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Reliability and Validity Estimation of Job Stressor Measures: Interpersonal Conflict at Work Scale, Quantitative Workload Inventory and Organizational Constraints Scale in Urdu Language

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Abstract

Background and Objective. The major objective of the present research study was to translate, reliability and validity estimation of three self-report measures of job stressor in Urdu language, namely, the Interpersonal Conflict at Work Scale (ICAWS), the Organizational Constraints Scale (OCS) and the Quantitative Workload Inventory (QWI) (Spector & Jex, 1998).

Method. This process was completed in three phases.Phase-I comprised of the translation of measures through forward-backward translation method. To establish the cross-language validity, Urdu translated versionsand the English versionswere administered on bilingual respondents (N = 100)(men = 74 and women = 26).In Phase-II, reliability estimation of ICAWS, OCS and QWI including Chronbach's alpha reliability and test–retest reliability was done. In Phase-III, validity estimation of ICAWS, OCSand QWI was done. Analysis were carried on the sample of 546 employees (men = 334 and women = 212) of public service sector organizations (WAPDA, NADRA, Sui Gas, PIA, Railways, PTCL, OPF and Postal Services) of Pakistan, taken from Rawalpindi and Islamabad with age range of 22 to 60 years.

Results. All indexes calculated were found to be significant.The one-dimensional structure of three measures was confirmed. The three scales have acceptable fit to the data. The one-factor structures and other psychometric properties of the Urdu version of the scales seem to be similar to those found in the US version of the original scales.

Conclusion. The translated Urdu versions of the scales are reliable instruments that can be used in Pakistani organizational settings to measure job stress.

Keywords. *Job stressor measures; interpersonal conflict; organizational constraints; quantitative workload; reliability and validity estimation*.

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Introduction

For over past 60 years, researcher has been devoted continuously to study job stress and its related variables. This is possiblybe brought out by the outcomes of researches highlighting that the work stress is the significantwork risk issue. Researches done by the European Foundation for the Improvement of Living and Working Conditions in European Union (EU) countries specified that employees are experiencing severe job stress, around 28% of workers suffer from job stress and observe its disparaging effects due to their negative working conditions (Parent-Thirion et al., 2017). Succeeding most significant health problem after back ache is the job stress among active workers. Recent researches in recent times are focusing that the drift is mounting (Hellgren et al., 2008). Job stress could have a substantial negative consequences on job performance and job turnover (Ajayi, 2018; Nisar & Rasheed, 2020); poor job commitment (Amin, 2018; Motamedzade, 2019); high level of work exhaustion (Alonso et al., 2020; Elshaer et al., 2018); more absenteeism (Khan et al., 2015; Peart, 2019); and more involvement indeviant work behaviors (Ma & Li, 2019; Mahdi et al., 2018). Nine EU countries have acknowledged psycho-social working conditions as a priority (Parent-Thirion et al., 2017). The negative consequences of job stress in working environments led to enormous studies devoted to establish stress measurement methods and to develop work stress measurement tools to be used in diverse cultures.

European Framework for Psychosocial Risk Management (PRIMA-EF) has identified different sources of work-related hazards in 10 fields (Leka, & Cox, 2008), including(a) work requirements (e.g., underutilization of workers' abilities), (b) job pace and work burden (e.g., more workload and low working pace), (c) job scheme (e.g., flexible job hours), (d) job command (e.g., little job authority), (e) work settings and work appliances (e.g., insufficient instruments availability), (f) workplace culture (e.g., meagre communiqué among workers and administration), (g) interpersonal conflicts at workplace (e.g., relationship among employees), (h) role ambiguity (e.g., vagueness in work role), (i) vocational development (e.g., occupational insecurity) and (j) work-home interconnection (e.g., higher rate of work-home conflicts). Few of the above mentioned job stressors have been studied in Pakistani organizational settings, both by using translated/adapted questionnaires and developed questionnaires by some Pakistani researchers, e.g., job performance (Nargis, 2007), job stress (Rauf & Farooq, 2014), organizational commitment (Abbas & Khanam, 2013), counter productive work behavior (Rauf & Farooq, 2014), psycho-social work environment, which evaluates work demands and work resources (Laila & Hanif, 2018). Interpersonal conflicts at work, organizational constraintsand quantitative workload are another group of jobs tressors that have rarely been studied in indigenous Pakistani organizational researches, possibly because of unavailability of reliable measurement instruments.

