental health in Europe- meeting the challenges.
202. World health organisation (2009): Unhealthy diets and physical inactivity: http://www.who.int/nmh/publications/fact_sheet_diet_en.pdf
203. World health organisation (2011): Young pepole: health risks and solution: www.who.int/mediacentre/factsheets/fs345/en/ access 11:50 AM 15.9.2012
204. www.americanheart.org access 11:30 PM 31.8.2008
205. www.adam.about.com access 3:30 PM15.9.2008
206. www.brainyquote.com access 11:30 AM 15.9.2012
207. www.bodyfitnesshealth.com access 11:30 AM 15.9.2012
208. www.mihealthtools.org access 11:30 AM 15.9.2013
209. www.moh.govt.nz access 11:30 AM 17.9.2012
210. www.thefreedictionary.com access 1:30 AM 10.10.2009
211. www.topendsports.com access 11:39 AM 3.11.2009
212. www.healthfieldmedicare.suite101.com access 1:45 AM 18.9.2011
213. www.medical-dictionary.thefreedictionary.com access 11:30 AM 15.9.2011
214. www.wiki.answers.com access 6:30 AM 15.5.2008
215. www.hps.org access 10:30 PM 15.9.2007
216. Yaprak Y. (2013): The effect of back extention training on back extention on back muscle strength and spinal range of motion in young females *Biol Sport. Sep; 30(3): 201–206.*
217. Zheng X., Zhen C. (2008): Healthy Food, Unhealthy Food and Obesity Economics Letters. *;100(2):300-303*

8. Appendix

8.1 Questionnaire the health students

Technische Universität Chemnitz

FRAGEBOGEN

GESUNDHEIT

DER STUDIERENDEN

	t	t	m	m	j	j
DATUM						

MATRIKELNUMMER	1.	2.	3.	4.	5.	6.	7.	8.

Liebe Studierenden,

wir möchten Sie um das Ausfüllen dieses Fragebogens bitten. Der Fragebogen beschäftigt sich mit dem Thema Gesundheit von Studierenden. Ein Ziel der Studie ist es, anhand der gewonnenen Daten Gesundheitsförderungsprogramme zu entwickeln, die in der Zukunft Studierenden angeboten werden können.
Ihre Beteiligung an der Studie ist freiwillig. Durch das Ausfüllen des Fragebogens geben Sie Ihre Zustimmung für die Verwendung der Daten. Selbstverständlich werden Ihre Daten anonym behandelt und ausschließlich zu wissenschaftlichen Zwecken verwendet.

Für Ihr Interesse an diesem Projekt und für Ihre Mitarbeit möchten wir uns ganz herzlich bedanken!

Hinweise zum Ausfüllen des Fragebogens

Bitte beantworten Sie alle Fragen ehrlich, offen und spontan.
Da die Fragebögen mit einem Scanner eingelesen werden, benutzen Sie bitte zum Ausfüllen einen Kugelschreiber mit schwarzer oder dunkelblauer Farbe und schreiben Sie auf einer festen Unterlage.
Bei Aussagen, die Sie bewerten sollen, kreuzen Sie bitte das Kästchen an, das Ihrer Meinung oder Bewertung am ehesten entspricht.
Beispiel:

1. Wie zufrieden fühlen Sie sich heute?

Überhaupt nicht	Wenig	Eher wenig	Eher zufrieden	Zufrieden	Sehr zufrieden
☐	☐	☐	☒	☐	☐

Schriftliche Eintragungen möchten wir Sie bitten in Blockschrift und in Großbuchstaben auf die vorgegebene Linie zu schreiben, stichwortartige Antworten sind ausreichend.
Beispiel:
Anderes: .....U N I V E R S I T Ä T.....
Wir möchten außerdem noch einen Fitnesstest durchführen und anthropometrische Daten erheben (Blutdruck, Herzfrequenz, Körperkomposition). Ihre Daten werden vertraulich behandelt und nur für das Untersuchungsteam zugänglich sein. Bitte tragen Sie sich, falls Interesse besteht, in die ausliegende Liste ein. Wir werden uns innerhalb kurzer Zeit mit Ihnen in Verbindung setzen.

Zuerst stellen wir Ihnen einige Fragen zu Ihrem allgemeinen Gesundheitszustand.

