



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Research Commons

<http://researchcommons.waikato.ac.nz/>

Research Commons at the University of Waikato

Copyright Statement:

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

The thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of the thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from the thesis.

**Investigating the effects of an online ACT program on psychological
flexibility, stress, and burnout rates among teachers**

A thesis

submitted in partial fulfilment
of the requirements for the degree

of

Master of Applied Psychology

at

The University of Waikato

by

Bernice Maryna Botha



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2021

Abstract

Teacher stress and burnout is a growing concern, which has been globally associated with high attrition rates and student outcomes. Research over the last few decades has sought to understand organisational and personal factors that contribute to burnout to explore and identify solutions to the problem of burnout. The current study investigated the effects of an online Acceptance and Commitment Therapy based (ACT) programme, Psyflex6 6, on psychological flexibility and the level of burnout among a sample of teachers in Australia. The results from between group and within group comparisons of an Experimental Group and Control Group (N = 6 and N =9, respectively) indicated that whilst not statistically significant, the Intervention Group experienced an increase in psychological flexibility, a decrease in psychological inflexibility, and a decrease in the level of burnout. It is possible that a larger sample may increase the statistical power to the findings and supporting the use of a self-administered online ACT intervention a possible approach to reduce burnout among teachers.

Acknowledgment

This journey would not have been possible without the support of many individuals along the way. Personally, and professionally, this has been one of the toughest projects I have ever undertaken in a year filled with its share of obstacles and challenges.

First and foremost, I would like to extend my sincere gratitude to Dr Timothy Edwards. Thank you for your expert guidance, patience, and constant support throughout the completion of this thesis.

I would like to acknowledge Dr Natasha Lazareski, for your generosity in providing me access to the Psyflex6 programme without which this study would not have been possible at all. I would also like to thank you for your support and encouragement offered through many a frustration.

I would like to express my sincere appreciation to every participant who willingly volunteered time and effort to contribute to the completion of this project. No research is possible without willing volunteers.

From the bottom of my heart, I would like to thank my family. To my aunty Aldine and uncle Raymond, I want you to know that without you, this accomplishment would not have been possible. You have supported me in ways that extend beyond the boundaries of love, and I will forever be grateful for the role you play in my life. To my beautiful children, thank you for your patience, kindness, and encouragement. Few mothers have the privilege of sharing an academic journey with their children. There is something special about receiving a brutally honest reflection of your design flaws and refresher on basic statistics from your very own teenagers! Thank you for understanding all the weekends and hours spent reading and typing, and thank you for knowing when I needed a hug or baked goods. I feel blessed to call you, my children.

The last word of thanks and gratitude goes to my loving and supportive husband, Mornè. You have been on this journey with me from day one. You have experienced every up and down, every barrier, every frustration, and every moment of joy with me. You have dried my tears (literally), held my hand, and cheered me on even when I wanted to quit. Thank you for the late

nights and early mornings. Thank you for being my sounding board, cheerleader, proof-reader and everything in between. Most importantly, thank you for being my rock and for believing in me even in the times I don't.

Table of Contents

| | |
|--|-----|
| Abstract..... | ii |
| Acknowledgment..... | iii |
| List of Figures..... | ix |
| List of Appendices..... | x |
| Investigating the effects of an online ACT program on psychological flexibility, stress, and burnout rates among teachers..... | 1 |
| Literature Review..... | 2 |
| Stress & Burnout..... | 2 |
| Burnout..... | 4 |
| Cherniss’ Model of Burnout..... | 4 |
| Conservation of Resources Theory..... | 5 |
| Job Demands Resources Model..... | 6 |
| Maslach AW Model..... | 7 |
| Teacher Burnout..... | 8 |
| Impact of Teacher Burnout..... | 11 |
| Coping Strategies..... | 12 |
| Interventions..... | 13 |
| Acceptance and Commitment Therapy..... | 14 |
| Defusion..... | 17 |
| Acceptance..... | 18 |
| Contact with the present moment..... | 18 |
| Values..... | 19 |
| Committed Action..... | 19 |

| | |
|---|----|
| Effectiveness of ACT as an Intervention | 20 |
| The Effectiveness of Online Interventions | 21 |
| Current Study..... | 22 |
| Method | 23 |
| Participants..... | 23 |
| Materials..... | 25 |
| Measures | 26 |
| Copenhagen Burnout Inventory (CBI)..... | 28 |
| Perceived Stress Scale (PSS)..... | 28 |
| The Automatic Thoughts Questionnaire (ATQ) | 28 |
| Multidimensional Psychological Flexibility Inventory (MPFI) | 28 |
| Work-related Acceptance and Action Questionnaire (WAAQ)..... | 29 |
| Research Design..... | 30 |
| Procedure | 30 |
| Data Analysis | 31 |
| Results | 33 |
| Measure Scores (Pre, Post and Follow-Up)..... | 33 |
| Burnout as measured by Copenhagen Burnout Inventory | 34 |
| Flexibility as measured by Multidimensional Flexibility Inventory (MPFI) | 36 |
| Inflexibility as measured by Multidimensional Flexibility Inventory (MPFI) | 39 |
| Perceived Stress Results as measured by the Perceived Stress Scale (PSS) | 41 |
| Results as measured by the Automatic Thoughts Questionnaire – Degree of Belief (ATQ-B)..... | 43 |
| Results as measured by the Automatic Thoughts Questionnaire – Degree of Frequency (ATQ-F | 46 |

| | |
|---|----|
| Results as measured by the Work-related Acceptance & Action Questionnaire (WAAQ)..... | 48 |
| Discussion | 51 |
| Limitations..... | 53 |
| Conclusion..... | 56 |
| References | 57 |

List of Tables

| | |
|---|----|
| Table 1 Summary of demographic details of participants..... | 24 |
| Table 2 Summary of measures used..... | 27 |
| Table 3 Recruitment of Participants & Group Distribution | 32 |
| Table 4 Number of participants (N), Mean (M) and Standard Deviation (SD) of group scores for both Control and Experimental groups..... | 33 |
| Table 5 Results of Paired-Samples t-tests on the within group differences for Experimental and Control Groups – MPFI Flexibility | 38 |
| Table 6 Results of Paired-Samples t-tests on the within group differences for Experimental and Control Groups – Perceived Stress Scale..... | 42 |
| Table 7 Results of Paired-Samples t-tests on the within group differences for Experimental and Control Groups – Automatic Thoughts Questionnaire (ATQ-B)..... | 45 |
| Table 8 Results of Paired-Samples t-tests on the within group differences for Experimental and Control Groups – Work-related Acceptance and Action Questionnaire | 50 |

List of Figures

| | |
|--|----|
| FIGURE 1 A MODEL OF TEACHER STRESS <i>A MODEL OF TEACHER STRESS</i> | 3 |
| FIGURE 2 CHERNISS' MODEL OF BURNOUT..... | 5 |
| FIGURE 3 CONSERVATION OF RESOURCES MODEL (COR) | 6 |
| FIGURE 4 JOB DEMANDS MODEL OF BURNOUT | 7 |
| FIGURE 5 MASLACH AW MODEL | 8 |
| FIGURE 6 ACCEPTANCE AND COMMITMENT THERAPY HEXAFLEX | 17 |
| FIGURE 7 COPENHAGEN BURNOUT INVENTORY MEAN RESULTS..... | 35 |
| FIGURE 8 MULTIDIMENSIONAL PSYCHOLOGICAL FLEXIBILITY INVENTORY RESULTS - FLEXIBILITY..... | 37 |
| FIGURE 9 MULTIDIMENSIONAL PSYCHOLOGICAL FLEXIBILITY INVENTORY RESULTS - INFLEXIBILITY . | 40 |
| FIGURE 10 PERCEIVED STRESS SCALE RESULTS | 41 |
| FIGURE 11 AUTOMATIC THOUGHTS QUESTIONNAIRE RESULTS: ATQ-B | 44 |
| FIGURE 12 AUTOMATIC THOUGHTS QUESTIONNAIRE RESULTS: ATQ-F..... | 47 |
| FIGURE 13 WORK-RELATED ACCEPTANCE & ACTION QUESTIONNAIRE RESULTS..... | 49 |

List of Appendices

| | |
|---|----|
| APPENDIX A - PARTICIPANT INFORMATION SHEET | 74 |
| APPENDIX B CONSENT FORM | 76 |
| APPENDIX C COPENHAGEN BURNOUT INVENTORY | 77 |
| APPENDIX D PERCEIVED STRESS SCALE | 79 |
| APPENDIX E AUTOMATIC THOUGHTS QUESTIONNAIRE | 80 |
| APPENDIX F MULTIDIMENSIONAL PSYCHOLOGICAL FLEXIBILITY INVENTORY | 81 |
| APPENDIX G WORK-RELATED ACCEPTANCE AND ACTION QUESTIONNAIRE | 82 |

Investigating the effects of an online ACT program on psychological flexibility, stress, and burnout rates among teachers

The incidence of teacher stress and burnout has caused serious concern in Australia. Based on data collected in a decade-old study by the Organisation for Economic Cooperation and Development (OECD), it is estimated that up to 30% of Australian teachers leave their careers within the first five years (OECD, 2005). In a more recent publication, the estimates of early career attrition rates range from 8% to 50% (Queensland College of Teachers, 2013). Globally, teaching has been identified as a career that is perceived as rewarding but increasingly stressful over recent years (Franco et al., 2010). Studies done in the 1980s in the state of Victoria identified around 160 teachers per annum superannuated due to ill-health: two thirds due to psychological ill-health and one tenth because of stress-related illness. A study completed in Western Australia (1987) found up to 30 % of 2,138 teacher respondents reported experiencing psychological distress, whilst a collaborative study completed by the Independent Education Union in New South Wales and Victoria in 1996 reported serious levels of stress, anxiety, and feelings of powerlessness (Howard & Johnson, 2004). O' Brien et al. (2007) interviewed 98 participants in their second year of teaching and found a correlation between beginner teacher burnout and serious intention to leave. These findings echoed similar investigations into an association between burnout and turnover intention in teachers at the start of their careers (Goddard & O'Brien, 2003; Goddard & Goddard, 2006) and is supported by a more recent meta-analysis by Madigan and Kim (2021), which demonstrated high correlation between burnout and intention to quit, following the analysis of 24 studies. Studies into teacher stress and burnout continue to emphasize the importance of changes required on a systemic and personal level to address teacher attrition and burnout (Madigan & Kim, 2021; O'Brien et al. 2007, Goddard & O'Brien, 2003; Goddard & Goddard, 2006) whilst research on effective interventions remain sparse.

Literature Review

Stress & Burnout

Selye (1936) defined stress as a non-specific outcome (either physical or psychological) to any demand made of an organism. Beehr and Franz (1987, p6.), noted stress “has commonly been defined in one of three ways: as an environmental stimulus often described as a force applied to the individual, as an individual’s psychological or physical response to such an environmental force or as the interaction between these two events”.

To date many studies have been conducted with the goal of establishing a workable ‘stress model’. Whitehead (2001) pointed to three general perspectives on stress, the first involves stress being viewed as a product of external factors; the second acknowledging the role of internal factors, also known as ‘private events’, and the interpretation of ‘what is going on’ in the culmination of stress; and the third being the transactional view of Lazarus with an emphasis on cognitive processes and emotional reactions to the environment. Whilst there is support for stress to be viewed as a stimulus model, or response model, there are limitations to these perspectives, and the most accepted definition of stress lies with the transactional model as defined by Lazarus and Folkman (Weber, 2001; Obbarius et al., 2021).

The concept of teacher stress has been studied since the late 1970’s. Kyriacou & Sutcliffe, (1978) proposed a teacher stress model that incorporates previous models and understandings of stress. In this model, a distinction is made between potential occupational stressors, such as workload, and environmental factors (Figure 1, Box 1) and actual occupational stressors, (Figure 1, Box 3). It is proposed that potential stressors would only result in teacher stress (Figure 1, Box 5) if there is a perceived threat to self-esteem or wellbeing (Figure 1, Box 2). According to Beehr and Franz (1976), this appraisal may occur in one of two ways, the first when the demands outweigh teacher efficacy and the second because of a conflict between demands and higher order needs.

Figure 1 A Model of Teacher Stress

A Model of Teacher Stress

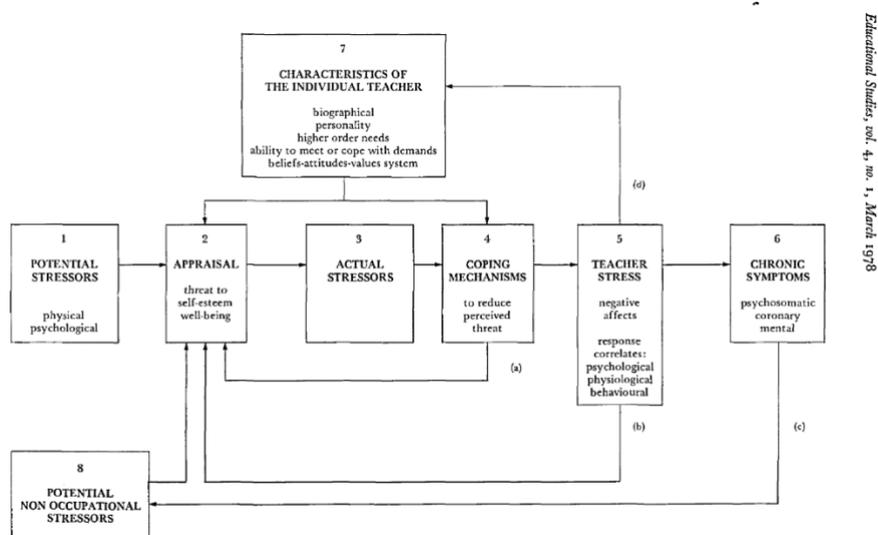


FIGURE 1. A model of teacher stress.

Note: A model of teacher stress produced by Kyriacou (1978). From “A Model of Teacher Stress” by C Kyriacou & J Sutcliffe, 1978, *Educational Studies*, 48(1), p 3. Used with permission.

Kyriacou (1978), suggests the appraisal of demands made by a teacher will be dependent on interaction between individual characteristics (Figure 1, Box 7), (which may include biographical details (e.g., sex, age, teaching experience), personality traits (e.g., anxiety proneness, flexibility/rigidity), higher order needs (e.g. self-actualisation), ability to meet demands, and a values system), and the perceived demands and perceived ability to meet the perceived demands. Provision is also made for the impact of non-occupational stressors (Figure 1, Box. 8) which may include personal events or “ill health”.

Kyriacou (1987) summarises teacher stress as the experience of unpleasant emotions which may include but are not limited to frustration, anger and depression resulting from appraisal of work-related demands. According to Kyriacou (2011), wellbeing is a complex notion that includes a teacher’s perceptions pertaining to their identity and self-esteem. Kyriacou (2011) places emphasis on the role of perception in the experience of stress, whether it be perception about demand and performance expectations, perception

relating to self-esteem or even perception of role and career expectations with attention drawn to early career expectation and intention to leave (Day & Qing, 2009; Kyriacou, 2007).

Burnout

Teacher stress and burnout, despite being closely related are two different concepts. Burnout as a concept has been researched for well over 40 years, with the earliest research accounts dating back to 1974. Freudenberger described burnout as a “feelings of failure and being worn or wrung out, resulting from an overload of claims on energy, on personal resources or on the spiritual strength of the worker”, (Manzao-Garcia, 2013, p 801). Several ‘models’ of burnout have since evolved in an attempt at explaining burnout and its causes to better define and treat the phenomenon that is burnout.

Cherniss’ Model of Burnout

According to Burke et al. (1984), Cherniss defined burnout as negative personal changes in helping professionals as the result of working in frustrating or demanding jobs. Cherniss developed one of the earliest theories about the developmental trajectory of burnout from interviewing human services professionals. Cherniss’ model proposes burnout occurs because of increased distress caused by dealing inadequately with stress and by developing negative attitudes as a habitual pattern over a period. As shown in Figure 2, Cherniss’ model proposes three panels of variables affect burnout: work settings (orientation, workload, autonomy, and leadership), personal attributes (career orientation, personal demands, and sources of support outside of work), and sources of stress (doubts about competence, problems with client’s stimulation and fulfilment). Cherniss proposed intervention in four areas: staff development and counselling, job structure, leadership and supervision and organizational goals, policies, and procedures (Burke & Greenglass, 1989).

Figure 2 Cherniss' Model of Burnout

Cherniss' Model of Burnout

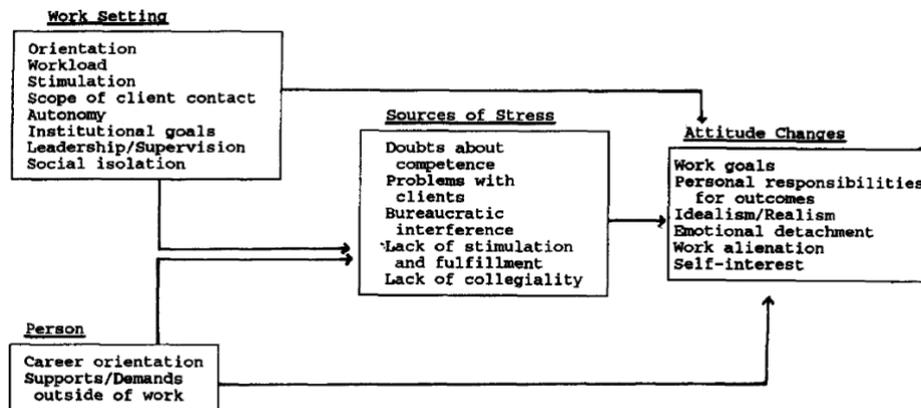


Fig. 1. Modified version of Cherniss process model of burnout.

Note: Modified version of Cherniss process model of burnout. From “A longitudinal examination of the Cherniss model of burnout” by R.J. Burke, and E.R. Greenglass, 1995, *Social Science & Medicine*, 48(10), p1358. Used with permission.

Conservation of Resources Theory

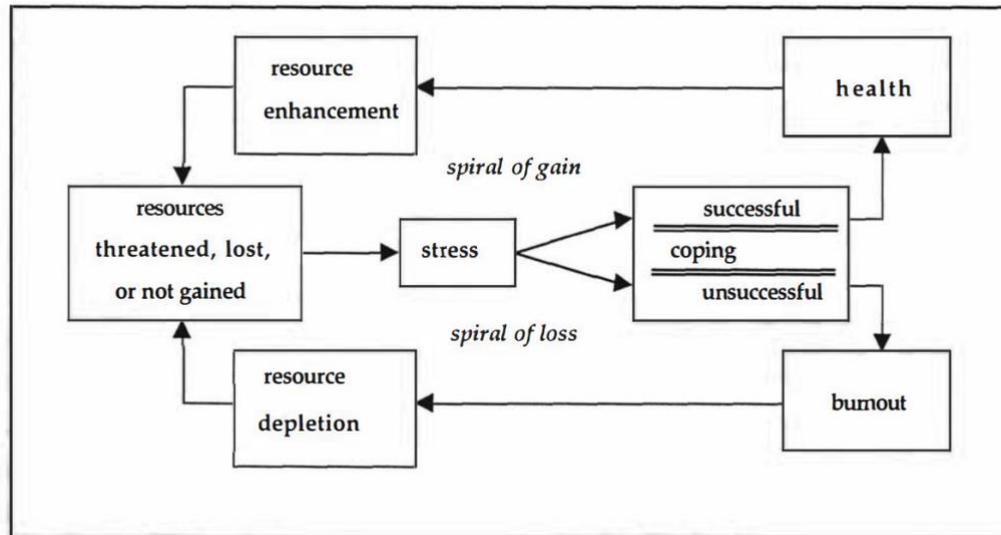
Conservation of Resources Theory claims that people strive to “obtain, retain, and protect that which they value” (Hobfoll & Lilly ., 1993, p 129). Hobfoll and Lilly (1993) went on to define four categories of resources deemed valuable by culture and society and proposed attempts to obtain these resources relate to psychological stress in one of three ways: when the resources are threatened, lost, or when an individual is unsuccessful in gaining resources following the investment of existing resources. Burnout in this model is depicted as the process of exhausting a person’s resources gradually over time (Hobfoll & Lilly., 1993).

