

Stress Buster: A web-based student stress assessment tool

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Abstract: In the modern era of busy and hectic life schedule enamours number of issues are arising. These issues are related to the one's mental health. Stress, Anxiety and depression are some of the commonly faced challenges in the today's generation. In this paper, the study has been conducted on the management and reduction of the stress among the student using web-based approach. This paper explores how a web-based system can be used to access the student stress level and based on the online assessment what are the appropriate measures that can be taken to solve the student's challenges. The web-based system "Stress buster" helps the students to cope with the stress issues.

Keywords: Stress buster, web-based assessment tools, life schedule, phycological, mental health.

1. Introduction

With this type of stress buster website student can overcome with their problems personally. No need to show it or reveal it to the others if they do not want. They can cure their stress related problems through the website only. No need to physically present at the doctor's place or visit again and again to the doctor. That helps the student a lot in their studies also. They also feel good by chatting with a bot and playing fun games. Half of the stress will be cured only by playing or answering to the questions or MCQ's. students may find it interesting website. As today the students are very stressed because of their level of studies, live projects or those are staying in hostel who are leaving their parents for the first time, sometimes it may be the cause of stress. Sometimes there may be some physical, social, mental and economic problems which may arise the stress in student. So, we find this type of website may help those students who suffer from this type of situations. It may help them a lot. This study explores how a chatbot can give response to students about stress related information.

1.1 Need of web-based assessment tool for stress management

Stress has affected the morale of students and hence their performance is low in the studies Stress demotivates students which causes the increase in anxiety and their performance in class. The stress management system helps boost student's morale and motivates them to be focused on their studies and performance. Student productivity automatically increases and there are less chances of complaints or poor decision making. By using the stress management system to identify the stressful issues correctly, teachers and students will be able to lead in tough times.

2. Literature review

Chiesa et al have discussed about the use of meditation-based program which gives good results for the person who cope with the chronic pain. There are three main ways to reduce this type of stress: YOGA which includes attention of both mind and body, SITTING MEDITATION: distractions occur sometimes thoughts flow in mind, BODY SCAN: requires attention of the whole body from head to foot [1].

Matteson et al. have discussed the various stress issues. Stress issues are twine together in different ways with other physical or mental diseases and personal characteristics. Most of the stress problems are related with three levels i.e. history, society and culture. Diseases such as blood pressure, hypertension and cancer

are rare among people but that diseases may cause death. To reduce stress there are some methods which is beneficial for the health and happiness [2].

According to WHO, stress is major problem among youngsters or college students now-a-days. It is the situation where person or organism's equilibrium is in threat or the person take the situation scary. Emotional freedom, diaphragmatic breathing, biofeedback, relaxation response, muscle relaxation and behavioural therapy are some of the techniques the minimize or manage the stress of person [3].

According to the authors there are many stressful situations in the life of college students. Some of them are addressed as interpersonal, family related, education related, financial, physical and environmental stresses. These are the major sources of stress among college students. As this is the actual time in which they have tension of study, about their family background, they have to get job with good salary. Sometimes pressure built on them by their families or teachers [4].

McCarthy et al, have discussed that Closeness or attachment which is considered as an emotional relationship experienced with other who felt as a factor of security or protection. As childhood experiences and strategies leads a person to handle the situation of life with in the protection of parents and with their support but now they have to cope with the situations on their own without security of their parents. Sometimes by continuous thinking about these things they started feeling stressed [5].

The author has discussed the issue of finance as a reason of stress among the students. Students fitness or robustness is important topic now-a-days on university campuses. As good education and their life wellness are highly concerned among students in colleges. Tension from financial difficulties leads students towards the wrong path. Sometimes they are not able to give loan that is taken for them by their family to make them educated. If they are not able to perform well in studies due to this tension they come into stress and take wrong decisions which may lead to death also [6].

Students are very important for society not for their own right benefits also for the society's well-being. That's why every nation now-a-days invest more on education to give the bright future not for their own but also for their nation or society. College students have more frequently compounded difficulties today than the long ago. Common problems related to their stress are high demand, tough competition, greater performances, more expectations and good results in academics. Sudden changes in environment, whether it is related to family or meeting new people [7].

The authors have emphasis on the mental health of the students. The authors have mention that the pharmacy or medical students have to go through the long trainings before they are licensed to their passion. The level of stress among medical students is higher than the students of other undergraduate students. As they have to perform well in each and every test. Initially they have to score good while taking seats in colleges then they have to perform well in studies then trainings. During trainings they have to meet with many different diseases and listen to them properly. Then they got license after spending too much money and too long time. Within this only they are fed up and stressed [8].