1. Wie würden Sie Ihren Gesundheitszustand im Allgemeinen beschreiben?

Ausgezeichnet	Sehr gut	Gut	Weniger gut	Schlecht
☐	☐	☐	☐	☐

9. Wie stark achten Sie auf Ihre Gesundheit?

Gar nicht	Eher wenig	Eher mehr	Sehr
☐	☐	☐	☐

3. Haben Sie in den letzten 6 Monaten einen Arzt aufgesucht? (außer Zahnarzt *und andere Routineuntersuchungen z.B. Frauenarzt?)*

☐ Nein ☐ Ja; Wie häufig? Mal

Was waren die Gründe?.....

4. Waren Sie in den letzten 12 Monaten so stark erkrankt, dass Sie im Bett bleiben mussten?

☐ Nein ☐ Ja; Wie häufig? Mal

Um welche Erkrankung(en) handelte es sich? .....

5. Nehmen Sie regelmäßig Medikamente ein (außer Verhütungsmittel wie die Anti-Baby Pille)?

☐ Nein ☐ Ja; Welche.....

Weshalb?.....

6. In welchem Maß stimmen Sie den folgenden Aussagen zu?

	Stimme überhaupt nicht zu	Stimme eher nicht zu	Neutral	Stimme eher zu	Stimme völlig zu
Im Universitätsgebäude sollte generell nicht geraucht werden.	☐	☐	☐	☐	☐
Rauchen sollte in gekennzeichneten Bereichen erlaubt sein.	☐	☐	☐	☐	☐
Alkohol sollte auf dem Universitäts-gelände nicht verkauft werden.	☐	☐	☐	☐	☐

Der nächste Abschnitt beschäftigt sich mit gesundheitlichen Beschwerden und unterschiedlichen Belastungen in Ihrem Leben.

7. Welche der folgenden Beschwerden hatten Sie im Verlauf der letzten 12 Monate?

	Nie	Eher selten	Eher oft	Sehr oft
1. Magenbeschwerden/Sodbrennen	☐	☐	☐	☐
2. Kreuz- oder Rückenschmerzen	☐	☐	☐	☐
3. Erschöpfung	☐	☐	☐	☐
4. Atembeschwerden	☐	☐	☐	☐
5. Händezittern	☐	☐	☐	☐
6. Herzrasen/Kreislaufbeschwerden/ Schwindel	☐	☐	☐	☐
7. Durchfall	☐	☐	☐	☐
8. Verstopfung	☐	☐	☐	☐
9. Kopfschmerzen	☐	☐	☐	☐
10. Schlafstörungen	☐	☐	☐	☐
11. Alpträume	☐	☐	☐	☐
12. Konzentrationsschwierigkeiten	☐	☐	☐	☐
13. Nacken- oder Schulterschmerzen	☐	☐	☐	☐
14. Unterleibsbeschwerden	☐	☐	☐	☐
15. Stimmungsschwankungen	☐	☐	☐	☐
16. Zittern	☐	☐	☐	☐
17. Depressive Verstimmung	☐	☐	☐	☐
18. Sprachstörungen	☐	☐	☐	☐
19. Gewichtszunahme/ Gewichtsverlust	☐	☐	☐	☐
20. Appetitlosigkeit	☐	☐	☐	☐
21. Angst/Phobie	☐	☐	☐	☐
22. Nervosität/Beklemmung	☐	☐	☐	☐
23. Andere:	☐	☐	☐	☐

8. Bitte geben Sie an, welche chronische Erkrankung(en) Sie haben:

☐ Diabetes ☐ Asthma ☐ Emphysem oder COPD

☐ eine andere Lungenerkrankung; bitte benennen: .....

☐ Herzerkrankung(en); bitte benennen: .....

☐ Arthritis oder andere rheumatische Erkrankung; bitte benennen: .....

☐ Krebs; bitte Krebstyp benennen: .....

☐ andere chronische Erkrankung: .....