This model has been adapted for research into teacher burnout as shown in Figure 3. The model emphasises the transactional nature of stress, conceptualising stress as a dynamic interaction between the individual and the environment with a focus on the causal link between perception and response as well as the general conditions under which work strain and burnout arise (Whitehead, 2001). According to this theory, teacher resources are grouped into four categories of resources: objects, conditions, personal, and

various forms of energy. When there is a real or perceived threat of loss of resources, stress is said to occur (Whitehead, 2001).

Figure 3 Conservation of Resources Model (COR)

Conservation of Resources Model (COR)



Note: Conservation of Resources (COR) Model of Burnout adapted for teacher stress, by A.J.

Whitehead, 2001, *Teacher Burnout: A study of occupational stress and burnout in New Zealand school teachers*. Massey University, Albany, New Zealand. Used with permission.

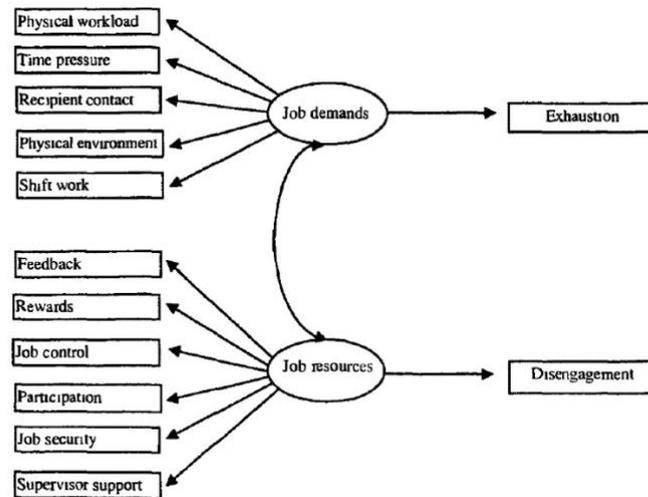
Job Demands Resources Model

This model, as shown in Figure 4, proposes that working conditions can be categorized into job demands and job resources. Job demands include the physical, social, or organisational aspects of one's work that require effort of a physical or psychological nature whereas job resources pertain to the physical, social, organisational, and psychological aspects that reduce to impact of the associated demands (Schaufeli & Bakker, 2004). Job demands correlate with the exhaustion component of burnout whilst a lack of job resources have a correlation to detachment and disengagement (Demerouti et al., 2001). Lorento et al. (2008) found a correlation between levels of burnout and teacher engagement in a study with 274 teachers

when measured against the JDR model and recommended future research on personality traits like perfectionism and “emotional instability”.

Figure 4 Job Demands Model of Burnout

Job Demands Resources Model of Burnout



Note: The job demands-resources model of burnout. From *Journal of Applied Psychology*, 2001 86(3) p502., by E. Demerouti, et al. Copyright American Psychological Association. Used with permission.

Maslach AW Model

Maslach and her colleagues pioneered the study of burnout. Maslach utilised a perspective considering the transactional relationship between environmental and individual factors and proposed burnout to be a chronic response to extreme pressures which consists of emotional exhaustion, depersonalisation, and feelings of low accomplishment (Maslach 1986).

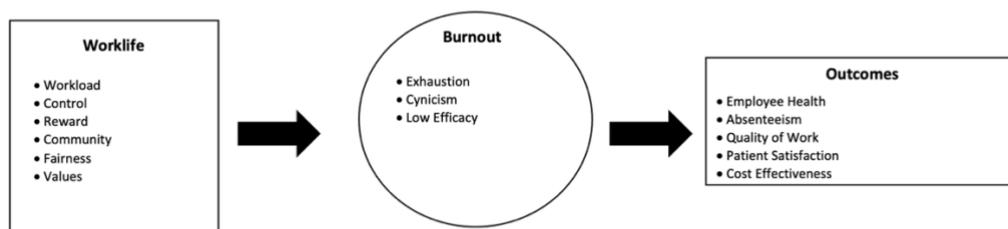
One theoretical perspective offered by Maslach and Leiter (2017), expanding on earlier work resulting in the MBI, is the work-life model of burnout (the AW Model). In this model burnout mediates the impact of job-related stressors on individual outcomes. The model identifies six key areas where person-job imbalances can occur: control, workload, reward, fairness, community, and values (Figure 5). The theory proposes that stressors affect the level of burnout experienced, which in turn affects the behavioural

outputs pertaining to areas of work, social and personal health, with a direct correlation between the perception of congruity/incongruity and the likelihood of work engagement vs. burnout.

To provide a contemporary integration of the concept of burnout, Manzano-Garcia (2013) explored the history and evolution of the burnout concept as well as different theoretical models related to 'burnout syndrome'. Manzano-Garcia (2013) concluded that there was consensus in the literature that burnout was a sequential process that occurred because of "unfulfilled expectations that generate demotivation" within the context of the simultaneous occurrence of personal and work stressors.

Figure 5 Maslach AW Model

Maslach - AW Model



The AW model of burnout

Maslach, C. (2017) Finding solutions to the problem of burnout. *Consulting Psychology Journal: Practice and Research*, 69(2), 143-152

Note. The AW Model of Burnout. From *Consulting Psychology Journal: Practice & Research*, 2017, 69, p.143 - 152., by C. Maslach. Copyright American Psychological Association. Used with permission.

Teacher Burnout

Teaching has been acknowledged as one of the most stressful and emotionally taxing professions in the world (Saloviita, 2021). Based on empirical research several factors are linked to teacher stress and burnout. These factors include individual/teacher and student characteristics, work, and organisational variables (Chang, 2009; Saloviita, 2021). Individual characteristics include age, gender, efficacy defined as teacher confidence in influencing student learning, teacher-student relatedness, and teacher attitudes towards students. Student characteristics include age, motivation, and support needs. Disruptive behaviour

has been identified as a serious work-related stressor in several studies as it contributes to feelings of defeat and lack of authority (Skaalvik & Skaalvik 2017; McCormick & Barnett, 2011). Work and organisational variables include workload, class and school size, access to resources and role clarity (Rajendran, 2020; Chang, 2009; Saloviita, 2021).

Brock (2000) described teacher burnout in several phases. During the first phase teachers will try to adapt to their situation but will report feeling high levels of job dissatisfaction. The second phase entails feelings of fatigue and exhaustion. At this point most teachers still report a love for the job and their students; however, there is an acknowledgment of the barriers perceived to be keeping them from accomplishing their goals. These barriers include several organisational factors and variables as described above. The final phase of teacher burnout is described by Brock (2000) as a distinct disparity between the perceived reality (what is experienced) and expectation of what should be experienced in the quality of teaching.

Addressing perception/appraisal, Chang (2009) introduced a third category of factors contributing to burnout, transactional factors which consist of attributions/judgements of misbehaviours, perceptions of leadership style, perceived support, self-efficacy, norms of student teacher interactions and internal rewards. Chang (2009) proceeded to analyse the inter- and intra-personal factors that could add to the experience of burnout, particularly with concern to the Emotional Exhaustion domain. Emotional Exhaustion which has been defined as the stress component of burnout (Steinhardt, 2011), is one of the core components of measuring burnout. Emotional Exhaustion refers to feelings of fatigue and exhaustion resulting from feeling overextended (Van Droogenbroek, 2021; Evers et al, 2004). Evidence has been found to support a relationship between Emotional Exhaustion and negative emotions (Carson, 2007; Keller et al., 2014).

Chang's research (2009) explored the relationship between unpleasant emotions and burnout by analysing why teachers feel emotionally exhausted and by identifying the triggers to unpleasant emotions. Chang (2002) concluded emotional exhaustion may be the result of intensive emotional work and labour required in teaching. This was supported in a study by Khajavy (2016), who also established a link between

motivation, emotions and burnout based on a study conducted with 326 Iranian EFL teachers in different language institutes. Results of the study indicated that both emotions and motivation predicted different dimensions of burnout, with an emphasis on the impact of emotions. Negative emotions such as anger, shame, and boredom were considered strong predictors of depersonalisation and reduced personal accomplishment.

As for the antecedents, Chang (2009) utilised appraisal theory which proposes emotions result as a product of the judgements of events and situations (Roseman & Smith, 2001). Within the appraisal theory framework several appraisals including goal congruence, goal conduciveness, coping potential (control), accountability and goal significance, have been referenced as potential antecedents to emotions (Frenzel et al., 2009). Frenzel et al. (2009) proposed a high correlation between emotions, coping potential and goal congruence. Low coping potential and goal incongruence have been attributed to the formation of anxiety.

In a study completed by Becker et al. (2015) to empirically investigate Frenzel's claim, support was found for the assumption that teacher-student interactions can be charged with positive emotions and offer emotional rewards. The study concluded that objective classroom conditions explained a small variance in teachers' experience of enjoyment and anger whilst interpretations and appraisals teachers had of classroom events had a larger effect on variance. Harmsen (2018) found negative pupil aspects and high psychological task demands were related to tension, discontent and negative emotions, with discontent cited as being strongly related to teacher attrition, whilst a correlation has also been established between higher levels of burnout and lower levels of social-emotional competence (Chan, 2006; Platsidou, 2010; Rey et al., 2016). Chang (2009) proposed by helping teachers become aware of, and to re-evaluate their appraisals, more effective emotion regulation could be facilitated. In addition, Chang (2009), suggested teachers should be encouraged to be curious about the origin of emotion before reflecting on the judgements and appraisals they make. Van Droogenbroek (2021) proposed transactional factors be distinguished from individual and organisational factors and that they reflect the experience and perception teachers have of aspects of their work environment. Based on an empirical study conducted by Van Droogenbroek (2021), it was concluded that while organisational factors might be important contributors to

burnout, the individual's perception, and response to stressors (individual and school level job demands and resources) may be the ultimate contributing factor in teacher burnout and stress.

Impact of Teacher Burnout

Saloviita (2020) argues there is a multi-dimensional impact to teacher burnout with effects on teachers' physical well-being, mental health, and job satisfaction as well as student achievement and adjustment. Maslach et al. (2001) argued emotional demands of work can exhaust a service provider's capacity to be involved and responsive to the recipients' needs. Burke et al. (1996) suggested teachers who experience higher levels of burnout tend to withdraw from student-teacher relationships which may result in difficulty with classroom and behaviour management as well as student motivation and performance. As noted elsewhere, this in turn serves to heighten teacher stress and contribute to burnout in a vicious never-ending cycle.

Maslach & Leiter (1997) suggested that burnout causes vocational and existential questioning as it directly impacts the values and hopes of individuals. In a study conducted by Schaufeli (2007), one result of the effects of burnout was inefficacy. Participants reported feeling ineffective and a perception of a lost sense of value in the job they perform. The loss of purpose and the loss of sight of values has a significant impact on teachers as there is a body of evidence supporting the importance of values in teaching as a career choice (Sahlberg, 2010; Skaalvik & Skaalvik, 2017; Barni et al; 2019., Fouchè et al; 2017).

The most visible impact of burnout remains the physical signs such as exhaustion, fatigue, headaches, lowered immune system, and insomnia (Freudenberger, 1974; Burke & Greenglass, 1996). Other physical manifestations such as accident proneness, change in eating habits and neck, shoulder, and back tension and pain have also been identified (Schaufeli, 1996, p324) and related to a suppression of emotions (Maslach 2003), which is considered as an avoidance coping strategy (Holahan et al., 2005).

The physical impact extends beyond affecting the individual to also influence organisational functioning in the form of high rates of absenteeism, and attrition (Howard & Johnson, 2004; Schonfeld, 2001; Rajendran, 2019; Mason & Matas, 2015). Côté (2002), in a longitudinal study, found a correlation between suppression of unpleasant emotions, job dissatisfaction and an intention to resign from the career.

Coping Strategies

According to Kyriacou (2011) coping strategies fall into two categories namely direct-action techniques and palliative techniques. Direct-action techniques are aimed at eliminating the sources of stress by identifying the source and then carrying out an action to eliminate this source of stress, which could be problematic if it is something reoccurring like student behaviour. In this instance direct-action may involve developing new skills or knowledge to deal with arising situations in a more productive way. However, if attempts at eliminating the source of stress are unsuccessful this adversely affects emotional response variables which has been found to have a high correlation to burnout (Montgomery & Rupp, 2005).

Montgomery and Rupp (2005) completed a meta-analytic review that suggested a correlation between teachers' appraisal of an event, and their ability to control their emotional responses, as to whether they manage a "challenging" event successfully. In addition to this, the review also found the choice of coping strategies and degree of success stressful situations were managed with, correlated with teachers' subjective perceptions of the quality of their environment and support available. Palliative techniques do not deal with the cause of the stress but rather attempts to lessen the emotional impact of the stress. Palliative strategies are often employed when stress triggers are perceived as irreversible, and can include avoidance behaviour, physical exercise, or positive reappraisal of said situation (Antonioni, 2003). Other examples of avoidance coping may include self-medicating and excessive alcohol use (Seidman & Zager, 2007). A correlation between high stress levels and negative coping strategies such as avoidance coping has been established (Antonio et al., 2013; Austin et al., 2005).

Research indicates that coping strategies may serve to mediate stress levels (Chaplain, 2003; Austin, 2005), however it was argued that direct coping strategies are more effective than emotion-focused coping strategies (Austin, 2005). Antonio et al. (2013) suggested avoidance coping strategies indicated burnout whilst problem solving abilities were associated with lower levels of burnout. Montgomery and Rupp (2005) referred to health posture, as coping positively with stress by using cognitive and emotional strategies to control the anxiety of the situation resulting in experiencing more self-control as well as a more positive physical response.

In a study conducted by Eldridge (2013), one of the overarching themes identified to facilitate a working definition of resilience from a teaching perspective was cognitive flexibility. Four different types of thought processes were attributed to this: (a) realistic role expectations which varied in definition between participants but generally maintained that challenges are part of the career and that they are not unique to the individual; (b) depersonalising stressful situations by seeking to understand reasons for another's challenging behaviour or by taking responsibility for a stress-causing situation and learning from it; (c) focussing on the positives which involved reflecting on the initial motivations that contributed to the career choice and noting instances in their daily work that supported these motivations and (d) reflective practice which focussed on reflecting and improving personal skills sets.

Interventions

A meta-analysis conducted by Iancu et al. (2018) investigated the effectiveness of interventions aimed at reducing burnout experienced by teachers. A final sample of 23 controlled trials reflected statistically significant effects in terms of effectiveness in several categories. Intervention approaches were categorised into cognitive behaviour therapy (CBT), mindfulness and relaxation, social-emotional skills, psycho-educational approaches, social support, and professional development. According to the meta-analysis (Iancu et al., 2018), CBT yielded inconsistent results when applied in educational settings. Two studies were compared, one of which indicated considerable change in depersonalisation and personal accomplishment results between treatment and control group (Cooley & Yovanoff, 1996) whilst the other study resulted in no between-group differences (Ebert et al. 2014). It should be noted that Ebert et al. (2014) implemented an internet-based study, and this may have had some impact on the results, as it is harder to ensure and gauge engagement with internet-based interventions. Studies involving social emotional skills and professional development approaches reflected varied results whilst the psychoeducational approach and social support approach studies indicated positive effects on emotional exhaustion and personal accomplishment factors of burnout (Iancu et al., 2018).

Interventions based on mindfulness and relaxation techniques indicated promising results in all studies compared (Flook et al., 2013; Roeser et al. 2013). Three change mechanisms were identified to

provide an explanation of the utility of mindfulness in reducing burnout. The first was developing awareness of the antecedents to the stress reaction through curiosity (e.g., What generates emotional responses and how can this be used to reduce stress?), the second was the development of awareness of the physiological response to stress, and the third and final, generating strategies to deal effectively with stress such as taking a break, deep breathing, and self-compassion. Faber (2000) acknowledged the benefits of stress reduction techniques; however, emphasized the importance of teachers needing to modify their appraisals to believe that they are at least partially successful at the job or receiving adequate rewards to renew commitment and involvement in the work.

Acceptance and Commitment Therapy

Traditional cognitive therapies suggest an individual's perception of their environment contributes to the shaping of their thoughts, feelings and behaviours and aims to address the perception in order to minimise the impact of these to achieve symptom reduction. Cognitive Behavioural Therapy (CBT), which is one of the most widely researched therapeutic modalities, specifically aims at addressing 'unhelpful cognitions/thoughts' by either searching for 'evidence against', or by balancing the thinking with a more helpful thought and encouraging problem solving strategies (Hayes et al., 2016).

Whilst there is empirical evidence supporting the effectiveness of this approach in the reduction of stress and burnout symptomatology (Richardson & Rothstein, 2008), it has been demonstrated to be cognitively demanding with mixed results recorded in the long-term effectiveness of CBT interventions (Ahola et al., 2017). It has been argued that thought suppression could be considered counterproductive as demonstrated in the famous 'white polar bear' study (Wegner et al., 1987) where participants were tasked to suppress thinking of white polar bears, resulting in an increase in the frequency of thinking of white polar bears.

Hayes et al. (1999) presented a different model of psychotherapy that challenges the foundations of CBT. Acceptance and Commitment Therapy (ACT) is a third wave therapy that was developed within functional contextualism, rooted in Skinner's radical behaviourism, and formalised in relational frame theory (Hayes, et al., 1999). Relational Frame Theory (RFT) is a behaviour analytic account of language and cognition

and provides a functional analytic explanation of human language and cognition as learned operant behaviours sensitive to context (Hayes, 2004). It expands on Skinner's theoretical analysis of verbal behaviour and describes the processes by which verbal rules function to influence human behaviour. Relational Frame Theory is based on the idea that human language (which is considered a behaviour) relies on the inter-relating of concepts. Blackledge (2003) identified three properties of relational frames: (1) mutual entailment – if an individual notices A leads to B, then A will be connected to B in his mind, but B will also be connected to A, (2) combinatorial entailment – if A is related to B, and B is related to C, then A is related to C and vice versa, (3) transformation of functions – if A and C are related and B which is related to either A and or C is introduced the relationship between A and C might change (e.g. a child associates the beach with fun; if one day the child is told going to a theme park is more fun than going to the beach, the theme park becomes more valuable as the functional relationship has now changed).

RFT researchers distinguish between two contextual features. Functional context and relational context. Relational context determines how and when events are related, and the functional context determines the function that will be transformed in terms of a relational network (Hayes 2016). For example, "Grapes are more expensive than strawberries" the words '*are more expensive*' function for the reader to establish a relational context of comparison between grapes and strawberries. When someone says: "Imagine the waves on the beach", the word '*imagine*' serves a functional context based on a frame of coordination between the waves and the beach. Functional contextualism assumes behaviour is shaped by the social and physical environments of an individual in an ongoing way. It emphasises context in the understanding of behaviour. The primary goal of functional contextualism is to provide theories and interventions that are based on observable and testable variables, rendering concepts like 'ego' and 'schema' redundant, and instead opting for concepts such as 'psychological flexibility' and 'acceptance' as "descriptors of behaviors or qualities of behaviour that can be observed and described" (Boone et al., 2015, p 645). Behavioural contextualism includes overt actions as well as private events such as thoughts, feelings, memories, and physical sensations (Boone et al. 2015).

