

Looking For A Specific Measure For Assessing Sources Of Stress Among Teachers: A Proposal For An Italian Context

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ABSTRACT

The teaching profession is now recognized as a highly stressful occupation, mainly due to the increase in work demands and interaction with students. Given that in Italy there is a scarcity of validated instruments that specifically measure school-related sources of stress, specifically Workload and Class Stress, this study proposes a first contribution for the validation of the Teacher Stress Inventory (TSI) in the version proposed by Klassen and Chiu (2010), including 7 items. To accomplish this, the items of the instrument were back-translated from English into Italian. A survey among Italian primary and secondary school teachers ($n=269$) was conducted in order to explore the psychometric proprieties of the Italian version. Results of the Exploratory Factor Analysis revealed, in accordance with expectations, a bi-dimensional factor-structure underlying the 7 items. Specifically, the first factor extracted was Classroom Stress (4 items), explaining the 59.37% of the variance, whereas the second factor comprised all the 3 items of Workload Stress (variance explained: 15.01%). All Cronbach's alphas were satisfactory ($\alpha > .80$). In addition, the significance of the correlations of both scales of TSI with burnout and another measure of stress provided evidence for predictive and convergent validity. Overall, these results suggested the validity and applicability of the instrument also in the Italian context.

INTRODUCTION

In the last decade, growing attention has been paid to occupational wellbeing in the educational sector, primarily due to the link between the quality of the teaching process and students outcomes, not only in terms of learning process, but also for the general academic and psychosocial wellbeing of the latter (Caprara et al., 2006; Denny et al., 2011; Reyes et al., 2012; Converso et al., 2014).

Like other "helping professions", teaching is a highly stressful occupation (IARD, 2003). Specific sources of stress that account for the onset of burnout, mental illness, and job dissatisfaction could be identified either in the social or in school-classroom characteristics. Teachers seem to experience – more than any other category – social disvalue and poor acknowledgement of their commitment from school administrators (Zurlo et al., 2007; Cordeiro et al., 2002) along with the increased workload, the management of demands not directly related to the teaching process, often without a corresponding increase in salary or job security (Drago, 2006). Moreover, several studies showed that the daily interactions with students - most of all with their disruptive behaviors - colleagues and students' parents, have the main impact on their wellbeing (Boyle et al., 1995; Kokkinos, 2007; Hargraves, 2003; Otero-Lopez et al. 2008; 2010; Velasco et al., 2013). Several studies identified, as the main predictive factors of burnout among teachers, the student's inappropriate behavior and attitudes (e.g. Hasting, Bham, 2003; Kokkinos, 2007; Kyriacou, Sutcliffe, 1978a), the difficulty in dealing with potentially conflictive situations, and the lack of support, as emerged also from Chang's literature review (2009). In this sense, as teachers mainly link their goals and expectations to the quality of the educational process and in influencing and inspiring students, they may experience less meaningful work when have to deal with students' inattention and disinterest in learning (Pines, 2002). This is of primary importance given that the efficacy perceived in the daily interaction with students and in classroom management is also predictive of the quality of the learning environment (Caprara, 2003), job satisfaction (Skaalvik, Skaalvik, 2009) and intention to leave (Martin et al., 2012). Otherwise, knowing the sources of stress that teachers experience in the class context is also indicative of the general class social climate, which, as highlighted by the research on school effectiveness, is one of the major elements linked to student wellbeing and academic outcomes (e.g. Reyes et al., 2012; Way, Reddy, Rhodes, 2007).

Despite this, in the Italian context, most of the instruments used in the school-research field, such as the JCQ (Karaseck, 1988) or the ERI (Siegrist, 1996), are actually shaped in relation to the general organizational health psychology literature that doesn't take into account the specific demands posed by the teaching profession. Even though all the dimensions considered by these tools emerge as important transversal characteristics of the work environment, it could be stated that, to facilitate more meaningful research into teaching stress, there is the need for a manageable tool for the assessment of the main sources of stress experienced by teachers, especially in the Italian context where there is a paucity of validated instruments that specifically measure school-related factors (Guidetti, Converso, Viotti, 2014).

