

Teacher Beliefs and Stress

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Abstract The first of two studies provided validity data on the Teacher Irrational Belief Scale that measures a set of beliefs of teachers previous research has found to be associated with teacher stress. Employing a sample of 850 primary and secondary teachers in Australia, an exploratory factor analysis resulted in four distinct factors: Self-downing, Authoritarianism, Demands for Justice, and Low Frustration Tolerance. These four sub-scales demonstrated adequate internal reliability and correlated with self-ratings of stress occasioned by different teaching stressors. In a second study, 140 teachers and 26 teachers retired from teaching because of stress completed the Teacher Irrational Belief Scale and a measure of teacher stress. Teachers retired from teaching due to stress scored higher on sub-scales of Self-downing and Low Frustration Tolerance than teachers still teaching. These results are discussed in terms of Ellis' theory of REBT and implications for consultants and teacher educators offering stress management programs and support for teachers.

Keywords Teacher stress · Irrational beliefs · Measurement · Prevention · Consultation · Rational emotive behavior therapy

Over the past two decades, the number of studies of occupational stress in the teaching profession has dramatically increased reflecting growing international concern with this topic (e.g., Kyriacou 2001; Popov and Popov 2015). Studies indicate that approximately 60–70 % of teachers show some stress symptoms, and about 30 % of them have burnout symptoms (e.g., Bermejo-Toro and Prieto-Ursúa 2006). When compared with other professions, teachers report one of the highest levels of occupational stress (e.g., Smith 1989). Some studies show gender

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differences in favour of females in the amount of teacher stress experienced (e.g., Klassen and Chiu 2010), while other studies show no effect of gender on teacher stress (e.g., Kalyva 2013).

Negative consequences of teacher stress have been found on teacher mental health (e.g., McCarthy et al. 2009), low work productivity (Friedman 2003) and have resulted in what some have described as a national epidemic of teacher departures (Fisher 2011). Teachers with high classroom stress have been found to have lower self-efficacy (Klassen and Chiu 2010).

Given the significant costs of teacher stress that includes the negative impact on student learning, extensive investigations have been devoted to the search for causes and cures.

The transactional model of stress (Lazarus and Folkman 1984) has often been invoked to explain teacher stress (e.g., Bernard 1990). The model emphasizes that while stress is a response to external demands and threats, it is not a direct result but rather is influenced by people's perception of and attitudes towards the stressor and their own resources for overcoming it. In terms of external stressors, Kyriacou (2001) found that the main sources of teacher stress were unmotivated students, maintaining discipline in the classroom, time pressures and workload demands, the great number of changes within the school system, exposure to evaluation by others, conflicts with administration and school management, lack of school equipment and poor working conditions. Geving (2007) found that poor student behavior is a main contributor to teacher stress, especially in secondary level teachers. Psychological factors that have been found to moderate the impact of external stressors include achievement striving and occupational commitment (Jepson and Forrest 2006), self-efficacy (e.g., Friedman 2003), neuroticism (e.g., Goddard et al. 2006), self-concept (e.g., Villa and Calvete 2001), hardiness (e.g., Chan 2003) and self-concept (e.g., Villa and Calvete 2001).

The two research studies reported here focus on the *irrational beliefs* of teachers, a factor that previous research with samples of teachers has shown to mediate stress (e.g., Popov and Popov 2015), psychological hardiness and emotional intelligence (Khaledian et al. 2016) and teacher self-efficacy (e.g., Klassen and Chiu 2010).

