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Tracing stress symptoms: an empirical study of manufacturing industry

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ABSTRACT

The present study aimed to get an insight into the kind of symptoms of work stress experienced by employees in middle level management of the manufacturing industry. A sample of 103 middle level employees from manufacturing organizations of Jammu region (India) has been utilized in the study. The results uncover eleven indicators of stress, namely, paranoid behaviour, physical reactions, personal habits, lack of quality sleep, emotional volatility, receptive instability, sleep turmoil, fatigue syndrome, emotional detachment, diet and anxiety indicators and work syndrome. The study suggested that these indicators can be used as screening kit for the purpose of identification of stress among the employees whose overlook can push the employees towards the trench of stress.

KEY WORDS

stress, symptoms, factor analysis, manufacturing

JEL Code: I30, J81, M10

1 INTRODUCTION

Organizations are visualized as the social alliance of individuals directed towards the achievement of some collective goals depending on their efforts. Although human efforts are being channelized through well defined hierarchy of authority and responsibility, yet its effective utilization is prejudiced by different factors such as organizational rules, regulations, policies, customers, competitors etc. (Huczynski, 2005). The nature of these factors differs but these factors are interdependent on each other. For instance, changes in Government policies and procedures leads to alteration in the organizational policies, procedures, etc. Such changes, sometimes, even create misfit between the demands of the environment and abilities of the employees which will eventually lead to stress if it remained unaddressed (Edwards, 1998). Stress can be narrated as an adoptive response arbitrated by individual characteristic and psychological processes that are the consequences of any external action, situation or event that places special physical, psychological demands upon a person (Ivancevich and Matteson, 1980).

Stress is the consequence of the pressure external to an individual and its impact varies from individual to individual depending on their perception. With context to the organizations, stress can be understood as perceived stress which affects mental and physical health of the employees (Canadian Mental Health Association, 2004) eventually leading to high labor turnover and absenteeism rate, low productivity, low performance, ineffectiveness and inefficiency (Moustaka and Constantinidis, 2010). Consequently, perceived organizational stress has become a strategic concern for all the organizations because of its direct impact on employees as well as organizational performance. The harmful and costly consequences of stress both at individual and organizational level have demonstrated the need for identification of the stress among employees at early phase so that necessary proactive measures can be taken to deal with it. In view of this, the present study has been carried out to indentify the indicators which depicts the presence of stress in employees. The next section reviews the literature followed by a detailed discussion on the methodology adopted. The ensuring sections discuss the results followed by the conclusion and implications emanating from the study.

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2 LITERATURE REVIEW

Stress affects every day normal functioning of employees in the organizations, thereby, making it a major concern for all the organizations (Frank, 2003). The study conducted by Kemeny (2003) demonstrated that when stress is enduring, the body pumps out stress hormones continuously and mobilizes other systems which over the time tax the body resources and deteriorates health. With similar notion, Luban-Plozza and Pozzi (1994) attempted to identify the impact of stress on immune system of individuals and revealed that chronic stress weakens the human immune system, thereby, making them more prone to various health issues including headaches, body aches, strokes etc. The study conducted by Rakovec-Felser (2000) and Murphy (1995) also identified that stress in an employee can be revealed through various body reactions, namely, headaches, asthma, body aches, allergies, diabetes, hypertension, mental disorders, etc. With similar path, Likar et al. (2008) stated that changing demands of the workplace and changing life style increases stress level among employees and working with stress can eventually leads to cardiovascular diseases (Mozina, 1998). Another study conducted by Kiecolt-Glaser et al. (2002) indentified that the progressive stress affects the endocrine system, immune system and nervous system of the employees. While attempting to indentify stress symptoms, Looker and Gregson (1993) stated that stress causes various physical problems which can be explored to identify the stress level of the employees at initial stages. According to them, stress can be identified from some typical symptoms which includes body aches, headaches, skin rashes, itching, etc.

