

Measuring the Immeasurable! An Overview of Stress & Strain Measuring Instruments

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Abstract

Measurement of stress has been a subject of interest for many researchers and an extensive amount of literature has been devoted to this topic however despite the popularity of "stress" as a research topic, researchers still do not agree on a common definition of this controversial subject (Rees & Redfern, 2000). According to Person-Environment fit (PE-Fit) theory (French & Kahn, 1962; French et al., 1974), stress and strain at job comes into action from the interaction of individual with environment and particularly when job challenges pose a threat to individual which ends up in incompatible PE-Fit, leading to stress related physical and psychological strains (Edwards & Cooper, 1990, French, Caplan, & Harrison, 1982). PE-Fit and Demand-Control (Karasek, 1979) models developed to explain the job stress and strain have guided the construction of most measures of occupational stress (Vagg & Spielberger, 1998). This article in particular aims to discuss few of the most important stress and burnout measurement instruments designed so far and intend to offer recommendations regarding instrument selection. Furthermore this article shall also discuss the pros and cons of stress assessment approaches in general, with few suggestions for improvement.

Keywords: Research, Environment, Stress, Strains, Measurement, Instruments.

1. Introduction

Though many studies have been conducted on stress, but this term still has divergence of opinions and is covered by a "mask of confusion" (Barkhuizen & Rothmann 2008, p. 321). Claude Bernard (1878), the renowned 19th century French physiologist was one of the most important researcher who studied stress as an adaptive response to external stimuli and introduced the principle of homeostasis, which is the process by which the normal balance of internal body environment is maintained (Kolb & Whishaw, 2001). Stress has been defined by a number of authors in a number of ways with reference to its sources, consequences and the resources to overcome the negative effects of it. The concept of stress has been introduced first by Hans Selye who studied the strains which arise when people struggle to adapt and cope because of changing environments. Selye (1956) originally presented stress as a general, nonspecific physiological response to any stressor. Later, he drew attention to the difference between eustress, or good stress, and distress, or bad stress. Various stress models and theories concluded stress as a process which includes the psychological and physiological attributes of the individual and the work environment around him/her and according to them this process is triggered by a stressor, where the individual's perceptions matter the most and if s/he perceives it as a threat, it will further trigger to produce negative emotional responses (French & Kahn, 1962, Lazarus and Folkman, 1984; Matteson, 1987; Topper, 2007). Further this process involves behavioral and physiological responses which ultimately lead to psychosomatic health problems (Cohen & Lazarus, 1979).

2. Static or dynamic nature of stress:

Previously it was thought that stress could be left where it had been observed or experienced (Klarreich, 1990) and

stress is static in nature. In other words, it may not be considered as a dynamic process or it may not have impact over a period of time but just at a point of time (when it was experienced). For example, if employees feel highly stressed because of personal/family problems at home, it has no impact on his job and they will feel comfortable at office, unless they face some other job related stressor which they cannot overcome and vice versa. But later on, this was not found true and stress was studied keeping in view its dynamic nature and as a "multivariate process involving inputs, outputs and mediating activities of appraisal and coping" (Lazarus 1990, p. 4).

Matteson (1987, p. 157) mentions that an interactional definition of stress provides the most realistic view of dynamic nature of stress and defines stress as "an adaptive response, mediated by individual characteristics, that is a consequence of any external action or event that placed special demands upon a person".

By some other researchers, occupational stress is defined as the perception of a discrepancy between environmental demands (stressors) and individual capacities to fulfill these demands in the job (French et al., 1982; Topper, 2007; Vermunt & Steensma, 2005). Many scholars agree that stress is a quality transaction which arises between environmental demands and the individual and in this context they define stress as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman 1984, p. 24).

3. Stress models: An overview

Researchers at different points of time have presented some models of stress, which guided in the construction of a number of measures of occupational stress. These include Person-Environment Fit (PE-Fit; French & Kahn, 1962), Demand–Control Model (Karasek, 1979), Transactional Process Model (Lazarus, 1966), Effort Reward Imbalance (ERI; Siegrist, 1996) and State Trait Process Inventory / Model (STPI; Spielberger, 1979).

