EFFECT OF SKY PRACTICES ON WELLNESS AND PERFORMANCE OF STUDENTS IN HIGHER EDUCATION

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CHAPTER II

REVIEW OF LITERATURE

2.0 INTRODUCTION

The primary purpose of the literature review is to study the body of knowledge that exists in the area of research from different sources. The broad objectives of the literature review are as follows:

- Examine the current body of knowledge in one's field of research from the literature.
- Compile all the relevant insights from the literature relating to the field of research.
- Utilize the summary of insights from the literature to relate to the research questions in formulating the hypotheses and identify the areas for further study.

The literature review examines books, scholarly publications, and other sources related to a specific topic, or field of study, and offers a definition, overview, and critical assessment of these works in relation to the research problem under consideration. Literature reviews are intended to give readers a summary of the sources that can be used when studying a specific subject and to show them how the analysis fits into a broader field of study.

The literature review was carried out on the following areas of the proposed research:

1. Challenges faced by youth
2. Wellness and its dimensions
3. Methods of measuring dimensions of wellness
4. SKY practices on wellness
5. Qualitative methods to understand the challenges of youth etc.

2.1 CHALLENGES FACED BY YOUTH

(Davendra Verma 2017) states that the youth are a huge source of energy and drive. If their potential is not developed and harnessed well, their energy not only gets wasted but can also become destructive to the society. (APJ Abdul Kalam 2016b, 2016a) emphasized

on the importance of focusing on the development of youth towards nation-building. He was convinced that the power of the youth, if properly directed, will bring about transformed humanity by meeting its challenges. He advised the parents and teachers to allow their children to dream as the dreams are followed by revolutionary thoughts and actions. Success always follows dreams attempted with actions. It is essential for an individual, an organization or a country to work towards continuously improving themselves and that would lead to excellence. Excellence does not come by accident; it is achieved by a process. Dr Kalam found that while the youth like to be unique, the world around them tries to make them identical to everyone else. Parents want their children to score good marks in the school like the neighbourhood kids. Teachers expect every kid to be one of the top five in the class. Dr Kalam advised the youth to be unique. Having an aim in life gives purpose to every action and orientation to every result. Currently, most of the youth choose their studies and career based on parental or peer influence rather than on their own aptitude. The youth must work hard to improve their knowledge with a career goal and also serve the family, society, the nation.

(Vineeta Singh & Shilpi, 2015) observed that youth are at that wonderful stage in life when energy is limitless, creativity is at its best and the 'never say die' spirit at its peak. Swami Vivekananda was always in search of real youth who are young with full of energy, strength, intellect, and well-built body. He believed that undertaking any social change needed enormous energy and will. He wanted youth to acquire 'muscles of iron' as well as 'nerves of steel.' Hence, he called upon the youth to not only build their mental energy, but their physical energy as well.

According to (Geeta Sethi & Shalini Bharat, 2019)**,** adolescent health lays a solid foundation for adult health. The development of brain and neurological system happens during teens and the early twenties. Due to the increased emphasis placed on academics, youth engage in significantly less physical activity. The choice and intake of food is determined by socioeconomic status and influenced by the media, family, peers. Studies have shown how physical activities and exercises increase oxygenation, and therefore, attention and memory. The lifestyle of youth has significantly changed as a result of increasing urbanization, individualization, and globalization. Social networking sites have several negative impact on the youth as they are highly time consuming, leading to waste

of significant productive time. This also shortens attention span. Young people experience significant hormonal changes that can significantly impact their emotions and mood. They can therefore be extremely sensitive, especially to criticism from peers and disapproval from parents.

According to (Giedd, 2018), youth go through dramatic changes in body, brain, and behaviour with consolidating their identities and forming their lifelong values. It is an opportunity to acquire new skills such as problem solving and decision making as well as self-regulation. It is a time of confusion, shifting preferences and a time of great passions. This is the peak time for emergence of psychiatric illnesses, including anxiety and mood disorders, eating disorders, personality disorders, and substance abuse. Despite the potential upsides, the digital technologies, such as computers, the Internet, and smart phones to learn, play, and interact with each other, there are downsides, which lead to distraction. Likewise, the other activities of adolescence to watch are about social network, communication, voice prosody, buying patterns, and media consumption. According to (Fan Rui et al, 2016), emotions that transfer between individuals through their communications and interactions are called 'emotional contagion'. This causes others to experience similar emotional states leading to social interactions, and collective behaviour happens in social networks.

