

CHAPTER ONE

Introduction

This research was intended to investigate depression, anxiety and self esteem in relation to sleep patterns among teenage students.

Background

According to Laurie Pawlik, 2010, sleep deprivation causes depression and low self esteem. Getting enough sleep-sleeping throughout the night – is one of the keys to being emotionally, mentally, and physically healthy. Sleep deprivation is associated with serious health problems such as depression. Depression is an illness that involves the body, mood, and thoughts, that affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things(Roxanne D.E and Dennis .L.,2010).

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (World Health Organisation, 2010). These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide, a tragic fatality associated with the loss of about 850 000 lives every year (World Health Organisation, 2010).

Anxiety is a feeling of apprehension and fear characterized by physical symptoms such as palpitations sweating, and feelings of stress (John. P. C., 2003). Unlike the relatively mild, brief anxiety caused by a stressful event such as a business presentation or a first date, anxiety disorders are chronic, relentless, and can grow progressively worse if not treated (John. P. C., 2003).

Some fears and worries are justified, such as worry about a loved one or in anticipation

of taking a quiz, test, or other examination (Minas .C, 2010). Problem anxiety interferes with the sufferer's ability to sleep or otherwise function. It is noteworthy that teenagers are particularly susceptible to having irritability as a symptom of a number of emotional problems, including anxiety (Minas. C, 2010).

Self esteem is your opinion about yourself (Perera. K, 2007). High self esteem is a good opinion of yourself and low self esteem is a bad opinion of yourself (Perera. K., 2007). Low self esteem comes from a poor self image. Your self-image is based on how you see yourself. Low self esteem feeds your negative thinking and causes you to believe the criticism others make of you. This can cause you to lose confidence so it is vital to end negative thoughts if you want to build your self esteem (Perera. K.,2007).

Sleep is a state that is characterized by changes in brain wave activity, breathing, heart rate, body temperature, and other physiological functions(Scammell .T.,2007). Sleep is a period of reduced activity associated with a typical posture, such as lying down with eyes closed in humans and results in a decreased responsiveness to external stimuli(Scammell . T.,2007).

Everyone has an internal clock that influences body temperature, sleep cycles, appetite and hormonal changes(Mayo staff clinic,2010). The biological and psychological processes that follow the cycle of this 24-hour internal clock are called circadian rhythms. Before adolescence, these circadian rhythms direct most children to naturally fall asleep around 8 or 9 pm (Mayo staff clinic, 2010).

Puberty changes a teenager's internal clock, delaying the time he or she starts feeling sleepy — often until 11 pm. or later. Staying up late to study or socialize can disrupt a teenager's internal clock even more (Mayo staff clinic, 2010). Studies show that teenagers generally get an average of only 7.4 hours a night (Witmer D, 2010). The study focused on depression, anxiety,

self esteem and how they related with sleep patterns in the life of a teenage student.

Statement of the problem.

The average teenager needs around 9.5 hours of sleep per night, possibly because hormones that are critical for growth and sexual maturation are released mostly during slumber (Witmer D, 2010). Sleep deprivation can be the cause of depression. Poor sleep patterns can lead to depression, anxiety, and low self esteem. If measures are not set in regard to this likely problem, this could lead to interference with student's academic performance and behaviour.

Purpose of the study

To investigate the relationship between depression, anxiety, and self esteem with sleep patterns among teenage students.

Study objectives

1. To investigate the relationship between depression and sleep patterns among teenage students.
2. To investigate the relationship between anxiety and sleep patterns among teenage students.
3. To investigate the relationship between self esteem and sleep patterns among teenage students.

Hypothesis

1. There is no significant relationship between depression and sleep patterns among teenage students.
2. There is no significant relationship between anxiety and sleep patterns among teenage students.
3. There is no significant relationship between self esteem and sleep patterns among teenage students.

Significance of the study

The results of this study may be helpful in;

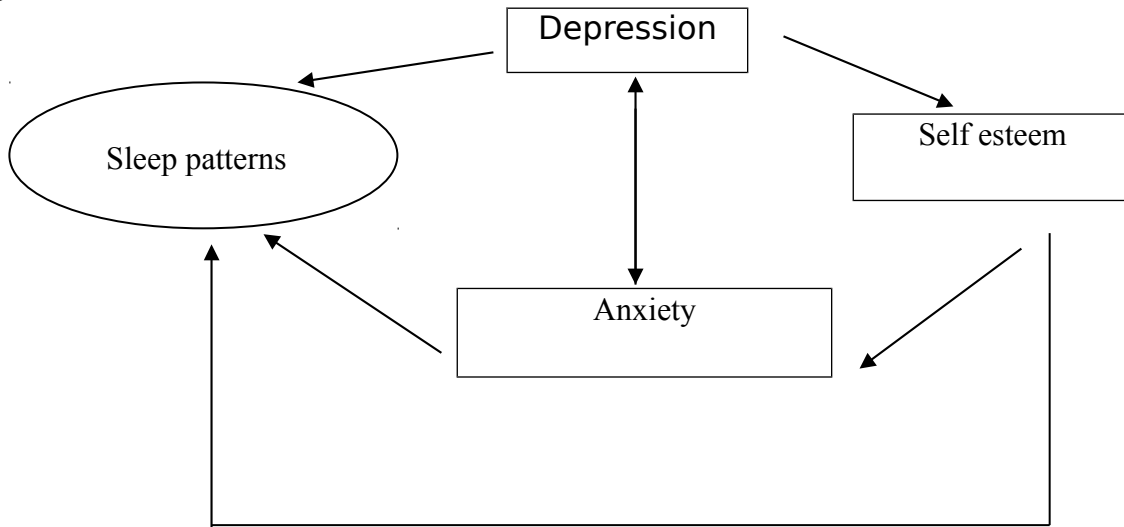
1. Planning and policy making by stakeholders in the education sector as they try to provide a better education for the leaders of tomorrow thus formulating by-laws that may be found necessary in improving the education offered to teenage students such that there are better grades achieved.
2. Improving the quality of education attained by the teenage students with consideration of the favourable policies they will have made.
3. The findings may be of great use to institutions of higher learning like universities, health training institutions and to responsible citizens at large by providing vital and useful knowledge.
4. Above all, the main beneficiaries may be the academic personnel of Green Hill Academy and Muyenga High School as the study seeks to provide clear recommendations that may be used to provide a better education with increased student collaboration.

Scope of the study

The research was carried out in June 2010 at two secondary schools namely; Green Hill Academy and Muyenga High School. The study included a total of 100 students both female and male aged 13-19 years.

