

## Comparative study of health status in working men and women using Standard Form -36 questionnaire.

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### ABSTRACT:

**Introduction:** Many studies have established the adverse effects of job strain on health status of women. We assume women are more prone for stress related disorders compared to men. In this study we will try to correlate health status in working women compared to men using standard form-36.

**Aims and objectives:** The SF-36 is a widely used questionnaire for measuring physical and mental health status. These are multi-dimensional measures of self-reported health status. At the end of this scientific study working women will have some understanding about their physical and psychological wellbeing.

**Materials and methods:** Standard Form-36 (1992-medical outcomes trust) Questionnaire is administered to collect data. The following 8 scales were measured and expressed as scores ranging from 0-100. The scales are as follows. Physical functioning, Role limitations due to physical health problems, Role limitations due to emotional health problems, Energy and Fatigue, Emotional wellbeing, social functioning, Freedom from bodily pain, General health.

**Statistical Analysis:** Comparison between two groups was done using student t test and chi square test. P value  $\leq 0.05$  was considered statistically significant.

**Results :** Women had less scores of emotional health compared to men ( $p=0.05$ ) which was statistically significant. The scores for role limitations due to emotional problems was considerably less in women when compared to men ( $p=0.07$ ). Overall general health scale is considerably less in females compared to men ( $p=0.02$ ).

**Conclusion:** Working women were found to have significantly less scores of mental health compared to men.

**Keywords:** SF-36 Questionnaire, Physical Health, Mental Health

### I. INTRODUCTION

The global impact of stress-related conditions is expected to rise over this decade such that by 2020, depression and anxiety disorders, including stress-related health conditions, will be second only to ischemic heart disease in prevalence(1). Although stress can occur at home or after trauma, the most ubiquitous and studied form of stress is work related. In this context, stress has been defined as an emotional experience associated with nervousness, tension, and strain.(2,3)

The impact of job strain on health functioning and sense of wellbeing have been reported in only a few recent studies. There was study on the cumulative effects of job strain on health status in a large cohort of women in the United States, with repeated measures of job characteristics. They hypothesised that job strain not only predicts poor health status but also accelerates functional decline over time.(4,5,6)

Our aim is to study the health status in working women and men using sf-36 questionnaire.

### II. PARTICIPANTS AND METHODS

Study population consisted of men and women (n=86) of Mangalore. RAND 36-Item Health Survey (SF-36) questionnaire was filled after taking informed consent from them

The RAND 36-Item Health Survey (Version 1.0) contains eight scales: physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. It also includes a single item that provides an indication of perceived change in health. These 36 items, presented here, are identical to the MOS SF-36 described in Ware and Sherbourne (1992). They were adapted from longer instruments completed by patients participating in the Medical Outcomes Study (MOS), an observational study of variation in physician practice styles and patient outcomes in different systems of health care delivery (Hays & Shapiro, 1992; Stewart, Sherbourne, Hays, et al., 1992).(7,8,9)

**SCORING RULES FOR THE RAND 36-ITEM HEALTH SURVEY (Version 1.0)**

Scoring the RAND 36-Item Health Survey is a two-step process. First, precoded numeric values are recoded per the scoring key given in Table 1. Note that all items are scored so that a high score defines a more favorable health state. In addition, each item is scored on a 0 to 100 range so that the lowest and highest possible scores are set at 0 and 100, respectively. Scores represent the percentage of total possible score achieved. In step 2, items in the same scale are averaged together to create the 8 scale scores. Table 2 lists the items averaged together to create each scale. Items that are left blank (missing data) are not taken into account when calculating the scale scores. Hence, scale scores represent the average for all items in the scale that the respondent answered.

The RAND 36-Item Health Survey standard form version 1.0

Table 1

**STEP 1: RECORDING ITEMS**

Item Numbers Change original response category (a) To recoded value of

1,2,20,22,34,36	1-----	>100
2-----		>75
3-----		>50
4-----		>25
5-----		>0
3,4,5,6,7,8,9,10,11,12	1-----	>0
2-----		>50
3-----		>100
13,14,15,16,17,18,19	1-----	>0
2-----		>100
21,23,26,27,30	1-----	>100
2-----		>80
3-----		>60
4-----		>40
5-----		>20
6-----		>0
24,25,28,29,31	1-----	>0
2-----		>20
3-----		>40
4-----		>60
5-----		>80
6-----		>100
32,33,35	1-----	>0
2-----		>25
3-----		>50
4-----		>75
5-----		>100

