

INCONSISTENCIES IN ENTREPRENEURS' HEALTH AND WELL-BEING RESEARCH: A REVIEW

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ABSTRACT

The contradictory results of whether self-employed individuals and entrepreneurs suffer from better or worse health outcomes and the lack of a consistent definition of health and well-being variables motivated this literature review. Some of the inconsistencies include the definition of health and well-being and the extrapolation of findings for self-employed or entrepreneurs. Self-employed, entrepreneurs, founders, business managers and business owners are categories sometimes used interchangeably in the literature. Researchers use self-employed as a proxy for entrepreneurs. In this paper, we separate studies based on the sample, and discuss the limitations of generalizability. We provide a state of the research and examine the studied interactions between self-employed individuals and variables related to their physical and mental health. In our literature search we found 28 articles related to the health and well-being of the self-employed or entrepreneurs. The results of these studies indicate there is confusion regarding the causes and definition of stress, poor health, and well-being. Research regarding the occupational health and well-being of the self-employed is critical to understanding their success and failure. We present various future research avenues and questions.

Keywords: Entrepreneurs, physical health, mental health, well-being, self-employed

INTRODUCTION

The self-employed are underrepresented in occupational health research (Schonfeld & Mazzola, 2015). Thus far, there exists conflicting results on whether self-employed individuals suffer from better or worse health outcomes than their organizational-employed counterparts. Important distinctions identified by research are related to whether there are differences between the self-employed and wage earners or business managers as well as comparing the different types of self-employed (i.e. independent contractors and founders). The context in which self-employed individuals work can be viewed as one that elicits more extreme experiences with stress, well-being, and work addiction than the workers in an organizational context, and self-employed individuals are at a higher risk for negative health outcomes. Conducting research with the self-employed can uncover ways to mitigate negative health outcomes for entrepreneurs.

Self-employed, entrepreneurs, founders, business managers, and business owners are categories sometimes used interchangeably in the literature. Researchers often use self-employed as a proxy for entrepreneurs. In this paper, we separate studies based on the sample, and discuss the limitations of generalizability. Self-employed business owners face several stressors that are not experienced by employees. For example, a self-employed individual does not have access to organizational health benefits, faces more overall uncertainty (financially and otherwise) and often has a higher responsibility load, especially if they employ workers. They do, however, also

experience more autonomy/control, freedom, and a large body of literature reports them as having higher job satisfaction than employees despite working longer hours and facing higher levels of stress. Cardon and Patel (2015) provide a great discussion of the relationship between stress and negative health outcomes.

Given the contradictory results as well as the inconsistent application of health and well-being variables, a comprehensive review of the literature is needed. As such, we provide a state of the research and examine the interactions between self-employed individuals and variables related to their physical and mental health. We also review the theoretical foundations and contributions of the studies included in the sample. Additionally, directions for future research and specific research questions finalize the paper. The research in this area is very nuanced and differs with how health is defined and measured; who is considered an entrepreneur; and what management roles for the self-employed affect health. As such, a review of the existing body of work is necessary to highlight the theoretical and empirical literature gaps and to propose areas for future research. The arguments for whether entrepreneurship and self-employment are better (or worse) in terms of health outcomes are not consistent and findings seem contradictory. There seems to be a tipping point where the negative impacts of entrepreneurship (e.g. role conflict) overtake the positive impacts of entrepreneurship (e.g. autonomy). Evidence has also been found to conclude that improving entrepreneurs' health should focus on both individual and organizational measures and that entrepreneurs' health might be an underestimated resource for entrepreneurial behavior (Vinberg, Gundersen, Nordenmark, Larsson, & Landstad, 2012). Finally, there is room for more consideration of the theoretical foundations and contributions in this stream of research.

We begin with a discussion of our methodology, including how we curated the list of studies included in this review. We include studies examining stress due to the impact on both health and well-being. We review research that examines the health/well-being outcomes of the self-employed. Additionally, we examine research that has compared health/well-being outcomes of the self-employed versus the organizationally employed (also known as wage earners or wage workers). In addition, while some self-employed work alone, others may have a small group of employees that they manage. This distinction is important because job roles differ among independent contractors, business owners and owner-managers. A discussion of coping and transition are included. Coping is a specific line of research related to stress and the health/well-being of the self-employed, therefore we include this in our review. We include transition due to the temporal effects of moving between being organizationally employed and self-employed. Finally, we present our discussion, which includes future research in occupational health and well-being for the self-employed.

METHODOLOGY

We followed a structured review procedure to identify relevant sources for this study. We used Web of Science, Google Scholar, and other library databases (ABI/INFORM Collection, Business Source Complete and ProQuest). Web of Science covers research across many disciplines where relevant studies and conference proceedings would be stored and published.

We used a variety of search and phrases terms for entrepreneurs and for health outcomes. Table 1 presents some examples of the terms and phrases used in the search.

TABLE 1
Example Search Terms and Phrases

Entrepreneurship Related	Health Related
Entrepreneur	Health
Self-Employed	Physical health
Venture owner	Mental health
Founder	General health
Business manager	Somatic health
Business owner	Psychosomatic health
Independent contractor	Well-being
Freelancer	Physical well-being
Enterprise owner	Mental well-being
Enterpriser	Depression
Businessman	Heart attack
Businesswoman	Stress

Next, by reading the title and abstract of the studies, we determined if they were relevant to the current paper. Our primary focus was to identify papers which discussed physical or mental health outcomes for entrepreneurs and the self-employed. We then read those papers thoroughly and narrowed the pool of papers again. Using the papers in the narrowed pool, we conducted references searches of the manuscripts to determine if we missed any papers in the database searches. We then used the first page of Google Scholar search results to locate which studies cited our initial pool of papers.

Many of the papers we found focused on coping strategies and mechanisms and not necessarily on health and well-being as an outcome. A few of these papers are reviewed later in the manuscript, but they are not the focus of this study. We identified 27 relevant papers for this review. We then noticed that the final collection of papers could be divided by sample. For example, some studies only investigated a pool of entrepreneurs or self-employed. Others compared entrepreneurs to business managers. Others focused on self-employed versus organizationally employed. We decided to use these distinctions as the underlying framework for organizing our review. Though most of the papers included in the review were post 2000, some of the earlier studies include relevant scales, measurements, and theory. The final decision to include papers was not made based on publication date of the article but instead focused on the content of the paper.

HEALTH AND WELL-BEING FOR ENTREPRENEURS

Most studies we found in this review did not include any definitions of health or well-being. Table 2 presents the studies of mental strain as the health outcome.

TABLE 2
Mental Strain Outcomes and Measurement

Health Outcome	Measurement	Studies
Mental Strain	Emotional exhaustion - adapted from Maslach (1982).	Tetrick, Slack, Da Silva, and Sinclair, (2000)– Self-employed business owners reported less strain than wage workers.
	Swedish Level of Living Survey	Andersson (2008) – No significant difference between self-employed and wage earners

It can be seen from Tables 2 through 6 that there is very little agreement among the various measures of health and well-being. A further discussion of the findings highlighted in the “Studies” column will be included throughout the review of the literature which follows this section. The discussion of literature is mainly organized by employment type. Tables 3a and 3b organized the studies that focused on psychosomatic/mental health. Some of the measures were self-reported, some were from state-level studies, and others used data from validated measures of health.