Considering the instruments shortcoming in Pakistani organizational settings, the present research aimed to overcome the concerning issues by translating and validating three short self-report measures of job stressors in Pakistani organizational settings. Paul Spector and Steve Jex (1998) North American psychologists—developed these measures for assessment of three major forms of work stressors that take place commonly at the working environments. The Interpersonal Conflict at Work Scale (ICAWS) was anticipated to assessen counters and disagreements with other colleagues and people at workplace, the Organizational Constraints Scale (OCS) was envisioned to assess restraints on job performance at workplace and the Quantitative Workload Inventory (QWI) was anticipated to evaluate the quantity of job hours, work load and work pace. Number of western researches have been conducted on work stress outcomes using these well-known instruments (Fox et al., 2001). The project of Cooperative International Study on Managerial Stress (CISMS-2) startedby Spector et al. (2007) was carried out using the above-mentioned job stress scales. Nevertheless, while exploring the literature review,as far as we are aware of,the psychometric properties of the above-mentioned instruments have certainly not been carried out on the indigenous Pakistani organizational population measuring specific cultural perspectives/values. The present research is an attempt to fill up the existing literature gap.

Numerous empirical evidences have highlighted taking into account the role of social factors to a greater extent when investigating the sources of occupational stress (Jex & Britt, 2014) which characterizes characteristics of the working environments having to do with interpersonal relationships with other people as working individuals spend half of their lifetime at the job (Bhayo et al., 2017; Bruk-Lee & Spector, 2011). Past researches elucidated that disparaging interpersonal relationships at the work placecan harm the physical health of employeesin the similar manner

as caused by the physical workplace stressors (e.g., under privileged working environments, noiseetc) andthe organizational job stressors (e.g., overload of work) (Hauge et al., 2010).

Interpersonal conflict is one of the social stressors at work place and is defined asexactly howfine anemployee gets along with other employeesin their working environment (e.g., how one behaves, cooperates, have fights, and other related interpersonal behaviors that affect his/her relationship with other co-workers) (Spector & Jex, 1998). It is defined as a destructive interpersonal confront specified by anargumentative conversation, antagonism or violence. This can be an episode of isolated eventor recurrent and continue dincidents which can be demonstrations of harassment. The severity of work place interpersonal conflict can vary from minor differences to multiple physical fights between colleagues and co-workers (Bruk-Le & Spector, 2011). These conflictscan be explicit (e.g., being impolite and bad mannered to collegues) or implicit (e.g., disseminating rumors, propaganda, and lying about colleagues' misconduct).

Keenan and Newton (1985) used an open-ended method, The Stress Incident Report (SIR), to assemble events of stressful work place incidents, indicating that of the 74% statedwork place accidents were instigated chiefly by social encounters with authorities, colleagues, or juniors. Few past researches indicated that interpersonal conflicts occurring at workplace are significantly positively correlated with workers' resentment, apprehension, hostility, rage, emotional fatigue, job exhaustion and despair (Inoue & Kawakami, 2010). However, the effects of these conflicts are very different from conflicts with higher authorities than conflict with colleagues (Frone, 2000). The conflicts with supervisors can have organizational consequences (e.g., lack of work motivation, poor work performance and low job commitment). The conflicts with colleagues can lead to personal consequences (e.g., distress, and poor self-esteem). Across different cross-cultural studies, there is an evidence of a high prevalence of interpersonal work-place conflict as a noteworthy cause of stress among the employees in every type of organization (Liu et al., 2008). A study by Narayanan et al. (1999) identified 11 types of major stressor categories in North American and Indian lower staff workers. Results among these cross-cultural samples indicated that interpersonal conflict occur at workplace was amongst the third most prevailing cause of job stress in American population, and was the fourth most prevailing cause of job stress in Indian population.

Organizational constraints affects the employees' job performance. These are the working situations or conditions that hinder the use of employees' full capabilities and skills into effective efforts that will help in the enhancement of overall productivity of the organization (Spector & Jex, 1998). These organizational constraints can be divided into two major categories, namely, interpersonal constraints (e.g., contradictory orders of individual's supervisors) and work place constraints (e.g., insufficient resources and insufficient training) (Liu et al., 2010). 11 causes of work place constraints acknowledged by Peters and O'Connor (1988) are: work-related miscommunication, biases in budget distribution, lack of sustainability, biases in material distribution, lack of work support from leadership and other workers, miscommunication in task training, limited time for deadlines, poor working surroundings, poor task schedules, unavailability of transport, and authoritative administrative style. Employees'job performance at work place can be subdued owing to themixture of unapproachability of recourses, reduced quality, and inadequate working environment (Nisar & Rasheed, 2020; Vijayan, 2017). Several cross-cultural examinations considered the organizational constraints as an influencing factor that affects the mental and physical health of the employees across Chinese, Indian, and North American study participants (Liu et al., 2010). Cultural differences were also evident across these countries, as American workers experienced considerably more interpersonal constraints as compared to Chinese workers. As for work place restraints, there found no noteworthy differences amongs North American workersand Chinese workers. The higher level of work place constraints lead to negative and adverse emotions (e.g., nervousness, aggression, frustration and anger), lack of occupational contentment, poor work task commitment and deviant behaviors in the working environment (Fox et al., 2001).