According to Person-Environment fit (PE-Fit) theory (French & Kahn, 1962; French et al., 1982), stress and strain at job comes into action from the interaction of individual with environment and particularly when job challenges pose a threat to individual which ends up in incompatible PE-Fit, leading to stress related physical and psychological strains (Edwards & Cooper, 1990, French, Caplan, & Harrison, 1982). PE-Fit theory presents a structure for evaluating and forecasting how characteristics of the individual and the job environment jointly decide worker's well-being which can further be used to develop a model for preventive interventions. This model has been criticized because it gives insufficient attention to specific stressors, is overwhelmed with some theoretical problems, and cannot differentiate between different types of fit (Edwards & Cooper, 1990).

The two-dimensional Karasek's (1979) Demand–Control model suggests that workers concurrently experiencing high psychological demands (e.g. high workload, conflicting demands) and low decision/control latitude (e.g. having no say in one's job, no freedom, no skill development) are more likely to develop strains/health problems (Karasek 1979). The Demand–Control model also highlights the positive effects of social support from supervisors and co-workers (Johnson & Hall, 1988; Karasek *et al.*, 1982).

Transaction Process Model of stress (Lazarus, 1966) presents stress as a process which involves a complex transaction between individual and environment (Lazarus and Folkman, 1984). He mentioned that stress consists of three processes including primary appraisal (perceiving a threat), secondary appraisal (potential response to threat) and coping (executing the response). In this model he appreciates the match/fit between person's abilities and environmental demands, but accentuate more importance towards how the individual "appraise" the stressful situation and later on how s/he "react" to it i.e. coping. In a threatening situation, if the individual lacks the ability to cope appropriately, s/he will experience strain.

Effort–Reward Imbalance (ERI; Siegrist, 1996) model of job stress (which is based both an interpersonal and a transactional theory), states that employees exchange efforts for rewards. According to ERI model, when there is lack of reciprocity between costs and gains, it results in emotional distress and strain. In other words employees are in a state of inequity when high extrinsic efforts are coupled with low rewards and such individuals are thus more vulnerable to emotional distress and strain.

Spielberger's State–Trait Process (STP) model was based on PE-Fit and Transactional Process Models and focuses on the perceived frequency of occurrence and severity of stressors including job pressures and lack of support (Spielberger *et al.*, 2002). Moreover the State–Trait Personality Inventory (STPI; Spielberger, 1979) measures depression, anger, anxiety and provides essential information about a individual's mental health with particular reference to individual differences in personality traits, as individual differences define how they perceive and appraise the stressors.

These models emphasize on the dynamic nature of stress being mediated/moderated by some other factors e.g. coping resources and some individual characteristics which may change in the changing scenarios. However no definite major demanding events are necessary to turn out job stress but the accumulation of trivial everyday problems can also ignite much stress Chamberlain & Zika (1990), provided there are no effective coping mechanisms to overcome it.

4. Measuring stress & strain: A review of stress measuring instruments:

The concept of occupational stress has gained popularity during last 50 years a number of efforts have been made by researchers to design and develop stress measuring instruments (Vagg & Spielberger, 1998). These researchers approached to assess the stressful environments in different ways for example some focused on subjective and direct measures which include dimensions related to job, while others focused on general measures which do not link sources of stress to job (Shea & Cieri, 2011). Some researchers particularly focused on manifestations/symptoms of stress e.g. depression, anxiety, burnout etc and many others included all the above mentioned approaches in their assessment tools.

The term stress for a layman may seem simple but from a researcher point of view it is not as simple. "Stress is an imprecise and misused term and a system of measurement should provide a structure and language that facilitates the understanding of the subject" (Williams & Cooper 1998, p. 306). While designing an instrument for job stress, one must be clear with the other three classes of variables which should also be browsed and clearly understood. These include stressors, strains and health outcomes. Stressors are the environmental conditions or exposures which seem to impact on the well being of the individual. Strains involve the individual's physiological and psychological reactions to such stressors and health outcomes are actually the negative health conditions of the individuals (Hurrell et al., 1998) who are exposed to stressors. Thus to assess stress, researchers design instruments to measure stressors, strains and the ultimate health outcomes.

The PE-Fit, Demand–Control, Transactional Process, Effort-Reward Imbalance and STP models have stimulated and guided the construction of a number of measures of occupational stress and strain. These measures are questionnaire based and focus on quantitative research methods for data collection and analysis. Few of these are presented below:

Table 1: List of stress measuring instruments.