One of the most interesting tool in the assessment of the teachers' working quality life, based on the interactional/transactional perspective on stress proposed by Kyriacou and Sutcliffe (1978b), is the Teacher Stress Inventory developed by Boyle et al. (1995), a formerly validated scale either in Anglo-Saxon (Dunn-Wisner, 2004) and other cultural contexts (Hanif, Pervez, 2003; Boshoff, 2011; Kourmoussi et al., 2015).

The authors of the original questionnaire specifically aimed at validating the dimensional structure of latent variables pertaining to teacher stress - previously identified by a series of factor analytic studies (e.g., Kyriacou, Sutcliffe, 1978b; Payne, Fumham, 1987; Borg et al., 1991) - using different samples to undertake separate exploratory and confirmatory factor analysis, providing strong evidence as to the reliability of the dimensions contributing to teacher stress. Based on this, the Teacher Stress Inventory consisted of 20 items that after EFA analysis, resulted in 16 items (after a deletion of items with a double loading) grouped into a five-factor solution ($\chi^2=91.97$; $df=16$; $p < .05$): Factor 1 - Workload (e.g. lesson preparation, responsibility for pupils and inadequate rest periods) accounted for 32% of the variance, Factor 2 - Professional Recognition (e.g., poor career structure, insufficient salary) accounted for 11.2% of the variance, Factor 3 - Student Misbehaviour (e.g., noisy and difficult pupils, lack of class discipline, problems in managing additional students) accounted for 7.7% of the variance, Factor 4 - Time/Resource Difficulties (e.g., inadequate equipment and facilities, large class size) accounted for 7.2% of the variance, Factor 5 - Poor Colleague Relations (e.g. attitudes of other teachers or pressure from educational authorities) accounted for 6.3% of the variance. Consequently, the factor structure was tested using Confirmatory Factor Analysis, providing evidence that the hypothesized model was stable ($\chi^2=171.14$; $df=70$; AGFI = .91; RMR = .06). Finally, the relationship of the five "causal" factors with a single-item self-rating measure of teacher stress was examined, and, interestingly, revealed that both Workload and Student Misbehaviour were the only latent variables that emerged as significant predictors, explaining respectively 30% and 29% of the variance (Boyle et al., 1995).

Since these two dimensions revealed the main contribution in the onset of teachers' overall stress, Klassen and Chiu (2010) adapted this instrument (rescaling the items on a nine-point response scale) confirming a two-factor solution for these two sources of stress and their predictive power in the levels of job satisfaction and teacher self-efficacy

THE CURRENT STUDY

The present study represents a first contribution to the development of the Italian version of the Teacher Stress Inventory (TSI) in the version proposed by Klassen and Chiu (2010). Particularly, it aims at examining the psychometric properties of TSI in a sample of Italian teachers.

MATERIALS & METHODS

Data collection:

Teachers from 18 public schools in a region of Northern Italy were involved during the academic year 2013/2014. Presentation of the project, sharing of content, objectives, and modalities of research implementation were first presented to school administrators, and consequently to all the participants involved in the project.

The self-reported questionnaire was administered anonymously to a total sample of 299 teachers, and its completion was the result of consent for the processing of the data, conducted in privacy and in accordance with current legislation. The questionnaire was filled out individually during working hours, in the presence of a researcher of the Department of Psychology who was available to the participants for clarification about the completion.

Participants:

269 teachers filled out the questionnaire correctly and therefore were considered for the current study. 169 (62.8%) were teachers of primary school, and 100 (37.2%) of secondary school.

91.2% were female and 8.8% were male. Participants were aged between 25 and 63 years ($M= 45.22$; $sd=7.84$). As educational level, 15.4% had a bachelor degree, 80.7% a master degree, and 3.9% a PhD or a specialist degree. Most of the subjects were married (71.3%), 65.9% have at least one child.

As concerns professional data, participants job tenure in the public school system ranged from 1 to 41 years (mean: 18.47; $sd=9.54$). The majority had a permanent contract (72.5%).