The construct of workload is generally scrutinized in two sub-dimensions. The one dimension studied is quantitative (quantifiable) work load, the other dimension being studied is qualitative (unquantifiable) workload (Liu et al., 2007). A quantitative (quantifiable) workload is the job load of the individual in the organization. Qualitative (unquantifiable) workload represents the unsuitability amongst the potentials and capabilities required to accomplish the work and the individual to do the work (Liu & Lo, 2018). Substantial qualitative workload means that the employee does not have the potentials and capabilities to execute his or her work.

Because work is too much for an employee that he/she cannot complete that work. Too much workload may cause many physiological and psy¬chological damaging consequences in employees (Çelik, 2016). The results of the study done by Karasek, Gardell, and Lindell (1987) showed that excessive workload leads to despair, distress, fatigue and heart problems. These negative psychological and physiological consequences causes poorpro¬ductivity and low job performance of workers at their work place. This condition is appraised as a cost element in organizational terms. For that reason, the results of the above mentioned study uncovered the significance of negative consequences, both at individual and at organizational level, caused by the quantitative workload in organizational life. Therefore, it is envisioned that the construct of quantitative workload will be investigated extensively in the nearby future.

Another variable that commonly adds up to the most recurrent causes of work stress is workload (Bruk-Lee& Spector, 2011). The workload is calculated by the quantity of working or job hours, higher expectations of productivity in less time, mental and physical demands of perfectionat work, the level of job performance and the mental pressure generated due to work. In the present research, the workload is figured outby the quantity of work/job that the workers are enforced to accomplish in a provided period of time (Spector & Jex, 1998). However, the shorter formula of quantitative workload inventory (QWI) can be used with other research instruments concurrently. Some past empirical evidences have found that quantitative workload increases work burnout, job stress, hopelessness, physical negative consequences, and decreased job contentment (Brunner et al., 2019; Kasi-Raman & Geetha 2017; Khan et al., 2015; Peart, 2019).

To assess job stressors of employees can be a helping resource to address the factors that decrease the level of employees' performance in organization (Ismail et al., 2015). The need is to have tools to assess various factors and job related aspects not only to evaluate the employees periodically but also to have valid research work in the field. Lack of indigenous measures and resources to develop these measures make this task hard and challenging. There is a dire need to fill the gap by either translating or adapting already available tools or to construct some new culture free measures.

The culturally suitable measures to assess job stressors are also not available. To address this need instruments can be developed or validated into local language. Method of translation and validation of scale is less economically than test development but similar in benefits. For this purpose, in current study three self-report measures of job stressor, namely, the Interpersonal Conflict at Work Scale (ICAWS), the Organizational Constraints Scale (OCS) and the Quantitative Workload Inventory (QWI: Spector & Jex, 1998) were chosen for cultural validation to assess employees' level of job stress. In current study, ICAWS, OCS and QWI were translated and validated into national language of Pakistan (Urdu). Further more, this will provide a foundation and facility to develope new measures as well as researchers' interest in this area. In addition, ICAWS, OCS and QWI translated in local language would help to collect in-depth information about this construct in Pakistani organizational settings.

The main objectives of the present research were to translate andto validate ICAWS, OCS and QWI into Urdu language considering its significance and the dire need to assess the construct of job stress with the help of culturally reliable tool.

Objectives

Objectives of the present study are as follows

1. To translate ICAWS, OCSand QWI (Spector &Jex, 1998) into Urdu language.

2. To establish reliability and validity estimation of Urdu versions of ICAWS, OCS and QWI through Chronbach's alpha reliability, test–retest reliability and cross-language validity.

3. To establish factorial validity of Urdu versions of ICAWS, OCS and QWI.

Method

The present research study was completed in three phases. Phase-I, comprised of translation and cross-language validation of Urdu versions of ICAWS, OCS and QWI. In Phase-II, reliability estimation was established by using Cronbach's alpha reliability and test-re-test reliability. Phase-III was completed with validity estimation of Urdu versions of ICAWS, OCS and QWI.

Instruments

The questionnaire booklet, which was used as a data collection tool in the research, consisted of two sections. The first section included demographics designed to collect the demographic information of respondents. The second section contained ICAWS, OCS and QWI.

Job Stressor Measures. Developed by North American psychologists – Paul Spector and Steve Jex (1998) – these measures were designed to assess three types of general job stressors that occur in the work environment. The Interpersonal Conflict at Work Scale (ICAWS) was intended to measure conflicts and arguments with other people at work, the Organizational Constraints Scale (OCS) was intended to measure constraints on performance at work and the Quantitative Workload Inventory (QWI) was intended to assess the amount of work and work pace.