Further, Mesko et al. (2012) extended the study of Looker and Gregson and indentified another category of stress symptoms, namley, psychological symptoms. These symptoms includes confusion, irritability, lack of trust on themselves and on others, feeling of loneliness, less frequent socialization. The existing research also depicts that employees perceiving stress looses their self confidence, flexibility in decision making, loss of self confidence, dissatisfaction, bad mood, irritability, over sensitiveness, confusion, feeling of inferiority, low spirits, feeling of self helplessness, felling of helplessness, dissatisfaction and loss of self confidence and often experiences poor concentration (Goswami and Talukdar, 2013; Orpen 1991; Segerstrom and Miller, 2004).

Stress not only contributes to ill health with negative effects on physical and psychological well being but it also impacts behavior of employees (Terry et al., 1993; Bickford, 2005). The research work carried out by Mansoor et al. (2011) investigated the same issue and identified that stress alters the behavior of employees as the results explained that the employees perceiving stress usually do not spend time on entertainment or other activities like reading news paper. Such employees show paranoid behavior, remain detached from their social circle. Another study conducted by Mojoyinola (2008) also revealed that stress is negatively associated with behavior of employees. An increased level of stress provokes changes in the behavior of the employees thereby altering their performance (Smith 2003). Moreover, stress is one of the major reasons for certain behavioral changes in employees which includes working for late hours, working at home, shyness while talking to others, avoid discussing about problems, trouble remembering things and feeling anxious about problem that are difficult to describe (Mojoyinola, 2008). In this regard, Kendall et al. (2000) also explained that mental stress can be either acute or chronic in nature. Acute stress can be easily identified and the return to normal life can be made within a short span of time. But chronic stress is a cumulative reaction to build up pressure over a long period of time and is manifested through various reactions of employees. For an instance, chronic stress restricts employees to share their feeling with their friends and family members. This in turn, also gives rise to other psychiatric disorders including changes in neuronal function, altered gene expression and abnormal neurotransmitter production (Kanel et al., 2001; Kessler et. al. 1999). According to Freudenberg (1975) such pressures lead to burnout characterized by ultimate emotional exhaustion of employees under pressure and according to American Psychiatric Association (1994) such pressures even leads to health disorders which ranges from feeling of pain, nausea, sweating, muscle tension, etc.

Identification of Stress among employees attracts the attention of management in the organizations as it affects performance of both employees as well as the organizations. This makes it imperative for the management to identify stress in employees so that proactive actions for stress reduction can be taken. In this regard, although the review of literature suggests that stress among employees can be detected through various behavioural, psychological and health symptoms but scant research is available on accessing stress through different symptoms especially in context to developing nations like India. The present paper is, therefore, an attempt to identify the stress symptoms among employees. The next section presents database and research methodology adopted for the present empirical work.

3 DATABASE AND RESEARCH METHODOLOGY

The present empirical work focuses on employees working in middle level management of the manufacturing industry as they have been identified as the most critical part of organizational life. The said employees are at the nexus of interaction and act as a knob in a system of communication thereby connecting flow of information from top to operating level and vice versa (Floyd and Woolridge, 1994). Moreover, the research into the stress symptoms of managers in middle level management of manufacturing organizations of India and particularly in Jammu region

of J&K state (India) is scant which has reinforced the decision to confine to middle level employees for the present study. The study is based mainly on primary data collected from middle level employees of manufacturing industry of Jammu region (India) during the working hours. Organizations have been selected randomly from the list of the organizations registered with Directorate of Industries of Jammu region. Accordingly, pretested structured questionnaires utilizing standardized scale for identifying stress symptoms were distributed among 120 full time middle level employees of manufacturing organizations contacted at their workplace during the working hours during December 2015 to February, 2016. The responses of only 103 employees were used for the analysis after accounting for the incomplete responses

The demographic profile of the sampled employees revealed that the sample is predominantly of male employees (84%), married (60%), falling under age group of 35 to 40 years (41.6%) and are working in the organization for more than 2 years (72%). The majority of sampled employees have completed their university education on master level (52.4%), belonging to nuclear family (77.7%) with average family size of four members (43.7%) and maximum of sampled employees (43.5%) fall in the monthly salary category of INR 20000 to 50000 ($297.52 to $744.38) with average working hours of 10 hours per day (50.5%).

