

Suicidal Ideation Among Working Adults:

A Moderated Mediation Approach

By  
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**Abstract**

Suicide is prevalent among people of working age. The profound impacts of employee suicide on both the individual and the workplace call for research on suicide risk and protective factors present at work. In the current study, I proposed and tested two moderated mediation models that connect meaningfulness of work and transformational leadership, respectively, with feelings of hopelessness, depression, and suicidal ideation among employees under the boundary condition of experienced job stressors. Cross-sectional survey data were collected from 600 working adults recruited through Prolific. Results suggested that meaningfulness of work and transformational leadership were associated with lower levels of hopelessness and depression, which were further associated with lower suicidal ideation. Further, the positive impacts of work meaning and transformational leadership on employee suicidal ideation were attenuated when job stressors were perceived to be high. Theoretical and practical implications of this study are discussed.

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### **Suicidal Ideation Among Working Adults: A Moderated Mediation Approach**

Suicide is among the leading causes of death in North America. It has been estimated that approximately 4,000 people in Canada die by suicide each year (Government of Canada, 2020a). Research suggests that one of the highest-risk groups for suicide are employed individuals, with 70% of all suicide deaths being among people of working age (Mustard et al., 2010; Yip & Caine, 2011). The economic burden of employee suicide and self-harm can be as high as \$3 billion per year, including direct costs (e.g., cost of healthcare services) and indirect costs associated with loss productivity, absenteeism, and turnover at work (Government of Canada, 2020b). Exposure to the suicide of a colleague in a workplace setting has been associated with increases in subsequent mental health issues and suicidal thoughts among loss survivors (Jordan, 2017). Employee suicide may also lead to a decrease in workplace morale, functioning and productivity, and damage to the organization's image (Kato, 2014; Kinder & Cooper, 2009). Taken together, the high prevalence and negative impacts of suicide on workplaces present a clear motivation for organizations to address and prevent employee suicide.

Work constitutes a major part of adult life; many spend nearly 50% of their waking hours at work (Tudor-Locke et al., 2011). Employment can contribute to improved quality of life, mental health, and social inclusion (Evans & Repper, 2000). Work life might also enrich other aspects of life, generating a wide range of resources that can be used to handle nonwork-related challenges and commitments (Greenhaus & Powell, 2006). On the other hand, work can be a source of dissatisfaction and prolonged stress, which might consume employees' physical, mental, and emotional resources, leading to the development of mental health challenges (Baumert et al., 2014; Greenhaus & Beutell, 1985). For example, factors such as excessive

workload, lack of control, adverse physical working conditions, and interpersonal conflict and violence have been found to contribute to increased risk for depression (Bonde, 2008) and suicide (Baumert et al., 2014) among employees. Considering the critical role of work in individuals' mental health and well-being, it is of importance to explore resources available at work that could help prevent the development of suicidal thoughts and how work, on the other hand, might diminish such resources and exacerbate suicidal ideation. Accordingly, organizations might consider preventing workplace suicide by providing resources at work to support employee mental health.

In my research, I focused specifically on suicidal ideation. Suicidal ideation, defined as a range of contemplations, wishes, and preoccupations with death and suicide, has been identified as an immediate precursor to suicide attempts (Czyz & King, 2015; Harmer et al., 2022; Nock et al., 2008). Individuals with high persisting levels of suicidal ideation demonstrate greater odds of attempting suicide, compared to those with rapidly declining or constant low levels of suicidal ideation (Czyz & King, 2015; Madsen et al., 2016). Although suicidal ideation does not necessarily lead to subsequent suicide attempts, it has been found to be strongly predictive of suicide deaths, injury, hospitalization, loss of liberty, and increased financial burdens (Klonsky et al., 2016). Understanding the nature and development of suicidal ideation in a workplace context might help organizations identify ways to mitigate risk of suicide among employees.

Although antecedents and consequences of suicidality have been extensively studied in various areas of psychology (e.g., Glenn et al., 2018), the influence of workplace factors on suicidal ideation has received relatively less scholarly attention. Previous organizational studies examining the association between work-related factors and employee suicide have typically used levels of hopelessness as an indicator of suicide risk instead of directly measuring suicidal

ideation or other suicide-related outcomes (e.g., Miller et al., 2019), which limited their ability to draw firm conclusions. Therefore, my research aimed to fill this gap and investigate work-related factors that might exacerbate or alleviate suicidal ideation among employees.

Drawing upon the Conservation of Resources Theory (COR; Hobfoll, 1989, 2011), my research highlighted the role of workplace resources in linking work with employee suicidal ideation. Specifically, my goal was to explore protective functions of workplace resources, i.e., meaningfulness of work and transformational leadership, against suicidal ideation and the detrimental effect of the resource-draining factor of job stressors. I proposed that transformational leadership and meaningfulness of work are indirectly associated with alleviated suicidal ideation through lowered feelings of hopelessness and depression; however, such protective functions are dependent on the level of experienced job stressors. Findings from this study would provide insights into the influence of workplace factors on suicide and have important implications for workplace suicide prevention programs.

### **Hopelessness, Depression, and Suicidal Ideation: The Conservation of Resource Theory**

It has been well-established that feelings of hopelessness and depression are significant precursors to the development of suicidal ideation (Beck et al., 1993; Ribeiro et al., 2021). Previous research suggests that hopelessness and depression are possible mechanisms connecting common suicide risk factors, including negative life events (Konick & Gutierrez, 2005), chronic pain (Tang & Crane, 2006), insomnia (Woosley et al., 2014), and family dysfunction (Ahookhosh et al., 2017), with suicidal ideation. In the workplace context, research has found that high job demand, work-life conflict, and low task variety and autonomy are associated with suicidal ideation and attempts through increased depression and hopelessness (Howard & Krannitz, 2017). However, previous research on employee suicide mainly focuses on individuals

working in high-risk occupations, such as military members, farmers, and medical professionals (Howard et al., 2022; Roberts et al., 2013), neglecting the risk of suicide among general working populations. Further, it is less clear whether depression and hopelessness could explain the relationship between protective factors in the workplace and alleviated suicidal ideation. Thus, the current research addressed the gaps by examining depression and hopelessness as the underlying mechanisms connecting various positive and negative workplace factors with suicidal ideation in a sample of working adults.

The current research explored employee suicide applying the Conservation of Resources Theory (COR; Hobfoll, 1989, 2011), highlighting the role of resource in the process by which workplace factors impact suicidal ideation. According to the COR Theory, individuals are motivated to gain resources and prevent resource loss; when experiencing resource depletion or a lack of gain following resource investment, individuals would feel heightened distress and experience diminished well-being (Hobfoll, 2011; Schaufeli & Bakker, 2004). In the workplace context, resources could be understood as things that employees centrally value and those that can help to achieve their personal and career goals, such as time, energy, autonomy, self-efficacy, and psychological capital (Culbertson et al., 2010; Halbesleben & Rathert, 2008; Hobfoll, 2011). When employees lose or experience threats to valued resources over an extended period of time, they likely develop feelings of hopelessness and depression in the face of diminishing returns, perceiving little power over their jobs and their situation as unchangeable (Fragher et al., 2005; Howard et al., 2022; Howard & Krannitz, 2017). As a result, employees might see suicide as a way out of their “insoluble problems” (Beck et al., 2006; Howard & Krannitz, 2017). On the other hand, employees who are able to acquire, maintain, and foster necessary resources at work might be able to not only meet their current work demand but also



guard against future resource loss (Avey et al., 2010; Wright & Hobfoll, 2004), thus preventing feelings of hopelessness, depression, and ultimately the development of suicidal ideation.

Hopelessness is identified as a core component of depression; researchers have suggested that these two constructs share considerable overlapping components (Beck, 1967; Henkel et al., 2002). However, despite that both hopelessness and depression have been found to result from resource depletion and correlate with the severity of suicidal ideation, researchers have argued that hopelessness exists independently from depressive episodes as individual attitudes representing vulnerability and risk factor for suicide (Elliott & Frude, 2001; Henkel et al., 2002; Troister & Holden, 2013). Thus, it might be valuable to investigate hopelessness and depression as independent mediators connecting workplace factors and employee suicidal ideation. Indeed, previous studies suggest that hopelessness and depressive symptoms might demonstrate different patterns of association with suicide (Horwitz et al., 2017). For example, in both community and clinical samples, research has found that hopelessness was more directly related to suicidal intent than depression (Dyer & Kreitman, 1984; Groholt et al., 2006; Kuo et al., 2004; Wetzel et al., 1980; Zhang & Li, 2013). In contrast, other researchers found that depression, but not hopelessness, was a predictor of suicidal ideation among samples of high-risk psychiatric patient (Prinstein et al., 2008). Such inconsistency calls for additional research to clarify the relationship between hopelessness, depression, and suicidal ideation in various populations, including working adults.

Taken together, the workplace presents a range of positive and negative factors that contribute to fluctuations in individuals' resource repertoire, which might have further implications on their mental health and well-being (Nielsen et al., 2017). Therefore, I used COR theory as the theoretical foundation to explore how meaningfulness of work, transformational

leadership, and the experiences of job stressors might contribute to individuals' resource gain or loss, and as such, affect their suicidal ideation. Further, I examined feelings of hopelessness and depression as separate mechanisms that connect work with employee suicide ideation.