Conceptual framework and review;

figure 1



In figure 1 above, depression could affect sleep patterns of a teenage student. Depression in turn affects self esteem of a teenager, however self esteem could also affect or lead to increased or decreased levels of anxiety. Furthermore levels of anxiety affect a teenager's sleep patterns. Depression also influences the anxiety of a teenager and the reverse holds.

CHAPTER TWO

Introduction

In this chapter the researcher will review literature from various studies done by different scholars. Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (World Health Organisation, 2010). Anxiety will be defined as a feeling of apprehension and fear characterized by physical symptoms such as palpitations sweating, and feelings of stress (John. P.C, 2003). Self esteem will be defined as your opinion about yourself (Perera. K., 2007). Sleep patterns of teenage students are discussed first, then depression, anxiety and self esteem respectfully in relation to sleep patterns of the same students.

Sleep Patterns of teenage students

Sleep is broadly classified into two types: REM (rapid-eye-movement) sleep and non-REM sleep (NREM). By studying brain wave patterns we know that NREM sleep consists of several stages, ranging from drowsiness through deep sleep (Dawson. P., 2004). In the early stages (Stages I and II) you awake easily and may not even realize that you have been sleeping. In the deeper stages (Stages III and IV) it is very difficult to wake up, and if you are aroused you are likely to find yourself disoriented and confused (Dawson. P., 2004). In NREM sleep your muscles are more relaxed than when you are awake but you are able to move (although you do not because the brain is not sending signals to the muscles to move).

REM sleep is more active (Dawson. P., 2004). Breathing and heart rate become irregular, your eyes move rapidly back and forth under your eyelids, and control of your body temperature is impaired so that you do not sweat when you are hot or shiver when you are cold (Dawson. P., 2004). Below the neck, however, you are inactive because the nerve impulses that travel down

the spinal cord to body muscles are blocked(Dawson. P.,2004). Your body is essentially paralysed. It is during this sleep stage that you dream(Dawson. P.,2004).

As children go through the transition from childhood to adolescence, many shifts occur in sleep/wake patterns related to intrinsic and extrinsic developmental changes(Yang C.K, Kim J.K,Patel S.R and Lee.J.H,2005). These shifts have been shown to result in corresponding shifts in sleep phase (later sleep onset) and sleep deprivation among teenagers in Western societies(Yang C.K, Kim J.K,Patel S.R and Lee .J.H,2005).

Adolescent sleep patterns deserve particular attention because of the potential impact on school performance(Dawson. P.,2004). It has only been in the last 20 years or so that sleep researchers have recognized that there are distinctive changes in sleep patterns in adolescence(Dawson. P.,2004). There are changes in the biological clock (also called circadian rhythms) of teenagers. With the onset of puberty, teenagers begin to experience a sleep phase delay such that they develop a natural tendency both to fall asleep later in the evening and to wake up later in the morning(Dawson. P.,2004).

Even youngsters who have experienced sleep deprivation (and therefore accumulated some sleep debt) tend to feel more alert in the evening, thus making it more difficult to go to bed at what parents might consider a reasonable hour(Dawson. P.,2004).The onset of sleep is triggered by the release of melatonin, a natural body hormone. Toward dawn, melatonin shuts off as another hormone, cortisol, increases, signalling the youngster to wake up(Dawson. P.,2004).

Research shows that the pattern of melatonin secretion makes it hard for teenagers to fall asleep early in the evening and to wake up early in the morning(Dawson. P.,2004). Schools with early start times (any time before 8:30 am.) place students at a disadvantage in terms of arousal and being alert for early morning classes and throughout the day because the adolescent's

biological rhythms are out of sync with typical school routines(Dawson. P.,2004).

Night sleep disorders include; night-time bed wetting, sleep walking(Dawson. P.,2004).

Depression in relation to sleep patterns among teenage students.

A depressive disorder is not the same as a passing blue mood(Roxanne D.E and Dennis .L.,2010). It is not a sign of personal weakness or a condition that can be wished away(anon3,2010). People with a depressive disease cannot merely "pull themselves together" and get better(Roxanne D.E and Dennis .L.,2010). Without treatment, symptoms can last for weeks, months, or years. Appropriate treatment, however, can help most people with depression(Roxanne D.E and Dennis .L.,2010).Disturbed sleep can cause a great deal of distress for people, whether it is caused by depression or not(Hamish. M.W.,2005). Depression was the leading cause of disability and the 4th leading contributor to the global burden of disease since 2000(World Health Organisation,2010). Depression occurs in persons of all genders, ages, and backgrounds(World Health Organisation,2010).

Depression is common, affecting about 121 million people worldwide and is among the leading causes of disability worldwide(World Health Organisation,2010). Depression can be reliably diagnosed and treated in primary care yet fewer than 25 % of those affected have access to effective treatments(World Health Organisation,2010).

Teenage depression is not just bad moods and occasional melancholy(Segal. J.,2007). Depression is a serious problem that impacts every aspect of a teenager's life. Left untreated, teenage depression can lead to problems at home and school, drug abuse, self-loathing-even irreversible tragedy such as homicidal violence or suicide. Fortunately, teenage depression can be treated, and as a concerned parent, teacher, or friend, there are many things you can do to help(Segal. J.,2007).

People with depression can have many types of sleep problems(Hamish. M.W.,2005). Generally, these involve getting less sleep than usual and include: difficulty getting off to sleep - often because of lying in bed with thoughts going round in your head, frequently waking up during the night, waking early in the morning and not being able to get back to sleep(Hamish. M.W.,2005).

Even if people with depression do get a reasonable number of hours' sleep, they often wake in the morning not feeling refresh and feel tired through the day(Hamish. M.W.,2005). Occasionally, people with depression sleep too much, finding it hard to get out of bed and spending much of the day in bed. Again, this does not tend to lead to these people feeling any less tired(Hamish. M.W.,2005).

In people with depression, not being able to sleep (especially when this involves spending hours lying in bed awake) can cause other problems as well. During this time, people tend to dwell on their problems(Hamish. M.W.,2005).If you are depressed, everything seems black and dismal. Such bleak thoughts going round and round your head can cause your mood to get even lower. A lower mood makes the thoughts even bleaker and a vicious circle can occur(Hamish. M.W.,2005).

Severe sleep problems in depressed people are associated with an increased risk of suicide. On the other side of the coin, an improvement in sleep often indicates an improvement in mood(Hamish. M.W.,2005). The sleep pattern of somebody with depression is very different: it takes much longer to get off to sleep, the total sleep time is reduced, there is little or no deep sleep, REM sleep occurs earlier in the night, there are more frequent awakenings during the night, which may last long enough for the person to be aware of them. the person wakes up earlier in the morning(Hamish. M.W.,2005).