According to (Casimir Raj Motcham, 2015), youth go through physical, cognitive, and socio-emotional changes. During early stages, physical changes and changes in attitude and behaviour are rapid followed by attitudinal and behavioural changes. Brain connections and signalling processes selectively adapt to match the needs of the environment. The frontal lobe of the brain develops during this period. This is the control centre for "executive functions" such as planning, impulse control, and reasoning. The physical changes in the brain are clearly related to young people's cognitive development, which refers to 'all those abilities associated with thinking and knowing'.

(Casimir Raj Motcham, 2015) finds that teenagers enjoy relatively good relations with their parents, there are frictions on certain issues, which is not uncommon in other types of social relationship. Adolescents confront two major tasks: one is achieving autonomy from their parents; the second is forming an identity by creating an integral self

that harmoniously combines different aspects of the personality. While the peers are of same gender initially, they become mixed at a later stage. At this stage of their social development, friendship, infatuation, love, personal identify and social success play an important role.

(Divya Nath, 2015) observed that the students of the present generation are passing through a crisis. The great emphasis given to academics, hardly gives them any time to ponder over the nobler principles of human life. As a result, the subject of spiritual growth has been undermined and the fundamental truths of life and existence have been ignored. Traditional principles that encourage spiritual progress at every stage of life and have the potential to sow seed of noble values during student life are being disregarded. Aggressive competition, influence of media, peer pressure, self-centredness, imitation of western culture, unbridled materialism, consumerism and most importantly a learning system that is deficient in providing a holistic education, are the fundamental reasons for this regrettable crisis.

(Punyatoya Bej, 2015) iterates that in a connected world, exposure to media and social networking shapes the culture of the youth. The dominance of mass media forms such as popular music, fashion, television, the Internet, and video games impacts the lives of young people as a primary cultural resource. Their engagement in social media leads to starvation of sleep, which in turn can affect their attention, memory, and eventually their learning. Studies on youth show that the investments made to develop youth resulted in significant returns in terms of their improved health, well-being, and ability of the current generation of youth to transform into healthy, responsible, and productive adults. This results in intergenerational returns in terms of health and wellbeing of the next generation of children born to these people.

According to (Duggal & Bagasrawala, 2019), (JN Booth, 2013), (Wamsley & Stickgold, 2011), (Tokuhama-Espinosa, 2010), learning is considered to take place in the mind in a psychological sense, and in the brain, in a neurological sense. This results in a physiological change in the neural networks, as well as changes in the muscles and other parts of the body. Humans are learning organisms that rely on interaction between the body and mind. The following factors influence learning:

- Nutrition: The physical makeup of the brain is affected by nutrition. The brain needs energy to work properly, which it gets primarily from food. A student's nutrition leads to enhanced concentration.
- Physical activity: Learning is influenced by physical activity which has a long-term positive impact on academic attainment.
- Attention and Memory: Real learning relies on the brain's ability to pay attention and later recall what it has been exposed to. Attention can be either focused or peripheral. Memory can be sensory, short-term, working, and long-term.
- Good stress: While "Good" stress (eustress) increases attention and aids learning, "Bad" stress hinders learning. Moderate stress (eustress) can enhance learning by putting the body in a prepared state through the release of hormones.
- Sleep: For effective consolidation of what is learnt in the class, sleep is important. During all stages of sleep, the mind and brain are working to process new memories, consolidating them into long-term storage and integrating recently acquired information with past experience. Memory consolidation is dependent on sleep—specifically, REM (rapid eye movement) sleep, in which certain neurotransmitters are present that help preserve memory.

