

A Comprehensive Evaluation of Faculty Members' Emotion Regulation and Well-being

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Abstract

The literature suggests that faculty members experience high levels of job-related stress. Evidence also suggests that the stress inherent in the academic profession undermines faculty members' personal and professional well-being. Stress invokes a variety of positive and negative emotions which impact faculty cognition, well-being and performance and faculty employ a variety of strategies to cope with stress and regulate their emotions. Although emotion regulation strategies faculty employ also have consequences on well-being and performance, the role of emotion regulation in faculty well-being remains underexplored. This dissertation has aimed to explore this notable research gap in the higher education research literature.

The current dissertation is comprised of three separate manuscripts. The first two are comprehensive reviews of the literature on the impact of stress on faculty members' psychological well-being and the coping and emotion regulation strategies faculty employ to deal with stress and emotions. The third is an empirical study exploring the impact of several emotion regulation strategies on well-being outcomes, the potential impact of gender, years of experience, and stress on emotion regulation strategy use and well-being and the moderating role of these background variables in the association between emotion regulation and well-being, as well as interactions between adaptive and maladaptive emotion regulation strategies in predicting well-being. The sample consisted of 414 faculty members from non-medical disciplines from thirteen English speaking research-intensive universities in Canada.

The first manuscript utilized content analysis to review and critically analyze the empirical evidence of the ways in which work-related stress and experiences compromise academics' psychological well-being. The second manuscript provides a comprehensive and descriptive review of the literature on academics' coping and emotion management strategies as well as the

consequences of these strategies on faculty well-being and productivity. Finally, the third manuscript employed regression analyses to investigate the link of adaptive and maladaptive emotion regulation strategies and stress to well-being outcomes and moderation analyses to provide empirical support for the moderating role of stress and sample characteristics in the link between emotion regulation and well-being as well as the interactions between emotion regulation strategies. Results serve to provide a deeper insight into the impact of stress on faculty well-being and emotion regulation strategy use, the emotion regulation strategies faculty employ and the ways in which emotion regulation strategies shape well-being in post-secondary faculty. Most importantly, the present study contributes the novel finding that stress impacts emotions regulation strategy use and moderates emotion regulation and well-being association. Findings also point to directions for future research as well as organizational initiatives to improve the emotion regulation strategies and the psychological and physical well-being of their faculty members.

Résumé

La littérature suggère que les membres du corps professoral éprouvent des niveaux élevés de stress lié au travail. Les données indiquent également que le stress inhérent à la profession universitaire nuit au bien-être personnel et professionnel des membres du corps professoral. Le stress fait appel à une variété d'émotions positives et négatives qui ont une incidence sur la cognition, le bien-être et le rendement des facultés, et les facultés emploient une variété de stratégies pour faire face au stress et réguler leurs émotions. Bien que les stratégies de régulation des émotions utilisées par les professeurs aient également des conséquences sur le bien-être et le rendement, le rôle de la régulation des émotions dans le bien-être des professeurs demeure sous-exploré. Cette dissertation vise à explorer cette lacune notable dans la littérature de recherche de l'enseignement supérieur.

La thèse actuelle est composée de trois manuscrits distincts. Les deux premières sont des examens exhaustifs de la documentation sur l'incidence du stress sur le bien-être psychologique des membres du corps professoral et sur les stratégies d'adaptation et de régulation des émotions utilisées par le corps professoral pour gérer le stress et les émotions. La troisième est une étude empirique explorant l'impact de plusieurs stratégies de régulation des émotions sur le bien-être qui en résulte, l'impact potentiel du genre, les années d'expérience et le stress sur l'utilisation et le bien-être et le rôle de modérateur de ces variables d'arrière-plan dans l'association entre la régulation des émotions et le bien-être, ainsi que les interactions entre les stratégies de régulation des émotions adaptatives et inadaptées pour prédire le bien-être. L'échantillon se composait de 414 membres du corps professoral de disciplines non médicales provenant de treize universités de recherche anglophones au Canada.

Le premier manuscrit a utilisé l'analyse du contenu pour examiner et analyser, de façon critique, les preuves empiriques des façons dont le stress et les expériences liées au travail compromettent le bien-être psychologique des universitaires. Le deuxième manuscrit présente un examen complet et descriptif de la documentation sur les stratégies d'adaptation et de gestion des émotions des universitaires ainsi que sur les conséquences de ces stratégies sur le bien-être et la productivité des professeurs. Enfin, le troisième manuscrit a utilisé des analyses de régression pour étudier le lien entre les stratégies de régulation adaptative et inadaptée des émotions et le stress au bien-être des résultats et des analyses de modération pour fournir un soutien empirique au rôle modérateur du stress et des caractéristiques de l'échantillon dans le lien entre la régulation des émotions et le bien-être, ainsi que les interactions entre les stratégies de régulation des émotions. Les résultats permettent de mieux comprendre l'incidence du stress sur le bien-être des professeurs et l'utilisation des stratégies de régulation des émotions, les stratégies utilisées par les professeurs et les façons dont ces stratégies façonnent le bien-être dans les facultés d'enseignement post-secondaire. Plus important encore, l'étude contribue à une nouvelle conclusion selon laquelle le stress influe sur la stratégie de régulation des émotions et modère la régulation des émotions et l'association au bien-être. Les résultats indiquent également des orientations pour les recherches futures ainsi que les initiatives organisationnelles visant à améliorer les stratégies de régulation des émotions et le bien-être psychologique et physique des membres de leur faculté.

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Preface and Contributions of Authors

I am the principal author of each manuscript in the present dissertation and as such responsible for their content. In addition, I am primarily responsible for the idea generation, dissertation proposal, ethics application and approval, data collection, data analyses, and writing of the manuscripts in the present dissertation. I wrote earlier versions of Chapters 2 and 3 independently as partial fulfillment of my comprehensive exam. Dr. Saroyan and Dr. Hall provided substantive feedback by way of email and personal meetings as members of evaluation committee. The empirical manuscript presented in Chapter 4 was co-authored with Dr. Hall and Dr. Saroyan. Dr. Quoidbach provided advice on modifying the emotion regulation questionnaire to adapt it to the academic context. Furthermore, an abbreviated version of Chapter 4 was presented as a paper presentation at the 2019 American Educational Research Association (AERA). The specific contributions made for each manuscript by myself and coauthors are described below. I wrote the Introduction (Chapter 1) and General discussion (Chapter 5) independently.

Chapter 2 Contributions

The original version of this manuscript was prepared in partial fulfillment of my comprehensive exam. Dr. Saroyan and Dr. Hall provided feedback as my comprehensive examination committee members. I wrote the manuscript in its entirety. Dr. Saroyan and Dr. Hall, reviewed the final draft of the manuscript and provided several rounds of feedback. The manuscript was published in December 2017 in the *Journal of International Education Research*. Dr. Saroyan and Dr. Hall were co-authors on this manuscript.

Chapter 3 Contributions

This chapter is also based on my comprehensive examination. As such, I am entirely responsible for conducting the literature search and review and writing this manuscript. Once the manuscript was finalized, it was reviewed by Dr. Hall and Dr. Saroyan for several rounds. Dr. Hall suggested further revisions regarding the guiding framework, structure, and writing. The manuscript will be submitted to a peer-reviewed educational psychology journal, with Dr. Hall and Dr. Saroyan as co-authors.

Chapter 4 Contributions

I independently collected the data, conducted the analyses and completed the writing for this manuscript. Dr. Hall reviewed the initial draft of the methods and results section and provided substantive feedback for revisions and additional analyses. Dr. Hall and Dr. Saroyan also reviewed the initial full draft of the whole manuscript. Once all the analyses were finalized, Dr. Hall and Dr. Saroyan conducted another round of review. The manuscript will be submitted to a peer-reviewed educational psychology journal, with Dr. Hall and Dr. Saroyan as co-authors.

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Chapter 1

Introduction

Fundamental changes in the higher education sector worldwide (e.g., growth in student numbers, internationalization, and commercialization) and subsequent demands for efficacy and accountability have resulted in increased vulnerability to job-related stress in post-secondary faculty (Biron, Brun, & Ivers, 2008; Kinman, 2014; McAlpine & Akerlind, 2010; Winefield et al., 2003). Indeed, academics' self-reported stress levels exceed those of other professional groups and the general population (e.g., Barkhuizen & Rothmann, 2008; Tytherleigh, Webb, Cooper, Ricketts, 2005). Empirical evidence further shows that stress has adverse consequences for personal and occupational well-being as well as performance and professional development of post-secondary faculty (Barkhuizen, Rothmann, & van de Vijver 2014; Catano et al., 2010). Nonetheless, there are no reviews of empirical research on how work-related stress compromises these professionals' psychological health and the strategies post-secondary faculty employ in coping with stress.

Furthermore, the academic profession involves the experience of a variety of emotions which, in turn, have implications on the well-being and performance of faculty (Stupnisky, Hall, & Pekrun, 2019a, 2019b; Stupnisky, Pekrun, & Lichtenfeld, 2016; Trigwell, 2012; Zhang & Zhang, 2013). Given that emotions constitute an integral aspect of faculty lives, it is critical to investigate how different emotion regulation strategies relate to faculty well-being. The construct of emotion regulation refers to a range of automatic and controlled processes by which individuals influence which emotions they have, when they have them, and how they experience and express their emotions (Gross, 1998, 2014). Nonetheless, although job performance and accountability of post-secondary faculty have been extensively explored, their emotional experiences have been largely overlooked (Berry & Cassidy, 2013; Postareff & Lindblom-Ylänne, 2011; Zhang & Zhang, 2013). Specifically, despite previous research consistently linking emotion regulation strategies to subsequent well-being in other professional contexts, regulation of emotions and its impact on

well-being is to date underexplored among faculty members with no reviews of research conducted on this topic.

There exists no common definition or conceptualization of stress within the literature. Stress has been conceptualized as a response, a stimulus, and a transaction. Response-based conceptualization defines stress as a response to environmental conditions/demands (often referred to as stressors; Selye, 1956) whereas the stimulus-based view (Holmes & Rahe, 1967) defines stress as a stimulus that causes certain reactions. As for transactional view of stress (Lazarus & Folkman, 1984), stress is characterized as a more dynamic process whereby individuals perceive and respond to events they appraise as demanding or threatening. The current dissertation draws on all these three conceptualizations.

The present dissertation thus aimed to contribute to the post-secondary education literature in two ways: First, a comprehensive review of the existing empirical research was conducted to identify the ways in which stress compromises psychological well-being in post-secondary faculty. This research further aimed to identify the strategies faculty use in coping with work-related stress and emotions so as to provide an insight into how faculty members' emotion regulation strategies predict well-being. Second, a large-scale quantitative study of Canadian faculty members recruited nationally from 13 English-speaking research-intensive universities sought to explore empirically the notion of emotion regulation and well-being amongst faculty. Additionally, the present study aimed to explore how stress, gender, and years of experience predict well-being and use of emotion regulation strategies, how these background variables interact with emotion regulatory strategies in predicting well-being, as well as how different emotion regulation strategies interact with each other in predicting faculty well-being.

Accordingly, the present dissertation aimed to target two notable gaps in the existing research literature on post-secondary education: first by comprehensively reviewing the empirical findings on the detrimental influences of stress on psychological well-being as well as identifying the emotion regulation strategies faculty employ in dealing with their emotions; second, by empirically investigating the ways in which different emotion regulation strategies as well as background variables relate to well-being outcomes in post-secondary faculty. The present dissertation thus attempts to answer the following three general research questions:

1. How do work-related stress and experiences compromise post-secondary faculty members' psychological well-being (Chapter 2)?
2. What are the strategies post-secondary faculty use in coping with work-related stress and emotions (Chapter 3)?
3. How do stress and emotion regulation strategies predict well-being in faculty members (Chapter 4)?

Overview of Chapters

Chapter 2 represents the first manuscript of the dissertation and includes a review of the empirical literature on faculty members' psychological health and a critical analysis of the ways stress and adverse work experiences impact their psychological well-being. Findings suggest that stress compromises psychological well-being of faculty members by making them vulnerable to psychological distress, negative emotions, depression, and burnout.

Chapter 3 represents the second manuscript of the dissertation. As a follow-up to the review of the existing literature (first manuscript) in which the impact of stress on psychological well-being of faculty is highlighted, the second manuscript explores the strategies faculty employ to

deal with work-related stress and emotions as well as the ways in which emotion regulation strategies impact faculty well-being.

The final manuscript of the dissertation, represented in Chapter 4, is a report of an empirical study which investigated the associations between perceived stressors and different emotion regulation strategies with well-being outcomes. Chapter 4 further evaluates the interactions between adaptive and maladaptive emotion regulation strategies in predicting well-being and explores the moderating role of stress (highlighted in chapter two as a determining factor in psychological well-being) and sample characteristics (i.e., gender and years of experience) in the association between emotion regulation strategies and well-being outcomes.

Finally, Chapter 5 presents a summary and a general discussion of the findings of the three previous manuscripts as well as empirical and practical contributions of this research to the field and concludes with important future directions for ongoing research on the topic.

In sum, the three manuscripts presented in the present dissertation contribute substantially to the post-secondary education literature in two ways: First, it provides the first comprehensive review articles on the impact of stress on psychological well-being of post-secondary faculty and the strategies faculty employ to deal with work-related stress and emotions. Second, it reports a timely empirical exploration of the link between emotion regulation strategies, stress, gender, and years of experience on the one hand and well-being outcomes on the other, as well as the interplay between stress, gender, and years of experience and emotion regulation strategies in shaping the physical and psychological well-being of faculty.

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Chapter 2

Examining the Factors Impacting Academics' Psychological Well-Being: A Review of Research

Salimzadeh, R., Saroyan, A., & Hall, N. C. (2017). Examining the factors impacting academics' psychological well-being: A review of research. *International Education Research*, 5(1), 13-44. doi:10.12735/ier.v5n1p13.

Abstract

Existing research suggests that academics are subjected to high levels of job-related stress. Numerous aspects of an academic career such as time constraint, work overload, work-life conflict, and emotional demands are stressful and trigger negative emotional responses. There is further evidence to suggest that job-related stress compromises physical and psychological well-being, and impairs productivity among academics. The purpose of the present paper was to review the empirical research on how work-related stress and experiences impact academics' psychological well-being. Accordingly, a thorough review of the literature was conducted and 46 studies attending to aspects of psychological well-being were identified and analyzed. The literature was found to be fragmented. The review concludes that job-related stress and specific types of experiences adversely impact academics' psychological well-being by making them vulnerable to psychological distress, negative emotions, depression, and burnout. Implications for improving psychological well-being among academics are addressed and directions for future research are proposed.

Examining the Factors Impacting Academics' Psychological Well-Being: A Review of Research

Academics, not unlike other professionals, are subjected to high levels of job-related stress (Tytherleigh, Webb, Cooper, & Ricketts, 2005). Internationally, academia has undergone fundamental changes over the last 20 years. Globalization, competition due to political and economic changes, eroded job security, and the ubiquity of information technology (Lundberg & Cooper, 2010) have changed employment in higher education as in other contexts (Biron, Brun, & Ivers, 2008; Kinman, 2014). The adoption of New Public Management (NPM) principles from the private sector that emphasize the centrality of the customer as well as accountability for results (Pollitt & Bouckaert, 2004), major educational reforms, expansion and access, the move towards commercialization (e.g., decreased focus on humanities vs. profit margins), and reduction in funding resources have thrust higher education into the competitive business arena (Constanti & Gibbs, 2004; Ogbonna & Harris, 2004). Added to these changes are the varied demands of the academic profession, involving the simultaneous performance of disparate tasks including teaching, supervising, undertaking research, and providing service (Fisher, 1994; Kinman, 2014). The increased demands for efficacy and accountability (Anderson, 2006) have put unprecedented levels of pressure on academia in general and academics in particular (Catano *et al.*, 2010; Kinman, 2014). The cumulative result of these changes to the academic landscape have accordingly resulted in increased vulnerability to job-related stress, reduced physical and psychological well-being, and impaired performance (Beehr & Franz, 1987; Kinman, 2001).

Given the significance of well-being for job performance and productivity (Ford, Cerasoli, Higgins, & Decesare, 2011) in general, and psychological well-being in particular, the purpose of the present paper was to review the literature on how work-related stress and experiences impact

academics' psychological well-being. The term *academic* has been previously used in the literature to refer to all faculty (e.g., tenured, untenured, full-time, part-time lecturers, etc.), graduate students, and research and teaching assistants. Our focus in this review is specifically on the experiences of tenured and tenure-track faculty members engaged in full-time teaching and/or research and their job-related stress, hereafter referred to as stress.

Occupational stress is conceptualized as “the inability of the individual worker to cope effectively with various work demands” (Blix, Cruise, Mitchell, & Blix, 1994, p. 158). As a triggering element, a stressor more specifically refers to “an environmental condition or event in the workplace that causes strain” (Beehr & Franz, 1987, p. 6). Several national and large-scale surveys of academics confirm Fisher’s (1994) observation that “psychological stress is a feature of occupational life for academics” (p. 68; Catano *et al.*, 2010; see also Shen *et al.*, 2014; Sun, Wu, & Wang, 2011; A. H. Winefield *et al.*, 2003). Not only have academics’ self-reported stress levels increased in recent years, they now also exceed those of other professional groups and the general population (Barkhuizen & Rothmann, 2008; Gillespie, Walsh, Winefield, Dua, & Stough, 2001; Mark & Smith, 2012; Tytherleigh *et al.*, 2005; A. H. Winefield *et al.*, 2003). More specifically, whereas recent large-scale surveys of academic staff show the proportion of those who perceive their job as stressful to have increased significantly over the past two decades (e.g., U.K.: Kinman, 2001; Kinman & Jones, 2004; Australia: Gillespie *et al.*, 2001; T. Winefield, Boyd, Saebel, Pignata, 2008), findings consistently show faculty to report higher stress levels than other university staff and the general public (A. H. Winefield *et al.*, 2003). Similarly, comparisons of caseness (i.e., when an intervention is required) among U.K. and Australian academics reveal that academics suffer from greater need for psychological intervention as compared with other occupational groups (e.g., university staff) and community samples (Kinman, 2014).

Research findings from several countries such as Australia (A. H. Winefield *et al.*, 2003), Canada (Biron *et al.*, 2008; Catano *et al.*, 2010), the U.K. (Tytherleigh *et al.*, 2005), and elsewhere (e.g., China; Sun *et al.*, 2011) have uniformly identified numerous stressful aspects of the academic profession. Time constraint, work overload, role conflict and ambiguity, pursuit of tenure, work–life conflict, teaching, emotional demands, interaction with large numbers of students, pressure to publish, lack of support, and unsatisfactory work relationships are among the factors that emerge consistently across cultures and contexts (for a review, see Kinman, 2001).

The adverse consequences of stress on academics is very similar to the impact stress has on performance of employees (e.g., Edwards, Guppy, & Cockerton, 2007) and on physical and psychological health across other occupational groups (e.g., Dormann & Zapf, 1999; Ford *et al.*, 2011; Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010). In other words, the general stress literature aligns directly with the growing body of research on academic employment in showing that despite the freedom and opportunity afforded to academics, stress is present and more importantly has debilitating consequences on their psychological and physical health (e.g., Catano *et al.*, 2010; Shen *et al.*, 2014), job performance, productivity, and student learning (Blix *et al.*, 1994; Gillespie *et al.*, 2001; Stevenson & Harper, 2006).

Psychological Well-Being and its Relevance to Academics

Psychological well-being contributes significantly to employees' performance, productivity, as well as health (for a meta-analysis see Ford *et al.*, 2011; Häusser *et al.*, 2010) and is typically operationalized according to two overlapping perspectives: hedonic and eudemonic (Deci & Ryan, 2008). The hedonic approach is mainly concerned with the experience of positive emotions or increasing pleasure and, conversely, the absence of negative emotions or decreasing pain. In contrast, the eudemonic approach centers primarily on life satisfaction and the

actualization of one's personal potential (Diener, Suh, Lucas, & Smith, 1999; Ryan & Deci, 2001). Drawing on both these streams, a recent meta-analysis by Houben, Van Den Noortgate, and Kuppens (2015) defines psychological well-being as:

a broad construct that involves either or both the presence of positive indicators of psychological adjustment such as positive emotionality, happiness, high self-esteem, or life satisfaction, and the absence of indicators of psychological maladjustment such as negative emotionality, psychopathological symptoms and diagnoses (p. 1).

Given the significance of psychological well-being, greater knowledge of the ways in which work-related stress compromises academics' psychological well-being is important for two reasons. First, academics play a fundamental role in the creation and development of knowledge as the primary resource of a university (Gmelch, Lovrich, & Wilke, 1984). Second, academics transform the lives of students and promote the quality of life in society (Johnsrud, 2008). It can thus be inferred that psychological well-being among academics is foundational to educational quality with conditions that undermine their well-being also having a negative impact on their students. Additionally, given the lost time and resources to help faculty cope (e.g., psychological, medical), the financial costs for post-secondary institutions may be substantial.

The Present Review

To date, most research attention has been devoted to academics' job performance and accountability with little emphasis given to how faculty are faring psychologically. Furthermore, the literature on this topic appears to be fragmented with no reviews of empirical research conducted on the topic to date. The current state of this literature thus highlights the need for an overarching review to integrate relevant findings. Within this context, the present review attempts to address this gap by integrating the findings of quantitative and qualitative research on the stress

and psychological well-being of academics. More precisely, it aims to synthesize empirical evidence on the ways in which work-related stress and experiences compromise academics' psychological well-being.

Findings from this review generate insight as to the different ways in which academics are affected by their professional practice and also shed light on how to protect their psychological health by circumventing the conditions that compromise it. As such, this review highlights the consequences of work-related stress and experiences for psychological health among academics and outlines findings relevant to optimal stress reduction approaches. Accordingly, these findings should help to inform efforts by post-secondary institutions to protect and boost psychological well-being in faculty so as to better enable them to achieve their instructional, research, and professional goals.

Psychological Well-Being Indicators in the Current Review

Psychological well-being is a broad construct (Houben *et al.*, 2015) although research on the construct has typically examined a subset of variables comprising well-being. In selecting the psychological well-being indicators for examination in this review, three meta-analytical reviews were consulted (Ford *et al.*, 2011; Houben *et al.*, 2015; Schmitt, Branscombe, Postmes, & Garcia, 2014). These reviews highlight both positive and negative indicators of psychological well-being including positive emotionality, life satisfaction, self-esteem, and extraversion as well as negative emotionality, depressive symptoms, anxiety, neuroticism, and psychological distress, fatigue, and personality disorders.

Given that this review set out to determine the manner in which stress and work experiences adversely impact psychological health among academics, the focus is primarily on negative indicators and more specifically, psychological distress, depression, burnout, and negative

emotions. Burnout syndrome was included based on the rationale that it involves negative emotionality and fatigue, as discussed later in the paper. As for negative emotions specifically, Kinman's review (2001) of the impact of stress on academics' well-being did not provide a thorough analysis of negative emotions, and no review to date has examined the topic.

With respect to the underlying conceptual framework, the present review was guided by the Job Demands-Resources (J D-R) model, a leading job stress conceptual framework that allowed us to explore the adverse impact of stress and work experiences on psychological well-being. The J D-R model proposes that two different underlying psychological processes determine the development of job-related strain and motivation. The first process concerns health impairment in that it is assumed that chronic job demands (e.g., work overload, emotional demands, etc.) contribute to physical and psychological health challenges in employees due to exhaustion. In contrast, the second process refers to the compensatory availability of job resources that can help to sustain work-related motivation, reduce cynicism, and improve performance. The J D-R model further highlights the interaction of demands and resources such that job resources are expected to buffer the negative impact of work demands on psychological strain (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011). Consistent with research based on the J D-R model that to date has focused primarily on the job demands component in predicting psychological well-being (e.g., Rothmann & Essenko, 2007; Hakanen, Bakker, & Jokisaari, 2011), the present review similarly focuses on impact of job demands and stressors on mental health outcomes in academic populations.

Methodology

Inclusion and Exclusion Criteria

A systematic search was conducted in the electronic databases of the Educational Research Information Center (ERIC), Psychological Information (PsycINFO), Web of Science, and Scopus. Every search term¹ was entered in combination with one or two additional search terms. To avoid “unexplained selectivity” (Dunkin, 1996), the following inclusion and exclusion criteria were applied to refine the database search.

First, because reports, conference papers, non-peer-reviewed studies, and peer-reviewed studies may not be equivalent in rigor, the search included only peer-reviewed empirical investigations so as to avoid “lack of discrimination” and ensure robustness of conclusions (Dunkin, 1996; Oxman, 1994). Second, to maintain a reasonable scope, only studies addressing psychological well-being among academics conducted within the last 20 years were included. This decision was based on fundamental changes in the demands placed on academics over the past 20 years (Kinman, 2014) and an existing review by Kinman (2001) of studies conducted prior to 2001. The selected time frame minimized overlap with existing work.

Third, the present review excluded literature pertaining to medical and clinically based academics as well as faculty who were also social workers on the grounds that they experience qualitatively different work conditions than non-medical academics because of their hospital

¹ The keywords used to locate the relevant studies included: (“college*” OR “university”) AND (“college faculty” OR “college teacher*” OR “college professor*” OR “university lecturer*” OR “university teacher*” OR “university professor*” OR “faculty member*” OR “professor*” OR “faculty” OR “lecturer”) AND (“stress” OR “occupational stress” OR “work stress” OR “job stress” OR “stress variable*” OR “stressor*” OR “challenge*”) AND (“wellbeing” OR “well-being” OR “burnout” OR “anxiety” OR “depression” OR “psychological distress” OR “strain”) AND (“affect” OR “emotion*” OR “mood” OR “feel*”).

appointments and clinical instruction and practice responsibilities (e.g., Le Blanc, Bakker, Peeters, van Heesch, & Schaufeli, 2001; Watts & Robertson, 2011). Fourth, the review also excluded studies that reported aggregated findings from combined groups of faculty and general university staff (e.g., Gillespie *et al.*, 2001; Jacobs, Tytherleigh, Webb, & Cooper, 2010; Mark & Smith, 2012; Rothmann, Barkhuizen, & Tytherleigh, 2008; A. H. Winefield & Jarret, 2001; A. H. Winefield *et al.*, 2003) or faculty and other professions such as engineers and hospital doctors (Tian & Wang, 2005). As the work conditions and tasks for these professionals are not the same, it is essential to isolate the factors that relate specifically to academics. Given the aggregate nature of the data reported, it was not feasible to determine what proportion of the findings was specific to faculty. Fifth, since the review aimed to investigate the effects of stress and work experiences on psychological well-being among academics, only studies that reported empirical data on the association between stress and work experiences, and negative indicators of psychological health, were included. Finally, only studies published in the English language were included. In addition to database searches, a snowball technique was used to obtain articles indicated in the reference lists of articles retrieved from the database search.

Search Results

The database and manual searches collectively yielded 46 studies that met the inclusion criteria. Among these, 28 studies employed a quantitative approach, 14 were qualitative in nature, and four studies utilized a mixed-methods approach. Of the 17 studies that examined academics' emotions, only nine had emotions as their primary focus (Gates, 2000; Hagenauer & Volet, 2014; Lahtinen, 2008; Löfström & Nevgi, 2014; Martin & Lueckenhausen, 2005; Postareff & Lindblom-Ylänne, 2011; Regan *et al.*, 2012; Smith, Cronin, & Kessler, 2008; Stupnisky, Pekrun, & Lichtenfeld, 2016). Interestingly, seven of these nine studies were conducted between 2008 and

2014, suggesting that research on academics' emotions is an emerging research topic. In the remaining eight studies on faculty emotions (Boice, 1991; Greene *et al.*, 2008; Harrison & Kelly, 1996; Mullen & Forbes, 2000; Nir & Zilberstein-Levy, 2006; Simmons, 2011; Solem & Foote, 2004; Whitt, 1991), emotions were only tangentially examined. A list of studies included in this review can be found in Tables 1, 2, and 3. Included studies have been identified with an asterisk in the reference list.

Review of Research on Psychological Well-Being in Academics

As outlined below, the findings of the present review are consistent with the health impairment risks of job-related stressors as proposed in the J D-R model in highlighting the deleterious effects of stressors on psychological well-being among academics. More specifically, the studies reviewed unanimously suggest that stress and specific elements of academic work are associated with poor psychological health with respect to psychological distress, anxiety, depression, burnout, and negative emotions. Further, study findings indicate that poor psychological well-being can itself be associated with additional negative consequences, with the following sections outlining the consequences of stress across multiple aspects of psychological health in academic populations.

Consequences of Academic Stress for Psychological Distress, Anxiety, and Depression

As a negative indicator of psychological well-being, psychological distress includes “depression, anxiety, somatic symptoms, obsessive-compulsive disorder, and post-traumatic stress” (Schmitt *et al.*, 2014, p. 926). Empirical findings have shown that higher stress levels lead to psychological distress, anxiety, and depression (e.g., Dormann & Zapf, 1999; Ford *et al.*, 2011).

Table 1

Studies on Stress, and Psychological Well-being (PWB), Psychological Distress, and Depression of Academics (n = 13)

Author, Date	Focus/ Question	Context / Sample	Paradigm / Method / Data source	Findings	Limitations
Barkhuizen & Rothmann (2008)	To identify the indicators of occupational stress and to investigate whether stressors predict ill-health and a lack of organizational commitment	South Africa, 595 academics at six universities	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> • Work overload and work-life balance contributed significantly to ill-health • Occupational stressors including overload, job control, lack of resources and communication significantly impacted organizational commitment 	<ul style="list-style-type: none"> • Cross-sectional design • Self-report measures
Catano et al. (2010)	To explore the level of occupational stress and its impact on work and health-related outcomes	Canada, a national study of 1440 faculty members at 56 universities	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> • Stressors detrimentally impact job satisfaction, affective commitment to the institution, as well as physical and psychological health • 13% reported high levels of psychological distress due to stress • Work-life imbalance emerged as the main predictor of increased psychological distress 	<ul style="list-style-type: none"> • Low response rate (27%) • Self-report • Cross-sectional
Hogan et al. (2014)	To examine the effects of organizational factors on work hours, work-life conflict and psychological strain	Ireland, 410 academics at three Irish universities	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> • Higher levels of work-life conflict were associated with higher levels of psychological distress 	<ul style="list-style-type: none"> • Cross-sectional design • Self-reported data • Low response rate (23%) causes concerns about self-

					selection and non-response bias
Kataoka et al. (2014)	To examine occupational stress and its related factors	Japan, 337 university teachers at one university	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Stress was associated with high levels of anxiety and depression 	<ul style="list-style-type: none"> A single-site study Cross-sectional design
Kinman (2008)	To examine the association between job stressors and psychological and physical health symptoms	UK, a national survey of 465 faculty members	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Found significant relationships between stressors and health outcomes Stressors relating to time constraints, support , influence , and work–home interface demands had the strongest associations with health outcomes 	<ul style="list-style-type: none"> Cross-sectional design Self-report data
Kinman & Jones (2003)	To explore the association between stressors and psychological distress and job dissatisfaction	UK, a national study of 782 academics	Mixed-methods study (questionnaire and open-ended questions)	<ul style="list-style-type: none"> 53% achieved borderline levels of depression and anxiety and 21.8% reported serious levels of depression and anxiety Psychological distress was negatively associated with job satisfaction Work-life conflict was the main predictor of psychological distress 	NA
Kinman & Jones (2008a)	To examine the effects of effort-rewards imbalance on psychological distress, physical health, job	UK, a national study of 844 academics	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Efforts-rewards imbalance was significantly associated with strain including poor physical and PWB, job satisfaction and leaving intentions 	<ul style="list-style-type: none"> Cross-sectional Self-reports

	satisfaction, and leaving intentions				
Kinman & Jones (2008b)	-To examine work demands, work-life balance, and well-being	UK, a national study of 844 academics	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Poor work-life balance was negatively associated with PWB 	<ul style="list-style-type: none"> Cross-sectional Self-reports
Leinbaugh et al. (2003)	To examine issues that encourage or discourage educators to continue as faculty members	USA, a national survey of 230 counselor educators	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Lack of control was a source of occupational stress and was shown to be negatively associated with life satisfaction 	<ul style="list-style-type: none"> Majority (85%) were White Americans and the results may not be generalizable to minority groups
McCoy et al. (2013)	To examine the role of an institution's environmental conditions in faculty well-being (i.e., job satisfaction, intent to leave, emotional and physical health)	US, 242 faculty members at one university	Quantitative cross-sectional, questionnaire	<ul style="list-style-type: none"> Perceptions of institutional support was associated with higher levels of well-being and vice versa 	<ul style="list-style-type: none"> Being single-site Cross-sectional
Shen et al. (2014)	To examine the association between occupational stress and depressive symptoms	China, 1210 university teachers at six universities	Quantitative , cross-sectional, questionnaire	<ul style="list-style-type: none"> Depressive symptoms rate was 58.9 % Stress was positively associated with depressive symptoms Effort-reward imbalance was positively associated with depression 	<ul style="list-style-type: none"> Reliance on self-report data

Slišković et al. (2011)	To examine the relationship between sources of occupational stress, work locus of control, attitudes towards work, and well-being of university teachers	Croatia, 1170 university teachers at four universities	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> Pressures arising from the work with students had a direct effect on PWB, physical health, and work satisfaction, but the effects on organization satisfaction were fully mediated by level of work locus of control Social conditions of work directly contributed to the PWB 	<ul style="list-style-type: none"> Cross-sectional Self-report data
Sun et al. (2011)	To assess occupational stress and its risk factors	China, 827 university teachers at eight provinces	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> Stressors were significantly associated with PWB 	<ul style="list-style-type: none"> Self-report data Cross-sectional

Table 2

Studies on the Association between Stress and Burnout among Academics (n = 16)

Author, Date	Focus / Question	Context / Sample	Paradigm / Method / Data source	Findings	Limitations
Anderson (2006)	To explore the ways in which recent managerial changes in Australian universities affect academics' experiences of their working lives	Australia, 27 academics, eight universities	Qualitative study, interview,	Constraints resulting from work overload were found to be associated with burnout	NA
Barkhuizen et al. (2014)	To investigate the relationships among job demands and resources, burnout, work engagement, ill-health and organizational commitment	South Africa, 595 academics at six universities	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Job demands and a lack of job resources contributed to burnout • Overload was the most important predictor of burnout, which, in turn, was related to physical and psychological ill-health • Burnout further mediated the relationship between job demands and ill-health 	<ul style="list-style-type: none"> • Cross-sectional design • Reliance on self-reports
Fernet et al. (2004)	To examine the interplay among job demands, job control, and work self-determination to predict burnout	Canada, 398 university professors at one French-Canadian university	Quantitative study, cross-sectional, questionnaire	<ul style="list-style-type: none"> • All predictors (job demands, job control, and self-determined work motivation) correlated significantly with emotional exhaustion, depersonalization, and personal accomplishment 	<ul style="list-style-type: none"> • Self-report data • Cross-sectional
Frisby et al. (2014)	To examine effects of college student dissent on	US, 113 instructors	Quantitative, cross-	<ul style="list-style-type: none"> • Instructional dissent is positively related to 	<ul style="list-style-type: none"> • Small sample size

	instructors' professional outcomes	at one university	sectional, questionnaire	instructors' organizational burnout	<ul style="list-style-type: none"> • Cross-sectional and self-reports
Ghorpade et al. (2011)	To examine the relationship between burnout, work, and personality and how burnout is affected by the interaction of work and personality	US, 263 faculty members at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Higher levels of role conflict and role ambiguity were associated with higher levels of emotional exhaustion and depersonalization • Lower levels of role conflict and role ambiguity and higher levels of extraversion, conscientiousness, agreeableness, openness to experience, and emotional stability were associated with lower levels of emotional exhaustion and depersonalization 	<ul style="list-style-type: none"> • Cross-sectional
Gomes et al. (2013)	To examine the mediating role of cognitive appraisals of stressors in the association between occupational stress and burnout	Portugal, 333 academics at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • The stress resulting from work overload, pressure to increase scientific productivity, and work-home conflict was positively related to burnout 	<ul style="list-style-type: none"> • Cross-sectional • Single site study
Gonzalez & Bernard (2006)	To determine the relationship of workload typologies and other selected demographic variables to levels of burnout	North America, 826 undergraduate faculty at 11 colleges and universities	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • The higher levels of emotional exhaustion was displayed by faculty in teaching-full load typology • Teacher perception of academic workload intensity and years of service in 	<ul style="list-style-type: none"> • Cross-sectional • Self-report

				education contributed the most to emotional exhaustion	
Hogan & McKnight (2007)	To examine burnout among online university instructors	US, 76 online instructors at different universities	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> Teaching online is a stressor Burnout is prevalent among online instructors 	<ul style="list-style-type: none"> Small sample size
Lackritz (2004)	To examine burnout among university faculty in relation to demographics, work conditions, performance and productivity	US, 256 university faculty members at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> Number of students taught was positively correlated with emotional exhaustion and depersonalization Workload was positively correlated with emotional exhaustion Student evaluations and overall productivity were positively correlated with personal accomplishment 	<ul style="list-style-type: none"> Data obtained at the first third of a semester. If collected at the end of the semester, the results could be different
Navarro et al. (2010)	To determine the mediating role of perceived personal competence in the association between stressful work conditions and the manifestation of burnout and stress symptoms	Spain, 193 university professors at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> Emotional exhaustion was the only dimension that: a) was negatively impacted by stressful working conditions such as work overload, b) impacted the appearance of stress symptoms Perceived personal competence mediated the impact of working conditions on depersonalization, personal fulfillment, and appearance of stress symptoms 	<ul style="list-style-type: none"> Self-report data