☐ keine *-> weiter mit 10.* (modified after Juniper, 1992) (Midthjell, 1992)

9. In wieweit beeinträchtigt Ihr Schmerz tägliche Aktivitäten?

Gar nicht  **Sehr stark**

☐ ☐ ☐ ☐ ☐

10. In welchem Maß fühlen sie sich auf folgenden Gebieten belastet?

	Überhaupt nicht					**Sehr stark**
1. Im Studium allgemein	☐	☐	☐	☐	☐	☐
2. Prüfungen, Seminararbeiten, Präsentationen	☐	☐	☐	☐	☐	☐
3. Mangelnde praktische Relevanz des Studiums	☐	☐	☐	☐	☐	☐
4. Anonymität an der Universität	☐	☐	☐	☐	☐	☐
5. Schlechte Berufsaussichten	☐	☐	☐	☐	☐	☐
6. Probleme mit den Eltern	☐	☐	☐	☐	☐	☐
7. Probleme mit Studienkollegen	☐	☐	☐	☐	☐	☐
8. Probleme mit Freunden	☐	☐	☐	☐	☐	☐
9. Andere bedeutende Beziehungen	☐	☐	☐	☐	☐	☐
10. Sexualität	☐	☐	☐	☐	☐	☐
11. Unterkunft	☐	☐	☐	☐	☐	☐
12. Gesundheitliche Probleme	☐	☐	☐	☐	☐	☐
13. Finanzielle Situation	☐	☐	☐	☐	☐	☐
14. Arbeitsbelastung neben dem Studium	☐	☐	☐	☐	☐	☐
15. Isolation an der Universität	☐	☐	☐	☐	☐	☐
16. Isolation im Allgemeinen	☐	☐	☐	☐	☐	☐
17. Mangelnde Zeit zum Studieren	☐	☐	☐	☐	☐	☐
18. Schlechte Arbeitsbedingungen	☐	☐	☐	☐	☐	☐
19. Andere:	☐	☐	☐	☐	☐	☐
Betrachten Sie nochmals Ihre derzeitige Situation:	☐	☐	☐	☐	☐	☐
20. In welchem Maß fühlen Sie sich insgesamt belastet?	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beziehen sich auf Ihre derzeitige Lebenseinstellung. Kennzeichnen Sie bitte in jeder Vorgabe wie häufig sie das Angegebene in den letzten Tagen erlebt haben.

	Nie					**Fast immer**
1. Ich bin betrübt.	☐	☐	☐	☐	☐	☐
2. Ich fühle mich in Bezug auf die Zukunft entmutigt.	☐	☐	☐	☐	☐	☐
3. Ich habe das Gefühl versagt zu haben.	☐	☐	☐	☐	☐	☐
4. Es fällt mir schwer Dinge zu genießen.	☐	☐	☐	☐	☐	☐
5. Ich fühle mich schuldig.	☐	☐	☐	☐	☐	☐
6. Ich habe das Gefühl, man wolle mich bestrafen.	☐	☐	☐	☐	☐	☐
7. Ich bin von mir selbst enttäuscht.	☐	☐	☐	☐	☐	☐
8. Ich stehe meinen Schwächen und Fehlern kritisch gegenüber.	☐	☐	☐	☐	☐	☐
9. Ich habe Selbstmordgedanken.	☐	☐	☐	☐	☐	☐
10. Ich weine.	☐	☐	☐	☐	☐	☐
11. Ich bin verärgert und gereizt.	☐	☐	☐	☐	☐	☐
12. Ich habe das Interesse an anderen verloren.	☐	☐	☐	☐	☐	☐
13. Ich schiebe es auf, Entscheidungen zu treffen.	☐	☐	☐	☐	☐	☐
14. Ich sorge mich um mein Aussehen/Auftreten.	☐	☐	☐	☐	☐	☐
15. Ich muss mich zu allen Dingen zwingen.	☐	☐	☐	☐	☐	☐
16. Ich schlafe nicht gut.	☐	☐	☐	☐	☐	☐
17. Ich bin erschöpft und lustlos.	☐	☐	☐	☐	☐	☐
18. Ich habe keinen Appetit.	☐	☐	☐	☐	☐	☐
19. Ich bin um meine Gesundheit besorgt.	☐	☐	☐	☐	☐	☐
20. Ich habe mein Interesse am Sex verloren.	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beschäftigten sich mit Ihren Gefühlen und Gedanken während der letzten vier Wochen. Bitte beurteilen Sie dabei die Häufigkeit bestimmter Empfindungen und Gefühle.

