Proposing RSFCA- Reliable Stress Factor Calculation Algorithm for Human Brain

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ABSTRACT

Problem: The ratio of stress becomes increases due to several different environmental factors that may either effect human behavior directly or indirectly.

Purpose: Authors purpose to study different environmental factors that may effect on human behavior. The motivation towards writing on this topic is to find out the real causes (or symptoms) of stress on human brain. In addition, this paper also discussed how stress will damage human immune system. The significance to study this concept is to reduce the human death rate due to stress only.

Methodology: This paper designed a new algorithm “RSFCA” that is termed as a Relaible Stress Factor Calculation Algorithm” on human brain while analyzing the different-2 situations. Here, authors use a primary data collection technique for the detection of real causes of stress on different categories of people viz. students, employees and business man.

Findings: Try to utilize body and brain tools for reducing the amount of stress on human brain. For handling critical situations effectively we have need to reduce stress and becomes a mandatory factor.

Keywords: Stress factor, stress causes, stress effects, stress cycle, stress reaction, Human behavior, human brain, human nervous system.

1. INTRODUCTION

Stress is inescapable part of modern life and most importantly exists in most of the people life viz. stress on student, stress on employee and stress on business man etc. It is considered as a kind of social dynamic factor [18] that may change due to changing the need of life styles. A normal human being basically has 4 brain stages than can be shown in figure 1:

![Fig.1: Human Brain Stages](image)

Table 1: Stress Causes Several Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Stress in Human Nervous System</th>
<th>Brain Level in Human Brain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabettes</td>
<td>Moderate high</td>
<td>Very high</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>Moderate high</td>
<td>High</td>
</tr>
<tr>
<td>Heart Attack</td>
<td>Moderate high</td>
<td>Extreme high</td>
</tr>
</tbody>
</table>
Each disease goes through the journey of stress as shown in figure 2:

![Stress Journey Diagram]

**Fig.2: Journey of Stress**

As authors surveyed the main cause of stress is the variations in hormones according to environmental changes [19] [3] that can be discussed with the help of a daily life example like the root cause of any type of stress is Problem that was originated from the environment as an example stress due to illness or stress due to some official work that can be counted under some specific range like inside the shear (tolerable) or outside the shear (i.e. Non-tolerable) [16] etc. As authors noticed the range of out of the shear people is going to be increases rapidly as the time passes. Any type of stress causes several diseases like infectious diseases, conflict injuries, anxiety & depression [10] [15]. Such types of diseases create a mental disorder [14] and so called stress related illness [10] and effects human life since long [11]. So, to save human life from stress and provide protection with healthier environment is author’s responsibility. By studying variety of different methods authors may help for reducing the mental level stress that can be listed below:

- Early in the morning meditation may help to reduce stress and correspondingly it provide self-relaxation for improving memory [8] [20] [5].
- Listening to music also reduce stress up to some extent [6].
- While diverting concentration from one to another [2] [9].
- Time management creates a bridge between personal and professional life that ultimately helps to reduce stress. (Real Life experimental approach).
- Physical activities and daily games may reduce stress [1].

By following the author’s advice (i.e. above discussed methods) the level of stress may reduce up to some extent and that results lifelong learning and aging [4].

This paper designed a new method “RSFCM” that is termed as a Reliable stress factor calculation method. This proposed methodology provides self-compassion [9]. The benefit to utilize this proposed methodology is it considers different parameters for calculating different types of stress viz. psychological stress, mental stress, emotional stress and behavioral stress etc that can be discussed below while considering several different parameters with several different cases. These different cases considered different situations for calculating either the same type of stress in different situation as shown in table 2:

**Table.2: Calculate stress on different categories of people while analyzing same situation.**

<table>
<thead>
<tr>
<th>Category of Humans</th>
<th>Current Situation</th>
<th>Type of Music</th>
<th>State of Mind</th>
<th>Stage of Stress in Human Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger(Love)</td>
<td>Recent Break Up</td>
<td>Listen Sad Songs</td>
<td>Too revised</td>
<td>Very High</td>
</tr>
<tr>
<td>Younger(Love)</td>
<td>Beginning of love</td>
<td>Listening Romantic Songs</td>
<td>Feeling Tired</td>
<td>Related (Calm) i.e. no stress</td>
</tr>
</tbody>
</table>

Or different type of stress in same situation that can be shown with the help of different cases from 1 to 5 having table description from table.3 to table.7:

Different cases for calculating stress:

Case 1 (For Mental Stress): Mental stress may consider different types of daily life tensions as an example it either may related to job or related to family. Such kind of stress can be easily reflected through human facial expressions. A daily life example is you called somebody he or she is sitting inside you but not responding or in his or her thought process or planning etc.

**Table.3: Nomenclature for calculating Mental Stress.**

<table>
<thead>
<tr>
<th>CS</th>
<th>Critical Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Time</td>
</tr>
</tbody>
</table>

Formulae for calculating Mental Stress:

\[ SF = (cs1+cs2+......+csn) (t1+t2+......+tn) \]  
Equation. 1

Case 2 (For Emotional Stress): For calculating emotional stress authors considers a case of recent break-up between lovers. They calculated how stress response or reflects on human behavior especially when the situation is too critical.