ACT applies RFT to change the functions of our language and thinking patterns. ACT proposes that human suffering is a natural and unavoidable part of being human, however also suggests that some of the suffering we experience is unnecessary and self-inflicted in some ways. Experiential avoidance is one of the most well-known pathological processes that contributes to this. Experiential avoidance is behaviour that occurs when an individual attempts to escape, avoid or minimise the impact, form, or frequency of adversely experienced private events, even when these behaviours may be detrimental (Hayes, 2004; Costa & Pinto-Gouveia, 2013). Antoniou (2013) and Austin (2005) suggest palliative coping strategies are driven by experiential avoidance. In some situations, experiential avoidance can be a functional short-lived coping strategy with minimal impact, for example not showing anxiety in a job interview, or sitting through a boring conversation with a valued friend. However, experiential avoidance becomes a problem when it is rigidly and inflexibly applied to the extent that it consumes significant effort, energy, and time. Hayes et al (1999) propose that attempts at experiential avoidance contribute to psychopathology more than the intensity, frequency, and negative valence of the experiences would do.

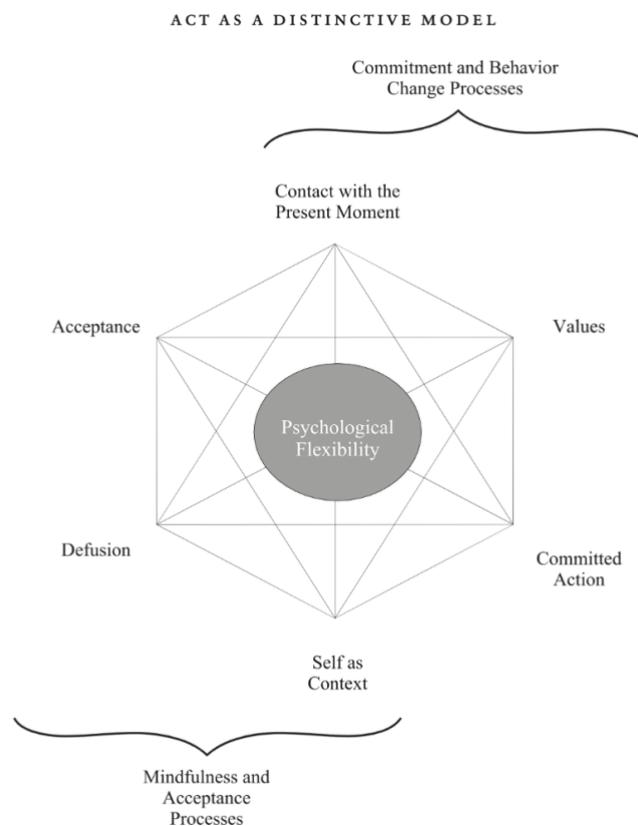
Rigidly attempting to avoid negatively evaluated private events (thoughts, feelings and/or bodily sensations) has been found to increase the frequency and distress of these same events (Gross, 2002) whilst interfering with engaging in meaningful life activities (Kashdan et al., 2006). Empirical evidence has been found in clinical and non-clinical samples specifically in the case of anxiety and depression (Forsyth, Parker, & Finlay 2003) which are commonly seen in the case of burnout (Devereux, Hastings & Noone, 2009).

Within ACT it is accepted that all human beings experience the full range of emotions, which at times will include pain and suffering, and other feelings that cause discomfort to varying extents from simply feeling uncomfortable to potentially disturbing panic attacks. There is no 'right' way to feel. The main goal of ACT is to increase psychological flexibility, which is defined as the ability to contact the present moment as a conscious human being, and to change or persist in behaviour in accordance with values-based contingencies through six core processes (Hayes et al, 2006, p7). These processes can be grouped into mindfulness and acceptance processes, and commitment and behaviour change processes (Figure 6). Fletcher and Hayes (2005) describe psychological flexibility as the ability to be fully present whilst being

aware of all thoughts and feelings experienced in that moment, including the negative, and remaining open to be accepting of the experiences as opposed to avoiding them, and then to finally commit to actions or behaviours consistent with one's values. In the workplace, psychological flexibility is associated with increased well-being, job satisfaction and performance as well as improved stress management (Bond & Bunce, 2000; Bond, Flaxman & Bunce, 2008).

Figure 6 Acceptance and Commitment Therapy Hexaflex

Acceptance and Commitment Therapy Hexaflex



Note. Psychological Flexibility as a model of human functioning and behaviour change. From *Acceptance and Commitment Therapy: The Process and Practice of Mindful Change* (2nd ed., p63), by Steven Hayes, 2016, The Guilford Press. Copyright 2016 by Steven C. Hayes. Used with permission.

Defusion

Fusion is considered a process whereby verbal stimuli exert dominance over behavioural regulation (Hayes et al., 2006). Simply stated, fusion can be understood as over-identifying with the mind. This can become an obstacle as it becomes hard to distinguish between the functions of the world and those

pertaining to thoughts and descriptions. In ACT it is not the thought that is the issue, but rather the avoidance resulting from fusing with the thought (Hayes et al., 2006). Defusion, which is considered one of the key purposes of ACT, aims to counteract fusion by altering the cues and contexts that support fusion (Hayes et al., 2006 p 71). One way of doing this is by becoming aware of the process of thinking without examining the veracity of the thoughts. Functional contextualism considers truth to be a pragmatic and contextual multidimensional concept shaped by events and provides an individual with a choice as to 'which truth to pursue.' In other words, to consider which two or more perceived realities aligns more with a preferred goal. This is also known as the pragmatic truth criterion which contributes to psychological flexibility from a 'workability' perspective. Rather than focus on how true a particular thought is, the focus is shifted to how 'helpful' the thought is in living in accordance with one's values (Boone et al. 2015).

Acceptance

Acceptance involves the willingness to actively experience private events with full awareness, without the need/attempt to change frequency, intensity, or form. In ACT, acceptance is not an end-goal, but rather part of the process to move toward values-guided action (Hayes et al., 2016; Hayes et al, 2017).

Contact with the present moment

Contact with the present moment can be facilitated through mindfulness exercises (Eifert & Forsyth, 2005) and involves bringing one's awareness fully to either the physical or psychological world (or both simultaneously) to pay attention to the 'here and now' experiences without judgement, regardless of whether they are pleasant or unpleasant (Harris, 2009).

Self as context

The conceptualised self is a direct result of verbal operant conditioning that starts in childhood. Individuals form a self-story based on historical experiences that are reinforced as facts. In ACT the conceptualised self is considered problematic from the perspective that it can interfere with psychological flexibility (Hayes, 2012, p 83-85). If an individual holds too rigidly to the idea that they are incompetent at their job, there is less probability of identifying parts they are good at or strengths that can be transferred to improve. The same can be said for self-stories that sound positive. 'If I am good at my job, or smart', little

room is left for failure as a normal part of day-to-day functioning. In ACT the goal with self as context is not to change the content of the story but the attachment to it, from an ‘observant’ self-perspective. In ACT, self as context is taught as an extension of mindfulness to expand the awareness of self as being greater than, or bigger than my internal experiences. Self as context provides opportunity to engage with what is valued without being restricted by content (Foody et al., 2015).

Values

In ACT, clients are encouraged to identify values and work toward a rich and meaningful life. Values are not goals or attainable things (Boone et al., 2015). They are not held as nouns either, instead they are better understood as verbs and adverbs describing the ideal way to be in the world. “Values are the answer to the question: ‘In a world where you could choose to have your life be about something, what would you choose?’” (Hayes et al, 2017, p. 29). Values are a focal point in times of experiencing distress or ‘negative’ emotions as individuals are encouraged to continuously make ‘towards moves’ based on the values important to them in the context at hand, be it work, personal relationships or other life domains.

Fouche et al. (2017) investigated antecedents and outcomes of meaningful work among teachers in South Africa. Meaningful work was considered to encompass positive/meaningful work relationships, a good fit between the individual and the organisations values and mission, task coherence and calling as a work belief. Whilst values as a concept has been explored in traditional psychology and CBT, none of the other theoretical models facilitate the measurement of values or manipulation of contextual variables to explore and produce values-consistent patterns of behaviour. ACT provides a ‘bottom up’ approach which allows for the measurement and manipulation of contextual variables to produce values consistent actions and ultimately contribute to a ‘meaningful life’ (Plumb et al., 2009).

Committed Action

In ACT committed action is about making choices to behave in ways that contribute to living a values-based life, no matter how large or small (Boone et al, 2015; Hayes et al 2017, p. 30). Any traditional evidenced-based intervention can be utilised in this stage of the model, such as goal setting, skills training, shaping, behavioural activation etc. (Harris, 2012 p. 11; Hayes et al 2017, p. 31).

Effectiveness of ACT as an Intervention

There is a growing amount of evidence demonstrating the effectiveness of ACT. Several meta-analytic and systematic reviews (Hayes et al, 2006; Powers et al., 2009; Hacker et al, 2015; Brown et al., 2016) indicated promising results in several areas related to mental health and wellbeing when comparing ACT-based interventions to control and other treatment groups. Powers et al. (2009) concluded after a comparison of 18 studies that ACT-based interventions outperformed control conditions (waitlist, psychological placebo, and treatment as usual) after treatment and at follow up. Studies suggested ACT has positive effects on symptom reduction of both clinical and non-clinical issues including but not limited to depression and anxiety (Forman et al., 2007; Zettle, 2015; Richardson & Bramwell, 2018), despite symptom reduction not being a specific aim of the ACT framework (Howell & Passmore, 2019).

The research on the effectiveness on an ACT-based approach to burnout is in its infancy; however, there is a growing body of evidence supporting the use of ACT approaches for the improvement of general and work-related distress (Frögeli et al., 2015; Prudenzi, 2021; Brinkborg et al., 2011; Moran, D; 2015). Frögeli et al. (2015) compared the results of a 6 x 2-hour program to treatment as usual (TAU) completed by 113 nursing students. Post-intervention results indicated increased mindful awareness and decreased experiential avoidance alongside a decrease in perceived stress and burnout. The results were sustained at the three-month follow up. It has been argued that ACT can be beneficial to prevent future health issues by targeting experiential avoidance and preventing some of the harmful consequences of stress (Brinkborg et al., 2011).

Whilst ACT has been relatively well researched in aspects of health, corporate and student wellbeing sectors, little research of the application of ACT has been done within the educational sector. In preparation for this research project, two studies utilising ACT in educational settings were identified. Emery (2011) examined the effects of a day-long ACT workshop on the stress and burnout levels of teachers in the United States. At three months follow up there was a significant decrease in the burnout levels for the experimental group and an increase in burnout levels for the control group. Gillard et al. (2020) delivered an adapted ACT programme to seven education leaders in 4 sessions. The focus remained on the main

components of ACT. A statistically significant change in reduction of work-related burnout symptoms and improvement in values awareness was reported following the training.

The Effectiveness of Online Interventions

Even before the COVID-19 pandemic there has been a growing preference among consumers to access interventions in the privacy and convenience of their daily lives (Lui, et al., 2017; Torous & Powell, 2015). With the pandemic came lockdowns and restrictions limiting access to face-to-face therapy which saw an increase in the need for technologically based support.

Emerging evidence suggests that therapeutic support and psychoeducation can be effectively delivered in web-based or app format to produce desired outcomes for many mental health symptoms, such as depressive symptoms, generalized anxiety symptoms, stress levels, and social anxiety type symptoms (Linardon, 2020; Stratton et al., 2017).

ACT-based programmes have been delivered successfully in online and app-based format. A meta-analysis completed by Brown et al. (2016) reviewed web-based applications of ACT for common mental disorders and found support for the web-based delivery of ACT for the management of depression and anxiety; the outcomes were supported by a subsequent meta-analysis of iACT which demonstrated maintained improvement of mental health outcomes across a range of conditions in adults (Thompson et al., 2020). The researchers could not find support pertaining to the effectiveness of improving quality of life; however, they stated that this was not a targeted focus for any of the studies considered.

In a previous study completed as part of a master's thesis dissertation, a group of behavioural therapists completed the Psyflex6 6 intervention. Psyflex6 is an Acceptance and Commitment Therapy (ACT) based program which is designed to be delivered over the course of six weeks. There are six modules which adhere to the six core processes of ACT and the aim of the programme is to increase psychological flexibility, and resilience whilst decreasing stress, burnout, and unconscious bias. The findings of the study demonstrated significant decreases in burnout and emotional exhaustion scores (Walker, 2017).

Current Study

Teacher attrition remains a global concern. Estimates indicate over 40% of trained teachers leave the profession during the first 5 years, whilst teachers at risk of leaving express strong job and work environment dissatisfaction (George et al, 2018). Rajendran et al. (2020) proposed personal demands should be examined in addition to the job demands within it based on the outcome of examining turnover intent among primary and secondary teachers under the scope of the job demands-resources (JD-R) model.

Teaching as a career choice has long been associated with values such as contribution, collaboration, and purpose (Whiteford et al., 2021; Fouche et al., 2017; Watt & Richardson, 2007).

An ACT-based approach could serve to address teacher stress and burnout in three ways: by increasing commitment to and maintaining values-based behaviours; by cultivating an improved awareness of one's internal and external environment through mindfulness, leading to deliberate response-related decision making; and by encouraging open-mindedness to experience the full spectrum of emotions, thus reducing experiential avoidance behaviours and the impacts of these behaviours.

This is the first study of its kind in Australia aiming to investigate the effects of an online ACT values-based intervention, Psyflex6, on the burnout levels and perceived stress of a teacher only sample.

Hypothesis 1: Total burnout is expected to decrease following the completion of the intervention.

Hypothesis 2: There is a correlation between avoidance/psychological inflexibility and burnout within a teaching population.

Hypothesis 3: Psychological flexibility is expected to increase following the completion of the intervention.

Method

Participants

The final sample utilised for the study consisted of 15 people from the educational sector. Table 1 describes the demographic details of the final sample of participants. The final sample consisted of four male and 11 female participants. All participants held a minimum bachelor's degree and 13 participants (86.6%) worked more than 20 hours per week. The remaining two participants (14.6%) worked 9-20 hours per week. All teachers were employed as either secondary, primary or specialist lesson staff at the time of the research. Participants' teaching experience varied between one and more than ten years, with nine participants (60%) having had more than ten years' experience at the time of the research project. Three participants (20%) had teaching experience of 6-10 years and three participants (20%) less than five years' experience. Thirteen participants (86.6%) acknowledged they had received some form of therapeutic intervention at some point during the programme. The inclusion criteria for the study were that the participants had to have access to a computer/tablet/smartphone to access the program online and that they had to be employed in the education sector working in a teaching capacity with children. This research was approved by the University of Waikato ALPSS Human Research Ethics Committee (#FS2020-64).

Table 1*Summary of demographic details of participant*

| ID | Gender | Age | Experience years | Hours Per Week | Qualification | Primary/ Secondary | Intervention Status |
|-----------|---------------|------------|-------------------------|-----------------------|----------------------|---------------------------|----------------------------|
| P01 | F | 46-55 | 1-5 | 20+ | Bachelor | Specialist | Completed |
| P02 | F | 36-45 | 1-5 | 20+ | Bachelor | Primary | Completed |
| P03 | F | 36-45 | 10+ | 9-20 | Bachelor | Specialist | Completed |
| P04 | F | 55-60 | 1-5 | 9-20 | Bachelor | Secondary | Completed |
| P05 | M | 46-55 | 6-10 | 20+ | Bachelor | Secondary | Completed |
| P06 | F | 26-35 | 6-10 | 20+ | Bachelor | Secondary | Completed |
| P07 | F | 36-45 | 10+ | 20+ | Bachelor | Secondary | Non-Complete |
| P08 | M | 46-55 | 10+ | 20+ | Bachelor | Secondary | Non-Complete |
| P09 | F | 26-35 | 6-10 | 20 | Bachelor | Secondary | Non-Complete |
| P10 | M | 46-55 | 10+ | 20+ | Bachelor | Specialist | Non-Complete |
| P11 | F | 46-55 | 10+ | 20+ | Bachelor | Secondary | Non-Complete |
| P12 | F | 26-35 | 10+ | 20+ | Bachelor | Primary | Non-Complete |
| P13 | F | 60+ | 10+ | 20+ | Masters | Specialist | Non-Complete |
| P15 | M | 46-55 | 10+ | 20+ | Bachelor | Secondary | Non-Complete |
| P16 | F | 55-60 | 10+ | 20+ | Bachelor | Primary | Non-Complete |

Materials

Information sheet. Every participant that indicated interest in the programme received an information sheet (Appendix 1). Participants who were addressed in person received a hardcopy and participants who were recruited electronically received an email copy. The information sheet contained information outlining the purpose of the study, the recruitment process, time requirements involved in participation (including completing the assessment measures), confidentiality and eligibility requirements.

Consent form. Each participant received a consent form to sign. The consent form confirmed receipt of the information sheet and acknowledged an opportunity to ask questions. The consent form also covered confidentiality and privacy matters.

Welcome email. Each participant received a welcome email with login details from the administrators of Psyflex6 programme.

Psyflex6 access. Participants who successfully completed the pre-programme measures were afforded access to the Psyflex6 online programme. The online programme has been designed to be self-paced and consists of videos presented by Dr Russ Harris, one of the creators and co-director of Psyflex6, and a workbook. The workbook is accessible in a format that is downloadable and printable with the purpose to support and reinforce what is introduced in the online modules. Each of the six modules of the workbook correlates with an online module and covers concepts as outlined below.

- **Module 1 – Introduction.** This module contains four videos totalling 25 minutes and provides an overview of psychological flexibility and resilience and an introduction to the choice point and mindfulness.
- **Module 2 –** This module consists of six videos that expands on the components of psychological flexibility. Mindfulness is explored in more detail and participants are introduced to ‘dropping anchor’, ‘being here and now’ and applying mindfulness practically to experience unpleasant situations and painful feelings without avoiding them.

- Module 3- This module continues to solidify 'unhooking' strategies and introduces defusion techniques which would be utilised to address unhelpful cognitions/stories. The total time commitment for these videos is 50 minutes.
- Module 4 – Introduces the concepts of values and goals and explores why clarification of values are important in ACT. The final of the five videos in this module demonstrates the practical application of values and goals. This module has a total of 5 videos that span across 35 minutes.
- Module 5 – This module contains four videos at 10 minutes each. It introduces a psychological resilience formula from a choice point perspective, explores values-guided goal setting and assesses the practical applications and evaluation of values-guided SMART (Specific, Measurable, Adaptive, Realistic, Time-framed) goals.
- Module 6 – The final module is about reflecting on the challenges and barriers at living in the moment and choosing to live a values-guided life. Six videos spanning 50 minutes explore concepts such as Acceptance vs Avoidance, 'Opening Up' and Kindness to Self and Others before a final reflection on the programme in the last video.

Measures

Participants were asked to complete 2 - 3 sets of measures at various stages throughout the programme. The measures were administered at pre-programme, post programme (at completion) and follow-up (two months post completion) for the experimental group; and for the control group, measures were administered at pre-programme and follow-up (approximately three months after pre-programme measures were completed). The measures were all administered via Qualtrics and could be completed on a laptop, tablet, or smartphone. A summary of these measures can be seen in Table 2.