4 MEASURES

The study collected the responses of 103 respondents through pretested structured questionnaire utilizing measures assessing stress symptoms which were well-publicized in the stress literature for identifying different stress symptoms. One part of the said questionnaire includes information regarding socio-economic characteristics of the respondents. The other part includes pretested scale assessing stress indicators developed by utilizing the measurement scales, namely, Stress management packet by The counseling team international (2006), Work related stress questionnaire by UNITE health and safety representatives (2011). Further, the respondents were asked to narrate their level of agreement related to various aspects of life which they usually experience after a typical working week for getting an insight about the stress symptoms undergone by them *(e.g., I have hard time feeling relaxed, No matter how much I sleep, I awake feeling tired, I try to work while I am eating lunch, etc.)*. The responses on the scale have been collected using a five point Likert scale ranging from "Almost Always" to" Never". The codes 1, 2, 3, 4, 5 were assigned to all the positive statements identifying stress among the employees whereas negative statements were reversely coded. The preliminary draft of the questionnaire included a list of 54 statements pertaining to different stress symptoms experienced by the employees at the end of the working week and a pilot testing was conducted in 25 middle level employees working in manufacturing industry of the Jammu region (J&K). The factor loadings of 10 statements were below 0.50 and therefore, they had been dropped from the scale and only 44 statements were retained. The study aimed at identifying different stress symptoms based on the responses of employees. Therefore, exploratory factor analysis was found to be the most relevant technique for the present study as it aimed at identifying observed variables (Costello and Osborne), that is, different stress symptoms. Further, the reliability of the scale has been tested using the value of Cronbach alpha. The estimation of results was carried out using SPSS 20.0 discussed in the next section.

5 FINDINGS OF THE STUDY

Stress has been considered as an important concern for the organizations due to its adverse effect on the performance of employees and ultimately, on the organizational performance (Elovainio et al. 2002). This section endeavors to study the nature of the stress symptoms in middle level employees on the basis of problems experienced by them through exploratory factor analysis. The list of the statements utilized to identify stress symptoms has been described in Table 1.

Table 1: Measures developed

Labels	Statements
S1	My body feels tense all over
S2	I have a nervous sweat or sweaty palms.
S3	I have a hard time feeling really relaxed.
S4	I have severe or chronic lower back pain.
S5	I get severe or chronic headaches.

Labels	Statements
S6	I get tension or muscle spasms in my face, jaw, neck or shoulders.
S7	My stomach quivers or feels upset.
S8	I get skin rashes or itching.
S9	I feel short of breath after mild exercise like climbing up four flights of stairs.
S10	More tension alters my appetite
S11	I get sharp chest pains when I'm physically active.
S12	I don't really plan my meals for balanced nutrition
S13	I take pills to get to sleep.
S14	I have nightmares or repeated bad dreams.
S15	I have trouble falling asleep.
S16	I wake up at least once in the middle of the night for no apparent reason.
S17	No matter how much sleep I get, I awake feeling tired.
S18	I stutter or get tongue tied when I talk to other people.
S19	I try to work while I am eating lunch.
S20	I have to work late.
S21	I have to bring work home.
S22	I usually use medicines for relaxation after work.
S23	I tend to stumble when walking, or have more accidents than other people.
S24	After dinner I spend more time alone or watching TV than I do talking with my family or friends.
S25	I have found the best way to deal with hassles and problems is to consciously avoid thinking or talking about them.
S26	I have trouble remembering things.
S27	I feel anxious or frightened about problems I can't really describe.
S28	I worry a lot.
S29	It is important for me not to show my emotions to my family.
S30	It is hard for me to relax at home.
S31	I find it hard to talk when I get excited.
S32	I have temper outbursts I can't control.
S33	I feel extremely sensitive and irritable.
S34	I feel like other people don't understand me.
S35	I really don't feel good about myself.
S36	Generally I am not optimistic about my future.
S37	I spend less than three hours a week working on a hobby of mine.
S38	I spend less than one hour a week writing personal letters, writing in a diary or writing creatively.
S39	I spend less than 30 minutes a week talking casually with my neighbors.
S40	I lack time to read the daily newspaper.
S41	I watch television for entertainment when I am at home.
S42	I drive in a motor vehicle faster than the speed limit for the excitement and challenge of it.
S43	I spend less than 30 minutes a day working toward a life goal or ambition of mine
S44	When I feel tensed, it is difficult for me to plan time and activities to constructively release my pressure.