Instruments:

The data were obtained by means of a self-reported questionnaire including a socio-demographic section and the version of Teacher Stress Inventory (TSI) proposed by Klassen and Chiu (2010) back-translated into Italian. A single item aimed at capturing overall stress (Klassen and Chiu, 2010) and the Spanish Burnout Inventory (SBI, Figueiredo-Ferraz et al. 2013) were also included.

The Klassen's TSI version consists of 7 items grouped in 2 sub-dimensions: workload stress (4 items) and class stress (3 items). More specifically, Klassen and Chiu (2010) used six items from the Boyle et al. (1995) Teacher Stress Inventory, plus an additional item about class size (see in table , the item 3). All 7 items were back-translated (Brislin, 1970, 1976) and included in the present questionnaire. Also the following instructions were translated into Italian: *As a teacher, how great a source of stress are these factors to you?*, with responses ranging from 1 (*no stress*) to 9 (*extreme stress*).

Teacher stress was also measured by a single-item scale (*"I find teaching to be very stressful"*, 1=completely disagree; 9=completely agree), following the approach used in recent studies of teacher stress (e.g., Chaplain, 2008; Klassen and Chiu, 2010).

Burnout syndrome was assessed by the Spanish Burnout Inventory. It consisted of 20 items distributed in four scales (five-point scale ranging from 0 "Never" to 4 "Every day"): Enthusiasm towards the job (5 items, e.g., *I see my job as a source of personal accomplishment*, $\alpha=.86$), Psychological exhaustion (4 items, e.g., *I feel emotionally exhausted* $\alpha=.84$), Indolence (6 items, e.g., *I don't like taking care of some students*, $\alpha=.64$), and Guilt (5 items, e.g., *I regret some of my behaviors at work*, $\alpha=.77$).

Data analysis.

Data analysis were performed using SPSS Statistical Package version 21 and included in five steps: a) item analysis (mean, standard deviation, skewness and kurtosis); b) assessment of score reliability of the TSI sub-scales (Cronbach's alpha and alpha if item is deleted); c) testing factorial validity of the TSI through Exploratory Factor Analysis (EFA; Method of Estimation: Maximum Likelihood; Rotation method: Oblimin); d) Pearson's correlations between TSI, the job stress single-item-scale and, SBI sub-scales in order to assess respectively convergent and predictive validity.

FINDINGS

Item analysis.

Descriptive statistics for the items are shown in Table 1. The highest mean values were reached by item 5 ("having noisy students", $m=6.74$), item 3 ("have large class size", $m=6.69$), and item 7 ("dealing with students' impolite behavior or rudeness" $m=6.68$).

For all items, the corrected item-total correlation achieved values equal or greater than $r = .60$. All values of skewness and kurtosis are comprised in the range -1.0 to $+1.0$, suggesting no violation of normal distribution.

Internal consistency.

The internal consistency of the sub-scales was satisfactory as the values of Cronbach's alpha reached respectively .82 for Workload stress subscale and .90 for Classroom stress (Table 1). In addition, all items seem to give a relevant contribution to the subscales where they belong, since in no case, if the items were deleted, the alpha increased or kept the same value.

Table 1 – Descriptive Statistics of TSI Items.

Subscale Item	M (SD)	Corrected item-scale correlations	Skewness	Kurtosis	Alpha if item deleted
Workload stress ($\alpha=.82$)					
1) Having too much work to do	5.65(2.26)	.75	-.38	-.78	.73
2) Having extra duties/responsibilities because of absent teachers	5.58(2.35)	.68	-.32	-.99	.76
3) Having large class size	6.69(2.25)	.57	-.86	-.26	.81
4) Being responsible for students' achievement	6.14(2.25)	.60	-.60	-.58	.80
Classroom stress ($\alpha=.90$)					
5) Having noisy students	6.74(2.04)	.81	-.78	-.28	.85
6) Maintaining class discipline	5.83(2.24)	.80	-.42	-.85	.86
7) Dealing with students' impolite behavior or rudeness	6.68(2.29)	.80	-.84	-.36	.86

Exploratory Factor Analysis (EFA).