TABLE 3a
Psychosomatic/Mental Health Outcomes and Measurement

Health Outcome	Measurement	Studies
Psychosomatic & Mental Health	Michigan Studies of Workers’ Health	Jamal and Badawi (1995) – Self-employed reported more psychosomatic health problems.
	Psychosomatic Health -Michigan Studies of Workers’ Health; Mental Health – Kornhauser (1965)	Jamal (1997) –The self-employed reported more psychosomatic health problems.
	Goldberg’s Depression and Anxiety scale	Parslow, Jorm, Christensen, Rodgers, Strazdins, and D’Souza (2004)– Self-employment was associated with relatively few mental health benefits.
	Self-reported – Symptoms include stomach pain, anxiety, nervousness, etc.	Gunnarsson, Vingard, & Josephson (2007) – Mental health was second most frequently reported.
	Swedish Level of Living Survey	Andersson (2008) – Self-employed were more likely to state their mental health deteriorated.
	Role-related Exhaustion –Depression measured from Simpson’s (1984) personal health questionnaire.	Wincent and Otqvist (2009) – Role stress mediates the relationship between venture environment, venture technology, personality, and entrepreneur role related exhaustion.

	German National Health Survey Mental Health Supplement	Stephan and Roesler (2010) – Entrepreneurs were less likely to suffer from a mental disorder during their lifetime as compared to wage earners.
	General Health Questionnaire (Goldberg, 1972)	Gorgievski, Bakker, Schaufeli, van der Veen, and Giesen (2010) - Results indicate that self-employed who experienced financial problems were impacted by psychological distress.

TABLE 3b
Psychosomatic/Mental Health Outcomes and Measurement

Health Outcome	Measurement	Studies
Psychosomatic & Mental Health	Perceived mental status Mental Health Composite Score SF-12v2 Kessler index	Yoon and Bernell (2013) – Self-employment is not significantly different from wage work.
	Kessler 10 (K10) Screening for Psychological Distress Treatment sought for mental health	Cocker, Martin, Scott, Venn, and Sanderson (2013) – Respondents with high psychological distress reported taking more sick days than those with low/moderate levels. Owner/managers that reported receiving treatment for mental health issues reported more absenteeism and working while ill.
	Center for Epidemiological Studies Depression Scale	Rietveld, Kippersluis, and Thurik (2015) – No significant difference between the mental health of the self-employed and wage workers.
	EuroQol EQ-EL Self-Reported Health instrument – 1 mental health dimension (anxiety/depression)	Rietveld, Bailey, Hessles, and van der Zwan (2016) - Opportunity-based self-employed are overall healthier than wage workers.
	Euro-D	Patel, Reid, and Wolfe (2020) – Older self-employed individuals report lower levels of depression, up until approximately retirement age (65).

Tables 4a and 4b present the studies, outcomes, and measurements for somatic/physical health for entrepreneurs. Table 4a focuses on the studies which generally find that entrepreneurs are healthier (or at least not less healthy) than wage earners or organizationally employed and the studies that find no difference between the two groups. From the data gathering process and analysis, this was a major discrepancy in the literature. Some of the differences can be attributed to the heterogeneity of the measurement instruments. The different types of data used included national health surveys, self-reported health surveys, perception scores, and risk reporting based on behaviors.

TABLE 4a
Somatic/Physical Health Outcomes and Measurement

Health Outcome	Measurement	Studies
Somatic & Physical Health	German National Health Survey 1998; Behavioral Health – e.g. physician visits, sick days in past year	Stephan and Roesler (2010) – Entrepreneurs had lower blood pressure and somatic morbidity than wage earners.
	Health perception scores – perceived physical health status; Physical Health Composite/Short-form Version 2; Medical conditions – e.g. stroke, diabetes, asthma, etc.; Health behavior – e.g. smoking, moderate or vigorous physical activity, BMI	Yoon and Bernell (2013) – Self-employment is associated with greater level of perceived physical health status. Overall conclusion is that the self-employed do not appear to be in poorer physical health than wage earners.
	Swedish Level of Living Survey	Andersson (2008) – No significant difference between self-employed and wage earners
	Self-rated health – single item measure	Cocker, Martin, Scott, Venn, and Sanderson (2013) - The majority of self-employed reported working while ill.

The studies in Table 4a include a variety of measurement of health though they consistently report that the self-employed are at least as healthy as wage earners or organizationally-employed individuals, if not healthier. Some of the measurements are self-reported items while others include measurable health data such as BMI. Another type of measurement researchers used was reporting of the health history of the individual. Examples of this include asthma, stroke, and diabetes. One of the final types of measurement includes risk-related factors of health. Examples are smoking and level of physical activity.

There is the same heterogeneity in measurement as seen in Table 4b for the studies that find self-employed are less healthy and/or engage in more unhealthy lifestyles. An interesting finding from this group of studies is that even though the self-employed were less healthy, they did not perceive themselves to be as such. The measures include lifestyle choices such as smoking and health measures including blood pressure and cholesterol. Another type of data used in these studies are reported pain levels, fatigue, number of doctor visits, and general self-reporting of overall health. Without knowing the details of the studies, it is obvious that one of the reasons for inconsistency in the findings is the diversity of health-related measurement tools. It can also be argued that the number of doctor visits is not a valid measure of health, and that self-reported pain can vary from month to month and may represent an injury and not a chronic condition. Some of the studies can tie other information to each observation, but some of the data is aggregated and generalized.

TABLE 4b
Somatic/Physical Health Outcomes and Measurement

Health Outcome	Measurement	Studies
Somatic & Physical Health	Behavioral risks – smoking habits, BMI, work-related stress; Health measures – Physical symptoms such as blood pressure, cholesterol, fatigue Behavioral health - physician visits, disability days	Epstein and Yuchtman-Yaar (1991) - Self-employed smoked more, are more obese, and experience more work-related stress and they experience greater health risks but do not perceive a difference in their well-being.
	Medical Outcomes Study 12 item short form Health Survey; Visits to the general practitioner/doctor	Parslow, Jorm, Christensen, Rodgers, Strazdins, and D'Souza (2004) – Women entrepreneurs reported worse physical health than organizationally employed counterparts.
	Overall health – In general how would you describe your health? Musculoskeletal pain – shoulders, neck, back, hips, hands, arms, and legs in previous 3 months	Gunnarsson, Vingard, and Josephson (2007) – Musculoskeletal pain was more frequently reported. Men reported more problems than females.
	HRS Research and Development V.L dataset	Rietveld, Kippersluis, and Thurik (2015) – Self-employed are generally healthier than wage workers in both subjective and objective health outcomes.
	EuroQol EQ-5D-5L Self-Reported Health instrument	Rietveld, Bailey, Hessels, and van der Zwan (2016) – Opportunity-based self-employed are overall healthier than wage workers.
	Self-report measures – e.g. alcohol use, smoking, physical activity, weight gain Subjective Health Assessment – Would you say your health in general is excellent, very good, good, fair, or poor?	Cardon and Patel (2015) – For entrepreneurs, stress had a stronger negative effect on their personal health and income when compared to wage earners. These impacts were mitigated by positive affect.