### **Meaningfulness of Work and Employee Suicidal Ideation**

Previous research on employee mental health has largely focused on the role of stressors and challenges at work in the development of mental health problems (e.g., Hao et al., 2021). Nevertheless, it is important to note that work itself can provide valuable resources for employees and prevent the development of mental health issues (Glazer et al., 2014; Greenhaus & Powell, 2006; Karatepe et al., 2018; Reis et al., 2015). Many people view their jobs as more than simply a source of income that provides financial security, but as a career that gives meaning and purpose and serves a greater goal in life (Howard & Krannitz, 2017; Steger et al., 2012). Meaningfulness of work has been defined as a subjective experience that what one is doing at work has personal significance, contributing to meaning in life as a whole while making a positive impact on the greater good (Rosso et al., 2010; Steger et al., 2012). Meaningfulness of work has been found to be important for human motivation and well-being (Steger et al., 2013). At workplaces, perceived meaningfulness of work is associated with positive outcomes, including increased organizational commitment, organizational citizenship behaviour, job satisfaction, engagement, and decreased turnover intention and long-term sickness absence (Arnoux-Nicolas et al., 2016; Clausen et al., 2010; Duffy et al., 2015; Maharaj & Schlechter, 2007; Steger et al., 2013).

According to Glazer et al. (2014), meaningfulness of work can be considered as an important psychological resource. In line with the COR theory (Hobfoll, 1989, 2011), meaningfulness might provide resources that contribute to employees' capacity to deal with

work-related stresses and challenges, prevent excessive resource loss, and promote resource gain following resource investment at work. Specifically, individuals who experience meaningfulness at work tend to be deeply and personally invested in their work, which in turn, might lead to subsequent resource gains through fulfilled psychological needs, increased self-acceptance, autonomy, and greater purpose in life (Howard & Krannitz, 2017; Steger & Dik, 2009; Wrzesniewski et al., 2013). When facing high job demands, employees who view their job as meaningful tend to generate and replenish depleted resources and prevent further resource loss, thereby recovering from the potentially negative experience (Glazer et al., 2014). The experience of meaningfulness at work might serve a protective role when employees encounter difficult working conditions, increasing their capacity to cope with negative events and maintain health and well-being in the face of diminishing resources (Clausen & Borg, 2011). Taken together, individuals who view their job as an important source of meaningfulness might experience decreased perceived and actual loss of resources and increased resource gain following investment. Thus, it can be posited that meaningfulness of work serves as an important workplace resource that contribute to decreased feelings of hopelessness and depression and improved well-being.

Research supports that meaningfulness promotes mental health and serves a protective role against psychological distress and hopelessness. Meaningfulness of work consistently predicts positive mental health outcomes among employees, including improved well-being, resilience, positive mood, and better psychosocial adjustment (Arnold et al., 2015; George & Jones, 1996; Heath et al., 2020; Kamdron, 2005; Maharaj & Schlechter, 2007; Steger et al., 2012; Wingerden & Poell, 2019). Meaningfulness of work may also reduce feelings of hopelessness; individuals who experience meaningfulness are less likely to perceive their

situations as unchangeable even when exposed to high work stress and demands (Howard et al., 2022; Kost et al., 2018). Those who feel their work is meaningful tend to report lower levels of hopelessness, emptiness, and stress when experiencing aversive working conditions (Isaksen, 2000). Regarding suicidal ideation, despite that ample research evidence exists to support that meaning in life predicts decreased suicidal thoughts (e.g. Kleiman & Beaver, 2013), no study has yet to explore whether meaningfulness of work would be associated with decreased suicidal ideation through lowered feelings of hopelessness. Following the COR theory (Hobfoll, 1989, 2011), meaningfulness of work can be considered as an important workplace resource, enriching employees' resource pool and promoting a resource gain cycle (Hobfoll, 2011), which can lead to lower feelings of hopelessness and suicidal ideation. Therefore, I hypothesized that:

***Hypothesis 1a:** Meaningfulness of work is negatively and indirectly related to suicidal ideation through feelings of hopelessness.*

Additionally, meaningfulness of work tends to alleviate the severity of mental health symptoms among employees (Glazer et al., 2014). For example, meaningfulness of work has been found to be negatively associated with stress, burnout, and depressive symptoms (Hamama-Raz et al., 2021; Lips-Wiersma & Wright, 2012; Passmore et al., 2019; Treadgold, 1999). The negative relationship between meaningfulness and depression remains significant after controlling for job satisfaction (Allan et al., 2016). In contrast, low influence at work, loss of meaning, and detachment from work have been associated with depression and increased risk for suicide (Alderson et al., 2015; Feskanich et al., 2002; Niedhammer, Bèque, et al., 2020; Niedhammer, Coindre, et al., 2020). Extending this line of research, I explored the role of depression in explaining the relationship between meaning of work and suicidal ideation. Drawing upon COR theory, I proposed that meaning of work provides resources to employees

and fosters a resource gain cycle (Hobfoll, 2011), which help them cope with mental health symptoms including depression, and further prevents suicidal ideation. Accordingly, I hypothesized that:

***Hypothesis 1b:** Meaningfulness of work is negatively and indirectly related to suicidal ideation through depressive symptoms.*

### **Transformational Leadership and Employee Suicidal Ideation**

At workplaces, positive leadership (i.e., a set of leadership behaviours that result in subordinates' experiencing positive emotions) may also provide employees with resources that support their health and well-being (Kelloway et al., 2013; Montano et al., 2017; Nielsen et al., 2008; O'Brien et al., 2022). Recent meta-analysis suggests that positive leadership styles are associated with improved mental health states among followers, including reduced burnout and stress and increased psychological functioning (Montano et al., 2017). Regarding suicide-related outcomes, researchers suggest that leaders might play an important role in mitigating risk for suicidal behaviours among employees (Boccio & Macari, 2014; O'Brien et al., 2022; Trachik et al., 2021). Specifically, leaders could support at-risk employees by increasing mental health awareness, promoting utilization of mental health support services, and creating a positive and supportive work environment (Boccio & Macari, 2014). Workplace suicide prevention programs that focus on leader awareness education and training have also been found to be effective in reducing employee suicidal ideation and attempts (Knox et al., 2003; Takada & Shima, 2010).

Positive leadership might be considered as an important workplace resource (Nielsen et al., 2017). Leaders could contribute to employees' resource gain, prevent or alleviate resource loss, and contribute to resource replenishment, thus serve a protective role against negative experiences at work and mental health problems (Perry et al., 2010; Rousseau et al., 2014; Stein

et al., 2021). Among various positive leadership styles, transformational leadership has been found to be particularly influential in improving employees' mental health conditions (Montano et al., 2017). Transformational leadership emphasizes motivating followers to go beyond their own self-interests for the sake of organizational goals, as well as to accept and achieve challenging goals that the followers would not have pursued otherwise (Bass, 1999). More specifically, transformational leaders are those who employ a visionary style of leadership, act as a mentor, inspire and empower employees to make independent decisions, and provide attention, support, and resources for employee development (Bass, 1999; Bass & Riggio, 2005).

From the COR perspective (Hobfoll, 1989, 2011), transformational leaders provide their followers with resources through positive leadership characteristics (e.g., individualized consideration; Bass & Riggio, 2005) and enriching social interactions (e.g., mentorship, coaching, and feedback; Nielsen et al., 2017). For example, transformational leadership has been shown to have a positive influence on increasing employees' workplace resources, including self-efficacy (Bayraktar & Jiménez, 2020), positive moods (Tsai et al., 2009), openness to experience (Hildenbrand et al., 2018), and positive team climate (Liao & Chuang, 2007; Sheehan et al., 2020), which further lead to improved employee performance and well-being. Support and care from transformational leaders have been found to mitigate the negative impacts of resource-draining organizational conditions on employees' well-being, including high job demand (Breevaart & Bakker, 2018), bullying (Dussault & Frenette, 2015), organizational change (Bayraktar & Jiménez, 2020), and work-family conflict (Gillet et al., 2016). Therefore, it can be posited that employees with transformational leaders who foster, enrich, and protect their resources might have greater capacity to cope with stressful situations at work and thus prevent the development of mental health problems.

Regarding suicidal ideation, transformational leaders might help alleviate employees' feelings of hopelessness and suicidal thoughts through the provision of resources. When facing stressful events and adverse work conditions, resources originated from transformation leaders, such as supervisory support, information, social relations, self-efficacy, resilience, and optimism, could help employees build up strong resource reserves in coping with negative work experiences (Bayraktar & Jiménez, 2020; Kim et al., 2021). Further, transformational leadership is beneficial to employees' well-being such that the leaders recognize and act on their follower's higher-order needs (Arnold et al., 2015). As a result, employees might be able to look beyond the immediate challenges at work to focus on their higher-order needs and goals, thus alleviating the sense of hopelessness. Taken together, it can be hypothesized that transformational leadership is negatively associated with feelings of hopelessness and suicidal ideation among employees.