The Kaiser-Meyer-Olkin measure ($KMO = .86$) and Bartlett's test ($\chi^2=1279.33$, $df=21$, $p < .00$) indicate that the factor model is appropriate.

In accordance with expectations, a bi-dimensional factor-structure was found underlying the 7 items. Overall, the amount of variance explained is 74.38%. Table 2 presents the items loadings on the two factors. The first factor explained 59.37% of variance. It consisted of three items of Classroom stress. All items positively loaded on the factor, with a saturation greater than .40 (the lowest value is on item 3 "maintaining discipline" with a value of .85). The second factor was Workload stress with 15.01% of variance explained. All loadings were greater than .40 and the lowest loading was reached by item 4 "Being responsible for students' achievement", with a value of .42.

Table 2 – Factors, items loadings, variance explained of TSI

Item	Factors	
	Factor I	Factor II
7) Dealing with students' impolite behavior or rudeness	.88	-.03
5) Having noisy students	.87	.01
6) Maintaining class discipline	.85	.04
1) Too much work to do	-.05	.91
2) Extra duties/responsibilities because of absent teachers	-.06	.81
3) How great a source of stress is having a large class size	.27	.51
4) Being responsible for students' achievement	.29	.42
% of Variance	59.37%	15.01%

Note 1– Bold type indicate Value $\geq .40$.

Correlations among subscales

The two subscales showed a high positive correlation ($r = .62$) in the expected direction.

The correlations (Table 3) also suggest an adequate convergent validity with the measure of global stress and a good predictive validity on the burnout syndrome. All the correlations were significant. Workload stress showed the highest correlation with the measure of overall stress ($r = .52$). Among the burnout dimensions, psychological exhaustion showed the strongest correlations with both the stress sources (r for workload equal to $.54$ and r for classroom $.39$), whereas guilt the weakest (both r were equal to $.11$).

Table 3 - Pearson's correlations among subscales

	1	2	3	4	5	6	7
1. Classroom Stress	1						
2. Workload Stress	.62**	1					
3 Overall Stress	.39**	.52**	1				
4. Enthusiasm towards the Job (burnout)	-.25**	-.19**	-.18**	1			
5. Psychological Exhaustion (burnout)	.39**	.54**	.45**	-.37**	1		
6. Indolence (burnout)	.24**	.14*	.16**	-.30**	.28**	1	
7. Guilt (burnout)	.11*	.11*	.06	.00	.35**	.38**	1

** $p < .001$; * $p < .05$

CONCLUSIONS

The purpose of this study was to examine the psychometric properties of the Italian version of TSI proposed by Klassen and Chiu. The results obtained indicate that TSI is an adequate tool for assessing stress sources also in the Italian teaching context. In line with previous studies that underlie how the daily interaction with students and the management of academic demands are the main sources of stress (Otero-Lopez, 2008; 2010), this study shows similar patterns presenting significantly high correlations with levels of overall stress and emotional exhaustion.

This study has some limitations. The most important are that the data collection included only one Italian Northern Region, and that participants were selected in a non-random way. Future studies should select representative samples in order to provide stronger evidence for the adequacy of the psychometric properties of TSI in an Italian context implementing confirmatory factor analysis.

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Appendix-1 English and Italian version

Original item	<i>Item translated into Italian</i>
As a teacher, how great a source of stress are these factors to you?	Pensando al suo lavoro di insegnante, in quale misura i seguenti aspetti rappresentano per lei una fonte di stress?
(Workload stress)	
1) Having too much work to do	Avere troppo lavoro da portare a termine
2) Having extra duties/responsibilities because of absent teachers	Avere responsabilità e compiti extra quando altri insegnanti sono assenti
3) Having a large class size	Avere classi numerose
4) Being responsible for students' achievement	Essere responsabili dei risultati conseguiti dagli studenti
(Classroom stress)	
5) Having noisy students	Avere studenti in classe che disturbano, fanno baccano
6) Maintaining class discipline	Mantenere la disciplina in classe
7) Dealing with students' impolite behavior or rudeness	Rapportarsi con studenti maleducati, insolenti