Table 5 includes the studies with stress as the outcome. The definitions and measurements of stress are inconsistent in the literature. Stress can manifest at work and at home. It can be related to relationships, family status, or work environment. This makes it difficult to ascertain if researchers are adequately including controls in the models which would invalidate the studies' findings.

TABLE 5
Stress Outcomes and Measurement

Health Outcome	Measurement	Studies
Stress	Occupational Stress Inventory	Elmuti, Kathawala, and Wayland (1993) – Female entrepreneurs were higher on all three occupational stress factors.
	13 item scale (Parker & DeCotiis, 1983)	Jamal and Badawi (1995) – Self-employed experienced higher job stress than salaried employees.
	15 item scale (Rizzo, House, & Litzman, 1970)	Jamal (1997) – The self-employed reported higher job stress than the organizational workers.
	19 questions – e.g. decision authority, job demands and skill discretion # of hours worked per week, etc.	Parslow, Jorm, Christensen, Rodgers, Strazdins, and D'Souza (2004)– Self-employed reported more decision authority.
	Swedish Level of Living Survey	Andersson (2008) – No significant difference between self-employed and wage earners.
	Proxy for stress – blood pressure, hypertension Subjective measure – 3 item scale – Under strain, stress, or pressure during the past month/been anxious, worried, or upset/how relaxed or tense have you been in the past month	Cardon and Patel (2015) – Entrepreneurs experience higher stress than wage earners.
	Role stressors – Lechat & Torres (2012) Extent of problems related to finances, sales and administration, employees, and suppliers.	Fernet, Torres, Austin, and St-Pierre (2016) – Job stressors and occupational loneliness were positively correlated with burnout.
	Household, Income, and Labor Dynamics in Australia survey – My job is more stressful than I ever imagined, I fear that the amount of stress in my job will make me physically ill	Hessels, Rietveld, and van der Zwan (2017) – Work related stress is on average lower for the self-employed than for wage workers.

In Table 6, the studies focused on well-being (inconsistently defined) and burnout. Some of the studies focused on self-reported data while others relied on national datasets.

TABLE 6
Well-being and Burnout Outcomes and Measurement

Health Outcome	Measurement	Studies
Well-being	German National Health Survey	Stephan and Roesler (2010) – Entrepreneurs reported significantly higher well-being/life satisfaction than wage earners.
	Three items – How satisfied are you with life as a whole? How happy are you? How is your general health? Range from 1-5.	Annink, Gorgievski, and den Dulk (2016) – Results indicated that financial hardship among the self-employed impairs their overall well-being across various countries.
	2008 General Social Survey	Bulmash (2017) – Early-stage entrepreneurs report lower physiological and psychological well-being than late-stage entrepreneurs.
Burnout	Maslach Burnout Inventory (1981)	Jamal (2007) – Self-employed experienced higher overall burnout, emotional exhaustion, and lack of accomplishment than organizational workers in both Canada and Pakistan.
	French version of the Burnout Measure, Short Version	Fernet, Torres, Austin, and St-Pierre (2016) – Job stressors and occupational loneliness were positively correlated with burnout.

The following sections organize papers by the sample definition. Some papers only had a sample of the self-employed while others compared the self-employed to organizationally employed. Other papers investigated business managers (non-owners), some only business managers and a few of the papers compared different types of entrepreneurs, e.g., independent contractors, founders, owner-managers, etc.

General Self-Employed & Entrepreneurs

Gorgievski, Bakker, Schaufeli, van der Veen, and Giesen (2010) investigated the relationship between a businesses' financial situation and the level of psychological distress among a group of business owners. The three-wave longitudinal study is one of the few studies found which uses a dynamic equilibrium model. Experiencing financial problems predicted psychological distress and strengthened the intention for the owner to quit the business. The authors describe this as a self-fulfilling prophecy. Table 7 presents the literature reviewed which differentiates by self-employed or entrepreneur. The findings have been added to highlight the inconsistencies in the literature.

TABLE 7
Self-Employed or Entrepreneur Literature

Study	Stressors	Health/Well-being Measures	Findings
Annink, Gorgievski, and Dulk (2016)	Household income Access to capital	General health	Financial hardship and impaired well-being are weaker for self-employed persons in countries with a more supportive social policy.
Baron, Franklin, and Hmieleski (2016)	Psychological capital	Stress Well-being	Psychological capital was negatively related to stress, and stress, in turn, was negatively related to entrepreneurs' subjective well-being.
Blanchflower (2004)		Stress, Exhaustion, Loss of sleep, Depression, Self-Worth, Confidence	Self-employed work under high pressure, report their work stressful, and come home exhausted.
Elmuti, Kathawala, and Wayland (1993)		Role overload, Role insufficiency, Role ambiguity, Role boundary Responsibility, Physical environment, Vocational strain, Psychological strain, Interpersonal strain, Physical strain, Recreation, Self-care, Social Support, Rational cognitive coping	There are significant differences in all three categories of occupational stress for male and female entrepreneurs.
Gorgievski, Bakker, Schaufeli, van der Veen, and Giesen (2010)	Experienced financial problems Objective financial situation	Short term psychological distress, Total psychological distress, Baseline psychological distress	Experiencing financial problems predicted psychological distress and strengthened intentions to quit.
Wincent, and Örtqvist (2009)	Role stressor – role ambiguity, role overload, role conflict	Entrepreneurial exhaustion – depression	Role stress is an important mediator and has pronounced relationships to expanded conceptualizations of role-related rewards and exhaustion.

Annink, Gorgievski, and Dulk (2016) also conducted a study looking at the relationship between financial hardship and subjective well-being. This was a cross-national study (31 countries) that investigated a sample of 9,755 self-employed individuals between 2004 and 2010. Subjective well-being was measured using three indicators on a 5-point Likert scale. Using multilevel, hierarchical regressions, they found a direct relationship between financial hardship and subjective well-being, and this relationship is buffered by social trust and higher education.

In one of the first studies, we found on stress and entrepreneurs, Elmuti, Kathawala, and Wayland (1993) examined the difference between male and female entrepreneurs. They used the Occupational Stress Inventory, which categories stress into three factors. These three factors include role stress, personal strain, and personal coping resources. Results indicate that female entrepreneurs experience higher stress in all three factors than male entrepreneurs. These results include both emotional and physical distress as compared to men.

Entrepreneurs often report low levels of stress. For example, Baron, Franklin, and Hmieleski (2013) collected data from a national random sample of American business founders. The final count of usable responses was 160. Their findings indicate that entrepreneurs report relatively low levels of stress. They attribute these results to two types of selection bias. One is environmental and the other is self-selection. In yet another study related to stress and entrepreneurs, Wincent and Örtqvist (2009) sent a questionnaire to a random sample of first year Swedish entrepreneurs and received 282 completed, usable responses. They measured the entrepreneurs' role stress using a higher-order construct combining role conflict and role ambiguity. Role exhaustion was measure using two constructs with a total of seven items combining depression and the impact on home and family life. The findings suggest that role stress mediates between personality, organizational and environmental characteristics, and exhaustion.