Building on the COR theory and existing research, I hypothesized:

***Hypothesis 2a:*** *Transformational leadership is negatively and indirectly related to suicidal ideation through feelings of hopelessness.*

In addition, transformational leadership might contribute to decreased suicidal ideation among employees through alleviated depressive symptoms. From a social interaction perspective, positive interactions and social support from transformational leaders represent positive-inducing emotional incidents, which could contribute to employees' interpersonal resources, provoke positive affective experiences, and increase their sense of belongingness and connectedness (Anestis et al., 2008; Cooper et al., 2018; Tan & Xia, 2021; Van Orden et al., 2008). Indeed, Tan and Xia (2021) found that social support from leaders was negatively associated with employee suicidal ideation through decreased depression. In addition to social support and resources, leaders might also assist employees presenting with mental health

problems by increasing their personal resources, fostering their sense of worth, creating meaningfulness and purpose, and promoting a sense of self-efficacy and self-accomplishment at work (Boccio & Macari, 2013; Madathil et al., 2014; O'Brien et al., 2022; Trachik et al., 2021). Transformational leadership behaviours have been found to be associated with decreased depressive symptoms among employees through strengthening their personal resources (Perko et al., 2014). Taken together, research has shown that transformational leaders foster the gain of both social and personal resources among their employees (Walsh et al., 2014; Widiyanto & Wilderom, 2017). In line with the COR theory (Hobfoll, 1989, 2011), leaders who actively promote resource gain and prevent resource loss might help alleviate employee depressive symptoms, thereby prevent the development of suicidal ideation. Building upon the COR theory and existing research evidence, I hypothesized:

***Hypothesis 2b:** Transformational leadership is negatively and indirectly related to suicidal ideation through depressive symptoms.*

### **The Moderating Role of Job Stressors**

Despite the positive roles of meaningful work and transformational leadership play in the workplace, it is important to recognize the potential limitations of those factors in promoting employee mental health and well-being. For example, the positive influences of meaningfulness of work and transformational leadership on employees' mental health might be limited when they are experiencing high levels of job stress. There is comparatively less research investigating the boundary conditions of leadership and work meaning relationships with employee well-being (Arnold, 2017). That is to say, it remains unclear under which conditions are meaningfulness of work and transformational leadership more or less likely to exert positive impacts on employees' depression, hopelessness, and suicidal ideation. Previous research has examined factors such as



motivation and income as moderators in the relationship between perceiving meaning in work and employee well-being. For example, Duffy et al. (2017) found that the relationship between perceiving work as a calling and life satisfaction is moderated by calling motivation, such that individuals who feel a calling to their work are more likely to experience higher life satisfaction when they are motivated to pursue that calling. Regarding leadership, research suggests that transformational leadership is more strongly related to reduced emotional strain for employees with high professional ambition (Holstad et al., 2014). Extending this line of research, the current study examined job stressors as a moderator in transformational leadership and work meaning relationships with employee suicidal ideation.

Job stress has been consistently linked to mental health challenges among working individuals (Baumert et al., 2014; Bonde, 2008; Howard & Krannitz, 2017; Ylipaavalniemi et al., 2005). According to Karasek and Theorell (1990), job stress occurs when there is a mismatch between job demands and job control, in combination with low social support in the workplace. Job stress can be understood as a result of individuals' perception and experience of various job stressors, such as lack of control, high workload, and routinization (Gilbert & Kelloway, 2014; Kelloway & Day, 2005). COR theory suggests that sustained experience of job stressors might generate and exacerbate feelings of hopelessness and depression due to chronic resource loss (Hobfoll & Shirom, 2001). Previous research supports that experience of job stressors is associated with negative mental health outcomes such as psychological strain (Gilbert & Kelloway, 2014), burnout (Iacovides et al., 2003), hopelessness (Violanti et al., 2016), depression (Virtanen et al., 2007), and suicidal ideation and attempts (Baumert et al., 2014; Feskanich et al., 2002; Howard et al., 2022; Xiao et al., 2017). As such, I hypothesized that:

***Hypothesis 3a: Experienced job stressors are positively associated with feelings of hopelessness.***

*Hypothesis 3b: Experienced job stressors are positively associated with depressive symptoms.*

From the COR perspective (Hobfoll, 1989, 2011), job stressors such as high workload, work-family conflict, and negative interpersonal relationships might pose threats to employees' physical and emotional resources or prevent resource gain after continuing investment. Even though meaningfulness of work and transformational leadership provide valuable resources for employees, high levels of job stress might lead to a consistent resource drain and further result in a chronically depleted pool of resources (Hobfoll & Shirom, 2001). Typically, there are limited things employees can do to modify the job stressors and negative work environments even when they perceive high meaning of work and a great deal of support from transformational leaders. When employees lose or experience threats to valued resources over an extended period of time, they likely develop feelings of hopelessness and depression in the face of diminishing returns, perceiving little power over their jobs and their situation as unchangeable (Faragher et al., 2005; Howard et al., 2022; Howard & Krannitz, 2017). As a result, employees might see suicide as a way out of their "insoluble problems" (Beck et al., 2006; Howard & Krannitz, 2017).

Research suggests that job stress interacts with meaningfulness of work to predict employee mental health outcomes (Glazer et al., 2014). Specifically, meaning of work has been found to be a valuable personal resource that buffers the negative impact of job stressors on self-rated health (Britt et al., 2001), job burnout (Meng et al., 2022), and depressive symptoms (Lease et al., 2019). However, previous studies have not considered the role of levels of work stress, that is, to what extent meaning of work could promote mental health when individuals are under high stress. Therefore, I addressed the research gap by examining the moderating role of job stressors in the relationship between meaningfulness of work and suicidal ideation, as mediated by feelings of hopelessness and depression. The experience of job stressors is conceptualized as a

resource draining factor at work that might counteract the positive influences of meaningfulness of work and transformational leadership on employee well-being (Hobfoll & Shirom, 2001). I hypothesized that:

***Hypothesis 4a:*** *The relationships between meaningfulness of work and hopelessness/depression are moderated by levels of job stressors, such that the relationships are stronger when experienced job stressors are low and weaker when experienced job stressors are high.*

***Hypothesis 4b:*** *The indirect effects of meaningfulness of work on suicidal ideation through hopelessness/depression are moderated by job stressors, in that the higher meaningfulness of work is, the less severe the feeling of hopelessness/depression and suicidal ideation are with low experienced job stressors. On the other hand, the effects of meaningfulness of work on hopelessness/depression and suicidal ideation are reduced with high experienced job stressors.*

Similarly, research has found that transformational leadership could mitigate the detrimental effects of work stress on work-life balance (Syrek et al., 2013), psychological well-being (Arnold & Walsh, 2015), and burnout (Ul Hassan et al., 2023). Nevertheless, Arnold (2017) argues that more research is warranted to explore when transformational leadership would predict employee well-being, that is, boundary conditions of the relationship between transformational leadership and employee mental health. Thus, the current research responded to this call and examined job stressors as a moderator in the impact of transformational leadership on employee suicidal ideation through depression and hopelessness.

***Hypothesis 5a:*** *The relationships between transformational leadership and hopelessness/depression are moderated by levels of job stressors, such that the relationships are stronger when experienced job stressors are low and weaker when experienced job stressors are high.*

***Hypothesis 5b:** The indirect effects of transformational leadership on suicidal ideation through hopelessness/depression are moderated by job stressors, in that the higher transformational leadership is, the less severe the feeling of hopelessness/depression and suicidal ideation are with low experienced job stressors. On the other hand, the effects of transformational leadership on hopelessness/depression and suicidal ideation are reduced with high experienced job stressors.*

### **The Current Study**

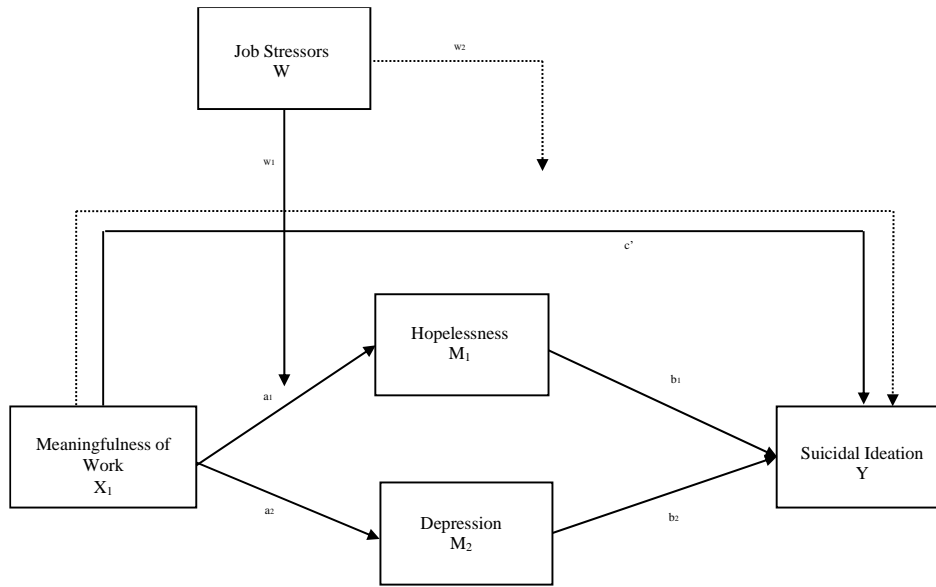
Elevated rates of suicide are well-documented among people of working age (Mustard et al., 2010; Yip & Caine, 2011). Although suicidal ideation has been widely researched in the areas of clinical, developmental, and cognitive psychology (e.g., May & Klonsky, 2016), fewer studies have been conducted in the workplace context to understand suicide in the working population (Howard & Krannitz, 2017). Glenn et al. (2018) argues that to advance research on suicidal behaviour, researchers need to shift away from the heavy focus on mental disorders as the primary predictive and explanatory factors in understanding suicidal ideation and behaviours. My research responded to this call by exploring the link between meaningfulness of job, transformational leadership, and employee suicidal ideation, as well as the boundary conditions of and the underlying mechanisms explaining the relationships. I pointed to the considerable influence of work to everyday life, including attitudes, moods, and well-being (Hobfoll, 2011; Howard & Krannitz, 2017), in positing a theoretical model of workplace suicidal ideation, including antecedent, mediating, and moderating effects.