In den letzten vier Wochen.....	**Nie**				**Sehr oft**
1. Wie oft hatten Sie das Gefühl, dass Sie wichtige Dinge in Ihrem Leben nicht unter Kontrolle haben?	☐	☐	☐	☐	☐
2. Wie oft fühlten Sie sich sicher, dass Sie mit persönlichen Problemen gut umgehen können?	☐	☐	☐	☐	☐
3. Wie oft hatten Sie das Gefühl, dass sich die Dinge Ihren Vorstellungen entsprechend entwickeln?	☐	☐	☐	☐	☐
4. Wie oft hatten Sie das Gefühl, dass Ihnen Schwierigkeiten so über den Kopf wachsen, dass Sie damit nicht fertig werden?	☐	☐	☐	☐	☐

11. Wie viele Personen – einschließlich Ihrer Familie – kennen Sie, die Sie unterstützen, wenn es Ihnen emotional schlecht geht?

Keine Person	**1 Person**	**2-3 Personen**	**Mehr als 3 Personen**
☐	☐	☐	☐

12. Sind Sie im Allgemeinen mit der Unterstützung, die Sie in solchen Fällen bekommen zufrieden?

Sehr zufrieden				**Gar nicht zufrieden**
☐	☐	☐	☐	☐

13. Wenn Sie einmal über Ihre Lebensqualität nachdenken: Wie sind die Dinge für Sie in den **letzten vier Wochen** gelaufen?

Sehr schlecht	**Schlecht**	**Ungefähr zu gleichen Teilen gut und schlecht**	**Ziemlich gut**	**Sehr gut**
☐	☐	☐	☐	☐

Die nachfolgenden Fragen beziehen sich auf Ihre Ernährung und Sportaktivität.

14. Wie viele Portionen Obst und Gemüse essen Sie üblicherweise an einem Tag? (eine Portion entspricht einer handvoll Obst/Gemüse)

Ich esse kein Obst und Gemüse	**1-2**	**3-4**	**5 oder mehr**
☐	☐	☐	☐

15. Wie oft essen Sie folgende Nahrungsmittel?

	Mehrmals am Tag	**täglich**	**Mehrmals in der Woche**	**1-4 mal im Monat**	**Nie**
1. Süßigkeiten (Schokolade, Bonbons, etc.)	☐	☐	☐	☐	☐
2. Kuchen (Torte)/Gebäck	☐	☐	☐	☐	☐
3. Snacks (Chips, Erdnüsse, etc.)	☐	☐	☐	☐	☐
4. Fast food/ Dosengerichte (Pizza, Hamburger, Pommes frites, Raviolidosen, etc.)	☐	☐	☐	☐	☐
5. Frisches Obst	☐	☐	☐	☐	☐
6. Salat/rohes Gemüse	☐	☐	☐	☐	☐

7. Gekochtes Gemüse	☐	☐	☐	☐	☐
8. Limonade/alkoholfreie Getränke	☐	☐	☐	☐	☐
9. Fleisch/ Wurstprodukte	☐	☐	☐	☐	☐
10. Fisch/Meeresfrüchte	☐	☐	☐	☐	☐
11. Milch/Milchprodukte	☐	☐	☐	☐	☐
12. Getreide/Getreideprodukte (Vollkornbrot, Müsli, Haferflocken, etc.)	☐	☐	☐	☐	☐

16. Wie wichtig ist es für Sie gesund zu essen?

Sehr wichtig ☐ ☐ ☐ ☐ ☐ **Überhaupt nicht wichtig**

17. An wie vielen der letzten 7 Tage haben Sie: **Anzahl der Tage**:

	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
An intensiven Bewegung mit einer Dauer von mindestens 20min teilgenommen?	☐	☐	☐	☐	☐	☐	☐	☐
An moderater Bewegung mit einer Dauer von mindestens 30min teilgenommen?	☐	☐	☐	☐	☐	☐	☐	☐
Übungen zur Stärkung der Muskulatur durchgeführt, wie Liegestütze, Sit-ups oder Gewichtheben?	☐	☐	☐	☐	☐	☐	☐	☐
Genug Schlaf bekommen, so dass Sie sich morgens beim Aufstehen ausgeruht gefühlt haben?	☐	☐	☐	☐	☐	☐	☐	☐

18. Wie gelangen Sie hauptsächlich zu Ihrer Universität oder Arbeitsstelle?

☐ Bus ☐ Fahrrad ☐ Auto (als Fahrer) ☐ Auto (als Mitfahrer)
☐ zu Fuß ☐ Kraftrad ☐ Zug

(modified after Scott house employee travel survey 2006)

19. An wie vielen Tagen einer Woche im Semester kommen Sie normalerweise an die Universität?

☐ an einem Tag ☐ an zwei Tagen ☐ an drei Tagen ☐ an vier Tagen
☐ an fünf Tagen ☐ an sechs Tagen ☐ an sieben Tagen

20. Wie viele Minuten fahren Sie täglich mit dem Fahrrad/ laufen Sie täglich zur Arbeit und zum Einkaufen (hin und zurück)?