The conceptual model that underpins this work is the theory of rational emotive behavior therapy (REBT) (Ellis 1994). In this model, beliefs, be they rational or irrational, are evaluations of reality (DiGiuseppe et al. 2013). Rational evaluations are consistent with reality and logical whereas irrational beliefs are inconsistent with reality and logically inconsistent. According to the founder of REBT, Albert Ellis (Bernard 1990; Ellis 1994), all human beings when faced with events which block them from achieving their goals or which conflict with their values have tendencies to engage in rational thinking (e.g., "I prefer but don't need to be achieving and approved of. It's not terrible and awful when I do not succeed or am thought badly of. I can tolerate it. The lack of success or rejection does not make a worthless person."). All humans also have an innate tendency to engage in irrational thinking characterized by absolutism (e.g., "I must be successful and approved of."), to blow the unpleasantness and hassles of life out of proportion (e.g., "It's really terrible and awful to make mistakes or to be criticized."), to evaluate frustrating events and/or emotional discomfort as intolerable (e.g. "I can't stand being criticized or thought

badly of.”) and to globally rate (over-generalize) the worth of oneself, others or the world on the basis of a limited sample of behavior and observation (e.g., “Because I have not succeeded in important areas of my job, I am a failure.”). According to Ellis, stress-proneness is partly a function of these irrational beliefs. The emotional impact of an environmental stressor depends in large part upon whether the evaluation of the event by the individual is governed primarily by rational (logical, empirical) or irrational (illogical, anti-empirical) beliefs.

Bernard et al. (1983) offered a listing of irrational beliefs specific to teachers:

1. I must have constant approval from students, other teachers, administrators and parents.
2. Events in my classroom should always go exactly the way I want them to.
3. Schools should be fair.
4. Students should not be frustrated.
5. People who misbehave deserve severe punishment.
6. There should be no discomfort or frustration at school.
7. Teachers always need a great deal of help from others to solve school-related problems.
8. Those who don't do well at school are worthless.
9. Students with a history of academic or behavioral problems will always have problems.
10. Students or other teachers can make me feel bad.
11. I can't stand to see children who have had an unhappy home lives.
12. I must be in total control of my class at all times.
13. I must find the perfect solution to all problems.
14. When children have problems, it's their parent's fault.
15. I must be a perfect teacher and never make mistakes.
16. It's easier to avoid problems at school than to face them.

Measuring Teacher Beliefs

While different survey instruments have been used to measure different irrational beliefs of teachers (e.g., Jones' Irrational Belief Questionnaire 1968), some contemporary research has utilized Bernard's *Teacher Irrational Belief Scale* (TIBS), a self-report survey containing items that reflect different types of irrational beliefs of teachers including absolutizing (should, musts, needs, demands), awfulizing, Low Frustration Tolerance and global rating. Bora et al. (2008) conducted a factor analysis of the TIBS for a Romanian population of teachers and found three principal factors related to three core irrational beliefs: Low Frustration Tolerance, Self-downing and other demandingness.

Internationally, research into teacher stress and irrationality has employed the TIBS. Bermejo-Toro and Prieto-Ursúa (2006) in studying stress in a sample of secondary teachers in Spain found significant relationships between teacher

irrational beliefs, burnout and depression. In particular, they found that low tolerance for frustration had a significant influence on the levels of stress, depression and physical symptoms. Popov and Popov (2015) investigated with a sample of primary and secondary teachers in Serbia, the mediating role of irrational beliefs in the relationship between stressors at work and emotional distress. Their findings indicated that both external stressors and irrational beliefs have a direct effect on general stress among teachers. Moreover, irrational beliefs partially mediated the relationship between outside stressors and stress symptoms. Low Frustration Tolerance had the highest loading on the factor of irrational beliefs.

The present two studies have the following purposes: Study 1 presents validation data on the Teacher Irrational Belief Scale (TIBS) based on a sample of teachers from Australia. Study 2 compared a group of teachers in the workforce with a clinical group of teachers retired from teaching due to stress. Interest in Study 2 was in determining which, if any, of Ellis' irrational beliefs could distinguish the group of "retired-stressed" teachers from a group of teachers still teaching.

Study 1

Method

Subjects

Questionnaires were distributed to 850 teachers in Victoria, Australia, at the beginning of a curriculum-in-service day conducted at 27 schools. These teachers received no further experience or training connected with the topic of teacher stress. Teachers generally completed the questionnaires at the beginning or during the day and were collected by the person conducting the in-service at the end of the day. 58 questionnaires were either not handed in or contained incomplete information and were deleted from the sample leaving 792 subjects (278 males, 514 females). 437 of the teachers were employed in grades 1–6 while 355 were employed in grades 7–12. 541 of the teachers worked in public schools, 76 in technical high schools and 175 in private, denominational schools. Teaching experience of participating teachers varied from less than a year to 42 years with 9 years representing the mean number of years taught.