The current research drew upon COR theory (Hobfoll, 1989, 2011), highlighting the role of workplace resources in connecting meaningfulness of work and transformational leadership with feelings of hopelessness, depression, and suicidal ideation. My models (see Figure 1)

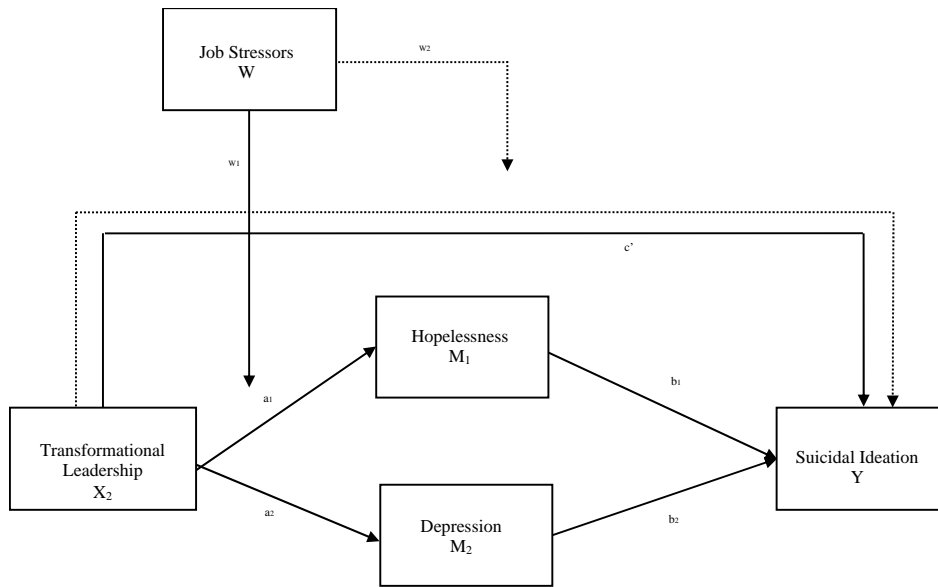
proposed that meaning of work and transformational leadership represent workplace resources, protecting employees against feelings of hopelessness, depression, and suicidal ideation (Arnold et al., 2015; Glazer et al., 2014; Munir et al., 2010; Perko et al., 2014). Meaningfulness of work and transformational leadership are posited to lead to alleviated suicidal ideation through reduced feelings of hopelessness and depressive symptoms. Job stressors, on the other hand, represent a risk factor that drains resources and prevents resource gain, which in turn, counteracts the positive impacts of meaningfulness of work and transformational leadership on hopelessness, depression, and suicidal ideation among employees (Baumert et al., 2014; Bonde, 2008; Howard et al., 2022; Howard & Krannitz, 2017).

**Figure 1**

*Conceptual Moderated Mediation Models of Employee Suicidal Ideation.*



(a) Model 1: Meaningfulness of Work as Predictor



(b) Model 2: Transformational Leadership as Predictor.

*Note. Experienced job stressors moderate the direct X-M<sub>1</sub> relationship and X-M<sub>2</sub> relationship (a paths), as well as the indirect relationship between X and Y through M<sub>1</sub> and M<sub>2</sub> (ab paths).*

## Method

The current research used a cross-sectional survey design to examine the associations among meaningfulness of job, transformational leadership, job stressors, hopelessness and depression, and employee suicidal ideation. Specifically, the goal of the current research was to provide preliminary evidence for the moderated mediation models, forming the basis for exploring longitudinal trajectories of suicidal ideation at work.

### Participants

Participants of the current study were recruited from Prolific, an online participant recruitment platform. Factors such as gender, age, or ethnicity were not considered in the selection criteria; however, participants need to report to one direct supervisor at work to be able to answer questions about their leader's leadership styles. Participants provided informed consent and then completed a set of questionnaires online through Qualtrics.

A total of 600 participants completed the survey. The current sample included 345 males (57.5%), 246 females (41.0%), six who identified as non-binary (1.0%), one transgender (.2%), and one whose gender was unspecified (.2%). Participants ranged in age from 19 to 85 ( $M = 38.22$ ,  $SD = 10.31$ ). The majority of participants are White ( $n = 473$ , 78.8%), followed by Black ( $n = 60$ , 10.0%), Asian ( $n = 48$ , 8.0%), Hispanic ( $n = 34$ , 5.7%), North American Indigenous ( $n = 7$ , 1.2%), Middle Eastern ( $n = 7$ , 1.2%), and other ethnicity groups ( $n = 4$ , .07%). Participants work in various industries; 100 work in professional, scientific, and technical services (16.7%), 75 work in education (12.5%), 70 work in service-producing sector (e.g., retail; 11.7%), 67 work in healthcare and social assistance (11.2%), 65 work in finance (10.8%), 44 work in manufacturing (3.6%), and the rest 179 participants work in other industries.

## **Materials**

Research materials used in this study are presented in Appendix A.

### ***Meaningfulness of Work***

Meaningfulness of work was measured by the 10-item Work and Meaning Inventory (WAMI; Steger et al., 2012). The WAMI measures the extent to which individuals perceive work as a subjectively meaningful experience, consisting of experiencing positive meaning in work (four items, e.g., “I have found a meaningful career”), sensing that work is a key avenue for making meaning (three items, e.g., “I view my work as contributing to my personal growth”), and perceiving one’s work to benefit some greater good (three items, e.g., “The work I do serves a greater purpose”). Each item is rated on a 5-point Likert scale (1 = absolutely untrue; 5 = absolutely true). The overall meaningfulness of work score is computed by averaging items scores. The WAMI demonstrated adequate reliability in previous research (Cronbach’s  $\alpha = .93$ ; Steger et al., 2012) and in the present study (Cronbach’s  $\alpha = .95$ ).

### ***Transformational Leadership***

Employees’ ratings of their supervisor’s transformational leadership were obtained through the Global Transformational Leadership scale (GTL; Carless et al., 2000). The GTL scale contains seven items measuring seven facets of transformational leadership, including: vision (“My leader communicates a clear and positive vision of the future”), staff development (“My leader treats staff as individuals, supports and encourages their development”), supportive leadership (“My leader gives encouragement and recognition to staff”), empowerment (“My leader fosters trust, involvement and cooperation among team members”), innovative thinking (“My leader encourages thinking about problems in new ways and questions assumptions”), lead by example (“My leader is clear about his/her values and practices what he/she preaches”), and



charisma (“My leader instills pride and respect in others and inspires me by being highly competent”). Each item is rated on a 5-point Likert scale (1 = Rarely or Never, 5 = Very Frequently or Always). The overall transformational leadership score is computed by averaging items scores. The GTL demonstrated adequate reliability in previous research (Cronbach’s  $\alpha = .93$ ; Carless et al., 2000) and in the current study (Cronbach’s  $\alpha = .95$ ).

### ***Job Stressors***

Participants’ perception and experience of job stress was measured by the single-item facet measure of job stressors developed by Gilbert and Kelloway (2014). The measure consists of 11 items representative of 11 distinct facets of job stressors, including: recognition and feedback (“I feel I am recognized for the work I do”), control (“I decide how to spend my time at work”), workload (“It is hard for me to keep up with the workload”), work-family conflict (“It is difficult to balance my work and family demands”), supervisor support (“My supervisor looks out for his/her people”), skill use (“My job allows me to use my skills and abilities”), decision making (“I have a say in how the work gets done”), significance (“My work is important to the organization”), information and resources (“I have the tools I need to do my job”), routinization (“There is little variety in the tasks that I do”), and co-worker relations (“My co-workers treat me with respect and courtesy”). Each item is rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree); overall experienced job stressors level is calculated by averaging the item scores. Previous research suggests that the single-item job stressor facet measure demonstrated good psychometric properties (Gilbert & Kelloway, 2014). The job stressor measure showed acceptable reliability in the current study (Cronbach’s  $\alpha = .79$ ).