☐ < 5 ☐ 5-15 ☐ 15-30 ☐ 30-45 ☐ >45

(modified after Baecke J. A. H. et al., 1982)

21. Denken Sie nur an die körperlichen Aktivitäten die Sie für mindestens 10 Minuten ohne Unterbrechung verrichtet haben. An wie vielen der vergangenen 7 Tage haben Sie anstrengende körperliche Aktivitäten wie Aerobic, Laufen, schnelles Fahrradfahren oder schnelles Schwimmen in Ihrer Freizeit verrichtet?

☐☐ **Tage pro Woche**

☐ **Keine anstrengenden Aktivitäten in der Freizeit** *-> weiter zu Frage 20*

Wie viel Zeit haben Sie für gewöhnlich an einem dieser Tage mit anstrengender körperlicher Aktivität in Ihrer Freizeit verbracht?

☐☐ **Stunden pro Tag**

☐☐ **Minuten pro Tag**

22. Denken Sie erneut nur an die körperlichen Aktivitäten die Sie für mindestens 10 Minuten ohne Unterbrechung verrichtet haben. An wie vielen der vergangenen 7 Tage haben Sie moderate körperliche Aktivitäten wie Fahrradfahren bei gewöhnlicher Geschwindigkeit, Schwimmen bei gewöhnlicher Geschwindigkeit und Doppel-Tennis in Ihrer Freizeit verrichtet?

☐☐ **Tage pro Woche**

☐ **Keine moderaten Aktivitäten in der Freizeit** *-> weiter zu Frage 21*

Wie viel Zeit haben Sie für gewöhnlich an einem dieser Tage mit moderater körperlicher Aktivität in Ihrer Freizeit verbracht?

☐☐ **Stunden pro Tag**

☐☐ **Minuten pro Tag**

(modified after International physicahl activity questionnaire, 2002)

23. Wie motiviert sind Sie, den Umfang Ihres derzeitigen a) Ausdauertrainings und b) Krafttrainings in den nächsten drei Monaten zu steigern?

	Überhaupt nicht motiviert						Extrem motiviert
a) Ausdauertraining	☐	☐	☐	☐	☐	☐	☐
b) Krafttraining	☐	☐	☐	☐	☐	☐	☐

(modified after Plotnikoff R. C. et al., 2008)

24. Wie groß sind Sie? ☐☐☐ cm

25. Wie viel wiegen Sie? ☐☐☐ kg

26. Wann haben Sie sich zum letzen Mal gewogen?

Gestern	**Letzte Woche**	**Letzten Monat**	**Vor einigen Monaten**	**Mehr als vor einem Jahr**	**Weiß nicht**
☐	☐	☐	☐	☐	☐

27. Sind Sie Ihrer Meinung nach ...?

Viel zu dünn	Ein bisschen zu dünn	Genau richtig	Ein bisschen zu dick	Viel zu dick
☐	☐	☐	☐	☐

28. Wie zufrieden sind Sie mit Ihrem aktuellen Gewicht?

Sehr zufrieden	Eher zufrieden	Eher unzufrieden	Sehr unzufrieden
☐	☐	☐	☐

29. Wie haben Sie sich bezüglich Ihres Erscheinungsbildes im Verlauf der **letzten vier Wochen** gefühlt?

	Nie	Kaum	Manch-mal	Häufig	Sehr häufig	Immer
1. Waren Sie so unzufrieden mit Ihrer Figur, dass Sie dachten, Sie müssten eine Diät machen?	☐	☐	☐	☐	☐	☐
2. Haben Sie Ihre Figur mit der anderer Personen verglichen und sich dabei unwohl gefühlt?	☐	☐	☐	☐	☐	☐
3. Haben Sie sich zu dick gefühlt, wenn Sie nackt waren, z.B. wenn Sie ein Bad genommen haben?	☐	☐	☐	☐	☐	☐
4. Haben Sie nicht an sozialen Anlässen teilgenommen (z.B. Partys), weil Sie sich mit Ihrer Figur unwohl gefühlt haben?	☐	☐	☐	☐	☐	☐
5. Haben Sie sich Sorgen gemacht, dass andere Personen bei Ihnen Fettpolster an den Hüften oder am Hals sehen?	☐	☐	☐	☐	☐	☐

