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Research Article

Stress among Women in Sub-Urban area of South Chennai, India

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Abstract: The aim of this study was to estimate the Prevalence of stress among 200 women of reproductive age. It's a Cross Sectional Study in Sub-Urban Chennai with information's on demographic and stress collected by personal interview method using a structured questionnaire from women of age (18-45) years after obtaining the written informed consent. The important findings are Prevalence was 69.5% and Women with younger Age <30 and BMI <25 were found to be at major risk of stress with statistical significance. The prevalence of STRESS in south Chennai women is slightly lesser than those found in earlier studies. We suggest that the 'Stressed Women at Risk group for Illness' should be identified from the community at the earlier age for health assistance to lead a better quality of life.
Keywords: Stress, Household survey, Holmes & Rahe stress scale, Random sampling

INTRODUCTION

Around the world women enjoy broader opportunities and expanding roles along with an increased risk for stress. Indian women attributed the higher level of stress to more opportunities, coupled with managing multiple roles. A recent survey conducted between February and April 2011, covering 6,500 women from 21 developed and developing countries such as Sweden, the US, the UK, France, Thailand, Malaysia, China and India by Global Research Firm Nielsen, mentioned that Indian women across the world are the most stressed for time, with 87 per cent of respondents stating they felt stressed most of the time and 82 per cent claiming they had no time to relax [1]. The biggest stress is felt among women of 25-55 years of age, typically married where expectations from women have risen-and where conflicts between what all women must do too has surged [1] . Multi-Faceted role in the community are performed by women today. They have a predominant role in the economic growth of our nation.

Objectives

- To estimate the Prevalence of Stress among women
- To find the statistically significant factors influencing the Stress level of women.

This study is sanctioned by the Institutional Research and Ethical Committee Board [2], Chennai.

MATERIALS AND METHODS

Design: Cross –Sectional Study: Household Survey [3]

Place: Sripuram, the field practice area of the institution from South Chennai, India.

Period: July 2012 to Jan 2013.

Participants: Women of reproductive age group (18-45) years

Sampling & Sample Size [4]: Two Stage Sampling

With reference to Global research firm Nielsen's Survey [1]

Prevalence of stress among Indian women, P = 87% = 0.87

With 5% of Type I error(α), $Z_\alpha = 1.96$

Limit of accuracy as 10%,

L% (P) = 10% (0.87) = 0.087

N = 57.4 + 20% (57.4) = 57.4 +11.5 ≈ 69

The minimum required sample size was estimated to be 69 women.

Stage 1

Therefore, 300 out of 3238 households from Sripuram area of South Chennai was randomly selected by Systematic Random Sampling method [5].

Stage 2

One women of the age group (18-45) years were recruited by Simple Random Sampling method performed after obtaining the written informed consent.

Socio-demographic [6] information's collected and their stress levels were assessed by a standardized tool for adults. To Measure stress according to the Holmes and Rahe Stress Scale [7], the number of "Life Change Units" that apply to events in the past one year of an individual's life are added and the final score had given a rough estimate of how stress affects health.

Statistical Analysis

The response from the stress scale were scored according to the 'Life Change Units' for each item and the data was analysed using SPSS 15.0 [8]. The results are presented as Descriptive statistics - frequency, percentage, range, mean, standard error and the Inferential statistics- Chi Square test on nominal data, student t-test on ratio scales, ANOVA were used to test for the statistical significance at 5% type I error and 10% of type II error [9]. The values within parentheses represent percentages.

RESULTS

This pilot study with 200 women of reproductive age ranging from 18 to 45 with a mean±SE (mean) as 30±0.47 years and a mean age at menarche was observed to be 13.4±0.09 with their age at marriage ranging between 18 to 30years.