Kumaraswamy et all have discussed the various parameter which cause stress among the college students. The particular level of stress among students is good which may give high results and good performances which we can say that is a eustress. Too much stress lead to negative effect on their mind as well as their body also. Fight or flight respond as a negative effect on student's life in which both body and mind are included. Similarly, to reduce stress mind/ body have to involve. Example: to do meditations, yoga or exercises. Colleges have to do sports meet regularly in which students have to involve [9].

Many students in campus cope with stress related to their academic performance pressure, about their housing arrangements and interpersonal relationships. Low family support and loneliness in the new or different environment lead a student to the distress. Some students cope with this situation positively and do their best and complete their studies but those who are not able to cope with they go back or leave their studies and some chooses wrong path and go for suicides if their parents are also not supporting them [10].

The paper shows how the different stress management programme helpful for undergraduate students to

reduce stress. The techniques like coping skills training, deep exhale, peacefulness and show unreal method are very helpful to reduce the stress. By using these methods, the students have lower level of stress, worry and anger [11].

In recent years it will found that stress among students are increase due to their academic and goals. Due to stress anger, worry and symptoms of depression are found common in students. By following the methods of stress management programme students can overcome from stress [12].

There are a number of various preventive methods for stress management for college students. These are different from other medical approaches like counselling and psychotherapy. These usually use workshops so students can able to handle their stress before it will become a crisis for them. Students must understand their problems and try to solve them [13].

To find different cause of stress among college students in Taiwan. Research shows male students have more stress as compare to female students. students who have greater grades and who take loan for study are suffer from the problem of stress and the students who have some family problems are also suffer from stress. So, parents and teachers must understand the students problem and try to solve them [14].

The authors have discussed that the students who study law are also suffered from stress. students concern for grades, long working hours and fear of losing goals and pressure of handle various legal activities can cause stress. So, law students must attend the seminar or workshops on stress management programme. By this they did not feel pressure of work load and also overcome from stress. When students not able to handle their academic and personal problems then they face problem of stress [15].

In college most of the students are suffered from the stress. This is due to the pressure of academic performance and the students who are not able to manage time properly and also due to heavy workload. The students who manage their time proper always perform well in their academics and feel less workload and they always feel satisfied from what they are doing and they know what they want to do [16].

Students of nursing also suffered from the problem of stress. stress can occur due to responsibilities, performance and interpersonal problems. Students of nursing face problem of stress due to heavy work duties. These problems can be solved by managing the time, proper management training and first understand problems and then try to solve them [17].

The study is to measure volume, sources and effects of stress in the dental students. Dental students are facing the problems of stress during their training. Stress effect the health of students physically and mentally. Students must not take their academic performance as a pressure and try to solve the problems [18].

To measure the effectiveness of Multiple Stress Management Intervention on performance and health of undergraduate students. This will help students to manage their stressful lives. Then they are able to manage their academic performance and interpersonal problems. By using different techniques and attending counselling can reduce stress [19].

Students are in college always suffered from different problems whether it is related to academic or any family problems. When these problems cannot be solved then students take it as a stress. Students who are specially study medical and law are suffered from stress. So, to solve this problem students should attend workshops who give them knowledge about different techniques to overcome from stress [20].

The authors have discussed the importance of web-based assessment tools to measure and reduce the student stress level. There was survey held to check the quality of web-based stress management system on IT and media workers. The aim was to know the effects of treatment. After monitoring six months progress report of the patient then result came with the positive effect sign on the patient. Finally, they declare that for short term web-based stress management system is beneficial to resolve the common stress and health issues of today [21].

Due to the excessive stress the people lead to the several health problems like headache, sleeping issues, depression, etc. so in this paper they present the destress management system which consist one wearable stress monitor sensor and mobile phone-based application to monitor the stress. There was one experiment conducted in 30 persons to check the accuracy of device. After someday it clears that that the destress correctly indicates the mental health of the users and the guidance users can alleviate their stress dramatically [22].

Today the wearable technology and mobile application are become important part in health care. So, this paper introduces the real time stress management system using wearable sensors and smartphone mobile platform. This system estimates the stress level by using heart rate variability and patient activity cycle, at that time device provide the relaxation exercise instant to help manage stress [23].

In today lifestyle occupational stress is a major problem or issues among individuals and organizations. Due to stress people suffers from burnout, ill-health, absenteeism, reduce efficiency and performance. Their aim was to identify the factors contribute to stress for qualified UK clinical psychologist [24].