Otero-López et al. (2008)	To explore the main determinants of burnout	US, 813 university professors at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Lack of social support was a risk factor for burnout • Work hours per week were also associated with burnout 	<ul style="list-style-type: none"> • Correlational nature and causal inferences cannot be made
Pandey & Tripathi (2001)	To examine the level of perceived occupational stress and burnout	US, 56 college teachers at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Role ambiguity and unreasonable group and political pressure were found to be the two best predictors of various components of burnout 	<ul style="list-style-type: none"> • Self-reports • Cross-sectional • Small sample size
Siegall & McDonald (2004)	To examine the role of person-organization value congruence on the experience of burnout	US, 135 university faculty members at one university	Quantitative study, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Person-organization value congruence was negatively associated with burnout 	<ul style="list-style-type: none"> • Cross-sectional • Measured some variables with scales of one or two items
Taris et al. (2001)	-To examine the antecedents and consequences of job stress	The Netherlands, 131 academics at one university	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • High job demands (i.e., time constraints, number of students) were associated with higher strain (emotional exhaustion, health complaints) and withdrawal 	<ul style="list-style-type: none"> • Relatively small, cross-sectional data-set
van Emmerik (2004)	Examined the direct and buffering effects of mentoring on the relationship between adverse working conditions and job satisfaction and burnout	The Netherlands, 1,320 faculty members at different universities	Quantitative, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Work pressure and role conflict were associated with emotional exhaustion • Mentoring mediated the association between adverse work conditions and the experience of burnout and job satisfaction 	<ul style="list-style-type: none"> • Self-report data • Cross-sectional design
Vera et al. (2010)	To see if different university work profiles	Spain,	Quantitative, cross-	<ul style="list-style-type: none"> • Research cluster offered the lowest value in burnout and 	<ul style="list-style-type: none"> • Cross-sectional • Self-report data

are linked to experience
of well-being (burnout,
engagement, intrinsic
satisfaction)

170 university
faculty
members at
one university

sectional,
questionnaire

the highest value in
engagement and intrinsic
satisfaction

- Management cluster presents
the highest value in burnout
and the lowest in engagement
and intrinsic satisfaction
-

Table 3
Studies on Sources of Academics' Negative Emotional Experiences (n = 17)

Author, Date	Topic / Focus	Context / Sample	Paradigm / Method / Data source	Findings	Limitations / Future Research
Boice (1991)	To understand the experiences of new faculty	US, Four cohorts of new faculty (n = 185)	Qualitative, longitudinal (interviewed bi-annually for four years)	<ul style="list-style-type: none"> • Reported feelings of insecurity, and isolation • Reported worry about establishing a competitive research profile 	NA
Gates (2000)	To explain what classroom interactions were stressful for faculty members	US, nine tenured faculty members	Qualitative, field notes, interview, observed for 5 months in undergraduate courses, and document collection	<ul style="list-style-type: none"> • Reported negative emotions of disappointment, discouragement, exasperation, frustration in relation to misplaced students and believed that these negative emotions stressed them • They found teaching to be tentative, indeterminate, and perilous • Negative emotions of anger, disappointment, and anxiety were associated with teaching stress 	<ul style="list-style-type: none"> • Small sample size
Greene et al. (2008)	To describe the experiences, perceptions, and available support systems of untenured faculty	US, 96 tenure-track faculty	Mixed-methods, online survey and open-ended questions	<ul style="list-style-type: none"> • They reported stressful and unbalanced lifestyle • Reported being overwhelmed by teaching and research load 	NA
Hagenauer & Volet (2014a)	To study the origin and causes of university teachers' emotions related to teaching and	Australia, 15 university teachers	Qualitative, interviews at two time points (before the academic year	<ul style="list-style-type: none"> • Annoyance and insecurity were the most frequently reported negative emotions 	<ul style="list-style-type: none"> • Did not include researchers who might experience different emotions

	interactions with students		started and during the first semester)		<ul style="list-style-type: none"> • Relied on self-reports
Harrison & Kelly (1996)	To explore the variables that influenced tenure-track faculty members' career satisfaction and anticipation of remaining in academia	US and Puerto Rico, 163 tenure-track faculty	Quantitative study, cross-sectional, questionnaire	<ul style="list-style-type: none"> • Reported feelings of loneliness (43%) and anxiety for being tenured • Loneliness significantly and negatively predicted career satisfaction and staying in academia 	<ul style="list-style-type: none"> • Limited to only one discipline
Lahtinen (2008)	To explore aspects of pedagogical interaction that trigger negative emotional experiences	Finland, eight university teachers	Qualitative, phenomenological approach, interview	<ul style="list-style-type: none"> • Coping with the emotional load placed on them by the students, making pedagogical decisions under uncertain conditions, facing conflicting expectations and beliefs concerning the teaching-learning process triggered frustration 	<ul style="list-style-type: none"> • Small sample size
Löfström & Nevgi (2014)	Used drawings to get an insight into emotions in university teaching	Finland, 86 university teachers	Qualitative, drawings	<ul style="list-style-type: none"> • The participants expressed positive emotions within seminar or group work context. Negative emotions were linked to lecture settings • Teachers who adopted student-focused approaches to teaching expressed positive emotions towards teaching, while those who adopted content-focused approaches displayed negative or neutral emotions 	NA

Martin & Lueckenh ausen (2005)	To examine the change in teachers' understanding of the subject matter and how this change influences the teachers' emotions	US, 31 university teachers	Qualitative, interview	<ul style="list-style-type: none"> Teaching a subject alters university teachers' understanding of it and this consequently impacts their emotions Emotions linked to change: gratifying, reassuring, satisfying, uncertainty, unease, stress, and anxiety 	NA
Mullen & Forbes (2000)	To do a needs assessment for mentoring among untenured faculty members	US, Canada, and Australia, 60 pre-tenure faculty	Qualitative, personal reflections: open-ended questions	<ul style="list-style-type: none"> They described tenure-earning process as ambiguous, uncertain, and anxiety-provoking 	NA
Nir & Zilberstein-Levy (2006)	Examines how role stress resulting from occupational insecurity impacts tenure-track faculty	Israel, 10 pre-tenure and six tenured faculty members	Qualitative, interview	<ul style="list-style-type: none"> Probation period is characterized by feelings of uncertainty and insecurity 	<ul style="list-style-type: none"> Small sample size
Postareff & Lindblom-Ylänne (2011)	To examine the role of university teachers' emotions (related to their teaching and pedagogical training) in six different teacher profiles	Finland, 97 university teachers	Qualitative, interview	<ul style="list-style-type: none"> Those whose teaching approach was more content-focused reported experiencing neutral or negative emotions Confusion was dominant for those teachers who were in the developmental phase of their teaching 	<ul style="list-style-type: none"> Results come from the teachers' general descriptions and interview questions did not address the specific role of emotions in teaching

Regan et al. (2012)	To examine their emotional experiences	US, six full-time faculty	Qualitative: four focus group interviews in two rounds	<ul style="list-style-type: none"> The central emotions expressed by the participants were related to the following five themes: (a) restricted; (b) stressed; (c) devalued; (d) validated; (e) rejuvenated 	<ul style="list-style-type: none"> Small sample size
Simmons (2011)	To outline how seven pre-tenured professors developed as university teachers	Canada, seven pre-tenured university teachers	Qualitative, interview	<ul style="list-style-type: none"> Lack of preparation for teaching and teaching overload was associated with anxiety Moving from the role of graduate student to faculty member is characterized by anxiety 	<ul style="list-style-type: none"> Small sample size Included those interested in talking about their teaching
Smith et al. (2008)	To explore if the emotional reactions of university faculty members to group inequities in faculty pay and benefits shape their willingness to protest and their organizational loyalty	US, 370 university faculty members	Mixed methods, survey and open-ended comments	<ul style="list-style-type: none"> Sadness, fear, and anger are distinct emotional responses to a collective disadvantage Group-based anger mediated the relationship between collective disadvantage and willingness to protest whereas group-based sadness mediated the relationship between collective disadvantage and organizational loyalty 	<ul style="list-style-type: none"> Many variables measured with single questions Did not measure self-conscious emotions such as guilt and shame A measure of group identification was not included
Solem & Foote (2004)	To explore the experiences of early-career faculty	US, 40 tenure-track faculty	Qualitative, focus group interviews	<ul style="list-style-type: none"> Teaching is the primary source of anxiety among new professors 	<ul style="list-style-type: none"> Single-site study
Stupnisky et al. (2016)	To examine the presence and frequency of emotions among new faculty members and to explore how emotions related to	US, 18 tenure-track faculty members (first-third year)	Mixed-methods, survey and focus group interviews	<ul style="list-style-type: none"> Identified emotions as an important factor that significantly predict faculty success Enjoyment, pride, and boredom were the most frequently reported teaching-related emotions, while anxiety, guilt, 	<ul style="list-style-type: none"> Emotions emerged spontaneously when they were looking at success

	their success in teaching and research			and helplessness were the most frequently researcher-related emotions	<ul style="list-style-type: none"> • Small sample size for quantitative analysis • Single-site
Whitt (1991)	To examine and describe the experiences of new faculty	US, six new faculty	Qualitative, interview	<ul style="list-style-type: none"> • Expressed predominantly negative emotions about being a new faculty member and described it as threatening and frustrating • Some expressed confusion since they had no idea of what was going on 	<ul style="list-style-type: none"> • Small sample size • Single-site study

Consistent with existing findings in non-academic populations, results from studies on overall psychological health and psychological distress have revealed that academics who report higher levels of stress also report poorer psychological well-being and higher psychological distress. For instance, a national study of Canadian academics found 13% of the 1,440 faculty assessed, reported high levels of psychological distress due to stressful work conditions (Catano *et al.*, 2010; for similar findings from aggregate studies of faculty and general academic staff, see A. H. Winefield & Jarrett, 2001).

In several large-scale and national studies, work–life conflict has emerged as the most frequently reported stressor to be significantly associated with poorer psychological health levels amongst academics (Barkhuizen & Rothmann, 2008; Catano *et al.*, 2010; V. Hogan, Hogan, Hodgins, Kinman, & Bunting, 2014; Kinman, 2008; Kinman & Jones, 2008b). National studies of academics in Canada (Catano *et al.*, 2010) and the U.K. (Kinman & Jones, 2003) have also identified work–life conflict as the main predictor of psychological distress. Various additional workplace stressors, ranging from personal to social factors, and from resource-related to management-related issues, have similarly been identified as linked to poorer levels of psychological well-being and higher psychological distress (see Barkhuizen & Rothmann, 2008; Kinman, 2008; Kinman & Jones, 2003; Kinman & Jones, 2008a; Leinbaugh, Hazler, Bradley, & Hill, 2003; McCoy, Newell, & Gardner, 2013; Slišković, Maslić Seršić, & Burić, 2011; Sun *et al.*, 2011).

Other studies have further specified anxiety and depression as negative indicators of psychological well-being. For instance, a survey of 827 Chinese university teachers documented the prevalence of depressive symptoms due to stress, with 58.9% participants reporting depressive symptoms (Shen *et al.*, 2014). Similarly, a study of 337 Japanese university teachers showed a

strong positive association between stressors and high incidence of anxiety and depression (Kataoka, Ozawa, Tomotake, Tanioka, & King, 2014). Moreover, a national survey of U.K. faculty (Kinman & Jones, 2003) revealed a caseness rate of above 50% for psychological distress, with 21.8% of the faculty interviewed reporting serious levels of depression and anxiety (for similar findings from aggregate studies of faculty and general academic staff, see Gillespie *et al.*, 2001; J. M. Hogan, Carlson, & Dua, 2002; Mark & Smith, 2012).

Consequences of Stress for Faculty Burnout

The most common adverse consequence of stress among academics concerns its contribution to the development of burnout: “a prolonged response to chronic emotional and interpersonal stressors on the job” (Maslach, 2003, p.189). Indeed, of the 46 studies reviewed, 16 demonstrated that stress was associated with burnout. Although often considered an emotion itself, burnout consists of three discrete components. The first component emotional exhaustion, represents the core dimension of burnout and refers to fatigue and feeling depleted of emotional energy due to the excessive emotional demands of providing service to others. Second, depersonalization or cynicism reflects the development of negative attitudes and feelings towards others, and treating them as dehumanized objects. Third, reduced personal accomplishment involves dissatisfaction and perceptions of decline with respect to one’s occupational achievements (Maslach, 2003; Maslach & Jackson, 1981, 1984; Maslach, Jackson, & Leiter, 1986). With respect to academics, the degree of burnout they experience has been found to be comparable with that of school teachers and medical professionals for whom burnout levels are widely considered to be particularly high (Watts & Robertson, 2011).

The literature suggests that the three dimensions of burnout are associated with one’s work conditions, with emotional exhaustion showing the strongest correlations with job-related factors

(Maslach, 2003; Maslach & Jackson, 1984; Maslach, Leiter, & Jackson, 2012; Maslach, Schaufeli, & Leiter, 2001). The prevalence of burnout among faculty has similarly been linked to various work demands such as overload, with this factor emerging as the most important predictor of burnout in a study of 595 academics in South Africa (Barkhuizen, Rothmann, & Van de Vijver, 2014). Other studies of academics have also discovered significant relations between work overload and the three dimensions of burnout (Anderson, 2006; Fernet, Guay, & Senécal, 2004; Gomes, Faria, & Gonçalves, 2013; Gonzalez & Bernard, 2006; Lackritz, 2004; Navarro, Mas, & Jiménez, 2010). Relatedly, time constraints resulting from work overload have been shown to positively correspond with burnout in studies with Australian (Anderson, 2006) and Dutch academics (Taris, Schreurs, & Van Iersel-Van Silfhout, 2001).

Burnout is common in occupations that require substantial interaction with others (Maslach & Jackson, 1984; Maslach *et al.*, 1986). The academic profession fits in this category as it often requires consistent interaction with large numbers of students as well as staff and administration (Blix *et al.*, 1994). Consistent with Watts and Robertson (2011) who identified interactions with students as the most significant predictor for burnout in faculty, the present review suggests a clear link between student variables and academics' experiences of burnout. For instance, the study by Taris *et al.* (2001) with 131 Dutch faculty reported a positive association between the number of students taught and the emotional exhaustion dimension of burnout. Similarly, a later study of 256 U.S. faculty (Lackritz, 2004) found a positive association between the number of students taught by faculty and emotional exhaustion as well as depersonalization suggesting that larger class sizes result in a greater workload (Watts & Robertson, 2011), a crucial contributor to burnout (Barkhuizen *et al.*, 2014). As another example, Frisby, Goodboy, and Buckner (2015) found instructional dissent, defined as the process by which "students express their disagreements or

complaints about class-related issues” (Goodboy, 2011, p. 423), to correspond with greater burnout among post-secondary instructors (for similar findings with K-12 teachers, see Chang, 2009).

In regard to interactions with co-workers, unsatisfactory relations between academics and their superiors were found to be positively linked to emotional exhaustion and depersonalization (Barkhuizen *et al.*, 2014). Likewise, perceived lack of social support in the workplace was also found to be positively associated with these components of burnout in studies of 813 U.S. college professors (Otero-López, Mariño, & Bolaño, 2008) and 1,320 Dutch faculty (van Emmerik, 2004).

The types of academic work demands placed on faculty represent yet another aspect of the profession found to be associated with burnout. For instance, a North-American study of 826 faculty showed a full teaching load to predict the highest level of emotional exhaustion (Gonzalez & Bernard, 2006). Also, online teaching, a new form of pedagogy that presents a variety of challenges for instructors, was found to be associated with burnout in a study of 76 U.S. college instructors (R. L. Hogan & McKnight, 2007). Conversely, academics whose work consisted primarily of research responsibilities were shown to experience the lowest level of burnout, with those performing more managerial tasks suffering the highest burnout levels (Vera, Salanova, & Martín, 2010). Given that teaching and management responsibilities inherently involve more interpersonal interactions than research, their stronger relations with burnout are perhaps not surprising.

Additional contributors to burnout among academics include role conflict and ambiguity (see Pandey & Tripathi, 2001). Recently research by Barkhuizen *et al.* (2014) found low role clarity to correspond with greater emotional exhaustion and depersonalization in faculty. This finding is consistent with related findings showing faculty burnout to be positively associated with higher levels of role conflict and ambiguity (Fernet *et al.*, 2004; Ghorpade, Lackritz, & Singh,

2011; van Emmerik, 2004). Not surprisingly, work–life conflict has also been found to be related to burnout among academics, with the overflow and integration of academic work into one’s personal life corresponding with greater emotional exhaustion in a study by Gomes *et al.* (2013) with 333 Portuguese faculty. Finally, conflicting person-organization values were found to be associated with the experience of burnout in a study of 135 U.S. faculty conducted by Siegall and McDonald (2004). The following section turns the discussion to the topic of negative emotional experiences that could further compromise academics’ psychological health.

Work Experiences and Emotions

Differentiating Emotion from Stress

The term emotion refers to an individual’s response to a situation considered relevant to their current goals, with emotional experiences often being immediately predicted by cognitive appraisals of goal progress (Gross, 2010). Since emotion and stress overlap, it is necessary to consider both their interdependence and distinguish how they are different. Psychological stress is defined as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). As such, both stress and emotion are contingent upon cognitive appraisals; the way an individual perceives their goal progress impacts psychological well-being. However, as emotion is commonly operationalized as a broader concept that includes negative experiences such as stress, stress is typically more limited in its scope (Lazarus, 1993). Whereas negative emotions arise when individuals appraise their progress as thwarted or goal-incongruent (Lazarus, 1993), perceived stress reflects a belief that these challenges exceed one’s capabilities to respond to them. Important to note is that individuals’ emotional experiences have implications for their psychological well-being, such that positive emotions contribute to better psychological

health whereas excessive negative emotional experiences are linked to impaired psychological well-being and stress (Houben *et al.*, 2015).

Academics' Negative Emotional Experiences

Emotions are not only a prevalent but also an integral part of employees' work experiences (Ashforth & Humphrey, 1995; Woods, 2010) that can impact performance as well as well-being (Chang, 2009; Frenzel, Goetz, Stephens, & Jacob, 2009; Hughes, 2001). Similar to other demanding employment settings, the academic profession has substantial emotional elements encompassing a range of both positive and negative emotional experiences (Hagenauer & Volet, 2014; Martin & Lueckenhausen, 2005; Neumann, 2006; Postareff & Lindblom-Ylänne, 2011). The subsequent sections review research aimed at identifying the sources of academics' negative emotions as per the following three types of precursors: student-related, teaching- and research-related, and institutional factors.

Student-related Factors. Firstly, although interactions with students represent an integral aspect of the academic profession, they are often reported to be distressing and frustrating to faculty (Frisby *et al.*, 2015; Lahtinen, 2008). Academics consequently report feelings of anger, irritation, disappointment, discouragement, exacerbation, frustration, annoyance, and insecurity in relation to students who are disengaged or disruptive, as well as interpersonal conflict (i.e., when students' and teachers attitudes do not match; Gates, 2000; Hagenauer & Volet, 2014). Given that negative interactions with students (i.e., student dissent) are a likely predictor of burnout among university teachers (Frisby *et al.*, 2015), these relations could explain why conflictual student–instructor interactions correspond to negative psychological outcomes in faculty.

Teaching- and Research-related Factors. A second precursor to negative emotional experiences are teaching responsibilities. For example, the unpredictable and uncertain aspects of

post-secondary instruction, such as interactions with students or gauging comprehension in the absence of sufficient student feedback, have been reported to be distressing and frustrating in a sample of Finnish university teachers (Lahtinen, 2008) and linked to anger, anxiety, and disappointment among U.S. faculty (Gates, 2000). In a more recent study, university teachers reported feelings of insecurity in relation to teaching and marking assignments (Hagenauer & Volet, 2014). More precisely, unfamiliarity with teaching content, limited teaching experience, and the perception of having only partial control over students' learning contributed to their distress. Additionally, the subjectivity involved in grading essay assignments emerged as a further trigger of feelings of insecurity.

Similarly, in a study of how varied teaching profiles were associated with different emotions, Postareff and Lindblom-Ylänne (2011) found feelings of confusion to be most dominant for faculty during the developmental phase of their teaching. Additionally, online instruction emerged as another dimension that evoked more negative than positive emotions in faculty (R. L. Hogan & McKnight, 2007) who have additionally been found to report feeling anxious, apprehensive, and helpless as well as inadequate, insecure, restricted, and overwhelmed with respect to online teaching (Regan *et al.*, 2012; e.g., findings of burnout in online instruction from R. L. Hogan & McKnight, 2007). Research has also shown connections between teaching methods and emotions, with university teachers who adopt learner-focused approaches tending to report positive emotions towards teaching, with those endorsing content-focused approaches being more likely to report neutral or negative emotions (Postareff & Lindblom-Ylänne, 2011).

Consistent with theorizing by Pekrun (2006) and corresponding empirical evidence regarding the domain specificity of emotions in academic settings (Goetz, Frenzel, Pekrun, Hall, & Lüdtke, 2007), the contextual nature of emotions linked to university teaching was highlighted

in a qualitative study of a sample of Finnish university teachers (Löfström & Nevgi, 2014). In seminar and group work contexts in which the instructor and students were in close contact (i.e. students being more likely to share their thoughts with teachers), positive emotions tended to be experienced. Conversely, more impersonal lecture settings were linked to negative emotions in instructors such as isolation and anxiety. Finally, teaching has been found to evoke mixed emotions when faculty are teaching a subject that requires them to alter their understanding of what it means to know, teach, and learn that subject. Whereas greater uncertainty, unease, stress, anxiety, and confusion have been reported following radical conceptual change concerning instruction in faculty, feelings of gratification, reassurance, and satisfaction have also been reported (Martin & Lueckenhausen, 2005).

Negative emotions about teaching have also been observed specifically among pre-tenure academics, as in a recent study of U.S. faculty who were found to report greater boredom concerning teaching compared to boredom regarding research (Stupnisky et al., 2016). Other studies have also found pre-tenure faculty to report feeling overwhelmed by their teaching load, specifically when teaching responsibilities constitute the majority of their academic workload (Greene *et al.*, 2008), with studies also showing feelings of frustration and anxiety to arise from lack of teaching preparation (Simmons, 2011; Solem & Foote, 2004; for related findings with school teachers, see Chang, 2009; Frenzel *et al.*, 2009). With respect to research responsibilities, a mixed-methods study by Stupnisky et al. (2016) of tenure-track faculty further identified anxiety, guilt (i.e., when research was avoided), and helplessness as the most common negative emotions specific to research obligations. Qualitative studies have similarly shown tenure-track faculty to report feeling overwhelmed by their research demands (Greene *et al.*, 2008) as well as worried about establishing a competitive research profile (Boice, 1991).

Institutional Factors. An institutional element that has specifically been found to trigger negative emotional experiences is the pursuit of tenure. For instance, tenure-track faculty have been found to express predominantly negative emotions about being a new faculty member, generally perceiving the tenure process as frustrating, ambiguous, uncertain, and anxiety-provoking (Mullen & Forbes, 2000; Whitt, 1991). Harrison and Kelly (1996) also identified feelings of anxiety and loneliness (43%) among academics seeking tenure, with loneliness being significantly and negatively associated with career satisfaction and intentions of staying in academia. Other studies related to tenure-track academics have similarly found academics to report feelings of insecurity and fear about obtaining tenure, or the tenure-related impact of poor course evaluations, as well as uncertainty and confusion about the tenure process (Boice, 1991; Nir & Zilberstein-Levy, 2006; Whitt, 1991). Concerning other organizational factors, research has also shown faculty to experience negative emotions arising from inequities in pay and employment benefits, with these perceptions further found to be associated with emotions of anger, fear, and sadness in a study of U.S. faculty (Smith *et al.*, 2008).

As outlined above, despite the unique affordances of the academic profession, various aspects of academic work can trigger negative emotional experiences that, if excessively experienced, may jeopardize faculty well-being. More precisely, given that related research shows the experience of negative emotions to be associated with impaired psychological well-being and burnout in instructional settings (Chang, 2009; Hughes, 2001), it could be inferred that the negative emotions experienced by academics could likewise contribute to greater burnout. Hence, managing negative emotions represents a crucial component of successful faculty development (Gates, 2000; Regan *et al.*, 2012; Zhang & Zhu, 2008), with efforts to better equip faculty with effective emotion regulation strategies proving increasingly necessary to avoid harm to psychological health.

Additional Considerations

To this point, the studies reviewed demonstrate that stress and specific work experiences can undermine psychological well-being in academics. It should be noted, however, that beyond relations with perceived stress, findings suggest that academics' poor psychological health is further linked to ill health (Dreyer, Dreyer, & Rankin, 2010; Sang, Teo, Cooper, & Bohle, 2013), suicidal thoughts (Kelly, Charlton, & Jenkins, 1994), lower job satisfaction, and intentions to leave — the economic cost of which is well-established (Lundberg & Cooper, 2010). These findings are also consistent with research on other occupational groups linking depression and anxiety to burnout (Papastyliaou, Kaila, & Polychronopoulos, 2009), diminished job satisfaction (Ferguson, Frost, & Hall, 2012), and turnover intentions (Lu, Zhong, & Chen, 2013).

Meanwhile, burnout has been shown to be further associated with impaired performance and productivity (Blix *et al.*, 1994), job dissatisfaction, and turnover intentions in faculty (Li, Li, & Sun, 2013). By the same token, existing research suggests that stress contributes to well-being outcomes indirectly through greater burnout, as observed in a study of 300 Chinese university teachers showing burnout to mediate the effects of stress on depression (Zhong *et al.*, 2009). Similarly, the study of South African academics by Barkhuizen *et al.* (2014) found burnout to mediate the effects of perceived job demands on physical and psychological health, particularly with respect to the pace, amount, and compounding of work demands (e.g., simultaneous obligations).

General Discussion

Existing research on subjective well-being in faculty has to date tended to focus on limited aspects of psychological well-being, with little research providing a holistic perspective on this important topic. The present review is the first to provide an up-to-date synthesis of research on

the consequences of stress and work experiences for psychological health among academics. As such, the findings from this review add to the body of evidence on psychological well-being among faculty. Following from the J D-R model (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011), the review focused on health impairment implications in showing stress among academic populations to have various negative consequences for academics' psychological health including psychological distress, anxiety, depression, burnout, and negative emotions. As outlined above, the findings observed across existing studies underscore the significant relationship between adverse work experiences and impaired mental health among academics. In the sections that follow, limitations of the review (e.g., methodological challenges) and critical areas of research needed to advance psychological well-being research in academic populations are discussed.

Limitations of Studies Reviewed

The methodologies of the studies included in this review were limited in multiple ways, most of which are acknowledged by the authors of the respective studies. Firstly, of the 29 studies that focused on the association between stress, overall psychological well-being, psychological distress, depression, and burnout, the majority ($n = 27$) were cross-sectional and correlational in nature and thus limited as to their potential for causal assertions (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A second important limitation pertains to the exclusive reliance in the studies reviewed on self-report measures of psychological well-being, psychological distress, depression, burnout, and emotions which is problematic in that self-reports may be influenced by personal biases (e.g., positive/negative affectivity, social desirability; Spector, 2006) as well as common method variance (Podsakoff *et al.*, 2003).

Specifically, of the nine studies that had the study of emotions as their focus, all except one utilized interviews to gain insight into academics' experiences of emotions. Although interviews

are an effective technique to elicit information, they measure primarily the subjective component of emotions and are thus not sufficient to capture their multi-componential nature (Pekrun & Bühner, 2014). A further limitation is that among the 16 studies that explored burnout and reported negative emotional experiences, 11 studies drew on data from single institutions raising questions as to the external validity of the findings observed. Finally, the reviewed studies captured mostly academics' teaching-related emotions. Given the domain specificity of emotions (Goetz *et al.*, 2007; Pekrun, 2006), each of academics' other tasks (i.e., conducting research, supervising, and providing service) may entail different emotions.

Implications and Directions for Future Research

The present paper set out to review the fragmented literature pertaining to psychological well-being among academics in a manner consistent with the job demands component of the J D-R model. In summary, findings from both qualitative and quantitative research approaches reveal that academics encounter considerable stress inherent to their profession that, in conjunction with specific elements of the academic work experience, jeopardizes their psychological health by making them vulnerable to psychological distress, depression, burnout, and negative emotions, as well as the corresponding negative consequences. Given the critical nature of psychological well-being in predicting job performance (Ford *et al.*, 2011), and the pivotal role of academics in knowledge creation and instruction (Gmelch *et al.*, 1984; Trigwell, Prosser, & Waterhouse, 1999), impaired psychological health among faculty has significant negative impacts on academic research and training (Gillespie *et al.*, 2001; Lease, 1999).

The findings signify the importance of increasing efforts to protect psychological well-being in academics on the part of both faculty and administrations, and for research in this domain to pay greater attention to faculty adjustment, in addition to performance and accountability

outcomes. Similarly, given the unfortunate lack of research on academics' emotions, and significance of emotions for psychological health, scholarly attention to the emotional aspects of this profession is also required. Considering the commonly observed adverse consequences of stress and negative emotions among faculty (Trigwell, 2012; Watts & Robertson, 2011), these findings further speak to the need for academics to understand how stress and emotions could impact their psychological health as well as performance and student learning outcomes.

Additionally, the findings from this review have practical implications. As job demands compromise psychological well-being among academics, it may be advisable that university administrators implement changes to policy and organizational conditions to address the issue of excessive job demands as well as enhance job resources to address the psychological and physical costs of impaired psychological health in faculty. As indicated by repeated calls by researchers in this domain (Gates, 2000; Kataoka *et al.*, 2014; Regan *et al.*, 2012; Zhang & Zhu, 2008), these findings similarly warrant further administrative consideration as to whether or not academics are indeed being equipped with effective strategies to combat stress. In this respect, related initiatives to develop and implement cost-effective interventions to promote academics' coping resources are needed to attenuate the adverse impact of faculty stress and negative emotions; proactive efforts to prevent damages to psychological health, as opposed to reactionary programs. As yet, there is little precedence to explore the potential of interventions in preventing and reducing stress among academics. Nonetheless, a recent Australian study of faculty and university staff linking stress-reduction interventions to higher job satisfaction, organizational commitment, perceived justice, and trust in administration does show such programs to have considerable promise (Pignata & Winefield, 2015).

In light of the findings of the review and the aforementioned methodological limitations, future research should be further expanded to capture faculty emotions in domains other than teaching to provide a more complete picture of their psychological well-being regarding other academic responsibilities (e.g., research, service). Additionally, longitudinal research is sorely needed to more clearly delineate causal relations between variables related to psychological health in faculty, with greater efforts to incorporate multiple sources of information from students and peers, as well as from faculty across institutions in multi-site initiatives. With regard to emotions, given the multi-componential nature of emotions, there is also a need to utilize objective measures such as physiological indicators or observations of facial expressions to better evaluate the varied nature of academics' emotions (Reisenzein, Junge, Studtmann, & Huber, 2014). It is anticipated that more specific and varied measurement techniques should contribute to the reliability and objectivity of findings otherwise based on self-report methods.

In conclusion, the focus of the present review was to bring to the fore the issue of psychological well-being among academics and identify the manner in which work-related stress can compromise psychological health in this underexplored post-secondary population. As evidenced by findings presented above, the varied academic demands and stressors faced by faculty on an everyday basis have clear empirical associations with psychological health problems, warranting specific consideration of these results on the part of academic institutions and associations when developing related intervention and support initiatives. These findings also underscore the importance of a preventative focus on psychological well-being in faculty with respect to addressing the psychological implications of existing academic conditions, in addition to reactive intervention efforts once psychological problems become evident, so as enable a sustainable long-term employment context for post-secondary faculty.

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Bridging Text (Chapter 2-3)

In the previous chapter, a thorough review of the existing research was conducted to identify the ways in which job-related stress and adverse experiences undermine academics' psychological health. Findings of the review indicate that stress has various negative consequences for academics' psychological well-being including psychological distress, anxiety, depression, burnout, and negative emotions. Furthermore, the review showed poor mental health to be further linked to ill-health, job dissatisfaction, turnover intentions, and impaired performance and productivity. Providing a critique of the current state of the field, the review provided several recommendations for advancing research on academics' psychological well-being. These recommendations included increased scholarly attention to faculty adjustment, considering the role of emotions in psychological health, and exploring the potential of interventions in preventing and reducing stress. Furthermore, based on the studies reviewed, the methodological limitations were identified and directions for future research were proposed including improving study designs, considering context-specific nature of emotions, and conducting longitudinal research.

While stress has been consistently shown to compromise post-secondary faculty well-being and productivity, to date, there exist no review of research of the strategies academics employ to deal with work-related stress and emotions. Accordingly, the second dissertation manuscript (Chapter 3) addresses this gap by providing a comprehensive review of the ways in which higher education academics manage stress and emotions as well as the consequences of those strategies on academics' personal and professional well-being.

Chapter 3

Examining Academics' Strategies for Coping with Stress and Emotions:

A Review of Research

Salimzadeh, R. Hall, N.C., & Saroyan, A. (2020). *Examining faculty members' stress management and emotion regulation strategies: A review of the literature*. Manuscript in preparation.

Abstract

Existing research suggests that numerous aspects of the modern academic career are stressful and trigger emotional responses, with research evidence further showing job-related stress and emotions to impact well-being and productivity of post-secondary faculty (i.e., university or college research and teaching staff). The current paper provides a comprehensive and descriptive review of the empirical research on coping and emotion regulation strategies among faculty members, identifies adaptive stress management and emotion regulation strategies for coping with emotional demands of the academic profession, synthesizes findings on the association between such strategies and faculty well-being, and provides insight into directions for future research on this topic.