Bulmash (2016) examined the physiological and psychological health of early and late-stage entrepreneurs. Results indicate that early state entrepreneurs report lower well-being in both categories. This is explained as being associated with the increased demands on early-stage entrepreneurs. Interestingly, financial satisfaction was found to be a significant mediator and is in part responsible for the differences between early and late-stage entrepreneurs.

The main theoretical foundations in this set of studies were role stress theory and conservation of resources theory (Baron, et al., 2016; Gorgievski et al., 2010; Wincent & Ortqvist, 2009). In an interesting application of theory Baron et al., 2016 also applied attraction selection attrition theory to their study of the effects of psychological capital on the stress experienced by entrepreneurs. Gorgievski et al., (2010) applied the equilibrium model of well-being in addition to the conservation of resources theory to explain the psychological distress of business owners.

Independent Contractors vs Business Owners

Most studies of the self-employed do not differentiate between independent contractors and those with managerial responsibility. Research comparing self-employed and organizational employees have not properly accounted for the variance in working conditions and arrangements for the self-employed (Hundley, 2001). Independent contractors have a wide range of responsibilities from bookkeeping to supply chain activities, and most employees do not have such a diverse set of work demands (Pink, 2001). Lumping independent contractors and business owners together leads researchers to draw conclusions for both groups that may not be reliable (Prottas & Thompson, 2006). Findings suggest the differences between groups are small in magnitude and can be attributed to demographics rather than heterogeneous work arrangements

(Prottas & Thompson, 2006). Table 8 organizes the studies of independent contractors and business owners.

TABLE 8
Independent Contractors vs Business Owners Literature

Study	Stressors	Health/Well-being Measures	Findings
Prottas Thompson (2006)	Job autonomy Job pressure Hours worked	Health Stress	Self-employment, either as owner or independent, was not related to greater stress and poorer health.
Schonfeld and Mazzola (2015)	Job/Income threat Interpersonal conflict Constraints Work overload Role ambiguity Isolation Empathy stress Difficulty learning business Uncertain length of work	Apprehension/Anxiety Frustration Anger Sadness/Depression Disappointment Annoyance Disturbed	The self-employed used problem-focused coping much more often than emotion-focused coping.

Prottas and Thompson (2006) separated national level United States data by categories of employment. They examined differences between organizational employees, independent contractors, and small business owners. The latter two are different categories of self-employment. This study included over 3,500 observations (2,810 employees, 222 owners and 472 independents). With such a large sample size, statistical significance was easier to establish, so the authors relied on effect size for hypothesis testing. In terms of theory, they mentioned the job characteristics model and the job demand control model briefly. They mainly relied on stress and autonomy as their theoretical foundation.

Owner-Managers

Cocker, Martin, Scott, Venn, and Sanderson (2013) aggregated owners (CEO, owner, director) and senior managers into a data set of 217 owner-managers of small (<200 employees) businesses. Over a third of the sample reported high/very high levels of psychological distress. They found that 66% of the owner-managers reported attending work while they were ill. Those with higher levels of psychological stress were more likely to report to work while ill even though reporting being less productive. The owner-managers with overall better self-reported health attended work while ill at a much higher rate than those with poor health. Table 9 presents the literature results from the studies of owner-managers.

TABLE 9
Owner-Managers Literature

Study	Stressors	Health/Well-being Measures	Findings
Cocker, Martin, Scott, Venn, and Sanderson (2013)	Number of hours worked in a week Number of employees supervised Productivity Job satisfaction Business confidence Work/life balance Work related job tension	General health status Depression Anxiety	Health-related factors were the strongest correlates of higher presenteeism. Work-related well-being factors job tension and job satisfaction were the strongest correlates of higher absenteeism days.
Fernet, Torrès, Austin and St-Pierre (2016)	Job stressors – finances, sales, administration, employees, suppliers	Burnout - emotional, mental, physical exhaustion	The conditional indirect effect of loneliness was stronger when entrepreneurial orientation is low, but weaker and not significant when entrepreneurial orientation is high.
Lechat, and Torres (2017)	Stressors - event based (e.g. conflict with suppliers, personnel claims, employee resignation) Satisfactors - event based (e.g. Client satisfaction, vacation time, good social climate, good prospecting)	Self-rated Mental health Self-rated Physical health	Small business owners reveal that negative events were cited more often than positive events. Overwork was the most commonly experienced stressor and lack of recognition was the least intense.

Fernet, Torrès, Austin, and St-Pierre (2016) collected multi-wave data from 377 owner-managers in France. They find that job stressors are positively related to burnout, and this relationship is partially mediated by loneliness. This mediation effect can be moderated by entrepreneurial orientation. Loneliness has been largely ignored by researchers, but this study suggests that loneliness may contribute to psychological health issues. Less proactive owners react more strongly to loneliness and are at higher risk for burnout. Another novel contribution of this study is that entrepreneurial orientation may be an adaptive factor and is a significant resource for owner-managers to deal with loneliness and the potential mental health implications.

Lechat and Torrès (2017) conducted a mixed methods study using a panel of 357 small business (<250 employees) owner-managers. The focus was to extend current research of stressors for entrepreneurs into an event-based predictive arena. This complements the current primarily outcome-based approach to researching these subjects. The framing was that stress was a negative response to certain events and satisfaction was a positive response which works against the stress. Events were categorized based on open ended questions from the qualitative portion of the research. Self-rated health was also measured from open-ended questions. Stress

exhibited a strong negative effect on both physical and mental health. Lack of recognition was an event-based stressor reported often but was not intense. Bankruptcy was the most intense stressor event for physical and mental health. Client satisfaction was an intense satisfactor.

The studies in this group included some interesting theoretical foundations. For example, Fernet, et al., 2016 relied not only on role theory and stress, but they also examined entrepreneurial orientation and occupational loneliness. These theories added strength and support to their hypotheses development. Cocker et al., 2013 discussed presenteeism as a theoretical foundation to their study of stress in owner/managers. They did not really apply the theory but just mentioned it and tested it. They also included some discussion of role theory. Lechat & Torres 2017 applied affective events theory to their study of the stressors and satisfactors that predict small business owners' health. This was a unique approach that resulted in an interesting contribution to the literature.

Self-Employed vs. Wage Earners/Employees

The self-employed and wage earners have vastly different work experiences. These differences are based on a myriad of factors including stress, job autonomy, job roles, etc. Stress, physical health, and mental well-being have been common variables in studies comparing wage earners and the self-employed. In many instances the happiness and health of these two groups differ (Andersson, 2008). There are, however, conflicting results in the research. For example, while acknowledging these differences in the work context and in the health and happiness of these two groups, Andersson (2008) found that there were no differences in physical health between the self-employed and wage earners, and while there were differences in mental health, they stated the results were not robust. The conclusions from this study were that well-being is not lower for the self-employed than wage earners. Yoon and Bernell (2013) found similar results in their study comparing the self-employed and wage workers. In fact, they concluded the self-employed were just as healthy as wage workers in the US despite the lack of health insurance. In other research, it has been found that business owners or the self-employed were healthier than wage workers in various self-reported health categories (Rietveld, Bailey, Hessels, & van der Zwan, 2016). For example, Bulmash (2016) found that entrepreneurs reported higher physiological and psychological well-being than non-entrepreneurs. The question of whether entrepreneurs are healthier and self-select into business ownership remains open.