3. Methodology

An approach has been followed to help students to manage their stress level. A “Stress-Buster” website have been designed, to help the student cope up with their personal and professional issues. The detailed process can be described into following steps:

Step 1: In the first iteration a website is designed for giving students information about the stress, what actually stress is, types of stress etc.

Step 2: In the second iteration the study explores website in which there are three levels and these are-MCQs, games, exercises and recommendations etc. through this student can know how much are they stressed.

Step 3: In the third iteration there is a chatbot and used this in combination with testing to learn more about how a chatbot for this context should be work.

Step 4: In the final iteration, iteration four, the chatbot based on the results from the last iteration and made a plan for to evaluate student stress.

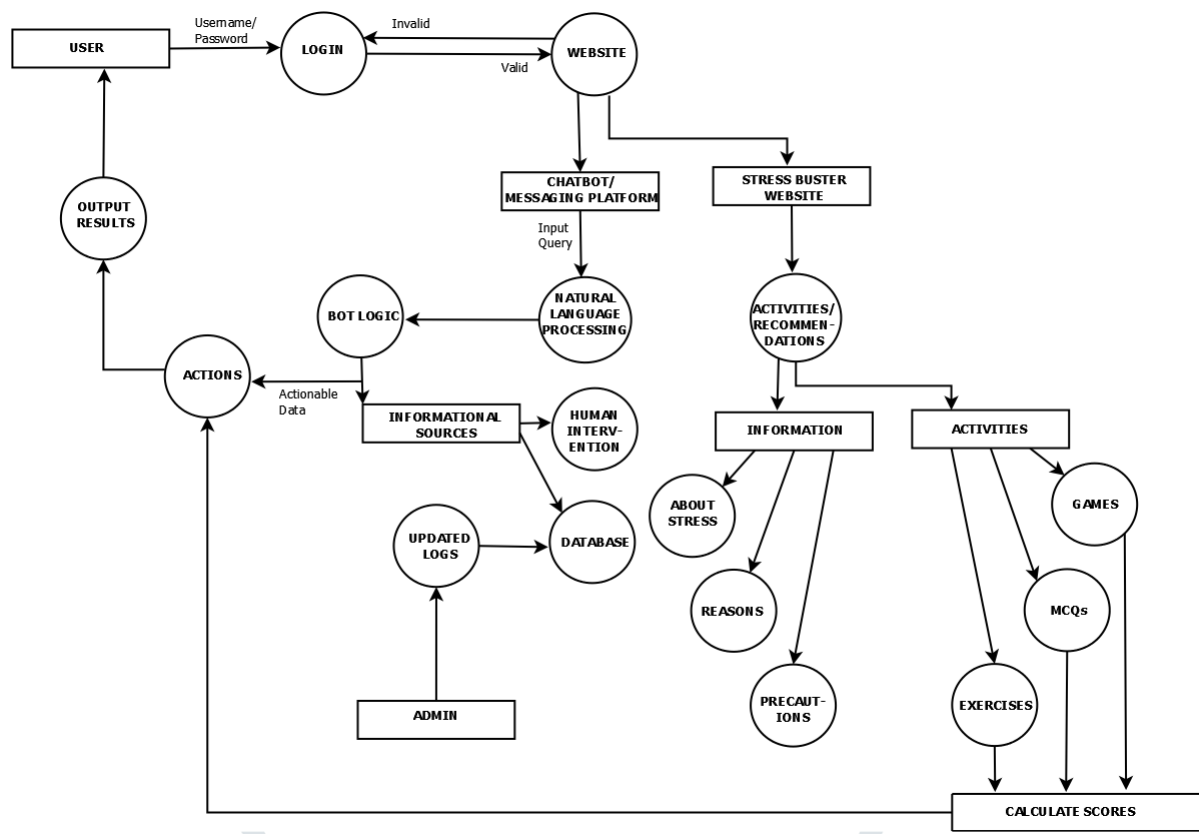


Figure 1: Representation of web-bases “Stress-Buster”

Figure 1 represents the complete flow of the web-based stress assessment tool. Moreover, to assess the student stress level a questionnaire has been designed, which will help in getting the information regarding the student stress level. The questionnaires have been designed based on the parameters like physical (figure-1), sleep (figure-2), behavioural (figure-3), emotional indicators (figure-4) and personal habits (figure-5),