Interpersonal Conflict at Work Scale (ICAWS). Interpersonal Conflict at Work Scale (ICAWS) was used to measure interpersonal conflict. The ICAWS includes four items referring to the frequency of arguments or conflicts in the workplace and the rude behaviour of co-workers (e.g., 'How often do other people yell at you at work?'). The ICAWS has no reverse coded items. The instrument has a 5-point response scale ranging from 1 = *less than once a month or never to 5 = several times a day* with score range of 1-20. High scores represent a high level of interpersonal conflict at work place. In the study on the validation of the US version of the scales, the reliability coefficients for the individual scales were $\alpha = 0.74$ for the ICAWS(Spector, & Jex, 1998).

Organizational Constraints Scale (OCS). Organizational Constraints Scale (OCS) was used to measure organizational constraints. The OCS includes 11 items referring to a variety of constraints in the workplace, related to poor equipment, organizational rules and procedures, other employees, supervisors, lack of training and incorrect instructions (e.g., 'How often do you find it difficult or impossible to do your job because of poor equipment or supplies?'). This summated rating scale is based on the constraint areas identified by Peters and O'Connor (1988). Participants are asked to indicate how often they find it difficult or impossible to do their job because of each constraint. The OCS has no reverse coded items. The instrument has a 5-point response scale ranging from 1 = *less than once a month or never to 5 = several times a day* with score range of 1-55.

High scores represent a high level of organizational constraints at work place. In the study on the validation of the US version of the scales, the reliability coefficients for the individual scales were $\alpha = 0.85$ for the OCS (Spector, &Jex, 1998).

Quantitative Workload Inventory (QWI). Quantitative Workload Inventory (QWI) was used to measure workload quantitatively. The QWI consists of five items referring to the quantity of job tasks, the effort required to perform them and the time assigned for task completion (e.g., 'How often does your job leave you with little time to get things done?'). This summated rating scale assesses respondents' perceptions of work in terms of volume and pace. The QWI has no reverse coded items. The instrument has a 5-point response scale ranging from 1 = *less than once a month or never to 5 = several times a day* with score range of 1-25.High scores represent a high level of quantitative workload at work place.In the study on the validation of the US version of the scales, the reliability coefficients for the individual scales were $\alpha = 0.82$ for the QWI (Spector, &Jex, 1998).

Phase I: Translation and Cross-Language Validation of Urdu Versions of ICAWS, OCS and QWI.

Permissions for the use of instruments in the present study were taken from the authors through e-mail. The three job stressor instruments were translated in this study after taking permission from the respective authors.The main focus during this part of the study was on cross-cultural sameness and conceptual equivalence instead of linguistic similarities.

A well familiar and competently prevalent procedure to attain conceptually equivalent translation, forward and back-translations method was used (Brislin, 1976; Van de Vijver& Hambleton, 1996). Initially, the authors of the measures were asked for their permission to translate the scales. After getting permission, the scale was translated into the target language i.e Urdu from the source language i.e English. To achieve this objective, five bi-lingual professional shaving good reading proficiency and writing proficiency in both the languages of Urdu and English were provided with original scales to translate them in Urdu language. Three of the translators were related to academic field and two were language experts with ample competency and command on language.

Forward translations of ICAWS, OCS and QWI were assessed in a committee approach. After reviewing all translations carefully, members of the committee selected and finalized the most appropriate translation for each item of all the scales. Recommended suggestions were considered and changes were made accordingly.

In the next step, backward translation of the scales from Urdu into the source language that is, English was done. For this process, another set of five independent bilingual translators were approached and asked to translate the Urdu version of ICAWS, OCS and QWI back into English. Back translations of the scale which were later assessed in another committee approach.

Committee members were approached to complete the process of translation. This time, the committee approach aimed to check the similarity of the newly translated English items with the original items of ICAWS, OCS and QWI. The committee reviewed the translations and checked the semantic equivalence of the back translations with the original statements. Most closely related items with original version were selected. Finally, instructions of the scales were added and settled by the committee members and Urdu version of ICAWS, OCS and QWI was finalized.

To establish the cross language validity of the translated scalesconcerning original English version, sample was drawn, details are given below:

Sample. 100 employees (men = 74 and women = 26) of public service sector organizations (WAPDA, NADRA, Sui Gas, PIA, Railways, PTCL, OPF and Postal Services) of Pakistan, having bilingual comprehension skills, were approached through purposive and convenient sampling from Rawalpindi and Islamabad. Those public sector organizations of Pakistan were identified in which public/human interaction is a dominant part of their work and the organizations which provide services to the public.

*Figure 1***.** Diagrammatic representation of the distribution of total sample into four groups for test-rest reliability.