	Nie	Kaum	Manch-mal	Häufig	Sehr häufig	Immer
6. Haben Sie sich, wenn Sie mit anderen Menschen zusammen waren, Sorgen gemacht zu viel Platz einzunehmen (z.B. beim Sitzen auf einem Sofa oder im Bus)?	☐	☐	☐	☐	☐	☐
7. Haben Sie Ihren Körper gezielt nach Fettstellen abgetastet (z.B. indem Sie Hautfalten zusammen gekniffen haben)?	☐	☐	☐	☐	☐	☐
8. Haben Sie Situationen vermieden in denen andere Personen Ihren Körper sehen konnten (z.B. Gemeinschaftsumkleideräume, Schwimmbäder?	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beziehen sich auf Ihre Fernseh- und Computergewohnheiten.

30. Wie viel Zeit sehen Sie schätzungsweise an einem gewöhnlichen Wochentag fern?

☐☐ h, ☐☐ min.

31. Wie viel Zeit sehen Sie schätzungsweise an einem gewöhnlichen Wochenendtag fern?

☐☐ h, ☐☐ min.

32. Wie viel Zeit verbringen Sie an einem typischen Wochentag am Computer (mit Surfen im Internet, E-Mails Schreiben, etc.)?

☐☐ h, ☐☐ min.

33. Wie viel Zeit verbringen Sie an einem typischen Wochenendtag am Computer (mit Surfen im Internet, E-Mails Schreiben, etc.)?

☐☐ h, ☐☐ min.

34. Wie viel Zeit verbringen Sie an einem gewöhnlichen Wochentag damit, Video Spiele zu spielen?

☐☐ h, ☐☐ min.

35. Wie viel Zeit verbringen Sie an einem gewöhnlichen Wochenendtag damit, Video Spiele zu spielen?

☐☐ h, ☐☐ min.

(modified after Berman M. et al. 1981) (Eismann J. C. et al. 1999) (Couper D. J. et al. 2008)

Der nächste Abschnitt des Fragebogens bezieht sich auf Rauchen, Drogen und Alkohol

36. Wie häufig haben Sie während der letzten 3 Monate geraucht? (Zigaretten, Pfeife, Zigarillos, Zigarren)

☐ **Täglich** ☐ **Gelegentlich** ☐ **Nie**

37. *Falls Sie rauchen: (ansonsten weiter zu Frage 40)*

Falls Sie täglich rauchen: Wie viele Zigaretten rauchen Sie durchschnittlich? ☐☐

38. Haben Sie in den letzten 12 Monaten versucht mit dem Rauchen aufzuhören?

☐ **Ja** ☐ **Nein**

39. Haben Sie schon einmal Drogen konsumiert oder konsumieren Sie Drogen?

☐ **Ja, regelmäßig** ☐ **Ja, aber nur ein paar Mal** ☐ **Niemals**

40. Falls ja, welche Droge(n)? …….....

(Ecstasy, Marijuana, Kokain, Heroin, Crack, LSD, Amphetamine)

41. Wie häufig haben Sie innerhalb der letzten 3 Monate Alkohol, beispielsweise Bier, getrunken?

Mehrmals täglich	Täglich	Mehrmals wöchentlich	1mal pro Woche	Weniger als 1mal pro Woche	Nie
☐	☐	☐	☐	☐	☐

42 . Über wie viele Stunden zog sich Ihr Alkoholkonsum, als Sie <u>das letzte Mal</u> feiern waren bzw. ausgegangen sind?

☐☐ **Stunden**

43. Wie viele alkoholische Getränke haben Sie zu sich genommen, als Sie <u>das letzte Mal</u> feiern waren bzw. ausgegangen sind? (inklusive der Getränke, die eventuell vor dem Ausgehen getrunken wurden)

☐☐ **Getränke**

44. Denken Sie noch einmal über die <u>letzten zwei Wochen</u> nach. Wie häufig (falls überhaupt) haben Sie fünf oder mehr alkoholische Getränke nacheinander getrunken?

☐☐ **mal**

45.