Table 2*Summary of measures used*

| Measure | Abbreviation | Construct Measured |
|--|---------------------|--|
| Copenhagen Burnout Inventory | CBI | Burnout |
| Perceived Stress Scale | PSS | Perceived Stress |
| Automatic Thoughts Questionnaire | ATQ-F ATQ-B | Depressogenic Thoughts Frequency & Degree of Belief |
| Multidimensional Psychological Flexibility Inventory | MPFI | Psychological Flexibility Psychological Inflexibility |
| Work-related Acceptance Action Questionnaire | WAAQ | Psychological Flexibility |

Copenhagen Burnout Inventory (CBI)

The Copenhagen Burnout Inventory (CBI) was specifically developed for occupations within human service work and measures burnout on three scales: personal burnout, work-related burnout, and client-related burnout. The PUMA study (Kristensen et al., 2005) found the measure to have very high internal reliability (0.85-0.87) and full analyses indicate satisfactory reliability and validity. The CBI has been successfully adapted for use within the educational sector (Milfont et al., 2008; Ruiz et al, 2013; Sestili et al., 2018) and has demonstrated acceptable validity and reliability. Milfont et al. (2008) recorded a negative correlation between burnout and perceived general health and wellbeing.

Perceived Stress Scale (PSS)

This is a self-report measure that is used to assess the change in perceived stress. It is a measure with 10 items using a 5-point Likert scale ranging from 0 to 4. The total score is the sum of all items including four reverse scored items. A high score reflects a higher perceived stress level. The PSS has been noted to have good internal reliability (Cohen et al., 1983). In this research design a correlation is expected between perceived stress, psychological inflexibility, and overall burnout rates.

The Automatic Thoughts Questionnaire (ATQ)

The Automatic Thoughts Questionnaire (Hollon & Kendall, 1980), measures depressogenic thought frequency. The ATQ-30 scores were found to correlate significantly with the Beck Depression inventory and Minnesota Multiphasic Personality Inventory Depression scale (Harrel & Ryon, 1983). The ATQ has shown good internal consistency and reliability (Sahin & Sahin, 1992). The ATQ - B (Hayes, 1986) is a revision to the ATQ aimed at assessing the believability of thoughts. Scoring is measured by the sum score of sub-scales and have been shown to differentially relate to outcome (e.g., frequency of thought was not reduced post treatment whereas believability was).

Multidimensional Psychological Flexibility Inventory (MPFI)

The multidimensional psychological flexibility inventory is a more recently developed measure of the conceptualisation of psychological flexibility of Acceptance and Commitment Therapy. The measure has been developed to capture the six proposed underlying dimensions of psychological flexibility and introduces

six dimensions of psychological inflexibility. The original measure consists of 60 items; however, provision is made to shorten this by using the first two items in each dimension. Scoring is done on a Likert scale ranging from 1 to 6. The average of the two items informs the domain score for each of the sub-domain.

Only one study was found on the validity of the psychological flexibility component of the model (Landi et al., 2021). The model was determined to have good construct and discriminant validity in this domain. Seidler et al. (2020) suggested whilst the measure would benefit from further refining, it may provide capacity to inform treatment planning, evaluation or contribute to process-based research on therapy. This measure was selected to explore any correlation between burnout and experiential avoidance, and to investigate a correlation between psychological flexibility and perceived stress.

Work-related Acceptance and Action Questionnaire (WAAQ)

The Work-related Acceptance and Action Questionnaire was developed to assess psychological flexibility in an organisational context. Findings from 745 participants across three studies reflected a satisfactory reliability and construct validity (Bond & Lloyd, 2012). This measure has been translated and replication studies support these findings (Ruiz & Odriozola-González, 2014; Xu et al., 2018). Internal consistency ranged from 0.81 to 0.92 in five separate samples. Holmberg et al. (2019) in a study with 184 health professionals investigated and established a negative relationship between WAAQ and perceived stress as well as a correlation between work engagement and perceived stress. The instrument consists of seven items rated on a Likert scale from 1 - 7. Scores are calculated by the sum of the items, with higher scores indicating higher levels of psychological flexibility.

Research Design

This study used a group design, which included a control group and an experimental group. All potential participants were offered access to the programme, however only six participants completed the programme. Difficulty in obtaining sufficient sample size dictated assignment to a group based on completion. The experimental group consisted of all participants who completed the programme (N=6), whilst the control group included the participants who did not complete the programme but provided follow up data that was able to be used in the final analysis (N=9). Within subjects analyses were utilised to investigate the effects of the programme within the group of participants who completed the programme at Pre-Intervention, Post-Intervention (at time of completion) and Follow-Up (2months Post Intervention for the Experimental Group and 3 months for the Control Group respectively). Between subjects analyses were carried out to investigate any significant differences in effect between the Intervention Group and Control Group.

Procedure

The Initial recruitment phase involved addressing staff at a Boys College in Queensland. Consent was obtained from the organisation to address potential participants during a staff meeting. This resulted in 15 participants indicating interest. An introductory email containing the information sheet and consent form was sent to all participants who indicated interest. Participants who returned the consent form were registered for the programme and received an email with access to the first set of measures on Qualtrics. Completion of assessments was estimated at 12 - 15 minutes.

Due to small sample size and low participation numbers, approval was sought for a second recruitment avenue. The second recruitment phase involved approaching an online community of teachers on social media. A post was made informing participants of the research project and inviting interested individuals to send an expression of interest to the researcher. Following this, similar to the first recruitment phase, interested individuals received the introduction email, information sheet and consent form via email. Fifteen teachers from this recruitment phase were sent an email link to the first set of measures in Qualtrics.

After participants completed the first set of measures, they were granted access to the programme and sent a welcome email with login instructions by administration staff of Psyflex6. Each weekly module involved four to six short video clips followed by completing exercises in the accompanying workbook. Participants were also able to download the workbook as they engaged with each module

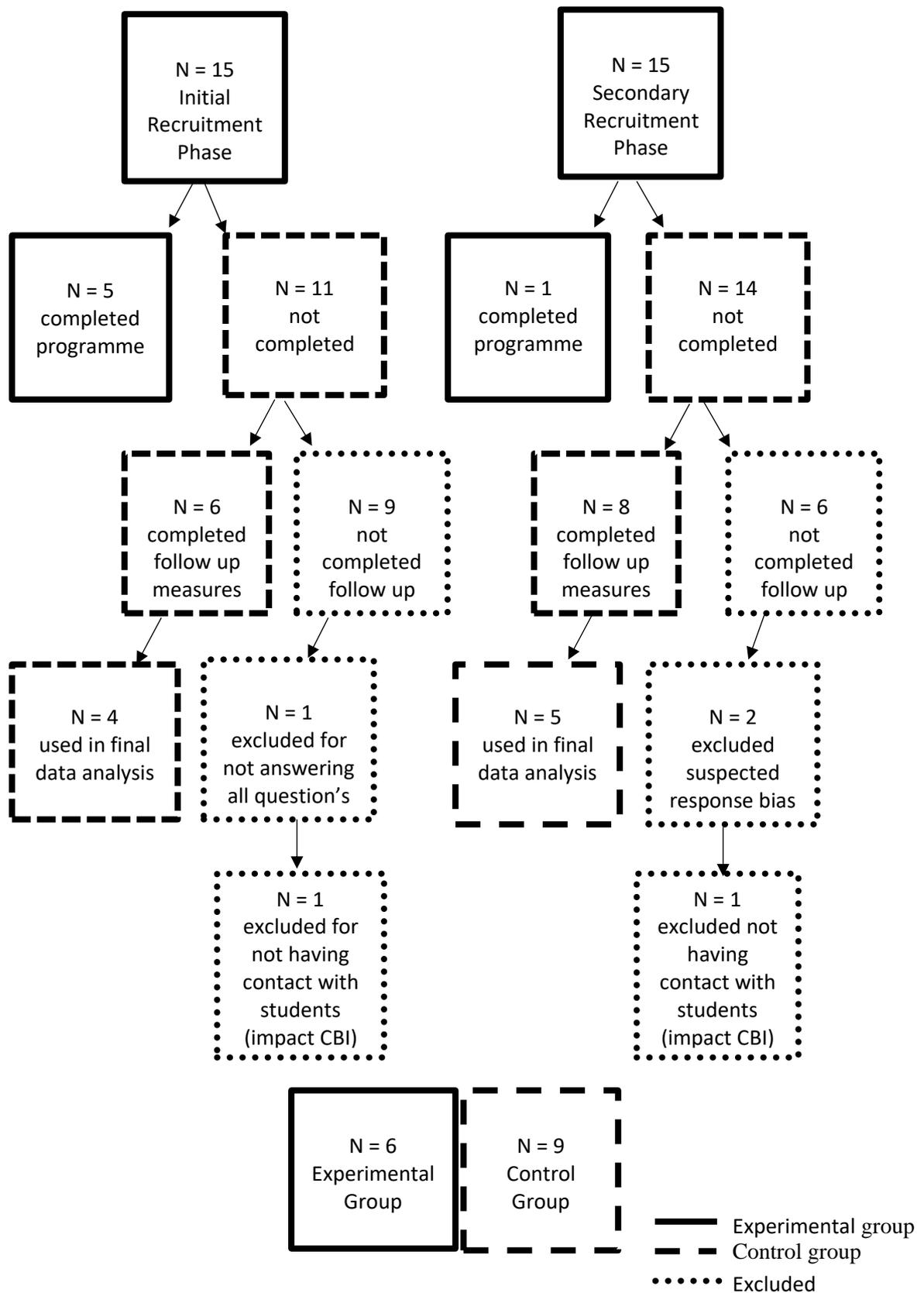
Once participants completed the final module of the programme, they were sent a link to the Post-Intervention measures. The Follow-Up data was collected approximately 2 months post completion for the participants that completed the programme and 3 months post completing the initial set of measures for participants who did not complete the programme. Table 3 displays the group distribution.

Data Analysis

All data sets were analysed using Excel and Minitab® (V 21.1). Subscales were analysed separately in Excel prior to completing relevant statistical calculations in Minitab. Data analysis was performed at a Confidence Interval of 95%, $\alpha = .05$

Table 3

Recruitment of Participants & Group Distribution



Results

Measure Scores (Pre, Post and Follow-Up)

Table 4 displays a summary of the measure scores (mean and standard deviation) for each of the measures completed. The intervention group measures were completed at pre-intervention, post-intervention (upon completion) and 2-month post intervention follow-up stage. The control group completed measures at pre- and follow-up (3 months later at the conclusion of the programme).

Table 4

Number of participants (N), Mean (M) and Standard Deviation (SD) of group scores for Control and Experimental groups.

| Measure | Completed | Experimental Group (N=6) | | Control Group (N=9) | |
|----------------------|-----------|-----------------------------|-------|------------------------|-------|
| | | M | SD | M | SD |
| CBI | Pre | 39.47 | 16.64 | 54.39 | 19.23 |
| | Post | 30.89 | 14.87 | | |
| | Follow-Up | 33.12 | 19.95 | 50.46 | 18 |
| MPFI - Flexibility | Pre | 4.41 | 0.79 | 4.27 | 0.81 |
| | Post | 4.77 | 0.68 | | |
| | Follow-Up | 4.83 | 0.78 | 4.16 | 0.72 |
| MPFI - Inflexibility | Pre | 3.14 | 1.01 | 2.91 | 0.46 |
| | Post | 2.5 | 0.84 | | |
| | Follow-Up | 2.47 | 0.46 | 2.99 | 0.51 |
| PSS | Pre | 17.67 | 7.34 | 20.89 | 4.11 |
| | Post | 12.5 | 6.63 | | |
| | Follow-Up | 12.5 | 5.99 | 20.11 | 5.9 |
| ATQ -B | Pre | 48.18 | 15.74 | 62.22 | 34.04 |
| | Post | 36.67 | 10.72 | | |
| | Follow-Up | 38.83 | 8.89 | 64.67 | 27.86 |
| ATQ-F | Pre | 49.67 | 17.94 | 58 | 22.47 |
| | Post | 41.83 | 14.16 | | |
| | Follow-Up | 42 | 15.23 | 58.89 | 37.41 |
| WAAQ | Pre | 35.28 | 7.08 | 35.56 | 5.88 |
| | Post | 39.5 | 6.54 | | |
| | Follow-Up | 40 | 4.34 | 36.44 | 7.62 |

CBI = Copenhagen Burnout Inventory, MPFI-Flexibility = Multidimensional Psychological Flexibility Inventory - Flexibility subscale, MPFI-Inflexibility = Multidimensional Psychological Flexibility Inventory - Inflexibility subscale, PSS = Perceived Stress Scale, ATQ = Automatic Thoughts Questionnaire (B - Belief), (F-Frequency), WAAQ = Work-related Acceptance and Action Questionnaire.

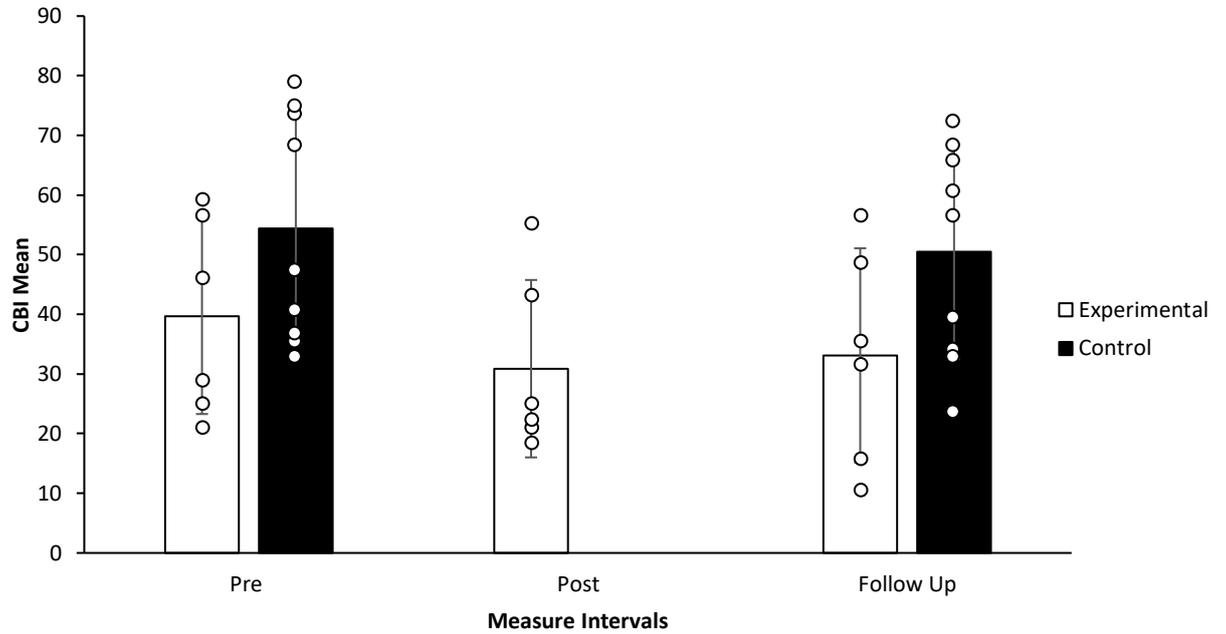
Burnout as measured by Copenhagen Burnout Inventory

The Copenhagen Burnout Inventory (CBI) mean for the Experimental Group was lower than that of the Control Group at pre-intervention and follow-up (see Figure 7). Cut off scores of the CBI (Low <50, Moderate 50-74, High 75 -99, Severe >100) indicate the intervention group experienced low burnout levels ($M = 39.47$), which improved post intervention ($M = 30.89$) and were maintained at follow up ($M = 33.12$), whilst the control group reflected moderate burnout levels pre-intervention ($M = 54.39$) and remained at moderate burnout levels at the time of follow-up ($M = 50.46$). Following the identification of an outlier in the Control Group, a Mann-Whitney U test was performed at a confidence level of 95% to determine whether the change in CBI scores between the pre- and follow-up measures were significantly different between the two groups. These median change scores (-9.87 and -6.58 in the Experimental and Control Groups, respectively) were not statistically significant, $p = 0.41$. The effect size of $d = 0.96$ met Cohen's (1988) criteria for a large effect size.

A paired samples t -test was performed to evaluate within group differences in burnout before and after the completion of the intervention for the Experimental Group. Participants' burnout rates pre-intervention ($M = 39.47$, $SD = 16.64$) were higher than post-intervention ($M = 30.89$, $SD 14.87$), however there was no statistically significant mean decrease in burnout rates ($M = 8.59$, 95% CI, [0.30 to 17.56], $t(5) = 2.46$, $p = 0.057$). A paired samples t -test between the pre- and follow-up intervention measures for the CBI showed a significant mean decrease ($M = 6.36$ 95% CI, μ 0.04 - 12.68), $t(5) = 2.59$, $p = 0.049$. The effect size met Cohen's (1988) criteria for a small effect, $d = 0.67$. The paired sample t -test for the control group showed a non-significant difference between the pre- and follow-up intervention measures at 3 months, $t(8) = 1.18$, $p = 0.271$. The effect size was small according to Cohen's criteria, $d = 0.21$.

Figure 7 Copenhagen Burnout Inventory Mean Results

Copenhagen Burnout Inventory (CBI) Mean Results – Repeated Measures



Note: Mean CBI scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher CBI Scores = Higher Burnout, Lower CBI Scores = Lower Burnout.

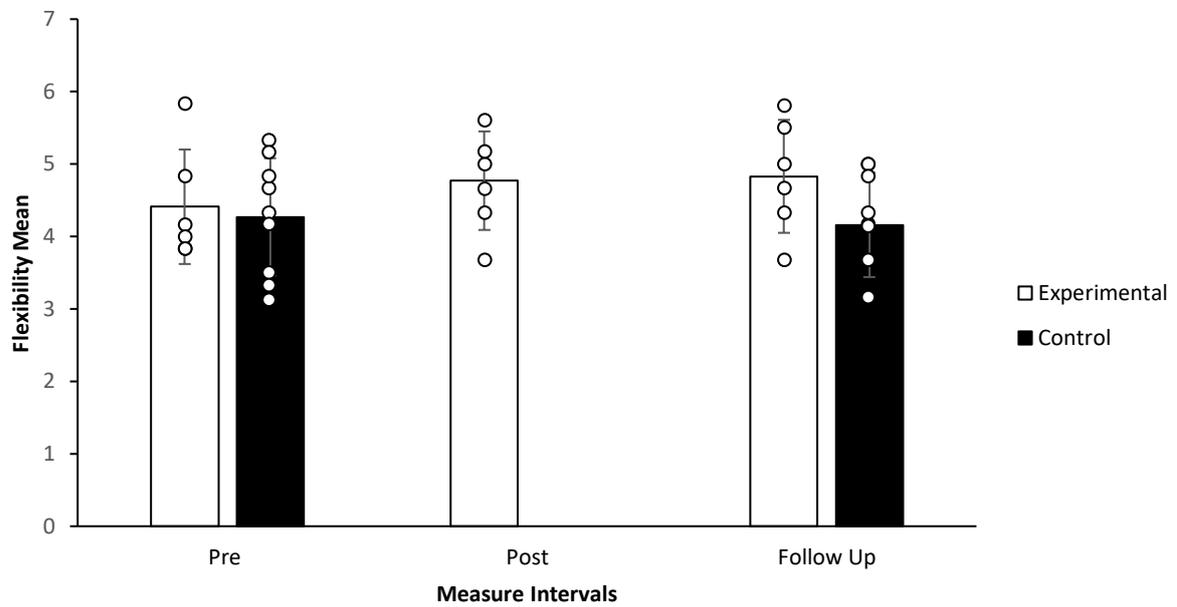
Flexibility as measured by Multidimensional Flexibility Inventory (MPFI)

Figure 8 displays an improvement in mean Flexibility scores for the Intervention Group between Pre- and Post-Intervention measures. An independent samples *t*-test was performed to evaluate if there were statistically significant differences in the change in Flexibility scores from measured at Pre-Intervention and between the Experimental and Control Group. The results reflected that whilst both groups demonstrated improvement in Flexibility ($M = 0.42$, $SD = 0.68$ and $M = 0.11$, $SD = 0.87$ in the Experimental and Control Groups respectively, the difference was not statistically significant, $t(12) = 1.3$, $p < 0.21$. The effect size calculated at Follow-Up between the two groups met Cohen's (1988) criteria for a large effect size, $d = 0.89$. Paired sample *t*-tests were performed to evaluate within group differences in Flexibility scores before and after completion of the intervention. No statistical significance was indicated. Results are summarised in Table 5. Effect size for the Intervention Group at Pre/Post Intervention measures met Cohen's (1988) criteria for medium effect, $d = 0.44$, whilst the effect size for the control group met Cohen's criteria for a small effect, $d = 0.14$.