Table 1: Descriptive statistics for the demographic variables of the participants

Variables	N (%)	Variables	N (%)
1. Age in years		**8. Family Type**	
(≤30)	122(61.0)	Nuclear	133(66.5)
(>30)	78(39.0)	Joint	67(33.5)
2. Level of Education		**9. Standard of Living**	
Primary	16(8.0)	Low	24(12.0)
ESSLC	43(21.5)	Medium	176(88.0)
Secondary	59(29.5)		
Higher Secondary	26(13.0)	**10. Marital Status**	
Undergraduate	32(16.0)	Unmarried	32(16.0)
Postgraduate	24(12.0)	Married	162(81.0)
3. Religion		Separated	6(3.0)
Hindu	163(81.5)		
Muslim	23(11.5)	**11. Diet**	
Christian	13(6.5)	Vegetarian	24(12.0)
Inter religion	1(0.5)	Mixed	176(88.0)
4. Occupation		**12. Physical Activity**	
Housewife	159(79.5)	Inactive	16(8.0)
Student	5(2.5)	Minimally Active	42(21.0)
Skilled	20(10.0)	Normally Active	106(53.0)
Managerial	16(8.0)	Hyper Active	36(18.0)
5. Males in a Family		**13. BMI**	
(≤ 5)	174(87.0)	(<25)	158(79.0)
(> 5)	26(13.0)	25-30	33(6.5)
		30-35	9(4.5)
6. Females in a Family			
(≤ 5)	155(77.5)	**14. Abdominal Obesity**	
(> 5)	45(22.5)	(<0.85)	19(9.5)
		(≥0.85)	181(90.5)
7. Total Family members			
(≤ 5)	51(25.5)		
(> 5)	149(74.5)		

BMI [10] was 22.7±0.25 with the 'Abdominal Obesity' [11] ranging from 0.80 to 0.99 on a Per Capita Income of INR 375/- to INR 26,666/- per month. Table 1 shows no illiterate women, but 72percent had education lesser than or equal to Higher Secondary level. Majority of our participants were Hindus, nearly 149 families had more than five members.

Eighty four (42.0%) had a family history of diabetes and fifty two (26.0%) with a family history of hypertension. Six (3.0%) women were hypertensive and twelve (6.0%) were diabetic, five (2.5%) had irregular menstruation, seven (3.5%) with back pain, six (3.0%) with common cold, six (3.0%) with sinusitis, thirteen (6.5%) with knee pain, five (2.5%) with wheezing problems [12] were on medication. Forty two (21.0%) with family history of mental illness, Nineteen (9.5%) with family history of couple misunderstanding, six (3.0%) were ill-treated by family members and a cheap psychological atmosphere was prevailing at work place for seven (3.5%) women.

In our findings, One hundred and thirty nine (69.5%) women were experiencing stress [13]. Among them 91(65.5%) were in the age group of 18 to 30years, forty eight (34.5%) of them above 30years and there existed a statistically significant association between Age and Stress with χ^2 =3.824(P=0.05). One hundred and two (73.4%) of them, up to Higher Secondary level of education were more stressed. 118(67.8) out of 174 families with less than or equal to 5 males and 106(68.4%) out of 155 families with less than or equal to 5 females were experiencing stress. 176(88.0%) were from the medium standard of living index. Fifty seven women with family history of diabetes and thirty two with family history of hypertension had stress. In this study, we noticed that 113 (71.5%) out of 158 women with BMI less than 25 were more stressed than others, where 127(63.5%) out of 200 had 'abdominal obesity' with stress as well majority were suffering from other illness like Back pain, Knee pain, irregular menstruation, sinus, wheezing and common cold. The Chi Square value did not show much statistical dependence between the demographic variables and stress other than AGE and BMI.

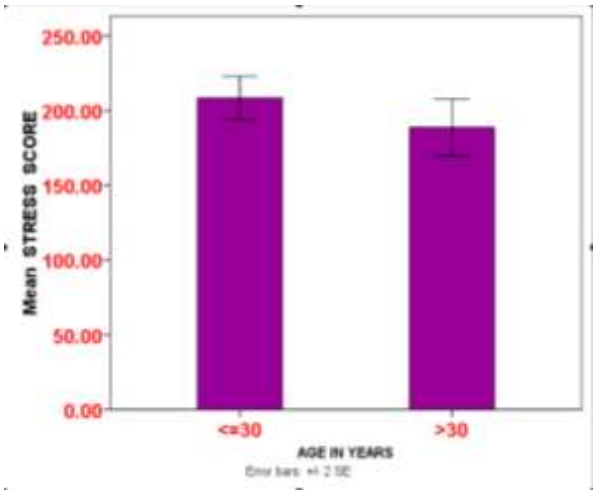

Fig. 1: Bar Diagram with Error of Mean Stress Score for AGE

Hence we segregated the 139 stressed women data and found that there was significant difference in the mean stress score between the age groups with t = 98.0(P=0.000) and is provided in Fig 1. There also existed mean stress score differences between the BMI groups with F=414.9 (P=0.000) and a Levene' statistic=7.306(P=0.001). The Pie diagram for the groups (No Stress, Mild Stress, Moderate Stress, Severe Stress) with STRESS score is presented in Fig 2.