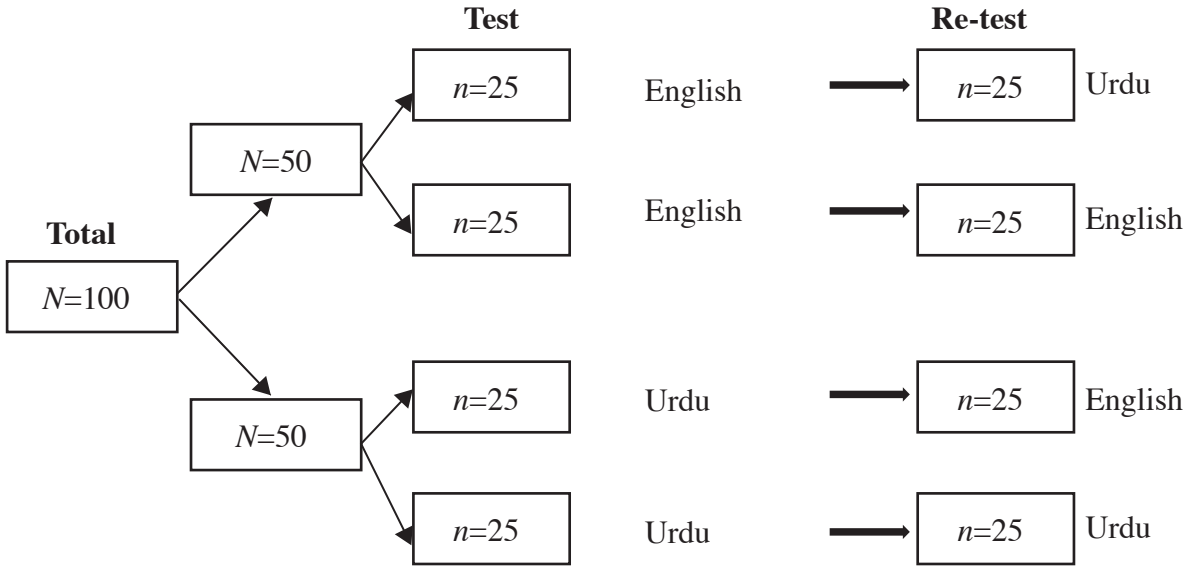

Figure 1 shows details about sample division and provision of original and translated scales to participants. They were requested to fill ICAWS, OCS and QWI with assurity to maintain their anonymity. All ethical considerations were taken in mind. Two-week gap between test and then re-test administration was made to control learning effect and previous experiential impact.

Procedure. Four groups of the sample were made and in Trail-1 two groups having 25 employees each were requested to respond on English version original scale. The remaining two groups were instructed and requested to respond to Urdu ICAWS, OCS and QWI that is translated version. Similarly other two groups of 25 employees were given translated version of ICAWS, OCS and QWI. After two weeks, these employees were again approached for Trail-2. Here first group of 25 employees (earlier got English versions) this time was given Urdu version and other 25 employees were again provided with same English version of scales. Likewise, to last two groups (earlier got Urdu versions), first group was provided with English scales and second group got translated version as depicted in Figure 1 as well. To identify any discrepancy and to examine equivalency in both versions and with-in same version application, this exercise was particularized.

Results Phase I

Correlation coefficients between all four groups were configured in Trial 1 and Trail 2 for original and translated versions of ICAWS, OCS and QWI. Results are given below.

Table 1

Test-Retest Reliabilities of Urdu and English Versions of ICAWS, OCS and QWI(*N*=100)

Sr. No.	Scales	Groups			
		UU (n = 25)	UE (n = 25)	EU (n = 25)	EE (n = 25)
1	Interpersonal Conflict at Work Scale (ICAWS)	.89**	.87**	.86**	.84**
2	Organizational Constraints Scale (OCS)	.90**	.86**	.85**	.82**
3	Quantitative Workload Inventory (QWI)	.88**	.85**	.83**	.81**

Note.UU = Urdu-Urdu; UE = Urdu-English; EU = English-Urdu; EE = English-English. **p<.01.

Table 1 shows test-retest correlations of all four groups on the scales. These were found positive and significant. This indicates the stability of scales in different groups (p < .01). Results of the between-groups correlation shows thatthe test-retest correlations Urdu-Urdu group is greaterthan the other three groups possibly because of practice effects due to repeated administration of a scale in native language that is Urdu.

Phase II: Reliability Estimation of Urdu Versions of ICAWS, OCS and QWI.

In Phase-II, reliability estimation of Urdu Versions of ICAWS, OCS and QWI was established through Cronbach's alpha reliability and test-re-test reliability.

Sample. The sample comprised of 546 employees of public service sector organizations (WAPDA, NADRA, Sui Gas, PIA, Railways, PTCL, OPF and Postal Services) of Pakistan, who were approached through purposive and convenient sampling from Rawalpindi and Islamabad. Sample comprised of 334 (61.2%) men and 212 (38.8%) women. The age of the participants ranged from 22-60 years (M = 40.35, SD = 9.22). Potential participants got a booklet of the scales/instrumentsin addition to a letter clarifying the objectives of the research. Complete privacy of attained data and secrecyof participants were guaranteed. All ethical considerations were taken in mind. Furthermore, data for the test-retest reliability of Urdu Versions of ICAWS, OCS and QWI was collected. For this purpose total 50 employees including 32 (64%) men and 18 (36%) women were approached.