(Sahni Ashok, 2003) found that with growth in the youth population and limited opportunities for admission in schools and colleges of repute, and specifically in professional courses, the youth are under great pressure to perform. The previous academic standards of Class 1 and 2 are hardly adequate in modern India. The parents, right from the nursery level, make higher demands on their children to study hard and get good marks or ranks. Such demands from the parents and the society exert stress upon the youth. A high percentage of youth, after graduation at bachelor's or at post-graduation level in engineering, medicine, law, nursing, and other disciplines remain unemployed or are under-employed and under-paid. The youth are under great pressure to make their life a success, to prove themselves to their parents and the society, and yet the opportunities are limited. They are not empowered and equipped to pursue careers in line with their aptitude and vocational interests. The job satisfaction, personal fulfilment, and creative realization depends on the

choice of career made with one's aptitude, interests, and capabilities. Keeping in view the socio-economic conditions of the country, competitions, and opportunities available, the youth should set up realistic goals and priorities. Greater stress is experienced when the goals are unrealistic.

In a highly competitive environment, the students are expected to perform beyond their potential with limited guidance. The choice of their studies and jobs are based on the parental aspiration or influence of peers. Many students have no idea of their aptitude and lack guidance to explore and decide the right choice of studies and career. Hence, they are not actively engaged in their studies as they lack their own goals. Many students coming from rural areas and socio-economic groups with Tamil medium, they find it difficult to cope with engineering programs taught in English. Most of the school education is rote-based with limited understanding of the concepts and an orientation for application. The professional courses demand application of basic science and mathematics. Their foundation is weak and hence they take some time to cope with studies in higher education.

Youth generally lack nutrition and they indulge in consuming unhealthy fast food. Most of them reduce their engagement in physical activities/exercises due to overemphasis on academics during classes 10, 11, 12. After getting used to this lifestyle, they never resume their physical activities after they join college. Depression and anxiety related disorders have been found to be most prevalent among youth according to a study on the mental issues faced by youth in India. Most of the students experience sleep disorders as they spend time with friends and social media. The students in higher education go to sleep very late in the night and compromise on the quality of sleep required for learning. This means that students who have not slept well will do poorly in the classroom. Students are able to cram for an exam using their short-term memory, pass it, but remember almost nothing shortly after the test is over. The information they studied never gets into long-term memory. Sleep impact cognitive ability: Lack of sleep impairs one's capacity to be attentive and manage the mental activities effectively and efficiently. To read, to write, to listen, and to tell, one needs a good night's sleep.

2.2 WELLNESS AND ITS DIMENSIONS

According to the WHO's constitution, everyone has a fundamental right to enjoy the best possible level of health, regardless of their race, religion, political beliefs, economic status, or social standing. According to (Corbin, 2008a), wellness is considered as an important component of optimal health. Sense of well-being reflects in one's optimal functioning in daily life in terms of quality of life, meaningful work, and a contribution to society. Wellness reflects how one feels (a sense of well-being) about life, as well as one's ability to function effectively. An individual with good quality of life can enjoyably do the activities of life with little or no limitation and can function independently. Health and wellness depend on each person's unique characteristics. Each of us has personal strengths and limitations. Focusing on strengths and learning to accommodate weaknesses are essential keys to optimal health and wellness.

The dimensions of health and wellness include the physical, mental, intellectual, social, spiritual as shown in the following Table 2.1.

TABLE – 2.1

DIMENSIONS AND DEFINITION OF WELLNESS

		Wellness
1	Physical	Ability to function effectively in daily work. Possess physical fitness and useful motor skills. Characterized as fit instead of unfit.
2	Mental	Ability to cope with daily circumstances and to deal with personal feelings in a positive, optimistic, and constructive manner. Characterized as happy instead of depressed.
3	Intellectual	Ability to learn and to use information to enhance the quality of daily living and optimal functioning. Characterized as informed instead of ignorant.
4	Social	Ability to interact with others successfully and to establish meaningful relationships that enhance the quality of life for everyone. Characterized as involved instead of lonely.
5	Spiritual	Ability to establish a values system and act on the system of beliefs. Pursue meaningful and constructive lifetime goals. Belief in a force greater than the individual that helps one contribute to an improved quality of life for all people. Characterized as fulfilled instead of unfulfilled.