### *Feelings of Hopelessness*

Individuals' feelings of hopelessness were measured by the modified version of the State–Trait Hopelessness Scale (STHS; Dunn et al., 2013). Dunn et al. (2013) differentiated state from trait hopelessness and developed the STHS to measure both the temporary response and the chronic outlook of hopelessness. The current research focused on individuals' experience of hopelessness within the period of past two months; thus, all items would start with the stem “in the past two months” instead of “today” or “typically” as presented in the original scales. Further, Dunn et al. (2003) conducted factor analyses for the state and trait subscales, which yielded two factors, hopelessness present and hopelessness absent, for both subscales. The current research focused on the presence of feelings of hopelessness, therefore, only items that load on hopelessness present factor were included in this study. The current hopelessness scale included eight items rated on a 5-point Likert scale (1 = Rarely or Never, 5 = Very Frequently or Always). Examples of items include “It is difficult for me to imagine my future” and “I feel giving up would be easier”. The overall hopelessness score is computed by averaging items scores. Research showed evidence for validity and reliability for the STHS (Dunn et al., 2003). The STHS items in the present study demonstrated good reliability (Cronbach's  $\alpha = .94$ ).

### *Depressive Symptoms*

Severity of depressive symptoms was measured by the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001). The PHQ-9 is a self-report survey which allows respondents to indicate the severity of depression on a nine-symptom checklist (e.g., “little interest or pleasure in doing things”). Respondents answer how often have they been bothered by each depressive symptoms on a four-point frequency scale (0 = not at all, 3 = nearly every day). The overall depression severity score is computed by averaging items scores. The PHQ-9 has been validated

in various populations, showing adequate evidence for validity and reliability (Cronbach's  $\alpha = .84$  to  $.93$ ; Kroenke et al., 2001; Thibodeau & Asmundson, 2014). The PHQ-9 in the present study demonstrated good reliability (Cronbach's  $\alpha = .89$ ).

### ***Suicidal Ideation***

Suicidal ideation was measured by the Depressive Symptom Index Suicidality Subscale (DSI-SS; Joiner et al., 2002). The DSI-SS is a four-item measure of the frequency and intensity of suicidal ideas and impulses. Items are rated on a 4-point scale (0-3) with varying descriptors for each item. For example, for group A statements, 0 indicates "I do not have thoughts of killing myself" whereas 4 indicates "I always have thoughts of killing myself". The overall DSI-SS score (ranging from 0 to 12) is computed by adding up scores on all four items, with higher scores reflecting greater severity of suicidal ideation. Joiner et al. (2002) suggested a cutoff score of 3 among general populations, representing the threshold at or above which one is deemed to be suicidal. The DSI-SS demonstrated favorable reliability characteristics in previous research (Cronbach's  $\alpha = .90$ ; Joiner et al., 2002) and in the current study (Cronbach's  $\alpha = .93$ ).

### **Data Analysis**

Prior to testing the moderated mediation models, the measurement models were tested on how well observed variables represent the underlying latent constructs. Specifically, I used CFA to test whether the depression and hopelessness should be represented as separate constructs in this study. The measurement model was evaluated on the basis of the chi-square test and several other fit indices: root-mean-square error of approximation (RMSEA), Tucker-Lewis index (TLI), and comparative fit index (CFI). Subsequently, the PROCESS macro for SPSS (Hayes, 2013) was used to test a set of two moderated mediation models (see Figure 1). In the first model, the relationship between meaningfulness of work and suicidal ideation is mediated by hopelessness

and depression and the mediation paths are moderated by job stressors. In the second model, the relationship between transformational leadership and suicidal ideation is mediated by hopelessness and depression and the mediation paths are moderated by job stressors. The moderated mediation models were tested using Hayes (2013) PROCESS Model 7. Bootstrapping method with 5,000 samples was used.

### **Results**

Prior to testing the main hypotheses, data accuracy and assumptions were checked. Specifically, data input errors on demographic information and survey items were treated as missing values. Mean composite scores for meaning of work (WAMI), transformational leadership (GLT), experienced job stressors, hopelessness (STHS), and depression (PHQ-9) were computed for participants who responded to at least two-thirds of the items on each scale. Total suicidal ideation scores were computed for participants who responded to at least two of the four items on the DSI-SS scale. The assumptions of independence of observations, homoscedasticity, linearity, and absence of multicollinearity were checked and met. A total of 13 univariate outliers were identified by the inspection of  $Z$  scores of each scale ( $Z < -3.3$  or  $Z > 3.3$ ). Univariate outliers were kept in the dataset because extreme cases are of interest to the current research (e.g., individuals with high suicidal ideation). Alternative analyses were conducted without the outliers; results were similar to those with the outliers. There were no multivariate outliers in the data. Mooney et al. (1993) recommended that bootstrapping is ideal for suicide-related data in a non-clinical sample, which is likely to be positively skewed. Therefore, bootstrapping methods with 5,000 iterations were used due to concerns for normality. Descriptive statistics and intercorrelations for all study variables are presented in Table 1.

Joiner et al. (2002) suggested a cutoff score of 3 for the DSI-SS scale to identify individuals who are at risk for suicide. Among the 594 individuals who responded to this scale, 88 (14.8%) scored at or above the cutoff score and indicated relatively high levels of frequency and intensity of suicidal ideas and impulses. A total of 481 (80.2%) reported no suicidal ideation (scored 0).

**Table 1***Descriptive Statistics and Intercorrelations Among Study Variables (N = 581).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Gender	--	--							
2. Age	38.21	10.31	.06						
3. Meaningfulness of Work	3.47	1.02	.08	.11**					
4. Transformational Leadership	3.71	1.02	-.09*	.07	.51***				
5. Job Stressors	2.17	.55	.13**	-.10*	-.59***	-.66***			
6. Hopelessness	2.14	.99	.09*	-.12**	-.40***	-.32***	.41***		
7. Depression	1.69	.60	.10*	-.15***	-.26***	-.24***	.35***	.76***	
8. Suicidal Ideation	.69	1.63	.03	-.09*	-.12**	-.11**	.14***	.53***	.55***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ 

*Gender: 1 = Male, 2 = Female. Seven participants identified as non-binary/transgender; two participants did not report gender identity. They were not included for any gender correlations to improve interpretability. However, the participants were retained for all other correlations.*

### Measurement Model

In the current study, the moderated mediation paths were tested separately in two models, with meaningfulness of work and transformational leadership as the predictor, respectively. The predictors were not tested in the same model due to concerns for collinearity issues<sup>1</sup>.

Meaningfulness of work and transformational leadership correlated at a substantial level ( $r = .51$ ). Although preliminary regression analyses revealed the absence of multicollinearity (VIF < 10), Bowerman and O'Connell (1990) suggested that if the average VIF is greater than 1 (in the current study, 1.85), then multicollinearity may be a potential problem. According to Field (2017), if there are concerns for multicollinearity issue, one solution is to drop one of the variables from the model. Therefore, I tested two moderated mediation models with meaningfulness of work and transformational leadership as independent predictors.

CFA was conducted using Mplus 8 (Muthén & Muthén, 2017) to test the measurement models of the proposed moderated mediation models and the competing models. First, for each predictor, I estimated a five-factor model representing the five factors in the model (Model 1 with Meaningfulness of Work as predictor and Model 2 with Transformational Leadership as predictor). Then, I tested unidimensional models in which all items loaded on a single factor (Model 3 and Model 4, with Meaningfulness of Work and Transformational Leadership as the predictor, respectively). Finally, I estimated four-factor models which combined depression and hopelessness items into a single factor (Model 5 and Model 6, with Meaningfulness of Work and

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<sup>1</sup> Alternative model with both meaningfulness of work and transformational leadership included as predictors was tested in MPlus 8. Results found that both predictors and their interactions with job stressors showed nonsignificant effects on the mediators. Despite the path coefficients being nonsignificant, the predictors explained a significant amount of variance in the mediators, further indicating collinearity issues. Removing either one predictor from the model yielded significant results.

Transformational Leadership as the predictor, respectively). Fit indices for the models are presented in Table 2. As shown, the five factor models provided a better fit than did the four-factor (Meaningfulness:  $\Delta \chi^2 (4) = 516.17$ ; Transformational Leadership:  $\Delta \chi^2 (4) = 508.97$ ) or the unidimensional models (Meaningfulness:  $\Delta \chi^2 (10) = 7610.30$ ; Transformational Leadership:  $\Delta \chi^2 (10) = 7036.29$ ). Consistent with the literature on item level factor analysis (Kelloway, 2014), most fit indices for Model 1 and Model 2 indicated moderate support for the model with the RMSEA suggesting a good absolute fit to the data. Therefore, I retained the five-factor models for further analyses. Standardized parameters for the models are presented in Appendix B.

**Table 2**

*Comparison of Model Fit Indices Between the Proposed Moderated Mediation Models and Competing Models*

Model	$\chi^2; p (df)$	CFI	TLI	RMSEA [90% CI]
<b>Meaningfulness of Work</b>				
Model 1	2979.98; <.001 (809)	.88	.87	.067 [.064, .069]
Model 3	10590.28; <.001 (819)	.46	.43	.141 [.139, .143]
Model 5	3496.15; <.001 (813)	.85	.84	.074 [.072, .077]
<b>Transformational Leadership</b>				
Model 2	2435.17; <.001 (692)	.90	.89	.065 [.062, .068]
Model 4	9471.46; <.001 (702)	.48	.45	.144 [.142, .147]
Model 6	2944.14; <.001 (696)	.87	.86	.073 [.071, .076]



### **Moderated Mediation Model**

In this section, results for hypothesis testing are presented in an order different from the one in which hypotheses were proposed to better illustrate the relationship paths in each model. In other words, hypothesis-specific findings with respect to each model are organized and presented in two sub-sections.