**Table 2**

**STEP 2: AVERAGING ITEMS TO FORM SCALES**

Scale Number Of After Recoding Per Table 1,

Items Average The Following Items:

Physical functioning 10 3 4 5 6 7 8 9 10 11 12

Role limitations due to physical health 4 13 14 15 16

Role limitations due to emotional problems 3 17 18 19

Energy/fatigue 23 27 29 31

Emotional well-being 5 24 25 26 28 30

Social functioning 2 20 32

Pain 2 21 22

General health 5 1 33 34 35 36

**Table 3: Item groupings and abbreviated item content for the RAND 36-Item Health Survey**

Health scale	Item	Abbreviated item content
Physical Functioning (PF)	PF1	Vigorous activities, such as running, lifting heavy objects, strenuous sports
	PF2	Moderate activities, such as moving a table, vacuuming, bowling
	PF3	Lifting or carrying groceries
	PF4	Climbing several flights of stairs
	PF5	Climbing one flight of stairs
	PF6	Bending, kneeling, stooping
	PF7	Walking more than a kilometer
	PF8	Walking half a kilometre
	PF9	Walking 100 metres
	PF10	Bathing or dressing yourself
Role limitations due to Emotional problems (RE)	RE1	Cut down the amount of time spent on work or other activities
	RE2	Accomplished less than would like
	RE3	Didn't do work or other activities as carefully as usual
(Energy/fatigue) Vitality (VT)	VT1	Feel full of life
	VT2	Have a lot of energy
	VT3	Feel worn out
	VT4	Feel tired
Mental Health or emotional health (MH)	MH1	Been a very nervous person
	MH2	Felt so down in the dumps that nothing could cheer you up
	MH3	Felt calm and peaceful
	MH4	Felt down
	MH5	Been a happy person
Social Functioning (SF)	SF1	Extent health problems interfered with normal social activities
	SF2	Frequency health problems interfered with social activities
Bodily Pain (BP)	BP1	Intensity of bodily pain
	BP2	Extent pain interfered with normal work
General Health (GH)	GH1	Is your health: excellent, very good, good, fair, poor
	GH2	I seem to get sick a little easier than other people
	GH3	I am as healthy as anybody I know
	GH4	I expect my health to get worse
	GH5	My health is excellent

### III. RESULTS

Table 4.presents information on the reliability, central tendency and variability of the scales scored using this method.

Table 4

#### CENTRAL TENDENCY AND VARIABILITY OF SCALES

Scale	Items	Mean	SD
Physical functioning	10	76.43	24.81
Role functioning/physical	4	76.29	32.03

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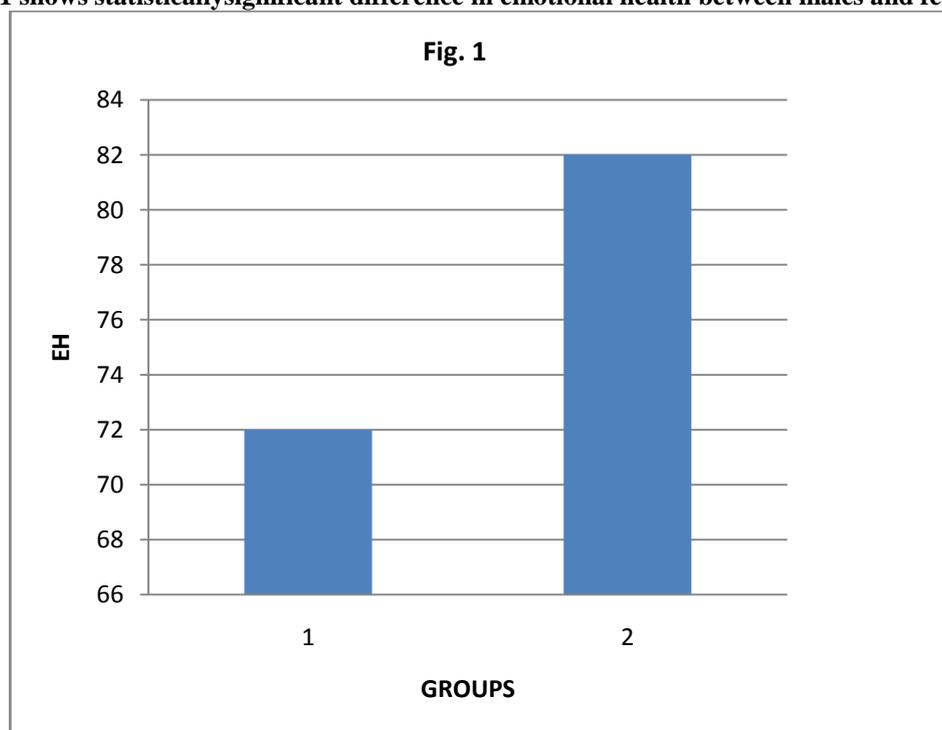
Role functioning/emotional	3		80.05	30.83
Energy/fatigue	4	62.75	15.18	
Emotional well-being	5		74.42	18.43
Social functioning	2		80.16	19.40
Pain	2		76.58	19.40
General health	5		68.09	20.29