2.2.1 PHYSICAL WELLNESS

(Rajam et al., 2017), (Kitko, 2016), (Corbin, 2008b) defined physical fitness as a person's ability to function effectively using physical fitness and motor skills. The five components of physical fitness include body composition, cardiovascular fitness, flexibility, muscular endurance, and strength. Physical fitness is generally considered to be "the ability to perform daily tasks without fatigue". The self is divided into the inner and the outer self; focus of the inner self is to ensure the functioning of every organ with proper nutrition and self-care and the focus of outer self is on pursuit of endurance, flexibility, and strength. Body composition: The proportion of muscle, fat, bone, and other tissues that consitute the body is an indication of fitness of a person with lower fatness. A fit person has a relatively lower percentage of body fat. This provides agility to perform different tasks.

(Zhang, 2004) explains that the purpose of sleep is to process information in the short-term memory, encode, and transfer to long-term memory. This will involve comparing the newly saved information from temporary memory with old information in the long-term memory, and identify and remove redundant, duplicate, and overlapping information. The remaining information is then encoded and transferred to long-term memory. Two types of temporary memory stores are used for declarative memory and procedural memory; therefore, sleep should have two distinct stages depending on the memory type that is being transferred. Rapid eye movement (REM) stage responsible for processing of the procedural memory, and non-REM (NREM) stage for processing of the declarative memory.

(Mary G. Graham, 2000) observed that sleep is not only a biological necessity but also a physiological drive. The effects of inadequate sleep affect our mood and how we perform at school, work, and home. Lost sleep also accumulates over time; the more "sleep debt" an individual incurs, the greater the negative consequences. Adolescence is considered to be the time of greatest vulnerability from the standpoint of sleep.

2.2.2 MENTAL WELLNESS

One of the primary roles of youth as students is to effectively engage in learning and perform well in their studies. (Robinson, 2017), (Cowan, 2014), (Tokuhama-Espinosa, Tracey, 2010), (Zhang, 2004) observed that attention and memory are two factors that

enable learning. Effective learning is realized when the brain can pay attention while listening or reading and subsequently remember what it has been exposed to. There are two levels of attention – Perceptual and Focal, and the mechanisms regulating them. Perceptual attention relates to the numerous phenomena which we attend to automatically and involuntarily, for example, during a conversation with a colleague, such as the room temperature or noises from the next room. Focal attention relates to the attention we pay to our colleague's words and facial expressions while they are speaking and try to understand what they are trying to communicate, we are exercising some degree of voluntary executive control.

Memory can be short-term, long-term, emotional, or sensory-related (visual, motor etc.). Each sensory channel has a short-term sensory memory that lasts from a few milliseconds to a few seconds. Attention, which lasts from several seconds to at most a few minutes, is what transfers information from sensory memory into short-term memory. Working memory is a dynamic view of the short-term memory, an active system in which information is not only stored but also processed. Working memory is the small amount of information that can be held in mind and used in the execution of cognitive tasks. It is connected to intelligence, information processing, executive function, comprehension, problem solving, and learning. The capacity of working memory can determine how many items can be held in mind at once to use the items together, or to link them to form a new concept in long-term memory.

Learning is considered as the formation of new concepts in an educational context. These new concepts occur when existing concepts are joined or bound together. The binding of ideas occurs more specifically in the focus of attention. For information to enter long-term memory in a form that allows later retrieval, it first must be present in working memory in a suitable form. The memory lasting anywhere from an hour to lifetime is called long-term memory. Long-term memory is divided into "declarative" (explicit) and "procedural" (implicit) memory. The information we possess that cannot be described verbally is called ‘Procedural memory’, which is also referred to as ‘psychomotor skills’ like typing, riding a bicycle and playing a musical instrument. Declarative memory represents all knowledge that can be consciously accessed and expressed symbolically through speech or writing.