Examining Academics' Strategies for Coping with Stress and Emotions:

A Review of Research

Not unlike other professionals, post-secondary faculty (i.e., university or college research and teaching staff across ranks and tenure status) have consistently been found to report high levels of job-related stress (Winefield et al., 2003). In the last few decades, higher education institutions worldwide have undergone fundamental changes. Major educational reforms, exponential expansion in student enrollment, escalating workloads, greater control by managers with respect to teaching quality and research productivity, and the movement towards commercialization have shifted the landscape of higher education into a competitive business (Biron, Brun, & Ivers, 2008; McAlpine & Akerlind, 2010; Ogbonna & Harris, 2004; Rothmann & Barkhuizen, 2008). Subsequently, there is substantial pressure on academics to maintain high academic performance and productivity (Catano et al., 2010; McAlpine & Akerlind, 2010). Surveys carried out in the U.K. (Kinman, 2014; Tytherleigh, Webb, Cooper, & Ricketts, 2005), Australia (Winefield et al., 2003), and Canada (Biron et al., 2008; Catano et al., 2010) suggest that these increased demands have contributed to high levels of job-related stress amongst academics. Most notably, a recent comparison of U.K. and Australian academics revealed that faculty suffered from higher levels of stress-related caseness (i.e., when some intervention is required) as compared with other occupational groups and community samples (Kinman, 2014). Empirical evidence strongly supports the detrimental impact of stress on post-secondary faculty members' physical and psychological well-being and professional competencies, as well as student attainment and institutional productivity (Blix, Cruise, Mitchell, & Blix, 1994; Barkhuizen, Rothmann, & Vijver 2014; Catano et al., 2010; Kataoka, Ozawa, Tomotake, Tanioka, & King, 2014; Salimzadeh, Saroyan, & Hall, 2017; Shen et al., 2014; Stevenson & Harper, 2006; Watts & Robertson, 2012).

A parallel line of research suggests that the academic profession elicits a wide variety of positive and negative emotions resulting from interactions with students, teaching and research-related activities, as well as organizational factors (e.g., Hagenauer & Volet, 2014a; Martin & Lueckenhausen, 2005; Postareff & Lindblom-Ylänne, 2011). The emotion literature further underscores implications of emotions on our cognition, behavior, physical health, and psychological well-being (for meta-analytical summaries, see Houben, Van Den Noortgate, & Kuppens, 2015; Lench, Flores, & Bench, 2011). Importantly, these findings have been replicated in emergent research conducted with post-secondary faculty. For instance, a study of 175 Australian university teachers documented the impact of teaching-related emotions on instructional behavior: positive emotions concerning teaching was associated with student-focused teaching approaches and negative emotions instead linked to information transmission approaches (Trigwell, 2012). Similarly, a mixed-methods study of 18 U.S. faculty members showed that emotions predict faculty success in teaching and research as well as mediate the impact of perceived task value on teaching success and perceptions of academic control on research success (Stupnisky, Pekrun, & Lichtenfeld, 2016). More precisely, faculty members who placed higher value on their teaching felt more enjoyment and pride in teaching and, in turn, experienced greater teaching success. As for research, the more faculty felt in control of their research, the more adaptive emotions they felt regarding research (e.g., enjoyment, pride) that, in turn, predicted greater research success. In the same vein, a study of 362 U.S. and Chinese college students found that students' perceptions of university teachers' positive emotions were significantly and positively correlated with students' own positive emotions, behavioral and cognitive engagement, and critical thinking (Zhang & Zhang, 2013).

As emotion and stress share overlapping dimensions, it is necessary to consider both their common and distinguishing features. Psychological stress is defined as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). While both stress and emotions are subject to appraisals of the personal significance of an emotional encounter, emotion is operationalized as a broader construct that encompasses negative experiences such as stress (Lazarus, 1993). As such and as a subset of emotion, stress is more limited in scope and depth. While negative emotions are elicited when our goals are thwarted, perceived stress represents the belief that the challenges exceed one’s capabilities to cope with them (Lazarus, 1993).

Coping refers to “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). Emotion regulation is similarly defined as “the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross, 1998b, p. 275). Empirical evidence further indicates that the ability to effectively manage stress and emotions has important consequences for health and adaptive functioning (e.g., Folkman & Moskowitz, 2004; Gross, 2002; Gross & Levenson, 1997; John, & Gross, 2004; for meta-analytical summaries, see Skinner, Edge, Altman, & Sherwood, 2003; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Webb, Miles, & Sheeran, 2012).

Although there is empirical evidence of the relevance of coping and emotion regulation for functional and dysfunctional outcomes within work contexts in general (e.g., Lawrence, Troth, Jordan, & Collins, 2011; Murphy, 1996), the nature and significance of post-secondary academics’

coping and emotion regulation strategies is underexplored. Furthermore, the existing literature is scattered and, to date, no reviews of empirical findings having been carried out on the topic. Given the stressful and emotion-laden nature of the academic profession as well as the increasingly problematic nature of stress and the impact of emotions in post-secondary faculty, a comprehensive review of empirical findings is required.

As such, the present review addresses this research gap by providing a comprehensive and descriptive review of quantitative and qualitative research findings on coping and emotion-regulation strategies as reported by post-secondary faculty. It is anticipated that findings from this review will generate insight into academics' coping and emotion management strategies as well as the consequences of these strategies for well-being and productivity. Furthermore, the findings should shed light on the design and implementation of optimal faculty interventions for post-secondary institutions to equip their academic teaching and research staff with adaptive psychological strategies and maintain their well-being levels. Prior to presenting the method of the review and the main findings, a brief overview of relevant constructs and their corresponding theoretical frameworks are presented.

Constructs under Review: Coping and Emotion Regulation

Coping strategies. A variety of conceptualizations have been utilized to describe the structure of individuals' psychological coping strategies, with models typically distinguishing between problem- and emotion-focused coping (Folkman & Lazarus, 1980, 1985), engagement (active, approach) versus disengagement (avoidance, passive) coping (Roth & Cohen, 1986; Tobin, Holroyd, Reynolds, & Wigal, 1989), and primary (assimilative) versus secondary (accomodative) control coping (Weisz, McCabe, & Dennig, 1994; Weisz, Rothbaum, Blackburn, 1984; for detailed reviews, see Skinner et al., 2003; Skinner & Zimmer-Gembeck, 2016). Problem-

focused coping (e.g., strategizing for the purpose of goal attainment) consists of efforts to solve the problem through modifying or eliminating the source of stress whereas emotion-focused coping (e.g., wishful thinking) seeks to regulate distressing emotions in the face of adversity so as to manage the psychological impact of stress. Similarly, engagement coping (e.g., support-seeking) entails active attempts to directly deal with the stressful situation or related feelings whereas disengagement coping (e.g., social withdrawal) refers to efforts to physically and cognitively distance oneself from the stressor and associated emotions. A further alternative perspective suggests that whereas assimilative coping is used to change the stressor or associated feelings via strategies such as problem solving or emotion regulation, accommodative coping refers to flexibly adjusting personal preferences to situational constraints (e.g., acceptance, cognitive restructuring; Skinner et al., 2003; Skinner & Zimmer-Gembeck, 2016; Weisz et al., 1994; Weisz et al., 1984). Schwarzer and Knoll (2003) make a related distinction between past-oriented (i.e., reactive) and future-oriented (i.e., proactive or anticipatory) coping. Reactive coping pertains to efforts to cope with a stressful encounter that happened in the past (e.g., doing poorly at a job interview). Future-oriented coping encompasses 1) anticipatory coping which consists of efforts to tackle an imminent threat in the near future (e.g., preparing for a public speech), 2) preventative coping, intended to deal with uncertain events in the distant future (e.g., exercising to prevent future heart-disease), and 3) proactive coping, which involves goal-setting and efforts to build up resources that facilitate achievement of challenging goals and personal growth (Schwarzer & Knoll, 2003).

Whereas perceiving a situation as a challenge may induce positive emotions such as eagerness or excitement, interpreting it instead as personally threatening generates negative emotions such as anxiety or fear (Folkman, 2008). This concept of cognitive appraisals is

consistently highlighted in the coping literature due to one's interpretations regarding the significance and meaning of a stressful encounter mediating the impact of such events on subsequent emotions (Folkman, 2008; Lazarus, 2000; Lazarus & Folkman, 1984). Importantly, cognitive appraisals are also assumed to determine the types of coping strategies individuals adopt to manage their emotions in stressful situations. Specifically, appraisals of a stressful encounter being controllable tend to trigger problem-solving responses such as planning and strategizing, whereas perceiving the situation as uncontrollable provokes accommodating or emotion-focused strategies such as acceptance or positive thinking (Aldwin, 2007; Skinner & Zimmer-Gembeck, 2016).

However, it is also important to note that the assumed function of a coping strategy may not in fact be the same as the actual effects of that strategy in response to a specific stressor. As postulated by Lazarus and Folkman (1987), although coping could be mainly classified as problem-focused or emotion-focused, "in reality any coping thought or act can serve both or perhaps many other functions" (p.152). Coping strategies are thus not universally adaptive or maladaptive and can be judged as such only after considering the context and the social and personal resources available to the individual as well as how they influence one's actions (Aldwin, 2007; Skinner & Zimmer-Gembeck, 2016). Nonetheless, research attempting to identify adaptive and maladaptive strategies has found problem-focused coping, engagement coping, as well as primary and secondary control coping to be typically adaptive in that they are consistently found to be linked with better psychological health and functioning. In contrast, disengagement and emotion-focused coping are shown to be associated with poorer psychological and behavioral outcomes (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001).

Given the overlap between coping and emotion regulation frameworks, it is necessary to consider both their convergences and differences. Compared with emotion regulation, coping is a broader construct. Although both coping and emotion regulation are regulatory processes that include controlled and purposeful (i.e., goal-directed) efforts that change over time (i.e., are temporal processes), coping focuses on much larger periods of time (e.g., coping with bereavement over months). However, whereas coping includes only controlled processes, emotion regulation reflects a continuum of processes from conscious, effortful, and controlled regulation of emotions to automatic regulation that takes place without conscious awareness. Accordingly, coping is commonly understood as a form of emotion regulation in which one engages in response to prolonged stress. More precisely, whereas coping primarily focuses on decreasing negative emotions in stressful encounters, emotion regulation targets both expression and experience of positive and negative emotions in stressful situations as well as non-stressful situations. Finally, although coping is performed by the person encountering stress, emotion regulation could be either intrinsic (individuals regulate their own emotions) or extrinsic in nature (emotions are regulated by others; Compas et al., 2014; Gross, 1998b, 2013; Gross & Thompson, 2007; Koole, 2009; Skinner & Zimmer-Gembeck, 2007).

Emotion regulation and emotional labor. Regulation of emotions has been studied under two distinct, yet overlapping, areas: emotion regulation and emotional labor. The two constructs are comparable in that both focus on modifying feelings and expressions through the use of different strategies (Grandey 2015; Gross, 2013). As mentioned above, emotion regulation encompasses a heterogeneous set of processes whereby people seek to influence the types of emotions they experience, when these emotions are experienced, and how they are expressed (Gross, Richards, & John, 2006). Emotional labor, on the other hand, involves the “process of

regulating both the internal and expressive components of emotions according to an organization's display rules" (Grandey, 2000, p. 97). As such, emotional labor represents a subtype of emotion regulation that takes place within a given work context where "display rules" prescribe specific emotions that may or may not be publicly expressed (Ashforth & Humphrey, 1993; Grandey, 2000; Grandey & Gabriel, 2015; Gross, 2013).

Regarding existing proposed frameworks concerning emotion regulation, Gross' process model (1998a, 1998b) is the most commonly used (for a meta-analysis, see Webb et al., 2012) and was used in the present review as the organizing structure to synthesize empirical evidence on faculty coping and emotion regulation. The model differentiates between two major forms of emotion regulation in terms of their timing during the unfolding of an emotion: antecedent-focused (i.e., preventative) and response-focused (i.e., responsive). The former strategies are activated before our appraisals initiate emotion response tendencies, and encompass four main strategy types. *Situation selection* (e.g., confrontation and avoidance) involves choosing or avoiding people, activities, or places that will lead to a situation that can generate the desired emotions. *Situation modification* pertains to efforts to alter the emotion-inducing situation in order to change its emotional impact and includes strategies such as direct situation modification, help/support-seeking, and conflict resolution. *Attentional deployment* (e.g., distraction, rumination, mindfulness) entails managing emotions without modifying the situation by choosing which aspects of a situation to attend to. *Cognitive change* (e.g., self-efficacy appraisal, challenge and threat appraisals, and positive reappraisal) involves re-evaluating a situation and altering one's appraisals of it (Gross, 1998a, 1998b; Gross & Thompson, 2007; Peña-Sarrionandia, Mikolajczak, & Gross, 2015). In contrast, response-focused strategies (e.g., emotion sharing, verbal/physical aggression, substance use, and expressive suppression) are activated after emotional responses

have been developed and attempt to influence experiential, behavioral, and physiological emotional response tendencies (Gross, 1998a, 1998b; Gross & Thompson, 2007; Peña-Sarrionandia et al., 2015).

Individuals are additionally said to regulate their emotions in two directions: They can either down-regulate (i.e., decrease) or up-regulate (i.e., increase) both negative and positive emotions (Gross, 2007; Nelis, Quoidbach, Hansenne, & Mikolajczak, 2011; Sheppes & Gross, 2012). Research within the emotion regulation framework has to date focused almost exclusively on down-regulating negative emotional experiences and up-regulating positive emotions (Gross, 2002, Gross et al., 2006; Quoidbach, Mikolajczak, & Gross, 2015). Existing empirical evidence further indicates that different forms of emotion regulation are associated with notably different affective, cognitive, and social outcomes (for meta-analytical reviews, see Aldao et al., 2012; Webb et al., 2012). For instance, expressive suppression has been shown to maintain or intensify the internal experience of the negative emotion, and also lead to lower positive emotions, higher physiological arousal, feelings of inauthenticity, depressive symptoms, pessimism, as well as decreased memory and negative social consequences. Suppression is additionally linked to job dissatisfaction and quitting intentions within occupational settings. In contrast, reappraisal has generally been found to lead to more positive and fewer negative emotional experiences and expressions, having few social costs and either no impact or positive effects on subsequent memory processes (Côté & Morgan, 2002; Gross, 2002, 2015; Gross & John, 2003; Gross & Levenson, 1997, Peña-Sarrionandia et al., 2015; Richards & Gross, 2000; Sutton, 2004). Overall, emotion regulation processes that target early stages of emotion generation are more effective than the strategies that target emotional responses (Sutton, 2007).

Concerning the construct of emotional labor, different conceptualizations have been proposed. Seminal work by Hochschild (1983) categorized emotional labor into two major forms: surface-acting and deep-acting. *Surface-acting* entails displaying emotions that one does not actually feel by revising one's external expression of an emotion without modifying actual internal feelings. In contrast, *deep-acting* refers to consciously modifying feelings so as to express the desired emotions. Both types of emotional labor are aimed at displaying required emotions with different motives. Specifically, surface-acting involves modifying emotional expressions, whereas deep-acting entails internalizing the desired emotion so as to appear authentic. Amplifying or suppressing public display of emotions through surface-acting creates dissonance between the displayed and the internally experienced emotion (Ashkanasy, Zerbe, & Hartel, 2016; Grandey, 2000), with evidence showing emotional inauthenticity to be psychologically taxing (Hochschild, 1983; Morris & Feldman, 1996; Rafaeli & Sutton, 1987). In contrast, deep-acting does not create significant levels of dissonance due to the displayed emotion matching the subjective experience of emotion.

Building on Hochschild's (1983) classification, subsequent research by Ashforth and Humphrey (1993) added a third form of emotional labor: *genuine or natural* emotional labor that involves the expression of naturally felt emotions such that the employees do not have to deliberately manage their emotions. Although low in emotional inauthenticity, genuine expression of internally felt emotions still requires cognitive effort (Grandey, 2000; Humphrey, Ashforth, & Diefendorff, 2015; Zapf, 2002; Zapf, Vogt, Seifert, Mertini & Isic, 1999). Later, Morris and Feldman (1996) theorized that the emotional labor construct consists of four dimensions: frequency of appropriate emotional display, attentiveness to display rules, variety of emotions required, and emotional dissonance, along with surface and deep-acting aspects. Subsequently,

Grandey (2000) proposed an emotion regulation model of emotional labor, connecting Hochschild's concepts of deep-acting and surface-acting to the well-established emotion regulation model by Gross (1998a, 1998b). More precisely, Grandey proposed analogies between antecedent-focused emotion regulation (used to modify a situation or cognitions to impact feelings) and deep-acting emotional labor, and response-focused emotion regulation (used to modify expressions and behavior once the emotion is felt) and surface-acting emotional labor. Surface-acting emotional labor thus reflects a type of response-focused emotion regulation strategy through which people regulate their emotional responses by faking, amplifying, or suppressing their emotions either cognitively or behaviorally. Conversely, deep-acting emotional labor represents a type of antecedent-focused emotion regulation strategy through which people modify their perceptions of the situation through attention deployment and cognitive change. Additionally, some researchers omit the deep-acting aspect, and focus instead on surface-acting by classifying it as either amplification (i.e., up-regulation) or suppression (i.e., down-regulation) of emotional expressions (Côté & Morgan, 2002; Côté, Van Kleef, & Sy, 2013).

Based on the conceptualizations presented, emotion regulation can thus be understood as encompassing a broader and more pervasive set of behaviors as compared to emotional labor. Also, despite the similarities in the strategies proposed in the two conceptual frameworks, they can be differentiated in that emotion regulation addresses an individuals' general dispositional approach to dealing with emotions and focuses on internal processes and individual differences, whereas emotional labor reflects a more specific examination of emotion regulatory processes in the context of displaying expected emotions in employment settings (Wang, Hall, & Taxer, 2019). The two traditions could also be differentiated in their concentration on positive and negative emotions. Specifically, emotion regulation research has largely focused on response-focused processes (i.e.,

suppression) to inhibit the expression of undesired negative emotional responses. In contrast, emotional labor researchers have mainly concentrated on amplifying the expression of desired positive emotions (i.e., surface-acting; Taxer & Frenzel, 2015).

Emotional labor has been described as a double-edged sword as it could enhance or hinder employee well-being (Ashforth & Humphrey, 1993; Hülshager & Schewe, 2011; Humphrey, Ashforth, & Diefendorff, 2015; Zapf, 2002). Overall, research findings suggest that emotional inauthenticity (i.e., faking or hiding emotions) and surface-acting are associated with adverse individual and organizational outcomes in the form of impaired well-being, job attitudes, and performance outcomes. However, deep-acting has been shown to be desirable in that it is positively associated with organizational attachment, emotional performance, and customer satisfaction (for meta-analytic findings, see Hülshager & Schewe, 2011; Kammeyer-Mueller et al., 2013). Further, existing research has yielded mixed results regarding the impact of emotional labor on specific well-being indicators such as job satisfaction, with some studies reporting positive effects (e.g., Zapf, 2002) and others demonstrating negative relations (e.g., Kinman, Wray, & Strange, 2011). Given the significance of coping and emotion regulatory processes for job performance and productivity, in general, and psychological well-being in particular, existing research on the ways in which post-secondary faculty cope with stress and emotions as well as the ways in which academics are affected by the strategies they adopt needs to be synthesized to shed light on how to promote their performance and protect psychological health.

Method

Existing empirical research on the strategies used by post-secondary faculty to manage work-related stress and emotions were located through a comprehensive search of English language, peer-reviewed empirical investigations via four electronic databases (Educational

Research Information Center (ERIC), Psychological Information (PsycINFO), Web of Science, and Scopus). The search terms used included: a) population: “college” or “university” + “faculty” or “professors” or “academics” or “instructor” or “research staff” or “teaching staff” or “lecturer” or “educator”, b) stress and emotion: “stress”+ “emotion” or “affect” or “mood”, c) emotion regulation and coping: “coping” or “stress management” or “coping behavior” + “emotion regulation” or “emotion management” or “emotion control”, and d) emotional labor: “emotion labor” or “emotional labor” or “emotional dissonance” or “emotional authenticity.” Since coping and emotion regulation among faculty are relatively under-researched and no review to date has examined these topics in post-secondary faculty, we did not limit the search to a specific time span. Further, the current review excluded studies of medical academics (e.g., physicians, nurses) as well as faculty who were also social workers due to the unique demands and pressures associated with their non-academic, service-oriented work conditions (Le Blanc, Bakker, Peeters, van Heesch, & Schaufeli, 2001; Watts & Robertson, 2012). In addition to the database searches, snowball searches of references of the retrieved studies were conducted. As per the inclusion and exclusion criteria specific to the aim of the present review, 25 empirical publications were included, with six drawing on two datasets (Amatea & Fong-Beyette, 1987; Amatea & Fong-Beyette, 1991; Gates 2000a, 2000b; Hagenauer & Volet, 2014a, 2014b), in which the stress management and emotion regulation strategies in post-secondary faculty were examined. All studies reviewed are included in Tables 4 and 5 and identified with an asterisk in the reference list

Table 4

Studies on Emotion Regulation and Well-being in Faculty (n = 16²)

Author, Date	Focus / Question	Context / Sample	Method / Data source	Findings	Limitations
Abouserie (1996)	To identify the sources of stress and the coping strategies used	U.K., 414 academics at one university	Mixed-methods, survey questionnaire and an open-ended question	<ul style="list-style-type: none"> Faculty used a wide range of coping strategies including talking to colleagues, acceptance of problem, thinking that “I am only a human being”, sharing emotions, and taking rests. 19.1% reported that they shut themselves in their office and 10.7% opted not to go to work Acceptance was the most commonly reported stress management strategy (58%) 	<ul style="list-style-type: none"> Single-site and not generalizable Self-report data
Amatea & Fong-Beyette (1987)	To examine the strategies in coping with the stress arising from role conflict	U.S., 135 academic women (faculty, researchers, administrators) at one university	Quantitative, cross sectional, survey	<ul style="list-style-type: none"> Faculty members reported greater use of problem-focused than emotion-focused coping responses across several different types of work role conflict situations Faculty opted to manage stress primarily by adopting strategies 	<ul style="list-style-type: none"> Single-site study Self-report data

² There are actually 19 publications on emotion Regulation and well-being included in this manuscript. However, as 6 of the papers draw on a common data set, the *n* at the top is given as 16.

such as planning and strategizing across different types of work-life conflict situations

Amatea & Fong-Beyette (1991)	To explore the contribution of role stressors and personal resources in predicting strain symptoms	U.S., 117 academic women (faculty, researchers, and administrator) at one university	Quantitative, cross sectional, survey	<ul style="list-style-type: none"> Faculty opted to manage stress primarily by adopting strategies such as planning and strategizing across different types of work-life conflict situations Perceived social support was also found to be correlated with better physical and psychological health 	<ul style="list-style-type: none"> Single-site study Self-report data
Brown & Speth (1988)	To investigate the coping strategies among faculty	U.S., 150 faculty members at one university	Quantitative, cross-sectional, survey	<ul style="list-style-type: none"> Faculty reported using more problem-focused coping strategies Identifying the cause of the problem or finding more about the situation were the most frequently used stress management responses Utilization of problem-focused coping was linked to better psychological adjustment 	<ul style="list-style-type: none"> Self-report data Cross-sectional
Devonport et al. (2008)	To explore use of coping strategies among higher education lecturers	U.K., 10 university lecturers at one university	Qualitative, interview	<ul style="list-style-type: none"> Problem-solving strategies such as prioritizing, proactively planning and time-management to avoid potentially stressful encounters were invaluable in managing and controlling stress 	<ul style="list-style-type: none"> Interviewed only once and cannot provide a dynamic perspective

				<ul style="list-style-type: none"> Unanimously reported seeking social support, particularly emotional support, as well as seeking professional counseling or psychological services, to manage stress 	
Dunn et al. (2006)	To understand the roles of hassles, avoidant and problem-focused coping, and perceived social support as mediating the relationship between maladaptive perfectionism and psychological distress	Canada, 370 university professors at one university	Quantitative, cross-sectional, survey	<ul style="list-style-type: none"> Problem-solving coping strategies such as active coping and planning were negatively associated with psychological distress Avoidant coping was positively associated with psychological stress Hassles and avoidant coping partially mediated the association between maladaptive perfectionism and psychological distress 	<ul style="list-style-type: none"> Cross-sectional Single-site and not generalizable
Gates (2000a)	To describe and analyze how and why faculty manage their emotions	U.S., nine tenured professors at one university	Qualitative, field notes, interview, observed for 5 months in undergraduate courses, and document collection.	<ul style="list-style-type: none"> Used positive reappraisal to reduce negative emotions in their interactions with students Emotion management helped them be effective teachers Taking deep breaths allowed faculty to monitor their feelings and assess the consequences of their emotions 	<ul style="list-style-type: none"> Small sample size

Gates (2000b)	To explore what emotion management strategies faculty members employ to cope with stressful classroom interactions	U.S., nine tenured faculty members at one university	Qualitative, field research methodology, observations, interviews, and document collection	<ul style="list-style-type: none"> The strategies included reappraisals of the situation, altering physiological state (deep breathing), expressive gesturing (glaring at disruptive students), applying language and labels to communicate values and emotions (it is ok to get confused while learning) Use positive reappraisal to down-regulate negative emotions. 	<ul style="list-style-type: none"> Small sample size
Gillespie et al. (2001)	To understand the personal strategies used to manage work stress	Australia, 74 academics and 104 general staff at 15 universities	Qualitative (first part of a longitudinal study), 22 focus groups (n=8 in each)	<ul style="list-style-type: none"> Identified planning and prioritizing as key stress management techniques Faculty also used the following strategies: situation selection by establishing tight role boundaries by avoiding non-essential student and staff contact or saying no to unnecessary demands to handle stressful experiences, learning to recognize and understand stress were also effective in coping with stress, acceptance of the specific situation by lowering their expectations helped faculty to reduce negative emotions, lowering their standards and self-expectations by withdrawing from voluntary service activities (e.g., leaving committees) as key stress management techniques, seeking social support 	<ul style="list-style-type: none"> Use of aggregate sample limits the ability to detect factors specific to academics

from family or friends, as well as attending scholarly conferences, as a means of coping with stress

Hagenauer & Volet (2014a)	To understand the origin and nature of emotions experienced by university teachers	Australia, 15 university teachers teaching first year students at two universities	Qualitative, exploratory, two rounds of interviews	<ul style="list-style-type: none"> • They experienced an array of emotions in teaching and interacting with their students • Annoyance and insecurity were the most frequently reported negative emotions • Emotions were linked to three main themes: 1) intrinsic value and social nature of teaching, 2) student learning and engagement, and 3) perception of partial control over their own teaching 	<ul style="list-style-type: none"> • Did not include researchers who might experience different emotions • Relied on self-reports to examine ER strategies
Hagenauer & Volet (2014b)	To examine teacher educators' emotional display and emotion regulation strategies in classroom	Australia, 15 university teachers teaching first year students at two universities	Qualitative, exploratory, two rounds of interviews	<ul style="list-style-type: none"> • University teachers view the open expression of positive emotions as an integral aspect of their teaching practice • It was critically important for teachers to control their negative emotions and on some occasions to completely conceal them • Faculty used response focused strategies (shared emotions with family members and colleagues) • Faculty used situation selection (e.g., by trying not to get involved 	<ul style="list-style-type: none"> • Self-report data • Link between teaching quality and emotions not studied

in the emotional issues of their students)

Kataoka et al. (2014)	To investigate occupational stress and mental health of university teaching staff	Japan, 337 university teachers	Quantitative, cross-sectional, survey	<ul style="list-style-type: none"> Academics engage in behavioral disengagement and self-distraction Self-distraction, substance use, behavioral disengagement, and self-blame coping were positively associated with anxiety, depression, and social dysfunction Proactive coping positively predicted mental and physical health 	<ul style="list-style-type: none"> Cross-sectional Single-site and not generalizable
Lease (1999)	To examine differences in levels of occupational stress and personal strain as well as the factors affecting the stress-strain relationship	U.S., 131 tenure-track faculty members at three universities	Quantitative, cross-sectional, survey	<ul style="list-style-type: none"> Avoidant coping was associated with greater experiences of role stress and strain Perceptions of social support and environmental support from colleagues, administrators, and departmental support staff to be beneficial for psychological adjustment at lower levels of work-role stressors (i.e., role ambiguity and role insufficiency), whereas the beneficial effect of social support was not evident when stress from role ambiguity and role insufficiency increased 	<ul style="list-style-type: none"> Reliance on self-reports Low generalizability due to low response rate (33%)

Mark & Smith (2012)	To investigate the relationships between job demands, control, social support, efforts, rewards, coping, and attributional style in predicting anxiety, depression, and job satisfaction	U.K., 307 university employees (academic and administrative staff) and 120 members of the general population	Quantitative, cross-sectional, survey	<ul style="list-style-type: none"> Rewards, social support, job control, and positive coping and attributional behaviors were linked to better psychological adjustment in the form of lower levels of depression and anxiety as well as better job satisfaction 	<ul style="list-style-type: none"> Low response rate Cross-sectional Did not control for family wise error arising from large number of comparisons made
Narayanan et al. (1999)	To compare three occupational groups' strategies in coping with stress	U.S., 387 participants (clerical workers, university professors (n=124), and sales associates)	Qualitative, open-ended technique	<ul style="list-style-type: none"> Differences across occupations regarding the coping mechanisms emerged In the higher level job (professors) both genders used problem-focused strategies (e.g., taking direct action or talking to their immediate superiors) most often 	NA
Perlberg & Keinan (1986)	To identify the coping strategies of the faculty	Israel, 100 faculty members at one university	Quantitative, cross sectional, survey	<ul style="list-style-type: none"> The most important ways of coping: social interaction (e.g., talking to friends, telling jokes) and information seeking (e.g., intellectual stimulation such as reading journals and magazines, and attending conferences) Identified intellectual stimulation such as reading journals, magazines, and attending conferences as one of the most effective ways of coping with stress in that it helps faculty divert attention from daily stressors 	<ul style="list-style-type: none"> Single-site study Used a limited list of coping strategies

				<ul style="list-style-type: none"> • Faculty also reported seeking social support (i.e., talking with a friend or telling jokes) as one of the most effective ways of coping with stress 	
Ramsey et al. (2011)	To examine the relationships among psychological reversal states, sense of humor, classroom conflict styles, and teacher burnout	U.S., 102 teaching faculty at three universities	Quantitative, cross sectional, survey	<ul style="list-style-type: none"> • Utilization of humor was significantly and negatively associated with burnout 	<ul style="list-style-type: none"> • Small sample size • Online survey, no time constraints, not possible to control for environmental contaminants
Regan et al. (2012)	To examine on-line faculty members' emotional experiences and the strategies they use to regulate their emotions	U.S., six full-time faculty members at one university	Qualitative, four focus groups in two rounds, additional observational notes	<ul style="list-style-type: none"> • Ways to regulate emotions: having adequate technology training, training and support from the educational institution, having synchronous office hours, face- to face or telephone interactions with students • Faculty employed cognitive change in the form of changing their view of the instructor as transmitter of information to facilitator of knowledge to avoid the negative emotion of feeling devalued in online learning environments 	<ul style="list-style-type: none"> • Small sample size and not generalizable • Second round of focus group focused on regulation of negative and challenging emotions only

Tümekaya (2007)	To identify the relationship between burnout and the variables of lecturers' humor styles, demographic information, occupational conditions, and ability to cope with humor in general	Turkey, 283 full-time lecturers at one university	Quantitative, cross sectional, survey	<ul style="list-style-type: none">• Use of humor was significantly and negatively associated with burnout	<ul style="list-style-type: none">• Cross-sectional• Single-site and not generalizable
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Table 5

Studies on Emotional Labor and Well-being in Faculty (n = 6)

Author, Date	Focus / Question	Setting / Sample	Paradigm / Method / Data source	Findings	Limitations
Berry & Cassidy (2013)	To examine levels of emotional labor in university lecturers and compare these data to other occupations	U.K., 61 university lecturers at one university	Mixed-methods, questionnaire-based survey and three open-ended questions	<ul style="list-style-type: none"> • Faculty performed relatively “high” levels of emotional labor and reported significantly higher levels of emotional labor than other occupations • Suppression was the most frequently used emotional labor strategy followed by emotion faking • Although university lecturers reported high levels of emotional labor they also felt satisfied with their jobs 	NA
Constanti & Gibbs (2004)	To understand the emotional labor while teaching and interacting with students and to explore student perception and management perspective of emotional labor	Cyprus, four university teachers, four university students, one chief executive of the college	Qualitative, focus group interviews	<ul style="list-style-type: none"> • Emotional labor among faculty is pervasive • Higher education teachers have to perform emotional labor for the benefit of customers (i.e., students) and the management 	<ul style="list-style-type: none"> • Small sample size
Mahoney et al. (2011)	To examine the effects of the genuine, faking, and suppressing aspects of emotional labor on emotional exhaustion,	U.S., a national study of 598 college and university professors	Quantitative, cross-sectional, online survey	<ul style="list-style-type: none"> • Significant direct relationships between emotional labor, emotional exhaustion, and job satisfaction • The relationship between emotional labor and affective commitment was 	<ul style="list-style-type: none"> • Cross-sectional • Contextual differences in universities not examined • Self-report data

	job satisfaction, and affective commitment			mediated by emotional exhaustion and job satisfaction	
				<ul style="list-style-type: none"> • Reported use of suppression as a surface-acted emotional labor strategy 	
Ogbonna & Harris (2004)	To examine the frequency and propensity of emotional labor and the positive and negative consequences of such emotional labor and work intensification	U.K., 54 University lecturers at different universities	Qualitative, interview (open-ended questions)	<ul style="list-style-type: none"> • Described emotional labor as fundamental to their labor process • Surface-acting was more common • Interactions with students, contact with internal actors caused surface-acted emotional displays • The most commonly described form of deep- acting was the active and conscious attempt by lecturers to arouse or repress emotion • Emotional labor contributed to high levels of stress, lack of team spirit and team work. It also made them eligible for organizational rewards for the display of appropriate behaviors and emotions 	NA
Pugliesi (1999)	To explore the consequences of emotional labor among academics	U.S., 2,069 academics (i.e., faculty and general university staff)	Quantitative, cross-sectional, online survey	<ul style="list-style-type: none"> • Attempting to change one's own or a client's or a coworker's feelings was associated with higher subjective job stress and psychological distress • Performing self-focused and other-focused emotional labor negatively predicts job satisfaction. 	NA

				<ul style="list-style-type: none"> Faculty who reported performing more emotional labor were less satisfied with their work 	
Zhang & Zhu (2008)	To examine the impact of emotional labor on the experience of burnout and job satisfaction	China, 164 full-time lecturers at one university	Quantitative, cross-sectional, survey data	<ul style="list-style-type: none"> Of the three dimensions of emotional labor the participants engaged the most in deep-acting and the least in surface-acting Surface-acting fosters burnout and reduces satisfaction and deep-acting and authenticity mitigate burnout and increase satisfaction 	<ul style="list-style-type: none"> Representativeness is a problem: majority of the participants were junior English lecturers Scales developed in western culture applied to Chinese context

Results

Prevalence and Outcomes of Coping and Emotion Regulation Strategies

The present section synthesizes and critically examines published empirical findings ($n = 22$) concerning the coping and emotion regulation strategies (i.e., behaviors, cognitions, and perceptions) in which academics engage when facing stress and emotional encounters, as informed by the process model of emotion regulation proposed by Gross (1998a, 1998b). The studies examining academics' coping with stress reviewed for this paper ($n = 13$) can be categorized into three main groups according to their foci: 1) those primarily assessing the specific coping strategies faculty members employ to deal with stress ($n = 5$; Abouserie, 1996; Brown & Speth, 1988; Devonport, Biscomb, & Lane, 2008; Kataoka et al., 2014; Perlberg & Keinan, 1986), 2) those that report findings on coping styles among academics combined with general university staff and other occupational groups ($n = 3$; Amatea & Fong-Beyette, 1987; Amatea & Fong-Beyette, 1991; Gillespie, Walsh, Winefield, Dua, & Stough, 2001; Narayanan, Menon, & Spector, 1999); and finally, 3) those that explore the association between academics' coping strategies and well-being outcomes ($n = 6$; Dunn, Whelton, & Sharpe, 2006; Kataoka et al., 2014; Lease, 1999; Mark & Smith, 2012; Ramsey, Knight, Knight, & Verdón, 2011; Tümkaya, 2007). The review identified five empirical publications (Gates 2000a; Gates 2000b; Hagenauer & Volet, 2014a; Hagenauer & Volet, 2014b; Regan et al., 2012) that examined academics' strategies in dealing with emotions, with four of the studies referencing two datasets (Gates 2000a; Gates 2000b; Hagenauer & Volet, 2014a; Hagenauer & Volet, 2014b). As for emotional labor and its consequences, six studies were identified (Berry & Cassidy, 2013; Constanti & Gibbs, 2004; Mahoney, Buboltz, Buckner, & Doverspike, 2011; Ogbonna & Harris, 2004; Pugliesi, 1999; Zhang & Zhu, 2008).