Measures

Teacher Irrational Belief Scale (TIBS) A 30-item Teacher Irrational Belief Scale developed by the author asked teachers to indicate on a five-point scale the extent to which they agreed or disagreed with an irrational belief (1 = 'strongly disagree'; 2 = 'disagree'; 3 = 'not sure'; 4 = 'agree'; 5 = 'strongly agree'). High scores indicate endorsement of irrational beliefs. Cognitively-worded items were developed to assess four different types of irrational beliefs (absolutizing, awfulizing, I-can't-stand-it-itis, global rating) which Ellis (e.g., 1978) hypothesizes lead to emotional stress (see Table 1). These irrational beliefs concerned the following four

Table 1 Factors and items for teacher irrational belief scale

Item loading	Item
Factor 1: Self-downing (19.9 % of variance)	
.69	I think I'm a failure when I haven't "gotten through" to a class
.59	I think I'm really inadequate when I don't get approval or respect for what I do
.59	To make mistakes or perform poorly as a teacher is for me one of the worst things in the world
.58	I think I'm totally hopeless when I haven't gotten all my work done on time
.44	I can't stand it when I put all my energy in a student or class and get no results
.43	I should be able to succeed at all the important things I do at school
.41	I really should be able to solve all of my students' problems perfectly
.40	I can't stand being criticized or thought badly of when I haven't finished something or done it properly
Factor 2: Authoritarianism (8.1 % of variance)	
.68	As a teacher, I must have the power to make my students do what I want
.61	Students who constantly misbehave are horrible and should be severely punished
.56	Before I can really change how I feel about a student or class, they must change
.52	I can't stand it when students misbehave
.47	Students should always be respectful, considerate and behave well
.44	Given my upbringing, past experience in teaching, and personality, I think it impossible to change
.42	It's really awful to teach in a class where there are so many problems
.40	Students can really upset me when they do the wrong things or misbehave
Factor 3: Demands for Justice (7.2 % of variance)	
.76	I can't stand it when I am not consulted about a decision, which affects my teaching
.65	Teachers should be consulted about decisions, which affect their teaching, and it's really unfair when they are not
.50	Without good administrator-teacher communication and support, schools are the very worst and terrible places to work
.46	Schools really should attend more to teachers' problems and it is totally unfair when they don't
.41	One thing I find totally bad is the lack of communication between teachers and central administration
Factor 4: Low Frustration Tolerance (6.3 % of variance)	
.77	It's really bad to have to put so many hours both inside and outside the classroom
.70	I shouldn't have to work so hard
.61	Schools are really lousy places to work because they give teachers too much work and not enough time to do it
.54	I find it too hard to balance my work and home demands

areas of teaching which previous research has indicated as contributing to teacher stress: (1) classroom discipline/management problems, (2) student learning/emotional and motivational problems, (3) time and workload pressures and (4)

problems with school administration. The items were reviewed and approved by a recognized REBT research-practitioners in the use of REBT with children, adolescents, parents and teachers.

Bora et al. (2008), reported the following reliabilities for the TIBS sub-scales obtained in their factor analysis (Cronbach Alpha): Self-downing (.66), Low Frustration Tolerance (.48), Demandingness (.68) and for Total (.74).

Assessment of Teacher Stress Following the example of Kyriacou (2001), a single-question format with a response scale was employed to assess how stressful teachers viewed specific teaching stressors. Teachers were asked to indicate on a five-point scale (1 = 'not stressful'; 2 = 'a little stressful'; 3 = 'moderately stressful'; 4 = 'very stressful'; 5 = 'extremely stressful') the extent to which they personally viewed the following four problems as stressful: (a) classroom management problems (e.g., disruptiveness, personal confrontations, swearing, disobedience); (b) student learning/emotional problems (e.g., poor performance by a student or class of students, poor motivation, 'sea of blank faces,' not getting through or helping a student with a special problem); (c) time and workload pressures (e.g., too much work and not enough time to do it, balancing home and work demands); and (d) problems with school administration (e.g., lack of influence over decisions which effect you, lack of communication, lack of appreciation). In addition, a Total Stress score was calculated by summing the scores on these four items.