Stress can, however, impact the overall health and well-being of the self-employed. Jamal (1997) compared job stress and psychosomatic health problems of the self-employed and the organizationally employed. Results indicate that the self-employed experienced more stress and psychosomatic health problems, however, they did not experience more mental health problems than wage earners. Similarly, Cardon and Patel (2015) found that self-employed individuals experience higher levels of stress than organization workers. Interestingly, their findings support that self-employed individuals often learn that the more stress they experience the more money they make regardless of their declining physical health. These findings highlight how self-employed workers are at higher risk for developing negative health outcomes because they learn that stress is both rewarding (financially) and punishing (negative health outcomes). Tables 10a

and 10b includes a list and description of the findings from the self-employed vs. wage earners literature.

TABLE 10a
Self-employed vs Wage-earners Literature

Study	Stressors	Health/Well-being Measures	Findings
Andersson (2008)	Hours worked-weekly, Annual income, Wage satisfaction, Feeling of control over life	Stress, Mental strain, Mental health problems, Poor general health	Self-employment leads to an increase in mental health problems.
Bulmash (2016)		Happiness, Exciting Life, Subjective Health, HIV test	Entrepreneurs report higher physiological and psychological well-being than non-entrepreneurs.
Cardon and Patel (2015)	Stress	Physical Health	The self-employed experience a negative impact of stress on physical health.
Gunnarsson, Vinga, and Josephson (2007)		General health, Musculoskeletal pain, Mental health, Stomach pain, Psychosomatic health, Mental health, Anxiety, Nervousness, Fatigue, Insomnia	Male enterprisers reported higher rate of health problems and female enterprisers equal rate compared with employees in the private sector.
Hessels, Rietveld, and van der Zwan (2017)		Work related stress	Job control fully mediates the negative relationship between self-employment and work-related stress.
Jamal and Badawi (1995)		Job stress Psychosomatic health	Salaries workers were better off than their self-employed counterparts.
Jamal (1997)		Job stress Psychosomatic health problems Mental health	The self-employed experienced higher job stress, non-work satisfaction, and psychosomatic health problems.
Jamal (2007)		Burnout - Emotional exhaustion, depersonalization, lack of accomplishment	Self-employed individuals experienced higher overall burnout, emotional exhaustion, and lack of accomplishment.

Cardon and Patel (2015) also found that trait-positive affect (PA) mitigated the negative health effects of stress while accentuating the positive income boost of stress. The question in applying this finding becomes how to teach/train individuals to exhibit more positive affect. Also, how can self-employed individuals know when to ease up on the stress they take on while

they may also be highly financially reinforced by leaning into it? Research focusing on the “dark side” of entrepreneur personality including entrepreneur addiction (Spivack & McKelvie, 2018; Spivack, McKelvie, & Haynie, 2014) echo this discussion

Contrary to the previous findings, Hessels, Reitveld, and van der Zwan (2017) found that stress was lower for the self-employed than for organizationally employed wage earners. Interestingly, self-employed with employees reporting to them experienced more stress than the self-employed that worked alone (Hessels, Rietveld, & van der Zwan, 2017). It appears that being responsible for other employees adds an additional burden to the self-employed. The results support other studies that examined the experience of owner-managers (Cocker, Martin, Scott, Venn, & Sanderson, 2013; Fernet, Torrès, Austin, & St-Pierre, 2016; Torrès, 2012).

As mentioned previously, there can be both positive and negative effects on the overall physical and mental health of the self-employed. In one of the earliest studies of health-related outcomes comparing the self-employed with the organizationally employed, Epstein and Yuchtman-Yaar (1991) examined various physical health outcomes including blood pressure, cholesterol, physician visits, somatic complaints, and disability days. In addition, they looked at behavior risks such as smoking, obesity, and stress. They found that the self-employed were more likely to smoke, were more obese, and experienced more work-related stress. Given these facts, it is interesting to note there were no significant differences in blood pressure for the two groups, while cholesterol was only slightly higher for the self-employed. When it comes to physician visits, the self-employed reported fewer trips to the doctor than the organizationally employed. In fact, the organizationally employed make 50% more visits to the physician. The self-employed also take fewer disability or sick days. This suggests that there are more health risks for the self-employed. The authors conclude that, in general, the self-employed are at higher risk for physical health problems as compared to the organizationally employed. Once again, the question becomes one of self-selection. Do the self-employed smoke more and eat less healthily because of the stress associated with the job or is there some underlying cause that links these behaviors and self-selecting into self-employment?

Jamal and Badawi (1995) compared the psychosomatic health of the self-employed and wage workers. They adopted the Michigan Studies of Worker’s Health measures which include upset stomach, headache, lack of sleep, bloating, nervousness, loss of appetite, etc. Results indicate that the self-employed experienced higher job stress and more psychosomatic health problems than wage earners. In a study conducted in Sweden, Gunnarsson, Vingard, and Josephson (2007) examined differences not only between the self-employed and organizationally employed but also between males and females. Interestingly, they found that male entrepreneurs reported more musculoskeletal pain and mental health problems than the organizationally employed. In addition, they reported poorer health in general. There were no significant differences found for the female self-employed as compared to their organizationally employed counterparts.

TABLE 10b
Self-employed vs Wage-earners Literature

Study	Stressors	Health/Well-being Measures	Findings
Lewin-Epstein and Yuchtman-Yaar (1991)	Weekly hours, Social and physical environment of work, Recognition, Opportunity for advancement, Flexibility, Task environment, Smoking, Obesity, Work related stress	Physical health Health behavior – physician visits and disability days	Higher levels of behavioral and physiological risk among the self-employed compared to salaried workers.
Patel, Reid, and Wolfec (2020)		Depression	Self-employment is negatively associated with depression among aging workers.
Rietveld, van Kippersluis, and Thurik (2015)	Job type Working Hours	Mental health Physical health	The selection of healthier individuals into self-employment accounts for the positive cross-sectional difference.
Rietveld, Bailey, Hessels, and van der Zwan (2016)		Mobility, Self-care, Ability to perform usual activities, Pain and discomfort, Anxiety, Depression	Business owners are healthier than wage workers.
Stephan, and Roesler (2010)		Blood pressure Somatic disease Physician visits Sick days Mental disorders	Entrepreneurs showed significantly lower somatic and mental morbidity and higher rates of well-being.
Yoon and Bernell (2013)		Health perceptions – perceived physical health, perceived mental health, Stroke, Diabetes Asthma, High blood pressure, High cholesterol, Joint pain Arthritis, Emphysema Mental Health – Kessler survey, Access to health care, Smoking, Exercise, BMI	Self-employment is positively associated with perceived physical health, and is negatively associated with having diabetes, high blood pressure, high cholesterol and arthritis. No mental health outcome is significantly associated with self-employment.