As stress is a subset of emotion (Lazarus, 1993), the research findings on both coping and emotion regulation strategies are synthesized using process model of emotion regulation (Gross, 1998a, 1998b). Based on the evidence presented in the studies reviewed, faculty members apply a variety of coping and emotional management strategies, either before or after emotional events. The findings from the present review further align with the evidence from the broader emotion management research in showing different strategy types to yield significantly different outcomes for academics' psychological adjustment (Compas et al., 2014; Folkman & Moskowitz, 2004; Skinner et al., 2003). For instance, academics' perceived ability to handle job stress, and appraisals of personal resources, were shown to significantly and negatively correlate with the level of stress and strain experienced (Amatea & Fong-Beyette, 1991; Blix et al., 1994). The strategies identified in the present review align directly with the process model of emotion regulation proposed by Gross (1998a, 1998b) and can be categorized into antecedent- or response-focused according to Gross's categorization. Although the primary objective of the current review is to synthesize the findings on strategies academics use, the outcomes associated with those strategies are also considered to help put the proposed implications in context.

Antecedent-focused strategies. The antecedent-focused strategies academics use to regulate their emotions in order to minimize the aversive nature of potential stressors (as opposed to modulating behavioral or physiological responses to a given stressor) can be further categorized into situation selection, situation modification, attention deployment, and cognitive change.

Selecting the situation. The studies reviewed suggest that faculty choose or avoid some people, activities and places to generate desired emotional impact. For instance, focus group interviews from a sample of 178 faculty and general staff from 15 Australian universities identified situation selection by establishing tight role boundaries by avoiding non-essential student and staff

contact or saying no to unnecessary demands to handle stressful experiences (Gillespie et al., 2001). The review findings further suggest that some academic work experiences, such as interactions with students, provoke negative emotions of anger, irritation, and disappointment. Additionally, being anxious, apprehensive, helpless, inadequate, and overwhelmed were reported with respect to online teaching experiences (Hagenauer & Volet, 2014a; Regan et al., 2012). As such, university teachers reported adopting strategies to make it less likely that their negative emotions would be provoked. The six U.S. university teachers in Regan et al.'s (2012) focus group interviews reported a number of strategies to regulate the negative emotions of feeling stressed, restricted, and devalued while teaching online, including adequate technology training and support from the educational institution, synchronous office hours, and face-to-face or telephone interactions with students. Additionally, interview findings from the 15 Australian university teachers indicated that faculty reported making attempts not to get involved in the emotional issues of their students (Hagenauer & Volet, 2014b). Also, adopting student-centered teaching approaches to maintain productive and positive interactions with students, to create positive energy and to help circumvent the occurrence of negative emotions were reported. Furthermore, the 337 Japanese university teachers in Kataoka et al.'s (2014) survey study reported using behavioral disengagement as an effective stress management technique (Kataoka et al., 2014).

As for the consequences associated with situation selection, regulating emotions through strategies such as behavioral disengagement was linked to lower psychological adjustment in the form of severe depression, anxiety, social dysfunction, somatic symptoms and insomnia (Kataoka et al., 2014). Additionally, escape-avoidance (i.e., ignoring or avoiding problem) was found to be associated with higher levels of anxiety and depression and lower job satisfaction (Mark & Smith, 2012), predict greater strain (Lease, 1999), and partially mediate the association between

maladaptive perfectionism and psychological distress (Dunn et al., 2006). Moreover, proactive coping, defined as anticipating potential stressors as challenges and generating the psychological resources necessary to prepare for future stressors (Swarzer & Taubert, 2002), was found to be correlated with better physical and psychological health (Amatea & Fong-Beyette, 1991; Kataoka et al., 2014).

Modifying the situation. Examples of situation modification were reported by 135 female U.S. faculty, researchers, and university administrators in Amatea and Fong-Beyette's (1987) study who opted to manage stress primarily by adopting strategies such as planning and strategizing across different types of work-life conflict situations. Similar findings were observed by the participants in Gillespie et al.'s (2001) study who identified planning and prioritizing as key stress management techniques. More recently, the sample of 10 U.K. faculty interviewed by Devenport et al. (2008) also unanimously reported strategies such as prioritizing, proactive planning, and time-management to avoid potentially stressful encounters to be invaluable in managing and controlling stress. Whereas proactive coping, such as planning, reduces the need for reactive coping, faculty reported that some circumstances of organizational constraints such as lack of control necessitate reactive coping (Devenport et al., 2008; Kataoka et al., 2014). This finding supports the observation that coping is primarily determined by environmental factors (Lazarus & Folkman, 1984).

A survey of 150 U.S. faculty members further identified strategies such as identifying the cause of the problem or finding more about the situation, as the most frequently used stress management responses (Brown & Speth, 1988). This finding is consistent with another U.S. study that qualitatively compared coping strategies across three occupations (i.e., clerical workers, sales associates, and university professors; Narayanan et al., 1999). The study found that, compared to

other professions, academics were more likely to engage in situation modification strategies such as taking direct action or discussing the problem with their chair or head of the department. Additionally, a qualitative field study of nine tenured U.S. university teachers (using observations, field notes and interview data) found that faculty reported using language and labels, such as telling students that it is OK to get confused while learning, and communicating values and conveying their expectations of how students should perceive and behave (Gates, 2000b). This was aimed at influencing students' behavior and thereby reducing the possibility of triggering negative emotions in teachers. Strategies such as learning to recognize and understand stress were also identified to be effective in coping with stress (Gillespie et al., 2001).

The findings from this review are consistent with the broader coping research (e.g., Aldwin, 2007; Lazarus, 1993; Skinner & Zimmer-Gembeck, 2016) in showing problem-focused coping to be an effective stress response among post-secondary faculty. For instance, the studies reviewed reported utilization of problem-focused coping to be linked to better psychological adjustment in the form of lower levels of stress, depression, and psychological distress as well as better job satisfaction (Brown & Speth, 1988; Dunn et al., 2006; Mark & Smith, 2012). Similarly, active coping was negatively associated with social dysfunction and severe depression, whereas instrumental support was negatively associated with depression (Kataoka et al., 2014).

Attention deployment. Faculty also reported selectively attending to stimuli to cope with their emotional experiences. For instance, a quantitative study of 100 Israeli faculty members (Perlberg & Keinan, 1986) identified intellectual stimulation such as reading journals, magazines, and attending conferences as one of the most effective ways of coping with stress in that it helps faculty divert attention from daily stressors. Likewise, the university teachers in Kataoka et al. (2014) study reported employing self-distraction to be effective in managing stress (e.g., engaging

in other work or leisure activities in order to think about stressors less; see Carver 1997). The findings from this review are consistent with the health impairment risks of self-distraction in linking utilization of this strategy to severe depression, anxiety, social dysfunction, somatic symptoms and insomnia among academics (Kataoka et al., 2014).

Cognitive change. Consistent with the empirical findings that advocate cognitive-restructuring (i.e., reappraisal) due to its commonly observed beneficial impact on negative emotional experiences (Folkman & Moskowitz, 2004; Lazarus, 2000), academics reported applying reappraisal of specific situations to make it less likely for negative emotions to be triggered. For instance, the faculty members in Brown and Speth (1988) study reported reappraisal as a key coping strategy. It also appears that cognitive techniques that involve positive reappraisal of work situations may reduce faculty members' stress and negative emotions. For instance, examples of cognitive change were reported by participants in Gates' (2000a, 2000b) studies who opted to positively reappraise stimuli, for instance by remembering positive interactions, to down-regulate negative emotions. A quotation from a university teacher, who helped a student adopt an effective learning strategy after failing on an exam, is illustrative: "He [the student] graduated with honors. When he walked away, for me that was a tremendous reward because, according to him, I had an impact. And that's what I try to focus on" (Gates, 2000b, p. 483). The participating university teachers further indicated that they try to redefine disruptive students as young and impressionable, or to think of a student who is doing poorly as developing, in order to manage feelings of anger, anxiety, frustration, and disappointment (Gates, 2000a; 2000b).

Similarly, faculty members in the Regan et al. (2012) study reported changing their view of the instructor as transmitter of information to facilitator of knowledge to avoid the negative emotion of feeling devalued in online learning environments. Furthermore, faculty reported using

cognitive strategies such as rationalization or acceptance by adapting their expectations. For instance, acceptance was the most commonly reported stress management strategy (58%) among the 414 academics, including faculty and research assistants, surveyed in Abouserie's (1996) study. Faculty also used rational arguments in the form of self-talk to down-regulate negative emotions such as feeling annoyed: "They are still in that kind of school-girl, school-boy mode, which is pretty normal at this... this stage" (Hagenauer & Volet, 2014b, p. 271). Also, acceptance of the specific situation by lowering their self-expectations and work standards helped teachers to reduce disappointment, frustration and stress (Hagenauer & Volet, 2014b; Gillespie et al., 2001). The participants in Abouserie's (1996) study also reported lowering their expectations to decrease strain by trying to think that "I am only human being," though this was not reported as a frequent way of coping. Similar findings were observed by the participants in the Gillespie et al. (2001) study who identified practicing stress management techniques such as lowering their standards and self-expectations by withdrawing from voluntary service activities (e.g., leaving committees) as key stress management techniques. Furthermore, the teachers interviewed by Hagnauer and Volet (2014a) reported sharing humor and jokes to facilitate good rapport with students and thereby a relaxed classroom atmosphere.

Evidence from the studies reviewed suggests that cognitive change can yield significantly different outcomes for academics' well-being depending on how adaptively this strategy is used. For instance, studies of 102 U.S. teaching faculty and 283 Turkish faculty members found utilization of humor to be significantly and negatively associated with burnout (Ramsey et al., 2011; Tmkaya, 2007). In contrast, wishful thinking and denial were shown to be maladaptive in predicting lower psychological adjustment in the form of anxiety, depression, somatic symptoms and job dissatisfaction (Kataoka et al., 2014; Mark & Smith, 2012). However, contrary to their

expectations, Kataoka et al. (2014) did not find positive reappraisal to be significantly linked to well-being among academics. This finding seems to run counter to the existing empirical findings showing that coping via positive restructuring is related to better psychological health.

Response-focused strategies. According to Gross's (1998a; 1998b) model of emotion regulation, academics can also apply a variety of strategies intended not to change their exposure or perceptions of a given stressors (antecedent-focused strategies) but rather to alter the experiential, physiological, and behavioral reactions following from their emotional responses to a stressor (response-focused strategies).

Social support. One such strategy targeted at experiential facets is sharing emotions. For instance, the participants in Hagenauer and Volet's (2014b) study indicated that, being aware of the effectiveness of emotion sharing, they expressed their positive and negative emotions with family members and departmental colleagues. However, they believed there were not many opportunities to share and discuss negative emotions and their triggers due to the lonely nature of university teaching profession. Abouserie et al. (1996) also identified using emotion expression strategies such as trying to bring their feeling into the open by sharing them with friends and colleagues to deal with stress.

The current review also highlights support seeking as an effective stress management strategy among faculty. For instance, the faculty members in Perlberg and Keinan (1986) study reported seeking social support (i.e., talking with a friend or telling jokes) as one of the most effective ways of coping with stress. Similarly, the faculty in Devenport et al.'s (2008) study unanimously reported managing stress via emotional support as well as professional counseling or psychological services. Abouserie (1996) also identified support seeking through talking with colleagues, involving oneself with friends, and talking about the problem with colleagues as

effective coping responses. Their findings support the assertion by Rimé (2007) who contends that emotion sharing is beneficial to psychological well-being due to the social bonds it fosters as well as transference of affection and warmth. Additionally, the study by Gillespie et al. (2001) reported that the participants relied on social support from family or friends, as well as attending scholarly conferences, as a means of coping with stress. It appears that while preparing manuscripts and presenting in conferences can be stressful, it enables faculty to discuss work-related problems with collaborators and colleagues.

Interestingly, the effectiveness of social support has also been found to be linked to the level of stress faculty experience. For instance, in a survey of 131 tenure-track U.S. faculty members, Lease (1999) found perceptions of social and environmental support from colleagues, administrators, and departmental support staff to be beneficial for psychological adjustment when work-role stressors (i.e., role ambiguity and role insufficiency) were perceived as low in magnitude. In contrast, the beneficial effect of social support was not evident when faculty perceived high levels of work-role stress. This finding indicates that social support may not be sufficient to meet the coping requirements posed by lack of clarity over academic roles and responsibilities. Perceived social support was also found to be correlated with better physical and psychological health (Amatea & Fong-Beyette, 1991; Kataoka et al., 2014) as well as negatively associated with maladaptive perfectionism and psychological distress (Dunn et al., 2006).

Physiological strategies. Other emotion management strategies used to reduce stress included modifying one's physiological state through practices such as deep breathing or expressive gestures aimed at dissipating (vs. internalizing) the emotional experience (e.g., glaring at disruptive students; Gates, 2000a, 2000b). Taking deep breaths allowed teachers to monitor their feelings and assess the consequences of their emotions (Gates, 2000a). Faculty also reported taking

regular breaks from their work, regularly exercising, and seeking alternative therapies for stress relief (e.g., yoga, massage relaxing; Abouserie et al., 1996; Gillespie et al., 2001). Such physiologically-oriented strategies are generally found to be beneficial for reducing stress, improving psychological well-being and sleep quality, as well as relieving physical symptoms in other populations (e.g., government employees, school teachers, general university staff; Hartfiel et al., 2012, Klatt, Buckworth, & Malarkey, 2009; Lin, Huang, Shiu, & Yeh, 2015).

Other maladaptive strategies. The findings from this review further reveal that to handle stressful experiences some faculty resort to alcohol, substance use and self-blame (e.g., Gillespie et al., 2001; Kataoka et al., 2014). Consistent with the findings in the broader well-being literature (Aldwin & Revenson, 1987; Single, Rehm, Robson, & Van Truong, 2000; Skinner & Zimmer-Gembeck, 2016; Teesson, Hall, Lynskey, & Degenhardt, 2000), use of these strategies by post-secondary faculty was linked to lower psychological adjustment in the form of severe depression, anxiety, social dysfunction, somatic symptoms and insomnia (Kataoka et al., 2014). Additionally, 19.1% of the 414 academics in Abouserie (1996) study reported that they often retreated to their office, or opted not to go to work at all (10.7%); behaviors implying social withdrawal and stress-related job absenteeism, respectively.

Prevalence and Consequences of Emotional Labor Strategies

As mentioned above, Grandey (2000) likened Gross's (1998a) antecedent and response-focused types of emotion regulation to Hochschild's (1983) concepts of deep and surface-acting, respectively. However, Grandey asserted that emotion regulation processes cannot be directly equated with emotional labor strategies because surface-acting encompasses not only suppression but also amplification and faking of emotions. Furthermore, although deep-acting requires cognitive appraisal, the ultimate goal is not to improve personal well-being but to facilitate their

efforts to better convey feelings that appear genuine to others. As such, the findings on faculty emotional labor are presented separately in the section below.

The studies reviewed suggest that academics view emotional labor as an intrinsic aspect of their work. Indeed, emotional labor is so inextricably linked to academics' profession that for some, it equals professionalism—and to a greater degree than in many other professions (Berry & Cassidy, 2013). Gates (2000a) asserted that faculty emotional management was essential for job satisfaction and effective teaching, and ultimately, student attainment. There are times when faculty express their genuinely felt emotions as well as times when they regulate (i.e., hide, fake, or minimize) their emotions to conform to contextually mandated display rules. As such, whether an emotion is appropriate for a given situation is determined by the tacit display rules of post-secondary institution. Research findings further indicate that academics' engagement in emotional labor partly derives from the aforementioned changes in higher education organizations and the subsequent ever-intensifying expectations associated with those changes (Biron et al., 2008; Gates, 2000a; McAlpine & Akerlind, 2010; Ogbonna & Harris, 2004). Indeed, marketization of higher education has led some scholars to conceptualize students as customers (Constanti & Gibbs, 2004), with academics being increasingly required to perform emotional labor to satisfy their job requirements and support student needs (Ogbonna & Harris, 2004). A comment from a U.K. university teacher is illustrative: "sometimes I feel like shouting at them [students] but I know what this will do to my teaching evaluations. I just stand there and pretend to be laughing even though I am fuming inside" (Ogbonna & Harris, 2004, p. 1197).

The studies reviewed further reveal that post-secondary faculty are particularly concerned with negative emotions and seek to down-regulate or suppress them (e.g., anger) to stay within the emotional boundaries of their profession. In contrast, faculty are more likely to openly express

positive emotions such as enjoyment, humor, and happiness, as long as the display does not include intense emotional reactions (Gates, 2000a, 2000b; Hagenauer & Volet, 2014b). For instance, a national sample of 598 U.S. college and university faculty members (Mahoney et al., 2011) consistently reported emotional suppression as a surface-acting emotional labor strategy. Similarly, a later mixed-methods study of 61 U.S. university teachers (Berry & Cassidy, 2013) exploring use of emotional display, suppression, and faking strategies of emotional labor found that suppression was the most frequently used emotional labor strategy, followed by faking. Faculty also reported engaging in suppression of negative emotions, for example, masking or hiding negative emotions such as anger and disappointment during interactions with students, and instead expressing positive emotions (e.g., enthusiasm) or specific negative emotions (e.g., disappointment) that conveyed a belief in students' potential (Gates, 2000a, 2000b). Likewise, all participants in Hagenauer and Volet's (2014b) study believed that negative emotions needed to be controlled in the classroom, either suppressed or expressed in a norm-accordant manner, in order to appear professional. They also reported suppressing negative emotions resulting from out of classroom issues such as high workload. These findings echo those of studies of school teachers (Aultman, Williams-Johnson, & Schutz, 2009; Sutton, 2004; Sutton, Mudrey-Camino, & Knight, 2009).

Interestingly, although studies show academics to consistently report engaging in suppression of emotions, the reported reasons for this behavior vary considerably. While some academics do so for moral reasons, such as caring for their students (Hagenauer & Volet, 2014b) or fostering students' social and emotional development (Gates, 2000a), for others emotion suppression is motivated by the belief that students are customers who need to be satisfied (Constanti & Gibbs, 2004). In a qualitative study of 54 U.K. university lecturers, Ogbonna and

Harris (2004) found that the participants performed surface-acting emotional labor more commonly than deep-acting, with interactions with students or one's superiors being particularly likely to elicit surface-acting behavior. The authors further observed the most commonly reported form of deep-acting by faculty to involve the active and conscious attempt to arouse a given emotion. By contrast, Zhang and Zhu (2008) in a survey of 164 Chinese university lecturers found that, of the three dimensions of emotional labor, participants engaged the most in deep-acting and the least in surface-acting. The authors assert that this finding could be due to a prominent Chinese mentality of thinking through emotions and viewing teachers as parents who care for and nurture their students by trying to display appropriate emotions. The findings from the present review suggest that academics consistently engage in emotional labor aimed at 1) constructing an optimal learning environment, 2) nurturing positive student–teacher relationships, 3) serving as role models for their students, or 4) satisfying students and benefitting their post-secondary institutional expectations (Constanti & Gibbs, 2004; Gates, 2000a, 2000b; Hagenauer & Volet, 2014b).

Studies have further examined the empirical links between emotional labor and well-being as well as employment outcomes in academics (Berry & Cassidy, 2013; Mahoney et al., 2011; Ogbonna & Harris, 2004; Pugliesi, 1999) including personal well-being outcomes such as work stress, psychological distress, and burnout as well as job-related outcomes such as job satisfaction, affective commitment, and career advancement. As for personal well-being consequences, research on post-secondary faculty has found faking of emotions to lead to greater job stress and psychological distress (Ogbonna & Harris, 2004). Additionally, the requirement to suppress job-related stress and negative emotions has been linked to the experience of frustration (Constanti & Gibbs, 2004). Similarly, a study of 2,069 U.S. academics (i.e., faculty and general university staff; Pugliesi, 1999) found self-focused emotional labor (e.g., deep-acting) to be less detrimental for

job stress and psychological distress than other-focused forms of emotional labor (e.g., attempting to help coworkers feel better about themselves).

Similarly, Mahoney et al. (2011) found genuine expression of negative emotions, faking positive emotions, and suppressing negative emotions to predict greater emotional exhaustion, whereas genuine expression of positive emotions, faking negative emotions, and suppressing positive emotions predicted lower emotional exhaustion. Likewise, Zhang and Zhu (2008) compared the effects of deep-acting and surface-acting strategies in a sample of 164 Chinese university teachers and found that deep-acting predicted lower burnout, whereas surface-acting predicted greater burnout. These findings are aligned with studies of school teachers showing comparable links between emotional labor and burnout (e.g., Näring, Briët, & Brouwers, 2006; Lorente Prieto, Salanova Soria, Martínez Martínez, & Schaufeli, 2008) and underscore the potential consequences of emotional labor for personal well-being in faculty.

Additionally, research indicates that emotional labor can have both functional and dysfunctional effects on job-related outcomes in faculty members. For instance, Berry and Cassidy (2013) found that although university lecturers reported high levels of emotional labor, they nevertheless felt satisfied with their jobs. A possible explanation for this contradictory finding is that the sample of university lecturers reported that they felt they had some job autonomy. As shown by Thompson and Prottas (2006), feelings of job autonomy and control predict better job satisfaction. In contrast, Pugliesi (1999) found that performing self-focused and other-focused emotional labor negatively predicted job satisfaction. Similarly, Mahoney et al. (2011) found genuine expression of negative emotions to predict lower job satisfaction, with genuine expression of positive emotions instead contributing to greater job satisfaction and affective commitment. These authors also found that faking positive emotions and suppressing negative emotions were

negatively linked to job satisfaction, whereas faking negative emotions was positively related to job satisfaction.

Additionally, greater emotional labor was reported to benefit faculty with respect to organizational rewards such as career progression (Ogbonna & Harris, 2004). A quotation from a university teacher is illustrative: “It’s about image — creating a brand of “me.” In my place careers are built on teaching portfolios. If you can create an image of yourself as a brilliant teacher — you’ve got it made. I have no problem with faking concern about students if it gets me another increment [point]” (Ogbonna & Harris, 2004, p. 1197). Although career growth has generally been linked to higher levels of job satisfaction and commitment (e.g., Maia, Bastos, & Solinger, 2016), the sample of U.K. lecturers assessed by Ogbonna and Harris (2004) found high levels of emotional labor due to occupational expectations to correspond with low levels of job satisfaction. Ogbonna and Harris (2004) further found academics to report engaging in emotional labor to contribute to feeling a lack of collegiality and teamwork due to diminished social interaction and a corresponding lack of emotional support from colleagues. These findings are, in general, consistent with studies of school teachers that link higher levels of emotional labor to greater burnout, job dissatisfaction, and health problems (e.g., Kinman et al., 2011; Schutz & Zembylas, 2009; Wrobel, 2013).

Discussion

Summary of Review Findings

Post-secondary academic employment poses various stressors for faculty members who are expected to ensure high quality teaching, research, and service in an evolving occupational context. However, despite the emotion laden nature of academic work, there is remarkably little research on the emotional experiences of post-secondary faculty with respect to coping, emotion

regulation, and emotional labor processes. Given the significance of these topics for well-being and academic performance, efforts to improve workplace quality in post-secondary institutions should not only emphasize academics' teaching, research, and service behaviors, but also how they deal with their emotions. As such, the topics of coping, emotion regulation, and emotional labor merit a more prominent niche in studies of academics. To address this research gap, the present paper reviewed the fragmented empirical literature pertaining to the strategies used by post-secondary faculty to cope with stress and regulate their emotions as organized according to the process model of emotion regulation (Gross, 1998a, Gross 1998b) and emotional labor theories (Ashforth & Humphrey, 1993; Grandey, 2000; Hochschild, 1983).

There is growing evidence that the academic work has been intensified as a result of the substantial changes to the context of higher education (e.g., Biron et al., 2008; McAlpine & Akerlind, 2010). Consequently, in order to adequately meet the multiplicity of organizational and occupational demands, faculty are required to show or exaggerate some emotions as well as minimize or suppress the expression of other emotions (Ogbonna & Harris, 2004). That is, academics have learned not only to control their emotions, but also to display the appropriate emotional responses even if the response is inauthentic, under stressful conditions. In other words, although published research has consistently established the link between greater emotional inauthenticity (i.e., surface-acting) and lower employee well-being, post-secondary faculty nonetheless regularly perform this type of emotional labor as part of their emotion-related job expectations and their potential benefits for student development and learning.

The findings of the present review, albeit from a limited empirical basis, reveal that post-secondary faculty adopt a variety of coping and emotion regulation strategies. This scant evidence further indicates that the coping and regulatory strategies academics employ have implications for

their well-being as well as performance. More specifically, cognitive reappraisal, problem-solving, and social support were found to be adaptive in helping academics reduce stress and maintain their well-being. Conversely, study findings revealed emotion suppression to be prevalent yet have mixed effects among post-secondary faculty, with suppression showing both benefits (e.g., achieving teaching and learning goals, fostering positive interactions with students; Constanti & Gibbs, 2004; Gates, 2000b; Hagenauer & Volet, 2014b) as well as negative effects for academics (e.g., maintaining and intensifying negative emotions; Hagenauer & Volet, 2014b). As an illustration, the university teachers interviewed in Hagenauer and Volet (2014b) study indicated that they “boil underneath” if they tried to completely conceal their emotions. Similarly, maladaptive coping responses such as escape, social isolation, and submission were found to be detrimental for psychological and behavioral outcomes in post-secondary faculty (Brown & Speth, 1988; Dunn et al., 2006; Kataoka et al., 2014; Lease, 1999; Mark & Smith, 2012).

Additionally, the evidence from limited studies shows emotional labor in post-secondary faculty to have potentially negative consequences for their psychological and occupational well-being. Specifically, when engaging in surface-acting emotional labor, the disparity between truly experienced emotions and external expressions corresponds with higher psychological strain. Further, faculty who reported performing more emotional labor experienced higher levels of job stress, were at a greater risk of developing burnout, and were less satisfied with their work (Constanti & Gibbs, 2004; Mahoney, 2011; Ogbonna & Harris, 2004; Pugliesi, 1999). Nevertheless, post-secondary faculty do report viewing emotional labor as an intrinsic element of their academic work (Berry & Cassidy, 2013), suggesting positive links between emotional labor and job satisfaction. Additionally, some evidence suggests that emotional labor may not be entirely detrimental for faculty due to fostering career progression as a result of sustaining a professional

“image” (Ogbonna & Harris, 2004). Furthermore, evidence of job satisfaction despite high levels of emotional labor (Berry & Cassidy, 2013) suggests that fulfilling the emotional demands of faculty position does not necessarily come at the expense of job satisfaction. In conclusion, given the pivotal role of academics in knowledge creation and instruction (e.g., Atkins, Brown, & Brown, 2002), impaired well-being and performance among faculty has clear implications for quality of academic work, student development, and institutional efficacy (Gillespie et al., 2001; Lease, 1999).

Implications of Faculty Emotion Regulation and Emotional Labor

In sum, the findings presented underscore the importance of continued research on the varied types of coping strategies, emotion regulation behaviors, and emotional labor approaches used by faculty in response to academic challenges given clear links to both personal well-being and employment outcomes. Moreover, these findings suggest that post-secondary administrators and support personnel are well-advised to raise faculty awareness of the implications of their emotion regulation strategies, and highlight the need for further investigation into avenues for enhancing faculty coping and regulatory skills. Indeed, promoting adaptive emotion regulation is necessary for successful job performance and can help academics deal more effectively with stress and emotions, and thus directly decrease the level of job stress and indirectly protect their well-being and productivity. By implication, stress reduction and health protection in post-secondary faculty could be achieved not only by decreasing work demands, but also by developing their personal resources such as coping and emotion regulation skills (Gates, 2000b; Kataoka et al., 2014; Regan et al., 2012; Zhang & Zhu, 2008). University administrators aiming to equip faculty with effective regulatory skills and promote well-being are encouraged to develop related orientation content for new faculty, developing counselling and mental health support for faculty

in general, as well as improving training for administrators to better identify and respond to mental health concerns in faculty.

Additionally, university administrators, policy makers, and faculty development programs are ideally positioned to understand the emotional aspects of their primary institutional resources' work (Gmelch, Lovrich, & Wilke, 1984). These stakeholders are thus especially encouraged to take active steps in developing and implementing interventions to raise academics' awareness regarding coping and emotion regulation strategies and their associated consequences, to promote coping and emotion regulation skills, and to foster academics' use of effective strategies for improving faculty well-being and performance. Despite the lack of research on academics, research evidence from other occupational groups (e.g., teachers) raises the possibility that training post-secondary faculty to develop more adaptive coping and emotion management skills might result in favorable outcomes that will, by extension, benefit the academic institutions (Kotsou, Nelis, Gregoire, & Milkolajczak, 2011). For example, empirical evidence across occupational settings consistently demonstrates the efficacy of cognitive reappraisal stress management interventions such as cognitive behavioral therapy (CBT; for meta-analytical summaries, see Kim, 2007; Richardson & Rothstein, 2008; Van der Klink, Blonk, Schene, & Van Dijk, 2001). Additionally, mindfulness-based stress reduction (MBSR) programs show a range of cognitive (e.g., enhanced working memory and attention), psychological (i.e., improvements in emotion regulation skills and self-efficacy, decrease in stress, anxiety, emotional exhaustion, and depression as well as increase in positive emotions) and physiological benefits (i.e., improved immune function) among K-12 students and teachers (e.g., Napoli, Krech, & Holley, 2005; Poulin, Mackenzie, Soloway, & Karayolas, 2008; Roeser, Skinner, Beers, & Jennings, 2012), university students (Ford, Grasso, Levine, & Tennen, 2018; Freeman et al., 2015), other occupational groups

(e.g., Janssen, Heerkens, Kuijer, Van Der Heijden, & Engels, 2018), as well as general population (e.g., Davidson et al., 2003; Hölzel et al., 2011).

As such, post-secondary administrators are recommended to consider integrating CBT and MBSR interventions into faculty development programs to facilitate adaptive emotion regulation, well-being, and performance in faculty members. Increased health and well-being among post-secondary faculty should, in turn, lead to greater occupational engagement and satisfaction as well as lower levels of faculty burnout and attrition. Increased faculty well-being should also support the formation of positive relationships with students that, in turn, promote students' sense of belonging, engagement, learning, and achievement. Nonetheless, given research findings showing mindfulness training to be inappropriate for chronically stressed individuals due to negative effects of chronic stress on sustained attention and complex thought processes (e.g., Arnsten, 1998; Sapolsky, 2004), it is possible that CBT or MBSR may be ineffective for the chronically stressed faculty they are intended to serve. Hence, it is incumbent on administrators to also focus on long-term improvements to academic work environments to make them less emotionally demanding by reducing workloads (e.g., excessive teaching responsibilities faced by non-tenure-track faculty; Baldwin & Wawrzynski, 2011), facilitating balance between academic responsibilities (e.g., teaching releases to offset research or administrative demands; Stupnisky, Weaver-Hightower, & Kartoshkina, 2015), clarifying role expectations (e.g., tenure expectations), as well as providing effective physical and mental health resources (e.g., gym memberships, vacation time) and stress management workshops (see Gillespie et al., 2001).

With respect to the present findings concerning emotional labor strategies, this review further suggests that higher education institutions are well-advised to encourage deep-acting strategies and discourage surface-acting as part of existing professional development initiatives

aimed at improving teaching effectiveness. Moreover, given that social support was consistently found to protect faculty against job stress, institutional efforts to promote faculty collegiality (e.g., regular social events, departmental lecture series) as well as develop collaborative work spaces, team teaching initiatives, and faculty mentorship programs should contribute to greater connectedness, enhanced well-being, and improved teaching and research productivity.

Empirical evidence demonstrates the beneficial effects of such initiatives. For instance, studies of faculty members have shown implementation of mentorship programs to result in favorable outcomes such as higher retention rates, improvement in self-perceived abilities, and higher academic success rates as measured by number of peer-reviewed publications, leadership and professional activities, honors, and awards (Jackevicius et al., 2014; Ries et al., 2012; Zeind et al., 2005). Additionally, existing studies highlight the potential benefits of team teaching initiatives for faculty members, including deepened pedagogical knowledge, improvements in teaching skills and effectiveness, higher motivation to teach, overcoming feelings of isolation by creating a sense of community, and enhanced conflict management skills (Cohen & DeLoise, 2001; Kluth & Straut, 2003; Lester & Evans, 2008; Robinson & Schaible, 1995). Furthermore, social activities have been shown to foster integration and social cohesion in faculty members (Lindholm, 2003) and particularly among pre-tenure faculty (Fleming, Goldman, Correlli, & Taylor, 2016).

Limitations and Future Directions

The methodologies of the studies reviewed had multiple limitations, many of which were recognized by authors of the respective studies. Firstly, 12 of the 22 studies employed only quantitative analyses and thus failed to capture the full complexity of academics' lived experiences concerning their challenges and emotion regulation otherwise afforded by qualitative protocols

(Creswell & Creswell, 2017). Second, the few studies that investigated emotion regulation among faculty focused largely on negative emotions such as anger, burnout, and stress, thus neglecting the potential benefits of upregulation of positive emotions on well-being and performance (Folkman, 2008; Fredrickson, 2000, 2001, 2013; Quoidbach et al., 2015). Hence, further studies are needed to examine the impact of multiple emotion regulation strategies on faculty well-being. Third, the majority of the studies focused on how academics regulate their teaching-related emotions, thereby neglecting various other domains of academic work such as research, service, or administration. Considering recent empirical evidence regarding the domain specificity of emotional experiences in post-secondary faculty (e.g., teaching vs. research; Stupnisky et al., 2016), future researcher are encouraged to explore the strategies academics employ to regulate their emotions in domains other than teaching.

Fourth, a majority of the studies reviewed drew on populations from single organizations thus raising concerns of generalizability to academics at large. Hence, future studies are encouraged to draw on larger numbers of academics from varied institution types (e.g., colleges, trade schools, universities; teaching vs. research intensive schools) and countries to better ascertain the external validity of findings. Fifth, all but two studies (Constanti & Gibbs, 2004; Gates 2000a, 2000b) employed exclusively self-report measures that are susceptible to response biases warranting that future research also investigate academics' coping and emotion regulation strategies using more objective assessments such as observations, experience sampling, and physiological markers (Paulhus & Vazire, 2007; Pekrun & Bühner, 2014; Spector, 2006). Finally, given that multiple studies reported data from aggregate samples that included both faculty and non-faculty participants (e.g., researchers, administrators, see Amatea & Fong-Beyette, 1987; Gillespie et al., 2001), it was not possible in these studies to more closely examine factors that

pertain specifically to post-secondary faculty (e.g., thesis supervision, tenure pressures). Accordingly, further research on stress management and emotion regulation in post-secondary faculty specifically, as well as further differentiation between disparate types of faculty employment (e.g., non-tenure-track vs. tenure-track employment; Hall, 2019), are needed to better examine the role of coping, emotion regulation, and emotional labor among faculty in the context of modern academic employment.