Results

Factor Analysis of the TIBS

A maximum likelihood exploratory factor analysis with oblique rotation was conducted (e.g., Costello and Osborne 2005). Four principal factors with eigenvalues greater than one were identified. Twenty-five of the original 30 items loaded .40 or higher on one of the factors (see Table 1). Those items, which loaded less than .40, were deleted from the scale. Factor 1, referred to as "Self-downing," accounted for 19.9 % of the variance and contained 12 items involving needs for approval and achievement, exaggeration of the badness of not living up to one's expectations, and, in particular, putting oneself down for poor performance or disapproval from others. Factor 2, "Authoritarianism," which accounted for 8.1 % of the variance contained eight items revolving around teachers' Demands for control over students and blaming students for their misbehavior. Factor 3, "Demands for Justice," accounted for 7.2 % of the variance and contains five items dealing with teachers' desires for communication and consultation. Factor 4, "Low Frustration Tolerance," accounted for 6.3 % of the variance and contains four items dealing with teachers' evaluations of the unpleasantness of their work.

Table 2 presents the correlations among the different factors of the TIBS. Self-downing is the most strongly correlated with other factors correlating .38 with Low Frustration Tolerance and .32 with Authoritarianism. The other factors appear weakly correlated among themselves.

Table 2 Factor correlations of the teacher irrational belief scale

Scale	Self-downing	Authoritarianism	Demands for Justice	Low Frustration Tolerance
Self-downing	–			
Authoritarianism	.32	–		
Demands for Justice	.28	.21	–	
Low Frustration Tolerance	.38	.22	.27	–

Reliability of the TIBS

The internal reliabilities of the four subscales of the TIBS were computed using Cronbach's Alpha: Self-downing (.76), Authoritarianism (.78), Demands for Justice (.70), and Low Frustration Tolerance (.77). The overall internal reliability of the TIBS is .85. These reliability indices suggest that the TIBS and its sub-scales have a reasonable degree of internal consistency.

Teaching Experience and Teacher Irrational Beliefs

Interest was in determining whether the irrational beliefs of teachers varied as a consequence of the number of years of teaching experience. Teachers were divided into three groups: those that had taught for less than 2 years ($n = 129$); those having taught between 2 and 10 years ($n = 374$); those having taught 11 or more years ($n = 289$). As a multivariate analysis of variance (MANOVA) revealed significant age differences across all four subscales of the TIBS ($p < .001$). Univariate F tests with Tukey post hoc comparisons were conducted. In terms of total irrational beliefs, the most experienced group of teachers scored significantly lower than either of the other two groups of teachers who did not differ, $F(2, 789) = 4.60$, $p < .01$. The most experienced group of teachers scored significantly lower on Self-downing than the other two groups which did not differ, $F(2, 789) = 2.96$, $p < .05$. The group of teachers with between 2 and 10 years of experience were found to score significantly higher in Authoritarianism than either of the other two groups of teachers who did not differ, $F(2, 789) = 3.97$, $p < .01$. On the Demands for Justice subscale, the most experienced group of teachers scored significantly lower than either of the other two groups of teachers who did not differ, $F(2, 789) = 3.50$, $p < .05$. On the Low Frustration Tolerance subscale, the most experienced group of teacher indicated higher frustration tolerance than the group of teachers with between 2 and 10 years of experience, $F(2, 789) = 3.09$, $p < .05$.