Figure 8 Multidimensional Psychological Flexibility Inventory Results - Flexibility

Multidimensional Psychological Flexibility Inventory (MPFI) Flexibility Mean Scores – Repeated

Measures



Note: Mean Flexibility scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher Flexibility Scores = Higher Flexibility; Lower Flexibility Scores = Lower Flexibility.

Table 5

Results of Paired-Samples t-tests on the within group differences for Experimental and Control Groups

| Group Comparison | n | df | Mean | SD | SE Mean | t | p | 95% CI | Cohen's d |
|---------------------|---|----|------|------|---------|------|-------|--------------|-----------|
| <i>Intervention</i> | | | | | | | | | |
| Pre/Post | 6 | 5 | 0.34 | 0.9 | 0.365 | 0.93 | 0.395 | 1.28 to 0.60 | 0.44 |
| Pre/Follow-Up | 6 | 5 | 0.42 | 0.68 | 0.28 | 1.5 | 0.194 | 1.13 to 0.30 | 0.23 |
| <i>Control</i> | | | | | | | | | |
| Pre/Follow-Up | 9 | 8 | 0.11 | 0.87 | 0.29 | 0.37 | 0.72 | 0.56 to 0.78 | 0.14 |

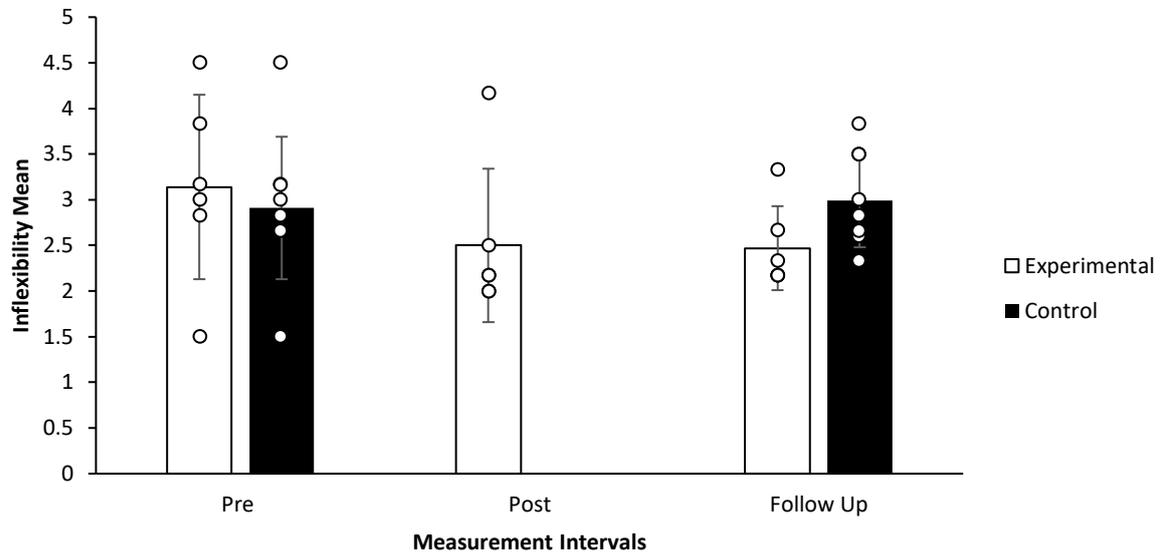
Inflexibility as measured by Multidimensional Flexibility Inventory (MPFI)

Inflexibility mean scores decreased for the Intervention Group; however, they increased for the Control group (Figure 9). An independent samples *t*-test was completed to determine whether the change in Inflexibility scores between the pre- and follow-up measures were significantly different between the two groups. Whilst results indicated an improvement in Inflexibility for the Experimental Group ($M = 0.67$, $SD = 0.82$). The difference was not statistically significant, ($M = 0.12$, $SD = 0.59$), $t(8) = 2.04$, $p < 0.076$. The effect size between the Experimental and Control group met Cohen's *d* (1988) criteria for large effect, $d = 1.02$. A paired samples *t*-test was performed on the data of the Control group to evaluate within group differences before and after the completing the programme. Participants' Inflexibility scores were higher at the Follow-Up measure ($M = 2.99$, $SD = 0.51$) than at the Pre-Intervention measure ($M = 2.91$, $SD = 0.78$). The mean difference ($M = -0.08$) did not meet the criteria for statistical significance 95% CI, $[-0.56, 0.39]$, $t(8) = -0.41$, $p < 0.692$. The effect size met Cohen's criteria for small effect, $d = 0.13$. An outlier was identified in the Post Intervention sample of the Experimental Group and as a result a Wilcoxon Signed Rank test was performed to evaluate within group differences in Inflexibility scores before and after the completion of the intervention. The Wilcoxon Signed Rank test did not confirm any statistical significance, $W = 18.00$, $p < 0.142$. A paired samples *t*-test was conducted to determine whether there was a statistically significant mean difference between the Inflexibility scores of the Pre- and Follow-Up Intervention measures of the Experimental group. Participants' Inflexibility scores were lower at Follow-Up ($M = 2.46$, $SD = 0.46$); however the mean decrease of 0.67 was not considered statistically significant, 95% CI, $[0.19, 1.52]$, $t(5) = 1.00$, $p < 0.103$. The effect size was large according to Cohen's (1988) criteria, $d = 0.85$. A Pearson Correlation Coefficient was performed to evaluate the relationship between Burnout (CBI) scores and Inflexibility (MPFI – Inflexibility). There was a moderate positive correlation between Burnout and Inflexibility, however it was not statistically significant $r(6) = 0.65$, $p < 0.163$.

Figure 9 Multidimensional Psychological Flexibility Inventory Results - Inflexibility

Multidimensional Psychological Flexibility Inventory (MPFI) Inflexibility Mean Scores – Repeated

Measures



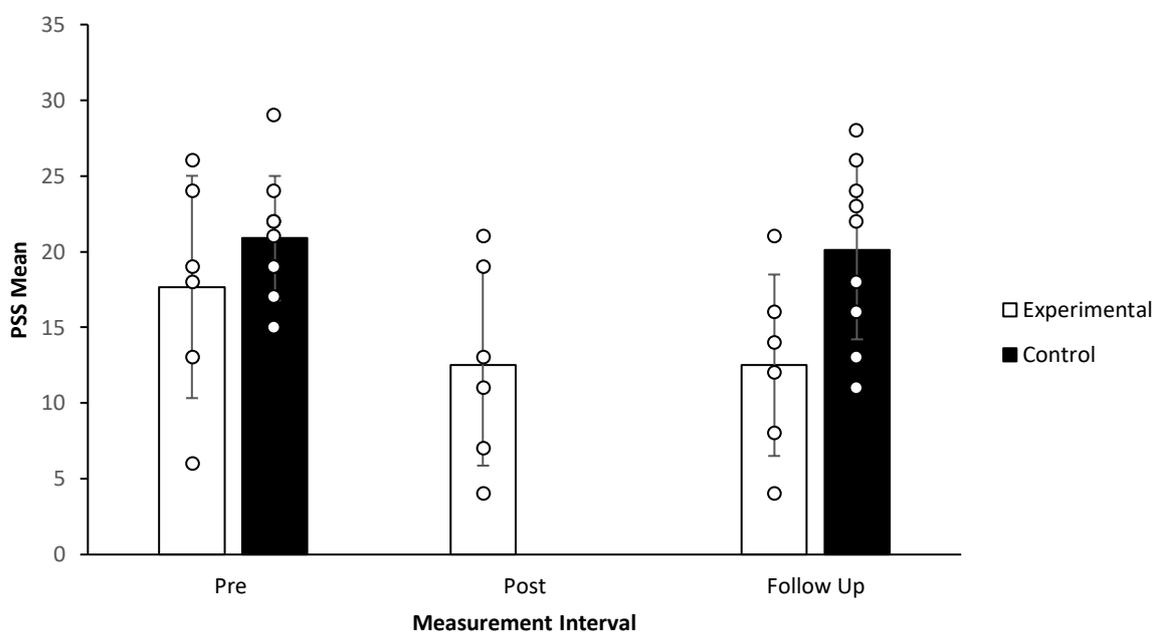
Note: Mean Flexibility scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher Inflexibility Scores = Higher Inflexibility; Lower Inflexibility Scores = Lower Inflexibility.

Perceived Stress Results as measured by the Perceived Stress Scale (PSS)

Figure 10 displays an improvement in PSS mean scores for the Intervention Group. An independent samples *t*-test was performed to determine if there were significant differences in the change of mean PSS scores between the Experimental and Control Group. The results showed an improvement in the scores for both groups ($M = 4.5, SD = 8.38; M = 0.78, SD = 4.58$ respectively), however the differences were not statistically significant, $t(7) = -0.99, p < 0.34$. Paired sample *t*-tests were performed to evaluate within group differences in PSS scores. No statistically significant differences were identified for any of the paired sample *t*-tests (Table 6). The effect sizes met Cohen's (1988) criteria for large effect for the Intervention group at pre/post ($d = 0.74$) and pre/follow up ($d = 0.77$) measures, whilst the effect size for the control group was small ($d = 0.15$).

Figure 10 Perceived Stress Scale Results

Perceived Stress Scale (PSS) Mean Scores – Repeated Measures



Note: Mean PSS scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher PSS scores = Higher Perceived Stress; Lower PSS Scores = Lower Perceived Stress.

Table 6

Results of Paired-Samples t-tests on the within group differences for Experimental and Control Group Perceived Stress Scale (PSS)

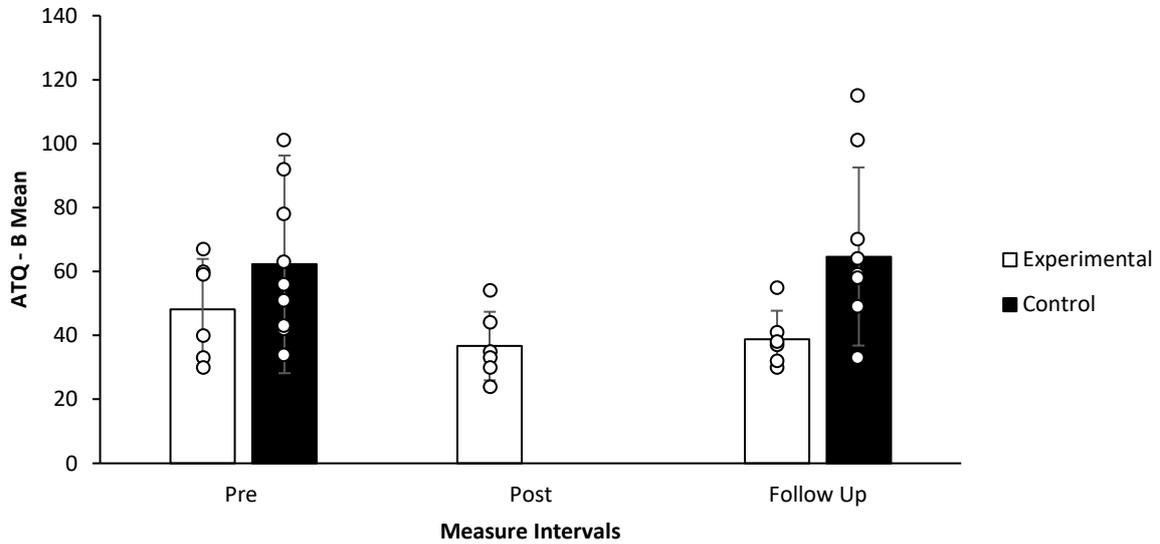
| Group Comparison | n | df | Mean | SD | SE Mean | t | p | 95% CI | Cohen's d |
|---------------------|---|----|------|------|---------|------|-------|----------------|-----------|
| <i>Intervention</i> | | | | | | | | | |
| Pre/Post | 6 | 5 | 5.17 | 7.36 | 3 | 1.72 | 0.146 | -2.56 to 12.89 | 0.44 |
| Pre/Follow-Up | 6 | 5 | 5.17 | 7.91 | 3.23 | 1.6 | 0.17 | -3.13 to 13.47 | 0.23 |
| <i>Control</i> | | | | | | | | | |
| Pre/Follow-Up | 9 | 8 | 0.71 | 4.58 | 1.53 | 0.37 | 0.72 | -2.74 to 4.30 | 0.15 |

Results as measured by the Automatic Thoughts Questionnaire – Degree of Belief (ATQ-B)

Automatic Thoughts Questionnaire – Degree of Belief (ATQ-B) mean scores for the Control Group were higher than those of the Intervention Group at Pre-Intervention and Follow-Up (Figure 11). An independent samples *t*-test was performed to evaluate between group differences in the change in scores for the Degree of Belief (ATQ-B) between the Experimental and Control Group. The results showed no statistically significant difference between the two groups $t(12) = -1.06, p < 0.31$. Paired sample *t*-tests were performed to determine if there were any statistically significant mean differences for ATQ-B scores within groups. No statistical significance was identified for any of the paired sample *t*-tests (Table 7). The effect sizes met Cohen's (1988) criteria for medium effect for the pre/post Intervention Group ($d = 0.64$), large effect for Pre/Follow-Up ($d = 0.82$) measures, and small the effect for the Control Group ($d = 0.13$).

Figure 11 Automatic Thoughts Questionnaire Results: ATQ-B

Automatic Thoughts Questionnaire – Degree of Belief (ATQ-B) – Repeated Measures



Note: Mean ATQ-B scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher ATQ-B scores = Increase in Degree of Belief of Automatic Negative Thoughts; Lower ATQ-B scores = Decrease in Belief Automatic Negative Thoughts

Table 7

Results of Paired-Samples t-tests on the within group differences for Experimental and Control Group – Automatic Thoughts Questionnaire (ATQ-B)

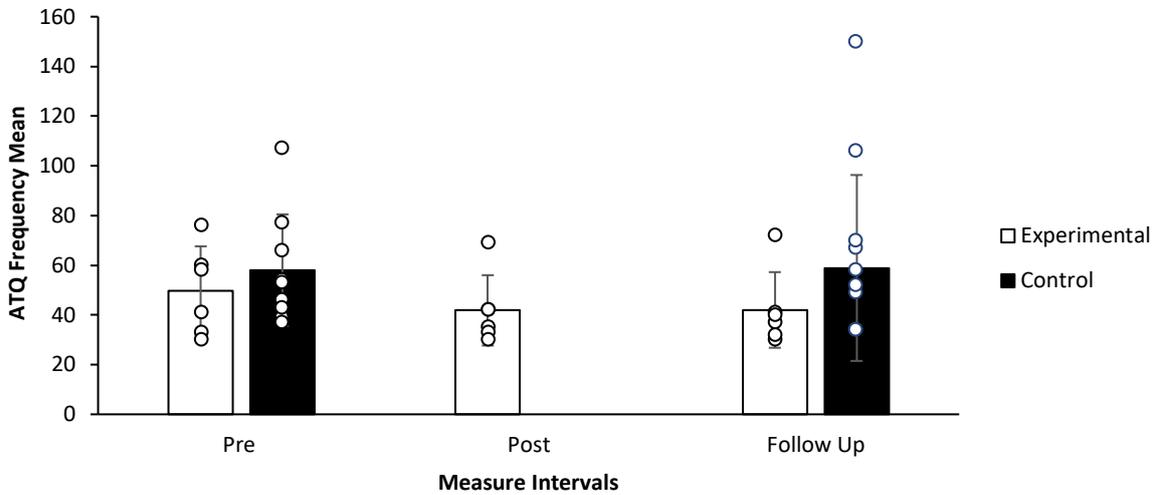
| Group Comparison | n | df | Mean | SD | SE Mean | t | p | 95% CI | Cohen's d |
|---------------------|---|----|-------|-------|---------|-------|------|----------------|-----------|
| <i>Intervention</i> | | | | | | | | | |
| Pre/Post | 6 | 5 | 11.50 | 15.58 | 6.36 | 1.81 | 0.13 | -4.58 to 27.85 | 0.85 |
| Pre/Follow-Up | 6 | 5 | 9.33 | 14.76 | 6.03 | 1.55 | 0.18 | -6.16 to 24.82 | 0.73 |
| <i>Control</i> | | | | | | | | | |
| Pre/Follow-Up | 9 | 8 | -11.9 | 34.4 | 11.5 | -1.04 | 0.33 | -38.3 to 14.6 | 0.98 |

Results as measured by the Automatic Thoughts Questionnaire – Degree of Frequency (ATQ-F)

Automatic Thoughts Questionnaire – Degree of Frequency (ATQ-F) mean scores for the Control Group were higher than those of the Intervention Group at pre-intervention and follow-up (Figure 12). Following the identification of an outlier (Grubb's test) in the Control Group, a Mann-Whitney U test was performed to determine the significance of the change in Pre- and Follow-Up Intervention scores on the ATQ-F between the Experimental and Control Group. These median change scores for ($M = -2$ and $M = -1$ for Experimental and Control Groups respectively) were not statistically significant, $p < 0.52$. Grubb's test identified outliers in both the post and follow-up data sets for the Experimental Group's ATQ-F scores. A Wilcoxon Signed Rank test was performed to evaluate within group differences in the frequency of automatic negative thoughts. The median difference for the Pre/Post Intervention scores for the Intervention Group was 8, $W = 7$, $p < 0.529$. The median difference for the Pre/Follow-Up Intervention scores for the Intervention Group was 8, $W = 7$, $p < 0.273$. No statistically significant decrease in the frequency of automatic negative thoughts were established. The effect size met Cohen (1988) criteria for small effect at $d = 0.49$ and $d = 0.46$ respectively. The Control Group showed an increase in frequency of automatic negative thoughts. A paired sample t -test was performed to evaluate whether the increase was significant. Participants' frequency of thoughts scored higher at Follow-Up ($M = 69.9$, $SD = 22.5$) than at Pre-Intervention ($M = 58.0$, $SD = 37.5$), however the mean increase of 11.9, 95% CI, [-38.3, 14.6] was not considered statistically significant, $t(8) = -1.04$, $p < 0.33$. The effect size met Cohen's criteria for small effect, $d = 0.3$.