The results indicate that the female subjects in the study reported less monotonous work, as well as less physical lifting required of them. These factors impacted their reported health outcomes. Despite the previously mentioned studies, Rietveld, Van Kippersluis, and Thurik (2015) found that the self-employed were generally healthier, both physically and mentally, than wageworkers. It is interesting to note however that they conclude this to be related to self-selection. In other words, individuals that choose to be self-employed are healthier individuals to

begin with (Rietveld, Van Kippersluis, & Thurik, 2015). These results were in line with a previous study which found the self-employed to be healthier overall when compared to the organizationally employed (Stephan & Roesler, 2010). They examined various health-related factors including blood pressure, somatic diseases (hypertension, diabetes, ulcers), as well as stress-related mental disorders (affective disorders, anxiety, substance abuse). Results indicate that the entrepreneurs were healthier overall in some areas and experienced no significant difference in others.

Research conducted in Australia related to stress and mental health in self-employed workers and organizationally employed workers found that “overall, self-employment was associated with relatively few mental health benefits” (Parslow, et al., 2004, p. 242). In fact, a different line of inquiry focuses on the “dark side” of entrepreneurial personality. Researchers have found that self-employed individuals have a higher rate of depression, obsessive compulsive disorder, and attention deficit hyperactivity disorder than workers in organizations, for example (Spivack & McKelvie, 2018). While personality traits are beyond the scope of this review, we acknowledge that there are negative impacts on overall well-being from various dark side traits associated with entrepreneurs. A further investigation into workaholism and the factors that lead to these behaviors in entrepreneurs, as opposed to the organizationally employed, can help inform a research agenda into this phenomenon.

Burnout is another topic examined in the self-employment literature. There are three dimensions of burnout which include emotional exhaustion, lack of accomplishment, and depersonalization (Jamal, 2007). Emotional exhaustion is related to well-being and thus we included this study in our review. In a comparison of wage earners and self-employed, results indicate that the self-employed experience higher overall burnout and emotional exhaustion than the wage earners (Jamal, 2007).

Mental well-being is another variable that is often included in studies related to the health of entrepreneurs and the self-employed. In a study of older self-employed workers vs. older wage earners, results indicate that self-employment is negatively associated with depression (Patel, Reid, & Wolfe, 2020). Interestingly, older female workers reported lower depression symptoms than their male counterparts.

There was very little in terms of a theoretical foundation in this set of studies. Most of the hypotheses in these studies were based on previous research and results. There was some discussion of role theory (Cardon & Patel, 1995). In addition, a few studies were based on the job demand control theory (Hessels, Rietveld, & van der Zwan 2017; Rietveld, Van Kippersluis, & Thurik 2015; Stephan & Roesler 2010). In an early study by Lewin-Epstein and Yuchtman-Yaar (1991) the basis of the theoretical foundation was class theory and they included a discussion of the neo-Marxist framework to hypothesize the impact on the health and well-being of the self-employed.

Self-Employed vs Business Managers

The self-employed have also been compared to business managers. Entrepreneurs face different stressors and role conflicts than business managers. The entrepreneurial role of starting

and leading one's own business requires significant risk-taking (Buttner, 1992). Entrepreneurs and managers differ in their attitudes and values (Benfari & Knox, 1991). Buttner (1992) investigated whether there is a difference between entrepreneurial and managerial stress, what factors drive this difference and are there individual characteristics which moderate the relationship between entrepreneurial stress and health outcomes. Buttner (1992) collected data via mail surveys. There were 68 usable responses from entrepreneurs (those who started their own business and currently still hold a managerial role). Forty-four usable responses were received from upper- and middle-level managers from large organizations. The demographics of the sample of entrepreneurs were similar to those of the managers. The nature of work stress differed between managers and entrepreneurs where entrepreneurs faced more role ambiguity. Managers reported more satisfaction with their work. Entrepreneurs conveyed higher levels of health problems measured by the frequency of 30 different health problems (headaches, backaches, indigestion, insomnia) over the past six months. These health problems were experienced more frequently by entrepreneurs with Type B personalities when compared to Type A. Table 11 organizes the self-employed vs business managers literature highlighting the findings from the relevant studies.

TABLE 11
Self-employed vs Business Managers Literature

Study	Stressors	Health/Well-being Measures	Findings
Buttner (1992)	Role ambiguity, Role conflict, Job vs nonjob conflict, Role overload, Responsibility pressure, Quality concern	Frequency and severity of physical health problems (e.g. headache, insomnia, loss of appetite, ulcer and indigestion)	Entrepreneurs who are able to leave work worries at the office experience fewer health problems.
Rahim (1996)	Role conflict, Role ambiguity, Role overload, Role insufficiency	Depression Anxiety Cognitive disturbance Anger	Due to higher internal locus of control, entrepreneurs may be better equipped to deal with their associated job stressors than managers.
Tetrick, Slack, Da Silva, and Sinclair (2000)	Quantitative workload, Role ambiguity, Role conflict, Job-personal conflict	Emotional exhaustion	Owners had less social support from work-related sources and perceived lower levels of role ambiguity and role conflict, less emotional exhaustion, and higher levels of job satisfaction and professional satisfaction than did nonowners.

Rahim (1996) compared 238 entrepreneurs who started their own business and acting as the CEO with 288 top-, middle- and lower-managers. The study found results suggest that entrepreneurs were older, more educated, had fewer employees and exhibited a higher level of locus of control. It makes since that entrepreneurs are less likely to externalize. Internalizers may be better equipped to handle the pressures and uncertainties of starting and running a business.

Managers reported higher stress. For entrepreneurs, locus of control did not significantly moderate the stress-strain relationship but still may act as a coping mechanism.

Tetrick, Slack, Da Silva, and Sinclair (2000) compared owners (N=63), managers (N=24) and employees (N=55) which were all licensed morticians in the State of Michigan. The study investigated the differences in job demands, emotional exhaustion, satisfaction, and social support in the stress-strain process between the groups. Ownership status significantly predicted job satisfaction, but not emotional exhaustion, after controlling for stressors. Owners may perceive that emotional exhaustion is an indicator of how hard they work, feeling more accomplished and satisfied. Social support moderated the relationship between emotional exhaustion and job satisfaction but not professional satisfaction (Tetrick, Slack, Da Silva, & Sinclair, 2000).

The main theoretical basis for the studies in the group was related to role theory. All three studies in the group included some discussion of role theory as it applies to role overload, role conflict, and role ambiguity (Buttner, 1992; Rahim, 1996; Tetrick et al., 2000). Resource conservation theory was also applied to Tetrick et al. (2000). While role theory has been successfully applied in these studies it is possible that there are other theoretical foundations that can also be examined.

Coping

Although a review of coping could be a standalone paper and is not the focus of our review, we decided it is important to give a brief overview of the literature. This will be helpful to set the stage for the future research posited later in this paper. Coping enables people to deal with negative emotions that may result from harm, loss or threats and refer to the thoughts and behaviors used to manage the situation (Folkman & Moskowitz, 2004). Coping strategies can be problem-focused (active) (Billings & Moos, 1981), emotion-focused (avoidance) (Carver, Scheier, & Weintraub, 1989) and/or humanitarian-focused (Schonfeld & Mazzola, 2015). There are other classifications and various terms used to describe similar mechanisms, but those distinctions are not relevant to the current study. The use of different coping strategies is not mutually exclusive (Folkman & Moskowitz, 2004), and entrepreneurs use multiple coping mechanisms to deal with venture-related stress (Patzelt & Shepherd, 2011). Coping tools can enhance an individual's ability to deal with their stress and emotional stability (Patzelt & Shepherd, 2011).

