



# A Study on Stress and Coping among Parents and Students using Statistical and Data Mining Techniques

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**ABSTRACT:** Parents are often faced with managing a busy schedule including job related responsibilities, household duties and preparing their children to school. These demands occasionally result in parenting stress. Parenting stress is associated with both parenting behaviours and child adjustment. The main objective of this study is to explore the subjective experiences of families of school going children, specifically the sources of stress and coping for these families. Interviews were conducted with families to shed light on their subjective experiences of coping and stress. This study aims to apply data mining techniques to predict the sources of parent's stress and children's stress. Data are received by well set of questionnaire. Attributes are selected with chi squared attribute selection and ranker algorithm. J48 and FT algorithm are used to classify the stress sources. Apriori algorithm is used to find stress sources with best rule. Parent and children data set are clustered by five groups using Simplekmeans algorithm. Attribute selection, Classification, Association and Cluster analysis are done in WEKA tool. Frequency analysis and Hypothesis testing's done in SPSS tool. There are many coping strategies are found from this study.

**Key Words :** Child Stress, Data Mining, Parents Stress, Stress Management

## I. INTRODUCTION

People frequently used the word stress when they feel that everything seems to have become too much, they are overloaded and wonder whether they really can cope with the pressures placed upon them. Anything that poses a challenge or a threat to our well-being is a stress. Some stresses are good, without any stress at all many say human being lives would be boring and would probably feel pointless. However, when the stresses weaken both mental and physical health they are bad. In this study concentrate some bad stresses.

Stress comes in much form and affects people of all ages and all works of life. The degree of stress in over lives is highly depending upon individual factors such as physical health, the equality of interpersonal relationship the number of commitments and responsibilities. People carry the degree of others dependence receives from others and the number of change or traumatic events that occurred in their lives. A lot of research has been conducted on stress over the past few years. Some of the theories behind it are now settled and accepted. Others are still being researched and debated.

### Parenting Stress

Parents are often faced with managing a busy schedule including job related responsibilities, household duties, and raising their children. These demands occasionally result in parenting stress, which is stress associated with being a parent. Parenting stress is associated with both parenting behaviours and child adjustment. **“Parenting stress”** as stress that is felt in response to the demands of being a parent —stress that is often experienced as negative feelings toward the self and toward the child or children. Parents can experience stress because of the immediate demands of meeting a child's needs (food, comfort, attention), the need to balance a child's needs with their own needs, and the general social pressure associated with a long-term investment in the child's growth and wellbeing.

### Children's Stress

Usually birth of a baby in a family anticipated with great excitement and expectation of the future filled with happiness and success. These children face various stressors and which in turn lead to stress when they are not able to cope up with these stressors. Stress can be explained in terms of sadness, worries, tension, frustration which leads to depression which is temporary or may last for long. It has been found in many studies that severely depressed school



children are more prone to suicide attempts. Some of the common reasons of stress can be problems with the parents, siblings, problems in the school, problems with the studies, teachers, classmates etc. the problem starts with normal stress among the individual with can turn to distress and result in many health problems both biological and psychological. Primary school children experience stress when they have to wait, when they want something they can't have, or when they lose or break one of their toys.

### **Coping**

People are often told of the harmful effects of stress on our health and well being, but they are not powerless in the face of stress, stress management training is a powerful tool. It is impossible to remove all the pressures from life but they can learn strategies to stop excessive pressure developing into stress; the strategies will need to teach through this course, there are many benefits to living in our fast paced, modern industrialized world; however the same society has created complex demands on our psychological and physiological health. There is no need to return to the stone age to regain our health and it's impossible to remove all stress (pressure) from our lives, but what they do need to do is learn to deal with it in a more positive, less destructive manner, using our skills and knowledge of stress to learn how to reduce its impact on our lives.

### **Scope of the Study**

This study covers the stressed parents and primary school children. Yet very few studies have been conducted with the usage of data mining concept and also considered the normal parent and normal children. Main aim of this study is to analyse stress factor and way to come out from stress by using the coping strategies and move to healthiest and happiest life. Recommendations have established based on the study to reduce the stress and paving the way forward for a pleasant and healthy life.

### **Research Objectives**

- To find the relationship between Parent's stress and their employment, family support their school going children.
- To find the relationship between Children's stress and their parent, sibling, study, family situation and their physical and mental health.
- To find out best algorithm in data mining for analysing the stress factor.
- To establish recommendations to overcome the stress.