The results of the exploratory analysis have been scrutinized on the basis of the following considerations:

- The value of Kaiser-Mayer Olkin (KMO) statistic 0.726 is very large;
- The barlett's test of spherecity value chi-square value 6336.293 was highly significant ($p<0.001$) indicating the appropriateness of the factor analysis in context of the present study;
- The mean correlation is 0.37 for stress symptoms and it varied from 0.02 to 0.87 across different stress symptoms with a range of 0.85, which revealed that there is enough correlations for employing factor analysis (Hair et al., 2012).

These tests confirm factor analysis as an appropriate technique for the analyzes of the given data and also depicted that the results can be relied upon. For extracting the factors, principal component analysis with varimax rotation has been utilized. The total number of factors was decided on the basis of Eigen value, that is, in the present study, 11 factors were found to have Eigen value equals to 1 or more. Further, as explicated in table 1, the factors loadings for all these 11 factors was greater than 0.50 (ignoring signs) which has been considered very significant (Hair et al., 2012).

Table 2: Eigen values and variance explained by the extracted factors

Factor No.	Name of the Symptom	Eigen Value	Percentage of Variance	Percentage of Cumulative Variance
F1	Physical Reactions	8.350	10.441	10.441
F2	Sleep Turmoil	5.311	9.650	20.092
F3	Emotional Detachment	4.017	9.583	29.675
F4	Paranoid Behaviour	3.706	9.173	38.848
F5	Emotional Volatility	3.015	7.794	46.642
F6	Receptive Instability	2.828	7.605	54.247
F7	Personal Habits	2.407	6.188	60.434
F8	Lack of Quality Sleep	1.983	6.040	66.474
F9	Chronic Fatigue	1.642	5.865	72.340
F10	Work Syndrome	1.514	4.852	77.192
F11	Diet and Anxiety Indicators	1.295	4.783	81.975

It is clear from Table 2 that a total of eleven factors have been extracted from varimax factor analysis as the Eigen values for only these eleven factors is greater than one. These factors together explained about 81.975 per cent of the total variance. Further, the individual percentage of variance from the factor F1 to factor F11 is 10.441, 9.650, 9,583, 9.173, 7.794, 7.605, 6.188, 6.040, 5.865, 4.852 and 4.783 respectively.

The factor loadings of the statements on the respective factors are summarized in Table 3. It represents the relationship between the original variable and its factors. The signs are interpreted like any other correlation coefficients where 'like signs' factor loadings mean that the factor loadings and factors are positively correlated and 'opposite signs' indicates negative correlation between factor loadings and factors.