There are as many misconceptions about teen depression as there are about teenagers in general. Yes, the teen years are tough, but most teens balance the requisite angst with good friendships, success in school or outside activities, and the development of a strong sense of self. Occasional bad moods or acting out is to be expected, but depression is something different(Segal. J.,2007). Depression can destroy the very essence of a teenager's personality, causing an overwhelming sense of sadness, despair(Segal. J.,2007). Thus interfering with their sleep patterns.

Whether the incidence of teen depression is actually increasing, or we're just becoming more aware of it, the fact is that depression strikes teenagers far more often than most people think. And although depression is highly treatable, experts say only 20% of depressed teens ever receive help(Segal. J.,2007).

Unlike adults, who have the ability to seek assistance on their own, teenagers usually must rely on parents, teachers, or other caregivers to recognize their suffering and get them the treatment they need. So if you have an adolescent in your life, it's important to learn what teen depression looks like and what to do if you spot the warning signs(Segal. J.,2007).

Depressed children and adolescents can be withdrawn, irritable or uncooperative, and often have difficulty identifying and expressing their feelings(Rebecca. J.P.,2005). Some youngsters, particularly boys, deny feeling sad; the only observable complaint will be of irritability, moodiness, boredom and disturbed sleep patterns(Rebecca. J.P.,2005). As a result, they may get in fights or other trouble at school, interact less socially and lose friends. They may also 'act out' suicidal feelings, e.g. by cutting themselves, which can be misinterpreted by parents and teachers as manipulative rather than as a communication of distress. All these things can worsen a depressed state(Rebecca. J.P.,2005).

Anxiety in relation to sleep patterns among teenage students.

Anxiety may occur without a cause, or it may occur based on a real situation but may be out of proportion to what would normally be expected. Severe anxiety can have a serious impact on daily life(Minas. C.,2010). Quite often anxiety becomes a habit because the neural pathways of an emotion, like anxiety, can become burned into the brain(Wendy. O.,2004). You may be understandably anxious about a specific situation, but when the situation is resolved, the anxiety remains. This is non-specific or chronic anxiety and can be very detrimental to your health and, as you've probably noticed, to your sleep as well(Wendy. O.,2004).

Chronic anxiety can affect your immune system, leaving you more prone to disease onset(Wendy. O.,2004). It can also cause headaches, loss of appetite and muscle spasm. It can also lead to irritability and depression. Chronic anxiety can cause insomnia due to involuntary muscle tension and an agitated racing mind(Wendy. O.,2004). If you know what's causing your anxiety, you can at least take steps to solving the problem. Chronic anxiety leaves you with nowhere to go because you've no idea what's causing it(Wendy. O.,2004).

Feelings of hopelessness are often the main underlying causes of anxiety disorder in adults, teens and children. Learning more about these core beliefs and how they may be affecting your child can help parents and teens to develop coping strategies that can provide permanent relief and treatment(Purvis D, Robinson E, Sally M and Watson P,2007).

Social anxiety is a specific type of anxiety that occurs in social situations. People with social anxiety may have trouble talking in class, giving speeches, going to parties, or even meeting someone new(Purvis D, Robinson E, Sally M and Watson P,2007). Social situations cause those suffering from social anxiety to feel extremely nervous(Purvis D, Robinson E, Sally M and Watson P,2007). . Their hands may sweat and their lips may tremble. They may feel

dizzy or light-headed. Sometimes social anxiety may become so severe that a person avoids all social situations. This can lead to isolation and loneliness where by some students resort to over-sleeping as a way of overcoming the boredom(Purvis D, Robinson E, Sally M and Watson P,2007).

Generalized Anxiety Disorder (GAD) occurs when a person is consumed with worry about almost every aspect of his/her life(Purvis D, Robinson E, Sally M and Watson P,2007). People with GAD worry about themselves, their families, and even the state of the world in general. They worry about almost everything in their lives. Sometimes this worry can affect their ability to do well in school or at work, to sleep at night, and even to complete basic daily tasks(Purvis D, Robinson E, Sally M and Watson P,2007). A student may fail to comfortably sleep at night all because he is worried(Purvis D, Robinson E, Sally M and Watson P,2007).

Anxiety is a natural reaction to something which is scary or difficult (Purvis D, Robinson E, Sally M and Watson P,2007). A chemical called adrenaline is released into your body and you start to breath hard to get more oxygen into your system. This makes you feel more awake, alert and focused thus leading to failure of getting enough sleep(Purvis D, Robinson E, Sally M and Watson P,2007). This happens to everyone if they are faced with a tricky situation. However, anxiety can sometimes feel overwhelming and be triggered by things which most people can deal with without a problem(Purvis D, Robinson E, Sally M and Watson P,2007).

Anxiety can be caused by a bad past experience, leaving us anxious every time we come across the same situation – a barking dog, for example. You might also worry about the future and things over which we have no control, like nuclear war or friends being injured(Purvis D, Robinson E, Sally M and Watson P,2007). Taking drugs, drinking, smoking and eating a bad diet

can cause symptoms of anxiety because of their impact on the body. Caffeine, sugar and junk food are particularly bad(Purvis D, Robinson E, Sally M and Watson P,2007)

When your adrenal glands release excessive amounts of the hormone adrenalin it makes it difficult for your body to utilize the mineral Calcium(Kevin,2010). Calcium requires the blood circulating through your body to be of a certain pH(Kevin,2010). Excessive amounts of adrenalin throws off the body's pH balance making it difficult for calcium to be absorbed into the bloodstream. Muscle cramps can result at night from the lack of calcium being supplied to muscles causing restless sleep or lack of sleep(Kevin,2010).

The circadian cycles, or the hormones that control your sleep cycle, are also sensitive to the timing of the adrenalin hormone. If your adrenal glands are not functioning properly, it will be hard to achieve a restful deep sleep(Kevin,2010).

Self esteem in relation to sleep patterns among teenage students.

Low self esteem means poor confidence and that also causes negative thoughts which means that you are likely to give up easily rather than face challenges. In addition, it has a direct bearing on your happiness and well-being(Perera. K.,2007).If you have a high level of self esteem you will be confident, happy, highly motivated and have the right attitude to succeed(Perera. K.,2007). It is very important because it affects how you think, act and even how you relate to other people. It allows you to live life to your potential(Perera. K.,2007).

If you sleep for less than four hours a night, you're 73% more likely to be overweight than someone who sleeps well, researchers at Columbia University in New York have discovered. Research also found if you sleep for less than six hours a night, you are 25% more likely to be overweight(Eleanor and Snell .E.,2007). Some over weight teenage students have low self esteem.