## **II. Review of Literature**

Parental stress is stress that parents experience not only because of childrearing but also due to their social and environmental circumstances, responsibilities and everyday life. The presence or absence of social support and economic challenges and other factors impacts stress for parents. Even very young children experience stress, and it's important for adults to recognize and help primary schoolers deal with it. Primary school stress comes in two main forms : everyday stress and long term or chronic stress. Children can experience stress at home, in child care settings, or even in play with others.

Marty Wyngaardem Krauss found investigation about data concerning similarities and differences in child related and parenting stress between mothers and fathers of 121 toddlers with disabilities. The report revealed that fathers reported more stress related to their child's temperament and their relationship too their child. Mothers reported more stress from the personal consequences of parenting.

Viljoen and Rothmann aimed at studying and investigating the relationship between "occupational stress, ill health and organizational commitment" (2009). The results were that organizational stressors contributed significantly to ill health and low organizational commitment. Stress about job security contributed to both physical and psychological ill health. Low individual commitment to the organization was predicted by five stressors, namely work-life balance, overload, control, job aspects and pay.

Magee, and Bill, in their article titled "Stress, Anxiety and Anger about Home and Work" (2009) they suggested that mediate associations between the differentiated forms of work with me matching effects at home. Their interference seems to play a relatively limited role in maintaining the cross-domain association which is affected in either form of negative or positive.

Kushnir Talma Melamed and Samuel in their study titled "Domestic Stress and Well-Being of Employed Women". (2006) Respondents were 133 mothers employed in secretarial and managerial jobs. It is suggested that in families (as in teams), shared decision control may be a more potent coping resource than personal control.



### III. Materials and Methods

A well-constructed and self developed questionnaire titled “A study on stress and coping among Parents and Primary school going children” was used to get the desired information from the parents and children. The questionnaire composed of 15 questions to the parents and 11 questions to the children. The survey was formatted with multiple choice questions and questions using a Likert type scale for answering. The designed questionnaire was submitted to the subject experts for vetting correction and approved before distributing it to the respondents. A sample size of 600 was selected from the parents and children at Kanchipuram city. Responses from the questionnaire were analysed using descriptive statistics of frequency counts and percentage and inferential statistics of Chi-Square test. Data Mining techniques were applied to classify the different factors of stress and to find associative factors of stress.

#### Hypothesis to Parent

Hypothesis-I : There is significant Association between Parent’s Stress and Both of them working.

Hypothesis -II : There is significant Association between Parent’s Stress and not having enough time sleep.

Hypothesis -III : There is significant Association between Parent’s Stress and No Family support.

Hypothesis -IV : There is significant Association between Parent’s Stress and Preparation of the children to school.

Hypothesis -V : There is significant Association between Parent’s Stress and Parent’s health.

#### Hypothesis to Children

Hypothesis -I There is significant association between Children’s stress and parents quarrel.

Hypothesis -II There is significant association between Children’s stress and siblings quarrel.

Hypothesis -III: There is significant association between Children’s stress and School distance.

Hypothesis -IV: There is significant association between Children’s stress and Force to study.

Hypothesis -V There is significant association between Children’s stress and Force to eat.

#### Tools for the Study

In this study stress factors are analysed through the SPSS and Weka software tool. Using SPSS software frequency and Chi squared test are performed. Using Weka software major data mining tasks are Attribute selection, Association, Clustering, Classification performed.

### IV. RESULT AND DISCUSSION

Among the 300 parents 46% of parents strongly agree to avoid school on Saturdays. 51.7% people strongly agree to reduce class hours at school. 47% people strongly agree to reduce number of subjects and note books. 44.3% of children strongly agreed that quarrel between parents in front of them makes stress for the children. 43.7% of children strongly agreed that quarrel among sibling makes stress. 47.7% children strongly agreed for they haven’t enough time to play. 46.3% of children strongly agreed for they haven’t enough time to spend extracurricular activities.

It is inferred that there exist significant association between the parent stress and working parents(70.7%). It is inferred that there exist significant association between the parent stresses and time to sleep. It is inferred that there exist significant association between the parent stress and non-available of family support (32.7%). It is inferred that there exist significant association between the parent stress and preparation of their child for school. Further, it is inferred that there exist significant association between the parent stress and parent’s health issues. It is inferred that there exist significant association between the Children’s stress and quarrel among the parents (59.3.1%). It is inferred that there exist significant association between the Children’s stress and quarrel among the sibling (48.3.1%). It is inferred that there exist significant association between the Children’s stress and Children’s school distance(44.1%). It is inferred that there exist significant association between the Children’s stress and force to eat (43.4%). It is inferred that there exist significant association between the Children’s stress and force to study (53.1%). From the analysis of all the hypotheses were accepted because all the significant level is less than 0.05.