Note: Data is from general population of Mangalore (N – 85 )

**Table 5. Comparison of scores as measured by different scales**

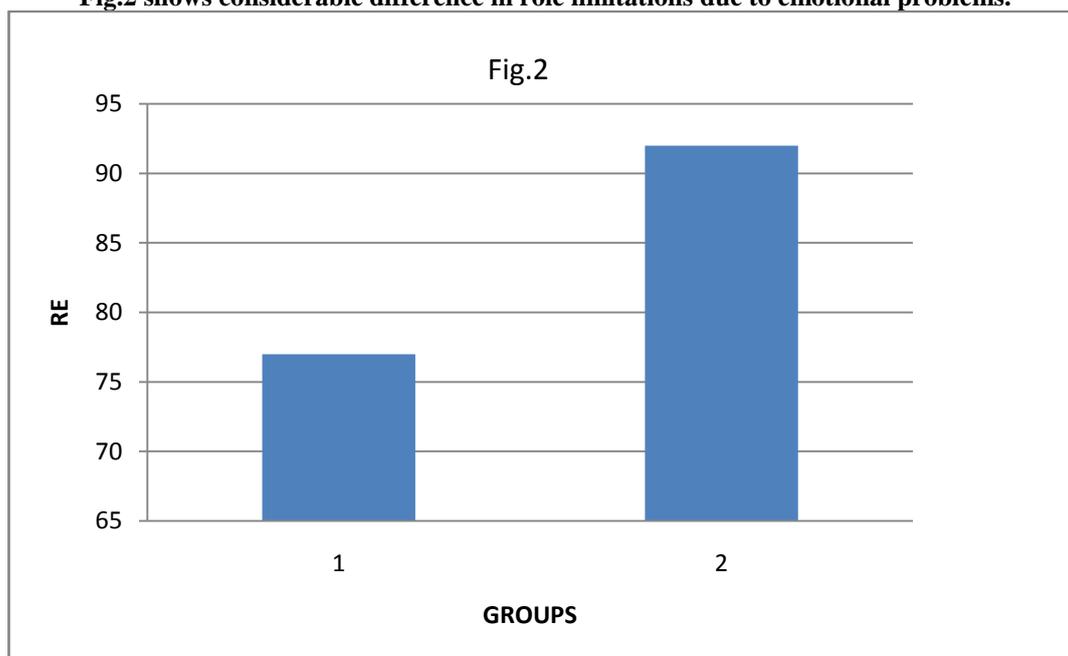
Scales	Group 1 (Females) N=68 (Mean ±SD)	Group2(Males) N=17 (Mean ±SD)	P Value
Physical Functioning	77.38±23.46	72.91±29.31	(0.050)*
Role limitations due to physical health problems	75.86±31.6	79.19±33.47	(0.701)
Role limitations due to emotional health problems	77.04 ±32.7	92.11±24.37	( 0.07)
Energy/Fatigue	61.32±15.35	68.47±12.92	(0.080 )
Emotional health	72.50±18.92	82.11±13.72	(0.05)*
Social functioning	78.5±20.64	86.82±12.6	(0.116)
Bodily pain	74.66±20.59	84.17±10.89	(0.070)
General health	65.63±20.77	77.94±14.55	(0.023)*