And researchers also claim that hormonal changes caused by a lack of sleep could lead to an increased appetite. People who slept for 5 hours had 15% more ghrelin (a hormone that increases feelings of hunger) than those who slept for eight hours, and those who slept for fewer hours had 15% less leptin (a hormone that suppresses appetite). Research by University of Bristol, led by Dr Taheri (Eleanor and Snell .E.,2007) .

Forget expensive beauty treatments, if you want to look your best, put a good night's sleep at the top of your list(Eleanor and Snell .E.,2007). Research from the University of Chicago found sleeping for four hours a night for less than a week hits the body's ability to process and store carbohydrates and regulate hormone levels. These changes mimic many of the hallmarks of advanced ageing(Eleanor and Snell .E.,2007). It's not just junk food that causes spots – hormones have a lot to do with it too – especially in teenagers. As lack of sleep can play havoc with your hormones, not getting enough sleep could pave the way for more facial pimples(Eleanor and Snell .E.,2007)!

Lack of sleep makes it hard to concentrate, can make you clumsy and both memory and creativity suffer. You get a "little stupid", too. Stanley Coren, a Canadian sleep expert claims you lose one IQ point the next day for every hour of lost sleep the night before(Eleanor and Snell .E.,2007). Teenage students who fail to score highly have high chances of developing low self-esteem(Eleanor and Snell .E.,2007).

According to Dr. Cheryl Guy, 2009, teenage students with low self esteem are found of putting on masks of deception and false representation of oneself to disguise their fears. Some of the masks could be in the form of anger. Anger is a defensive mechanism that could be used to protect against others from seeing what is really going on inside of a person(Cheryl. G.,2009). The anger mask is put on when the individual feels threatened in some way. To those

on the other side of the mask, the persona of toughness is seen, when actually on the inside of the anger, fear resides (Cheryl. G.,2009). There is also the fear from the discovery of inadequacies being revealed. Beneath the "anger mask" sits vulnerability and perceived weakness (Cheryl. G.,2009).

Another mask could be the mask of the "class clown". This mask also does a really good job of sending the message that an individual is always joking around (Cheryl. G.,2009). Joking around and not being serious keeps others from learning what is really going on inside isn't very funny at all. Laughing at the jokes is a lot better than laughing at the person that hides behind the mask of the class clown (Cheryl. G.,2009). To keep from being perceived as a "joke" the mask wearer tells jokes to keep everyone laughing at those rather than her as a person (Cheryl. G.,2009).

There is also the "Pollyanna mask". It is common among girls. These masks keep everyone on the other side in a constant state of desiring to be more like miss perfect as she is always so sweet and kind (Cheryl. G.,2009).

The masks of the "over achiever", "workaholic", etc. are all very similar. These are the people who over commit and over involve themselves in things because the busier they are with their time, the less time they have to spend with themselves alone (Cheryl. G.,2009).

There is a mask that girls and women put on called the "beauty mask" (Cheryl. G.,2009). This mask disguises the many flaws that lie beneath the make-up and name brand clothes. No amount of eye liner and mascara can ultimately hide what the eyes are truly saying (Cheryl. G.,2009). They are saying "I want you to believe that I am beautiful on the outside because if you really saw what I looked like underneath, you wouldn't think I was beautiful at all". Hiding behind the fabulous outfits, fancy beads, earrings, and make-up "beauty mask" is a shallow

shield against the truth that screams "I want to love myself, but I don't"(Cheryl. G.,2009)!

In summary, from all the studies that have been done by various scholars, it has been realised that sleep patterns are associated with depression, anxiety and self esteem. Sleep patterns have been distinctively changing for the last 20 years. Hormones, peer pressure and personality are some of the factors that have influence on the sleep pattern. They determine what level of self esteem, anxiety and depression a teenage student will have. With the great spread of westernisation so has been the increase in shifts of sleep/wake patterns of teenage students. The problems that used to be most common in the western world are now becoming more evident in the third world.

CHAPTER THREE

Methodology

In this chapter, we will review the research design, study population and the instruments that were used.

Study design

A cross sectional study was carried out in June 2010 at two heterogeneous schools thus Green Hill Academy and Muyenga High School in Kampala.

Study population

The study targeted 100 students from both schools. Each school had 50 participants both male and female. For each school, both O-level and A-level teenage students between 13-19 years were welcomed to take part. Never the less, it was the willing students that were considered for the research as long as they were teenagers so as to meet the 100 figure mark.

Sample size and selection

Stratified random sampling was used for this heterogeneous population. The area was divided into segments which were chosen at random for sampling. The segments were class streams to which the participants belonged. These teenage student participants were chosen at random with consideration of the ratio.

Kish Leslie's formula was used for sample size determination. The expected prevalence of the problem in Uganda was not available, therefore the prevalence of the problem was assumed at 89%.

$$n = \frac{z^2 p(1-p)}{e^2}$$

$$e^2 \quad (\text{Israel. G.D,2009})$$

where by: n=desired sample size, z = the standard variance at a given confidence level of 95% which is 1.96, p=prevalence rate which is 93% and e=acceptance error of 5%.

$$N = \frac{(1.96)^2 * 93 * (100 - 93)}{5 * 5}$$

$$= 100.035264 = \underline{100 \text{ teenage students.}}$$

Data collection methods and development of tools

Data was be collected using a structured questionnaire. This questionnaire had 5 sections that is; section A Biological data, section B sleep patterns, section C depression, section D anxiety and section E self esteem.

Sleep patterns were measured using the Iowa Paediatric Day time Sleepiness Scale(PDSS) which has 8 items. The instrument was scored using a 5 point likert scale 0-4, that is to say always=4, frequently=3, sometimes=2, seldom=1 and never=0. Item 3 was reverse scored. Scores ranging from 0-10 were considered low or normal sleep scores, 11-21 were considered as moderate scores sleep patterns and 22-32 were high scores indicating a possible sleep disorder. Depression was measured using the Beck's Depressive Inventory(BDI) which was developed by Aaron Beck and modified in 1996. The instrument is comprised of 21 items that was scored 0-3 for each item though 20 items were selected for this study. One item was dropped due to it's irrelevance to the study. A low score ranging from 0-14 indicated no/normal depression, 15-30 is a moderate score indicated mild/moderate levels of depression while a score above 30 indicated severe depression that needed attention.

Anxiety was measured using the Beck's Anxiety Inventory(BAI) that has 21 items and was scored using the likert scale ranging from 0-3. A grand sum between 0-21 indicated very low anxiety, a grand sum between 22-35 indicated moderate anxiety and the grand sum that exceeded 36 was a potential cause for concern.