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Bridging Text (Chapter 3 - 4)

Chapter 3 conducted a comprehensive and descriptive review of the studies that identified the strategies post-secondary faculty employ in dealing with job-related stress and emotions; with studies focusing mainly on regulation of negative emotions. Findings from Chapter 3 suggested that faculty members employ a variety of adaptive and maladaptive emotion regulation strategies. Furthermore, the coping, emotion regulation, and emotional labor strategies post-secondary faculty use indeed influence their well-being. Relations between stress management and emotion regulation strategies and well-being outcomes were discussed and adaptive strategies for coping with emotional demands of the academic profession were identified. Concerning the consequences of emotion regulation strategies, findings from Chapter 3 showed some strategies (e.g., problem-focused coping, proactive coping, seeking social support, using humor, etc.) to be adaptive for post-secondary faculty, with some other strategies (e.g., behavioral disengagement, escape-avoidance, wishful thinking, etc.) found to be detrimental. The review was concluded by providing a critique of the methodologies of the studies reviewed and making several recommendations for advancing research on coping and emotion regulation in post-secondary faculty. These recommendations included conducting multi-site studies, using objective measures of coping and emotion regulation strategies, investigating regulation of positive emotions, and considering the context-specific nature of emotion regulation. The previous two chapters thus reviewed the existing empirical research on the consequences of stress for psychological health and the specific emotion regulation strategies adopted by faculty.

The purpose of the third dissertation manuscript (Chapter 4) is to extend this research and address several of these issues by examining how faculty members' approaches to emotion regulation relate to their well-being (burnout, job satisfaction, quitting intentions, psychological maladjustment, and physical symptoms). Chapter 4 also explored the impact of stress, gender, and years of experience on faculty well-being and emotion regulation strategy use as well as interactions between emotion regulation strategies and the moderating role of stress, gender and years of experience to provide a better understanding of how background variables interact with emotion regulation strategies (identified in chapter 3) in predicting faculty well-being. Specifically, the following manuscript explored whether the impact of emotion regulation strategies on well-being would be different for males versus females, for less experienced versus more experienced, and for less stressed versus more stressed faculty members.

Chapter 4

Stress, Emotion Regulation, and Well-being among Canadian Faculty Members in Research-intensive Universities

Salimzadeh, R., Saroyan, A., & Hall, N. C. (2020). *Stress, emotion regulation, and well-being among Canadian faculty members in research-intensive universities*. Manuscript submitted for publication.

Abstract

Existing research reveals the academic profession to be stressful and emotion-laden, with recent evidence further showing job-related stress and emotion regulation to impact faculty well-being and productivity. The present study with 414 Canadian faculty members recruited nationally from 13 English-speaking research-intensive universities examined the associations between perceived stressors, emotion regulation strategies, including reappraisal, suppression, adaptive upregulation of positive emotions, maladaptive downregulation of positive emotions, as well as adaptive and maladaptive downregulation of negative emotions, and well-being outcomes (emotional exhaustion, job satisfaction, quitting intentions, psychological maladjustment, illness symptoms). Additionally, the study explored the moderating role of stress, gender, and years of experience in the link between emotion regulation and well-being as well as the interactions between adaptive and maladaptive emotion regulation strategies in predicting well-being. Results revealed that cognitive reappraisal was a health-beneficial strategy whereas suppression and maladaptive strategies for downregulating positive and negative emotions were detrimental. Strategies previously defined as adaptive for downregulating negative emotions and upregulating positive emotions did not significantly predict well-being. In contrast, strategies for downregulating negative emotions previously defined as dysfunctional showed the strongest maladaptive associations with ill-health. Practical implications and directions for future research are discussed.

Over the last few decades, academic employment has changed drastically as higher education institutions worldwide have experienced rapid growth in student numbers, internationalization, commercialization, major educational reforms, and accountability. Consequently, faculty³ are expected to demonstrate exceptional performance in instruction, research, service, and administration while resources have remained static or decreased (Biron, Brun, & Ivers, 2008; McAlpine & Akerlind, 2010; Ogbonna & Harris, 2004; Rothmann & Barkhuizen, 2008). Indeed, large-scale studies from around the globe consistently demonstrate that increased demands have contributed to alarmingly high levels of stress in post-secondary faculty (Biron et al., 2008; Catano et al., 2010; Kinman, 2014; Tytherleigh, Webb, Cooper, & Ricketts, 2005; Winefield et al., 2003).

Evidence further indicates that faculty suffer from higher levels of stress compared to other university staff, professional occupations, and the general population (e.g., Kinman, 2014; Tytherleigh et al., 2005; Winefield et al., 2003). Research also suggests that post-secondary occupational stressors contribute to psychological health problems such as burnout, depression and anxiety in faculty (Barkhuizen, Rothmann, & Van De Vijver, 2014; Biron et al., 2008; Byrne, Chughtai, Flood, Murphy, & Willis, 2013; Catano et al., 2010; Kinman & Wray, 2020). For instance, high levels of burnout in post-secondary faculty has been found to be comparable to that of school teachers and health care professionals (Watts & Robertson, 2012). Moreover, post-secondary employment has been shown to elicit varied and intensive emotional experiences ranging from anger to contentment, with findings consistently showing faculty members' emotions to be inextricably linked to their occupational and identity development (Berry & Cassidy, 2013;

³ The terms faculty, faculty members, post-secondary faculty, university teachers/professors/ lecturers are used synonymously in the present paper.

Hagenauer & Volet, 2014a; Martin & Lueckenhausen, 2005; Neumann, 2006; Ogbonna & Harris, 2004; Postareff & Lindblom-Ylänne, 2011) as well as their psychological health (e.g., Pugliesi, 1999; Stupnisky, Hall, & Pekrun, 2019a, 2019b; Stupnisky, Pekrun, & Lichtenfeld, 2014; Trigwell, 2012; Zhang & Zhang, 2013; Zhang & Zhu, 2008).

Despite research findings highlighting the emotional nature of academic work, the emotional experiences of post-secondary faculty have been largely overlooked in faculty development research in favor of job performance and accountability outcomes (Berry & Cassidy, 2013; Postareff & Lindblom-Ylänne, 2011; Zhang & Zhang, 2013). Evidence from the few studies conducted on emotion regulation in faculty suggests that how faculty manage their emotions is linked not only to their well-being but also to their professional performance (e.g., Hagenauer & Volet, 2014b; Regan et al., 2012). Accordingly, more research is needed to explore the ways in which emotion regulation strategies relate to well-being outcomes in post-secondary faculty.

To address this research gap, the current study aimed to extend previous research and explore the interplay between various emotion regulation strategies and well-being in post-secondary faculty by way of large-scale quantitative analyses. In addition, we aimed to explore how stress impacts emotion regulation and how different emotion regulation strategies interact and how the impact of these strategies on well-being may be moderated by critical background variables including gender, years of experience, and stress. It is anticipated that findings from this study could contribute to a richer and more nuanced picture of emotion regulation strategies and their link to well-being in the higher education employment context, and provide valuable insights into optimal well-being interventions to support academics' productivity as well their physical and psychological health.

Emotion Regulation and Psychological Well-being

Emotion regulation refers to “the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross, 1998b, p. 275). There is strong research evidence to suggest that emotion regulation ability has important consequences for health and adaptive functioning, with studies further showing different forms of emotion regulation to yield significantly different affective, cognitive, and social outcomes (Gross, 2002; Gross & Levenson, 1993; John, & Gross, 2004; for meta-analytical reviews, see Aldao, Nolen-Hoeksema, & Schweitzer, 2010; Webb, Miles, & Sheeran, 2012). Adaptive emotion regulation strategies are defined as strategies having negative associations with mental illness whereas maladaptive strategies are defined as those associated with eliciting and maintaining psychological disorders (Aldao & Nolen-Hoeksema, 2010).

Specifically, strategies such as problem-solving, cognitive reappraisal, and acceptance have been consistently shown to be connected with adaptive outcomes including lower stress levels, emotional well-being (e.g., Goldin, McRae, Ramel, & Gross, 2008; Gross, 2002; Scheibe & Zacher, 2013), optimal social and cognitive functioning (e.g., Gross, 2002; Lopes, Salovey, Côté, Beers, & Petty, 2005; Richards & Gross, 1999), and pain tolerance (e.g., Hayes et al., 1999). In contrast, converging evidence has shown that strategies such as suppression, avoidance, and rumination are generally linked to maladaptive outcomes such as negative emotions (Gross, 2002), depression and anxiety (Gross & Levenson, 1993; Mennin, Holaway, Fresco, Moore, & Heimberg, 2007; Nolen-Hoeksema & Aldao 2011; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), poor social and cognitive functioning (Gross, 2002), as well as eating disorders and substance abuse (Nolen-Hoeksema & Harrell, 2002; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Furthermore, previous research has found adaptive and maladaptive emotion regulation strategies

to interact to predict well-being. For instance, Aldao and Nolen-Hoeksema (2012) found that adaptive strategies demonstrated a negative association with depression, anxiety, and alcohol problems only at high levels of maladaptive strategies.

Consistent with findings from the broader emotion regulation literature, findings from occupational settings indicate that emotion regulation can impact employees' performance, physical health, and psychological adjustment (e.g., Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010; Grandey, 2015; Lawrence, Troth, Jordan, & Collins, 2011; Quoidbach & Hansenne, 2009). For instance, a study by Quoidbach and Hansenne (2009) with nurses demonstrated that adaptive emotion regulation (i.e., optimism) was positively associated with health care quality. In a study of working college students, Côté and Morgan (2002) found that suppression of negative emotions was associated with lower job satisfaction and consequently higher intentions to quit. In contrast, amplification of pleasant emotions was linked to greater job satisfaction. Furthermore, a study of university employees (75%) and students (25%) found that savoring positive emotions (i.e., using emotion regulation strategies to prolong and maintain positive emotional experiences) was associated with greater positive affect and life satisfaction whereas dampening positive emotions (i.e., downregulating) was linked to lower positive affect and life satisfaction (Quoidbach, Berry, Hansen, & Mikolajczak, 2010).

Studies similarly show K-12 teachers who are better able to regulate their emotional states experience higher levels of personal accomplishment, job satisfaction, and positive emotions (Brackett et al., 2010). Specifically, adaptive emotion regulation (e.g., modifying the situation by being well-prepared for lessons and deploying attention by thinking positive thoughts) were shown to be more beneficial for K-12 teaching and learning outcomes (Sutton, 2004). Cognitive reappraisal has similarly been found to correspond with lower emotional exhaustion in teachers

(Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010) as well as greater positive emotions (Lee et al., 2016), student engagement, and classroom management efficacy (Sutton, Mudrey-Camino, & Knight, 2009). Conversely, studies have shown strategies such as suppression (e.g., of anger, frustration) and behavioral disengagement to contribute to greater burnout in teachers (Carson, 2006; Chang, 2009; 2013; Griffith, Steptoe, & Cropley, 1999; Tsouloupas et al., 2010). Teachers have similarly been found to report reappraisal to be more effective than suppression for boosting positive and reducing negative emotions (Jiang, Vauras, Volet, & Wang, 2016), with expressing positive emotions also contributing to greater self-efficacy and hiding negative emotions associated with poorer mental and physical health outcomes (Taxer & Frenzel, 2015).

Emotion regulation and well-being in faculty. The effects of emotion regulation strategies on well-being and performance found in the general public and occupational settings align directly with the growing body of research on emotion regulation in post-secondary faculty. Specifically, adaptive strategies such as effectively selecting the situation (e.g., not getting involved in the emotional issues of their students, Hagenauer & Volet, 2014b) and adaptive cognitive change (e.g., changing their view of the instructor as transmitter to facilitator, Regan et al., 2012; acceptance through lowered self-expectations, Abouserie, 1996; Hagenauer & Volet, 2014b) have been linked to functional outcomes (e.g., lower stress and negative emotions of disappointment, frustration). Furthermore, cognitive change strategies involving humor have been inversely linked to faculty burnout (Ramsey, Knight, Knight, & Verdón, 2011; Tümkaya, 2007). Moreover, effectively modifying the situation by communicating expected student behavior in class corresponded with fewer negative emotions in university teachers (Gates, 2000) with planning and prioritizing also helping faculty better manage stress (Devonport, Biscomb, & Lane, 2008; Gillespie, Walsh, Winefield, Dua, & Stough, 2001). Attention deployment (i.e., diverting

attention from daily stressors through intellectual stimulation such as reading journals, attending conferences) and sharing emotions with friends and colleagues have also been found to help manage stress among university teaching staff (Abouserie, 1996; Perlberg & Keinan, 1986).

Concerning more maladaptive strategies, wishful thinking and denial have been shown to predict poorer levels of anxiety, depression, somatic symptoms, and job dissatisfaction in post-secondary faculty (Kataoka, Ozawa, Tomotake, Tanioka, & King, 2014; Mark & Smith, 2012), with suppressing negative emotions similarly corresponding to maintaining and intensifying negative emotions (Hagenauer & Volet, 2014b). Echoing findings on school teachers' emotional lives (Taxer & Frenzel, 2015), a study of American professors (Mahoney, Buboltz Jr, Buckner, & Doverspike, 2011) demonstrated that suppressing positive emotions was not detrimental for faculty members. However, other studies have shown maladaptive emotion regulation strategies of alcohol and drug use, as well as escape-avoidance strategies more generally (i.e., ignoring or avoiding problem), to be linked to greater anxiety, depression, social dysfunction, illness symptoms, insomnia, and lower job satisfaction (Lease, 1999; Kataoka et al., 2014; Mark & Smith, 2012). Finally, surface acting (suppression, faking) emotional labor has also been found to correspond with greater job dissatisfaction, stress, exhaustion, and distress in faculty (e.g., Berry & Cassidy, 2013; Mahoney et al., 2011; Ogbonna & Harris, 2004; Pugliesi, 1999).

Gender Differences in Emotion Regulation

Gender role theorists suggest that women are more likely to engage in internally focused and passive strategies such as rumination, with men instead being more prone to regulate their emotions through suppression or avoidance (for a review, see Tamres, Janicki, & Helgeson, 2002). However, empirical studies of gender-specific differences in emotion regulation have yielded less conclusive results than might be expected (Gross & John, 2003; McRae, Ochsner, Mauss, Gabrieli,

& Gross, 2008; Zlomke & Hahn, 2010). A meta-analysis by Tamres et al. (2002) suggests that women generally report using a wider variety of both adaptive (e.g., seeking social support, acceptance and cognitive reappraisal) and maladaptive emotion regulation strategies (e.g., rumination) than men. Whereas Gross and John (2003) demonstrated that males engage in suppression of both positive and negative emotions more frequently than females, some studies do not find gender differences in this strategy (e.g., Nolen-Hoeksema & Aldao, 2011). As with reappraisal, comparable frequencies have been reported across men and women (Gross & John, 2003; Gross, Richards, & John, 2006).

Studies of emotion regulation in the workplace have also produced inconsistent gender effects, with some showing female employees to perform more emotion regulation than males (Grandey, 2000; Hochschild, 1983; Schaubroeck & Jones, 2000; Wharton & Erickson, 1993) and others showing no gender differences (e.g., in deep acting or surface acting emotional labor; Bono & Vey, 2005; Meier, 2005; Uysal, 2007). In their study of dual-earner couples, Erickson and Ritter (2001) found that women reported a higher tendency than men to hide feelings of agitation (i.e., anger, irritation, nervousness). Likewise, a study by Totterdell and Holman (2003) with customer service employees found that females engaged in more negative emotion regulation and surface acting than males. Similarly, Lee et al. (2016) found that female school teachers used surface acting more frequently than males, whereas Yin (2015) found that male teachers reported more surface acting (i.e., hiding emotions) than females. Chang (2013) found female teachers to be more likely to engage in cognitive reappraisal in contrast to males who more frequently employed suppression. A study with sales staff (Sarraf, 2018) also demonstrated that women performed more emotional labor than men (e.g., deep acting), whereas males reported more frequent use of surface acting.

Gender differences in faculty emotion regulation. Extant research on how emotion regulation differs for men and women in post-secondary employment contexts suggests few gender differences. For instance, Tümkaya (2006) reported comparable frequencies for male and female university lecturers' humor styles, with Mahoney et al. (2011) showing emotional labor strategies (i.e., faking, suppression, genuine expression) of university professors to not differ according to gender. A study by Berry and Cassidy (2013) with U.K. university lecturers also reported no gender differences in the emotional labor strategies of emotional display, suppression, or faking, with Hagenauer and Volet (2014b) also finding no gender differences in university teachers' strategies for managing negative emotions (all participants emphasized the necessity of controlling, and occasionally suppressing, negative emotions). However, findings from Ogbonna and Harris (2004) show female university lecturers to report more deep acting than their male counterparts, suggesting that gender differences similar to those in the general population may be observed in some post-secondary employment contexts.

Gender Differences in Occupational Well-being

Empirical studies of gender differences in well-being within occupational settings have produced inconsistent results. Whereas some studies show female employees to report higher burnout than males (e.g., Antoniou, Polychroni, & Vlachakis, 2006), others show higher burnout among men (e.g., Brake, Bloemendal, & Hoogstraten, 2003) or no gender differences in burnout (e.g., Arvidsson, Håkansson, Karlson, Björk, & Persson, 2016). Similarly, while some studies did not find gender differences in turnover intentions (Sicherman, 1996; Weisberg & Kirschenbaum, 1993), other studies have found that, overall, women have higher average turnover propensities than men (e.g., Lee, 2012; Light & Ureta, 1992). Evidence also suggests that gender differences in turnover intentions tend to decrease when personal and job characteristics are considered. For

example, although Lee (2012) did not find gender differences in intentions to quit, other studies do show that women are more likely to leave their jobs for personal or family-related reasons (e.g., Lee, 2012; Lee, Gerhart, Weller, & Trevor, 2008; Sicherman, 1996; Theodossiou, 2002).

Studies of post-secondary faculty have also produced mixed gender effects in terms of well-being. For instance, despite assertions that females are more vulnerable to burnout than males (Maslach & Jackson, 1981), two systematic reviews on faculty burnout (Sabagh, Hall, & Saroyan, 2018; Watts & Robertson, 2011) reported inconsistent and contradictory gender differences. Specifically, whereas some studies report no gender differences in faculty burnout (Blix, Cruise, Mitchell, & Blix, 1994; Byrne et al., 2013; Gonzalez & Bernard, 2006; Rothmann & Barkhuizen, 2008), other studies suggest higher emotional exhaustion (Byrne, 1991; Ghorpade, Lackritz, & Singh, 2007, 2011; Lackritz, 2004; Tümkaya, 2007) and lower cynicism for females relative to males (Bilge, 2006; Ghorpade et al., 2007, 2011). As for perceptions of reduced personal accomplishment, only one study reported gender differences, with Byrne (1991) showing females to report lower perceived accomplishment levels. Findings of these reviews on emotional exhaustion are consistent with a recent international study of post-secondary faculty that found females to experience greater exhaustion than males (Hall, Lee, & Rahimi, 2019).

With respect to job satisfaction in faculty, whereas some studies did not find significant gender differences (e.g., Platsidou & Diamantopoulou, 2009; Toker, 2011; Ward & Sloane, 2000), other studies show significant gender effects. For instance, a national study of Australian university employees, including faculty (44%), found that men reported lower job satisfaction than women (Winefield et al., 2003). Nonetheless, other national studies from countries such as the U.S. (Sabharwal & Corley, 2009) and Canada (Catano et al., 2010), as well as other large-scale studies

(Okpara, Squillace, & Erondy, 2005), have found that male faculty enjoy higher levels of overall job satisfaction relative to their female counterparts.

As for quitting intentions of post-secondary faculty, while some studies did not show any gender effects on turnover intentions (e.g., Sharma & Sehwat, 2014), others have found gender to influence turnover through mediating factors such as research and teaching productivity, tenure status, and job satisfaction (e.g., Gander, 1999; Perna 2001). A study by Smart (1990) with a sample of U.S. faculty found that while there were no gender differences in turnover intentions for non-tenured faculty, tenured men were more likely to consider leaving a position than tenured women. Existing findings also suggest that female faculty have higher intentions to quit their job due to dissatisfying factors in their work environment (e.g., poor quality working relationships, insufficient research support, unequal advancement opportunities; Blix et al., 1994; Callister, 2006; Xu, 2008; Zhou & Volkwein; 2004).

With respect to psychological strain in faculty members, Winefield et al. (2003) initially found no gender differences, but in a follow-up study showed greater physical and psychological strain for female relative to male faculty (Winefield, Boyd, Saebel, & Pignata, 2008). Similarly, Catano et al. (2010) found that females experienced more frequent physical and psychological health issues than males. These findings align with findings from the general population showing female employees to experience greater psychological strain than their male counterparts (Park, 2007). Hence, no assertions can be made regarding gender effects on faculty well-being due to the lack of sufficient consistent findings.

Years of Experience, Emotion Regulation, and Well-being in Occupational Settings

Empirical evidence further suggests that length of service (i.e., experience) is associated with emotion regulation strategies employed in occupational settings. For instance, studies with nurses (Erickson & Grove, 2007) show less experienced nursing employees to perform fewer surface acting emotional labor strategies (i.e., suppressing, faking emotions) than more experienced nurses. In educational settings, some studies of school teachers report no differences in emotion regulation based on years of experience (e.g., Stoeber & Rennert, 2008; Van Dick & Wagner, 2001). However, other studies with school teachers have demonstrated that less experienced teachers seek more social support from supervisors, friends, and role models, are more likely to use physical exercise as a coping strategy, and rely more on avoidant coping and substance use than their more experienced colleagues (Griva & Joeke, 2003; Pascual, Perez-Jover, Mirambell, Ivanez, & Terol, 2003; Rahimi, Hall, Wang, & Maymon, 2017; Seidman & Zager, 1991). Conversely, more experienced teachers report using more meditation, deep breathing exercises, and cognitive reappraisal in coping with stress than early career teachers (Beers, 2012; Seidman & Zager, 1991). The emerging evidence from post-secondary educators indicates that early career university teachers experience their careers as more emotional in nature than their more senior counterparts (Hagenauer & Volet, 2014a) with early career lecturers also reporting greater emotional labor with respect to emotional displays, faking, and suppression (Berry & Cassidy, 2013).

Empirical studies have found mixed results concerning the effects of years of service on employee well-being. For instance, some studies of school teachers found no significant effects of length of service on burnout (Hastings & Bham, 2003; Rumschlag, 2017). However, other studies of school teachers in Australia (Australian Education Union, 2006; Watt & Richardson, 2007), the

U.S. (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; DeAngelis & Presley, 2011), Canada (Karsenti & Collin, 2013; Martin, Dolmage, & Sharpe, 2012; Wang & Hall, 2019; Wang, Hall, & Rahimi, 2015), and Greece (Antoniou et al., 2006) suggest that early career teachers (i.e., within the first five years) have higher quitting intentions and actual turnover than their more experienced counterparts. Although some studies find no association between faculty years of service and exhaustion (Bilge, 2006; Rothmann & Barkhuizen, 2008), other studies show faculty with less than 10 years of experience to be more prone to exhaustion than their more experienced colleagues (Blix et al., 1994; Gonzalez & Bernard, 2006).

Occupational Stress and Emotion Regulation

As highlighted above, the ability to effectively regulate emotions is particularly crucial during stressful encounters in employment settings. Findings from research in educational contexts align with the broader literature in showing that stress impacts emotion regulation. For instance, studies of elementary school students found peer stress (i.e., teasing and exclusion) to be positively linked to rumination (Goodman, Meltzer, & Bailey, 2003), with bullying and peer rejection significantly increasing emotional dysregulation in the future (Kelly, Schwartz, Gorman, & Nakamoto, 2008). Similarly, studies of university students show more frequent use of binge eating to be a primary way of regulating during exams (Han & Pistole, 2014; Macht, Haupt, & Ellgring, 2005), with an experimental study of German university students further showing stress to impair the effectiveness of distraction (Kinner, Het, & Wolf, 2014).

Empirical evidence from work settings aligns with the broader research findings in showing that stress exposure is associated with emotion regulation. For instance, a study of Chinese insurance salespersons found that higher emotional demands were positively associated with greater deep and surface acting emotional labor (Peng, Wong, & Che, 2010). Studies of U.S.

university employees similarly found that the job stress caused by interpersonal mistreatment to be positively linked with surface acting emotional labor (Adams & Webster, 2013). Likewise, a U.S. study of employed university students found interpersonal stress at work to be most commonly associated with situation selection strategies (i.e., avoiding the situation), situation modification (i.e., removing oneself from the situation), attention deployment (i.e., distraction), cognitive change (i.e., humor, perspective taking, cognitive reframing), and response modulation (i.e., suppression; Diefendorff, Richard, & Yang, 2008). Work stress (e.g., failure) was also tied to greater situation modification (i.e., trying to solve the problem) and cognitive change (i.e., considering how things could be worse). More recently, research with Chinese primary school teachers similarly found emotional job demands to be associated with greater cognitive reappraisal and suppression (Yin, Huang, & Wang, 2016). Finally, findings suggest that stress may interact with emotion regulation to predict well-being. For example, a German diary study of undergraduates showed students high in suppression to experience lower positive affect specifically on days of high stress (Richardson, 2017).

The Present Study

Despite the established significance of emotion regulation for employees' well-being and the impact of stress on emotion regulation, there is a paucity of research examining these topics among post-secondary faculty. The present empirical study addressed the role of emotion regulation in faculty well-being in the following ways. First, contrary to existing studies that have typically examined limited emotion regulation strategies, this study explored six types of strategies informed by the Process Model of emotion regulation (Gross, 1998a, 1998b) including cognitive reappraisal, expressive suppression, adaptive upregulation of positive emotions, maladaptive downregulation of positive emotions, as well as adaptive and maladaptive downregulation of

negative emotions. Second, this research assessed varied well-being indicators including affective outcomes (burnout, job satisfaction, turnover intentions), physical ill-health (e.g., headache, back pain), and psychological ill-health (Horn, Taris, Schaufeli, & Schreurs, 2004; Zacher & Schmitt, 2016). Third, this research examined potential moderating effects of other strategies as well as gender, years of experience, and stress on how emotion regulation strategies impact faculty well-being. Finally, this study explored the underexamined impact of perceived stressors on emotion regulation strategies to address the role of unique academic employment stressors on faculty well-being.

Study Hypotheses

Hypothesis 1: Emotion Regulation and Faculty Well-being

Emotion regulation strategies previously found to be adaptive (i.e., cognitive reappraisal, adaptive upregulation of positive emotions, and adaptive downregulation of negative emotions) were expected to predict greater job satisfaction and lower burnout, quitting intentions, psychological maladjustment, and physical symptoms in faculty participants (Hypothesis 1a). Conversely, strategies often found to be maladaptive (i.e., suppression and maladaptive downregulation of positive and negative emotions) were expected to predict lower job satisfaction and greater burnout, intentions to quit, and physical and psychological health issues (Hypothesis 1b). Hypotheses 1a and 1b were based on theoretically proposed relations between emotion regulation and well-being (Gross, 1998a, 1998b) as well as empirical findings showing adaptive emotion regulation strategies to predict better well-being and maladaptive strategies to correspond with impaired well-being (for reviews, see Aldao et al., 2010; Koole, 2009; Webb et al., 2012). Further, building on empirical evidence showing the effects of adaptive emotion regulation strategies to be moderated by use of maladaptive strategies (e.g., Joormann & D'Avanzato, 2010),

we expected that adaptive and maladaptive strategies would interact to predict faculty well-being (Hypothesis 1c). More specifically, we expected that maladaptive strategies would be associated with poorer well-being for those who were also lower in adaptive strategies.

Hypothesis 2: Gender, Emotion Regulation, and Well-being

Our hypothesis regarding gender differences in use of emotion regulation strategies was largely speculative due to a notable lack of existing research on post-secondary faculty. However, given existing research from the broader emotion regulation literature (Nolen-Hoeksema & Aldao, 2011; Tamres et al., 2002) in general and occupational settings (e.g., Grandey, 2000; Wharton & Erickson, 1993) showing females to engage in more emotion regulation, we expected that female faculty members would report using both adaptive and maladaptive strategies more frequently than their male counterparts (Hypothesis 2a). In view of existing evidence, we also hypothesized that gender would impact faculty well-being such that males would enjoy higher levels of overall well-being than females (Hypothesis 2b). Consistent with previous research, we further anticipated that gender would moderate the association between emotion regulation and well-being, with the effects being more impactful in the expected directions for women (Hypothesis 2c). This hypothesis was based on research showing women to use emotion regulation strategies more frequently than men (Grandey, 2000; Nolen-Hoeksema & Aldao, 2011; Tamres et al., 2002; Wharton & Erickson, 1993). Nonetheless, this moderation hypothesis should be viewed as speculative given the lack of empirical evidence on the moderating role of gender on the well-being effects of emotion regulation strategies for faculty members.

Hypothesis 3: Experience, Emotion Regulation, and Well-being

In light of existing research, we hypothesized that years of experience as a faculty member would impact academics' use of emotion regulation strategies. Specifically, we expected that less

experienced faculty would engage in more maladaptive strategies relative to their more experienced colleagues (Hypothesis 3a). Also, in light of evidence showing early career faculty to be more likely to engage in suppression and faking emotions (Berry & Cassidy, 2013), we expected that early career faculty would experience lower well-being as compared to more senior colleagues (Hypothesis 3b). We further expected that the well-being effects of emotion regulation strategies would be moderated by years of experience such that maladaptive emotion regulation would be more detrimental for less experienced faculty members (Hypothesis 3c). This hypothesis is consistent with studies showing the effects of emotion regulation strategies to be moderated by years of experience among K-12 teachers (e.g., Rahimi et al., 2017). Specifically, Rahimi et al. (2017) found that upwards social comparisons were more beneficial for early career teachers' well-being (job satisfaction, enjoyment, and quitting intentions) than their more experienced counterparts. Given the lack of existing research on the moderating role of years of faculty experience on the well-being effects of emotion regulation strategies, this interaction hypothesis is speculative in nature.

Hypothesis 4: Stress, Emotion Regulation, and Faculty Well-being

Consistent with previous research, we hypothesized that stress would predict more frequent use of subsequent adaptive and maladaptive emotion regulation strategies and have a weaker relationship with adaptive emotion regulation than maladaptive strategies (Hypothesis 4a). This hypothesis is based on the rationale that greater stress could have already elicited more adaptive emotion regulation that, in turn, reduced subsequent stress levels thereby contributing to a weaker association between stress and adaptive emotion regulation when assessed cross-sectionally in this study. Consistent with the Job Demands-Resources (JD-R) model of occupational stress (Bakker & Demerouti, 2007), previous faculty research has consistently shown job-related stress to impair

faculty well-being (e.g., Barkhuizen et al., 2014; Catano et al., 2010; Salimzadeh, Saroyan, & Hall, 2017; Shen et al., 2014; Watts & Robertson, 2012). It was therefore expected that faculty who report higher perceived stressors would also report poorer levels of burnout, turnover intentions, psychological maladjustment, physical symptoms, and job satisfaction (Hypothesis 4b).

Consistent with the preceding hypotheses concerning the anticipated influence of faculty members' perceived stress on well-being (Hypothesis 4b) and the effects of emotion regulation strategies on well-being (Hypotheses 1a and 1b), it can reasonably be assumed that the degree of stress experienced by faculty should also moderate the direct relationships between emotion regulation strategies and well-being outcomes. That is, the beneficial impact of adaptive strategies on well-being should be stronger when perceived stressors are low, and conversely, the detrimental effect of maladaptive strategies on well-being should be stronger when perceived stressors are higher (Hypothesis 4c). However, this hypothesis should also be considered highly speculative given that the present study is cross-sectional in nature and adaptive strategies may have already resulted in lower stress levels thus not allowing reported stress levels to moderate subsequent effects (see Lazarus & Folkman, 1984).

Methodology

Participants and Procedures

A total of 6,100 faculty members engaged in full-time teaching and/or research in 13 Canadian research-intensive universities (members of U15 group⁴) were contacted by email to complete a web-based questionnaire. Participants were purposefully recruited from the research-

⁴ The U15 group of Canadian Universities is an association of 15 Canadian public research-intensive universities including, University of Alberta, University of British Columbia, University of Calgary, Dalhousie University, University of Manitoba, McGill University, McMaster University, University of Ottawa, Queen's University, University of Saskatchewan, University of Toronto, University of Waterloo, University of Western Ontario, Laval University, and University of Montreal.

intensive universities as faculty employed in more research activity universities are tasked with a wider range of work requirements (e.g., research, teaching, service, supervision responsibilities) and thus experience emotions specific to more domains (Stupnisky et al., 2019a). As evidenced by Perry et al., (1997), institution type impacts the emotions experienced and may, in turn, affect the emotional regulation responses employed and thereby the adjustment profile of faculty. Medical faculty members were excluded as these professionals are typically tasked with other responsibilities beyond teaching and research such as hospital appointments and clinical practice (Le Blanc, Bakker, Peeters, van Heesch, & Schaufeli, 2001; Watts & Robertson, 2011).

The questionnaire included demographics items (age, gender, years of experience, tenure status, and discipline) and measures assessing perceived stressors, emotion regulation, and well-being. Of the 585 faculty members who completed the survey, a final sample size of 414 was retained after screening the data for univariate and multivariate outliers (male: 54.20%; female: 45.80%; 6.80% response rate). Participants included faculty from multiple disciplines including social sciences (38%), humanities (16.50%), natural sciences (20.90%), applied sciences (14%), formal sciences (9.00%), and interdisciplinary units (1.70%). The participating faculty members included tenured (74.30%), tenure-track (19.40%), and non-tenure track (6.30%) faculty ranked as assistant professor (19.60%), associate professor (41.40%), full professor (35.10%), and other (3.90%). The mean years of experience as a faculty member was 16.37 years ($SD = 10.00$).

Study Measures

Questionnaire measures consisted of published self-report scales assessing faculty members' perceived stressors, emotion regulation, emotional exhaustion, job satisfaction, quitting intentions, physical symptoms, and psychological maladjustment. Composite measures for each variable were created by taking the average across constituent items, with descriptive statistics for each scale presented in Table 6.

Table 6

Psychometric Properties of Study Variables

Variable	<i>M</i>	<i>SD</i>	α	Items	Range	
					Min	Max
Perceived stressors	3.44	0.76	.90	8	1.13	5.00
Emotion regulation (ERQ)						
Cognitive reappraisal	4.92	0.92	.83	6	1.17	7.00
Expressive suppression	3.60	1.28	.81	4	1.00	6.75
Emotion regulation (ERP-R)						
Adaptive upregulating positive emotions	4.03	0.93	.80	7	1.00	6.14
Maladaptive downregulating positive emotions	3.54	0.85	.71	7	1.14	5.57
Adaptive downregulating negative emotions	4.10	0.82	.53	5	1.40	6.00
Maladaptive downregulating negative emotions	2.78	1.19	.80	4	1.00	5.75
Well-being						
Burnout	3.28	1.28	.91	9	1.00	6.44
Job satisfaction	3.86	0.78	.86	5	1.00	5.00
Quitting intentions	1.66	0.70	.80	3	1.00	3.67
Psychological maladjustment	1.91	0.37	.86	12	1.00	3.17
Illness symptoms	1.50	0.49	.65	6	1.00	3.00

Perceived stressors. The short version of job demands subscale of Health and Safety Executive Management Standards Indicator Tool (HSE-MS IT, Health and Safety Executive, 2006) was used to assess faculty members' perceived stressors (sample item: "I have unachievable deadlines"). The scale included eight Likert-type items. Participants rated each item on a five-point scale (1 = *never*, 5 = *always*).