Figure 12 Automatic Thoughts Questionnaire Results: ATQ-F

Automatic Thoughts Questionnaire –Frequency (ATQ-F) Mean Scores – Repeated Measures



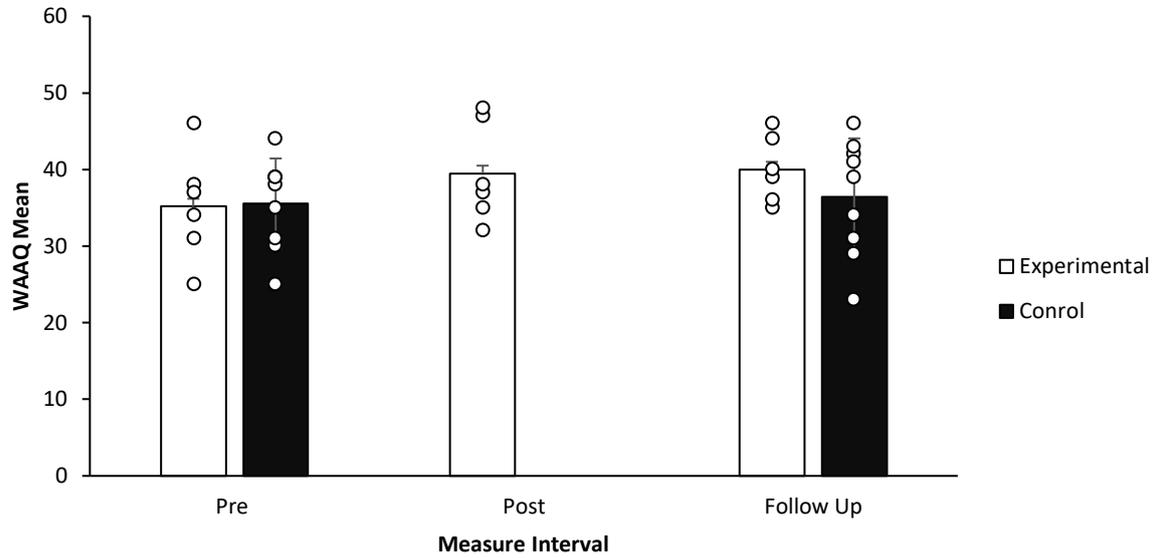
Note: Mean ATQ-F scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher ATQ-F scores = Increased Frequency of Automatic Negative Thoughts; Lower ATQ-F scores = Decreased Frequency of Automatic Negative Thoughts

Results as measured by the Work-related Acceptance & Action Questionnaire (WAAQ)

WAAQ mean scores improved for the Intervention Group and moved in the opposite direction for the Control Group (Figure 13). Following the identification of an outlier (Grubb's test) in the Control Group, a Mann-Whitney U test was performed to determine if there was any significance in the change of Pre- and Follow-Up Intervention scores between the Experimental and Control Group. The median scores ($M = 4$ and $M = 2$ in the Experimental and Control Groups respectively) were not statistically significant, $p < 0.673$. Paired sample t -tests were performed to evaluate WAAQ scores within groups. No statistical significance was identified for any of the paired sample t -tests performed (Table 8). The effect sizes met Cohen's (1988) criteria for medium effect for the Intervention Group at Pre/Post ($d = 0.64$), large effect at Pre/Follow-Up ($d = 0.82$), and small effect for the Control Group ($d = 0.13$).

Figure 13 Work-Related Acceptance & Action Questionnaire Results

Work-related Acceptance & Action Questionnaire (WAAQ) Mean Scores – Repeated Measures



Note: Mean WAAQ scores for the Experimental and Control Groups. Individual scores are indicated with open circles. Error bars represent the standard error of the mean. Higher WAAQ = Higher flexibility; Lower WAAQ scores = Lower flexibility.

Table 8

Results of Paired-Samples t-tests on the within group differences for Experimental and Control Group – Work-Related Acceptance and Action Questionnaire (WAAQ).

| Group Comparison | n | df | Mean | SD | SE Mean | t | p | 95% CI | Cohen's d |
|---------------------|---|----|-------|------|---------|-------|------|----------------|-----------|
| <i>Intervention</i> | | | | | | | | | |
| Pre/Post | 6 | 5 | -4.33 | 7.34 | 3.00 | -1.45 | 0.21 | -12.04 to 3.37 | 0.64 |
| Pre/Follow-Up | 6 | 5 | -4.83 | 7.19 | 2.94 | -1.65 | 0.16 | -12.38 to 2.72 | 0.82 |
| <i>Control</i> | | | | | | | | | |
| Pre/Follow-Up | 9 | 8 | -0.89 | 6.79 | 2.26 | -0.39 | 0.71 | -6.11 to 4.33 | 0.13 |

Discussion

The current study is the first of its kind to investigate the effects of an online Acceptance and Commitment Therapy (ACT) intervention on psychological flexibility, stress, and burnout rates in teachers in Australia. This study sought to test three hypotheses.

The first hypothesis was that burnout would decrease following the completion of an online ACT-based intervention. Overall, results showed an improvement in burnout rates in within group and between group comparisons at the conclusion of the study. One of the measures delivered a result of statistical significance ($p < 0.05$), however it is this measure would not have retained statistical significance if a correction for multiple tests, such as a Bonferroni correction, were applied. The Intervention Group demonstrated more observable differences in score changes of the Copenhagen Burnout Inventory (CBI). Burnout levels continued to decrease for four out of the six participants of the Intervention Group and remained low for the other two participants of this group at the two month follow up period. Whilst burnout also decreased for the Control Group, the difference in the Intervention Group was more noticeable and effect size larger than that of the Control Group (see results).

The second hypothesis this study sought to investigate was a correlation between avoidance/psychological inflexibility and burnout. This hypothesis is supported following the outcome of a Pearson Correlation Coefficient on the data collected from the Multifactor Psychological Flexibility Inventory (MPFI) and Copenhagen Burnout Inventory (CBI), $r(6) = 0.65$, $p = 0.163$. Further research is recommended as the shortened version for the MPFI was used to evaluate psychological flexibility. It should be noted that the full version of the MPFI contains 60 items and 12 subscales. Within the inflexibility sub-scale on the MPFI there are six key dimensions of inflexibility: Experiential Avoidance, Lack of Contact with Present Moment, Self as Context, Fusion, Lack of Contact with Values, Inaction, Global Inflexibility, Depressive Symptoms, and Anxiety Symptoms. The full scale contains 60 questions, and the inflexibility subscale contains 30 questions. The shortened version of the MPFI, which was utilised for this study, contains only 2 questions for each of the key

dimensions. It may be beneficial for future research to utilise the entire inflexibility subscale to determine correlation with burnout and the impact of intervention on specific subscales. Another interesting observation from participants' individual results was that the decrease in inflexibility on the MPFI did not necessarily correlate with an increase in flexibility on the MPFI. Several studies have confirmed independent associations of psychological flexibility and inflexibility with well-being (Howell & Demuynck, 2021) and the Hexaflex (Rolffs et al., 2018). However, no studies were found with any investigation into the correlation between the flexibility and inflexibility subscales of the MPFI. It is recommended that future research investigate any correlation or dependence between flexibility and inflexibility on the MPFI.

The third and final hypothesis was that the intervention would increase psychological flexibility as measured by the MPFI flexibility subscale, the Automatic Thoughts Questionnaire (ATQ) and Work-Related Acceptance and Action Questionnaire (WAAQ). Results demonstrated a decrease in frequency and degree of belief in automatic negative thoughts on the ATQ for the experimental group compared to a mean increase in frequency and degree of belief for the control group. Both groups improved in psychological flexibility as measured by the WAAQ, however the improvement for the experimental group was more noticeable. The experimental group demonstrated a mean increase in psychological flexibility on the MPFI; however only three participants of the six showed an increase in flexibility. No data was collected on whether participants were utilising the workbook or practicing the skills outside of the programme. Future researchers may wish to include data on this to investigate any effects on the outcome. Conversely, psychological flexibility scores decreased for the control group by the conclusion of this study.

Whilst existing interventions focus exclusively on symptom reduction outcomes Acceptance and Commitment Therapy is directed at processes and include key elements of values and acceptance, which has been found to be successful in addressing burnout for those in other helping professions, including special education teachers (Emery & Vandenberg, 2010) and social workers (Brinkborg et al., 2011). The findings of this study, like Frögéli et al. (2016), observed a more

noticeable decrease in perceived stress and general burnout for the Intervention Group compared to the Control Group. Although the results were not considered statistically significant, the findings support existing literature on addressing burnout in helping professions from an ACT framework and more research on this, particularly in exploring changes in inflexibility is recommended.

Limitations

The initial design intended to randomize participants into a waitlist Control Group and Intervention Group. However, given the low levels of engagement this was not possible. Limitations associated with non-randomized groups include participant variance and bias pertaining to the motivation of participants who completed the intervention compared to the participants who did not complete the intervention. To accommodate for the limitations baseline data was collected on all known confounds for both the Intervention and the Control Group and data was collected at multiple points (Pre-Intervention and Follow-Up). Further to this both groups were observed at the same time and followed the same data collection procedure. The small sample size (N=15) may have also impacted on the outcomes resulting in low statistical power. Considering the descriptive statistics were supportive of treatment effectiveness, it is possible that, by increasing the sample size, a significant result could be obtained as the result of an increase of statistical power.

Participation numbers were low despite two recruitment phases (one face to face and one online). Initially the recruitment was aimed at a single organisation but because of limited interest in the project a second recruitment phase was actioned. The potential participant pool for the second recruitment phase was estimated at over 13,000 potential candidates as the online group that was addressed had over 13,000 members at the time the post was made. Unfortunately, this resulted in only 15 additional candidates of which only one completed the programme. An interesting observation was that another researcher had also recruited members on the same platform a week later to conduct qualitative research on teacher burnout and teacher perspectives and reportedly experienced an overwhelming response by account of a follow-up post. This could indicate that teachers need a space to be heard before they are ready to engage actively upskilling social and

emotional coping skills, or it could be representative of the construct of avoidance as described in ACT (Hayes, 2004). Some possible solutions identified by the researcher to address low engagement and participation levels may include but not be limited to:

1. Incentivising participation. Research has demonstrated an increased willingness to participate in initiatives if there is an incentive for doing so (Parkinson et al, 2019; Zweben et al., 2009).
2. Encouraging participation as part of induction/teacher training programmes. A longitudinal study by Covell et al. (2009) investigated the impact of an initiative on teacher burnout and concluded optimal reduction in burnout rates were recorded in schools where the initiative was fully implemented.

More research is required to identify methods of increased participant engagement and reducing attrition for web-based interventions.

Two of the six participants in the experimental group provided unsolicited and voluntary verbal feedback on the programme, citing lack of time as a barrier to investing into the programme as much as they would have liked. This aligned with feedback from four of the participants of the Control Group who cited time constraints as a reason for not completing the programme. A possible challenge with online interventions could be that the intervention competes with other responsibilities, such as preparing dinner or doing day-to-day chores, for an individual's time and attention. This might be supported at an organisational level by allocating dedicated time and opportunity to complete such a programme as part of ongoing professional development.

All measures in this study relied on self-report (as many of the behaviours ACT aims to influence are private events, such as negative and unhelpful thinking, experiential avoidance, detachment from values, etc.). Future research may consider including behavioural observations or indicators of burnout rates and psychological flexibility. Employee stress and burnout rates have been associated with an increase in absenteeism, for instance. Absenteeism rates could therefore be

an observable indicator of impact on burnout rates. Psychological flexibility may be assessed by gathering qualitative data from participants, students and/or close relatives.

The final limitation to be addressed is programme adherence. As this is a self-paced programme with multiple components (videos and workbook), it may be advisable to include some measure of adherence in relation to intended use of the intervention and completion of the modules. There was no measure for programme adherence in this study; however, the researcher considered inconsistent adherence as a potential factor that could have impacted on outcomes. The original study design called for a mid-programme data collection point; however due to platform-related factors beyond the researcher's control, some participants had progressed beyond the mid-programme modules before completing the surveys, and others completed the programme without completing the mid-programme surveys. As a result, the data collection at mid-point had to be discarded as it was considered unreliable and incomplete. As this was a self-paced programme there could have been variation in engagement and time spent on the programme. It may also be noteworthy that completion of the workbook and practicing of skills outside of programme exposure was not measured. Whether that impacted on the overall outcome and effect of the intervention is unclear, but worth considering for future research.

Conclusion

Teaching is undoubtedly stressful with the pressure of expectations continuing to grow in an everchanging landscape. The literature has made it clear that burnout impacts heavily on this sector, (Saloviita., 2020; Maslach et al., 2001; Burke et al., 1996) and research has enabled us to develop a broad framework and better understanding of the factors that contribute teacher stress and burnout. Research on methods of addressing burnout, teacher attrition rates and well-being has been encouraged in the literature (Iancu et al., 2018).

This study sought to contribute to research on possible approaches to addressing burnout by investigating the effects of an online Acceptance and Commitment Therapy Programme (ACT), Psyflex6 6, on burnout and psychological flexibility in a teaching population in Australia. Despite the small sample size, which could have been responsible for the lack of statistically significant findings, participants from the experimental group showed a decrease in burnout rates, a decrease in psychological inflexibility and overall increase in psychological flexibility following the intervention. Furthermore, the improvement in psychological flexibility and burnout rates were maintained at the follow-up data collection point two months post intervention. The present study supports the findings of previous studies that investigated the effectiveness of online ACT interventions to reduce burnout (Walker, C., 2017; Lobo, D., 2018; Hofer et al., 2017). With further refinement and engagement at an organisational/stakeholder level, this approach may be a cost-effective way to equip teachers to deal with the challenges and pressures typical of the job and the factors that contribute to their experiences of stress and pressure outside of the classroom.

References

- Ahola, K., Toppinen-Tanner, S., & Seppänen, J. (2017). Interventions to alleviate burnout symptoms and to support return to work among employees with burnout: Systematic review and meta-analysis. *Burnout Research*, *4*, 1–11. <https://doi.org/10.1016/j.burn.2017.02.001>
- Antoniou, A.S., Ploumpi, A., & Ntalia, M. (2013). Occupational stress and professional burnout in teachers of primary and secondary education: The role of coping strategies. *Psychology*, *4*(03), 349,
- Aryankhesal, A., Mohammadibakhsh, R., Hamidi, Y., Alidoost, S., Behzadifar, M., Sohrabi, R., & Farhadi, Z. (2019). Interventions on reducing burnout in physicians and nurses: A systematic review. *Medical Journal of the Islamic Republic of Iran*, *33*, 77. <https://doi.org/10.34171/mjiri.33.77>
- Austin V, Shah S, & Muncher S. (2005). Teacher stress and coping strategies used to reduce stress. *Occupational Therapy International*, *12*(2), 63–80. <https://doi.org/10.1002/oti.16>
- Bai, Z., Luo, S., Zhang, L., Wu, S., & Chi, I. (2020). Acceptance and Commitment Therapy (ACT) to reduce depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, *260*, 728–737. <https://doi.org/10.1016/j.jad.2019.09.040>
- Barni, D., Danioni, F., & Benevene, P. (2019). Teachers' Self-Efficacy: The Role of Personal Values and Motivations for Teaching. *Frontiers in Psychology*, *10*, 1645. <https://doi.org/10.3389/fpsyg.2019.01645>
- Becker, E. S., Keller, M. M., Goetz, T., Frenzel, A. C., & Taxer, J. L. (2015). Antecedents of teachers' emotions in the classroom: An intraindividual approach. *Frontiers in Psychology*, *6*. <https://doi.org/10.3389/fpsyg.2015.00635>
- Beehr, T. A., Walsh, J. T., & Taber, T. D. (1976). Relationships of stress to individually and organizationally valued states: Higher order needs as a moderator. *Journal of Applied Psychology*, *61*(1), 41–47. <https://doi.org/10.1037/0021-9010.61.1.41>

- Berthelsen, T. J. (n.d.). *The University of Waikato*. 85.
- Blackledge, J. T. (2003). An introduction to relational frame theory: Basics and applications. *The Behavior Analyst Today*, 3(4), 421-433. <http://dx.doi.org/10.1037/h0099997>
- Bond, F. W., & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of occupational health psychology*, 5(1), 156.
- Bond, F. W., Flaxman, P. E., & Bunce, D. (2008). The influence of psychological flexibility on work redesign: mediated moderation of a work reorganization intervention. *Journal of Applied Psychology*, 93(3), 645.
- Bond, F. W., Lloyd, J., & Guenole, N. (2013). The work-related acceptance and action questionnaire: Initial psychometric findings and their implications for measuring psychological flexibility in specific contexts. *Journal of occupational and organizational psychology*, 86(3), 331-347.
- Boone, M. S., Mundy, B., Morrissey Stahl, K., & Genrich, B. E. (2015). Acceptance and Commitment Therapy, Functional Contextualism, and Clinical Social Work. *Journal of Human Behavior in the Social Environment*, 25(6), 643–656. <https://doi.org/10.1080/10911359.2015.1011255>
- Bramwell, K., & Richardson, T. (2018). Improvements in Depression and Mental Health After Acceptance and Commitment Therapy are Related to Changes in Defusion and Values-Based Action. *Journal of Contemporary Psychotherapy*, 48(1), 9–14.
<https://doi.org/10.1007/s10879-017-9367-6>
- Brinkborg, H., Michanek, J., Hesser, H., & Berglund, G. (2011). Acceptance and commitment therapy for the treatment of stress among social workers: A randomized controlled trial. *Behaviour Research and Therapy*, 49(6), 389–398. <https://doi.org/10.1016/j.brat.2011.03.009>
- Brock, B. L., & Grady, M. L. (2000). *Rekindling the flame: Principals combating teacher burnout* (pp. xi, 139). Corwin Press.
- Brown, M., Glendenning, A., Hoon, A. E., & John, A. (2016). Effectiveness of Web-Delivered Acceptance and Commitment Therapy in Relation to Mental Health and Well-Being: A

- Systematic Review and Meta-Analysis. *Journal of Medical Internet Research*, 18(8), e221.
<https://doi.org/10.2196/jmir.6200>
- Brownell, M. T., & Smith, S. W. (1993). Understanding Special Education Teacher Attrition: A Conceptual Model and Implications for Teacher Educators. *Teacher Education and Special Education*, 16(3), 270–282. <https://doi.org/10.1177/088840649301600309>
- Buchanan, J. (2010). May I be excused? Why teachers leave the profession. *Asia Pacific Journal of Education*, 30(2), 199–211. <https://doi.org/10.1080/02188791003721952>
- Burke, R. J., & Greenglass, E. R. (1989). Psychological Burnout among Men and Women in Teaching: An Examination of the Cherniss Model. *Human Relations*, 42(3), 261–273.
<https://doi.org/10.1177/001872678904200304>
- Burke, R. J., Greenglass, E. R., & Schwarzer, R. (1996). Predicting teacher burnout over time: Effects of work stress, social support, and self-doubts on burnout and its consequences. *Anxiety, Stress, & Coping*, 9(3), 261–275. <https://doi.org/10.1080/10615809608249406>
- Burke, R. J., Shearer, J., & Deszca, G. (1984). Burnout among men and women in police work: An examination of the Cherniss Model. *Journal of Health and Human Resources Administration*, 7(2), 162–188.
- Campos, H. E. (2015). Teacher burnout as a predictor of teacher motivational orientation [Ph.D., Capella University]. In *ProQuest Dissertations and Theses*.
<http://search.proquest.com/docview/1655359819/abstract/41DC2EA70E9A4545PQ/1>
- Chan, D. W. (2006). Emotional intelligence and components of burnout among Chinese secondary school teachers in Hong Kong. *Teaching and Teacher Education*, 22(8), 1042–1054.
<https://doi.org/10.1016/j.tate.2006.04.005>
- Chang, M.-L. (2009). An Appraisal Perspective of Teacher Burnout: Examining the Emotional Work of Teachers. *Educational Psychology Review*, 21(3), 193–218. <https://doi.org/10.1007/s10648-009-9106-y>