The main findings of the study are

- Prevalence of STRESS among women in the community study area was 69.5%.
- Holme & Rahe STRESS Score identified 55.5% of women had moderate risk and 13.0% had high risk of developing illness.

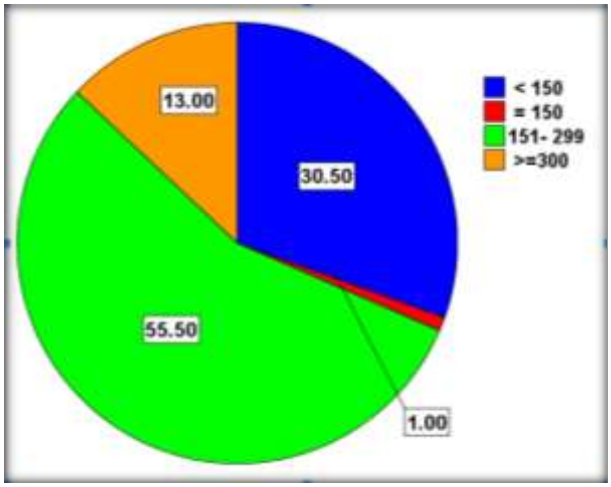

Fig. 2: Proportion of Women with Stress Score

DISCUSSION

Stress can cause severe health problems and, in extreme cases, can cause death. Our finding on 69.5 percent was little less from the Nielsen's statement [1], that the fairer sex in India are the most stressed (87%) of all. Moshin's study [14] found that more than three-fourth of Indian women (76 per cent) gave importance to saving for their children's education, which only 16 per cent of women in developed countries had made their priority. The biggest stress is felt among women of 25-55 years of age, typically married where expectations from women have risen-and where conflicts between what all women must do too has surged. Our study shows biggest stress experienced by women of age less than 30 years.

Sushmita's study [15] compares a group of working mothers with their non-working counterparts with respect to: (a) stress level, measured in terms of their anxiety score; and (b) certain general indicators of health including a broad measure of stress. The results show that anxiety and health scores of the two groups of women are similar. In our study, One hundred and one (67.8%) among 149 families with more than 5 members and a majority 88 (66.2%) out of 133 from nuclear family were stressed. Equal proportion of stress were observed among the married and the separated women. 113 (81.3%) had moderate risk and 26(18.7%) had high

risk for stress, and was statistically significant with t=15.63(p=0.000).

Breslau [16], identified 3 factors in civilian populations where women are at a higher risk for Posttraumatic Stress Disorder as (a) pre-existing psychiatric disorders, (b) a family history of disorders, and (c) childhood trauma. In our study Twenty seven (64.3%) out of 42 had family history of mental illness, eight (61.5%) out of 13 with family history of violence, eleven (57.9%) out of 19 with family history of couple misunderstanding, five out of 6 women who were ill-treated by family members and six out of seven women who had cheap psychological atmosphere at their workplace were very much stressed. Socio demographic factors such as age, marital status, salary per month and tenure of service were not significantly ($p \geq 0.05$) associated with stress in Za Emilia's study [17] and we had also observed the same except for age of the participant.

We have chosen Holmes & Rahe Stress Scale [7] for our study, because Stress can contribute to the development of illness and wanted to understand how different life events can affect a person's health. Majority of our participants (79.5%) were housewife, they felt that they never ever had stress in their life, but HR Scale identified the stressed women and were further recommended for medical assistance.

CONCLUSION

The prevalence of STRESS in South Chennai women is slightly lesser than those found in western culture. Further analysis is carried out to find the significant factors contributing to Stress level measured from Holmes & Rahe stress scale for adults with a larger sample size. An effective model for the prediction of the development of Stress needs to be developed and evaluated, and interventions aimed at reducing the incidence of Stress need further research.

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