	Ja	**Nein**
1. Haben Sie jemals darüber nachgedacht Ihren Alkoholkonsum zu reduzieren?	☐	☐
2. Haben andere Leute Sie jemals verärgert, weil sie Ihr Trinkverhalten kritisiert haben?	☐	☐
3. Haben Sie sich aufgrund Ihres Trinkverhaltens jemals schlecht oder schuldig gefühlt?	☐	☐
4. Haben Sie morgens jemals als erstes Alkohol getrunken, um sich zu beruhigen oder einen Kater loszuwerden?	☐	☐

Zum Schluss möchten wir Ihnen einige Fragen zu Ihrem Studium stellen.

46. In welchem Studienjahr/Fachsemester befinden Sie sich?

☐ erstes Jahr (Semester 1 o. 2)
☐ zweites Jahr (Semester 3 o. 4)
☐ drittes Jahr (Semester 5 o. 6)
☐ viertes Jahr (Semester 7 o. 8)
☐ fünftes Jahr oder höher (Semester 9 o. 10)
☐ Absolvent oder Berufstätiger
☐ besonderer Erwachsener
☐ Anderes (bitte angeben): .....

47. Was studieren Sie und mit welchem Abschluss? .....

48. Wie wichtig ist es Ihnen, gute Leistungen an der Universität zu erbringen?

Sehr wichtig	**Eher wichtig**	**Eher unwichtig**	**Ganz unwichtig**
☐	☐	☐	☐

49. Wie schätzen Sie Ihre Leistungen im Vergleich zu denen Ihren Kommilitonen ein?

Viel besser	**Besser**	**Gleich**	**Schlechter**	**Viel schlechter**
☐	☐	☐	☐	☐

Zuletzt noch einige Angaben zu Ihrer Person.

50. Wie alt sind Sie? ☐☐ Jahre

51. Welches Geschlecht haben Sie? ☐ Weiblich ☐ Männlich

52. Wo wurden Sie geboren? ☐ Deutschland

☐ woanders (bitte geben Sie an wo): ….....

Wie ist Ihre ethnische Zugehörigkeit *(meint die Zugehörigkeit zu einer Kultur-/Völkergruppe)*?

☐ Weiß ☐ Schwarz karibisch ☐ Schwarz afrikanisch ☐ Schwarz andere

☐ Indisch ☐ Pakistanisch ☐ Bangladesch ☐ Chinesisch

☐ Andere: .....

53. Welcher Religion gehören Sie an?

☐ Katholisch ☐ Protestantisch ☐ Orthodox ☐ Islam

☐ Andere: ..... ☐ Keiner

54. Wie stark stimmen Sie der folgenden Aussage zu: „Mein Glaube/ meine Religion spielt eine große Rolle in meinem Leben“?

Ich stimme voll zu	**Ich stimme zu**	**Unentschieden**	**Ich stimme nicht zu**	**Ich stimme überhaupt nicht zu**
☐	☐	☐	☐	☐

55. Wie oft nehmen Sie an Gottesdiensten teil?

Mindestens einmal pro Woche	**Mindestens einmal pro Monat**	**Mindestens einmal pro Jahr**	**Weniger als einmal pro Jahr**	**Nie**
☐	☐	☐	☐	☐

56. Über welches monatliche Einkommen verfügen Sie derzeit abzüglich Miete (Warmmiete+Strom)?

☐☐☐☐ (in Euro; Bitte fassen Sie Ihr Einkommen aus allen Einkommensquellen zusammen.)

57. Würden Sie sagen, dass Ihnen zur Verfügung stehende Geld ist…

Völlig Ausreichend	**Ausreichend**	**Weniger Ausreichend**	**Gar nicht ausreichend**
☐	☐	☐	☐

58. Auf welche Weise finanzieren Sie Ihr Studium? (Mehrfachnennungen möglich)

☐ Unterstützung der Eltern	☐ Erwerbstätigkeit während des Semesters	☐ Stipendium
☐ BAföG	☐ Erwerbstätigkeit während der Semesterferien	☐ Anderes und zwar: .....

59. Welchen höchsten schulischen oder akademischen Abschluss besitzen Ihre Eltern?

	Mutter	**Vater**
kein Abschluss	☐	☐
Realschulabschluss	☐	☐
Abitur oder qualifizierte Berufsausbildung	☐	☐
Bachelor	☐	☐
Diplom/ Magister/ Master	☐	☐
Doktortitel oder Gleichwertiges	☐	☐
	☐	☐

Sonstiges: .....