- Cihon, J. H., Ferguson, J., L., Leaf, J. B., Milne, C. M., Leaf, R., & McEachin, J. (2021). Acceptance and commitment training: A review of the research. *European Journal of Behavior Analysis, 0*(0), 1–21. <https://doi.org/10.1080/15021149.2021.1880688>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior, 385-396*.
- Cooley, E., & Yovanoff, P. (1996). Supporting professionals-at-risk: Evaluating interventions to reduce burnout and improve retention of special educators. *Exceptional children, 62*(4), 336-355.
- Cooper, C., & Quick, J. C. (2017). *The Handbook of Stress and Health: A Guide to Research and Practice*. John Wiley & Sons, Incorporated.
<http://ebookcentral.proquest.com/lib/waikato/detail.action?docID=4816171>
- Cote, S., & Morgan, L. M. (2002). A longitudinal analysis of the association between emotion regulation, job satisfaction, and intentions to quit. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 23*(8), 947-962.
- Covell, K., McNeill, J. K., & Howe, R. B., (2009). Reducing teacher burnout by increasing student engagement: A children's rights approach. *School Psychology International, 30* (3), 282-290.
- Day, C., & Qing, G. (2009). Teacher Emotions: Well Being and Effectiveness. In P. A. Schutz & M. Zembylas (Eds.), *Advances in Teacher Emotion Research: The Impact on Teachers' Lives* (pp. 15–31). Springer US. https://doi.org/10.1007/978-1-4419-0564-2_2
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512.
<https://doi.org/10.1037/0021-9010.86.3.499>
- Devereux, J., Hastings, R., & Noone, S. (2009). Staff Stress and Burnout in Intellectual Disability Services: Work Stress Theory and its Application. *Journal of Applied Research in Intellectual Disabilities, 22*(6), 561–573. <https://doi.org/10.1111/j.1468-3148.2009.00509.x>

- Ebert, D. D., Lehr, D., Boß, L., Riper, H., Cuijpers, P., Andersson, G., Thiart, H., Heber, E., & Berking, M. (2014). Efficacy of an internet-based problem-solving training for teachers: results of a randomized controlled trial. *Scandinavian journal of work, environment & health*, 40(6), 582–596. <https://doi.org/10.5271/sjweh.3449>
- Eifert, G.H., & Forsyth, J.P. (2--5). Acceptance and commitment therapy for anxiety disorders: A practitioner's treatment guide to using mindfulness , acceptance, and values-based behaviour change. New Harbinger Publications.
- Eldridge, M. (2013). Understanding the factors that build teacher resilience (Doctoral dissertation). University of London.
- Emery, D. W. (2011). *Crisis in education: A call to ACT* (Doctoral dissertation). University of Missouri-Saint Louis.
- Evers, W. J. G., Tomic, W., & Brouwers, A. (2004). Burnout among Teachers: Students' and Teachers' Perceptions Compared. *School Psychology International*, 25(2), 131–148. <https://doi.org/10.1177/0143034304043670>
- Farber, B. A. (2000). Treatment strategies for different types of teacher burnout. *Journal of Clinical Psychology*, 56(5), 675–689.
- Field, J. (2019). *Teacher burnout and student outcomes: Is there a link and are student-teacher relationships a predictor?* [Ph.D., University of Southampton]. <https://eprints.soton.ac.uk/437502/>
- Firth, J., Torous, J., Nicholas, J., Carney, R., Rosenbaum, S., & Sarris, J. (2017). Can smartphone mental health interventions reduce symptoms of anxiety? A meta-analysis of randomized controlled trials. *Journal of Affective Disorders*, 218, 15–22. <https://doi.org/10.1016/j.jad.2017.04.046>
- Fletcher, L., & Hayes, S. C. (2005). Relational frame theory, acceptance and commitment therapy, and a functional analytic definition of mindfulness. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, 23(4), 315–336. <https://doi.org/10.1007/s10942-005-0017-7>

- Flook, L., Goldberg, S. B., Pinger, L., Bonus, K., & Davidson, R. J. (2013). Mindfulness for teachers: A pilot study to assess effects on stress, burnout and teaching efficacy. *Mind, brain and education : the official journal of the International Mind, Brain, and Education Society*, 7(3), 10.1111/mbe.12026. <https://doi.org/10.1111/mbe.12026>
- Foody, M., Barnes-Holmes, Y., Barnes-Holmes, D., Rai, L., & Luciano, C. (2015). An Empirical Investigation of the Role of Self, Hierarchy, and Distinction in a Common Act Exercise. *The Psychological Record*, 65(2), 231–243. <https://doi.org/10.1007/s40732-014-0103-2>
- Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. *Behavior modification*, 31(6), 772–799.
- Fouché, E., Rothmann, S. (Snr), & van der Vyver, C. (2017). Antecedents and outcomes of meaningful work among school teachers. *SA Journal of Industrial Psychology*, 43(1), 1–10. <https://doi.org/10.4102/sajip.v43i0.1398>
- Franco, C., Mañas, I., Cangas, A. J., Moreno, E., & Gallego, J. (2010). Reducing Teachers' Psychological Distress through a Mindfulness Training Program. *The Spanish Journal of Psychology*, 13(2), 655–666. <https://doi.org/10.1017/S1138741600002328>
- Frenzel, A. C., Goetz, T., Stephens, E. J., & Jacob, B. (2009). Antecedents and Effects of Teachers' Emotional Experiences: An Integrated Perspective and Empirical Test. In P. A. Schutz & M. Zembylas (Eds.), *Advances in Teacher Emotion Research: The Impact on Teachers' Lives* (pp. 129–151). Springer US. https://doi.org/10.1007/978-1-4419-0564-2_7
- Freudenberger, H. J. (1974). Staff Burn-Out. *Journal of Social Issues*, 30(1), 159–165. <https://doi.org/10.1111/j.1540-4560.1974.tb00706.x>
- Friedman, I. A. (2000). Burnout in teachers: Shattered dreams of impeccable professional performance. *Journal of Clinical Psychology*, 56(5), 595–606. [https://doi.org/10.1002/\(SICI\)1097-4679\(200005\)56:5<595::AID-JCLP2>3.0.CO;2-Q](https://doi.org/10.1002/(SICI)1097-4679(200005)56:5<595::AID-JCLP2>3.0.CO;2-Q)

- Frögéli, E., Djordjevic, A., Rudman, A., Livheim, F., & Gustavsson, P. (2016). A randomized controlled pilot trial of acceptance and commitment training (ACT) for preventing stress-related ill health among future nurses. *Anxiety, Stress, & Coping*, *29*(2), 202–218.
<https://doi.org/10.1080/10615806.2015.1025765>
- George, S. V., Richardson, P. W., & Watt, H. M. (2018). Early career teachers' self-efficacy: A longitudinal study from Australia. *Australian Journal of Education*, *62*(2), 217–233.
<https://doi.org/10.1177/0004944118779601>
- Gillard, D., Wright, D., McNally, A., Flaxman, P. E., McIntosh, R., & Honey, K. (2021). Acceptance & commitment therapy for school leaders' well-being: An initial feasibility study. *Educational Psychology in Practice*, *37*(1), 34–51. <https://doi.org/10.1080/02667363.2020.1855120>
- Godbee, M., & Kangas, M. (2020). The Relationship Between Flexible Perspective Taking and Emotional Well-Being: A Systematic Review of the “Self-as-Context” Component of Acceptance and Commitment Therapy. *Behavior Therapy*, *51*(6), 917–932.
<https://doi.org/10.1016/j.beth.2019.12.010>
- Gross, J.J. (2002). Emotion regulation: Affective, cognitive and social consequences. *Psychophysiology*, *39*(3), 281-191.
- Hacker, T., Stone, P., & MacBeth, A. (2016). Acceptance and commitment therapy – Do we know enough? Cumulative and sequential meta-analyses of randomized controlled trials. *Journal of Affective Disorders*, *190*, 551–565. <https://doi.org/10.1016/j.jad.2015.10.053>
- Harmsen, R., Helms-Lorenz, M., Maulana, R., & Veen, K. van. (2018). The relationship between beginning teachers' stress causes, stress responses, teaching behaviour and attrition. *Teachers and Teaching*, *24*(6), 626–643. <https://doi.org/10.1080/13540602.2018.1465404>
- Harrell, T.H., Ryon, N.B., (1983) Cognitive-behavioral assessment of depression: clinical validation of the Automatic Thoughts Questionnaire. *Journal of Consulting and Clinical Psychology* *51* 721 725

- Harris, R. (2019). *ACT made simple: An easy-to-read primer on acceptance and commitment therapy*. New Harbinger Publications.
- Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*(4), 639–665.
[https://doi.org/10.1016/S0005-7894\(04\)80013-3](https://doi.org/10.1016/S0005-7894(04)80013-3)
- Hayes, S. C. (2016). Acceptance and Commitment Therapy, Relational Frame Theory, and the Third Wave of Behavioral and Cognitive Therapies – Republished Article. *Behavior Therapy, 47*(6), 869–885. <https://doi.org/10.1016/j.beth.2016.11.006>
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*(1), 1–25.
<https://doi.org/10.1016/j.brat.2005.06.006>
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and commitment therapy: The process and practice of mindful change*. Guilford Press.
- Hobfoll, S. E., & Lilly, R. S. (1993). Resource Conservation as a Strategy for Community Psychology. *Journal of Community Psychology, 21*(2), 128–148.
- Hofer, P. D., Waadt, M., Aschwanden, R., Milidou, M., Acker, J., Meyer, A. H., ... & Gloster, A. T. (2018). Self-help for stress and burnout without therapist contact: An online randomised controlled trial. *Work & Stress, 32*(2), 189-208.
- Holahan, C. J., Moos, R. H., Holahan, C. K., Brennan, P. L., & Schutte, K. K. (2005). Stress generation, avoidance coping, and depressive symptoms: a 10-year model. *Journal of consulting and clinical psychology, 73*(4), 658.
- Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive therapy and research, 4*(4), 383-395.
- Holmberg, J., Kemani, M. K., Holmström, L., Öst, L. G., & Wicksell, R. K. (2019). Evaluating the psychometric characteristics of the work-related acceptance and action questionnaire

- (WAAQ) in a sample of healthcare professionals. *Journal of Contextual Behavioral Science*, *14*, 103-107.
- Howard, S., & Johnson, B. (2004). Resilient teachers: Resisting stress and burnout. *Social Psychology of Education*, *7*(4), 399–420. <https://doi.org/10.1007/s11218-004-0975-0>
- Howell, A. J., & Demuyneck, K. M. (2021). Psychological flexibility and psychological inflexibility are independently associated with both hedonic and eudaimonic well-being. *Journal of Contextual Behavioral Science*, *20*, 163-171.
- Howell, A. J., & Passmore, H.-A. (2019). Acceptance and Commitment Training (ACT) as a Positive Psychological Intervention: A Systematic Review and Initial Meta-analysis Regarding ACT's Role in Well-Being Promotion Among University Students. (*Emotion in Teaching*, n.d.) *Journal of Happiness Studies*, *20*(6), 1995–2010. <https://doi.org/10.1007/s10902-018-0027-7>
- Huk, O. (2011). Predicting teacher burnout as a function of school demands and resources and teacher characteristics [Psy.D., St. John's University (New York)]. In *ProQuest Dissertations and Theses*.
<http://search.proquest.com/docview/912193420/abstract/3B8A3C490F5D4807PQ/1>
- Iancu, A. E., Rusu, A., Măroiu, C., Păcurar, R., & Maricuțoiu, L. P. (2018). The Effectiveness of Interventions Aimed at Reducing Teacher Burnout: A Meta-Analysis. *Educational Psychology Review*, *30*(2), 373–396. <https://doi.org/10.1007/s10648-017-9420-8>
- Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy*, *44*(9), 1301–1320.
<https://doi.org/10.1016/j.brat.2005.10.003>
- Keller, M. M., Chang, M.-L., Becker, E. S., Goetz, T., & Frenzel, A. C. (2014a). Teachers' emotional experiences and exhaustion as predictors of emotional labor in the classroom: An experience sampling study. *Frontiers in Psychology*, *5*.
<https://doi.org/10.3389/fpsyg.2014.01442>

- Keller, M. M., Chang, M.-L., Becker, E. S., Goetz, T., & Frenzel, A. C. (2014b). Teachers' emotional experiences and exhaustion as predictors of emotional labor in the classroom: An experience sampling study. *Frontiers in Psychology, 5*.
<https://doi.org/10.3389/fpsyg.2014.01442>
- Khajavy, G. H., Ghonsooly, B., & Hosseini Fatemi, A. (2017). Testing a Burnout Model Based on Affective-motivational Factors among EFL Teachers. *Current Psychology, 36*(2), 339–349.
<https://doi.org/10.1007/s12144-016-9423-5>
- Kristensen TS, Borritz M, Villadsen E, & Christensen KB. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192–207.
<https://doi.org/10.1080/02678370500297720>
- Kyriacou, C. (1987). Teacher stress and burnout: An international review. *Educational Research, 29*(2), 146–152. <https://doi.org/10.1080/0013188870290207>
- Kyriacou, C. (2001a). Teacher Stress: Directions for future research. *Educational Review, 53*(1), 27–35. <https://doi.org/10.1080/00131910120033628>
- Kyriacou, C. (2001b). Teacher Stress: Directions for future research. *Educational Review, 53*(1), 27–35. <https://doi.org/10.1080/00131910120033628>
- Kyriacou, C., & Sutcliffe, J. (1978). A Model of Teacher Stress. *Educational Studies, 4*(1), 1–6.
<https://doi.org/10.1080/0305569780040101>
- Kyriacou, C., & Sutcliffe, J. (1979a). A note on teacher stress and locus of control. *Journal of Occupational Psychology, 52*(3), 227–228. <https://doi.org/10.1111/j.2044-8325.1979.tb00456.x>
- Kyriacou, C., & Sutcliffe, J. (1979b). Teacher Stress and Satisfaction. *Educational Research, 21*(2), 89–96. <https://doi.org/10.1080/0013188790210202>
- Kyriacou, C. (2011). Teacher stress: From prevalence to resilience. *Handbook of stress in the occupations*, 161-173. Edward Elgar Publishing.

- Landi, Pakenham, K. I., Crocetti, E., Grandi, S., & Tossani, E. (2021). The Multidimensional Psychological Flexibility Inventory (MPFI): Discriminant validity of psychological flexibility with distress. *Journal of Contextual Behavioral Science, 21*, 22–29.
- Linardon, J. (2020). Can Acceptance, Mindfulness, and Self-Compassion Be Learned by Smartphone Apps? A Systematic and Meta-Analytic Review of Randomized Controlled Trials. *Behavior Therapy, 51*(4), 646–658. <https://doi.org/10.1016/j.beth.2019.10.002>
- Linardon, J., Cuijpers, P., Carlbring, P., Messer, M., & Fuller-Tyszkiewicz, M. (2019). The efficacy of app-supported smartphone interventions for mental health problems: A meta-analysis of randomized controlled trials. *World Psychiatry, 18*(3), 325–336.
- Lobo. (2018). Investigating the effects of an ACT-based mobile application on stress, anxiety, and burnout in the workplace . University of Waikato.
- Lorente, L., Salanova, M., Martínez, I., & Schaufeli, W. (2008). Extensión of the Job Demands-Resources model in the prediction of burnout and engagement among teachers over time. *Psicothema, 20*, 354–360.
- Lui, J., Marcus, D., & Barry, C. (2017). Evidence-Based Apps? A Review of Mental Health Mobile Applications in a Psychotherapy Context. *Professional Psychology: Research and Practice, 48*. <https://doi.org/10.1037/pro0000122>
- Madigan, D. J., & Kim, L. E. (2021). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education, 105*, 103425. <https://doi.org/10.1016/j.tate.2021.103425>
- Manzano- García, G., & Ayala-Calvo, J.-C. (2013). Nuevas perspectivas: Hacia una integración del concepto de burnout y sus modelos explicativos. *Anales de Psicología, 29*(3), 800–809. <https://doi.org/10.6018/analesps.29.3.145241>
- Maslach, C. (20170605). Finding solutions to the problem of burnout. *Consulting Psychology Journal: Practice and Research, 69*(2), 143. <https://doi.org/10.1037/cpb0000090>

- Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout: An annual review of Psychology, 52, 377-422.
- Mason, S., & Matas, C. (2015). Teacher Attrition and Retention Research in Australia: Towards a New Theoretical Framework. *Australian Journal of Teacher Education*, 40, 45–66.
<https://doi.org/10.14221/ajte.2015v40n11.3>
- McCormick, J., & Barnett, K. (2011). Teachers' attributions for stress and their relationships with burnout. *International Journal of Educational Management*, 25(3), 278–293.
<https://doi.org/10.1108/09513541111120114>
- McKenzie, K. E. (2009). Teacher burnout: A laughing matter [Ph.D., Capella University]. In *ProQuest Dissertations and Theses*.
<http://search.proquest.com/docview/305162617/abstract/9689EA5652540FEPQ/1>
- Milfont, T. L., Denny, S., Ameratunga, S., Robinson, E., & Merry, S. (2008). Burnout and Wellbeing: Testing the Copenhagen Burnout Inventory in New Zealand Teachers. *Social Indicators Research*, 89(1), 169–177. <https://doi.org/10.1007/s11205-007-9229-9>
- Molinero-Ruiz, E., Gomez-Quintero, H., & Lluís, S. (2013). Validation of the Spanish version of the Copenhagen Burnout Inventory questionnaire. *Rev Esp Salud Pública*, 87(165), e179.
- Montgomery, C., & Rupp, A. A. (2005). A Meta-Analysis for Exploring the Diverse Causes and Effects of Stress in Teachers. *Canadian Journal of Education / Revue Canadienne de l'éducation*, 28(3), 458–486. <https://doi.org/10.2307/4126479>
- Moran, D. J. (2015). Acceptance and Commitment Training in the workplace. *Current Opinion in Psychology*, 2, 26–31. <https://doi.org/10.1016/j.copsyc.2014.12.031>
- Obbarius, N., Fischer, F., Liegl, G., Obbarius, A., & Rose, M. (2021). A Modified Version of the Transactional Stress Concept According to Lazarus and Folkman Was Confirmed in a Psychosomatic Inpatient Sample. *Frontiers in Psychology*, 12, 405.
<https://doi.org/10.3389/fpsyg.2021.584333>

- Oberle, E., Gist, A., Cooray, M. S., & Pinto, J. B. R. (2020). Do students notice stress in teachers? Associations between classroom teacher burnout and students' perceptions of teacher social–emotional competence. *Psychology in the Schools, 57*(11), 1741–1756.
<https://doi.org/10.1002/pits.22432>
- O'Brien, P., Goddard, R., & Keeffe, M. (2008). *Burnout confirmed as a viable explanation for beginning teacher attrition.*
- Parkinson, B., Meacock, R., Sutton, M. , Fichera, E., Mills, N., Shorter, G.W., ...& Bower, P. (2019) Designing and using incentives to support recruitment and retention in clinical trials: a scoping review and a checklist for design. *Trails 20* (1), 1-4.
- Platsidou, M. (2010). Trait emotional intelligence of Greek special education teachers in relation to burnout and job satisfaction. *School psychology international, 31*(1), 60-76.
- Plumb, J. C., Stewart, I., Dahl, J., & Lundgren, T. (2009). In Search of Meaning: Values in Modern Clinical Behavior Analysis. *The Behavior Analyst, 32*(1), 85–103.
- Powers, M. B., Vörding, M. B. Z. V. S., & Emmelkamp, P. M. G. (2009). Acceptance and Commitment Therapy: A Meta-Analytic Review. *Psychotherapy and Psychosomatics, 78*(2), 73–80.
<https://doi.org/10.1159/000190790>
- Prudenzi, A., Graham, C. D., Clancy, F., Hill, D., O'Driscoll, R., Day, F., & O'Connor, D. B. (2021). Group-based acceptance and commitment therapy interventions for improving general distress and work-related distress in healthcare professionals: A systematic review and meta-analysis. *Journal of Affective Disorders, 295*, 192–202.
<https://doi.org/10.1016/j.jad.2021.07.084>
- Rajendran, N., Watt, H. M. G., & Richardson, P. W. (2020). Teacher burnout and turnover intent. *The Australian Educational Researcher, 47*(3), 477–500. <https://doi.org/10.1007/s13384-019-00371-x>

- Rey, L., Extremera, N., & Pena, M. (2016). Emotional competence relating to perceived stress and burnout in Spanish teachers: A mediator model. *PeerJ*, 4, e2087.
<https://doi.org/10.7717/peerj.2087>
- Richardson, A. M., & Burke, R. J. (1995). Models of burnout: Implications for interventions. *International Journal of Stress Management*, 2(1), 31–43.
<https://doi.org/10.1007/BF01701949>
- Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: a meta-analysis. *Journal of occupational health psychology*, 13(1), 69–93.
<https://doi.org/10.1037/1076-8998.13.1.69>
- Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., Oberle, E., Thomson, K., Taylor, C., & Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology*, 105(3), 787–804.
- Rolffs, J. L., Rogge, R. D., & Wilson, K. G. (2018). Disentangling components of flexibility via the hexaflex model: Development and validation of the Multidimensional Psychological Flexibility Inventory (MPFI). *Assessment*, 25(4), 458-482.
- Roseman, I. J., & Smith, C. A. (2001). Appraisal theory: Overview, assumptions, varieties, controversies. In *Appraisal processes in emotion: Theory, methods, research* (pp. 3–19). Oxford University Press.
- Ruiz, F. J., & Odriozola-González, P. (2017). The predictive and moderating role of psychological flexibility in the development of job burnout. *Universitas Psychologica*, 16(4), 282-289.
- Saloviita, & Pakarinen, E. (2021). Teacher burnout explained: Teacher-, student-, and organisation-level variables. *Teaching and Teacher Education*, 97, 103221–.
<https://doi.org/10.1016/j.tate.2020.103221>
- Şahin, N. H., & Şahin, N. (1992). Reliability and validity of the Turkish version of the Automatic Thoughts Questionnaire. *Journal of clinical psychology*, 48(3), 334-340.