#### ***Meaningfulness of Work as Predictor***

Hypotheses 1a-b and 4a-b are specifically related to Model 1, in which meaningfulness of work serves as the predictor. As can be seen in Table 1, correlational analyses suggested that meaningfulness of work was negatively associated with feelings of hopelessness, depression, and suicidal ideation. On the other hand, experienced job stressors were positively correlated with hopelessness and depression (thus supporting Hypotheses 3a and 3b).

Further, results from moderated mediation analyses suggested that meaningfulness of work and experienced job stressors interacted to affect feelings of hopelessness and depression. Job stressors moderated the meaningfulness-hopelessness relationship and the meaningfulness-depression relationship, indicating that the relationships changed depending on the levels of job stress (see Table 3 and Table 4). Specifically, as experienced job stressors increased, the meaningfulness-hopelessness relationship and the meaningfulness-depression relationship became weaker. The negative relationship between meaningfulness of work and depression became nonsignificant when the experience of job stressors was at a high level. The interaction between meaningfulness of work and job stressors explained an additional 1.4% of variance in hopelessness ( $F(1, 590) = 10.61, p = .001$ ) and an additional .9% of variance in depression ( $F(1, 590) = 5.99, p = .015$ ). Thus, Hypothesis 4a was supported. The effects of meaningfulness of

work on feelings of hopelessness and depression at different levels of job stressors are presented in Figure 2 and Figure 3.

**Table 3**

*Results for Moderated Mediation Model: Meaningfulness of Work (N = 594).*

Predictors	Outcomes					
	Hopelessness (M <sub>1</sub> )			Depression (M <sub>2</sub> )		
	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>
Meaningfulness of Work (X <sub>1</sub> )	-.24 (.05)	[-.33, -.14]	<.001	-.06 (.03)	[-.12, -.01]	.026
Job Stressors (W)	.57 (.08)	[.42, .73]	<.001	.35 (.05)	[.25, .46]	<.001
Meaningfulness × Job Stressors	.17 (.07)	[.04, .30]	.001	.08 (.04)	[.00, .16]	.015
	<i>R</i> <sup>2</sup> = .22 <i>F</i> (3, 590) = 55.46, <i>p</i> < .001			<i>R</i> <sup>2</sup> = .14 <i>F</i> (3, 590) = 30.71, <i>p</i> < .001		

*Note.* X, independent variable; W, moderator; M, mediator.

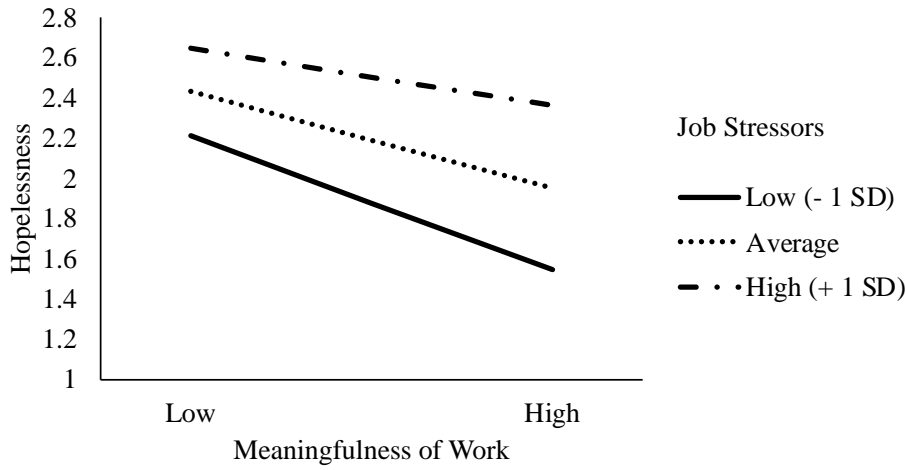
**Table 4**

*Conditional Effects of Meaningfulness of Work on Hopelessness and Depression (N = 594).*

Variable	Consequents					
	Hopelessness (M <sub>1</sub> )			Depression (M <sub>2</sub> )		
	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>
Low Job Stressors	-.33 (.05)	[-.44, -.22]	<.001	-.11 (.04)	[-.18, -.04]	.002
Average Job Stressors	-.24 (.04)	[-.32, -.15]	<.001	-.06 (.03)	[-.12, -.01]	.026
High Job Stressors	-.14 (.07)	[-.24, -.04]	.005	-.02 (.03)	[-.08, .05]	.588

**Figure 2**

*Moderating Effect of Job Stressor on the Relationship Between Meaningfulness of Work and Hopelessness.*



**Figure 3**

*Moderating Effect of Job Stressor on the Relationship Between Meaningfulness of Work and Depression.*



Results from the moderated mediation analyses (see Table 5) suggested that the indirect impact of meaningfulness of work on employee suicidal ideation through hopelessness was significant at all levels of experienced job stressors. Thus, Hypothesis 1a was supported. Further, the indirect relationship between meaningfulness of work and suicidal ideation through depression was found to be significant when the experience of job stressors was at low and average levels and nonsignificant when the experience of job stressors was at a high level; thus, Hypothesis 1b was partially supported.

Experienced job stressors were found to serve a significant moderating role in the indirect path from meaningfulness of work to suicidal ideation through hopelessness (Index of Moderated Mediation = .08, *SE* = .04, Bootstrapped 95% CI: .02 to .16). The indirect relationship through hopelessness was weaker for employees experiencing a high level of job stressors than for those scored low on job stressors. The strength of the indirect relationship differed significantly across levels of experienced job stressors. The moderating effect of job stressors on the indirect relationship between work meaning on suicidal ideation through depression was marginally significant (Index of Moderated Mediation = .08, *SE* = .04, Bootstrapped 95% CI: -.0009 to .15). The strength of the indirect relationship did not differ significantly across levels of job stressors. Taken together, Hypothesis 4b was partially supported.

**Table 5**

*Conditional Indirect Effects of Meaningfulness of Work on Suicidal Ideation (N = 594).*

Variable	Mediators			
	Hopelessness (M <sub>1</sub> )		Depression (M <sub>2</sub> )	
	Coeff ( <i>SE</i> )	Bootstrapped 95% CI	Coeff ( <i>SE</i> )	Bootstrapped 95% CI
Low Job Stressors	-.16 (.04)	[-.25, -.08]	-.10 (.04)	[-.18, -.03]
Average Job Stressors	-.11 (.03)	[-.18, -.06]	-.06 (.03)	[-.12, -.01]
High Job Stressors	-.07 (.03)	[-.13, -.01]	-.03 (.03)	[-.09, .05]

***Transformational Leadership as Predictor***

Hypotheses 2a-b and 5a-b are specifically related to Model 2, in which transformational leadership serves as the predictor. As can be seen in Table 1, correlational analyses suggested that transformational leadership was negatively associated with feelings of hopelessness and depression. Further, experienced job stressors were found to serve a moderating role in the aforementioned relationships (see Table 6 and Table 7). In other words, the impact of transformational leadership on hopelessness and depression changed depending on levels of job stressors. Specifically, as experienced job stressors increased, the transformational leadership-hopelessness relationship and the transformational leadership-depression relationship became weaker. The negative relationship between transformational leadership and hopelessness became nonsignificant when the experience of job stressors is at a high level. Transformational leadership was significantly associated with depression only when experienced job stressors were at a low level but not when experienced job stressors were at moderate or high levels. The interaction between transformational leadership and job stressors explained an additional 1.2% of variance in hopelessness ( $F(1, 590) = 9.04, p = .003$ ) and an additional 1.1% of variance in depression ( $F(1, 590) = 7.33, p = .007$ ). Thus, Hypothesis 5a was supported. The effects of transformational leadership on feelings of hopelessness and depression at different levels of job stressors are presented in Figure 4 and Figure 5.

**Table 6**

*Results for Moderated Mediation Model: Transformational Leadership (N = 594).*

Predictor	Outcomes					
	Hopelessness (M <sub>1</sub> )			Depression (M <sub>2</sub> )		
	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>
Transformational Leadership (X <sub>2</sub> )	-.12 (.05)	[-.22, -.02]	.017	-.03 (.03)	[-.09, .04]	.331
Job Stressors (W)	.68 (.09)	[.49, .86]	<.001	.39 (.06)	[.27, .51]	<.001
Transformational Leadership × Job Stressors	.17 (.07)	[.03, .29]	.003	.10 (.04)	[.01, .16]	.007
	<i>R</i> <sup>2</sup> = .19 <i>F</i> (3, 590) = 45.67, <i>p</i> < .001			<i>R</i> <sup>2</sup> = .13 <i>F</i> (3, 590) = 29.75, <i>p</i> < .001		

*Note.* X, independent variable; W, moderator; M, mediator.