Procedure. In order to complete the second phase of the study, heads of the public sector organizations of Pakistan were approached and clarified about the objectives of the research and permissions were taken from them for the collection of data. This time translated versions of ICAWS, OCS and QWI were administered over the target samples. Instruction were given to the participants and they were asked, to tell or comment at the end of the administration regarding any kind of difficulty, item unclarity or ambiguity. Data was collected and respondents were thanked for their cooperation. During this phase, data for the test-retest reliability ofUrdu Versions of ICAWS, OCS and QWI was also collected. In test-retest procedure, translated version was administered over same 50 participants with two-week interval.

Results

The results of Phase II are given below:

Internal consistency reliability of the scales were computed using Cronbach's Alpha.

Cronbach's alpha for the scales was found to be .84, .93 and .76 for ICAWS, OCS and QWI respectively. This indicates that internal consistency reliability of the scales are high, as Cronbach's Alpha range is between 0 - 1.00 and value near to 1.00 shows greater internal consistency reliability of the scale (Wells &Wollack, 2003).

Table 2 shows psychometric properties of the study variables. The values of Skewness show that the shapes of the curves of test scores across the scales are skewed. Furthermore, negative value of Kurtosis are showing that the distribution of scores across the QWI scale are flat, less peaked and has thin tail. The scores are not in constellation around the mean value. Significant positive correlations werefound between the three self-report measures of job stressor, namely, the ICAWS, OCSand the QWI.

Table 2

Psychometric Properties of the Study Variables (*N* = 546)

Sr. No.	Variable	No. of Items	α	*M(S.D)*	Skew	Kurt	1	2	4
1	Interpersonal Conflict at Work Scale (ICAWS)	4	.84	7.95(3.71)	1.04	.47	-	.57**	.27**
2	Organizational Constraints Scale (OCS)	11	.93	21.59(10.92)	1.11	.30		-	.41**
3	Quantitative Workload Inventory (QWI)	5	.76	14.64(5.03)	.009	-.95			-

Note. Skew = Skewness; Kurt = Kurtosis.

***p < .01*

Three self-report measures of job stressor, namely, the ICAWS, OCSand the QWI are found to be significantly and positively correlated with each other.

Item-total correlations were computed for Urdu Versions of ICAWS, OCS and QWI.

Table 3

Item Total Correlations of Urdu Version of ICAWS, OCS and QWI (N = 546)

Interpersonal Conflict at Work Scale (ICAWS)		Organizational Constraints Scale (OCS)		Quantitative Workload Inventory (QWI)	
Item No.	*r*	Item No.	*r*	Item No.	*r*
1	.77**	1	.61**	1	.75**
2	.77**	2	.74**	2	.75**
3	.73**	3	.74**	3	.73**
4	.68**	4	.76**	4	.69**
		5	.64**	5	.79**
		6	.70**		
		7	.70**		
		8	.74**		
		9	.71**		
		10	.75**		
		11	.73**		

Note.**p<.01*

Table 3shows corrected item total correlation of all the scale. Results revealed that the corrected item-total correlations for Urdu Versions of ICAWS, OCS and QWI were above the acceptable threshold (i.e., r ≥ .30; Ferketich, 1991), showing significant relationships between items in the scales. For example, item total correlation for items of Interpersonal Conflict at Work Scale (ICAWS) ranged from .68 - .77, for Organizational Constraints Scale (OCS) this correlation ranged from .61 to .76 and for Quantitative Workload Inventory (QWI) item total correlation ranged from .69 to .79 for.

In next step, test re-test reliabilities of the scales were estimated. Correlation coefficient statistics was applied to investigate the findings of test re-test reliabilities of ICAWS, OCS and QWI.

Findings reported high correlations on first and second administration of the scales; such as .89 for ICAWS, .90 for OCS and .88 for QWI. These findings are in line with earlier study (Anastasi, 1954) that indicated the utmost apparent technique for finding the reliability of an instrument/measure total sum is by replicating the same instrument/measure on a second juncture.The obtaine dreliability coefficient of the instrument/measure in this situation is the correlation amongst the scores attained by the identical individual on the two administrations of the same instrument/measure.

Table 4

Test-Retest Reliability of ICAWS, OCS and QWI (*N* = 50)

Sr. No.	Scales	Test-retest Reliability
1	Interpersonal Conflict at Work Scale (ICAWS)	.89**
2	Organizational Constraints Scale (OCS)	.90**
3	Quantitative Workload Inventory (QWI)	.88**

Note.**p<.01*.

Phase III: Validity Estimation of Urdu Versions of ICAWS, OCS and QWI.