Uncertainty, autonomy, responsibility effort, risk and responsibility are all job aspects for entrepreneurs. These aspects are related to positive and negative emotions. Self-employed are usually aware of the requirements of this type of occupational role (Hoang & Gimeno, 2009) and, to some extent, the potential consequences of this career path (Patzelt & Shepherd, 2011). Business owners report, at a high rate, that it is more stressful to run your own business than work as an employee or wage-earner (Teoh, Wei, Chong, & Ismail, 2016). Some entrepreneurs experience a higher level of stress due to inadequate knowledge, experience, or education (Parker, 2006). Not having the skills needed to run a business combined with work pressure are major sources of stress for entrepreneurs (Ahmad & Xavier, 2010).

Entrepreneurs with previous start-up experience effectively used avoidance coping mechanisms, but not active, to positively impact personal well-being and mental health (Uy, Foo, & Song, 2012). Stress arouses action, and entrepreneurs could perform at their peak by finding the optimal level of stress (Akande, 1992). Therefore, there is a tipping point where the psychological benefits could overtake the costs, and coping strategies can help entrepreneurs find this balance (Schonfeld & Mazzola, 2015). Entrepreneurs who can leave work at work and not bring those worries home, experience fewer health problems (Buttner, 1992).

Transition

Again, transitioning in and out of self-employment is only a subset of research. We believe this is an unexplored area of focus and it could better inform motivations for entering self-employment. Additional studies of these dynamics may help with the potential selection bias present in many of the data sets used by researchers in this field. The health of individuals transitioning in and out of self-employment is an understudied area. This line of research would help correct for some of the potential issues with cross-sectional data comparing employees with the self-employed. If research design does not control for the presence of selection bias in the data, then the results may not be reliable. Even if a study finds that self-employed individuals are physically or mentally healthier than their wage-earning counterparts, it could be possible that healthier people are more likely to move into self-employment, or the opposite could be true. Job benefits, such as health insurance and pensions, may keep the less healthy from making a transition (Zissimopoulos & Karoly, 2007).

The motivations for transitioning into self-employment must be considered as a control or possibly an antecedent when studying the health of entrepreneurs. Push factors are related to the economic necessity to start a business. These factors include loss of job, decrease in family income, divorce and job dissatisfaction (Alstete, 2003). Poor health can also be a push factor especially for older works (Zissimopoulos & Karoly, 2007). Entrepreneurial activities motivated by push factors are referred to as necessity driven. Pull factors are more associated with individual based psychological and personal considerations such as self-fulfilment, the need for independence, improving self-status, the need to be in control, higher income potential and risk tolerance (Barber III, Saadatman, & Pierce, 2019; Fosic, Kristic, & Trusic, 2017), and this describes the motives of an opportunity-driven entrepreneur. This can be measured by using the state of employment as a baseline to proxy opportunity or necessity. The movement from regular employment to self-employment (proxy for opportunity) leads to an increase in life satisfaction, while the transition from unemployment to self-employment (proxy for necessity) does not (Binder & Coad, 2013).

DISCUSSION

Research regarding the occupational health and well-being of the self-employed is critical to understanding their success and failure. In our literature search we found 26 articles related to the occupational health and well-being of the self-employed. The results of these studies indicate

there is still come confusion regarding the causes of stress as well as poor health and well-being. In addition, not all self-employed experience these negative effects. More research is needed to clarify these relationships as well as to tease out the differences between the various types of entrepreneurs. In addition, researchers need to come to some agreement regarding how these variables are measured and defined. The lack of agreement even just among the definitions of stress, physical and mental well-being has contributed to the contradictory findings. Table 12a posits a list of research questions related to business performance, antecedents, mediators/moderators, methodology, sample, and selection bias.

TABLE 12a
Future Research Questions

Topics	Questions
<i>Business Performance</i>	<p>What do entrepreneurs with better mental health do differently that impacts business performance? (Gorgievski, et al., 2010)</p> <p>How do entrepreneurs with better mental health make decisions, set goals, and develop business strategies differently?</p> <p>Is the relationship between physical/mental health and business performance circular? Does one feed into the other and vice versa?</p>
<i>Theory</i>	<p>What theoretical foundations can be applied to this stream of research?</p> <p>What are the theoretical contributions of research in this area?</p> <p>What frameworks or more comprehensive models can be developed?</p>
<i>Antecedents & Predictors</i>	<p>Which entrepreneurship-specific job demands (e.g. number of direct reports) impact entrepreneurs' mental/physical health? (Stephan & Roesler, 2010)</p> <p>What are more specific stressors related to entrepreneur's physical/mental health?</p> <p>What are the predictors of mental health among the self-employed and non-self-employed? (Jamal, 1997)</p> <p>Do somatoform disorders (specifically pain disorders) serve as early indicators or risk factors of work-related stress? (Stephan & Roesler, 2010)</p> <p>What are the health-relevant aspects of an entrepreneur's psychosocial work environment? (Stephan & Roesler, 2010)</p> <p>Does burnout manifest differently for entrepreneurs than salaried workers? And, how does entrepreneurial burnout relate to physical/mental health outcomes?</p>
<i>Mediators & Moderators</i>	<p>What variables mediate and/or moderate the relationship between business performance and mental health?</p> <p>Do gender, race, age, ethnicity, and national origin mediate/moderate the relationship between self-employment and physical and mental health outcomes?</p> <p>Does overconfidence or optimism bias mediate or moderate the relationship between self-employment and physical/mental health?</p>
<i>Methodology</i>	<p>What are the longer-term causal effects of self-employment on physical/mental health?</p> <p>How can we ensure the robustness of baseline physical/mental health measures?</p> <p>How can we better design longitudinal studies to track subjective and objective health measures of entrepreneurs over time?</p>
<i>Sample</i>	<p>How does physical/mental health change based on entrepreneurial type (freelancer, founder, executive, contractor, etc.)?</p> <p>How do we better assess variations in psychological distress and physical/mental health outcomes contingent on industry characteristics?</p> <p>How generalizable are studies across countries?</p>

<i>Selection Bias</i>	<p>What is the role of self-selection bias in the study of entrepreneurs' physical/mental health?</p> <p>How can future research further disentangle the selection mechanism to establish whether health status is a perceived barrier (the less healthy do not even try to become self-employed) or an actual barrier (the less healthy are faced with more obstacles, such as in the process of securing loans, when they want to start a business)? (Rietveld, Kippersluis, & Thurik, 2015)</p> <p>How is the motivation (necessity vs opportunity) for entrepreneurship related to the relative health of entrepreneurs?</p>
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Business Performance

Research has indicated the occupational health and well-being of entrepreneurs impacts the performance of their business. Gorgievski (2010) suggests further research is needed to determine what healthy entrepreneurs do differently that impacts business performance. This question is related to both antecedents of occupational health and well-being as well as coping.