Table 3: Factors loading from rotated factor analysis

Factor No.	Category of Symptoms	Label	Statements	Factor Loadings
F_1	Physical Reactions	S7	My stomach quivers or feels upset.	0.806
		S6	I get tension or muscle spasms in my face, jaw, neck or shoulders.	0.805
		S2	I have a nervous sweat or sweaty palms.	0.716
		S8	I get skin rashes or itching.	0.665
		S11	I get sharp chest pains when I'm physically active.	0.650
		S9	I feel short of breath after mild exercise like climbing up four flights of stairs.	0.620
F_2	Sleep Turmoil	S14	I have nightmares or repeated bad dreams.	0.893
		S15	I have trouble falling asleep.	0.870
		S13	I take pills to get to sleep.	0.868
F_3	Emotional Detachment	S41	I watch television for entertainment when I am at home.	0.827
		S39	I spend less than 30 minutes a week talking casually with my neighbors.	0.729
		S40	I lack time to read the daily newspaper.	0.714
		S43	I spend less than 30 minutes a day working toward a life goal or ambition of mine	0.697
		S42	I drive in a motor vehicle faster than the speed limit for the excitement and challenge of it.	0.652
		S38	I spend less than one hour a week writing personal letters, writing in a diary or writing creatively.	0.616
		S44	When I feel tensed, it is difficult for me to plan time and activities to constructively release my pressure.	0.585
F_4	Paranoid Behaviour	S34	I feel like other people don't understand me.	0.939
		S35	I really don't feel good about myself.	0.937
		S36	Generally I am not optimistic about my future.	0.891
		S37	I spend less than three hours a week working on a hobby of mine.	0.645
		S10	More tension alters my appetite	0.567
F_5	Emotional Volatility	S31	I find it hard to talk when I get excited.	0.858
		S32	I have temper outbursts I can't control.	0.831
		S33	I feel extremely sensitive and irritable.	0.796
		S30	It is hard for me to relax at home.	0.588
		S29	It is important for me not to show my emotions to my family.	0.547
F_6	Receptive Instability	S25	I have found the best way to deal with hassles and problems is to consciously avoid thinking or talking about them.	0.795
		S26	I have trouble remembering things.	0.777
		S28	I worry a lot.	0.737
		S27	I feel anxious or frightened about problems I can't really describe.	0.656
F_7	Personal Habits	S23	I tend to stumble when walking, or have more accidents than other people.	0.912
		S24	After dinner I spend more time alone or watching TV than I do talking with my family or friends.	0.827
		S22	I usually use medicines for relaxation after work.	0.673
F_8	Lack of quality sleep	S18	I stutter or get tongue tied when I talk to other people.	0.887
		S17	No matter how much sleep I get, I awake feeling tired.	0.846
		S16	I wake up at least once in the middle of the night for no apparent reason.	0.702
F_9	Chronic Fatigue	S4	I have severe or chronic lower back pain.	0.803
		S3	I have a hard time feeling really relaxed.	0.784
		S5	I get severe or chronic headaches.	0.742
F_{10}	Work Syndrome	S20	I have to work late.	0.763
		S21	I have to bring work home.	0.646
		S19	I try to work while I'm eating lunch.	0.599
F_{11}	Diet and Anxiety Indicators	S12	I don't really plan my meals for balanced nutrition	0.840
		S1	My body feels tense all over	0.767

F1 Physical Reactions

The most important indicator explaining maximum variance i.e. 10.441per cent is physical reactions. A total of six statements have been loaded on this factor and all are significantly correlated with the factor. Stress among employees can be identified through various physical reactions, such as, upset stomach (S7), muscles spasms in face, jaw, neck or shoulder (S6), rashes on skin (S8), sharp chest pains (S11) and breathleness after physical workout (S9). Hence, organizations can suspect the presence of stress among employees on the basis of the physical problems experienced by the employees.

F2 sleep Turmoil

The next set of stress symptoms, named as sleep turmoil, explains the percentage of variance equals to 9.650 per cent. Three statements have been loaded on this factor and all the statements are significantly correlated with the factor. The symptoms include nightmares (S14), trouble falling asleep (S15) and usage of sleeping pills (S13). Moreover, such employees usually remained tensed throughout the day without any valid reason which results into sleep disorders.

F3 Emotional Detachment

A total of seven statements have been loaded on this factor and accounts for 9.583 percentage of the variance. All the statements are significantly correlated and the factor includes the behavior of employees where they prefer to watch television at home (S41), finds no time to read newspaper (S40), drive vehicle faster than the speed limit for excitement (S42) and spend less time for social chatting (S39), working towards their ambition (S43) and writing personal diaries, etc (S38). Further, employees perceiving stress usually find it difficult for the employees to plan their time and activities constructively (S44).