Sex Differences and Teacher Irrational Beliefs

A MANOVA found that across the four subscales of the TIBS, male and female teachers differed significantly ($p < .001$). Univariate F tests revealed that males scored higher on the Authoritarian subscale, $F(1, 630) = 12.38$, $p < .01$, while

Table 3 Correlations between teacher irrational beliefs and stress: Study 1

	Total stress	Classroom management stress	Student learning problems stress	Time workload stress	School admin. stress
Total irrational	.41	.27	.28	.31	.25
Self-downing	.28	.15	.30	.22	.14
Authoritarianism	.25	.33	.24	.08	.03
Demands for Justice	.33	.08	.17	.20	.43
Low Frustration Tolerance	.36	.13	.15	.50	.23

Correlations above .13 significant at $p < .001$

females scored higher on Demands for Justice $F(1, 630) = 5.83, p < .01$. No sex differences were found for Self-downing and Low Frustration Tolerance.

Teacher Irrational Beliefs and Teacher Stress

Table 3 presents the correlations between the irrational beliefs held by teachers and their self-reports of stress. It can be seen that total irrational belief scores correlated moderately strongly with an one-item measure of teacher stress (.41). Of particular interest are the correlations between Self-dSelf-downing and stress due to student learning problems (.30), Authoritarian beliefs and stress due to classroom management problems (.33), Demands for Justice and stress due to problems with school administration (.43), and Low Frustration Tolerance and time and workload stress (.50).

Discussion

The four-factor solution for the Teacher Irrational Belief Scale corresponds in many respects with Ellis' hypotheses concerning the three major irrational beliefs, which influence emotional stress (e.g., Ellis and Bernard 1985). Factor 1, Self-downing, corresponds to one of the core irrational beliefs which Ellis advances as contributing to emotional stress (e.g., anxiety and depression) and which Ellis calls "Self-demandingness"; namely, "I must do well and win approval, or else I rate as a rotten person." Factor 2, Authoritarianism, and Factor 3, Demands for Justice, seem to measure Ellis' second major irrational belief which he calls other-demandingness"; namely, "Others must treat me considerately and kindly in precisely the way I want them to treat me; if they don't, society and the universe should severely blame, damn and punish them for their inconsiderateness. Factor 4, Low Frustration Tolerance, measures what Ellis (1994) calls "world-demandingness" and leads, according to Ellis, to a variety of stress reactions including low frustration, self-pity and despair; namely, "Conditions under which I live must be arranged so that I get practically all that I want comfortably, quickly and easily and get nothing I don't want."

The findings of a four-factor solution parallel are not inconsistent with the three-factor solution found by Bora et al. (2008) insofar as the two factors—Authoritarianism and Demands for Justice—which are different aspects of demandingness of others were represented in the Bora et al. study by the factor, Demandingness. It is not clear why two aspects of demandingness were obtained in the present study with an Australian sample but not with a sample of teachers from Romania.

It appears that more experienced teachers less strongly endorse irrational beliefs than teachers with little teaching experience though differences while statistically significant do not appear to be dramatically different. It is not possible to say whether decreases in the endorsement of irrational beliefs with advanced teaching experience are due to teachers holding more irrational beliefs leaving the workforce at an early age or whether beliefs change with maturity and experience.

The results of Study One confirm previous research summarized in the introduction to this paper that psychological factors are associated with teacher stress. Previous research has found variables associated with “self” (self-efficacy, self-confidence, perceptions of self-competence) correlate with teacher stress. Study One highlights another aspect of this dimension, Self-downing; namely, the tendency to make rigid demands of oneself for achievement and approval and to take personally lack of achievement and criticism. Factor 2, Authoritarian beliefs, has been linked to teaching being perceived as stressful (e.g., Harris et al. 1985). Joyce (1988) found that attitudes associated with Low Frustration Tolerance (Factor 4) correlated with a variety of measures of emotional stress of parents. Joyce also found that a scale measuring parental demandingness beliefs correlated with measures of parental anxiety and well-being.

Ellis’ hypothesis that Demands for Justice are associated with significant emotional distress appear to be born out in the findings of Study One which found a significant correlation of this subscale with stress due to problems with school administration.