Instrument	Dimensions	Remarks
Job Related Tension Index: French and Kahn (1962) and Kahn et al., (1964)	Role conflict, work overload, role ambiguity, interpersonal relations and participation	Fifteen item questionnaire to measure the job stressors and it served as a starting point
Job Diagnostic Survey (JDS): Hackman and Oldham (1975)	Task significance, task variety, task identity, autonomy and feedback	One of the first organized efforts which was intended to diagnose motivation and productivity.
Job Characteristic Inventory (JCI): Sims et al., (1976)	Job autonomy, job variety, tasks identity, relationships with others, friendship and feedback.	It was developed based on the research by Hackman & Lawler (1971),
Work Environment Scale (WES): Insel & Moos (1974)	Interpersonal relationships, orientation toward personal growth, and organizational structure of the work setting	It was guided by PE-Fit theory and contained true-false items.
Organizational Role Stress (ORS) Scale: Pareek (1983)	Inter role distance, role stagnation, role ambiguity, role expectation conflict, role erosion, role overload, role isolation, role inadequacy, resource inadequacy and self role distance.	Pareek (1982) expanded the framework of role stress developed the Your Feelings About Your Role (YFAYR) scale and later on developed ORS scale. SrivataV (2009) designed an updated version of it named as New Organizational Role Stress (NORS)
Perceived Stress Scale (PSS): Cohen, Kamarck and Mermelstein (1983)	To determine the degree to which subjects find their lives unpredictable, overloaded and uncontrollable	A global measure of perceived stress with questions indicating low perceived stress and high perceived stress.
Job Stress Scale: Parker and DeCotiis (1983)	Feelings of discomfort i.e. Stress and job anxiety. Motivation, satisfaction and organizational commitment	Focused on organizational and job-related stress
Occupational Stress Inventory	Role ambiguity, role insufficiency, physical	They developed and revised the Occupational

(OSInv): Osipow and Spokane (1980; 1987; 1998)	environment and role overload, physical strain, coping skills, and social support.	Stress Inventory (OSInv) to evaluate the major categories of PE-Fit variables
Stress Diagnostic Survey (SDS): Ivancevich and Matteson's (1980; 1976)	Type A-B behavior pattern and type A-B work environment. Personal stressors (non work version of SDS) and the job related stressors (work version of SDS)	Role stress (Kahn et al., 1964) and PE-Fit theory contributed in the development of SDS.
Job Demand & Control Measure: Jackson et al., (1993)	Timing control, method control, monitoring demand, production responsibility and problem solving	It covered job characteristics which were prominent to employee well being but for which there were no sufficient assessment measures
Job Content Questionnaire (JCQ): (Karasek et al., 1998).	Workload, role conflict, coworker and supervisor support, job decision latitude, depression, job dissatisfaction, depression and sleeping problems	Based on Karasek's (1979) Demand-Control model, (JCQ) was designed. It has been considered as the most widely used job stress assessment tool.
Occupational Stress Indicator (OSInd): (Cooper, Sloan and Williams, 1988)	Job pressure control, job/performance pressure, Job satisfaction, coping, Type A personality and psychosomatic health problems	The PE-Fit, Demand-Control and Transactional Process models, guided the development and validation of the OSInd
Generic Job Stress Questionnaire (GJSQ): (Hurrell and McLaney, 1988)	Job demands, job control, role conflicts, workload, skill utilization, job dissatisfaction, psycho-somatic problems, self esteem and social support resources etc.	Influenced by PE-Fit and Demand-Control theory and developed at National Institute for Occupational Safety and Health (NIOSH).
Job Stress Survey (JSS): Spielberger, (1991).	Generic job related stressors commonly experienced by variety of occupations	Based on Police Stress Survey (PSS) and Spielberger's STP model. Later on adapted for high school teachers and refined as JSS.
Work Stress Inventory (WSI): Barone et al., (1988)	Organizational Stress and Job Risk	Measure stress intensity and stress frequency in a different range of job settings.
Pressure Management Indicator (PMI): Williams and Cooper (1998)	Workload, career development, relationships, work-life balance impatience, control, decision latitude, social support, problem focused coping, job satisfaction and organizational commitment, exhaustion, anxiety & depression, physical symptoms, and resilience	PMI is revised version of Occupational Stress Indicator (OSInd) by Cooper, Sloan and Williams, (1988) and covers major dimensions of occupational stress in different domains
Perceived Work Characteristics Survey: Haynes et al., (1999)	Autonomy & control, , role clarity, role conflict, peer support, work demands, influence over decisions, leader support, professional compromise and feedback.	Based on a large scale cross-sectional survey and the instruments contains items mostly based on previously developed scales
The General Nordic Questionnaire: (Lindstrom et al., 2000)	Job control, job demands, role expectations, leadership, organizational commitment, social interactions etc.	It can be used as a research method or as a survey feedback tool in organization development and change management
Stress in General (SIG) scale: Stanton et al. (2001) & (SIG-Revised version): Yankelevich et al., (2011)	Job threat stress and job pressure stress e.g. Anxiety and feeling nervous. Intentions to quit and job satisfaction	A self report measure to measure perceived job stress based on Lazarus and Folkman's (1984) definition of stress
HSE(Health and Safety Executive) Indicator Tool: Cousins et al., (2004)	Demands, control, relationships, managerial and peer support, role and change	Based on research regarding "Management Standards' on work-related stress in UK"
Swedish Demand-Control-Support Questionnaire (DCSQ) : Sanne et al., (2005).	Psychological demands, social support and decision latitude	DCSQ is a shorter and modified version of Karasek's Job Content Questionnaire (JCQ: Karasek et al., 1998)
Copenhagen Psychosocial Questionnaire (COPSOQ II): Pejtersen et al., (2010)	Justice, trust, work family conflicts, social inclusiveness, stress, burnout, insomnia and depression	Revised version of COPSOQ I, tested on Danish employees.