F4 Paranoid Behaviour

The results of the study depicts that paranoid behavior of employees also depicts the presence of stress among employees. Five statements have been loaded on this factor and all are significantly correlated with the factor. This factor accounts for 9.173 per cent of the total variance. Employees perceiving stress feel like other people do not understand them (S34). They do not feel good about themselves (S35) and are not optimistic about the future (S36). They usually even do not devote time towards their hobbies etc. (S37). Moreover, their tension also alters their appetite (S10).

F5 Emotional Instability

The next category of stress symptoms is named as emotional instability which has accounted 7.794 per cent of the total variance. A total of five statements have been loaded on the factors and all are significantly correlated with the factor. The statements include difficulty in talking due to excitement (S31), temper outbursts which are beyond the control of the employee (S32), feeling sensitive and irritable without any apparent reason

(S33) and hiding emotions from the family members (S29). It also becomes difficult for the employees perceiving stress to relax at home (S30). Hence, it can be inferred that stress affects emotional stability of employees and causes mood swings.

F6 Receptive Instability

This is the sixth important indicator of stress with 7.605 per cent of variance. Four statements have been loaded on this factor and all are significantly correlated with the factor. Employees perceiving stress are not open to share their feelings etc. with others. They usually avoid discussing their problems with others (S25), worries a lot (S40) and feel anxious about the problems which they cannot describe (S27). Not only this, employees also face trouble while remembering things (S26).

F7 Personal Habits

Personal habits, the next category of symptoms, accounts for 6.188 per cent of the total variance and three statements have been loaded on the factor. The statements include stagger behavior while walking (S23), using medicines for relaxation (S22) and spending time alone at home (S24). Hence, it can be inferred that the stress alters the personal habits of the employees.

F8 Lack of Quality Sleep

The eight factor with 6.040 per cent of variance is lack of quality sleep. A total of three statements have been loaded on the factor and all are significantly correlated with the factor. Employees perceiving stress always feel tired even after sleep (S17) and they usually wake up atleast once in the middle of the night without any apparent reason (S16). Alongwith this, employees sometimes feel that they cannot talk to other people and share their opinions (S18).

F9 Chronic Fatigue

The factor accounts for 5.865 per cent of variance and three statements have been loaded on the factor. All the statements are significantly correlated with the factor. The symptoms related to this factor include severe back pains (S4) and chronic headaches (S5). Employees also find insufficient time for relaxing at home (S3). Stress extracts stress hormones in employees continuously which will eventually leads to chronic fatigue.

F10 Work Syndrome

The employees perceiving stress often faces work syndrome owing to which they work for late hours (S20), brings work at home

(S21) and try to work even at the time of eating lunch, etc. (S19). This factor accounts for 4.852 per cent variance and all the statements considered are significantly correlated with the factor. These symptoms inferred that the employees perceiving stress develops work syndrome and tries to work all the time.

F11 Diet and Anxiety Indicators

The eleventh factor is diet and anxiety indicator which indentifies stress among employees with the variance equals to 4.783 per cent. Total two statements have been loaded on the factor and all are significantly correlated with the factor. Employees perceiving stress usually do not plan their meals for balanced nutrition (S12) and their body feels tensed all over (S1). Hence, it can be surmised that stress alters the diet plan and boost the anxiety level of the employees.

The inter factor correlation; means, standard deviations and cronbach's alpha value are described in Table 4.

Table 4: Inter-factor correlation, means, standard deviations and Cronbach alphas of the extracted factors of stress symptoms