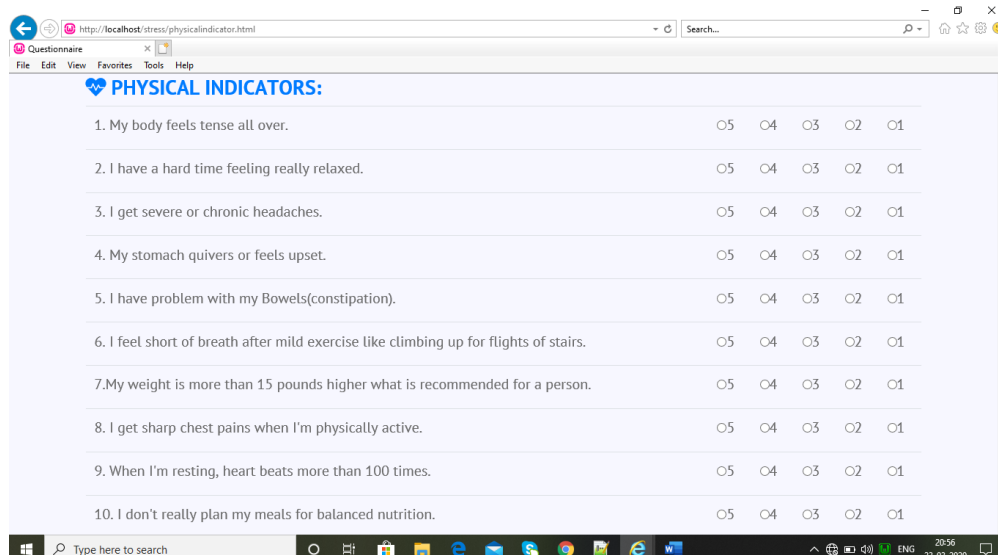


Figure 2: Stress-Buster website representing physical indicators

SLEEP INDICATORS:

1. I work or study in bed.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
2. I drink alcohol prior to bedtime.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
3. I eat if I awaken during the night.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
4. I awaken early in the morning still tired but unable to return to sleep.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
5. My sleep pattern is irregular.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
6. I have uncontrollable urges to fall asleep during the day.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
7. I performed poorly in school or work because of sleepiness.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
8. I have fallen asleep while driving.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
9. I have frequent nightmares.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01
10. I have sleep walked as an adult.	<input type="radio"/> 05	<input type="radio"/> 04	<input type="radio"/> 03	<input type="radio"/> 02	<input type="radio"/> 01

Figure 3: Stress-Buster website representing questionnaire on sleep indicators

BEHAVIORAL INDICATORS:

1. I try to work while I'm eating lunch.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
2. I go to work even when I feel sick.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
3. I drink alcohol or use drugs to relax.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
4. When I'm feeling high from alcohol or drugs I will drive a motor vehicle.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
5. I tend to stumble when walking, or have more accidents than other people.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
6. At least once during the week I will make bets for money.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
7. I have to work late.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
8. I have to bring work home.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
9. I have more than two beers, eight ounces of wine or three ounces of hard liquor a day.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

Figure 4: Stress-Buster website representing questionnaire on behavioural indicators

1- Never

EMOTIONAL INDICATORS:

1. I have found the best way to deal with hassles and problems is to consciously avoid thinking or talking about them.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
2. I have trouble remembering things.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
3. I feel anxious or frightened about problems I can't really describe.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
4. I worry a lot.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
5. It is important for me not to show my emotions to my family.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
6. It is hard for me to relax at home.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
7. It's best if I don't tell even my closest friend how I'm really feeling.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
8. I find it hard to talk when I get excited.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

9. I feel very angry inside.

Figure 5: Stress-Buster website representing questionnaire on emotional indicators

PERSONAL HABITS:

1. I spend less than three hours a week working on a hobby of mine.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
2. I spend less than one hour a week writing personal letters, writing in a diary or writing creatively.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
3. Because of my busy schedule I miss at least two meals during the week.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
4. I spend less than 30 minutes a week talking casually with my neighbors.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
5. I lack time to read the daily newspaper.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
6. I watch television for entertainment more than one hour a day.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
7. I drive in a motor vehicle faster than the speed limit for the excitement and challenge of it.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
8. I spend less than 30 minutes a day working toward a life goal or ambition of mine.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
9. My day to day living is not really affected by my religious beliefs or my philosophy of life.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

Figure 6: Stress-Buster website representing questionnaire on personal habits

4. Conclusion: This paper has represented the need of stress management tool, especially for the students. A web-based tool “Stress-Buster” has been implemented, keeping in mind the need of student’s requirement to manage the stress. There are various approaches used in this tool to manage the student stress like online games and questionnaires. The questionnaires are designed in such a way that will benefit the students in assessing and managing their stress level. In future this system can be further extended by implementing a chatbot which will answer the basic questions related to student stress issue.

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