Emotion regulation: Reappraisal and suppression. The 10-item Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) was used as a validated measure of emotion regulation strategies reflecting *cognitive reappraisal* (six items; e.g., "When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm") and *expressive suppression* (four items; e.g., "I control my emotions by not expressing them"). The items were rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*).

Emotion regulation: Profile-revised questionnaire. A modified version of the Emotion Regulation Profile-Revised (ERP-R; Nelis, Quoidbach, Hansenne, & Mikolajczak, 2011) developed for this study was used to assess individuals' typical emotion regulation behaviors. The ERP-R is a vignette-based instrument assessing individuals' typical ability to regulate both positive and negative emotions (Nelis et al., 2011). The scale included four emotion-eliciting scenarios, each followed by four adaptive and four maladaptive strategies totaling 32 items (eight items per subscale) measured on a 7-point Likert scale (1 = *never*, 7 = *always*). The scenarios assessed two positive emotions of high arousal (joy) and low arousal (contentment), and two negative emotions of high arousal (fear) and low arousal (sadness). The original scenarios were modified to reflect emotion-inducing situations related to academic work and scale items were modified to reflect strategies from the Process Model of ER (situation modification, attention deployment, cognitive reappraisal, and response modulation; Gross, 1998b).

Participants were asked to report the frequency with which they used four *adaptive strategies for upregulating positive emotions* including two items each for situation modification (e.g., “You decide to take the rest of the day off and treat yourself (e.g., coffee, meal, champagne) to celebrate this positive news”), attention deployment (e.g., “You try to enjoy the moment and put everything else out of your mind”), cognitive change (e.g., “Over the following days you think back on the hours spent on the application: the quality of your ideas and hard work paid off”), and response modulation (e.g., “Over the following days you excitedly share the good news with friends and colleagues”).

Four *maladaptive strategies for downregulating positive emotions* were also assessed including two items each for situation modification (e.g., “You don’t give yourself any time off or rest and you undertake another uncompleted task right away”), attention deployment (e.g., “You’re satisfied with having finished the task but can’t help noticing negative aspects about it (e.g., typos, omissions, etc.) that could make you look unprofessional”), cognitive change (e.g., “Even though others are congratulating you for your hard work, you can’t help thinking that you probably got just lucky and remember the times you were not successful”), and response modulation (i.e., suppression; e.g., “You try to downplay your excitement in front of colleagues to not look overly proud”).

Adaptive strategies for downregulating negative emotions were also assessed with respect to four strategies including two items each for situation modification (e.g., “You address the reviewers’ points as best as you can and try to respectfully appeal the rejection decision to the journal editor”), attention deployment (e.g., “You review previous positive course evaluations to help yourself relax”), cognitive change (e.g., “You focus on the silver lining: the reviews will

improve your next submission”), and response modulation (e.g., “You confide in your colleagues, telling them of your thoughts and seeking support and/or advice”).

Maladaptive strategies for downregulating negative emotions assessed using two items each the four strategies of situation modification (e.g., “You increase scores for all students on the mid-term exam on the hopes of less negative evaluations”), attention deployment (e.g., “You spend several hours or days thinking about possible negative evaluations, and begin to feel overwhelmed by anxiety”), cognitive change (e.g., “You blame yourself and/or start to question whether or not you have what it takes to be successful in academia”), and response modulation (e.g., “You consume alcohol or medication, or other substances to stop thinking about it”).

Prior to computing composite scores for the ERP-R subscales, we conducted skewness tests and Exploratory Factor Analyses (EFAs) to systematically identify the strongest scale items for analysis. Skewness tests demonstrated five items to be > 1 in skewness that were removed from subsequent analyses⁵. We ran EFAs by applying Principal Component (PC) analysis and Varimax rotation for each of the 8-item subscales separately. Following Nelis et al. (2011), an item was judged to belong to a factor if its loading was $> .40$ (if two items were equal to or above $.40$, it was allocated to the factor with the highest saturation). Poor factor loadings were observed for one item assessing *adaptive upregulation of positive emotions* (treating oneself) and one item for *maladaptive downregulation of positive emotions* (immediately undertake new work task); these items were removed from subsequent analyses. Two items for *adaptive downregulation of negative*

⁵ 66% of people answered "never" to: “You consume alcohol or medication, or other substances to stop thinking about it.”, 85% to: “You ask the editor to reconsider the decision by explaining, for example, how much you need this paper to be published.”, 63% to: “You increase scores for all students on the mid-term exam on the hopes of less negative evaluations.”, 84% to: “On the days leading up to the end of the semester evaluations, you consume alcohol, medication, or other substances more than usual to help reduce your anxiety.”, and 56% to: “You review previous positive course evaluations to help yourself relax”.

emotions were also removed; one for demonstrating poor factor loading (appealing a manuscript rejection decision) and one for a poor loading as a maladaptive item (distraction with unrelated task).

EFA results indicated two factors underlying the items assessing regulation of positive emotions (explaining 42.88% of total variance). The seven remaining items assessing *adaptive upregulation of positive emotions* demonstrated acceptable internal consistency (factor loadings = .53-.80) as did the remaining seven items for *maladaptive downregulation of positive emotions* (factor loadings = .42-.70). Similarly, EFA results indicated two factors underlying *negative emotion regulation* items (explaining 50.13% of total variance). While the remaining four items assessing *maladaptive downregulation of negative emotions* demonstrated acceptable internal consistency (factor loadings = .73-.84), items assessing *adaptive downregulation of negative emotions* showed poorer internal consistency ($\alpha = .53$; factor loadings = .52-.67). Composite scores were created for each factor based on the mean of the corresponding items, with higher scores indicating greater use of the emotion regulation strategy.

Burnout: Emotional exhaustion. Faculty members' feelings of burnout were assessed using a modified version of the nine-item, seven-point emotional exhaustion subscale of the Maslach Burnout Inventory Human Services (MBI-HSS; Maslach & Jackson, 1996; e.g., replacing "people" with "students, colleagues, and administrative staff"). The subscale included items such as "I am emotionally drained from my work" (1 = *never*, 7 = *every day*). The emotional exhaustion subscale was selected as an indicator of occupational burnout based on recent research with school teachers and post-secondary faculty showing this subscale to demonstrate substantially higher internal reliability than the other subscales (i.e., depersonalization and personal accomplishment; Frisby, Goodboy, & Buckner, 2015; Wang et al., 2015).

Job satisfaction. Job satisfaction was assessed using the five-item, seven-point scale developed by Moè, Pazzaglia, and Ronconi (2010). Participants were asked to report the extent to which they were satisfied with their job by responding to items such as “In most ways my job is close to my ideal” and “I am satisfied with my job” (1 = *strongly disagree*, 5 = *strongly agree*).

Quitting intentions. To measure intentions to quit, participants completed the three-item scale developed by Mobley, Horner, and Hollingsworth (1978) with items such as “I think about quitting my faculty position” (1 = *never*, 5 = *constantly*).

Psychological maladjustment. Psychological maladjustment was assessed using the 12-item, four-point General Health Questionnaire (GHQ-12) developed by Goldberg and Williams (1988). The GHQ-12 has been recommended (see Banks et al., 1980) as a validated instrument to identify mental illness (i.e., psychological strain) in occupational studies. The questionnaire focused on the inability to carry out normal functions with items such as “Have you recently been able to concentrate on whatever you are doing?” (1 = *more so than usual*, 4 = *much less than usual*), and the appearance of new and distressing phenomena with items such as “Have you recently been losing confidence in yourself?” (1 = *not at all*, 4 = *much more than usual*).

Physical illness symptoms. To assess faculty members’ perceived frequency of physical illness symptoms including headaches, sleep problems, muscle tension, stomach pain, heart pounding, and poor appetite, a six-item, five-point scale adapted from Cohen and Hoberman (1983) was used. The scale included items such as “During the last week, how much were you bothered by heart pounding or racing?” (1 = *not at all*, 5 = *five or more times*).

Results

Preliminary Analyses

The data were screened for univariate and multivariate outliers. Univariate outliers were identified as cases with scores that exceeded 2.5 standard deviations above or below the mean

(Meyers, Gamst, & Guarino, 2017). Multivariate outliers were assessed by calculating Mahalanobis distance using a stringent alpha level of 0.001 (Tabachnick & Fidell, 2013). Fourteen cases were deleted as having multivariate outliers. In order to assess the relationships between study variables and identify potential covariates for the main analyses, initial zero-order correlations were conducted (see Table 7).

Years of experience as a faculty member was retained as a covariate as this demographic variable correlated negatively with stress, emotion regulation strategies, exhaustion, as well as physical and psychological ill-health, and was positively associated with suppression and job satisfaction. Moreover, gender was included as a covariate based on *t*-tests (see Table 8) showing females to report higher levels of stress relative to males, $t(404) = -.3.63, p < .001$ (cf. previous research on gender differences in occupational stress in faculty; Blix et al., 1994; Brown et al., 1986; Catano et al., 2010). As for emotion regulation strategies, females reported more frequent use of adaptive strategies for upregulation of positive emotions, $t(404) = -.5.08, p < .001$, adaptive strategies for downregulation of negative emotions $t(404) = -.4.90, p < .001$, as well as maladaptive strategies for downregulation of negative emotions, $t(404) = -.4.06, p < .001$, and cognitive reappraisal, $t(404) = -2.01, p = .045$. Conversely, male faculty reported more frequent use of expressive suppression, $t(404) = 6.42, p < .001$ (cf. previous research on gender differences in emotion regulation strategies; Gross & John, 2003; McRae et al., 2008; Zlomke & Hahn, 2010).

Females also reported higher levels of exhaustion, $t(404) = -.3.87, p < .001$, and illness symptoms, $t(404) = -.4.86, p < .001$, consistent with previous research (e.g., Byrne et al., 2013; Catano et al., 2010; Ghorpade et al., 2007, 2011; Lackritz, 2004).

Table 7
Zero-order Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Stress	1											
2. Cognitive reappraisal	-.12*	1										
3. Expressive suppression	-.04	-.13**	1									
4. Adaptive upreg. positive emotions	.14**	.17**	-.27**	1								
5. Maladaptive downreg. positive emotions	.33**	-.11*	.32**	.05	1							
6. Adaptive downreg. negative emotions	.09	.21**	-.32**	.44**	.03	1						
7. Maladaptive downreg. negative emotions	.26**	-.16**	.06	.16**	.60**	.15**	1					
8. Emotional exhaustion	.58**	-.16**	.02	.01	.33**	.00	.40**	1				
9. Job satisfaction	-.30**	.18**	-.05	.03	-.21**	.01	-.25**	-.53**	1			
10. Quitting intentions	.14**	-.14**	.00	-.05	.13**	.04	.17**	.37**	-.51**	1		
11. Psychological maladjustment	.41**	-.21**	.18**	.00	.32**	-.06	.37**	.60**	-.49**	.44**	1	
12. Illness symptoms	.47**	-.14**	.03	.05	.20**	.04	.31**	.60**	-.33**	.20**	.54**	1
13. Years of experience	-.16**	.07	.14**	-.10*	-.16**	-.27**	-.30**	-.13**	.13**	-.04	-.12*	-.10*

* $p \leq 0.05$. ** $p \leq 0.01$.

Table 8

Gender Differences in Emotion Regulation Strategies, Stress, and Well-being

	Sex									
	Male			Female						
	M	SD	n	M	SD	n	p	95% CI for mean difference	t	df
Stress	3.30	0.79	220	3.57	0.70	186	.000	-0.42,-0.12	-3.63	404
Cognitive reappraisal	4.83	0.87	220	5.02	0.97	186	.045	-0.36, -0.00	-2.01	404
Expressive suppression	3.95	1.22	220	3.17	1.21	186	.000	0.54, 1.02	6.42	404
Adaptive upregulation of positive emotions	3.82	0.97	220	4.28	0.82	186	.000	-0.64, -0.28	-5.08	404
Maladaptive downregulation of positive emotions	3.55	0.86	220	3.51	0.85	186	.560	-0.12, 0.22	0.58	404
Adaptive downregulation of negative emotions	3.92	0.85	220	4.32	0.74	186	.000	-0.55, -0.23	-4.90	404
Maladaptive downregulation of negative emotions	2.57	1.12	220	3.04	1.23	186	.000	-0.70, -0.24	-4.06	404
Emotional exhaustion	3.05	1.26	220	3.53	1.23	186	.000	-0.72, -0.24	-3.87	404
Job satisfaction	3.91	0.78	220	3.80	0.76	186	.181	-0.05, 0.25	1.34	404
Quitting intentions	1.63	0.66	220	1.69	0.74	186	.397	-0.19, 0.08	-0.85	404
Psychological maladjustment	1.88	0.37	220	1.94	0.38	186	.101	-0.13, 0.01	-1.64	404
Illness symptoms	1.39	0.42	220	1.62	0.51	186	.000	-0.31, -0.13	-4.86	404

Main Analyses

Emotion regulation strategy effects. To evaluate the independent effects of emotion regulation strategies, we conducted hierarchical regressions including the two background variables (i.e., gender and years of experience) as covariates in the first step, followed by the adaptive and maladaptive emotion regulation strategies in the second step (see Table 9). Results showed that adaptive upregulation of positive emotions and adaptive downregulation of negative emotions were not significant predictors of our well-being measures.

Maladaptive strategies for downregulation of positive emotions, $p = .001$ and maladaptive downregulation of negative emotions, $p < .001$, predicted higher burnout levels. Additionally, cognitive reappraisal predicted lower burnout, $p = .020$. Maladaptive strategies for downregulation of negative emotions, $p = .007$, also predicted lower job satisfaction in faculty, with cognitive reappraisal predicting greater job satisfaction, $p = .009$. Concerning faculty members' intentions to quit, only cognitive reappraisal predicted lower turnover intentions, $p = .013$. Expressive suppression, $p = .013$, and maladaptive strategies for downregulation of negative emotions, $p < .001$, further predicted higher levels of psychological maladjustment, with cognitive reappraisal predicting lower psychological health issues, $p = .003$. Finally, maladaptive downregulation of negative emotions predicted more illness symptoms, $p < .001$, and cognitive reappraisal predicted lower physical ill-health, $p = .017$.

Stress effects. To assess main effects of stress on emotion regulation strategies and well-being, we conducted linear regression analyses (see Table 10). Results showed that stress was not a significant predictor of adaptive downregulation of negative emotions or expression suppression.

Table 9

Hierarchical Multiple Regression Analyses

Predictor	Burnout		Job satisfaction		Quitting intentions		Psychological maladjustment		Illness symptoms	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.05**		.02*		.00		.02*		.06**	
Gender		.17**		-.05		.04		.06		.22**
Years of experience		-.11*		.11*		-.03		-.11*		-.08
Step 2	.17**		.08**		.05**		.17**		.09**	
Gender		.17**		-.06		.03		.09		.22**
Years of experience		-.00		.05		.04		-.04		.00
Reappraisal		-.11*		.13**		-.13**		-.14**		-.12*
Expressive suppression		-.03		-.00		-.03		.13**		.06
Adaptive upregulation of positive emotions		-.04		.04		-.10		.03		-.00
Maladaptive downregulation of positive emotions		.20**		-.09		.08		.11		.04
Adaptive downregulation of negative emotions		-.05		.02		.09		-.08		.01
Maladaptive downregulation of negative emotions		.24**		-.17**		.11		.26**		.23**
Total R^2	.22**		.10**		.05**		.19**		.15**	

Note. Step two includes predictors from the previous step. Gender: 1 = male, 2 = female.

* $p \leq 0.05$. ** $p \leq 0.01$.

Table 10

Main Effects of Stress on Emotion Regulation Strategies and Well-being

Independent variable	Dependent variable	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Stress	Cognitive reappraisal	-.12	.04	-2.52	.012	-.20	-.02
	Expressive suppression	-.04	.06	-0.73	.467	-.17	.09
	Adaptive upregulation of positive emotions	.14	.04	2.94	.003	.04	.22
	Maladaptive downregulation of positive emotions	.33	.04	7.20	.000	.21	.36
	Adaptive downregulation of negative emotions	.09	.04	1.80	.073	-.00	.15
	Maladaptive downregulation of negative emotions	.26	.06	5.52	.000	.20	.42
	Emotional exhaustion	.58	.05	14.55	.000	.64	.84
	Job satisfaction	-.30	.04	-6.26	.000	-.30	-.16
	Quitting intentions	.14	.03	2.78	.006	.03	.16
	Psychological maladjustment	.41	.02	9.17	.000	.12	.19
	Illness symptoms	.47	.02	10.69	.000	.18	.27

However, stress predicted more frequent use of adaptive upregulation of positive emotions, $p = .003$, as well as maladaptive downregulation of positive emotions, $p < .001$, and negative emotions, $p < .001$, and less frequent use of cognitive reappraisal, $p = .012$. Stress additionally predicted higher levels of burnout, $p < .001$, turnover intentions, $p = .006$, as well as physical, $p < .001$, and psychological health issues, $p < .001$, as well as lower job satisfaction, $p < .001$.

Moderation analyses. The following moderation effects were outlined in the Hypotheses above: the effects of faculty emotion regulation on well-being would be moderated by gender, years of experience, and the stressors experienced by faculty; maladaptive strategies would moderate the relationship between adaptive strategies and well-being. To evaluate these hypotheses, moderation analyses were conducted using the PROCESS moderation macro (v3.0; Hayes, 2017) for SPSS (IBM Corp., 2016). As outlined in Hayes (2017), PROCESS is a versatile

computational tool for reliably estimating moderation models. The current analyses employed PROCESS Model 1 using 5,000 bootstrap resamples to yield 95% confidence intervals (CIs) for the conditional effects of emotion regulation on well-being. A significant interaction term ($p < .05$) that significantly improved the regression model, would indicate that gender, years of experience, and stress moderated the relationship between emotion regulation and well-being or emotion regulation strategies interacted in predicting well-being.

To evaluate Hypothesis 1c, we used adaptive emotion regulation strategies (i.e., cognitive reappraisal, adaptive upregulation of positive emotions, and adaptive downregulation of negative emotions) as the independent variables and maladaptive strategies (i.e., expressive suppression, maladaptive downregulation of positive and negative emotions) as moderators on the dependent variables, controlling for gender and years of experience. To evaluate Hypotheses 2c and 3c, we used emotion regulation strategies as the independent variables and gender and years of experience as moderators on five dependent variables. To evaluate Hypothesis 4c, we used adaptive and maladaptive emotion regulation strategies as the independent variables and stress as moderator on the dependent variables, controlling for gender and years of experience. The results of moderation analyses are presented in Tables 11 and 12.

As for interactive relationships between emotion regulation strategies, suppression interacted with adaptive upregulation of positive emotions in predicting faculty burnout ($p = .039$; see Table 11). More specifically, suppression contributed to higher burnout in faculty with less frequent use of adaptive upregulation of positive emotions (see Figure 1 for $\pm 1 SD$ simple slopes).

Table 11

Moderation Analyses for Adaptive Emotion Regulation Strategies

Independent variable	Dependent variable	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Reappraisal x stress	Burnout	-.00	.05	-0.06	.951	-.11	.10
	Job satisfaction	-.00	.03	-0.11	.909	-.07	.06
	Quitting intentions	-.01	.04	-0.42	.673	-.09	.06
	Psych. maladjustment	-.00	.02	-0.29	.775	-.04	.03
	Illness symptoms	-.01	.02	-0.74	.461	-.05	.02
Reappraisal x gender	Burnout	-.17	.12	-1.40	.165	-.42	.07
	Job satisfaction	.03	.07	0.46	.643	-.11	.18
	Quitting intentions	-.07	.07	-0.95	.343	-.21	.07
	Psych. maladjustment	-.02	.04	-0.57	.570	-.09	.05
	Illness symptoms	-.10	.04	-2.27	.024	-.19	-.01
Reappraisal x experience	Burnout	.04	.06	0.60	.546	-.09	.16
	Job satisfaction	.02	.04	0.49	.622	-.05	.09
	Quitting intentions	.02	.03	0.52	.600	-.05	.09
	Psych. maladjustment	.01	.02	0.80	.425	-.02	.05
	Illness symptoms	.04	.02	1.75	.080	-.00	.08
Reappraisal x suppression	Burnout	.04	.06	0.58	.564	-.09	.16
	Job satisfaction	-.00	.04	-0.16	.873	-.08	.07
	Quitting intentions	.00	.04	0.14	.884	-.07	.08
	Psych. maladjustment	-.00	.02	-0.27	.784	-.04	.03
	Illness symptoms	.01	.02	0.53	.594	-.03	.05
Reappraisal x maladaptive downregulation of positive emotions	Burnout	.04	.05	0.81	.421	-.06	.15
	Job satisfaction	.00	.03	0.00	.994	-.06	.06
	Quitting intentions	.00	.03	0.00	.996	-.07	.07
	Psych. maladjustment	-.00	.01	-0.32	.751	-.03	.02
	Illness symptoms	.00	.02	0.39	.697	-.03	.04
	Burnout	.00	.05	0.07	.944	-.10	.11

Reappraisal x maladaptive downregulation of negative emotions	Job satisfaction	.00	.03	0.19	.846	-.05	.07
	Quitting intentions	.00	.03	0.02	.986	-.07	.07
	Psych. maladjustment	-.01	.01	-1.02	.306	-.04	.01
	Illness symptoms	-.02	.02	-1.17	.240	-.06	.01
Adaptive upregulation of positive emotions x stress	Burnout	.03	.05	0.73	.468	-.06	.13
	Job satisfaction	-.05	.03	-1.50	.134	-.12	.01
	Quitting intentions	.02	.03	0.58	.560	-.04	.08
	Psych. maladjustment	.00	.01	0.37	.709	-.02	.04
	Illness symptoms	.03	.02	1.63	.105	-.00	.06
Adaptive upregulation of positive emotions x gender	Burnout	-.25	.14	-1.81	.070	-.53	.02
	Job satisfaction	.03	.08	0.40	.685	-.13	.20
	Quitting intentions	-.05	.08	-0.67	.503	-.21	.10
	Psych. maladjustment	-.02	.04	-0.43	.665	-.10	.06
	Illness symptoms	.21	.05	4.31	.000	.12	.31
Adaptive upregulation of positive emotions x experience	Burnout	.11	.06	1.81	.072	-.00	.23
	Job satisfaction	.01	.03	0.39	.694	-.06	.08
	Quitting intentions	-.02	.03	-0.70	.481	-.09	.04
	Psych. maladjustment	.02	.02	0.97	.331	-.02	.05
	Illness symptoms	.01	.02	0.56	.572	-.03	.05
Adaptive upregulation of positive emotions x suppression	Burnout	.12	.06	2.07	.039	.00	.24
	Job satisfaction	.00	.04	0.08	.931	-.08	.08
	Quitting intentions	.01	.04	0.33	.744	-.06	.08
	Psych. maladjustment	.00	.02	0.24	.809	-.03	.04
	Illness symptoms	-.00	.02	-0.07	.940	-.04	.04
Adaptive upregulation of positive emotions x maladaptive downregulation of positive emotions	Burnout	-.00	.06	-0.15	.881	-.12	.10
	Job satisfaction	-.05	.04	-1.31	.190	-.12	.02
	Quitting intentions	.06	.04	1.50	.133	-.02	.14
	Psych. maladjustment	.02	.02	1.38	.169	-.00	.05
	Illness symptoms	.02	.02	0.88	.381	-.02	.05
Adaptive upregulation of positive emotions x maladaptive downregulation of negative emotions	Burnout	-.12	.06	-1.94	.053	-.25	.00
	Job satisfaction	-.01	.04	-0.38	.703	-.09	.06
	Quitting intentions	.02	.04	0.48	.630	-.06	.10
	Psych. maladjustment	.01	.02	0.75	.450	-.02	.05

	Illness symptoms	-.01	.02	-0.43	.666	-.06	.04
Adaptive downregulation of negative emotions x stress	Burnout	.09	.06	1.46	.143	-.03	.21
	Job satisfaction	-.05	.04	-1.25	.211	-.13	.03
	Quitting intentions	.04	.03	1.33	.182	-.02	.11
	Psych. maladjustment	.02	.02	0.99	.321	-.02	.05
	Illness symptoms	.02	.02	1.02	.310	-.02	.05
Adaptive downregulation of negative emotions x gender	Burnout	-.04	.13	-0.34	.734	-.30	.21
	Job satisfaction	.05	.08	0.62	.532	-.11	.20
	Quitting intentions	.00	.07	0.11	.914	-.14	.15
	Psych. maladjustment	.07	.04	1.81	.071	-.00	.14
	Illness symptoms	.05	.05	0.95	.343	-.05	.14
Adaptive downregulation of negative emotions x experience	Burnout	.08	.06	1.37	.172	-.03	.19
	Job satisfaction	-.04	.03	-1.14	.256	-.10	.03
	Quitting intentions	.02	.03	0.51	.608	-.05	.08
	Psych. maladjustment	.01	.01	0.71	.477	-.02	.04
	Illness symptoms	.00	.02	0.07	.945	-.04	.04
Adaptive downregulation of negative emotions x suppression	Burnout	.11	.07	1.69	.091	-.02	.25
	Job satisfaction	-.00	.04	-0.16	.869	-.09	.07
	Quitting intentions	.02	.04	0.64	.522	-.05	.10
	Psych. maladjustment	.02	.02	1.07	.286	-.02	.06
	Illness symptoms	.02	.02	0.91	.361	-.02	.07
Adaptive downregulation of negative emotions x maladaptive downregulation of positive emotions	Burnout	.04	.07	0.59	.556	-.10	.18
	Job satisfaction	-.00	.04	-0.21	.828	-.08	.06
	Quitting intentions	.05	.03	1.48	.140	-.02	.11
	Psych. maladjustment	.00	.01	0.39	.695	-.02	.04
	Illness symptoms	.02	.02	1.07	.284	-.02	.06
Adaptive downregulation of negative emotions x maladaptive downregulation of negative emotions	Burnout	-.01	.06	-0.17	.865	-.14	.12
	Job satisfaction	.05	.03	1.54	.125	-.01	.12
	Quitting intentions	.00	.04	0.12	.908	-.07	.08
	Psych. maladjustment	.00	.02	0.02	.987	-.04	.04
	Illness symptoms	.01	.02	0.66	.507	-.03	.06

* $p \leq 0.05$. ** $p \leq 0.01$.

Table 12

Moderation Analyses for Maladaptive Emotion Regulation Strategies

Independent variable	Dependent variable	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Suppression x stress	Burnout	-.03	.06	-0.63	.530	-.15	.08
	Job satisfaction	.00	.04	0.19	.850	-.08	.09
	Quitting intentions	-.03	.03	-0.90	.370	-.10	.04
	Psych. maladjustment	-.01	.02	-0.77	.441	-.05	.02
	Burnout	-.03	.06	-0.63	.530	-.15	.08
Suppression x gender	Burnout	.53	.13	4.15	.000	.28	.79
	Job satisfaction	.01	.09	0.16	.870	-.15	.18
	Quitting intentions	.05	.07	0.65	.518	-.10	.19
	Psych. maladjustment	.04	.04	0.94	.346	-.04	.12
	Illness symptoms	.08	.05	1.59	.112	-.02	.18
Suppression x experience	Burnout	-.02	.07	-0.34	.730	-.16	.11
	Job satisfaction	.08	.04	1.78	.076	-.00	.17
	Quitting intentions	-.04	.04	-1.08	.281	-.12	.03
	Psych. maladjustment	-.02	.02	-0.97	.331	-.06	.02
	Illness symptoms	-.03	.02	-1.48	.140	-.08	.01
Maladaptive downregulation of positive emotions x stress	Burnout	.11	.05	2.08	.038	.00	.21
	Job satisfaction	-.05	.05	-0.99	.323	-.14	.04
	Quitting intentions	.03	.03	0.90	.370	-.03	.09
	Psych. maladjustment	-.00	.01	-0.43	.667	-.03	.02
	Illness symptoms	.03	.02	1.35	.177	-.01	.07
Maladaptive downregulation of positive emotions x gender	Burnout	.49	.12	4.11	.000	.25	.72
	Job satisfaction	-.10	.07	-1.22	.224	-.24	.06
	Quitting intentions	.06	.07	0.89	.373	-.08	.20
	Psych. maladjustment	.01	.03	0.40	.688	-.05	.08
	Illness symptoms	.03	.04	0.71	.476	-.05	.12
Maladaptive downregulation of positive emotions x experience	Burnout	-.04	.06	-0.66	.512	-.16	.08
	Job satisfaction	.07	.04	1.66	.097	-.01	.16

	Quitting intentions	-.04	.03	-1.14	.255	-.10	.03
	Psych. maladjustment	.01	.01	0.86	.389	-.02	.04
	Illness symptoms	-.00	.02	-0.53	.598	-.04	.03
Maladaptive downregulation of negative emotions x stress	Burnout	.05	.05	0.87	.382	-.06	.15
	Job satisfaction	-.01	.05	-0.27	.789	-.11	.08
	Quitting intentions	.04	.04	1.11	.268	-.03	.12
	Psych. maladjustment	-.00	.02	-0.22	.824	-.04	.03
	Illness symptoms	.05	.02	2.57	.010	.01	.09
Maladaptive downregulation of negative emotions x gender	Burnout	-.08	.12	-0.70	.483	-.32	.15
	Job satisfaction	.14	.07	1.97	.050	.00	.30
	Quitting intentions	-.04	.07	-0.56	.572	-.18	.10
	Psych. maladjustment	-.05	.03	-1.64	.101	-.13	.01
	Illness symptoms	.01	.05	0.31	.757	-.08	.11
Maladaptive downregulation of negative emotions x experience	Burnout	.08	.06	1.31	.191	-.04	.21
	Job satisfaction	-.04	.04	-1.06	.292	-.12	.04
	Quitting intentions	.00	.04	0.08	.939	-.07	.08
	Psych. maladjustment	.03	.02	2.05	.041	.00	.07
	Illness symptoms	.00	.02	0.24	.807	-.04	.06

* $p \leq 0.05$. ** $p \leq 0.01$.

Also, maladaptive strategies for downregulation of negative emotions interacted with adaptive strategies for upregulation of positive emotions in predicting burnout (see Table 11; $p = .053$). More precisely, using maladaptive downregulation of negative emotions was more detrimental for burnout in faculty with less frequent use of adaptive upregulation of positive emotions. Furthermore, simple slope testing (see Figure 2) suggested that maladaptive downregulation of negative emotions contributed to greater burnout in faculty who less frequently employ adaptive upregulation of positive emotions.

Concerning the moderating role of gender, gender significantly interacted with adaptive upregulation of positive emotions ($p < .001$) and cognitive reappraisal ($p = .024$) in predicting physical illness symptoms (see Table 11). Specifically, these strategies were more beneficial for physical health in female faculty than their male counterparts. Moreover, simple slope testing (see Figures 3 and 4) revealed that female faculty who more frequently employed adaptive upregulation of positive emotions and reappraisal enjoyed higher levels of physical health than their male peers. Similarly, gender significantly interacted with maladaptive strategies for downregulation of positive emotions ($p < .001$) and expressive suppression ($p < .001$) in predicting faculty burnout (see Table 12). More precisely, these strategies were more detrimental for burnout in female faculty relative to males. Additionally, simple slope testing (see Figures 5 and 6) revealed that female faculty who more frequently used maladaptive downregulation of positive emotions and suppression experienced greater burnout than their male colleagues.

Gender also significantly interacted with maladaptive strategies for downregulation of negative emotions in predicting job satisfaction ($p = .050$; see Table 12). Specifically, maladaptive downregulation of negative emotions was associated with lower job satisfaction in female faculty as compared with males. Furthermore, simple slope testing (see Figure 7) revealed that female

faculty who more frequently used maladaptive downregulation of negative emotions were less satisfied with their job relative to males.

As for moderating role of years of experience, experience significantly interacted with maladaptive strategies for downregulation of negative emotions in predicting psychological maladjustment ($p = .041$; see Table 12). Specifically, more experienced faculty who more frequently adopted maladaptive downregulation of negative emotions suffered from greater psychological health challenges than their less experienced colleagues. Simple slope testing (see Figure 8) revealed that more experienced faculty who more frequently used maladaptive downregulation of negative emotions were more prone to psychological maladjustment than their less experienced peers.

As regards moderating role of perceived stressors, stress significantly interacted with maladaptive downregulation of positive emotions in predicting burnout ($p = .038$) and with maladaptive downregulation of negative emotions in predicting illness symptoms ($p = .010$; see Table 12). More precisely, the detrimental impact of maladaptive downregulation of positive emotions on burnout and of maladaptive downregulation of negative emotions on physical illness were stronger among faculty with higher levels of perceived stressors. Furthermore, simple slope testing revealed that faculty with greater maladaptive downregulation of positive and negative emotions, accompanied by higher levels of perceived stressors, reported the highest level of burnout and illness symptoms, respectively (see Figures 9 and 10).

Discussion

Faculty experience emotion-laden interactions in their day-to-day work as they encounter a variety of emotional demands. Strong empirical evidence from studies of post-secondary faculty indicates that stress and emotional demands of academic life compromise personal and

professional competencies of academics (Byrne et al., 2013; Catano et al., 2010; Kinman & Wray, 2020; Watts & Robertson, 2012). In recent years, there has been a growing recognition of the importance of emotion regulation strategies on well-being in general and within occupational settings more specifically. Despite this, emotion regulation and its consequences for well-being remain under-researched among post-secondary faculty. The present study expands the existing research on faculty emotion regulation and addressed these gaps in the literature by exploring the relationship between several emotion regulation strategies and well-being outcomes among higher education faculty with a sample recruited from multiple research-intensive institutions. Furthermore, the study explored ways in which gender, years of experience, and stress impact well-being and emotion regulation strategies and how emotion regulation strategies interact with these background variables as well as other emotion regulation strategies in predicting faculty well-being. Our findings provide important clues as to the associations between emotion regulation strategies and well-being outcomes as well as the relative strength of different emotion regulation strategies in predicting well-being and the types of ill-health indicators these strategies were most related to.

Hypothesis 1: Emotion Regulation Strategies and Faculty Well-being

With respect to the hypothesized effects of adaptive and maladaptive emotion regulation strategies on faculty well-being, the results of this study provided partial empirical support for Hypotheses 1a and 1b. Hypothesis 1a asserted that faculty members' use of adaptive strategies (i.e., cognitive reappraisal and adaptive upregulation of positive emotions, and adaptive downregulation of negative emotions) should significantly and positively predict job satisfaction, and negatively predict burnout, quitting intentions, and physical and psychological health issues. This hypothesis was only partially supported because results of the analyses showed that adaptive

upregulation of positive emotions and adaptive downregulation of negative emotions were not significant predictors of any of the five measures of well-being.

These findings are contrary to prior studies that linked these strategies to favorable well-being outcomes such as reduced negative emotions (Larsen & Prizmic, 2004; Shiota, 2006) as well as greater happiness, life satisfaction, positive emotions, and self-esteem (Aldao & Nolen-Hoeksema, 2010; Bryant, 2003; Jose, Lim, & Bryant, 2012; Quoidbach et al., 2010; Wood, Heimpel, & Michela, 2003). Even though we did not replicate the beneficial impact of adaptive upregulation of positive and downregulation of negative emotions, these results underscore the importance of evaluating the job/role characteristics that make academic employment different from other professional occupations. It is plausible to speculate that within the academic context, a different set of upregulating behaviors for positive emotions and downregulating responses for negative emotions are required. However, the alpha reliability of adaptive downregulation of negative emotions ($\alpha = .53$) was low, a plausible explanation for which being that these strategies may be used selectively by faculty who prefer one over the others depending on the circumstances.