Self esteem was measured using the Rosenberg's self esteem scale(RSES) that has 10

items that were scored on a four point likert scale ranging from 0-3. Scores between 0-14 indicated a low self esteem, scores ranging between 15-25 were considered normal and those ranging from 26-30 as very high self esteem.

The tool was then pilot tested to establish it's reliability and validity in the Ugandan setting.

Ethical consideration

A letter of introduction was obtained from the registrar of the university and presented to both head teachers of these schools. Students were free to participate in other words voluntary participation was exercised with informed consent. A good relationship had to be established with the teenage students and they had to be assured of confidentiality. There was no risk of harm and students were assured of confidentiality. The questionnaires were anonymous even after filling in as the students had been advised not to write their names on the sheets.

Data integrity and analysis

A teacher at the school was requested to assist me in the issuing of the questionnaires. The teacher was kindly requested to introduce me to the class. All the questionnaires were filed in a folder as soon as they were used. Data was assessed and the questionnaires relevantly coded by me.

Each questionnaire was entered in SPSS, Statistical Package for Social Scientists for analysis. The Pearson Coefficient value was then used for proper management and presentation of data. All the objectives were analysed by testing each hypothesis using the Pearson correlation coefficient.

CHAPTER FOUR

Data presentation and analysis

Introduction

This chapter represents the findings of the study of 100 teenage students. The results were aimed at exploring depression, anxiety, and self esteem in relation to sleep patterns in teenage students. The variables examined in this chapter have been the basis under which data was analysed. The first presentations constitute the personal data of the teenage students, followed by analysis of each student 's sleep per night-time and lastly the four variables.

Demographic data

Respondents were asked to give their class and sex. Their responses given are represented in the table below.

Table 1; Sex and class of the respondents.

		What is your sex?		Total
		Male	female	
In what class are you?	1	9	12	21
	2	9	11	20
	3	10	10	20
	4	2	2	4
	5	10	20	30
	6	3	2	5
Total		43	57	100

From the above findings, 35% of the students were in the advanced level of learning while the rest were in ordinary level. From the findings 57% of the sample population was of the female sex while 47% was male. The highest participants came from senior five and senior one while the least came from senior four and senior six. The highest participants came from senior

one and five.

Table 2; Scholars and their class.

		Are you a day or a boarding student?		Total
		boarding	day	
In what class are you?	1	17	4	21
	2	11	9	20
	3	11	9	20
	4	3	1	4
	5	12	18	30
	6	3	2	5
Total		57	43	10

The majority of students (53%) were boarding students while the other 47% were day scholars. Form five had the highest number of day students while form one had the highest number of students who took part in this research. Form four had the least number of participants followed by form six probably because few were willing to take part being that they are candidate classes.

Table 3; How long students sleep.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 4	8	8.0	8.0	8.0
4.5	1	1.0	1.0	9.0
5	34	34.0	34.0	43.0
6	25	25.0	25.0	68.0
6.5	2	2.0	2.0	70.0
7	16	16.0	16.0	86.0
7.5	1	1.0	1.0	87.0
8	8	8.0	8.0	95.0

	Frequency	Percent	Valid Percent	Cumulative Percent
8.5	3	3.0	3.0	98.0
10	2	2.0	2.0	100.0
Total	100	100.0	100.0	

From the findings, the number of hours that students sleep per night on average ranges from 4 -10 hours. The majority of students sleep for 5 and 6 hours. 13% of the students sleep for an average of 8 hours and above while 87% of the teenage students sleep less than the recommended 8 hours per night. 68% of the students sleep for less than 6 hours per night on average.

Table 4; Sleep score of respondents

Sleep degree	scores	frequency	percentage
Normal	0-10	19	19
Moderate	11-21	70	70
Sleep disorder	22-32	11	11
TOTAL		100	100%

From the above findings, 70% of the sample population which was the majority had a moderate sleep score while 19% had normal sleep score and 11% had scores indicating a possible sleep disorder.

Table 5; Depression score of respondents

Depression degree	scores	frequency	percentage
No/normal depression	0-14	27	27
Moderate depression	15-30	66	66
Severe depression	30 and above	7	7
TOTAL		100	100%

66% of the sample population scored within 15-30 for moderate depression. Twenty seven percent of the teenage students had no/ normal depression while 7% had severe depression.

Table 6; Pearson correlation coefficient for depression and sleep patterns.

		SLEEP PATTERNS	DEPRESSION
SLEEP PATTERNS	Pearson Correlation	1	.498**
	Sig. (2-tailed)		.000
	N	100	99
DEPRESSION	Pearson Correlation	.498**	1
	Sig. (2-tailed)	.000	
	N	99	99

Since the level of significance(0.498) was more than the level of significance at 0.05, the null hypothesis that stated, there is no significant relationship between depression and sleep patterns among teenage students was retained thus concluding that, there is no significant relationship between depression and sleep patterns among teenage students.

Table 7; Anxiety score of respondents

Anxiety degree	scores	frequency	percentage
Very low anxiety	0-21	50	50
Moderate	22-35	35	35
Severe anxiety	36 and above	15	15
TOTAL		100	100%

The majority (50%) of students had very low anxiety that is scored between 0-21 while 35% of the sample population had a moderate score on anxiety. 15% of the students had severe anxiety with scores of 36 and above.

Table 8; Pearson correlation coefficient for anxiety and sleep patterns.

		SLEEP PATTERNS	ANXIETY
SLEEP PATTERNS	Pearson Correlation	1	.389**
	Sig. (2-tailed)		.000
N		100	100
NS			
ANXIETY	Pearson Correlation	.389**	1
	Sig. (2-tailed)	.000	
N		100	100

Since the level of significance(0.389) was more than the level of significance at 0.05, the null hypothesis that stated, there is no significant relationship between anxiety and sleep patterns among teenage students was retained thus concluding that, there is no significant relationship between anxiety and sleep patterns among teenage students.

Table 9; Self esteem score of respondents

Self esteem degree	scores	frequency	percentage
Low self esteem	0-14	13	13
Normal	15-25	71	71
High self esteem	26-30	16	16
TOTAL		100	100%

From the above findings, 16% of the sample population had high levels of self esteem, the majority (71%) had normal scores for self esteem while 13% who were the minority are possible victims of low self esteem.

Table 10; Pearson correlation coefficient for self esteem and sleep patterns.