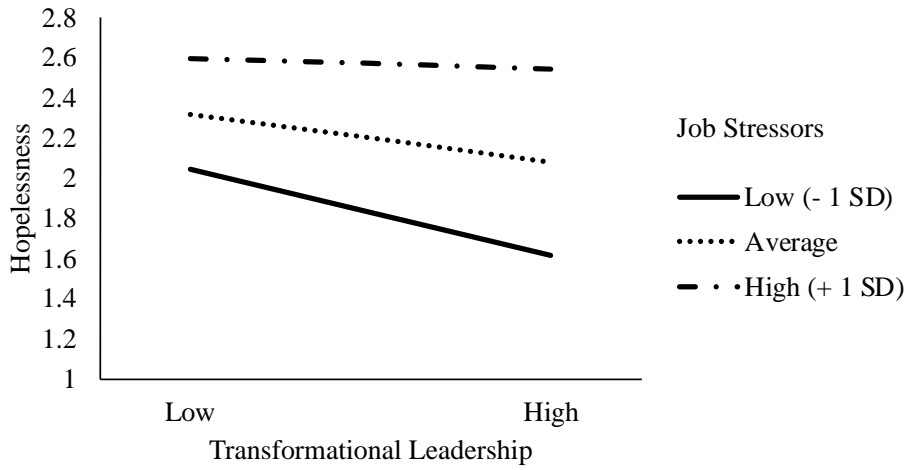
**Table 7**

*Conditional Effects of Transformational Leadership on Hopelessness and Depression (N = 594).*

Variable	Outcomes					
	Hopelessness (M <sub>1</sub> )			Depression (M <sub>2</sub> )		
	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>	Coeff (SE)	Bootstrapped 95% CI	<i>p</i>
Low Job Stressors	-.21 (.06)	[-.34, -.09]	<.001	-.08 (.04)	[-.16, -.01]	.039
Average Job Stressors	-.12 (.05)	[-.22, -.02]	.017	-.03 (.03)	[-.09, .03]	.331
High Job Stressors	-.03 (.05)	[-.13, .08]	.620	.02 (.03)	[-.04, .09]	.502

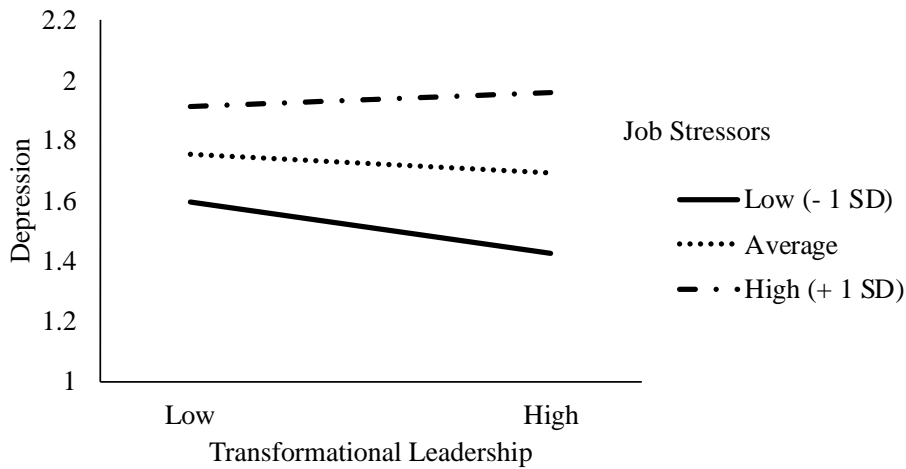
**Figure 4**

*Moderating Effect of Job Stressors on the Relationship Between Transformational Leadership and Hopelessness.*



**Figure 5**

*Moderating Effect of Job Stressors on the Relationship Between Transformational Leadership and Depression.*





Regarding the conditional indirect effects, results of moderated mediation analyses (see Table 8) suggested that the indirect negative relationship between transformational leadership and suicidal ideation through hopelessness was significant when experienced job stressors were low or moderate but nonsignificant when experienced job stressors were at a high level. Thus, Hypothesis 2a was partially supported. The indirect impact of transformational leadership on suicidal ideation through depression was only marginally significant when experienced job stressors were low. The indirect relationship became nonsignificant as job stressors increased. Thus, Hypothesis 2b is partially supported.

The experience of job stressors was found to serve a significant moderating role in the indirect path from transformational leadership to suicidal ideation through hopelessness (Index of Moderated Mediation = .08, *SE* = .03, Bootstrapped 95% CI: .01 to .15). The strength of the indirect relationship differed significantly across levels of job stressors. Experienced job stressors also significantly moderated the indirect impacts of transformational leadership on suicidal ideation through depression (Index of Moderated Mediation = .09, *SE* = .04, Bootstrapped 95% CI: .01 to .18). Despite that the indirect relationships were nonsignificant (or approaching significance), the strength of the indirect relationship were found to differ significantly across levels of job stressors. Thus, Hypothesis 5b was supported.

**Table 8**

*Conditional Indirect Effects of Transformational Leadership on Suicidal Ideation (N = 594).*

Variable	Mediators			
	Hopelessness (M <sub>1</sub> )		Depression (M <sub>2</sub> )	
	Coeff ( <i>SE</i> )	Bootstrapped 95% CI	Coeff ( <i>SE</i> )	Bootstrapped 95% CI
Low Job Stressors	-.09 (.04)	[-.17, -.03]	-.08 (.04)	[-.17, .00]
Average Job Stressors	-.05 (.03)	[-.11, -.01]	-.03 (.03)	[-.09, .04]
High Job Stressors	-.01 (.03)	[-.07, .04]	.02 (.04)	[-.05, .10]

### Discussion

Suicide is among the leading causes of death among working individuals in North America (Mustard et al., 2010; Peterson et al., 2018). In the current sample, the prevalence of suicidal ideation was relatively high; approximately 14.8% of participants reported having thoughts on suicide. These results further stressed the importance of researching suicide in general working populations.

Employee suicide has profound repercussion not only for the individual and the family, but also for the organization where the individual works. Yet many suicides are preventable. To develop effective prevention strategies, it is important to first understand what factors could impact suicide. I explored suicidal ideation in a workplace context, that is, how workplace factors might influence suicidal ideation among working individuals. Specifically, the goal of the current study was to investigate the protective roles of meaningfulness of work and transformational leadership in alleviating employees' suicidal thoughts. Further, this study investigated hopelessness and depression as underlying mechanisms connecting meaningfulness of work and transformational leadership with suicidal ideation and experienced job stressors as the boundary condition for such relationships. Drawing upon COR theory (Hobfoll, 1989, 2011), this study highlighted the role of resources in understanding how work might affect individuals' mental health struggles and suicidal ideations. Taken together, the current study tested two moderated mediation models, in which meaning at work and transformational leadership, respectively, are associated with reduced feelings of hopelessness and depression, which are further associated with alleviated suicidal ideation, while job stressors moderating the indirect relationships.

I found that meaningfulness of work was negatively associated with suicidal ideation among employees. This result is consistent with previous research findings suggesting that meaning of work plays a protective function against mental health issues among employees (Lips-Wiersma & Wright, 2012; Passmore et al., 2019; Torres Stone et al., 2018).

Meaningfulness of work is a valuable resource for employees that could increase their capacity in handling work demands and even demands in other areas of life (Allan et al., 2015; Greenhaus & Powell, 2006; Hobfoll & Shirom, 2001). Employees who perceive their job as meaningful also tend to actively search and build resources for themselves, leading to a resource gain cycle (Erlmaier et al., 2022). Meaningfulness of work is different from similar concepts such as intrinsic motivation and work value, such that meaningfulness promotes a sense of self-transcendence, allowing individuals to look beyond the challenges and problems they are currently facing (Dik et al., 2013). Finding meaning in work can increase individuals' feelings of contributing to society as a whole, enhance their self-esteem, and provides a way to cope with mental health problems such as depression and hopelessness (Torres Stone et al., 2018). The current research contributed to the literature in job meaningfulness by examining the relationship between meaning of work and suicidal ideation. Results from this study suggested that cultivating meaningfulness at work could be an effective way to prevent the development of suicidal thoughts.

As predicted, transformational leadership was also negatively correlated with employee suicidal ideation. In other words, employees who perceived their leaders to be transformational tended to report lower levels of suicidal ideation. This result is supported by previous literature suggesting that leaders could play an important role in mitigating risks for suicide among employees (Boccio & Macari, 2014; O'Brien et al., 2022; Trachik et al., 2021). Transformational

leaders provide their subordinates with social support, foster healthy workplace environments, and promote a sense of achievement among the employees (Arnold, 2017; Bayraktar & Jiménez, 2020; Liaw et al., 2010). Previous research has consistently found that transformational leadership is linked to reduced mental health symptoms among employees (LaRocca et al., 2018; Munir et al., 2010; Perko et al., 2014). Building upon previous findings, this study provided preliminary evidence that transformational leadership could also play a role in preventing suicidal ideation and behaviours in working individuals. The negative relationship between transformational leadership and suicidal ideation is consistent with COR theory (Hobfoll, 2011). Transformational leaders provide their followers with valuable resources such as positive leadership characteristics (Bass & Riggio, 2005), enriching social interactions (Nielsen et al., 2008), and psychological safety (Carmeli et al., 2014). Moreover, they help their followers to build their own resources by offering guidance, information, and opportunities (Kim & Park, 2020). As such, employees would have more resources to call upon to cope with negative feelings and mental health issues rather than using suicide as a way to escape.