Concerning cognitive reappraisal, as anticipated, use of this strategy was an important predictor of greater job satisfaction as well as lower burnout, turnover intentions, and physical and psychological health challenges. These findings are consistent with prior research highlighting the benefits of cognitive reappraisal in school teachers (Jiang et al., 2016; Lee et al., 2016; Tsouloupas et al., 2010) as well as post-secondary faculty (Ramsey et al., 2011; Regan et al., 2012; Tmkaya, 2007). Additionally, these findings extend prior research by demonstraing the health benefits of cognitive reappraisal with respect to a broader range of well-being indicators among academics. These findings further indicate that reappraisal might be a health-beneficial emotion regulation

strategy that may contribute to faculty job satisfaction and retention as well as physical and psychological health.

With respect to the hypothesized effects of maladaptive strategies (i.e., suppression and maladaptive downregulation of positive and negative emotions), our findings provided partial empirical support for Hypothesis 1b. As anticipated, maladaptive downregulation of negative emotions predicted lower job satisfaction as well as greater burnout and poorer physical as well as psychological health. However, contrary to our expectations, this group of strategies did not significantly predict faculty intentions to quit. Additionally, as expected, maladaptive downregulation of positive emotions was an important predictor of faculty burnout with suppression also being a significant predictor of psychological maladjustment. More specifically, faculty who reported more frequent maladaptive downregulation of negative emotions and suppression also reported higher burnout and psychological maladjustment, respectively. However, in contrast to our expectations, these two strategies did not significantly predict other aspects of well-being. These findings are partially consistent with previous research findings highlighting the adverse consequences of maladaptive emotion regulation strategies in the general population (Gross, 2002, 2015; Gross & Levenson, 1993; Peña-Sarrionandia, Mikolajczak, & Gross, 2015), in occupational settings (Chang, 2013; Côté & Morgan, 2002; Taxer & Frenzel, 2015; Tsouloupas et al., 2010), and among post-secondary faculty (Berry & Cassidy, 2013; Hagenauer & Volet, 2014b; Kataoka et al., 2014; Mark & Smith, 2012; Ogbonna & Harris, 2004).

We also found that maladaptive emotion regulation strategies were more strongly associated with ill-health than adaptive strategies. Specifically, maladaptive strategies for downregulation of negative emotions were the strongest predictor of well-being, with burnout and psychological maladjustment being the most strongly predicted well-being measures, respectively.

Overall, this finding suggests that the use of maladaptive strategies might play a more critical role in faculty ill-health than the non-use of adaptive strategies such that faculty employing maladaptive responses to negative emotions might experience more health problems. The finding that adaptive strategies played a smaller role in faculty ill-health is consistent with prior research showing maladaptive strategies (i.e., suppression and rumination) being a stronger predictor of mental illness (i.e., depression, anxiety, eating/substance-related disorders) than adaptive strategies (e.g., Aldao & Nolen-Hoeksema, 2010, 2012; Aldao et al., 2010). As Aldao and Nolen-Hoeksema (2010) argue, one possible explanation for the stronger association of maladaptive strategies with ill-health may be that the more frequently individuals use maladaptive emotion regulation strategies, the more quickly these strategies become their default way of regulating emotions. Consequently, people tend to use adaptive strategies less frequently that, in turn, could lead to weaker associations with health outcomes.

Although Hypothesis 1c suggested that maladaptive emotion regulation strategies would interfere with the use of adaptive strategies, this hypothesis was only partially supported in the present study. Suppression and maladaptive strategies for downregulation of negative emotions interacted with adaptive upregulation of positive emotions in predicting faculty burnout. More precisely, suppression and maladaptive downregulation of negative emotions were more detrimental to burnout for faculty who used adaptive upregulation of positive emotions less frequently. A similar conclusion was reached by Joormann and D'Avanzato (2010) who found the maladaptive strategy of rumination to narrow attentional focus and interferes with one's ability to shift attention away from negative stimuli.

Hypothesis 2: Gender, Emotion Regulation, and Well-being

Our results provide partial support for Hypothesis 2a in showing female faculty to report using both adaptive and maladaptive emotion regulation strategies more frequently than their male colleagues. Specifically, females in this study reported more frequent use of cognitive reappraisal, adaptive upregulation of positive emotions, and adaptive downregulation of negative emotions than males. These findings are consistent with prior research showing women to report greater use of adaptive emotion regulation strategies than men (Nolen-Hoeksema, 2012; Nolen-Hoeksema & Aldao, 2011; Tamres et al., 2002). Our study also found women to report more frequent use of maladaptive strategies for downregulation of negative emotions. In contrast, males reported more frequent use of expressive suppression; a finding that aligns with Gross and John (2003) but stands in contrast to previous research showing no gender differences in suppression of emotions (e.g., Nolen-Hoeksema & Aldao, 2011). Finally, these results did not reveal any gender differences in the use of maladaptive downregulation of positive emotions.

With respect to the hypothesized differences in well-being as a function of gender, our findings provide partial support for Hypothesis 2b in showing female faculty to report higher levels of burnout and illness symptoms consistent with prior research on gender differences in faculty (e.g., Byrne et al., 2013; Catano et al., 2010; Ghorpade et al., 2007, 2011; Lackritz, 2004). Nonetheless, our findings did not show any effects of gender with respect to job satisfaction, turnover intentions, and psychological health issues. These results are consistent with other studies that did not report gender differences in faculty job satisfaction (e.g., Platsidou & Diamantopoulou, 2009; Toker, 2011), turnover intentions (e.g., Sharma & Sehrawat, 2014), and psychological strain (Winefield et al., 2003). However, these findings do not align with studies with faculty that found gender differences in job satisfaction (e.g., Catano et al., 2010; Okpara et al., 2005; Sabharwal &

Corley, 2009), intentions to quit (Blix et al., 1994; Callister, 2006; Xu, 2008; Zhou & Volkwein, 2004), and physical and psychological strain (Catano et al., 2014; Winefield et al., 2008).

Although these results may suggest that female faculty may be less effective than their male counterparts in utilizing effective coping resources to deal with the demands of the profession, this interpretation is unlikely given that female faculty tend to use adaptive emotion regulation strategies more frequently than males. One explanation for this paradoxical finding might be that female faculty also used maladaptive strategies for downregulation of negative emotions more frequently than their male colleagues, with the detrimental effects of maladaptive downregulation of negative emotions being stronger than the beneficial effects of adaptive strategies. Another plausible explanation involves the fact that female faculty experience substantial additional challenges relative to their male counterparts. More specifically, research shows female academics to report higher work-life conflict (Catano et al., 2010; Kinman & Wray, 2013; Weinrib et al., 2013), greater effort-reward imbalance (Catano et al., 2010), less research support (Xu, 2008), lower likelihood of promotion (Winkler, 2000), more frequent harassment by students and colleagues (Cassidy, Faucher, & Jackson, 2014; Lampman, 2012; Taylor, 2012), and more family obligations than their male colleagues (i.e., housework, childcare, care for elders, Misra, Lundquist, & Templer, 2012). Accordingly, it is possible that these additional challenges may be contributing to persistently lower levels of well-being for female faculty relative to their male colleagues.

Finally, although it was hypothesized that gender would moderate the effects of emotion regulation strategies on well-being (Hypothesis 2c), this hypothesis was only partially supported. Specifically, gender significantly interacted with: a) adaptive upregulation of positive emotions and reappraisal in predicting physical health, b) suppression and maladaptive downregulation of

positive emotions in predicting faculty burnout, and c) maladaptive downregulation of negative emotions in predicting job satisfaction. These findings imply that, as anticipated, beneficial effects of adaptive upregulation of positive emotions and reappraisal were greater for women than men. Conversely, the detrimental effects of suppression and maladaptive downregulation of positive emotions on burnout, as well as the detrimental effects of maladaptive downregulation of negative emotions on job satisfaction, were greater for female faculty relative to males. However, contrary to our expectations, gender did not moderate the effects of adaptive downregulation of negative emotions on well-being. These findings are consistent with the results of a meta-analysis by Webb et al. (2012) who found that gender moderated the effectiveness of emotion regulation.

A possible reason for why female faculty demonstrated greater effects of emotion regulation may be that women assume the primary responsibility for the “psychological” management of the home (Ehrensaft, 1990) and, as partners and mothers, are primary providers of emotional support for their significant others and children in addition to their occupational responsibilities (Hochschild, 1983; Wharton & Erickson, 1993). As a result, women are typically required to perform emotion regulation more frequently, and thus are more likely to experience both the positive and negative consequences of these strategies more often than men. Another explanation may be that male faculty are likely to benefit from other supports (e.g., their partner’s performance of physical household labor, emotional caring, and higher salaries and promotion opportunities, Blix et al., 1994; Wharton & Erickson, 1993; Xu, 2008) and are thus not required to use emotion regulation as often.

Another potential explanation for this finding may be that female academics are expected to perform tasks that require emotional labor (Bellas, 1999). Specifically, women spend more time in teaching and receive extra service requests (e.g., student advising, committee work) and are

socially and culturally expected to be nurturing and caring for their students (e.g., by empathetically listening to their problems; Bellas, 1999; Larson, 2008; Winkler, 2000). This, in turn, requires substantial amounts of emotional labor that is neither acknowledged as valuable skill in their job descriptions and performance evaluations nor remunerated. Emotional labor, in turn, has been shown to be a key stressor and associated with impaired well-being (e.g., burnout, psychological distress) in post-secondary faculty (Constanti & Gibbs, 2004; Ogbonna & Harris, 2004; Pugliesi, 1999; Zhang and Zhu (2008).

Hypothesis 3: Experience, Emotion Regulation, and Well-being

With respect to the hypothesized effects of years of experience as a faculty member on emotion regulation strategy use, findings from the present study provide partial support for Hypothesis 3a. Years of experience was shown to be negatively associated with maladaptive downregulation of positive and negative emotions such that less experienced faculty more frequently engaged in maladaptive strategies to downregulate their positive and negative emotions. Adaptive upregulation of positive emotions and adaptive downregulation of negative emotions were also negatively associated with years of experience indicating that less experienced faculty also adopted these beneficial strategies more frequently than their more experienced colleagues. These findings are consistent with studies of school teachers reporting less experienced teachers to engage more frequently in adaptive emotion regulation strategies (i.e., seeking social support from supervisors and friends and doing physical exercise) than their more experienced peers (Griva & Joekes, 2003; Pascual et al., 2003).

Nonetheless, these results are not consistent with studies showing more experienced K-12 teachers to report more frequent use of adaptive emotion regulation strategies (i.e., meditation, deep breathing exercises, and cognitive reappraisal) than early career teachers (Beers, 2012;

Seidman & Zager, 1991). Unlike studies that found more experienced teachers to report more frequent use of cognitive reappraisal (e.g., Beers, 2012), years of experience was not significantly associated with cognitive reappraisal in this study. Experience was also positively associated with expressive suppression with more experienced faculty adopting suppression more frequently than their early career peers. This finding stands contrary to a study by Berry and Cassidy (2013) that found early career university lecturers to report more frequent use of suppression relative to their more senior peers.

Similarly, the present findings provide partial support for Hypothesis 3b in showing years of experience to be negatively associated with burnout as well as physical and psychological ill-health, and positively linked to job satisfaction. As anticipated, early career faculty reported lower levels of well-being relative to their more experienced colleagues. These results corroborate findings from prior studies that reported lower levels of well-being for early career school teachers (e.g., Karsenti & Collin, 2013; Martin et al., 2012; Wang & Hall, 2019) as well as post-secondary faculty (Blix et al., 1994; Gonzalez & Bernard, 2006). A possible explanation as to why more junior faculty experience poorer well-being could be challenges due to job insecurity, namely lack of tenure. This interpretation is consistent with previous studies that show pre-tenure faculty to report higher levels of stress compared to their tenured colleagues (e.g., Greene et al., 2008), with stress being a significant predictor of impaired well-being in pre-tenure faculty (Catano et al., 2010; Green et al., 2008).

As for moderating role of years of experience (Hypothesis 3c), although it was hypothesized that maladaptive emotion regulation strategies would be more detrimental for less experienced faculty members' well-being, this hypothesis was not supported. However, unanticipated findings did show maladaptive downregulation of negative emotions to differentially

impact psychological health in our faculty participants. Specifically, we found that for more experienced faculty, more frequent use of maladaptive downregulation of negative emotions was associated with poorer psychological well-being compared to those with less frequent use of this strategy.

Potential reasons for this finding may be prolonged exposure to repeated failures simply as a function of years of experience (e.g., more manuscript rejections, more unfavorable teaching evaluations) or that some stressors may become more frequent with experience. For instance, more senior faculty typically assume demanding administrative roles in addition to their teaching and research obligations that can contribute to work overload and maladaptive coping (Scheibe & Zacher, 2013).

Hypothesis 4: Stress, Emotion Regulation, and Faculty Well-being

With respect to the hypothesized effects of stress on emotion regulation strategy use, our findings provide partial empirical support for Hypothesis 4a. Contrary to our predictions, stress was not a predictor of suppression and adaptive downregulation of negative emotions. However, greater stress did predict more frequent use of adaptive upregulation of positive emotions, as well as maladaptive downregulation of positive and negative emotions, and less frequent use of cognitive reappraisal. More precisely, faculty who reported more perceived stressors reported greater use of adaptive upregulation of positive emotions, maladaptive downregulation of positive and negative emotions, but also less frequent use of cognitive reappraisal, underscoring the importance of faculty stress in adoption of emotion regulation strategies. These findings imply that a faculty member who encounters greater job stress is generally more likely to employ maladaptive emotion regulation strategies that lead to burnout, job dissatisfaction, turnover intentions, and physical and psychological ill-health. At the same time, if a faculty member can maintain adaptive

emotion regulatory behavior in face of stress, this may ultimately buffer against negative consequences of stress.

Moreover, the results of this study provide clear empirical support for Hypothesis 4b in showing occupational stress to be an important predictor of well-being in post-secondary faculty. More specifically, faculty who reported greater perceived stressors also reported poorer levels of burnout, quitting intentions, physical illness, psychological maladjustment, and job satisfaction, highlighting the critical role of stress for faculty well-being. Consistent with the job demands component of the JD-R model (Bakker & Demerouti, 2007) and previous findings with post-secondary faculty internationally (e.g., Blix et al., 1994; Catano et al., 2010; Shen et al., 2014), the present results support the assertion that Canadian post-secondary faculty are likely to experience impaired well-being as a result of higher levels of stress.

Finally, the present study contributes to research on faculty emotion regulation and well-being by exploring the moderating role of stress. In view of research suggesting stress can moderate the relationship between emotion regulation and well-being (e.g., Richardson, 2017), we hypothesized that adaptive strategies would act as protective factor against high stress whereas maladaptive strategies would impair well-being under high stress. However, the interaction between stress and adaptive strategies (i.e., reappraisal, adaptive upregulation of positive emotions, and adaptive downregulation of negative emotions) was not significantly associated with any of the well-being measures. A possible explanation for these nonsignificant interactions could be that faculty who engage in adaptive strategies are less impacted by stress due to having previously utilized these strategies to already reduce their baseline stress levels. However, as anticipated, the interaction between maladaptive downregulation of positive emotions and stress was a significant predictor of burnout. Additionally, the interaction between maladaptive

downregulation of negative emotions and stress predicted physical illness. These findings suggest that burnout and physical illness are more negatively affected by maladaptive emotion regulation at times of high stress than at times of low stress.

Limitations, Implications and Directions for Future Research

The present study has several limitations that leave ample room for future research to refine our findings. First, the cross-sectional design of the study did not allow for modeling of the relationships between emotion regulation strategies and well-being outcomes over time. Additionally, due to being correlational, it did not allow for making inferences about the causality and directionality of relationships. Future longitudinal research should explore how emotion regulation strategies change over time and how these changes impact faculty well-being. Second, faculty members were treated as a homogenous group regardless of their years of experience and tenure status, with tenured faculty being notably overrepresented (74.30%). This warrants future replications to differentiate between faculty members in terms of rank and tenure-track status (e.g., include more contingent faculty). Third, the study relied exclusively on self-report measures that may be influenced by shared method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and reporting biases (Robinson & Clore, 2002; Spector, 2006). Future research should employ more objective measures such as observations and physiological markers to assess emotion regulation (Pekrun & Bühner, 2014). Additionally, self-report measures of well-being outcomes fail to provide a precise picture of faculty well-being. To overcome personal biases and common method variance and to triangulate these results, structured interviews and objective health indicators could be used to complement our results.

Fourth, as our study assessed a limited number of emotion regulation strategies, future research could examine more strategy types to more completely integrate emotion regulation and

well-being. For instance, future researchers could use the Process Model of positive emotion regulation (Quoidbach, Mikolajczak, & Gross, 2015) to investigate how faculty attempt to upregulate (increase) their positive emotions before (e.g., positive mental time travel), during (e.g., being present), and after (e.g., capitalizing) positive academic experiences. An additional limitation is lower internal reliability for our measures of physical illness symptoms ($\alpha = .65$) and adaptive downregulation of negative emotions ($\alpha = .53$) that warrant further investigation with more reliable, larger-scale measures. Fifth, our recruitment protocols focused on research-intensive universities at which research responsibilities are prioritized and teaching loads are low relative to comprehensive or undergraduate-focused post-secondary institutions. Accordingly, our results may not be representative of faculty at other institution types (i.e., teaching, doctoral, comprehensive, metropolitan, regional, etc.). Finally, the design of the present study did not call for stratification based on racial, ethnic, and cultural attributes or sexual orientation. Future studies should take diversity into account as the experiences of marginalized groups are likely to yield different results. This would, in turn, shed light on the development of diversity/inclusivity initiatives to more effectively address the challenges faced by marginalized faculty as well as improve attitudes towards them. Despite these limitations, the present study provided an exploratory snapshot of the associations between adaptive and maladaptive emotion regulation strategies and well-being outcomes, the impact of stress on emotion regulation, as well as the moderating role of background variables that can be further investigated with longitudinal qualitative methodologies (e.g., to assess causality of relations) and supplemental measurement approaches (to supplement self-report measures).

Although this study was cross-sectional and exploratory in nature, the present findings nevertheless bear important implications for post-secondary institutions with respect to training

and better supporting the resilience in faculty. Given our findings on the role of stress in faculty adjustment, greater consideration of best practices to improve academic work environments for mitigating job-related stress is required. For instance, higher education institutions are encouraged to reduce excessive demands (e.g., teaching demands, research pressures), provide greater supports (e.g., teaching assistants, research officers), and facilitate balance between academic responsibilities (e.g., course releases for research efforts). Additionally, faculty development programs targeted at improving faculty members' psychological well-being could incorporate discussions of the prevalence and consequences of stress among faculty and offer stress management training and mental health resources (e.g., counseling services) to ensure that their faculty are equipped with stress management techniques.

The well-being and performance of post-secondary faculty is critical to both the higher education sector and society, with our findings also showing faculty members' emotion regulation strategies significantly to correlate with their well-being. Consistent with previous research, our findings indicate the benefits of cognitive reappraisal as well as detrimental effects of suppression and maladaptive emotion regulation strategies. Further, among the strategies tested, maladaptive strategies for downregulation of negative emotions were the most disadvantageous strategy for faculty in posing the greatest risk to psychological health. These findings suggest that maladaptive emotion regulation strategies may be a good target for interventions and prevention efforts, in addition to training faculty to more adaptively regulate their emotions. Specifically, faculty development programs could explore practical ways to encourage cognitive reappraisal while discouraging use of suppression and maladaptive strategies (e.g., role playing reactions to poor teaching evaluations or a manuscript rejection).

Our findings also highlight the importance of considering faculty members' use of emotion regulation strategies in the context of the extent of academic stressors they face. By implication, enhancing adaptive emotion regulation among faculty with higher levels of perceived stress may facilitate their ability to adapt more effectively to job stress and thereby reduce impaired well-being. Finally, the nonsignificant associations between well-being and adaptive emotion regulation strategies suggest that faculty development efforts should seek to identify other strategies for upregulating positive emotions (e.g., mindfulness attention; Killingsworth & Gilbert, 2010) as well as downregulation strategies for negative emotions (e.g., help/support seeking, acceptance) that are protective of faculty well-being to ensure that more effective strategies are targeted in intervention programs.

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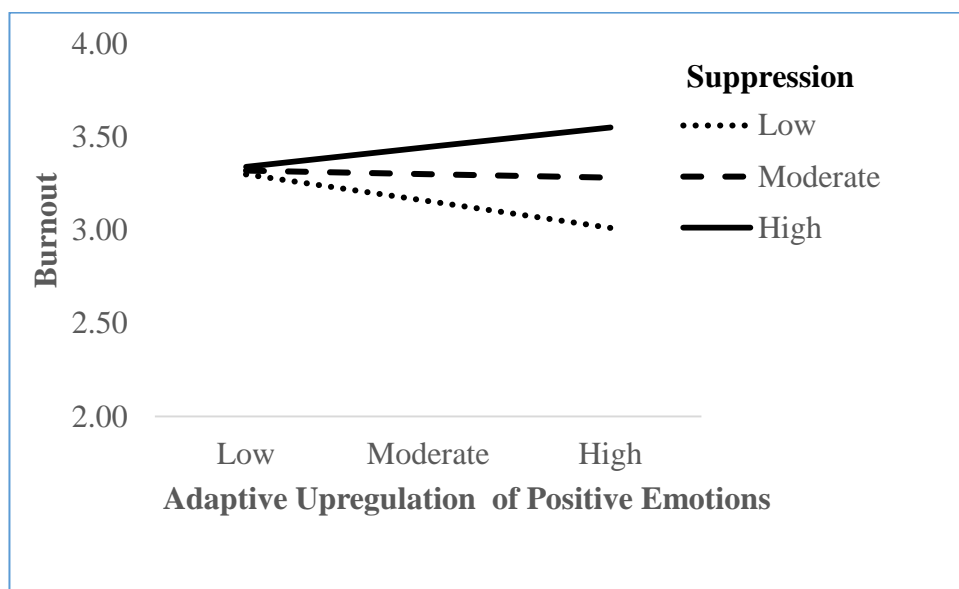


Figure 1. Adaptive upregulation of positive emotions predicting burnout as a function of suppression.

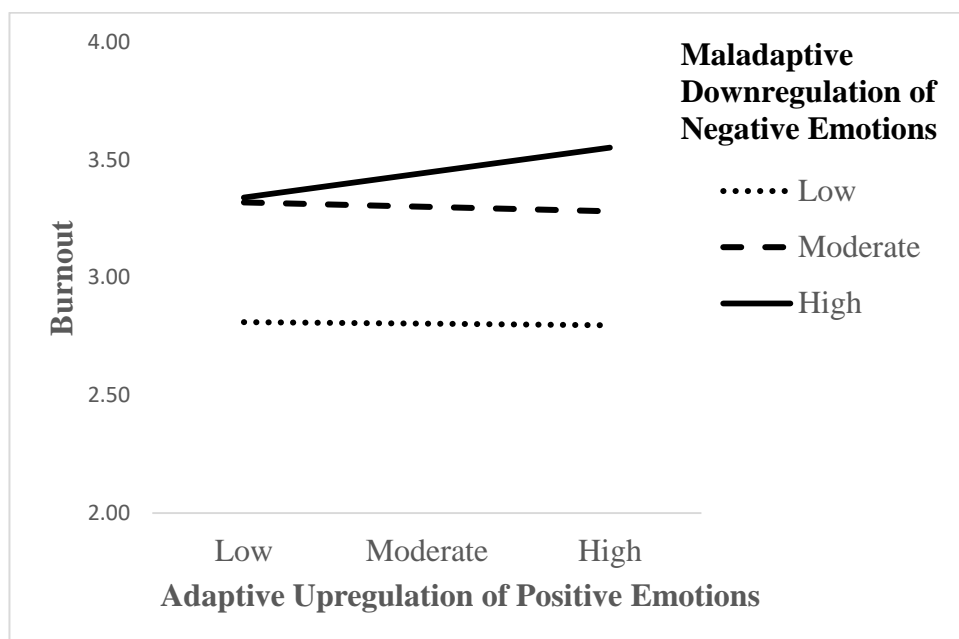


Figure 2. Adaptive upregulation of positive emotions predicting burnout as a function of maladaptive downregulation of negative emotions.

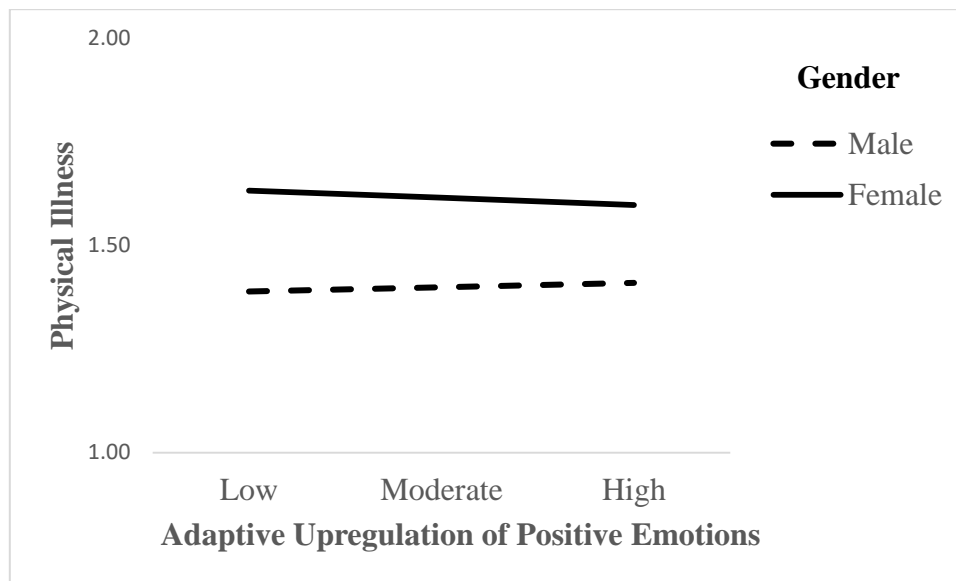


Figure 3. Adaptive upregulation of positive emotions predicting physical illness as a function of gender.

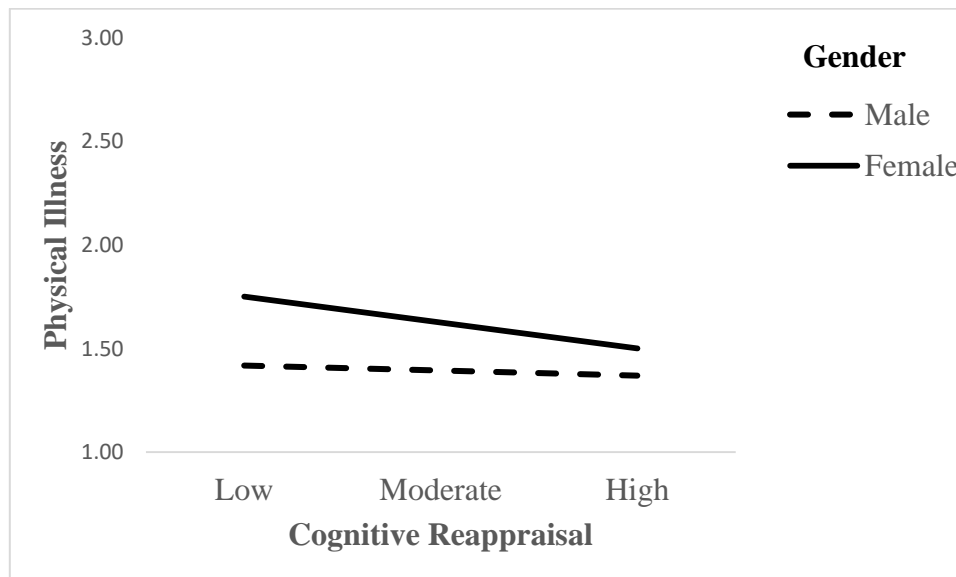


Figure 4. Cognitive reappraisal predicting physical illness as a function of gender.

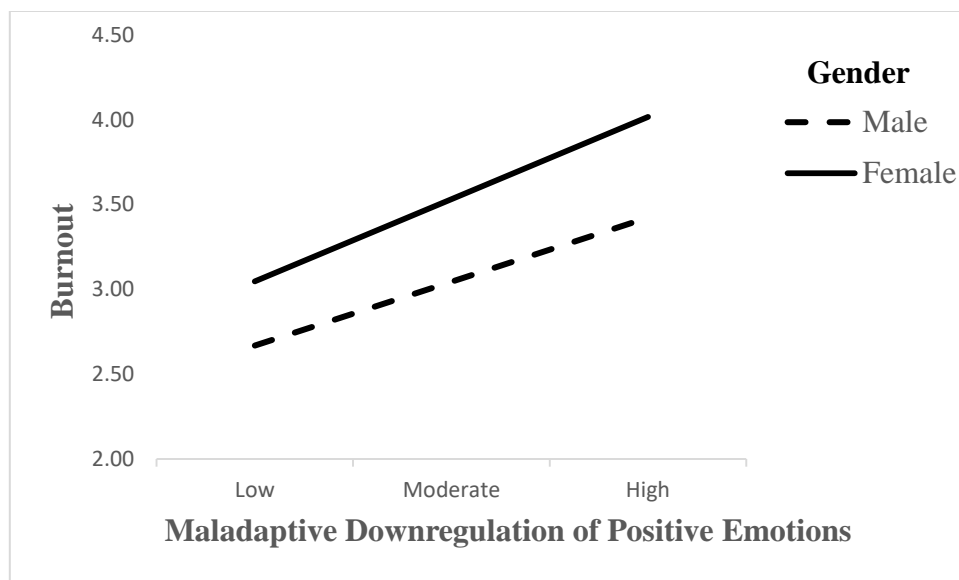


Figure 5. Maladaptive downregulation of positive emotions predicting burnout as a function of gender.

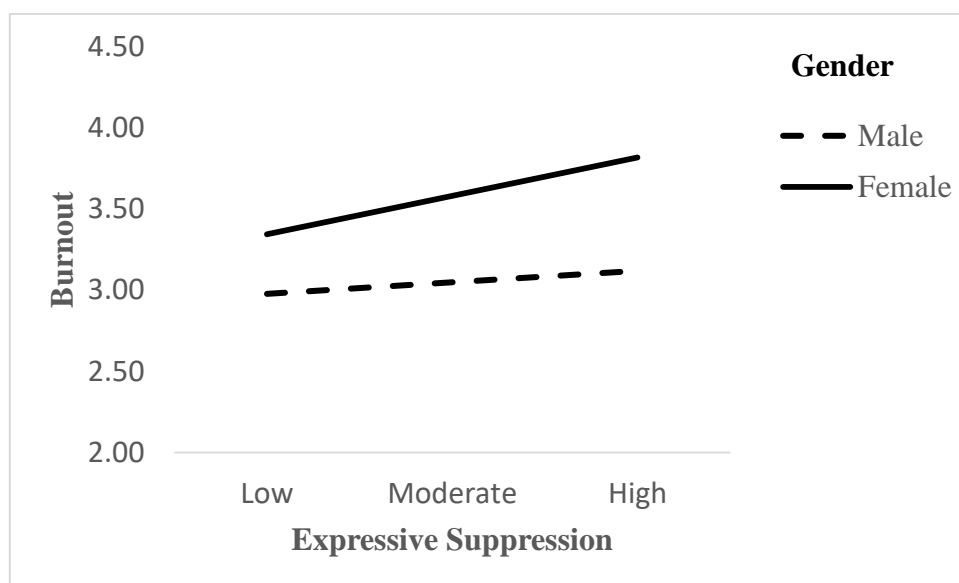


Figure 6. Expressive suppression predicting burnout as a function of gender.

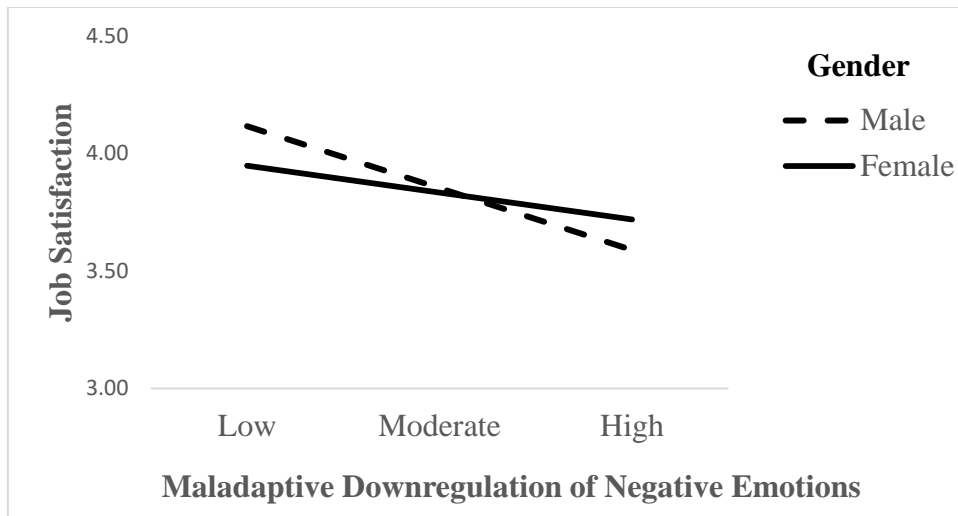


Figure 7. Maladaptive downregulation of negative emotions predicting job satisfaction as a function of gender.

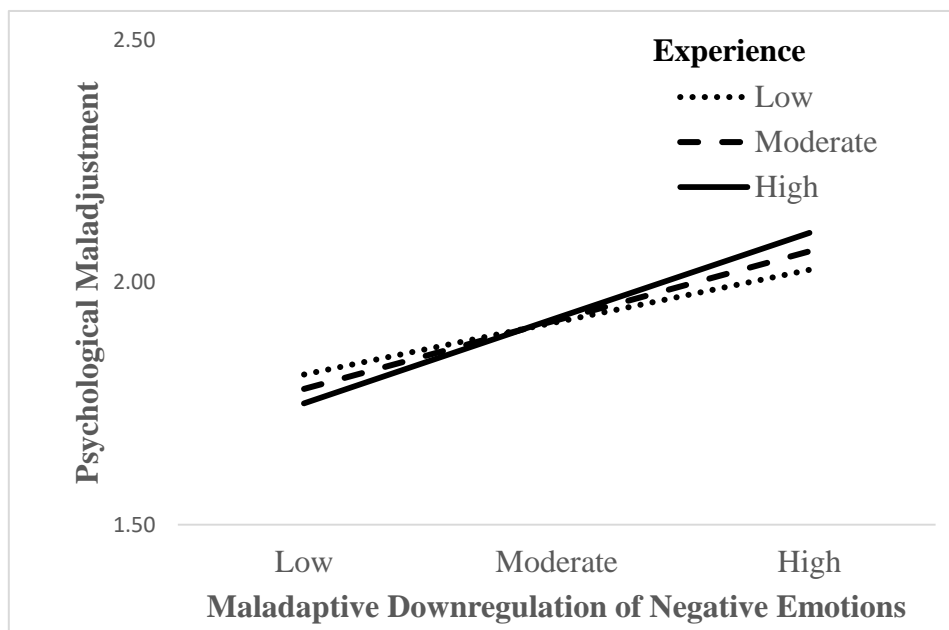


Figure 8. Maladaptive downregulation of negative emotions predicting psychological maladjustment as a function of years of experience.