		SLEEP PATTERNS	SELFESTEEM
SLEEP PATTERNS	Pearson Correlation	1	-.165
	Sig. (2-tailed)		.101

	SLEEP PATTERNS	SELFESTEEM
N	100	100
SELFESTEEM Pearson	-.165	1
Correlation		
Sig. (2-tailed)	.101	
N	100	100

Since the level of significance(-0.165) was less than the level of significance at 0.05, the null hypothesis that stated, there is no significant relationship between self esteem and sleep patterns among teenage students was rejected thus concluding that, there is significant relationship between self esteem and sleep patterns among teenage students.

CHAPTER FIVE

Introduction

This chapter focuses on the discussion and recommendations basing on the overall objectives of the study. In this chapter the researcher attempts to compare findings of the study with findings of various scholars who were cited in the literature review. It will include the implications of the findings for theory, policy and practice.

Sample and sleep patterns

The study included respondents aged from 13-19. It was realised that different teenage students have different sleeping patterns. Their hours per night ranged from 4-10 hours though the majority were sleeping for five hours. The average teenager needs around 9.5 hours of sleep per night, possibly because hormones that are critical for growth and sexual maturation are released mostly during slumber (Witmer D, 2010).

According to the findings of the study, the majority of students slept less than the recommended time (9.5hours) for adolescents due to the onset of puberty (Dawson. P, 2004). This could probably raise complications in the health of these students no precautions and remedies are taken.

Teenagers have an increased sleep requirement at the time when lifestyles, social engagements and peer pressure cause a reduction in sleep time. Insufficient sleep or disruption of the sleep-wake cycle causes fatigue(Ediau. S, 2006).

With the current spread of westernisation, there is increasing sleep deprivation and change in the teenage sleep pattern from the recommended(Yang C.K, Kim J.K,Patel S.R and Lee .J.H,2005). This calls for urgent attention and action if the community is still as concerned about the student's school performance as it used to be. Sleep patterns have a big impact on school performance (Dawson .P., 2005).

Depression and sleep patterns among teenage students.

According to the findings of the study, majority of the respondents had moderate depression thus indicating fair depressive levels. It was realised that the majority of the students did not have severe depression though 7% of them possibly had severe depression(30 and above). This was in agreement with research findings by (Hamish .M.W.,2005) who suggested

that students with depression get less sleep than usual while some do occasionally sleep too much.

Most of these students probably sleep late and wake up early thus getting less sleep per night. They take much longer to get off to sleep(Hamish .M.W.,2005). Probably some of these students have developed coping mechanisms for the depression like adults by seeking assistance on their own (Segal.J.,2007).

The finding show that five of the students do over sleep as a way of doing away with the boredom they may be experiencing. People with depression occasionally sleep too much, finding it hard to get out of bed(Hamish. M.W.,2005).These five students were probably among the seven students who were possibly having a depression disorder.

Anxiety and sleep patterns among teenage students.

According to the study findings, 15% of the students had severe anxiety. Possibly seven of these students could be suffering both severe depression and anxiety. They could possibly be having severe sleep disorders. The findings are consistent with the study by Purvis D, Robinson E, Sally M and Watson P, 2007 in which they said that worry can affect a student's ability to do well in school or at work, to sleep at night, and even to complete basic daily tasks.

These students probably have higher concentrations of adrenalin secreted in their bodies thus making them feel more awake, alert and focused thus leading to failure of getting enough sleep(Purvis D, Robinson E, Sally M and Watson P, 2007).

Self esteem and sleep patterns among teenage students.

From the findings 13% of the teenage students had low self esteem. 68% of the students were sleeping less than 6 hours per night. They were 25% likely to be overweight. Being teenagers, lack of enough sleep often comes with facial pimples that may lower their self esteem

especially in girls (Eleanor and Snell.,2007). These students most probably have negative thoughts which are caused by having poor confidence of oneself(Perera .K.,2007). Luckily there were no students who slept for less than four hours.

Most students who don't get good grades in class often have a low self esteem due to the fact that there is a high possibility of being looked down on by their fellow students. Most students with low self esteem then resort to putting on masks of deception to disguise their fears. The findings suggested that there was significant relationship between sleep patterns and self esteem thus being in line with the findings of Eleanor and Snell, 2007.

Conclusions

In accordance to the findings of the study and the discussion, the following discussions were made. It was realised that students who had possible sleep disorders had high chances of developing low self esteem, anxiety and depression. Studies show that teenagers generally get an average of only 7.4 hours a night(Witmer D,2010).

The average teenager needs around 8-9.5 hours of sleep per night, possibly because hormones that are critical for growth and sexual maturation are released mostly during slumber(Witmer D,2010). The findings found that on average these students slept for 7.5 hours per night which was close to the suggested figure of 7.4 hours in the studies done by Witmer D,2010.

Looking at how many students had moderate scores, on all the variables especially for sleep patterns and depression, there is a possibility that in the next ten years, the majority of students will have severe conditions if no precautions are undertaken by those in authority.

Of all great men that have lived on this earth, there is none told as a champion who never laid down to have a nap except if they were gods. They all at one time crept off to have a good

nap that would refresh their brains and relieve their muscles of aches. Sleep is like an antidote that protects one's body from having mental and nervous break downs. In teenage students, sleep plays a vital role towards the healthy development of the body.

Recommendations

The 7% of the students who are depressed raise serious concern and need urgent attention because if not attended to, they may stand out as possible victims of suicide (Segal.J.,2007). On the other hand, appropriate treatment can help most people with depression.(Roxanne D.E and Dennis . L.,2010).

Teenage depression should never be left untreated because it can lead to problems at both home and school, drug abuse.(Segal .J.,2007). This could probably explain why there are some students involved in drugs in some schools as of today. Precautions need to be taken to prevent the majority (66%) who have moderate depression from developing severe depression.

The government, teachers and parents with all concerned inclusive should make sure that students get adequate sleep such that they can not only yield better academic results but also have good health that will support their productivity in years to come.

Public health officers may utilise the results of this study to find solutions to the challenges related to depression, anxiety and self esteem in relation to sleep patterns in teenage students.

Parents should show concern about the sleep patterns of their children besides stopping at taking them to school. They should know that the amount of sleep a student gets is an important factor in determining the productivity of a student today and the years to come.

Teenage students should be taught that sleep has a vital role it plays in there performance at schools and has a direct effect on their depression self esteem and anxiety.

Implications for policy

It is a moral and legal responsibility, and a highly practical measure, for the government to ensure that teenage students get enough sleep during school by controlling the school programmes and syllabi. This is because they are tomorrow's leaders and we need them to fully mentally, physically and spiritually develop so as to be deemed competent to take on tomorrow's responsibilities.

The government and other concerned health organisations should invest in research concerning the teenagers as a way of planning and preparing for tomorrow's generation.