According to (Steve Graham, 2007), executive functioning involves the conscious, purposeful, and thoughtful activation, orchestration, monitoring, evaluation, and adaptation of strategic resources, knowledge, skills, and motivational states to achieve a desired goal. This involves analysis (e.g., sizing up the demands of the situation), decision making and planning (e.g., selecting or devising a plan of action), attentional control (focusing and maintaining attention as well as inhibiting interfering behaviours), coordination of cognitive resources, and flexible application (e.g., adjusting plans and goals to meet changing situations).

(Kitzrow, 2003) stated that mental health can affect all aspects of the student's physical, emotional, cognitive, and interpersonal functioning. Common symptoms of depression may include disturbed mood, fatigue and low energy, sleep and eating problems, impaired concentration, memory, decision-making, motivation and self-esteem, loss of interest in normal activities, isolation and social withdrawal, and in some cases suicidal or homicidal thoughts. Students with higher levels of psychological distress were characterized by higher test anxiety, lower academic self-efficacy, and less effective time management and use of study resources.

2.2.3 SOCIAL WELLNESS

(Kitko, 2016), stated that the social dimension of wellness is at its prime when the individual contributes to the human and physical environment and when he or she is communicating in harmony with others. Respect for all individuals and their opinions and beliefs falls into this category, as does maintaining intimacy with others. According to (Mehrotra et al., 2013), six dimensions of psychological wellbeing include Self-acceptance, Purpose in life, Personal growth, Environmental mastery, Positive relations with others, and Autonomy. According to (Lee & Keyes, 1998), following are the components of social wellbeing.

- Social integration is the evaluation of the quality of one's relationship with society and community. Those who are in good health feel like they are a part of society.
- Social acceptance is the construction of society based on the character and qualities of others as a general category. Those who exhibit social acceptance trust others, believe that people can be kind and industrious.

- Social contribution is the evaluation of one's social value. It includes the belief that one is a vital member of society, with something of value to give to the world.
- Social actualization is the evaluation of the potential and the trajectory of society. People with better health have optimism about the current condition and future of society.
- Social coherence is the perception of the quality, organization, and operations of the social world. Healthier people not only care about the kind of world in which they live, but also feel that they can understand what is happening around them.

(Enrique G Fernandez 2015) states that the self-control factor encompasses the aspects of emotion regulation, stress management, and impulsiveness. It refers to the capacity to manage one's impulses and emotions as well as external pressure and stress.

(Corey Lee 1998) finds that healthier people not only care about the kind of world in which they live, but also feel that they can understand what is happening around them, The emotionality factors like emotion perception, emotion expression, empathy, and relationships help to assert oneself as well as influence others' emotions and decisions. The capacity to control and balance one's impulses and emotions in response to external circumstances is known as the emotional quotient. This helps to manage harmony with oneself and others.

According to (Purkey 1988), 'self-concept' is important in a social context, as the perception one holds regarding personal existence – our idea of who we are and how the world fits into it. A person's self-concept can be described as a dynamic system of learned attitudes, beliefs, and opinions that they have about their own existence. Self-concept is relevant to enhance mutual acceptance in social systems for a common purpose. Social wellness is a person's ability to interact with others to establish meaningful relationships that enhance the quality of life of self and others.

2.3 METHODS OF MEASURING DIMENSIONS OF WELLNESS

The dimensions of wellness at the physical, mental, and social levels are important to check the improvement with specific interventions like nutrition, physical exercises, sports & games, yoga, sleep etc.

2.3.1 MEASUREMENT OF PHYSICAL WELLNESS

2.3.1.1 BODY COMPOSITION

(Corbin, 2008b), (International Fitness Association, 2002), states that Body Mass Index (BMI) is an accepted indicator of physical fitness, and it is measured as a ratio of weight to height. Height is measured using linear scale fixed to a wall in inches or centimetres and weight is measured using a weighing scale in pounds or kilograms. Then, BMI is calculated using the formula BMI = Weight /$(\text{Height})^2$. Based on the range of BMI, classification can be made whether a person is Underweight, Healthy weight or Overweight, as shown in the following Table – 2.2.