**Fig.1 shows statistically significant difference in emotional health between males and females.**



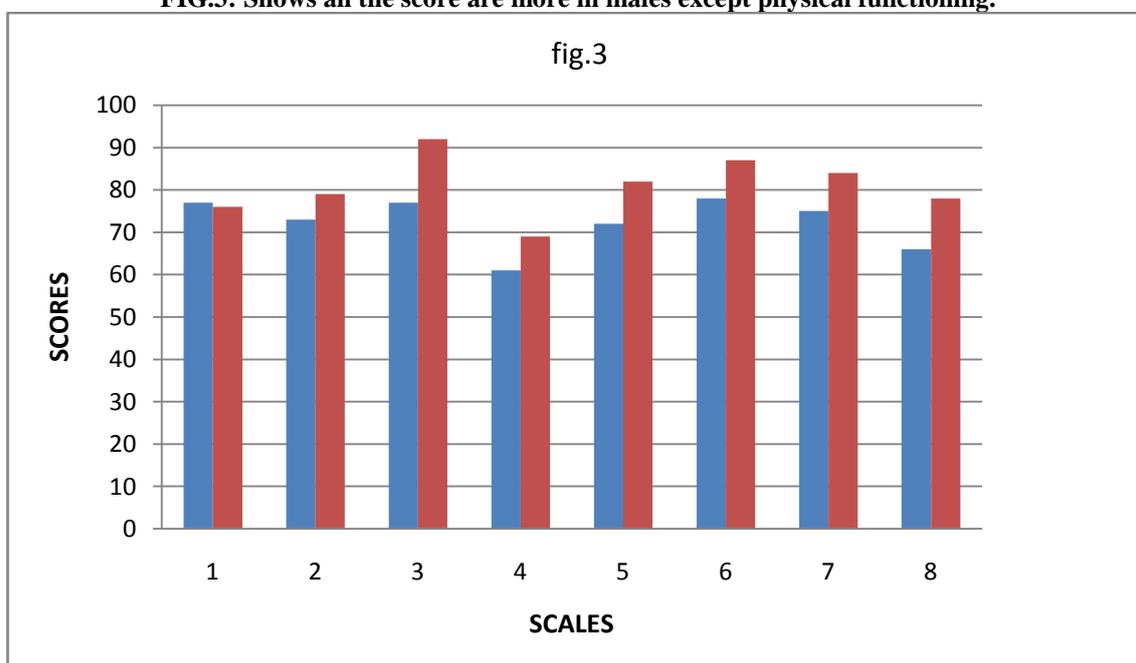
**EH: Emotional Health .Group 1: Females Group 2: Males**

**Fig.2 shows considerable difference in role limitations due to emotional problems.**



**RE: Role limitations due to emotional problems. Group 1: Females Group 2: Males**

**FIG.3: Shows all the score are more in males except physical functioning.**



**Blue :FemalesRed:Males**

## VI. DISCUSSION

Our studies indicate sex difference of statistical significance for mental health scale as men scored higher than women and women scored significantly higher score for physical functioning Scale. Men had higher values in all scales except physical functioning. Women had significantly less general health score when compared to men.

Similar studies done on New Zealanders show SF-36 profiles by sex: Males scored slightly, but statistically significantly, higher than females on most of the SF-36 scales, particularly on those scales more closely associated with mental health. Males scored slightly, but statistically significantly, higher than women on all scales except General Health. The differences were more pronounced for the scales more closely associated

with mental health (Vitality, Social functioning, Role Emotional and Mental Health) than for the scales associated with physical health (for example, Physical Functioning, Bodily Pain). The sex difference was not significant for the Physical Component Score (PCS), but was for the Mental Component Score (MCS).(10)

The degree and direction of sex difference in SF-36 scores of New Zealanders were similar to those found in the 1995 Australian National Health Survey (Australian Bureau of Statistics 1997), and neither country showed a sex difference on the General Health scale. A difference between the two countries emerged, however, in that New Zealanders showed a more pronounced sex difference on the scales most related to mental health, whereas the Australians showed a fairly similar sex difference across the scales related to both mental and physical health. The New Zealand data were similar to the American data (Ware et al 1993) to the extent that in both countries men rated their health better than women, but the Americans showed a more pronounced sex difference on the scales most closely related to physical health, rather than mental health.(11,12)

Another study done in America says Women in jobs with high demands, low control, and low social support (“iso-strain” jobs) showed the greatest declines in health status.(13)

## VI. CONCLUSION

When women engage in jobs outside home it is an extra burden on them as they already manage home affairs. That is the reason the physical functioning scale is higher in women than men. Women have natural ability to manage household job whereas men have the natural ability to sustain pressure of working outside home. Moreover in working places both men and women have to compete without any extra benefits given to women. Hence women need to be given some benefits like flexibility in timings while coming for jobs. If the work pressure reduces then automatically their psychological wellbeing is taken care. Further studies need to be conducted to establish relation of stress in women with the jobs.

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