**Table.4: Nomenclature for calculating Emotional Stress Recent break-up.**

<table>
<thead>
<tr>
<th>CS</th>
<th>Critical Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRe</td>
<td>Stress Response(High, Moderate, Low)</td>
</tr>
<tr>
<td>SBN</td>
<td>Human Behavior(Normal, Abnormal)</td>
</tr>
</tbody>
</table>

Formulae for calculating Emotional Stress Recent break-up:

\[ SRe \{H, M, and L\} = CS \times (HB \{N, AB\}) \]  
Equation.2

Case 3 (For Behavioral Stress): For calculating behavioral stress authors considers an example of any workplace such as multi-national companies. They want to check the performance of employees while working under pressure or working in friendly or stress free environment.
DE = QOW/TD  \hspace{1cm} \text{Equation.3}

DE \propto \text{HP}. \text{ (Human performance can be easily calculated through deadlines).}

If task will be completed before the deadline that indicates there is no pressure on their mind otherwise there is a lot of pressure on their minds.

Case 4 (For Psychological Stress): It can be easily calculated on work places on the basis of employee experience.

DE = QOW/TD + YOE \hspace{1cm} \text{Equation.4}

Case 5 (Overall Stress / Stress Agg): The aggregate of four separate types of stress cause “stress illness” that ultimately damage human immune system.

\[ \text{Stress}_{\text{Agg}} = MS + ES + BS + PS. \]

The motivation towards this new designed method is to reduce the death rate of humans due to stress... Hence, this new designed methodology reduce death rate of human up to some extent and work for improving human life quality that some professionals may called human life extension technology (HLET). In this way, author’s contributes their efforts for overall improvement of quality of life (QOL).

2. PROPOSED PROCEDURE: RSFCA (RELIABLE STRESS FACTOR CALCULATION ALGORITHM)

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
DE & Deadlines \\
QOW & Quantity of Work \\
TD & Time Duration \\
HP & Human Performance \\
YOE & Year of Experience \\
\hline
\end{tabular}
\caption{Table 1: Nomenclature for calculating behavioral stress under work pressure.}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
DE & Deadlines \\
QOW & Quantity of Work \\
TD & Time Duration \\
HP & Human Performance \\
YOE & Year of Experience \\
\hline
\end{tabular}
\caption{Table 2: Nomenclature for calculating psychological stress.}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
SC & Stress Case \\
SF & Stress Factor \\
SR & Stress Reaction \\
HB & Human Behavior \\
\hline
\end{tabular}
\caption{Table 3: Nomenclature of RSFCA.}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
RSFCA & Reliable Stress Factor Calculation Algorithm \\
\hline
\end{tabular}
\caption{Table 4: Nomenclature of RSFCA.}
\end{table}

RSFCA(SC, SF, \text{S}_{\text{Agg}}, \text{TOS} \{MS, PS, ES, BS\}, \text{SR}, \text{HB} \{N, AB\})

Step-1) SEARCH for SC.
Step-2) THEN CALCULATE TOS \{MS, PS, ES, BS\}.
For calculating MS, Apply equation 1.
For calculating ES, Apply equation 2.
For calculating BS, Apply equation 3.
For calculating PS, Apply equation 4.
Step-3) After that Calculate \text{Stress}_{\text{Agg}} = \sum (MS + ES + BS).
Step-4) at the end, Calculate \text{S}_{\text{Agg}}/\text{S}_{\text{Agg}} \text{ it includes the sum of all different types of stresses on human brain}
\text{S}_{\text{Agg}} = \text{Type of stress} \times 100/\text{S}_{\text{Agg}}.
Step-5) IF(25 < \text{S}_{\text{Agg}} < 35) \{ \text{HB: =N.} \}
ELSE \{ \text{HB: =ABN.} \}
Step-6) Hence, \text{SR: = HB} \text{ /Hence stress reaction is directly reflects through human behavior.}

3. RESEARCH DESIGN

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure3.png}
\caption{Figure 3: Steps Enabled for RSFCA.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure4.png}
\caption{Figure 4: Causes of Stress}
\end{figure}
4. STRESS CYCLE

![Stress Cycle Diagram](image)

Figure 5: Steps Enabled in Stress Cycle.

5. CONCLUSIONS

Different types of stress, either directly or indirectly effects on human behavior. This rapidly increased growth of stress on human brain may be reduced either by time management or by following separate methods suggested above in this paper. The new designed methodology is termed as “RSFCA” (Reduced Stress Factor Calculation Algorithm) that helps to calculate the overall stress on human brain while analyzing different situations on separate categories of people say stress on students, stress on employees and stress on business man etc. The main focus of authors is to build a bridge between personnel and professional life that ultimately approach to a balanced life & also provides healthier environment for better living. Hence, this proposed methodology helps to extend human life (i.e. it supports to human life extension technology) that ultimately reduce death rate that only causes by stress.

6. REFERENCES


[11] Stress in the workplace-meeting the challenge, Indian Health Deptt, Health advocate Inc.