#### Cluster Analysis

Parent and children data set attributes cluster with the help of SimpleKmeans Cluster algorithm. Both data set are cluster into five sections. In parent data set cluster 0 holds the 11% of records. Cluster 0 created by the conditions of Preparation to the School of children and Not having enough time to sleep to be neutral, child in take food, Reduce numbers of subject, note books and Reduce school time to be Disagree, School time to be 09-03o’clock,school distance to be 01-03. Cluster 1 holds the 18% records. Cluster1 created by the conditions of Travel time is high to be neutral,



not having enough time to sleep to be disagree, school time to be 08-05 O'clock and parent health to be none. Cluster 2 holds the 11% records. Cluster 2 created by the conditions of reduced school time, reduced number of subjects and note books, avoid Saturday school to be strongly disagree, school time to be 09-04 O'clock and child stress to be 'no stress'. Cluster 3 holds 15% records. Cluster 3 created by the conditions of child skill level, avoid Saturday school, reduced number of subject and note books, reduced school time to be agree and parents stress to be No. Cluster 4 holds 24% records. Cluster 4 created by the conditions of school preparation of children to be agreed, child intake food to be strongly disagree and child gets low mark to be scold.

In children data set cluster 0 holds 9% records. Cluster 0 created by the conditions of force to eat to be agree, no enough time to play and no enough time to do extracurricular activities to be disagree. Cluster 1 holds 55% records. Cluster 1 created by the conditions of force to eat, no enough time to play and no enough time to do extra curricular activities to be strongly agree. Cluster 2 holds 15% records. Cluster 2 created by the conditions of force to eat to be strongly disagree, no enough time to play and no enough time to do extracurricular activities to be strongly agree. Cluster 3 holds 19% records. Cluster 3 created by the conditions of force to eat to be disagree, no enough time to play and no enough time to do extracurricular activities to be strongly disagree. Cluster 4 holds 1% records. Cluster 4 created by the conditions of force to eat, no enough time to play and no enough time to do extracurricular activities to be neutral.

### Association Analysis

Association analysis of parent and children dataset has performed with the help of Apriori algorithm. This algorithm gives the best rule for association analysis. There is close association between Parent stress and both working parents (support 70 %, confidence 85%). Unavailability of family support and stress is closely associated (support 70 %, confidence 65%). The study reveals that Parental stress and timing of school are associated (support 70 %, confidence 60%). Further this study found that there child stress and quarrels among parents are associated (support 70 %, confidence 55%). We found that quarrels among the siblings, school timings and child stress are closely associated.

## V. CONCLUSIONS

From the study higher stress level observed among the both working parent to whom there is a lack of additional family support. Due to stress the health level of the parent and children were affected significantly. Stress level on the parent further increased due to the efforts required to prepare the children to send the school. Improper Work life balance resulting in less sleeping time which indents results in higher level of stress. The stress level child is increased due to the quarrel between the parents and with the siblings. Distance of the school from the home is the key factor which influences the stress on the children. Also stress on the children increased due to the forced wake up, forced eating and forced to study.

### Recommendations

#### Coping strategies for Parent's stress

- *Do Something People Enjoy*
- *Get Enough Sleep*
- *Learn to Meditate or Practice Yoga*
- *Be Sure to Get Enough Exercise*
- *Listen to Relaxing Music*
- *Make a Bold Change*
- *Eat well-balanced meals*
- *Welcome humour*
- *Maintain a positive attitude*
- *Connect to Others*

#### Coping strategies for children's stress

- *Encourage the child to face his/her fears, not run away from them.*
- *Tell the child that it is okay to be imperfect.*
- *Focus on the positives.*
- *Schedule relaxing activities.*
- *Model approach behaviour, self-care, and positive thinking*



- Reward the child's brave behaviours.
- Encourage good sleep hygiene.
- Encourage the child to express his/her anxiety.
- Stay calm. Practice relaxation exercises with the child.