Other suggestions

Considering the methodology used in the study , the reasonable sample size and sampling techniques used plus the quality control mechanisms that were adopted, the data collected can be regarded reliable and can therefore be utilised by policy makers , scholar and other organisations concerned about the good health and productivity of teenage students who we all know are tomorrow's leaders. The findings therefore provide foundation for appropriate planning and development of effective policies towards improvement of the health of tomorrow's leaders.

All schools should review there programmes and see whether they are favourable for the good health and development of teenagers.

Government ,teachers ,concerned citizens and parents must think of ways of helping teenage students who probably may be facing sleep disorders, severe depression and low self esteem before the situation turns alarming with several cases being reported in years to come. This study is vital because such students may be able to receive help earlier on before they turn to drugs and suicide as an option.

Further research

Further research should be done in the area to prove how adequate sleep and good nutrition can boost one's immunity against disease in teenagers.

APPENDIX A

Budget

ITEM	QUANTITY	BY WHOM	BY WHEN	Rate (UG Shs.)
printing	1 questionnaire	researcher	01/05/10	200
photocopying	150 copies	researcher	01/05/10	30000
printing	1 proposal			10000
transport	4 journeys			12,000
filing	3 folders			9000

Binding	3 copies	researcher		30,000
dissertation				
miscellaneous				54800
Air time				4000
total				150000

INTERNATIONAL HEALTH SCIENCES UNIVERSITY

An investigation on depression, anxiety, self esteem in relation with sleep patterns among teenage students.

Section A

Please tick and fill where it applies to you. Boys fill the left and girls the right side.

Male	Sex	Female
	Age	
	Class	
	Boarding scholar	
	Day student	

Section B

Please answer the following questions as honestly as you can by circling one answer.

1. How often do you fall asleep or get drowsy during class periods?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

2. How often do you get sleepy or drowsy while doing your homework?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

3.* Are you usually alert most of the day?

0) Always 1) Frequently 2) Sometimes 3) Seldom 4) Never

4. How often are you ever tired and grumpy during the day?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

5. How often do you have trouble getting out of bed in the morning?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

6. How often do you fall back to sleep after being awakened in the morning?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

7. How often do you need someone to awaken you in the morning?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

8. How often do you think that you need more sleep?

4) Always 3) Frequently 2) Sometimes 1) Seldom 0) Never

Add the figures you have circled to find your grand score . The score is

9. *On the average, how many hours did you sleep each night during the past 4 weeks?*

Write in number of hours per night:..... (ignore this when scoring).

Section C

Please read each group of statements carefully and then pick out the one statement in the group that best describes how you have been feeling for the past two weeks, including today. Circle the number of the statement you have picked. Do not pick more than one statement for each number.

<p>1. Sadness 0 I do not feel sad 1 I feel sad much of the time 2 I am sad all the time 3 I am so sad or unhappy that I can't stand it.</p> <p>2. Pessimism 0 I am discouraged about my future 1 I feel more discouraged about my future than I used to be. 2 I do not expect things to work out for me. 3 I feel my future is hopeless and will only get worse.</p> <p>3. Past Failure 0 I don't feel like a failure 1 I have failed more than I should have 2 As I look back I see a lot of failures 3 I feel I am a total failure as a person.</p> <p>4. Loss of pleasure 0 I get as much pleasure from the things I ever did from the things I enjoy. 1 I don't enjoy things as much as I used to. 2 I get very little pleasure from the things I used to enjoy. 3 I can't get any pleasure from the things I used to enjoy.</p> <p>5. Guilty of feelings 0 I don't feel particularly guilty</p>	<p>8. Self-criticalness 0 I don't criticise or blame myself more than usual. 1 I am more critical of myself than I used to be. 2 I criticise myself for all my faults. 3 I blame myself for everything bad that happens.</p> <p>9. Suicidal thoughts or wishes 0 I don't have any thoughts of killing myself. 1 I have thoughts of killing myself, but I would not carry them out. 2 I would like to kill myself. 3 I would kill myself if I had the chance.</p> <p>10. Crying 0 I don't cry any more than I used to. 1 I cry more than I used to. 2 I cry over every little thing. 3 I feel like crying, but I can't.</p> <p>11. Agitation 0 I am no more restless or wound up than usual. 1 I feel more restless or wound up than usual. 2 I feel so restless or agitated that that it's hard to stay still. 3 I am so restless or agitated that I have to keep moving or doing something.</p> <p>12. Loss of interest</p>
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<p>1 I feel guilty over many things I have done. 2 I feel quite guilty most of the time 3 I feel guilty all of the time</p> <p>6. Punishment feelings 0 I don't feel I am being punished. 1 I feel I may be punished. 2 I expect to be punished. 3 I feel I am being punished.</p> <p>7. Self-dislike 0 I feel the same about myself as ever. 1 I have lost confidence in myself. 2 I am disappointed in myself. 3 I dislike myself.</p>	<p>0 I have not lost interest in other people. 1 I am less interested in other people or things than before. 2 I have lost most of my interest in other people or things. 3 It's hard to get interested in anything.</p> <p>13. Indecisiveness 0 I make decisions about as ever. 1 I find it more difficult to make decisions than usual. 2 I have much greater difficulty in making decisions than I used to. 3 I have trouble making any decisions.</p>
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<p>14. Worthlessness 0 I do not feel I am worthless 1 I don't consider myself as worthwhile and useful as I used to. 2 I don't have enough energy to do very much. 3 I don't have enough energy to do any thing.</p> <p>15. Loss of energy 0 I have as much energy as ever. 1 I have less energy than I used to have. 2 I don't have enough energy to do very much. 3 I don't have enough energy to do anything.</p> <p>16. Changes in sleeping pattern 0 I have not experienced any change in my <u>sleeping pattern</u>. 1a I sleep somewhat more than usual <u>1b I sleep somewhat less than usual</u> 2a I sleep a lot more than usual <u>2b I sleep a lot less than usual</u> 3a I sleep most of the day 3b I wake up 1-2 hours early and can get back to sleep.</p> <p>17. Irritability 0 I am no more irritable than usual. 1 I am more irritable than usual. 2 I am much more irritable than usual. 3 I am irritable all the time.</p>	<p>18. Changes in appetite 0 I have not experienced any change in my <u>appetite</u>. 1a My appetite is somewhat less than usual. <u>1b My appetite is somewhat greater than usual.</u> 2a My appetite is much less than before. <u>2b My appetite is much greater than usual.</u> 3a I have no appetite at all. 3b I crave food all the time.</p> <p>19. Concentration difficulty 0 I can concentrate as well as ever. 1 I can't concentrate as well as ever. 2 It's hard to keep my mind on anything for very long. 3 I find I can't concentrate on anything.</p> <p>20. Tiredness or fatigue 0 I am no more tired or fatigued than usual. 1 I get more tired or fatigued more easily than usual. 2 I am too tired or fatigued to do a lot of things I used to do. 3 I am too tired or fatigued to do most of the things I used to do.</p> <table border="1"> <tr> <td>Sub total page 1</td> <td></td> </tr> <tr> <td>Sub total page 2</td> <td></td> </tr> <tr> <td>Total score</td> <td></td> </tr> </table>	Sub total page 1		Sub total page 2		Total score	
Sub total page 1							
Sub total page 2							
Total score							