In this phase, Confirmatory Factor Analysis (CFA) was conducted to establish the construct validity of Urdu Versions of ICAWS, OCS and QWI. The Confirmatory Factor Analysis were run because confirmatory analytical techniques provided more scrupulous procedure than exploratory analytical techniques and also because the structural models for the self-report measures of job stressor, namely, the ICAWS, OCS and the QWI were a priori hypothesized. The construct validity of Urdu version of ICAWS, OCS and QWI was entrenched by running CFA with estimation method of maximum likelihood in Amos-21. Uni-factor model was tested. Findings revealed a good model fit for the model. To signify the likelihood that individual items influence this model fit, individual item properties were also being examined. It was observed that factor loadings of all Items were above the acceptable value of λ = .30 (Field, 2009).

The good fit of the uni-factor model supports the idea of the uni-dimensional nature of the three self-report measures of job stressor, i.e, the ICAWS, OCS and QWI. Results of the analysis are given in Table 5.

Table 5

Confirmatory Factor Analysis of Urdu Versions of ICAWS, OCS and QWI (*N* = 546)

Model		χ^2	df	χ^2/df	*p*	GFI	IFI	CFI	SRMR	RMSEA
ICAWS	M	1.86	2	0.93	.000	.99	.98	.97	.03	.05
OCS	M	118.629	35	3.38	.000	.96	.97	.97	.02	.04
QWI	M	9.461	3	3.15	.000	.99	.99	.99	.02	.04

Note. ICAWS = Interpersonal Conflict at Work Scale; OCS = Organizational Constraints Scale; QWI= Quantitative Workload Inventory; χ^2 = chi-square; χ^2/ df = relative/normed chi-square; GFI = goodness of fit index; IFI = incremental fit index; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation.

Findings reveal that values of χ^2/df, SRMR, and RMSEA lie in acceptable ranges. Other fit indices are also in acceptable range. The inferences of the confirmatory analyses indicated that the one-factor structure solution is acceptable for all these three scales. Standardized factor loadings were taken according to the similar criterion of EFA that is equal to and above than .40 suggested by Robitschek et al. (2012). Factor loadings for Urdu Versions of ICAWS, OCS and QWI are given in Table 6.

Table 6

Factor Loadings for Urdu Versions of ICAWS, OCS and QWI (*N* = 546)

Interpersonal Conflict at Work Scale (ICAWS)		Organizational Constraints Scale (OCS)		Quantitative Workload Inventory (QWI)	
Item No.	λ	Item No.	λ	Item No.	λ
1	.62	1	.61	1	.69
2	.87	2	.88	2	.71
3	.84	3	.77	3	.62
4	.75	4	.80	4	.60
		5	.63	5	.64
		6	.71		
		7	.72		
		8	.74		
		9	.76		
		10	.80		
		11	.76		

Table 6 shows factor loadings of items in Urdu Versions of ICAWS, OCS and QWI lie in acceptable range (λ = .60 - 87), that is, ≥ .30 (Field, 2009; Floyd &Widaman, 1995).

Discussion

This research study was aimed to translate and validate three short self-report job stressor measures i.e ICAWS, OCS and QWI in Pakistani organizational settings. The objective of the study carried out through standard and extensive procedures of scale translation and validation comprised of three phases.

Phase-I completed with translation and linguistic equivalence estimation of Urdu Versions of ICAWS, OCS and QWI; Phase II completed with reliability estimation through Cronbach's alpha reliability and test-re-test reliability and Phase-III was completed with validity estimation of Urdu versions of job stressor measures.

Scale linguistic equivalence estimation was completed through forward and backward translations. First, all the items ICAWS, OCS and QWI were translated according to standard procedures of scale translation. Findings supported the translated versions of ICAWS, OCS and QWI as homogeneous measures with original version. This can be seen through significant positive correlations between translated and original version of the job stressor measures. Further, item total correlations also indicates high internal consistency showing significant relationships between items in the scales. This shows that each item is measuring the particular content, which is intended to measure (Johansone & Malik, 2008).

In next step, scale reliability estimation was carried out. Cronbach's Alpha indexes of Urdu Versions of ICAWS, OCS and QWI was found significantly high and this indicates higher test temporal stability (Wells & Wollack, 2003). Moreover, significant positive correlation values of test-retest reliabilities of Urdu Versions of ICAWS, OCS and QWI indicates self-report job stressor measures are highly reliable and consistent. Hence, both Cronbach's α coefficients and the test–retest reliability technique with two weeks' sequele stablished the reliability of the scales/instruments. Significant positive correlations were found between the three measures of job stressor which shows that these measures are positively and significantly related with each other. The factor analyses of the Urdu versionsof the scales/instruments approved their suitable factor structure, internal consistency, reliability and validity. Each item of the ICAWS (4 items), the OCS (11 items) and the QWI (5 items) formed a single latent factor with significant factor loadings in CFAs.