Factor No	**Factor**	**F1**	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**	**F9**	**F10**	**F11**
F1	Physical Reactions											
F2	Sleep Turmoil	0.579*										
F3	Emotional Detachment	0.416**	0.378*									
F4	Paranoid Behaviour	0.398**	0.324*	0.345**								
F5	Emotional Volatility	0.308**	0.024**	0.328**	0.565**							
F6	Receptive Instability	0.441**	0.274**	0.456**	0.602**	0.234*						
F7	Personal Habits	0.426**	0.386**	0.964**	0.435**	0.137*	0.237*					
F8	Lack of Quality Sleep	0.281**	0.335**	0.234*	0.343**	0.565**	0.124*	0.345**				
F9	Chronic Fatigue	0.271**	0.213*	0.432**	0.223*	0.489**	0.511**	0.399**	0.23**			
F10	Work Syndrome	0.276**	0.248*	0.234*	0.439**	0.356*	0.127*	0.421**	0.178*	0.445**		
F11	Diet and Anxiety Indicators	0.144**	0.224**	0.456**	0.543**	0.449**	0.126*	0.124*	0.345**	0.565**	0.556**	
	Number of Statements	**6**	**3**	**7**	**5**	**5**	**4**	**3**	**3**	**3**	**3**	**2**
	Mean (Scale Value)	**3.71**	**2.08**	**2.509**	**2.703**	**3.17**	**3.12**	**3.49**	**2.58**	**3.96**	**4.25**	**3.8**
	Standard Deviation	**1.09**	**1.411**	**1.404**	**1.418**	**1.279**	**1.276**	**1.249**	**1.497**	**0.579**	**0.779**	**1.05**
	Cronbach Alpha Value	**0.792**	**0.826**	**0.847**	**0.767**	**0.769**	**0.765**	**0.844**	**0.762**	**0.783**	**0.782**	**0.679**
	Composite Cronbach Alpha Value = 0.882											

Note: ** significant at 1% level of significance; * significant at 5% level of significance

The value of Cronbach alpha of the extracted factors ranges from 0.679 to 0.844 and depicts the high reliability for the sub-scale representing different stress symptoms. The composite alpha for the entire scale is reasonably high (0.882). Although the extracted factors were conceptually different from each other according to the results of Principal Component Analysis, yet there exits significant relationship between the extracted factors.

6 DISCUSSION, CONCLUSION AND IMPLICATIONS

Since an organization is the social alliance of the individuals working towards the accomplishment of the organizational objectives, it becomes imperative for the organizations to identify the factors which hinder the performance of the employees as the performance of the organization is directly related with the performance of the employees. In this regard, one of the serious problems identified in the literature is the stress perceived by the employees due to the changing demands of the work environment. The research in the field of stress demonstrates that stress affects the mental, physical and psychological wellbeing of the employees which affects their efficiency level and ultimately, affects their performance. Consequently, it is required for the organizations to identify the presence of stress among its employees so that proactive actions can be taken to nip the problem of stress in the bud. With a view to address this issue, in the present study, an attempt has been made to identify stress symptoms among the middle level managers of the manufacturing industry of Jammu region of J&K state (India). The foregoing analysis reveals eleven stress symptoms which can be categorized as behavioral symptoms, psychological symptoms and physical health symptoms. Behavioural symptoms include personal habits, emotional volatility, receptive instability, sleep turmoil, lack of quality sleep and work syndrome. Likewise, another category of stress symptom unveiled is psychological symptoms and it includes paranoid behavior and receptive instability. Health symptoms also indicates stress level among employees and can be characterized by physical reactions, fatigue syndrome and diet and anxiety indicators.

The present study provides a list of stress indicators thereby facilitating the organization in the early detection of stress among employees. For instance, an employee complaining of chronic headaches or body aches can be doubted for the presence of stress. Such cases provide an indication to the organizations to ensure the underlying reason for such chronic complaints. These results are in convergence with the studies conducted by Schneiderman (2005); Saab et al. (1992); Stults-Kolehmainen et al. (2015) wherein it has been highlighted that physical problems including headaches, body aches, etc. indicates that the person has started experiencing stress which needs to be controlled so that it would not harm the health of the respondents and ultimately, their productivity at work place. Further in this regards, one of the most important points to consider is that almost all the physical health symptoms can be effortlessly diagnosed by the organizations and some of the behavioral symptoms like work syndrome can also be diagnosed by the organizations while the other behavioral symptoms like sleep turmoil and the psychological symptoms are innate and cannot be directly enquired from the employees. Therefore, organizations should develop techniques which will unearth such issues. For an instance, organizing activities like role playing will assist organizations in analyzing the emotional volatility and receptive instability among employees. Organizations can even involve family members, peers and superiors of the employees for accessing such changes among the employees. The organizations, while conducting such activities, should keep in mind the adverse affect of such activities on the mental state of employees if not conducted in a proper manner. Merely, identifying such symptoms does not signify the existence of stress until and unless the root cause analysis of such symptoms can be conducted so as to indentify whether the reason for such complaints is stress or not.