60. Wie ist Ihr Familienstand?

☐ Single ☐ Verheiratet/Lebensgemeinschaft ☐ in einer Beziehung

☐ Anderes und zwar: .....

61. Haben Sie eine feste Partnerin/ einen festen Partner? ☐ Ja ☐ Nein

Wenn ja, wie lange sind Sie schon zusammen?

seit ☐☐ Monaten oder seit ☐☐ Jahren

62. Haben Sie Kinder? ☐ Ja ☐ Nein Falls ja, wie viele? ☐☐

63. Wo wohnen Sie während des Semesters?

- ☐ Ich wohne allein
- ☐ Ich wohne mit meinem Partner/meiner Partnerin zusammen
- ☐ Ich wohne bei meinen Eltern
- ☐ Ich wohne in einer Wohngemeinschaft
- ☐ Anderes: .....

Vielen Dank für Ihre Teilnahme!

(Al Ansari W., 2009)

8.2 Protocol anthropometric and fitness tests data collection.

ANAMNESEBOGEN

MATRIKELNUMMER PROBAND:	**DATUM:**
Alter:	Geschlecht: ☐ männlich ☐ weiblich
Wie fühlen Sie sich heute? **Ausgezeichnet** ☐ **Sehr gut** ☐ **Gut** ☐ **Weniger gut** ☐ **Schlecht** ☐	
Wann haben Sie Ihre letzte große Mahlzeit eingenommen?	
Wie viel haben Sie heute schon getrunken?	
Wann haben Sie das letzte Mal ein koffeinhaltiges Getränk zu sich genommen?	
Wann haben Sie das letzte Mal Alkohol getrunken?	
Wann haben Sie das letzte Mal Sport getrieben?	
Was haben Sie das letzte Mal für Sport getrieben?	
Welche Sportart(en) betreiben Sie hauptsächlich?	
Wie oft trainieren Sie pro Woche?	
Hatten Sie innerhalb der letzten 7 Tage gesundheitliche Beschwerden? Wenn ja, welche?	
Leiden Sie an einer chronischen Erkrankung? Wenn ja, welche?	
Haben Sie heute oder in den vergangenen 7 Tagen Medikamente/Substanzen eingenommen die sich positiv auf Ihre Leistungsfähigkeit auswirken könnten? Wenn ja, welche?	

UNTERSUCHUNGSPROTOKOLL

ANTHROPOMETRISCHE DATEN, KÖRPERKOMPOSITION, HERZ-KREISLAUF

Herz-Kreislauf-Parameter (automatisch)				**Bemerkung:**
Blutdruck (mm/Hg) Wenn systol. >140 oder diastol. >90 mm/Hg muss eine dritte Messung durchgeführt werden	1.	2.		
Puls (1/min)	1.	2.		
Körpermaße				
Größe (m)				
Gewicht (kg)				
BMI				
WHR :	Taille (cm): Hüfte (cm):			
Caliper-Messung (mm)				
Biceps brachii	Messwert 1: Messwert 2:			
Triceps brachii	Messwert 1: Messwert 2:			
Supscapular	Messwert 1: Messwert 2:			
Suprailical	Messwert 1: Messwert 2´:			

UNTERSUCHUNGSPROTOKOLL – FITNESSTEST

	MATRIKELNUMMER PROBAND:		
	Beweglichkeit/Dehnfähigkeit		**Bemerkung:**
1	Stand & Reach Abstand in cm	1. Versuch:	
		2. Versuch:	
		3. Versuch:	
2	Hand-To-Hand-Distance Abstand in cm Rechter Arm von oben Linker Arm von oben		
	Koordination - Gleichgewicht		
3	Flamingo Balance Anzahl der Unterbrechungen:		
	Kraft		
4	Jump & Reach Reichweite: Sprunghöhe	1. Versuch: 2. Versuch: 3. Versuch:	
5	Back Extension Kraft in kg	- Gewöhnung 1. Versuch: 2. Versuch:	
6	Sit Ups	Anzahl in 1 Minute:	
7	Static Pull Up	Zeit in s:	
	Ausdauer		
8	Aero Shuttle Run	Level: Anzahl der absolvierten 20m Shuttles:	

Name: Matr.Nr. :

Stufe	shuttles	bemerkung
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
20.		
21.		
Gesamnt Zeit:	Stufe: Shuttles:	

(Chemnitz University of Technology, 2009)