Research shows that strain is an outcome resulting from perceived stress (stressors) and higher level of strain results from higher level of stress coupled with lower coping resources (Karasek & Theorell, 1990; Osipow & Davis, 1988). To assess the strain factors as psychosomatic health problems, depression, anxiety and burnout, researchers have

developed few self-report measures which have been extensively used in this domain. Beck et al., (1961), Zung (1965), Goldberger (1978), Maslach et al., (1981) are few of the pioneers who developed indexes of depression, anxiety and burnout and these scales have been widely used by stress researchers.

Table 2: Instruments measuring psycho-somatic health and burnout.

Scale and Authors	Dimensions	Remarks
Cornell Medical Index: Brodman et al., (1951)	Physical and mental symptoms of stress.	One of the oldest and based on "yes / no" type simple questions
Beck Depression Inventory (BDI): (Beck et al., 1961)	21 item multiple-choice self-report assessment tool for measuring the severity of depression	Revised versions of Beck Depression Inventory include BDI-1A and BDI-II
Zung Self-Rating Depression Scale: (Zung, 1965; 1986)	20 item survey tool to quantify the depressed status of an individual/patient	Measures psychological and somatic symptoms associated with depression.
General Health Questionnaire (GHQ): (Goldberger, 1978; Goldberg & Williams 1988)	Physical stress symptoms, insomnia, anxiety and depression	most widely used strain detector, available in short and long form,
Four Dimensional Health Questionnaire (4DSQ): (Terluin et al., 2004)	General distress, depression, anxiety and somatization	Aimed to differentiate general stress and psychiatric symptoms.
Maslach Burnout Inventory (MBI): Maslach et al. (1981, 1986)	22 item survey tool to measure Emotional exhaustion, depersonalization and lack of personal accomplishment.	MBI is one of the most frequently used burnout instrument. The term was first introduced by Freudenberger (1974),
Burnout Measure (BM): Pines & Aronson (1988)	21 item survey tool to measure physical, emotional and mental exhaustion	

5. Limitations of the self-reported instruments of stress & strain:

Self reported measures of stress and strain have been subject to criticism based on few genuine grounds as mentioned below:

5.1 Subjective judgment:

Researchers argue that such instruments should be more objective rather than subjective but on the other hand such arguments have gone unheeded because it is not easy and sometimes not possible to obtain the objective measures of job stressors (Hurrell et al., 1998).

5.2 Severity, duration and frequency of stressors:

In the context of PE-fit theory, some researchers (e.g. Cox & Ferguson, 1994) argued that employees appraise their job environments not only in terms of existence of certain stressors but in parallel also on the basis of duration, frequency and severity of the stressors. Most of the stress assessment instruments mentioned above focus usually on frequency of occurrence of job stressors/challenges/demands.

5.3 Lengthy Questionnaires:

One of the major problems identified with most of the self reported measures of stress is that the questionnaires are usually lengthy, with repeated questions, multidimensional and intensity of the stressors are measured on the basis of "how often the stressor is encountered" (Vagg and Spielberger, 1998, p. 300). A typical questionnaire usually includes the various dimensions of stress e.g. stressors, coping, burnout, strains and health outcomes. Each dimension/scale has subscales and in addition many question pertaining to demographic information of the respondents constitute the first part of the questionnaire, while ultimately ends up in a lengthy questionnaire. Respondents highly overloaded with many roles may feel it difficult to browse and understand each item thoroughly and respond correctly. Thus there are ample chances that they may take it for granted, consider it as a burden and return it with inaccurate information.