The low sub-scale correlations amongst the four factors suggest a number of things. “Demandingness” as an absolute may exist when a teacher considers one aspect of his/her job (consideration, consultation) but need not co-exist with demandingness when a teacher evaluates another aspect of his/her job (student behavior, respect, control). It would appear that “Self-downing” is a more general disposition that characterizes the way a teacher evaluates diverse job contexts that involve self-perceived criticism or disapproval from others and/or work inadequacies. This finding is consistent with the factor structure and interpretation of the *Child and Adolescent Scale of Irrationality* (Bernard and Cronan 1999). Additionally, the lower sub-scale correlations alert practitioners to not assume that a teacher who endorses one element of irrational beliefs endorses them all.

The four factors, which represent different aspects of the irrational beliefs of teachers, may account for some of the individual differences in stress reactions of teachers working within the same educational environment. These findings suggest that teacher belief systems need to be considered in understanding the etiology and phenomenology of stress and when conducting stress management programs based, in part, on REBT.

Study 2

Method

Subjects

Sample 1 150 questionnaires were distributed to teachers at the beginning of a curriculum, in-service day at their respective schools. 140 were returned fully completed. The final composition of the 140 teachers in Sample 1 consisted of: 50 males, 90 females; 58 teaching in public schools, 20 teaching in technical high schools, 62 teaching in private schools; 79 elementary teachers and 61 secondary teachers. Teaching experience ranged from 0 to 32 years with 7 years representing the average.

Sample 2 The author of this research was invited to conduct a 1-day, in-service, stress management program for a group of 26 teachers who had retired from teaching in the past 12 months because of stress and who wanted to return to teaching. All 26 teachers were participating in a state government program, which provides workers with financial and rehabilitative support for forced retirements due to work-related causes or injury. At the beginning of the day, all 26 teachers completed the questionnaires described below. Demographic characteristics of the group were as follows: 11 males, 15 females; 20 taught in public schools, 6 in technical high schools; 15 elementary teachers, 11 high school teachers. Their teaching experience ranged from 5 to 32 years with 8 years representing the average.

Measures

Assessment of Teacher Irrational Beliefs The revised 25-item Teacher Irrational Belief Scale (see Table 1) described in Study 1 was employed in this second study.

Assessment of Teacher Stress The sample single-item question format with a five-point response scale (1 = "not stressful"; 5 = "extremely stressful") was employed in this study as was used in Study 1. Teachers were asked to indicate the extent to which they viewed the following seven problem areas as stressful: (a) classroom management; (b) poor student academic performance; (c) lack of student motivation/interest; (d) helping students with special needs; (e) time and workload pressures, (f) problems with school administration; (g) changes. Question eight read: "Taken all together, over the past few months how stressful have you found your job?"

Results

Sample 1: Teacher Irrational Beliefs and Teacher Stress

Table 4a, b present the correlations for male and female teachers in Sample 1 between irrational beliefs and stress associated with different teaching stressors. For

Table 4 Correlations between (a) male and (b) female teachers' irrational beliefs and stress (n = 50): Study 2

Demand stressor	Total irrational	Self-downing	Authoritarian	Demand for Justice	Low Frustration Tolerance
(a)					
Classroom discipline	.33	.31	.30	.24	.07
Poor student performance	.22	.40	.21	.06	-.11
Poor student motivation	.27	.24	.28	.09	.08
Special needs students	.37	.34	.25	.16	.33
Time/work pressures	.32	.05	.25	.14	.45
School admin. problems	.24	.04	.14	.48	.12
Change	.45	.25	.28	.43	.33
Total stress	.49	.34	.30	.35	.43
(b)					
Classroom discipline	.32	.18	.38	.13	.13
Poor student performance	.04	.10	.01	-.15	-.13
Poor student motivation	.15	.17	.11	.11	.02
Special needs students	.37	.27	.22	.21	.36
Time/work pressures	.45	.18	.32	.40	.47
School admin. problems	.09	.09	.05	.20	.20
Change	.23	.05	.19	.18	.27
Total stress	.42	.30	.32	.17	.38

Correlations above .30 significant at $p < .01$

males, total irrational beliefs correlated .49 with total stress (item 8). Self-downing correlated most strongly with classroom management stressors (.31) and poor academic performance (.40), Authoritarianism correlated with stress due to classroom management problems. Demands for Justice correlated .48 with stress due to problems with school administration and .43 with stress due to change. Low Frustration Tolerance correlated most strongly with time and workload pressures (.45) followed by the stress associated with students with special needs (.33) and change (.33).