Related to this is the question of how entrepreneurs with better physical and mental health make decisions, set business goals, and develop strategies differently from entrepreneurs with poor physical and/or mental health. Finally, future research is needed to determine if the relationship between physical and mental health and business performance is circular. In other words, does strong business performance result in better health of the entrepreneurs and vice versa, does better health lead to stronger business performance? Research that examines how these two factors impact each other is still needed.

Theory

There is very little theory to support the studies in this stream of research. There has been some application of role theory as well as the job demand role model. In addition, most studies rely on stress and the stress-strain perspective as the main theoretical foundation for studies on the health and well-being of entrepreneurs. These are strong theoretical foundations from which research can be built. Future studies need to identify the theories and frameworks that support the hypotheses they are testing. There has been enough research conducted to begin creating frameworks and models that explain the relationship between being self-employed and health and well-being outcomes. In addition, researchers should begin to consider the theoretical contributions of their studies. There was a lack of this included in many of the discussion sections of the studies we examined. Lechat & Torres (2017) took a unique approach to their theoretical development and testing that resulted in a strong contribution to the literature. The same can be said of Fernet et al., (2016) and Coker et al., (2013). More research along the lines of these owner/manager studies is needed.

Antecedents and Predictors

While some research has been conducted on the antecedents and predictors of the health of entrepreneurs more clarification is needed. For example, further research identifying stressors that result in poor health outcomes will help entrepreneurs do what they can to mitigate those

stressors or develop more coping mechanism for dealing with them. Stephan and Roesler (2010) identify several avenues that still need to be explored.

First, research needs to identify job specific demands, such as the number of direct reports, that impact the health of the self-employed. More specifically they suggest that research should identify which somatoform disorders serve as early indicators of risk factors or work-related stress. Finally, they state that more research is needed to uncover the health-relevant aspects of an entrepreneur's psychosocial work environment.

While there has been quite a bit of research on burnout, one avenue for future research, as it pertains to entrepreneurs, is concerned with how burnout manifests differently in the self-employed versus the organizationally employed. This is particularly relevant given that burnout can result in stress and negative physical/mental health outcomes. How does entrepreneurial burnout relate to physical/mental health outcomes, specifically?

Mediators and Moderators

We have already mentioned the relationship between physical/mental health and business performance, but further research is needed to investigate possible mediators and moderators. We know that the health of the self-employed is complex. For example, does the gender, race, age, ethnicity, and/or national origin of the entrepreneur moderate or mediate the relationship between being self-employed and physical and mental health? What about overconfidence or optimism bias? There are many potential variables that might act as mediators or moderators.

Methodology

In terms of methodology, one of the main unresolved questions relates to longitudinal studies. Are there differences in the physical and mental health of the self-employed over generations? Future research is needed to track the physical and mental health of the self-employed over time. Additionally, more robustness checks are needed in order to ensure we are using appropriate measures of physical and mental health.

Sample

There are a few studies that have been conducted outside of the U.S. More international studies are needed so we can determine how generalizable studies are across countries. Additionally, future research is needed that teases out differences in types of entrepreneurs. For example, are there differences between freelancers, founders, and contractors?

Selection Bias

Further research is needed to understand the role of self-selection in the physical and mental well-being of entrepreneurs. Does self-selection bias impact the health of the self-employed? Additionally, Rietveld, Van Kippersluis, and Thurik, (2015) suggest further research

is needed to disentangle the selection mechanism in order to establish whether health status is a perceived barrier (the less healthy do not even try to become self-employed) or an actual barrier (the less healthy are faced with more obstacles, such as in the process of securing loans, when they want to start a business). And finally, how is motivation (necessity vs. opportunity) related to the health of the self-employed?

Tipping Point

Future research regarding the tipping point is needed to determine at what point do the costs of being self-employed outweigh the benefits, in terms of physical and mental health. Cardon and Patel, (2015) ask at what point is sacrificing one's health is worth the apparent increase in one's personal income for entrepreneurs? Additionally, Schonfeld and Mazzola, (2015) state further research is needed to determine is the tipping point when the psychological benefits of self-employment (e.g., autonomy) are overtaken by business losses outside the individual's control. Finally, does the transition out of self-employment improve physical and mental health?

Coping

Further research is needed in order to identify the coping mechanisms used by entrepreneurs. Identification of those mechanisms that are helpful versus those that might be detrimental will help highlight the importance of healthy coping mechanisms for the self-employed. In addition, Cardon and Patel (2015) identified several areas for future research including a call for research aimed at specific variables such as positive affect and emotional regulation. Additionally, they suggest that future research aimed at the specific motivators for stress and health-related behaviours is needed. Tipping point and coping future research questions can be seen in Table 12b.

TABLE 12b
Future Research Questions

Research Directions	Questions
<i>Tipping Point</i>	<p>At what point do the health benefits of entrepreneurship outweigh the health costs?</p> <p>At what point is sacrificing one's health worth the apparent increase in one's personal income for entrepreneurs? (Cardon & Patel, 2015)</p> <p>Where is the tipping point bearing on when the psychological benefits of self-employment (e.g., autonomy) are overtaken by business losses outside the individual's control? (Schonfeld & Mazzola, 2015)</p> <p>Does the transition out of self-employment improve physical/mental health?</p>
<i>Coping</i>	<p>What are appropriate coping mechanisms and strategies for entrepreneurs suffering from physical/mental health problems?</p> <p>Does situational positive affect help entrepreneur's cope with stress? (Cardon & Patel, 2015)</p> <p>How can entrepreneurs better regulate their emotions to harness the productive potential of positive affect? (Cardon & Patel, 2015)</p> <p>What are the motivations behind stress and health-related behaviors? (Cardon & Patel, 2015)</p>

FUTURE RESEARCH

While research has made some progress in advancing our knowledge regarding the occupational health and well-being of the self-employed, we hope this review has helped bring together the various pieces to form a better picture of the body of work.

There are however still important questions that remain unanswered. These questions will be important in future research to advance our understanding. We have grouped future research into the following categories: business performance, antecedents and predictors, mediators and moderators, methodology, sample, selection bias, tipping point, and coping. They are displayed in Tables 12a and 12b.

CONCLUSION

Given the contradictory results for studies of whether self-employed individuals and entrepreneurs suffer from better or worse health outcomes as well as the lack of a consistent application of health and well-being variables, a review of the literature was needed. Some of the inconsistencies include the definition of health and well-being and the extrapolation of findings for self-employed or entrepreneurs. Self-employed, entrepreneurs, founders, business managers and business owners are categories sometimes used interchangeably in the literature. Researchers will use self-employed as a proxy for entrepreneurs. In this paper, we separated studies based on the sample, and discuss the limitations of generalizability. We provided a state of the research and examined the studied interactions between self-employed individuals and variables related to their physical and mental health. In our literature search, we found 28 articles related to the occupational health and well-being of the self-employed or entrepreneurs. The results of these

studies indicate there is confusion regarding the causes and definition of stress, poor health, and well-being. The heterogeneity in measurement types and data collection approaches has led to the inconsistencies in the health of entrepreneurs and self-employed literature. Research regarding the occupational health and well-being of the self-employed is critical to understanding their success and failure. In conclusion, there are multiple gaps in the research and unanswered questions that are seen in the future research section, and hopefully this study spurs further investigation and interest in subject of health and entrepreneurship.

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