5.4 Negative facets only:

One interesting point to ponder upon is that most of the stress measuring instruments focus on the negative facets of the job as predictors of health problems (Hurrell et al., 1998) whereas strains may result because of both reasons i.e. the presence of negative job features and the absence of positive attributes of job (Kanner, Kafry and Pines, 1978)

5.5 Global picture:

Most of the job-stress measuring instruments focus on the global picture and seek to measure stress based on the criteria which can be considered quite general rather than specific. As one size does not fit all and different jobs have different challenges/stressors so an instrument designed and tested on one set of respondents may not be suitable for the others whose job requirements are different. Moreover the items included in a more globalized questionnaire may be quite isolated from the actual job experience of the respondents (Hurrell et al., 1998). Even within same organizations e.g. a higher education institute, one can easily differentiate between the job demands of academic staff vs. non academic staff. A very well defined set of stress measuring instrument, with good internal consistency, factor loadings etc but specifically designed for academic staff cannot be considered suitable for the non academic staff.

5.6 21st century challenges:

The working environment in 21st century is quite different from what was ever before and it is very important for the stress researchers to incorporate the new challenges/stressors/work demands in their stress assessment tools. The cut throat international competition which paved the way for mergers and acquisitions, contractual and contingent workers, restructuring and downsizing, increased use of technology have changed the workplace challenges being faced by employees. Though few of the researchers address these challenges and come out with revised versions of their instruments but still many others (instruments) do not address such issues.

6. Discussion and Recommendations

To overcome the problem of subjectivity, it is suggested to use more objective measures of stress assessment rather than measuring respondent's perceptions regarding the stressors prevailing in the job environment. One of such objective measure is "Observational Approach" (Elo & Vehvilainen, 1983). This approach is thought to be more objective because it does not depend on the worker's perception of the job environment but on the observer's ratings based on some standardized rating scales and procedures, sometimes coupled with interviews as well. However observational tools have been criticized based on some arguments as this method needs a lot of expertise and training (of the observer) to observe and record correctly. Moreover it is quite time consuming particularly if the sample size is large. Being objective, it seems appealing but results might be distorted based in the subject perceptions/interpretations of the observer if s/he is not trained enough to conduct such survey.

It is worthwhile to mention that self report measures of strain (e.g. GHQ, 4DHO) are mostly based on subjective attribution of the individual and also lack the objectivity which may be incorrect. Results of most of these measures depend upon the respondents' psychological tendency and personal ability to respond accurately. As most of the questions in these scales are quite personal, towards which the respondent may be get defensive and reluctant to reply with the exact answer (e.g. physical or mental health). Even when the anonymity is claimed as "guaranteed" by researchers, respondents sometimes may not feel comfortable to talk their heart out easily.

To overcome this issue, more sophisticated physiological measures of strain can be used which have been categorized based on cardiovascular variables and stress hormones. Some self report measures of strains (discussed above) also include the items pertaining to cardiovascular problems e.g. heart rate and blood pressure problems, but the physiological measures can give accurate results as these are not based on subjective perceptions of the respondents but highly sophisticated equipments and trained practitioners. The second category i.e. using stress hormones as measures of strain involves complex laboratory processes, and starts with collection of urine and/or blood samples of respondents. These samples are tested and results are derived based on secretions of stress hormones e.g. cortisol. There are some other stress hormones and the choice of hormone and technique selection depends on the type of study. Researchers have found positive relationships between subjective measures (self reports) and objective measures of

strain and suggested to use both measures in stress research however the physiological measures are quite complex and recommended only in special cases.

It is also recommended to design stress assessment measures which are specifically applicable for certain occupations with reference to different personality types (Ganster and Shaubroek, 1991; Ivancevich et al., 1982; Sharpley et al., 1995). For example job challenges of a banker are quite different from those of a doctor and similarly doctor's job is quite different from that of a policeman, so how come one can use the same stress assessment instrument for this diverse group of occupations. Many researchers have thus designed different sets of questionnaires for different occupations, however in some cases they have designed some general scales and later on adapted to a particular group of occupations e.g. MBI (General Scale) & MBI (Educators Scale). Thus it is suggested that more customized instruments should be designed and/or existing instruments should be adapted based on the demands of the job and the organization. Even within same organization, different jobs/departments have different roles to play, different targets to achieve so "one size fit all" strategy should be avoided and more specific instruments should be used for surveys.