For female teachers, Total Irrational Beliefs correlated .42 with Total Stress. Self-downing correlated most strongly with Total Stress. As was anticipated, Authoritarian beliefs correlated with stress due to classroom management problems (.38) as well as with stress due to time and workload pressures (.32). Demands for Justice correlated with stress due to time and workload pressures (.40). Beliefs reflecting Low Frustration Tolerance correlated .36 with stress due to working with students with special needs and .47 with time and workload pressures.

Sample 2: Teacher Stress and Teacher Irrational Beliefs

Before comparing the sample of stressed teachers retired from teaching (Sample 2) with teachers still teaching in the regular classroom (Sample 1) in their endorsement

of irrational beliefs, a MANOVA found that teachers in Sample 2 experienced different teaching stressors as more stressful than teachers in Sample 1, $F(8, 157) = 9.46$, $p < .001$ (see Table 5). One-way ANOVAs revealed that with the exception of classroom management problems, teachers in Sample 2 (stressed teachers) found poor student performance, lack of student motivation, helping students with special needs, time and workload pressures, problems with school administration, and changes, more stressful as well as reported higher levels of Total Stress than teachers in Sample 1 who were still teaching (all ANOVAs significant with $df = 1, 164$, $p < .001$).

A MANOVA revealed that teachers in Sample 2 scored significantly higher on the Teacher Irrational Belief Scale than teachers in Sample 1, $F(4, 161) = 161.00$, $p < .001$ (see Table 6). Univariate tests revealed “stressed” teachers more strongly endorsed irrational beliefs associated with Self-downing, $F(1, 164) = 15.07$, $p < .001$, and Low Frustration Tolerance, $F(1, 164) = 10.46$, $p < .001$. No significant differences were obtained between the two samples on the Demands for Justice and Authoritarian subscales.

Discussion

The results from Study 2 confirm the association between the irrational beliefs of teachers and teacher stress. Differences in correlations between the irrational beliefs of male and female teachers with the intensity of the stress they experienced when confronted with different teaching stressors were minimal contradicting some

Table 5 Stressed retired teachers versus teachers still teaching: amount of stress experienced

Teaching stressors		Stressed retired teachers (n = 26)	Teachers still teaching (n = 140)
Classroom discipline	M	3.46	3.11
	SD	(1.27)	(1.18)
Poor student performance	M	3.04*	2.45
	SD	(.91)	(.97)
Poor student motivation	M	3.84*	2.89
	SD	(.94)	(1.16)
Special needs/problems	M	3.34*	2.39
	SD	(1.32)	(1.12)
Time/work pressures	M	4.30*	3.46
	SD	(.97)	(1.25)
School administration	M	3.73*	2.52
	SD	(1.18)	(1.27)
Changes	M	3.61*	2.39
	SD	(1.16)	(1.24)
Total stress	M	4.69*	2.81
	SD	(.73)	(1.15)

Stress ratings go from 1 = not stressful to 5 = extremely stressful; significant at $p < .01$

Table 6 Stressed, retired teachers versus teachers still teaching: Irrational beliefs

Teacher irrational beliefs		Stressed retired teachers (n = 26)	Teachers still teaching (n = 140)
Self-downing	M	24.04*	20.15
	SD	(6.80)	(4.19)
Authoritarianism	M	25.77	25.30
	SD	(4.90)	(5.33)
Demands for Justice	M	19.76	19.00
	SD	(3.30)	(2.95)
Low Frustration Tolerance	M	12.61*	9.77
	SD	(3.68)	(3.04)
Total irrational beliefs	M	82.19*	74.22
	SD	(14.12)	(10.96)