#### REFERENCES

- [1] Sandra J. Saldanha, "Stress and Coping among Parents of Children Having Thalassemia" International Journal of Science and Research , Volume 4, Issue 7, July 2015.
- [2] Sandhya M.S, Dr. Asha P Shetty, "A Study to Assess the Stress and Coping Strategies among Mothers of Physically Challenged Children in an Integrated School at Mangalore" American International Journal of Research in Humanities, Arts and Social Sciences, February, 2015.
- [3] G. Venkatesh Kumar, "Psychological stress and coping strategies of the parents of mentally challenged children", Journal of the Indian Academy of Applied Psychology", 34(2).227-231, July 2008.
- [4] ShubhiTomar, GarimaVerma, Anuj David, Megha Thakur, Ogorchukwu, Miti Judith, PrafullaShriyan, Purnima Parmar, RichaJaswal , "A Study on stress and coping strategies among private and government high school children in Udupi Taluk, Karnataka-A cross sectional study" , IOSR Journal of Nursing and Health Science Volume 3, Issue 2, 2014.
- [5] Barnett,et al , "Determinants of fathers' participation in family work", *Journal of Marriage and the Family*, vol 49,No. 29-40, 1987.
- [6] Wolf, L. C. et al, "Psychological effects of parenting stress on parents of autistic children, *Journal of Autism and Developmental Disorders*", vol 19, No.157-166, 1989.
- [7] Seshadri M K et al, " Impact of mental retardation of child on the family in India", Journal of Clinical Psychology Vol 473-498,2000.
- [8] Jackson P.B, "role occupancy and minority mental health" Journal of health and social Behaviour, vol 38, No.237-255.
- [9] Upadhyaya .R.G and Havalappanavar. B.N., "Coping in parents of the mentally challenged", Journal of the Indian academy of applied psychology. vol 34(2),No. 221-25. 2008.
- [10] Hossein Jenaabadi, "The Study And Comparison Of Stress Levels And Coping Strategies In Parents Of Exceptional (Mentally Retarded, Blind And Deaf) And Normal Children In Zahedan", Procedia - Social and Behavioral Sciences 114 ( 2014 ) 197 – 202, 2013.
- [11] Chen JY, "A comparison of stress and coping strategies", Journal of pediatric nursing Oct; vol 17(5), No.369-378. 2002.
- [12] KamarulzamanKamaruddin, Nordin Mamat, Stress among the Parents of Children with Learning Disabilities: A Demographical Analysis", International Journal of Humanities Social Sciences and Education (IJHSSE) Volume 2, Issue 9, 2015.
- [13] Raj Kumari Gupta, Harpreet Kaur," Stress Among Parents Of Children With Intellectual Disability" Asia Pacific Disability Rehabilitation Journal, Vol.21, No.2, 2010.
- [14] S. V., Biederman, J., &Friedman.D, " Validity of DSM-IV subtypes of attention-deficit/hyperactivity disorder: A family study perspective", Journal of the American Academy of Child and Adolescent Psychiatry,39,300-307, 2000.
- [15] Vasundhara Kumari, Vineeta Gupta, MD, K. Satya Piplani, M.Sc,B.D. Bhatia, MD, and S.K. Upadhyay, "Parental Stress and Coping Techniques in Parents of Children with Bronchial Asthma", Indian J Allergy Asthma Immunol; 25(2): 103-108, 2011.
- [16] Nisha Vidyasagar and Susan Koshy, Stress and Coping in Mothers of Autistic Children, Journal of the Indian Academy of Applied Psychology, Vol.36, No.2, 245-248, July 2010.
- [17] E. Danforth, J. S., Eberhardt McGee, T., Ulasek, W. R., & Friedman,J. L, "Parenting of children with attention-deficit/hyperactivity disorder (ADHD): The role of parental ADHD symptomatology", Journal of Attention Disorders,vol.7,No. 31-42, 2003.
- [18] Seshadri M K, Verma S K, and Prashad, " Impact of mental retardation of child on the family in India", Journal of Clinical Psychology, ,No. 473-498, 2000.
- [19] Baker, B. L., & Heller, T. L. "Preschool children with externalizing behaviors: Experience of fathers and mothers", Journal of Abnormal Child Psychology,vol24, No. 513-532.
- [20] MartyWyngaardenKrauss,'Child-Related and parenting Stress: Similarities between mothers and fathers of children with disabilities', American Journal on mental Retardation,Vol 97,No.4 593.404,1993.



- [21] Viljoen, J.P., & Rothmann, S., Occupational stress, ill health and organisational commitment of employees at a university of technology. SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 35(1), Art. #730, 11, 2009.
- [22] Magee, Bill. "Stress, Anxiety and Anger About Home and Work" Paper presented at the annual meeting of the American Sociological Association Annual Meeting, Sheraton Boston and the Boston Marriott Copley Place, Boston, MA, Jul 31, 2008
- [23] Kushnir, Talma; Melamed, Samuel. "Domestic Stress and Well-Being of Employed Women: Interplay Between Demands and Decision Control at Home", Sex Roles, Vol. 54 Issue 9/10, May2006.