Moreover, the unveiling of such symptoms also assists organizations in making a decision as to which coping strategy should yield the most effective outcome. Nevertheless, one of the most important issues experienced by the organizations is that there are hundreds of employees working in it and it might not be possible for the organizations to access stress symptoms of them. Therefore, organizations can also focus on educating and motivating employees for the self assessment of the stress thereby narrating the relationship between stress and its impact on their performance. The organizations should encourage employees for the self assessment of stress and educate them regarding the ways and methods to reduce the stress so as to keep their performance intact.

7 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The study has contributed to the comprehension of various stress symptoms based on responses of middle level employees of the manufacturing industry and hence, the results cannot be generalized for the middle level employees working in other industries. The future study pertaining to the identification of stress symptoms in other industries like service industry may unveil some other relevant indicators of the stress. Moreover, the present study includes middle level employees only whereas stress can also be experience by the top level and lower level employees thereby providing a probable scope for the future researchers to enquire the relevance of such symptoms in employees working at top and lower levels in the organizational hierarchy.

Furthermore, the future research can also focus on comparing the nature of stress symptoms found in employees deployed on different levels of organizational hierarchy. This, in turn, will also assist the organizations to frame the most effective stress coping strategies across the employees working at different hierarchical levels for restoring the performance of the employees. Doing so will move the organizations ahead on the path of enhanced profitability.

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Appendix 1

Labels	Statements
S1	My body feels tense all over
S2	I have a nervous sweat or sweaty palms.
S3	I have a hard time feeling really relaxed.
S4	I have severe or chronic lower back pain.
S5	I get severe or chronic headaches.
S6	I get tension or muscle spasms in my face, jaw, neck or shoulders.
S7	My stomach quivers or feels upset.
S8	I get skin rashes or itching.
S9	I feel short of breath after mild exercise like climbing up four flights of stairs.
S10	More tension alters my appetite
S11	I get sharp chest pains when I'm physically active.
S12	I don't really plan my meals for balanced nutrition
S13	I take pills to get to sleep.
S14	I have nightmares or repeated bad dreams.
S15	I have trouble falling asleep.
S16	I wake up at least once in the middle of the night for no apparent reason.
S17	No matter how much sleep I get, I awake feeling tired.
S18	I stutter or get tongue tied when I talk to other people.
S19	I try to work while I'm eating lunch.
S20	I have to work late.
S21	I have to bring work home.
S22	I usually use medicines for relaxation after work.
S23	I tend to stumble when walking, or have more accidents than other people.
S24	After dinner I spend more time alone or watching TV than I do talking with my family or friends.
S25	I have found the best way to deal with hassles and problems is to consciously avoid thinking or talking about them.
S26	I have trouble remembering things.
S27	I feel anxious or frightened about problems I can't really describe.
S28	I worry a lot.
S29	It is important for me not to show my emotions to my family.
S30	It is hard for me to relax at home.
S31	I find it hard to talk when I get excited.
S32	I have temper outbursts I can't control.
S33	I feel extremely sensitive and irritable.
S34	I feel like other people don't understand me.
S35	I really don't feel good about myself.
S36	Generally I am not optimistic about my future.
S37	I spend less than three hours a week working on a hobby of mine.
S38	I spend less than one hour a week writing personal letters, writing in a diary or writing creatively.
S39	I spend less than 30 minutes a week talking casually with my neighbors.
S40	I lack time to read the daily newspaper.
S41	I watch television for entertainment when I am at home.
S42	I drive in a motor vehicle faster than the speed limit for the excitement and challenge of it.
S43	I spend less than 30 minutes a day working toward a life goal or ambition of mine
S44	When I feel tensed, it is difficult for me to plan time and activities to constructively release my pressure.