* $p < .001$

research which has shown sex differences as an important psychosocial factor that interacts with stressors to affect an individual's burnout (e.g., Kiviet 2003). The main exception was for Self-downing beliefs, which may more strongly influence stress occasioned by classroom management problems and poor student academic performance for male than for female teachers. Consistent with previous research, the results confirm that the stronger the endorsement of irrational beliefs associated with teaching, the greater the stress of teaching (e.g., Bermejo-Toro and Prieto-Ursúa 2006; Popov and Popov 2015).

The results from the sample of teachers retired from teaching due to stress add not only to the convergent validity of the Teacher Irrational Belief Scale, but to our understanding as to the identity of the irrational beliefs which lead to the individual teacher not be able to tolerate working conditions. Consistent with previous research (e.g., Popov and Popov 2015) Low Frustration Tolerances appear to be a key feature of teacher irrational beliefs along with Self-downing which results in extreme stress. While results from Study 1 have shown a relationship for all teachers between authoritarian beliefs and stress due to classroom discipline problems as well as an association between Demands for Justice and stress occasioned by problems with school administration, these two beliefs which involve demands on others (students, school) do not appear to produce the type of excessive stress experienced by the stressed teachers (Sample 2) in this study.

A new finding obtained in this study is the identification of teacher attitudes towards the frustration and hassles of work (Low Frustration Tolerance), rather than the repetitiveness of the events themselves (Schonfeld 1990), which mediate teacher stress. Further investigation will need to be undertaken to examine the extent to which teachers who endorse beliefs associated with Low Frustration Tolerance are teaching in particularly frustrating circumstances relative to teachers who have low endorsement of these beliefs.

From a REBT perspective, it would appear that it is a teacher's tendency to take bad things which happen at school personally as well as the tendency to blow the unpleasantness of time and workload pressures out of proportion mediates high levels of stress. Authoritarian attitudes as those associated with Demands for Justice may well influence the degree of stress experienced; however, given the equivalence in their endorsement by teachers who retired from teaching with those teachers still teaching, these two irrational beliefs may not be the ones which are associated with debilitating levels of teacher stress. The generalizability of these results based on the responses of Australian teachers will, of course, need to be replicated on other samples of teachers from different countries to further validate REBT's hypotheses concerning irrational beliefs and stress.

A major limitation of these findings is that they are based on self-report data. Additional types of data collection methods (e.g., interview; behavioral rating of others; days absent from school due to stress) would further confirm the relationship of irrational beliefs and teacher stress.

Implications for Practice

School-based psychologists, counselors and special educators are becoming more involved at the level of consultation (e.g., Lee and Niileksela 2014) and are taking a more active role in the delivery of stress management programs for teachers (e.g., Herman and Reinke 2014) and cognitive-behavioral programs in particular (e.g., Terjesen and Kurasaki 2009).

The present research highlights a key area of concentration for consultants offering stress management programs for teachers. It is clear that highly stressed teachers have unhelpful ways of thinking about themselves. As well, stress-prone teachers hold beliefs about the high work demands they experience (hours of teaching, preparation, corrections, meetings and general paperwork) which are concomitant with high stress and which may significantly exacerbate stress.

Consultants who concern themselves with teacher stress may wish to consider targeting the irrational beliefs of teachers for modification. REBT does offer teachers one means for learning emotional self-management strategies.

Mentors of beginning teachers can assist in helping novice teachers to maintain perspective, not take things personally, come prepared with a mindset of high frustration tolerance and to be aware of the negative impact of demandingness. Helping teachers develop a rational mindset (self-acceptance, acceptance of others, high frustration tolerance) for preparing for and dealing with on-the-job adversity offers the promise of reducing teacher stress, burnout and departures as well as strengthening hardiness, efficacy, self-concept and resilience, and, ultimately, to great teacher satisfaction and effectiveness.

Compliance with Ethical Standards

Conflict of interest The author declares that he has no conflict of interest.

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