Keeping in view the importance of stressor-strain relationship and the measurement problems, stress researchers have proposed to use triangulation strategy (Ivancevich & Matteson, 1988), which is a combination of subjective and objective assessment tools. In triangulation, the researchers can use the cross sectional data acquired from different sources e.g. while measuring the health related strains one may get hold of record of sick leaves, visits to doctors, medicines frequently taken and in parallel use the self report measures e.g. GHQ or 4DSQ and other instruments if required according to the composition of the sample and nature of the study. The results can be further endorsed by individual interviews and observational measurement methods. The physiological measures of job strain can also be used on the same sample and be matched with the results of above mentioned instruments already used. Thus using a triangulation strategy, more useful conclusions and recommendations can be drawn based on the similar results obtained from different assessment tools. Triangulation strategy has its merits but its costly and time consuming.

In the context of the new challenges being faced by the workers, there is a dire need to revise the stress measuring instruments according to the challenging job requirements of the 21st century. Moreover the demographic changes are making the organizations much diverse than ever before, so such changes should also be kept under consideration while designing the new/revised instruments. Some non job related issues e.g. family problems, marital status, being away from home/town or expatriate status etc may also contribute directly or indirectly towards stress, so such factors should be studied as control variables and added in the questionnaires. Even some researchers suggest that non job-related (general) stress measures should be used rather than specific work-related measures e.g. Murphy and Hurrell (1987) called for the development of generic questionnaires to facilitate comparing stress levels in various job settings. However comprehensive assessment of occupational stress will consider taking into account the job conditions which produce job strain, how the stressors are perceived, appraised, and how the individuals react and cope (Vagg and Spielberger, 1998).

To overcome the issues of long scales which is quite time consuming for the respondents to respond, it is suggested to reduce these scales to short versions or develop a new scale (Shea & Cieri, 2011). But it needs a lot of efforts on the part of the researcher in developing the items and assessing the reliability and the validity.

While designing the instruments to assess relationships between stress and strain, researchers must take into consideration many other aspects (other than measurement) e.g. strong data analysis techniques (Cohen et al., 1995; Hurrell et al., 1998). One of the most important technique is Structure Equation Modeling (SEM) which is a very general statistical modeling technique widely used in psychology, behavioral and social sciences (Hox & Bechger, 1999; Anderson & Gerbing, 1988). Many a times in behavioral and social sciences, researchers are interested in understanding the variables that cannot be directly observed (latent variables), and SEM is one of the widely used statistical methods used to address such issues (Schreiber et al., 2006). Researchers interested in stress surveys are advised to use not only the best suited measurement instruments but also the advanced statistical methods like SEM. Moreover in behavioral and social sciences it is always good to collect data at different points of time (longitudinal survey) rather than a cross sectional data/survey. Because of its merits, use of SEM for longitudinal studies in stress related research has been recommended by many researchers.

7. Conclusion

During the last 50 years a number of efforts have been made by researchers to design and develop stress measuring instruments. However none of these tools can be termed as perfect, as the stressors change from job to job, time to time, depending on the environment in which the individual is working and moreover the distinctive individual characteristics

(Spielberger, 1979) which make everyone unique. Thus the job environments, individual appraisals and coping is different in different scenarios so there is a need to select the most appropriate stress assessment tool depending on the type of job/organization and nature of the study. However while designing stress measuring instruments, more focus should be diverted towards perceived intensity/severity of stressors, frequency of stressful encounters and how the individuals appraise such events (Dewe, 1989; Vagg and Spielberger, 1998). Pilot surveys should be conducted in prior to make sure that survey items are being clearly understood by the respondents and mixed approach i.e. combination of quantitative and qualitative methodologies should be used. Stress studies preferably should be longitudinal and should be analyzed using advanced statistical tools as SEM.

8. Limitations & Scope

This article intended to discuss few of the important stress instruments designed so far and offer recommendations regarding instrument selection. It does not include any empirical study based on data collection /results but just discussed pros & cons of stress assessment approaches based on thorough literature review with a sole objective to present few suggestions for improvement. Future studies in this context should be aimed at addressing specific stressors with particular reference to nature of job and should be based on some empirical support. Because of limited time and space, this study did not discuss the latent structure, reliability and validity issues of the instruments mentioned (in Table 1 and 2). Moreover qualitative measures to assess stress and strains have not been taken into consideration in this study, which can be focused upon in forthcoming studies.

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