TABLE – 2.2

CLASSIFICATION BASED ON BMI VALUE

Underweight	BMI less than 18.5
Healthy weight	BMI 18.5 to 24.9
Overweight	BMI 25 to 19.9
Obese	BMI 30 to 39.9

2.3.1.2 CARDIOVASCULAR FITNESS

According to (Corbin, 2008b)**,** a person's maximum oxygen uptake ($\dot{V}O_2$ max), commonly referred to as aerobic capacity, is determined in a laboratory by measuring how much oxygen a person can use in maximal exercise. A specialized gas analyzer is used to measure the use of oxygen during the test, usually done on a treadmill at different speeds and gradient. The following Table – 2.3 indicates the volumes of oxygen extracted by different categories of people from the environment.

TABLE – 2.3

CLASSIFICATION BASED INDICATED VOLUME OF OXYGEN EXTRACTED

Elite endurance athletes	5 to 6 litres of oxygen per minute
Average person	2 to 3 litres of oxygen per minute

2.3.1.3 FLEXIBILITY

According to (Corbin, 2008b), (Baltaci et al., 2003), hamstring and low back flexibility is measured using the sit and reach (SR) test. Though the flexibility is referred to all the joints, it is measured at hamstring and shoulder frequently. Sit-and-Reach test is carried out as shown in Figure – 2.1 by placing the head, back, against a wall at a 90-degree angle at the hips and placing the soles of the extended legs flat against a box or a bench. Then, one hand is placed over the other and slowly extended fully forward as far as possible keeping head and back in contact with the wall. A partner will slide the scale on the bench until it touches the fingertips. This is repeated twice and average of the scores of the two trials is taken.

FIGURE – 2.1

SIT AND REACH TEST

Classification based on the reach for men and women is made as shown in Table – 2.4.

TABLE – 2.4

CLASSIFICATION BASED ON THE REACH

Classification	Men			Women		
	Test 1	Test 2		Test 1	Test 2	
		Right up	Left up		Right up	Left up
High performance	16+	5+	4+	17+	6+	5+
Good fitness zone	13-15	1-4	1-3	14-16	2-5	2-4
Marginal zone	10-12	0	0	11-13	1	1
Low zone	<9	<0	<0	<10	<1	<1

2.3.1.4 MUSCULAR ENDURANCE

According to (Baltaci et al., 2003), handgrip dynamometer is used for measuring muscular endurance. The subject to be tested holds the dynamometer in one hand in line with the forearm and hanging by the thigh as shown in Figure – 2.2. Then, the maximum grip strength is calculated without swinging the arm. For each hand, the best of two trials is recorded.

FIGURE – 2.2

HANDGRIP DYNAMOMETER

(C Ashok, 2008) has specified the values listed as follows (in kilograms) and provide a guide for expected scores for adults as shown in Table – 2.5.

TABLE – 2.5

CLASSIFICATION BASED ON ENDURANCE VALUE

Rating	Male	Female
Excellent	>64	>38
Very good	56-64	34-38
Above average	52-56	30-34
Average	48-52	26-30
Below average	44-48	22-26
Poor	40-44	20-22
Very poor	<40	<20

2.3.1.5 SLEEP

(Buysse Charles F Reynolds Ill et al., 1988) state that although sleep quality is an important requirement for learning, it represents a complex phenomenon that is difficult to define and measure objectively. "Sleep quality" covers both quantitative and qualitative aspects of sleep. The quantitative aspect includes duration of sleep, sleep latency or number of arousals. The qualitative aspect includes ‘depth’ or ‘restfulness’ of sleep. The Pittsburg sleep quality index can be applied to various clinical and research settings to understand the quality of sleep and impact of sleep on other factors.

2.3.2 MEASUREMENT OF MENTAL WELLNESS

2.3.2.1 ATTENTION

According to (Natu & Agarwal, 1995), Digit Letter Substitution Test (DLST) is a speed test in which the individual has to substitute the maximum number of randomly distributed digits with corresponding letters from the English alphabet within 90 seconds according to the key given on the top of the worksheet. The choice of letters in the key is