As hypothesized, the CFA results were consistent with the one-factor models of the three scales. The ICAWS, OCS and QWI have acceptable fit in the CFA and have good fit to the data. Given these results, it can be assumed that the three scales have one-dimensional structures and contain all the items from their original versions. Moreover, the one-factor structures and other psychometric properties of the Urdu version of these scales seem to be similar to those found in the original version of the scales (Spector & Jex, 1998). The mean values for the Urdu version of the scales were comparable to the US ones.

Both the interpersonal conflict and organizational constraints are, to a larger extent, psychosocial stressors, mounting entirely or partially from interpersonal encounters with other people at work place. Workload, contrarily, assesses about job tasks more than other people at work place. Moreover, only having a enormous quantity of job to do does not necessarily causes job stress in the similar manner as organizational constraints or interpersonal conflict may cause. Numerous individuals mayrelish doing work and may not find it unpleasant to do a lot of work at their work place. Hence, it is anticipated that the correlation amongst workload and work stress would be weaker than the correlation amongst the other two work stressors. The three job stressors turned out to be significantly positively correlated to each other, i.er = 0.27 for interpersonal conflict and quantitative workload to $r = 0.57$ for interpersonal conflict and organizational constraints and $r = 0.41$ for quantitative workload and organizational constraints. Spector and Jex (1998) obtained quite comparable correlation coefficients from $r = 0.20$ for interpersonal conflict and quantitative workload to $r = 0.44$ for interpersonal conflict and organizational constraints and $r = 0.43$ for quantitative workload and organizational constraints.

The potential worth of three short self-report job stressor measures i.e the Interpersonal Conflict at Work Scale (ICAWS), the Organizational Constraints Scale (OCS) and the Quantitative Workload Inventory (QWI)(Spector &Jex, 1998) can contribute remarkably in the field of organizational psychology. The significance of job stressors were observed when numerous organizational experts turned their attention toward organizational factors of employee's turnover and absenteeism as well as poor productivity and efficiency.

These issues can be identified through job stressor measures. Job stressors are few of the significant factors that may affect organizational outcomes and performance. To highlight these issues self-report job stressor measures i.e ICAWS, OCS and QWI can be very suitable tools to be used. The results of the reliability and validity analysis showed that these measures are reliable and valid instruments and can be used in measuring the perceptions of job stressors in Pakistani organizational settings.

Limitations and Future recommendations

The current research seems to have some limitations. The sample of the current research comprised of employees from different public sector organizations only, however sample from forces and industrial workers that experience more work stress were not included. Therefore, future researches should take into account of more organizations with miscellaneous job-related groups with different working hazards. Further more, most of the sample consisted of male employees, an increase in the female employees sample can identify gender roles and its effect on job stress. Another limitation of the study is stress measurement method, one of the most repeatedly debated matters in job stress research among the employees. Only self-report instruments were employed, in the current research, to analyze the level of stress among the employees. The items of the instruments assess only the occurrence/frequency of stressful incidents in daily work hassles. Hence these job stress measures can be used primarily in investigations of enduring work place stressors, frequently recurring and in one way or another engraved in work characteristics. The benefit of self-report job stress scales/instruments is such that the evaluation of a job stressor is donevia the individual straightly being afflicted. However, the shortcoming is that the evaluation is directly and greatly affected by presently prompted emotional states and cognitive configurations.

Moreover, in the course of the assessment of personal and subjective feelings associated with stressful work related factors, the relation amongst the job stressor and the behavioral reaction to that are distorted because those components are managed as attached to each other (Dohrenwend, & Shrout, 1985).

To the best of our knowledge, there is scarce of literature available that examined the linkage amongst the three job stressor scales and the impartial considerations of job stress assessed by physiological responses (e.g., diastolic and systolic blood pressure andcardiac functioning) and by knowledge able experts (e.g., supervisors and colleagues) who having the chances of observing an employee in one and many job associated conditions. This kind of research would be exclusively suggested in the way of future inquiries of the self-report job stressor measures.

Implications

The present study translated the self-report job stressor measures for the first time in Pakistan to provide an Urdu version of the instruments. The study also reported the psychometric properties of the Urdu version of the instruments, thus establishing the construct validity of these instruments in Pakistan. Further, this work implies that the construct job stressor works some how similarly in Pakistani culture as compared to the Western culture, where this variable has been conceptualized. Therefore the present research suggests that the construct of job stressor and its nature needs to be further explored in Pakistani organizational context, and how this construct is perceived by the working individuals in Pakistani culture.

Conclusion

The construct of job stressor is worth studying because it is an important variable that leads to various work related outcomes at work. Considering this, present study attempted to translate and validate job stressor measures which are widely used instruments to measure perceived job stressors. The Urdu translated version of job stressor measures i.e the Interpersonal Conflict at Work Scale (ICAWS), the Organizational Constraints Scale (OCS) and the Quantitative Workload Inventory (QWI) showed adequate construct validity and reliability.

Declaration

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