Section D

Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it didn't bother me much.	Moderately - it wasn't pleasant at times	Severely – it bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Wobbliness in legs	0	1	2	3
Unable to relax	0	1	2	3

Fear of worst happening	0	1	2	3
Dizzy or light-headed	0	1	2	3
Heart pounding/racing	0	1	2	3
Unsteady	0	1	2	3
Terrified or afraid	0	1	2	3
Nervous	0	1	2	3
Feeling of choking	0	1	2	3
Hands trembling	0	1	2	3
Shaky / unsteady	0	1	2	3
Fear of losing control	0	1	2	3
Difficulty in breathing	0	1	2	3
Fear of dying	0	1	2	3
Scared	0	1	2	3
Indigestion	0	1	2	3
Faint / light-headed	0	1	2	3
Face flushed	0	1	2	3
Hot/cold sweats	0	1	2	3
Column Sum				

Scoring - Sum each column. Then sum the column totals to achieve a grand score. Write that score here

_____ .

Section E

Please carefully read each item in the list. Indicate how much you have been bothered by that symptom by circling the number in the corresponding space in the column next to each symptom.

STATEMENT	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I feel that I am a person of worth, at least on an equal plane with others.	3	2	1	0
2. I feel that I have a number of good qualities..	3	2	1	0
3. All in all, I am inclined to feel that I am a failure.	0	1	2	3
4. I am able to do things as well as most other people.	3	2	1	0
5. I feel I do not have much to be proud of.	0	1	2	3
6. I take a positive attitude toward myself.	3	2	1	0
7. On the whole, I am satisfied with myself.	3	2	1	0
8. I wish I could have more respect for myself.	0	1	2	3
9. I certainly feel useless at times.	0	1	2	3
10. At times I think I am no good at	0	1	2	3

all.

Your total score on the self-esteem scale is:

Scoring sheet for the questionnaire on sleep patterns in teenage students .

Section B for sleep patterns.

Scores ranging from 0-10 will be considered low or normal sleep scores, 11-21 will be considered as moderate scores while 22-32 will be high scores indicating a possible sleep disorder.

Section C for depression.

A low score ranging from 0-14 indicates no/normal depression, 15-30 is a moderate score indicating mild/moderate levels of depression while a score above 30 indicates severe depression that needs attention.

Section D for anxiety.

A grand sum between **0 – 21** indicates very low anxiety. That is usually a good thing. However, it is possible that you might be unrealistic in either your assessment which would be denial or that you have learned to “mask” the symptoms commonly associated with anxiety. Too little “anxiety” could indicate that you are detached from yourself, others, or your environment.

A grand sum between **22 – 35** indicates moderate anxiety. Your body is trying to tell you something. Look for patterns as to when and why you experience the symptoms described above. For example, if it occurs prior to public speaking and your job requires a lot of presentations you may want to find ways to calm yourself before speaking or let others do some of the presentations. You may have some conflict issues that need to be resolved. Clearly, it is not “panic” time but you want to find ways to manage the stress you feel.

A grand sum that **exceeds 36** is a potential cause for concern. Again, look for patterns or times when you tend to feel the symptoms you have circled. Persistent and high anxiety is not a sign of personal weakness or failure. It is, however, something that needs to be pro-actively treated or there could be significant impacts to you mentally and physically. You may want to consult a physician or counsellor if the feelings persist.

Section E for self esteem,

scores are calculated as follows:

<p><i>For items 1, 2, 4, 6, and 7:</i></p> <p>Strongly agree = 3 Agree = 2 Disagree = 1 Strongly disagree = 0</p>	<p><i>For items 3, 5, 8, 9, and 10 (which are reversed in valence):</i></p> <p>Strongly agree = 0 Agree = 1 Disagree = 2</p>
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	Strongly disagree = 3
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The scale ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem.

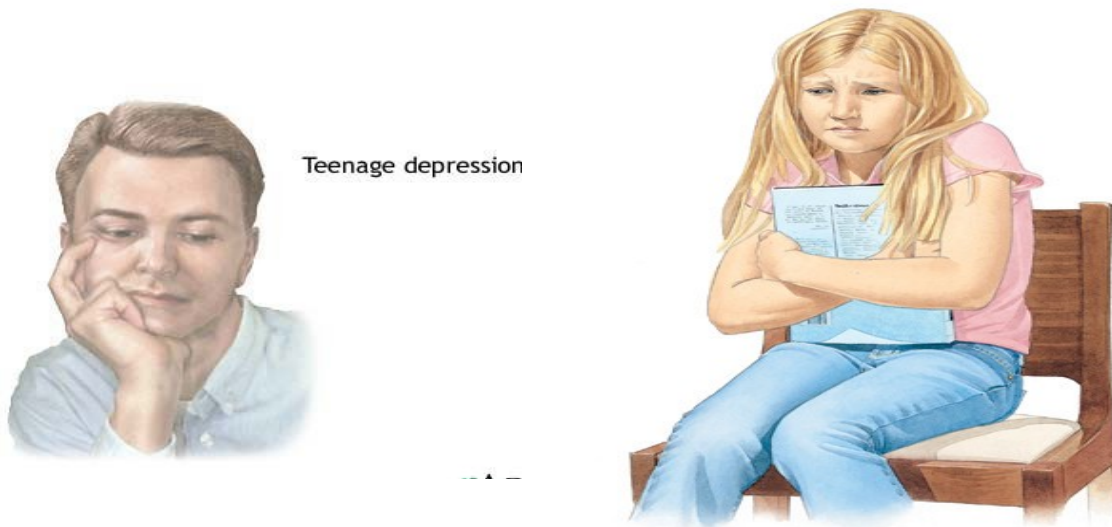
Figure 2



A distressed, stressed or depressed student should be everyone's concern. Let's not let anxiety and low self esteem come to their rescue. Shall those that ought to be concerned let go and let depression come to save them from the situation of need? Shall we?

Do we? I don't think we have to! Let's take up the initiative and get something done!

Figure 3



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