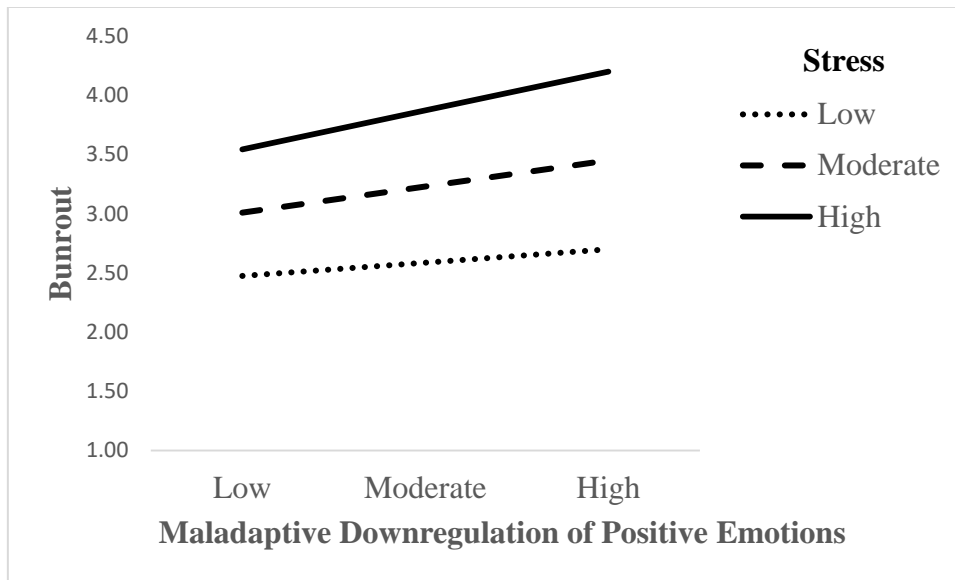


Figure 9. Maladaptive downregulation of positive emotions predicting burnout as a function of stress.

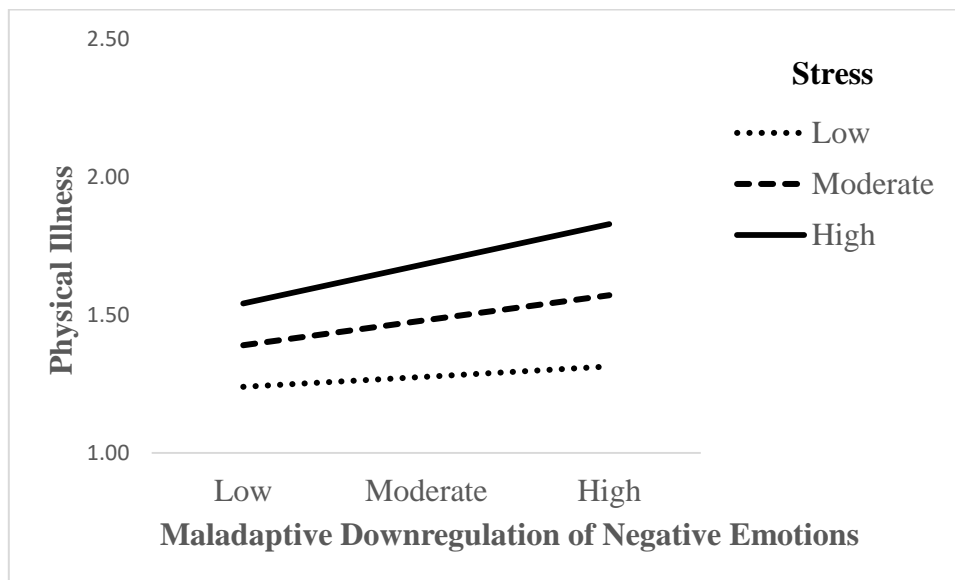


Figure 10. Maladaptive downregulation of negative emotions predicting physical illness as a function of stress.

Chapter 5

General Discussion

Research on faculty stress has emphasized the detrimental impact that job-related stress can have on post-secondary faculty members' performance and productivity as well as their physical and psychological well-being (Barkhuizen, Rothmann, & van de Vijver 2014; Catano et al., 2010; Kinman & Johnson, 2019). Despite this empirical evidence, there are no reviews of the related literature to consolidate findings and to shed a stronger light on the ways in which stress compromises psychological well-being in faculty. Empirical research has also shown that faculty experience a variety of positive and negative emotions in performing their various roles (i.e., teaching, researching, supervising, etc.; Stupnisky, Hall, & Pekrun, 2019b; Stupnisky, Pekrun, & Lichtenfeld, 2016; Trigwell, 2012). Despite this, the literature on the strategies faculty employ to deal with work-related stress and emotions is scattered; with no reviews of research conducted so far. More importantly, the scant research on faculty emotion regulation has so far focused on strategies academics employ to deal with their emotions. As such, studies investigating faculty emotion regulation have largely overlooked the impact of various emotion regulation strategies on different well-being outcomes. Hence, there is a pressing need for research to integrate emotion regulation and well-being research in post-secondary faculty and move the field forward.

The purpose of the current dissertation was to address these notable gaps in post-secondary education research by (1) comprehensively reviewing the research on the consequences of stress for psychological health of post-secondary faculty, (2) identifying the coping and emotion regulation strategies that faculty engage in, and (3) unifying the research into emotion regulation and well-being outcomes by way of large-scale quantitative analyses across disciplines. The conclusions drawn from the present dissertation add valuable insights into the prevalence and well-being consequences of different emotion regulation strategies in post-secondary faculty and

valuable information to design and implement initiatives to support faculty well-being and retention. This research also provides empirically driven suggestions for future research on this important topic and bears practical implications for postsecondary faculty and institutions on how to improve faculty productivity and well-being.

General Research Findings

In Chapter 2, as expected, findings from the review of empirical research showed job-related stress and adverse work experiences to undermine psychological health of post-secondary faculty. Specifically, the existing fragmented research suggests that stress and work experiences contribute to psychological distress, negative emotions, depression, anxiety, and burnout in faculty. The review identified the sources of academics' negative emotions to be student-related, teaching- and research-related, and institutional factors. Burnout was found to be the most prevalent adverse consequence of stress, with work overload and interactions with students emerging as the most notable predictors of faculty burnout. Further research was warranted to identify the strategies faculty engage in dealing with stress and emotions and the well-being outcomes associated with those strategies.

Therefore, a comprehensive and descriptive review of the empirical research was conducted to address the concerns raised in Chapter 2. Results of the review reported in Chapter 3 identified the adaptive and maladaptive coping, emotion regulation, and emotional labor strategies post-secondary faculty engage in to deal with stress and emotions and how these strategies influence faculty well-being. Chapter 3 classified the identified strategies into the five categories of emotion regulation strategies proposed by the process model of emotion regulation (Gross, 1998a, 1998b). The review findings, though from a limited empirical basis, showed maladaptive strategies (e.g., faking, substance and alcohol use, self-blame, and suppression) to be detrimental

for psychological, physiological, and occupational outcomes; with adaptive strategies (e.g., cognitive reappraisal, deep-acting, seeking social support) to be health beneficial. These findings highlighted the importance of examining the impact of multiple emotion regulation strategies in faculty well-being.

These findings pointed to the need for further research to expand the existing empirical findings by investigating the role of multiple emotion regulation strategies in faculty well-being. Therefore, the empirical study outlined in Chapter 4 was conducted to address the concerns raised in Chapter 3. Data from 414 faculty members from thirteen English speaking Canadian research-intensive universities were used for the empirical portion of this dissertation.

Given the critical role of emotion regulation in faculty well-being, following the process model of emotion regulation (Gross, 1998a, 1998b), Chapter 4 specifically aimed to explore the role of several emotion regulation strategies (i.e., cognitive reappraisal, expressive suppression, adaptive and maladaptive strategies for regulation of positive and negative emotions) in faculty well-being (burnout: emotional exhaustion, job satisfaction, quitting intentions, physical symptoms, psychological maladjustment). Additionally, the study sought to explore the impact of stress, gender, and years of experience on faculty well-being and emotion regulation strategy use as well as the moderating role of these background variables in the link between emotion regulation and well-being. The interactions between adaptive and maladaptive emotion regulation strategies in predicting well-being were also explored.

As with the effects of emotion regulation strategies, contrary to our expectations, adaptive upregulation of positive emotions and adaptive downregulation of negative emotions did not significantly predict any of the well-being aspects assessed. Cognitive reappraisal was the only adaptive emotion regulation strategy that significantly predicted faculty well-being. Specifically,

cognitive reappraisal predicted lower burnout, quitting intentions, and physical and psychological health issues as well as higher job satisfaction. These findings suggest that using reappraisal can help reduce incidence of burnout and promote job satisfaction and retention as well as physical and psychological health in post-secondary faculty.

Regarding maladaptive emotion regulation strategies, our findings showed suppression and maladaptive strategies for downregulation of positive emotions to predict greater psychological maladjustment and burnout, respectively. Finally, we found maladaptive strategies for downregulation of negative emotions to predict greater burnout and physical and psychological health challenges as well as lower job satisfaction. These findings suggest that using maladaptive strategies to regulate emotions could potentially lead to burnout and job dissatisfaction and impair physical and psychological well-being of post-secondary faculty. These findings are complementary to previous research findings in post-secondary faculty members and other occupational groups (e.g., Côté & Morgan, 2002; Hagenauer & Volet, 2014b; Ramsey, Knight, Knight, & Verdón, 2011; Regan et al., 2012; Quoidbach, Berry, Hansen, & Mikolajczak, 2010; Taxer & Frenzel, 2015; Tümkaya, 2007).

Interestingly, maladaptive emotion regulation strategies were found to be stronger predictors of ill-health than adaptive strategies; with maladaptive strategies for downregulation of negative emotions being the strongest predictor of well-being and with burnout and psychological ill-health being the most negatively impacted well-being aspects, respectively. This finding implies that using maladaptive responses to downregulate negative emotions could potentially lead to greater health impairment than not using adaptive strategies. Specifically, faculty who use maladaptive strategies to downregulate negative emotions may fair worse in terms of overall well-being.

As for the impact of demographic variables on faculty well-being, we found females to report higher burnout and physical illness symptoms in comparison with their male colleagues. These findings align with prior studies on gender differences in post-secondary faculty (e.g., Byrne et al., 2013; Catano et al., 2010; Ghorpade, Lackritz, & Singh, 2007, 2011; Lackritz, 2004). We also found years of experience as a faculty member to be a predictor of faculty well-being. More precisely, more experienced faculty enjoyed higher job satisfaction and suffered from lower burnout as well as physical and psychological health impairment relative to their less experienced peers. These findings mirror those of prior research (e.g., Blix, Cruise, Mitchell, & Blix, 1994; Gonzalez & Bernard, 2006).

We also found stress to predict faculty well-being across disciplines. Specifically, our results showed that faculty members who reported higher levels of stress also reported lower job satisfaction as well as higher levels of burnout, intentions to quit, and physical and psychological health issues. These findings are consistent with the job demands component of the JD-R model (Bakker & Demerouti, 2007) and complement existing research findings in post-secondary faculty (Barkhuizen et al., 2014; Biron, Brun, & Ivers, 2008; Catano et al., 2010; Kinman & Wray, 2020).

With regards to the effects of background variables on emotion regulation strategy use, our findings showed that gender did not impact use of maladaptive downregulation of positive emotions. Additionally, female faculty engaged in more frequent use of reappraisal, adaptive upregulation of positive emotions as well as adaptive and maladaptive downregulation of negative emotions relative to males. In contrast, male faculty engaged in more frequent use of suppression than their female counterparts. These findings align with previous research studies (Gross & John, 2003; Nolen-Hoeksema, 2012; Nolen-Hoeksema & Aldao, 2011; Tamres, Janicki, & Helgeson, 2002).

As for the effects of years of service on strategy use, our findings revealed that years of experience did not predict use of cognitive reappraisal. Additionally, we found that more experienced faculty engaged in more frequent use of expressive suppression and less frequent use of adaptive upregulation of positive emotions, adaptive downregulation of negative emotions as well as maladaptive downregulation of positive and negative emotions in comparison with their less experienced peers.

With regards to the impact of stress on emotion regulation strategy use, our findings suggest that stress did not significantly predict use of adaptive downregulation of negative emotions and expression suppression. Nonetheless, we found stress to predict less frequent use of cognitive reappraisal and more frequent use of adaptive upregulation of positive emotions as well as maladaptive downregulation of positive and negative emotions.

As for the interactive relationships between emotion regulation strategies, unlike Aldao and Nolen-Hoeksema (2012) who reported that maladaptive strategies did not interfere with the beneficial impact of adaptive strategies on psychopathology symptoms, our findings suggest that maladaptive strategies moderated the association between adaptive strategies and well-being. Specifically, we found that maladaptive downregulation of negative emotions and expressive suppression interfered with the impact of adaptive upregulation of positive emotions on faculty burnout. In other words, faculty who employed these maladaptive strategies more frequently and adaptive upregulation of positive emotions less frequently suffered from greater burnout. These findings are consistent with a study by Joormann and D'Avanzato (2010) who found that rumination interferes with the ability to switch attention away from negative stimuli by narrowing attentional focus.

Concerning the moderating role of gender, consistent with Webb, Miles, and Sheeran (2012) who found that gender interacted with emotion regulation strategies in predicting well-being, our results showed that gender moderated the effectiveness of both adaptive and maladaptive strategies in predicting faculty well-being. More precisely, we found that gender interacted with: a) adaptive strategies for upregulation of positive emotions and cognitive reappraisal in predicting physical health, b) maladaptive strategies for downregulation of negative emotions in predicting job satisfaction, and c) maladaptive strategies for downregulation of positive emotions and expressive suppression in predicting faculty burnout. Specifically, our findings imply that the beneficial effects of adaptive strategies were greater for women than men and the detrimental effects of maladaptive strategies were higher for female faculty as compared with their male colleagues.

Regarding the interactive effect of years of service, the present study showed that experience interacted with maladaptive downregulation of negative emotions in predicting psychological health. More accurately, we found that the more experienced faculty who more frequently engaged in maladaptive downregulation of negative emotions were at a greater risk of psychological health issues than their less experienced counterparts.

Finally, the findings from the current study revealed that stress moderated the effects of maladaptive strategies for downregulation of positive emotions on burnout as well as the impact of maladaptive downregulation of negative emotions on physical well-being. More exactly, the harmful effects of these maladaptive strategies on burnout and physical health were greater among faculty with higher levels of stress.

As a whole, the current dissertation underscores the critical role of emotion regulation in faculty well-being across disciplines. Chapter 2 provided a holistic picture of the consequences of

work-related stress and experiences for psychological well-being of post-secondary faculty. Specifically, Chapter 2 highlighted that stress undermines faculty members' psychological health by making them vulnerable to psychological distress, negative emotions, depression, anxiety, and burnout. Chapter 3 provided a descriptive and comprehensive review of the strategies academics employ in dealing with work stress and emotions and further investigated the effectiveness and adaptiveness of emotion regulation strategies for faculty well-being. The conclusions drawn from Chapters 2 and 3 were used to inform the study design and hypotheses presented in Chapter 4. The findings presented in Chapter 4 empirically supported the relationships between emotion regulation strategies, stress, and well-being reported in previous research studies.

In sum, the findings gleaned from the present dissertation contribute to the post-secondary education literature by creating a comprehensive review of the consequences of stress for psychological well-being, identifying the coping, emotion regulation, and emotional labor strategies faculty employ, and providing empirical evidence of the impact of different emotion regulation strategies on well-being outcomes as well as identifying the underexplored moderating role of demographic variables and stress in the relationship between emotion regulation strategies and well-being outcomes.

Implications and Directions for Future Research

Findings from the present dissertation bear particular practical implications for faculty members themselves as well as higher education administrators, discussed in more detail below. First, Chapter 2 presented a comprehensive review of the ways in which work stress and experiences compromise psychological health in post-secondary faculty. Post-secondary faculty are well-advised to become informed of the demands of the academic profession as well as the empirically supported ways in which stress and work experiences undermine their psychological

well-being, and more importantly, seek out resources to effectively cope with stress. University administrators are also encouraged to take active steps in implementing changes to academic work environments to address the issue of job demands and to take proactive measures by developing and implementing interventions to equip faculty members with adaptive coping strategies to tackle stress and thereby support psychological adjustment and reduce instances of faculty burnout and attrition.

Second, findings presented in Chapter 3 entail important implications for faculty members as well as higher education institutions. Faculty members are recommended to raise their awareness of the emotional demands of the academic profession as well as the consequences of emotion regulation strategies for well-being. Indeed, if faculty members are informed of the well-being effects of coping and emotion regulation strategies, they might be more inclined to invoke their resources to more adaptively deal with stress and emotions to prevent damages to their well-being. Stakeholders in professional development in higher education (i.e., university administrators, policy makers, and faculty development programs) should also provide faculty members with insight into the significance of coping and emotion regulation for well-being and take initiatives in developing and implementing interventions to equip faculty with effective coping and emotion regulation strategies to adaptively deal with the emotional challenges of their profession. Based on the findings presented in Chapter 3, post-secondary faculty are encouraged to use cognitive reappraisal, deep-acting, and seeking social support rather than faking, alcohol and substance use, self-blame, and suppression.

The findings outlined in Chapter 4 provide important information for post-secondary faculty and administrators (e.g., department chairs, deans, directors) as to the well-being effects of the assessed emotion regulation strategies and stress. Despite previously reported beneficial effects

of upregulation of positive and downregulation of negative emotions (e.g., Larsen & Prizmic, 2004, Shiota, 2006; Quoidbach et al., 2010; Quoidbach, Mikolajczak, & Gross, 2015; Tugade & Fredrickson, 2007), engaging in these strategies was not a significant predictor of any of the well-being outcomes in post-secondary faculty. This finding implies that a different group of upregulation and downregulation strategies might be required for faculty members. Chapter 4 also highlights the beneficial impact of cognitive reappraisal for faculty well-being as it was significantly associated with all aspects of well-being. One clear implication of this findings is that faculty members would benefit from employing this strategy in regulating their emotions.

As for maladaptive emotion regulation strategies, use of suppression and maladaptive strategies for downregulation of positive and negative emotions were found to be detrimental for faculty well-being. Specifically, maladaptive downregulation of negative emotions were significantly related to burnout, job satisfaction, as well as physical and psychological health. Also, maladaptive strategies for downregulation of positive emotions were significantly linked to burnout and suppression was significantly associated with psychological ill-health.

The findings highlighted in Chapter 4 provide important implications for faculty and academic administrators. These findings could be used to inform post-secondary faculty of the importance and well-being consequences of emotion regulation strategies. The findings could also be used to inform higher education administrators and mental health professionals in the design and implementation of interventions aimed at promoting faculty emotion regulation and maintaining their well-being. One clear implication of the findings from Chapter 4 is that faculty members would benefit from using cognitive reappraisal and avoiding the use of suppression as well as maladaptive strategies for downregulating positive and negative emotions. It is thus

suggested that programs aimed at promoting faculty well-being would be well-served to integrate cognitive reappraisal in their curriculum.

I intend to design faculty development seminars in order to develop specifically targeted emotion regulation interventions that focus on raising academics' awareness of the significance of one's emotion regulation strategies and their association with well-being, as well as to equip academics with effective strategies that can tackle stress and circumvent the detrimental consequences associated with stress and negative emotions. More accurately, I intend for the findings of this study to contribute in a meaningful fashion to faculty development and retention.

The overall dissertation findings provide some valuable recommendations for future research in the field of faculty emotion regulation and well-being. First, future studies could contribute to faculty well-being research in relation to emotion regulation by including a broader range of well-being indicators. For instance, drawing on the model proposed by Horn, Taris, Schaufeli, and Schreurs (2004), researchers could investigate the specific indicators of five dimensions of occupational well-being: affective (affect, emotional exhaustion, job satisfaction, and organizational commitment), professional (autonomy, aspiration, and professional competence; concepts which tap job-related motivation, ambition, self-efficacy, and achievement), social (depersonalization and efficient functioning in one's social relations in the workplace), cognitive (cognitive functioning), and psychosomatic (symptoms such as headache and back pain). The current dissertation focused on a limited set of indicators of faculty well-being. It is anticipated that targeting additional facets of well-being future research could yield a well-rounded perspective on the effects of emotion regulation on faculty well-being. For instance, the quality of interpersonal interactions is a worthy outcome to investigate. Specifically, future research can

explore the impact of emotion regulation strategies faculty adopt on their interactions with students as well as their peers.

Second, as the current dissertation investigated a relatively small number of emotion regulation strategies, future studies are encouraged to target a broader selection of strategies. Given the established effectiveness of upregulation of positive emotions (Fredrickson, 2000; Fredrickson, 2013; Quoidbach et al., 2015; Tugade & Fredrickson, 2007) and the under-researched nature of the topic among faculty populations, a novel direction for research would be to investigate the effects of other upregulatory strategies on faculty well-being. Such research would be suited to the Process Model of positive emotion regulation (Quoidbach et al., 2015), given its inclusion of the five families of strategies suggested by the process model of emotion regulation (Gross 1989a, 1989b). Alternatively, given the evidence that emotion regulation can be developed and improved (e.g., Goldin, McRae, Ramel, & Gross, 2008; Linehan, 2015), one valuable direction for future research would be to evaluate the efficacy of emotion regulation training interventions for faculty poor at emotion regulation. Arguably, early career faculty members who have made an important transition into the field would be viable candidates for such programs as the early years have been shown to be highly stressful and emotion-laden (e.g., Austin, 2010; Catano et al., 2020; Stupnisky, Hall, & Pekrun, 2019a).

Third, all existing studies on faculty emotion regulation, including the current dissertation study, are cross-sectional relying mainly on self-report measures of emotion regulation. The present research methodologies do not allow for assessment of change over time. Accordingly, longitudinal studies are warranted to enable researchers to make causal inferences and explore how particular emotion regulation strategies evolve over time and how these changes shape faculty well-being. For instance, future studies are encouraged to record the emotion regulation strategies

and well-being of tenure-track faculty members over time as they progress through their pre-tenure years. This would allow higher education administrators to identify faculty who are less adept at coping and emotion regulation and at risk of psychological health challenges and develop critical resources to equip these academics with healthy strategies, promote their resilience and adjustment, and enable them to thrive in their occupation.

As for self-report measures of faculty emotion regulation, they may reflect perceptions of the individual rather than reflecting the reality. Therefore, supplemental measurement approaches that objectively assess (e.g., observations, physiological metrics; Cole, Martin, & Dennis, 2004) emotion regulation are warranted to complement the existing research findings. For instance, future researchers are encouraged to collect video-recordings of teaching faculty members' behaviors in authentic classroom situations to assess emotion regulation skills and identify the particular strategies academics employ for classroom events and, more importantly, for challenging interactions. Additionally, in view of evidence regarding effectiveness of video supported reflection on teacher development (e.g., Rich, & Hannafin, 2009; Tripp & Rich, 2012), video observations could be further used to give faculty feedback, enable them to reflect on and analyze their regulatory behaviors, and empower them to take greater control of their emotions.

A fourth recommendation pertinent to future research involves employment type, academic institution type and location. Research evidence suggests disparities in faculty physical and psychological health as a function of rank (i.e., non-tenure-track vs. tenure-track; Hall, 2019). Accordingly, one valuable area for future research would be to investigate the influence of employment type (e.g., adjunct vs. tenure-track) on the association between emotion regulation strategies and well-being outcomes. Future researchers are also encouraged to explore how post-secondary institution type (i.e., public, private, teaching, doctoral, comprehensive, metropolitan,

regional, etc.; Stupnisky, Hall, Daniels, & Mensah, 2017) impacts the associations between emotion regulation strategies and well-being. This would also enable researchers to investigate the links between emotion regulation strategies and well-being outcomes as a function of different academic tasks (i.e., teaching, research, supervision, service responsibilities). Future research could also benefit from studies of post-secondary faculty in other countries (e.g., European, Asian, South American Universities, etc.). Indeed, multi-sample international studies of post-secondary faculty are required to ascertain the generalizability of the present dissertation study findings across countries and to provide deeper insight into the effects of emotion regulation strategies on faculty well-being.

It is anticipated that, following the recommendations outlined above, future research efforts aimed at integrating emotion regulation and well-being research can lead to outlining best practices to promote emotion regulation and well-being in post-secondary faculty.

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Appendix A

Questionnaire

Demographic Information

1. What is your gender?
(0) Other , (1) Male, (2) Female
If selected “other” for Gender1, please specify.
I identify myself as...
2. What is your age in years?
(1) 18-25
(2) 26-30
(3) 31-35
(4) 36-40
(5) 41-45
(6) 46-50
(7) 51-55
(8) 56 or older
3. How many years of experience do you have in your current position?
4. How many years of experience do you have as a faculty member?
5. What is your discipline?
6. What is your tenure-status?
(1) Non-tenure-track position
(2) Tenure-track position
(3) Tenured
7. What is your rank?
(0) Other
(1) Assistant professor
(2) Associate professor
(3) Professor
If selected “other” for Rank1, please specify.

Emotion Regulation

Short and revised form of: Nelis, D., Quoidbach, J., Hansenne, M., & Mikolajczak, M. (2011). Measuring individual differences in emotion regulation: The emotion regulation profile-revised (ERP-R). *Psychologica Belgica*, 51(1), 49-91.

The following scenarios capture emotional situations that faculty members typically encounter in their daily professional lives. Please indicate how you typically react in such situations. Please note that there are no right or wrong answers. We are simply interested in how you typically react to emotional situations in your day-to-day work life.

Response format:

1 (Never), 2 (Very rarely), 3 (Rarely), 4 (Sometimes), 5 (Frequently), 6 (Very frequently), 7 (Always).

1. You have invested a substantial amount of time on a paper before submitting it to a journal. For personal reasons (e.g., upcoming grant or tenure application), it is particularly important for you that this paper gets accepted. However, after six months of waiting, you get an email informing you that your paper has been rejected. The reviewers make a couple of valid points but you are nonetheless very disappointed with this decision.
 - a. You address the reviewers' points as best as you can and try to respectfully appeal the rejection decision to the journal editor.
 - b. You try to distract yourself by doing something else (e.g., go to see a movie, work on something unrelated).
 - c. You focus on the silver lining: the reviews will improve your next submission.
 - d. You call a close friend or talk with a few colleagues to share your experience.
 - e. You ask the editor to reconsider the decision by explaining, for example, how much you need this paper to be published.
 - f. You ruminate about the decision and have a hard time letting it go in the days that follow.
 - g. You blame yourself and/or start to question whether or not you have what it takes to be successful in academia.
 - h. You consume alcohol or medication, or other substances to stop thinking about it.
2. You have applied for a research grant. You are waiting for the results even though you are not very optimistic. You receive an email while in your office indicating that you have been granted most of the funding requested and you are happy about the news.
 - a. You decide to take the rest of the day off and treat yourself (e.g., coffee, meal, champagne) to celebrate this positive news.
 - b. You try to enjoy the moment and put everything else out of your mind.
 - c. Over the following days you think back on the hours spent on the application: the quality of your ideas and hard work paid off!
 - d. Over the following days you excitedly share the good news with friends and colleagues.

- e. Although you are happy with this accomplishment, your current preoccupations (e.g., job-related concerns) prevent you from fully enjoying it as you need to resume working.
 - f. You are happy you got the grant, but can't help noticing that although others were awarded their full requested amount, you were not.
 - g. Even though others are congratulating you for your hard work, you can't help thinking that you probably got just lucky and remember the times you were not successful.
 - h. You try to downplay your excitement in front of colleagues to not look overly proud or risk others becoming jealous.
3. You are teaching a course for the first time and have posted the mid-term grades. The students complain that they did poorly because the exam was too hard and your explanations were confusing. This feedback is concerning as course evaluations will be completed by the students in the coming days and poor ratings could negatively impact your career.
- a. You explain to the students that, as explained in the course syllabus, the exam required a deeper understanding and application of knowledge rather than basic recall. You also offer to extend your office hours to prepare students in case a make-up exam is required.
 - b. You review previous positive course evaluations to help yourself relax.
 - c. You try to see the positive side of the situation. Poor course evaluations can be informative and provide meaningful opportunities for teaching improvements.
 - d. You confide in your colleagues, telling them of your thoughts and seeking support and/or advice.
 - e. You increase scores for all students on the mid-term exam on the hopes of less negative evaluations.
 - f. You spend several hours or days thinking about possible negative evaluations, and begin to feel overwhelmed by anxiety.
 - g. You blame yourself for teaching poorly and question your ability to deliver lectures, connect with your students, or convey teaching competence to your department.
 - h. On the days leading up to the end of the semester evaluations, you consume alcohol, medication, or other substances more than usual to help reduce your anxiety.
4. You have just finished an important but particularly tedious task that you have been putting off for months (e.g., submitting an annual report, writing a book chapter). You now feel relieved and satisfied with your accomplishment.
- a. You decide to reward yourself for your hard work (e.g., nice coffee, special meal, celebratory drink...).
 - b. You savor the moment: you sit back, relax, and contemplate the work you have done.
 - c. You think back on the hours spent doing this tedious task and remind yourself that practice and perseverance do pay off.
 - d. You tell your colleagues how relieved you feel for completing this boring task.
 - e. You don't give yourself any time off or rest and you undertake another uncompleted task right away.

- f. You're satisfied with having finished the task but can't help noticing negative aspects about it (e.g., typos, omissions, etc.) that could make you look unprofessional.
- g. You think back on how you handled the task and focus on having better time management on your next task.
- h. You are satisfied with yourself but for various reasons (e.g., not embarrassing yourself, modesty, etc.) you do not fully express your emotions or openly celebrate your achievement.

Emotion Regulation

Emotion Regulation Questionnaire (ERQ)

Found in: Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348-362.

The questions below assess how you regulate and manage your emotions in your day-to-day professional life. Please note that although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale.

Response Format:

1 (Strongly disagree), 2 (Mostly disagree), 3 (Slightly disagree), 4 (Undecided), 5 (Slightly agree), 6 (Mostly agree), 7 (Strongly agree).

1. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.
2. I keep my emotions to myself.
3. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.
4. When I am feeling positive emotions, I am careful not to express them.
5. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
6. I control my emotions by not expressing them.
7. When I want to feel more positive emotion, I change the way I'm thinking about the situation.
8. I control my emotions by changing the way I think about the situation I'm in.
9. When I am feeling negative emotions, I make sure not to express them.
10. When I want to feel less negative emotion, I change the way I'm thinking about the situation.

Perceived Stressors

Short form of: Job demands subscale of Health and Safety Executive (HSE) Management Standards (MS) Indicator Tool

Found in: Edwards, J.A., Webster, S., van Laar, D. & Easton, S. (2008). Psychometric analysis of the UK Health and Safety Executive's management standards work-related stress indicator tool. *Work & Stress*, 22(2), 96–107.

The questions in this section ask you about your feelings and thoughts during the last month. Please indicate how often you felt or thought in a certain way for each case.

Response Format:

1 (Never), 2 (Seldom), 3 (Sometimes), 4 (Often), 5 (Always).

1. I am pressured to work long hours.
2. I have unachievable deadlines.
3. I have to work very fast.
4. I have to work very intensively.
5. I have to neglect some tasks because I have too much to do.
6. Different groups at work demand different things from me that are hard to combine.
7. I am unable to take sufficient breaks.
8. I have unrealistic time pressures.

Emotional Exhaustion

The emotional exhaustion subscale of Maslach Burnout Inventory Human Services (MBI-HSS, Maslach & Jackson, 1996).

Found in: Maslach, C., & Jackson, S. E. (1996). Maslach Burnout Inventory-Human Services Survey (MBI-HSS). In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *MBI Manual*. (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Please read each statement carefully and decide whether you ever feel this way about your job in your current faculty position. If you have never had this feeling or attitude, please select "Never". If you have had this feeling, please indicate how often you feel that way using the scale provided.

Response Format:

1 (Never), 2 (A few times a year or less), 3 (Once a month or less), 4 (A few times a month), 5 (Once a week), 6 (A few times a week), 7 (Everyday).

1. I feel emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel fatigued when I get up in the morning and have to face another day at work.
4. Working with people (e.g., students, colleagues, and administrative staff) all day is really a strain for me.
5. I feel burned out from my work.
6. I feel frustrated by my job.
7. I feel I am working too hard on my job.
8. Working with people (e.g., students, colleagues, and administrative staff) directly puts too much stress on me.

9. I feel like I am at the end of my rope.

Job Satisfaction

Found in: Moe, A., Pazzaglia, F., & Ronconi, L. (2010). When being able is not enough. The combined value of positive affect and self-efficacy for job satisfaction in teaching. *Teaching and Teacher Education*, 26, 1145–1153.

Please indicate to what extent you agree or disagree with the following statements regarding your current faculty position in this academic year.

Response Format:

1 (Strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), 5 (Strongly agree).

1. In most ways my job is close to ideal.
2. The conditions of my job are excellent.
3. I am satisfied with my job.
4. So far, I have got the important things I want in my job.
5. If I could live my life over, I would not change the choices I made in my life.

Quitting Intentions

Mobley, W.H., Horner, S.O., & Hollingsworth, A.T. (1978). An evaluation of precursors of hospital employee turnover. *Journal of Applied Psychology*, 63(4), 408 - 414.

The few items below assess your intentions to quit your current faculty position. Please read each statement carefully and choose the response that best represents your attitude.

Response Format:

1 (Never), 2 (Seldom), 3 (Sometimes), 4 (Often), 5 (Constantly).

1. I think about quitting my faculty position.
2. I intend to quit my faculty position.
3. I intend to move into another profession/occupation.

Psychological Well-Being

Goldberg, D., & Williams, P. (1988). *A user's guide to the General Health Questionnaire*. Windsor, UK: NFER-Nelson.

The next few items concern your psychological well-being. Please read each statement carefully. If you have never had this experience, please select "Never". If you have experienced it, please select a response that best describes how frequently you feel that way.

Response Format:

1 (Not at all), 2 (No more than usual), 3 (Rather more than usual), 4 (Much more than usual).

1. Have you recently lost much sleep over worry?
2. Have you recently felt constantly under strain?
3. Have you recently felt you couldn't overcome your difficulties?
4. Have you recently been feeling unhappy and depressed?
5. Have you recently been losing confidence in yourself?
6. Have you recently been thinking of yourself as a worthless person?

Psychological Well-Being Continued

Response Format:

(1) More so than usual, (2) Same as usual, (3) Less than usual, (4) Much less than usual.

1. Have you recently been able to enjoy your normal day-to-day activities?
2. Have you recently been able to face up to your problems?
3. Have you recently been feeling reasonable happy, all things considered?
4. Have you recently been able to concentrate on whatever you are doing?
5. Have you recently felt that you are playing useful part in things?
6. Have you recently felt capable of making decisions about things?

Physical Well-Being

Adapted from: Cohen, S., & Hoberman, H. M. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology*, 13, 99-125.

The next few items concern your physical well-being during the last week. Please read each statement carefully and indicate how often you experience each symptom using the scale provided.

Response Format:

1 (Not at all), 2 (About once), 3 (About twice), 4 (About four times), 5 (Five or more times).

During the last week, how much were you bothered by...

1. Sleep problems?
2. Headaches?
3. Muscle tension?
4. Stomach pain (e.g., cramps)?
5. Heart pounding or racing?
6. Poor appetite?

Appendix B

Ethics Approval



Research Ethics Board Office
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Research Ethics Board II Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 456-0416

Project Title: Investigating the Impact of Emotion Regulation strategies on Stress and well-being among Faculty Members

Principal Investigator: Raheleh Salimzadeh

Status: Pd.D. Student

Department: Educational & Counselling Psychology

Supervisor: Prof. Alenoush Saroyan

Approval Period: April 21, 2016 to April 20, 2017

The REB-II reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

Deanna Collin
Ethics Review Administrator, REB I & II

* All research involving human participants requires review on at least an annual basis. A Request for Renewal form should be submitted 2-3 weeks before the above expiry date. Research cannot be conducted without a current ethics approval.

* When a project has been completed or terminated, a Study Closure form must be submitted.

* Unanticipated issues that may increase the risk level to participants or that may have other ethical implications must be promptly reported to the REB. Serious adverse events experienced by a participant in conjunction with the research must be reported to the REB without delay.

* Modifications must be reviewed and approved by the REB before they can be implemented.

* The REB must be promptly notified of any new information that may affect the welfare or consent of participants.

* The REB must be notified of any suspension or cancellation imposed by a funding agency or regulatory body that is related to this project.

* The REB must be notified of any findings that may have ethical implications or may affect the decision of the REB.