- Sahlberg, P. (2010). Rethinking accountability in a knowledge society. *Journal of Educational Change*, 11(1), 45–61. <https://doi.org/10.1007/s10833-008-9098-2>
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., & Salanova, M. (2007). Efficacy or inefficacy, that's the question: Burnout and work engagement, and their relationships with efficacy beliefs. *Anxiety, Stress, & Coping*, 20(2), 177–196. <https://doi.org/10.1080/10615800701217878>
- Schaufeli, W. B., & Buunk, B. P. (1996). Professional burnout. *Handbook of work and health psychology*, 1, 383-425.
- Schonfeld, I., Bianchi, R., & Luehring-Jones, P. (2017). *Consequences of Job Stress for the Mental Health of Teachers*. https://doi.org/10.1007/978-3-319-53053-6_3
- Seidler, D., Stone, B., Clark, B. E., Koran, J., & Drake, C. E. (2020). Evaluating the factor structure of the Multidimensional Psychological Flexibility Inventory: An independent replication and extension. *Journal of Contextual Behavioral Science*, 17, 23-31.
- Seidman, S. A., & Zager, J. (1991). A study of coping behaviours and teacher burnout. *Work & Stress*, 5(3), 205–216. <https://doi.org/10.1080/02678379108257019>
- Sestili, C., Scalingi, S., Cianfanelli, S., Mannocci, A., Del Cimmuto, A., De Sio, S., ... & La Torre, G. (2018). Reliability and use of Copenhagen burnout inventory in Italian sample of university professors. *International journal of environmental research and public health*, 15(8), 1708.
- Skaalvik, E. M., & Skaalvik, S. (2017). Dimensions of teacher burnout: Relations with potential stressors at school. *Social Psychology of Education*, 20(4), 775–790. <https://doi.org/10.1007/s11218-017-9391-0>
- Steinhardt, M. A., Smith Jaggars, S. E., Faulk, K. E., & Gloria, C. T. (2011). Chronic Work Stress and Depressive Symptoms: Assessing the Mediating Role of Teacher Burnout. *Stress and Health*, 27(5), 420–429. <https://doi.org/10.1002/smi.1394>

- Stratton, E., Lampit, A., Choi, I., Calvo, R. A., Harvey, S. B., & Glozier, N. (2017). Effectiveness of eHealth interventions for reducing mental health conditions in employees: A systematic review and meta-analysis. *PLOS ONE*, *12*(12), e0189904.
<https://doi.org/10.1371/journal.pone.0189904>
- Thompson, E. M., Destree, L., Albertella, L., & Fontenelle, L. F. (2021). Internet-Based Acceptance and Commitment Therapy: A Transdiagnostic Systematic Review and Meta-Analysis for Mental Health Outcomes. *Behavior Therapy*, *52*(2), 492–507.
<https://doi.org/10.1016/j.beth.2020.07.002>
- Torous, J., & Powell, A. (2015). Current Research and Trends in the Use of Smartphone Applications for Mood Disorders. *Internet Interventions*, *62*. <https://doi.org/10.1016/j.invent.2015.03.002>
- Van Droogenbroeck, F., Spruyt, B., Quittre, V., & Lafontaine, D. (2021). Does the School Context Really Matter for Teacher Burnout? Review of Existing Multilevel Teacher Burnout Research and Results from the Teaching and Learning International Survey 2018 in the Flemish- and French-Speaking Communities of Belgium. *Educational Researcher*, 0013189X21992361.
<https://doi.org/10.3102/0013189X21992361>
- Walker. (2017). Acceptance and commitment therapy for stress and burnout : evaluating the effect of the online training, PsyFlex6 for behavioural therapists .University of Waikato.
- Watt, H. M., & Richardson, P. W. (2007). Motivational factors influencing teaching as a career choice: Development and validation of the FIT-Choice scale. *The Journal of experimental education*, *75*(3), 167-202.
- Weber, H. (2001). Stress Management Programs. In N. J. Smelser & P. B. Baltes (Eds.), *International Encyclopedia of the Social & Behavioral Sciences* (pp. 15184–15190). Pergamon.
<https://doi.org/10.1016/B0-08-043076-7/03890-0>
- Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of personality and social psychology*, *53*(1), 5.

- Whiteford, C., Kelly, N., & Dawes, L. (2021). Why Become a Teacher? Exploring Motivations for Becoming Science and Mathematics Teachers in Australia. *Australian Journal of Teacher Education*, 46(3), Article 3. <https://doi.org/10.14221/ajte.2021v46n3.1>
- Whitehead, A. J. (2001). *Teacher burnout: A study of occupational stress and burnout in New Zealand school teachers: a thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, Massey University, Albany, New Zealand* [Thesis, Massey University]. <https://mro.massey.ac.nz/handle/10179/2083>
- Williams, L. E., & MacDonald, H. M. (1982). Burnout: From Tedium to Personal Growth. *Social Science Quarterly (University of Texas Press)*, 63(3), 599–600.
- Xu, X., Liu, X., Ou, M., Xie, C., & Chen, Y. (2018). Psychological flexibility of nurses in a cancer hospital: preliminary validation of a Chinese version of the work-related acceptance and action questionnaire. *Asia-Pacific journal of oncology nursing*, 5(1), 83.
- Zettle, R. D. (2015). Acceptance and commitment therapy for depression. *Current opinion in psychology*, 2, 65-69.
- Zweben, A., Fucito, I. M. O' Maley, S. S., (2009). Effective Strategies for Maintaining Research Participation in Clinical Trials. *Drug Information Journal*, 43(4).

Appendix A - Participant Information Sheet



Investigating the effects of an online ACT program on psychological flexibility, stress and burnout rates among teachers.

You are being invited to participate in a research study that will seek to investigate the effects of an online training program (PsyFlex 6) on staff well-being, stress and burn-out rates.

The programme will be delivered through a six-week online course with a 15 -20 minute time investment per day for 5 days a week. Over the course of six weeks you will be working through six modules aimed at teaching three core mindfulness skills to increase psychological resilience and flexibility.

All eligible participants will be randomly assigned to one of two groups. Both groups will have the opportunity access and complete to the training program at staggered start dates.

If you choose to participate in this study, you will be asked to complete seven brief measures at four points during the course of the project. These measures will be completed online and should not take longer than 5 – 10 minutes. The first measures will be delivered prior to engaging in the program. The second set of measures will be delivered at the mid-way mark and the last set of measures at the end of the program. There will be a follow-up set of measures two months after program completion as well.

Confidentiality remains of the highest priority in this project. Every participant will be provided with a unique identifier number and data will be de-identified prior to being released to the researcher. Once the program has been completed and data collected and processed, de-identified results will be published in a thesis, and possibly a peer reviewed journal article. At no point will any member on staff, the senior leadership team or the researcher have access to participant information or participation status, unless self-disclosed. Participants will not be named in any research reports or articles. Any information and data collected will be securely stored for a period of 5 years before being destroyed.

All participants interested in participating in this study will be considered. To be eligible to participate in this study willing candidates must have access to internet and a computer/tablet for the duration of the program. This eligibility criterion is in place as the training is delivered online exclusively. We ask that participants who are currently undergoing therapy or receiving therapeutic support to indicate this on the demographic data collection form, as this and its potential impact on outcomes will need to be taken

into consideration during the publication of the results of the project. Participants will not be compensated financially or otherwise.

Participation in this study is completely voluntary. There is no expectation on any staff member to participate and likewise there will be no consequences for not participating. If you choose to participate in the study, you have the right to:

- Refuse to answer any particular question on the measures, although it is encouraged to complete the measures to the best of your ability.
- Withdraw from the study at any point up to 2 weeks after the study has concluded. If you wish to withdraw, you can inform me of your intention to withdraw by email or otherwise. As with all other measures and information, this will be handled with utmost confidentiality.
- Ask any further questions about the study that occurs to you during your participation.
- Be given access to a summary of the findings from the study when it is concluded.

This research is being completed in the partial fulfilment of a Masters of Applied Psychology, Behaviour Analysis, thesis component through the University of Waikato, New Zealand. and will be supervised by Dr Tim Edwards (tim.edwards@waikato.ac.nz). The research is being conducted by Bernice Botha (bmb22@students.waikato.ac.nz).

This research project has been approved by the University of Waikato's ALPSS Human Research Ethics Committee. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email fass-ethics@waikato.ac.nz, postal address, ALPSS, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

If you are interested in participating in this research or have any further questions, please contact me at the above email address.

Thank you for your time and interest.

Sincerely

Bernice Botha

Appendix B Consent Form



Investigating the effects of an online ACT program on psychological flexibility, stress and burnout rates among teachers

Consent Form for Participants

[A completed copy of this form should be retained by both the researcher and the participant]

| Please complete the following checklist. Tick [✓] the appropriate box for each point. | YES | NO |
|--|-----|----|
| I have read the participant information sheet (or it has been explained to me) and I have understood it. | | |
| I have been given time to ask questions and seek answers about this project. | | |
| I understand that taking part in this study is voluntary and that I may withdraw from this study without penalty. | | |
| I understand I have the right to decline to participate in any part of the research activity without penalty. | | |
| I understand that every measure will be taken to ensure confidentiality and that my personal details will not be disclosed to anyone without my prior written consent. | | |
| I understand that my details will be stored securely for a period of 5 years and then destroyed in an appropriate manner. | | |
| I understand that I have the right to access and correct any personal information. | | |
| I give consent for my de-identified data to be released for the use this research project | | |
| I know who to contact if I have any further queries about this research project. | | |
| I wish to receive a copy of the findings. | | |

Declaration by participant:

I agree to participate in this research project, and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee

| | |
|----------------------------|-------------|
| Participant's name: | |
| Signature | Date |

Declaration by member of research team: I have given a verbal explanation of the research project to the participant and have answered the participant's questions about it. I believe that the participant understands the study and has given informed consent to participate.

| | |
|---|-------------|
| Researcher's name: Bernice Botha | |
| Signature | Date |

Appendix C Copenhagen Burnout Inventory

Copenhagen Burnout Inventory (English version) used in the PUMA study

NB: The questions of the CBI are *not* being printed in the questionnaire in the same order as shown here. In fact, the questions are mixed with questions on other topics. This is recommended in order to avoid stereotyped response patterns.

Part one: Personal burnout

Definition: Personal burnout is a state of prolonged physical and psychological exhaustion.

Questions:

1. How often do you feel tired?
2. How often are you physically exhausted?
3. How often are you emotionally exhausted?
4. How often do you think: "I can't take it anymore"?
5. How often do you feel worn out?
6. How often do you feel weak and susceptible to illness?

Response categories: Always, Often, Sometimes, Seldom, Never/almost never.

Scoring: Always: 100. Often: 75. Sometimes: 50. Seldom: 25. Never/almost never: 0.
Total score on the scale is the average of the scores on the items.

If less than three questions have been answered, the respondent is classified as non-responder.

Part two: Work-related burnout

Definition: Work-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work.

Questions:

1. Is your work emotionally exhausting?
2. Do you feel burnt out because of your work?
3. Does your work frustrate you?

4. Do you feel worn out at the end of the working day?
5. Are you exhausted in the morning at the thought of another day at work?
6. Do you feel that every working hour is tiring for you?
7. Do you have enough energy for family and friends during leisure time?

Response categories:

Three first questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

Last four questions: Always, Often, Sometimes, Seldom, Never/almost never. Reversed score for last question.

Scoring as for the first scale. If less than four questions have been answered, the respondent is classified as non-responder.

Part three: Client-related burnout

Definition: Client-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work with clients*.

***Clients, patients, social service recipients, elderly citizens, or inmates.**

Questions:

1. Do you find it hard to work with clients?
2. Do you find it frustrating to work with clients?
3. Does it drain your energy to work with clients?
4. Do you feel that you give more than you get back when you work with clients?
5. Are you tired of working with clients?
6. Do you sometimes wonder how long you will be able to continue working with clients?

Response categories:

The four first questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

The two last questions: Always, Often, Sometimes, Seldom, Never/almost never.

Scoring as for the first two scales. If less than three questions have been answered, the respondent is classified as non-responder.

Appendix D Perceived Stress Scale

PERCEIVED STRESS SCALE *5m score*

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (Circle): **M** **F** Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- | | | | | | |
|--|---|---|---|---|---|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly? | 0 | 1 | 2 | 3 | 4 |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? | 0 | 1 | 2 | 3 | 4 |
| 3. In the last month, how often have you felt nervous and "stressed"? | 0 | 1 | 2 | 3 | 4 |
| 4. In the last month, how often have you felt confident about your ability to handle your personal problems? | 0 | 1 | 2 | 3 | 4 |
| 5. In the last month, how often have you felt that things were going your way? | 0 | 1 | 2 | 3 | 4 |
| 6. In the last month, how often have you found that you could not cope with all the things that you had to do? | 0 | 1 | 2 | 3 | 4 |
| 7. In the last month, how often have you been able to control irritations in your life? | 0 | 1 | 2 | 3 | 4 |
| 8. In the last month, how often have you felt that you were on top of things? | 0 | 1 | 2 | 3 | 4 |
| 9. In the last month, how often have you been angered because of things that were outside of your control? | 0 | 1 | 2 | 3 | 4 |
| 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | 0 | 1 | 2 | 3 | 4 |


mind garden
 info@mindgarden.com
 www.mindgarden.com

References

- The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.
- Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

Appendix E Automatic Thoughts Questionnaire

ATQ *Sum Score*

Instructions: Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you *over the last week*.

Please circle a response on the LEFT side of the sheet using the **FREQUENCY** scale:

1 = not at all 2 = sometimes 3 = moderately often 4 = often 5 = all the time

Then, please indicate how strongly, if at all, you tend to believe that thought, when it occurs. Please circle a response on the RIGHT side of the sheet using the **DEGREE OF BELIEF** scale:

1 = not at all 2 = somewhat 3 = moderately 4 = very much 5 = totally

| Frequency | Item | Degree of Belief |
|-----------|---|------------------|
| 1 2 3 4 5 | 1.) I feel like I'm up against the world. | 1 2 3 4 5 |
| 1 2 3 4 5 | 2.) I'm no good. | 1 2 3 4 5 |
| 1 2 3 4 5 | 3.) Why can't I ever succeed? | 1 2 3 4 5 |
| 1 2 3 4 5 | 4.) No one understands me. | 1 2 3 4 5 |
| 1 2 3 4 5 | 5.) I've let people down. | 1 2 3 4 5 |
| 1 2 3 4 5 | 6.) I don't think I can go on. | 1 2 3 4 5 |
| 1 2 3 4 5 | 7.) I wish I were a better person. | 1 2 3 4 5 |
| 1 2 3 4 5 | 8.) I'm so weak. | 1 2 3 4 5 |
| 1 2 3 4 5 | 9.) My life's not going the way I want it to. | 1 2 3 4 5 |
| 1 2 3 4 5 | 10.) I'm so disappointed in myself. | 1 2 3 4 5 |
| 1 2 3 4 5 | 11.) Nothing feels good anymore. | 1 2 3 4 5 |
| 1 2 3 4 5 | 12.) I can't stand this anymore. | 1 2 3 4 5 |
| 1 2 3 4 5 | 13.) I can't get started. | 1 2 3 4 5 |
| 1 2 3 4 5 | 14.) What's wrong with me? | 1 2 3 4 5 |
| 1 2 3 4 5 | 15.) I wish I were somewhere else. | 1 2 3 4 5 |
| 1 2 3 4 5 | 16.) I can't get things together. | 1 2 3 4 5 |
| 1 2 3 4 5 | 17.) I hate myself. | 1 2 3 4 5 |
| 1 2 3 4 5 | 18.) I'm worthless. | 1 2 3 4 5 |
| 1 2 3 4 5 | 19.) Wish I could just disappear. | 1 2 3 4 5 |
| 1 2 3 4 5 | 20.) What's the matter with me? | 1 2 3 4 5 |
| 1 2 3 4 5 | 21.) I'm a loser. | 1 2 3 4 5 |
| 1 2 3 4 5 | 22.) My life is a mess. | 1 2 3 4 5 |
| 1 2 3 4 5 | 23.) I'm a failure. | 1 2 3 4 5 |
| 1 2 3 4 5 | 24.) I'll never make it. | 1 2 3 4 5 |
| 1 2 3 4 5 | 25.) I feel so hopeless. | 1 2 3 4 5 |
| 1 2 3 4 5 | 26.) Something has to change. | 1 2 3 4 5 |
| 1 2 3 4 5 | 27.) There must be something wrong with me. | 1 2 3 4 5 |
| 1 2 3 4 5 | 28.) My future is bleak. | 1 2 3 4 5 |
| 1 2 3 4 5 | 29.) It's just not worth it. | 1 2 3 4 5 |
| 1 2 3 4 5 | 30.) I can't finish anything. | 1 2 3 4 5 |

Appendix G Work-related Acceptance and Action Questionnaire

Work-related Acceptance and Action Questionnaire

5m Scale

| Items | 1 Never | 2 Very seldom | 3 Seldom | 4 Sometimes | 5 Frequently | 6 Almost Always | 7 Always |
|--|------------|---------------------|-------------|----------------|-----------------|-----------------------|-------------|
| I am able to work effectively in spite of any personal worries that I have | | | | | | | |
| I can admit to my mistakes at work and still be successful | | | | | | | |
| I can still work very effectively even if I am nervous about something | | | | | | | |
| Worries do not get in the way of my success | | | | | | | |
| I can perform as required no matter how I feel | | | | | | | |
| I can work effectively even when I doubt myself | | | | | | | |
| My thoughts and feelings do not get in the way of my work | | | | | | | |