The current study found that meaningfulness of work and transformational leadership were associated with employee suicidal ideation through feelings of hopelessness and depression. In other words, the positive effects of meaning of work and transformational leadership on suicidal ideation could be explained by lowered hopelessness and depression. It has been well-established that hopelessness and depression are robust predictors of suicidal ideation and attempts (Beck et al., 1993; Ribeiro et al., 2021). In the workplace setting, chronic resource loss and lack of gain could lead to a pessimistic and hopeless attitude towards life (Akirmak & Ayla, 2021), which might further translate to suicidal ideation and attempts among employees (Beck et al., 2006). Resource depletion could also contribute to the development of

depressive symptoms and suicidal ideation (Hobfoll et al., 2012; Kato, 2014; Tan & Xia, 2021).

On the other hand, meaningfulness of work and transformational leadership might protect against resource loss and replenish depleted resources, thereby alleviating feelings of hopelessness and depression (Arnold, 2017; Erlmaier et al., 2022). As such, alleviated hopelessness and depression function as the mechanism connecting meaningfulness of work and transformational leadership with decreased employee suicidal ideation. The present research contributes to suicide literature by examining the mediating role of hopelessness and depression in the relationships between protective factors (rather than risk factors) and suicidal ideation.

Additionally, I investigated hopelessness and depression as separate mechanisms explaining the effects of meaning of work and transformational leadership on suicidal ideation. Even though hopelessness and depression were found to be highly correlated in the current sample, they demonstrated different patterns of relationships with meaningfulness of work and transformational leadership and different levels of impacts on suicidal ideation. By testing and comparing alternative models, I found that models in which hopelessness and depression are conceptualized as separate factors demonstrated better model fit than those in which hopelessness and depression are conceptualized as a global depression factor. Hopelessness and depression demonstrated different mediation functions in the relationships of work meaning and transformational leadership with suicidal ideation. Overall, the indirect relationships through hopelessness were stronger than the ones through depression. This result is supported by previous research suggesting that hopelessness and depression are differentially linked to suicidal ideation (Troister & Holden, 2013). For example, some studies have found that hopelessness is more important than depression in predicting suicidal ideation and attempts (Beck et al., 1993; Kuo et al., 2004; Ribeiro et al., 2018) while other studies suggesting the

opposite (Bagge et al., 2014; Cole, 1989; Prinstein et al., 2008). The current research attempted to address the inconsistencies by investigating hopelessness and depression as independent mediators in explaining the relationships of work meaning and transformational leadership with employee suicidal ideation. Findings from this research provide insights into better identifying employees who are at risk for suicide and designing effective prevention programs that target specific mechanisms.

I also investigated the boundary condition of the relationships between workplace protective factors and employee suicidal ideation. Results suggested that the experience of job stressors moderated the indirect impacts of meaningfulness of work and transformational leadership on employee suicidal ideation, pointing to potential limitations of work meaning and leadership in supporting employee mental health. Despite that meaning of work and transformational leadership have been found to positively affect hopelessness and depression and further contribute to alleviated suicidal ideation, such positive impacts reduce substantially as experienced job stressors increase. That is to say, when employees are under high stress at work, perceiving meaning at work and having a transformational leader might not be as effective in preventing the development of suicidal ideation. From the COR perspective (Hobfoll, 2011), although meaning of work and transformational leadership contribute to resource gain and replenishment, they might not be able to fill the hole opened by high job stress on the “resource bucket”. When experiencing high levels of stress, employees might not focus on resource seeking or meaning making at work but rather on handling more immediate stressors and challenges (Rosso et al., 2010). Previous research suggests that low job satisfaction can constrain the meanings to be found in work; meaningful work is related to decreased anxiety only when job satisfaction is high (Allan et al., 2018). Similarly, the positive impact of transformational

leadership on employee well-being is dependent on various factors including employment status, power distance, and affective commitment (Arnold, 2017; Franke & Felfe, 2011; Kanste et al., 2007; Zwingmann et al., 2014). The present research extended this line of research and found that the direct relationships of transformational leadership and meaning of work with hopelessness and depression and the indirect relationships with suicidal ideation are contingent on levels of experienced job stressors.

### **Theoretical and Practical Implications**

Theoretically, the present study makes several key contributions. First, I responded to Glenn et al.'s (2018) call that suicide research must go beyond the "usual suspects" of the risk factors such as mental disorders to provide a more holistic view of the development of suicide (p. 65). Further, it is equally important to research protective factors against mental health problems and suicidal ideation. As such, the current study focuses on suicidal ideation in the workplace context, providing insights into how protective and risk factors at work interact to impact suicidal ideation in the general work populations.

Second, consistent with previous research and the COR theory (Hobfoll, 2011), meaningfulness of work and transformational leadership were found to serve a protective role against hopelessness, depression, and suicidal ideation by generating and replenishing resources for employees. However, the protective function is limited by the resource draining factor, job stressors. The current research supports that the COR theory presents a useful framework in studying employee mental well-being, connecting positive and negative workplace factors in understanding how work might alleviate or exacerbate suicidal ideation. Third, the current research found that hopelessness and depression showed different patterns of relationship with meaningfulness of work, transformational leadership, and employee suicidal ideation. This

finding is in line with previous research suggesting that hopelessness and depression are related but independent predictors for suicidal ideation (Ribeiro et al., 2018). Despite being highly correlated, hopelessness and depression each explains unique variance in employee suicidal ideation in the current study. By teasing apart the relationships of hopelessness and depression with suicidal ideation, this study provides insights into better identifying employees who are at risk for suicide and designing effective prevention programs that target specific mechanisms.

The current research also provides several important practical implications. First, this study suggests that meaningfulness of work and transformational leadership are important resources that might help prevent the development of employee suicidal ideation. Workplace suicide prevention programs could focus on fostering such resources, specifically, organizations could help employees cultivate meaningfulness in their jobs and reinforce the congruence between work and the self (Dik et al., 2013). Leadership mental health training programs could use transformational leadership model as the theoretical foundation, as it has been found to be negatively associated with employees' mental health problems and suicidal thoughts. Second, the moderating role of job stressors in the impact of job meaningfulness and transformational leadership on suicidal ideation has important implications for organizational practitioners in developing policies and designing jobs. As much as meaning of work and transformational leadership might reduce suicidal ideation, job stressors seem to be presenting more fundamental issues that could lead to employee suicide. Thus, organizations should strive to create a workplace with balanced challenges and resources to support their employees' mental health and well-being.



### **Limitations and Future Directions**

The current research has several limitations. First, the cross-sectional nature of this study limits the ability to draw causal conclusions and explore the temporal relationships among transformational leadership, meaningfulness of work, job stressors, hopelessness, depression, and suicidal ideation. It is possible that depressive symptoms and hopelessness are predictors that affect individuals' perceptions of meaning and leadership at work, which further lead to heightened suicidal ideation. Thus, future research should implement longitudinal research designs to verify the proposed temporal ordering of variables.

Second, this study only considered meaningfulness of work and transformational leadership as protective factors at work that could potentially alleviate employee mental health symptoms and suicidal ideation. Future research could include other workplace resources as predictors in the model, such as psychological safety, team support, and leader mental health literacy. Future research should also take into account how other life events might play a role in employee suicidal ideation. This study focused on meaningfulness of work and transformational leadership as protective factors against suicide because they might enable employees to look beyond their immediate problems and take meaningful challenges at work. Thus, future research could also investigate other underlying mechanisms explaining the positive impacts of meaning at work and transformational leadership on suicidal ideation, including needs satisfaction, sense of belongingness, and professional fulfillment.

Finally, this study focuses on suicidal ideation rather than actual suicide attempts or behaviours. Previous research suggests that suicidal ideation does not necessarily lead to subsequent suicide attempts and that suicidal ideation and behaviours have different implications for the individual and the community (Klonsky et al., 2016). Future research could explore

factors that distinguishes between employees who attempt suicide and those who only consider suicide (May & Klonsky, 2016). By understanding which employees with suicidal ideation are more likely to act on those thoughts, organizational researchers and practitioners are able to design workplace suicide prevention programs that are more targeted and contextualized. Nevertheless, this study provided preliminary support for the moderated mediation model that connects workplace factors with suicidal ideation among working individuals. Considering the profound impacts work has on individuals' health and well-being, future studies should extend this line of research and investigate how other workplaces factors might prevent or exacerbate employee suicidal ideation.

### **Conclusion**

The goal of the present study was to examine how and under which conditions do meaningfulness of work and transformational leadership serve a protective function against employee suicidal ideation. Results suggested that meaningful work and transformational leadership were connected with reduced suicidal ideation through lowered feelings of hopelessness and depression among employees. However, the positive impacts of work meaning and transformational leader on suicidal ideation were attenuated when experienced job stressors are at a high level. Findings from the current study provide insights into suicidal ideation in the workplace context and give important implications for developing workplace suicide prevention programs. Future studies could build upon the current findings and further test the moderated mediation models using longitudinal or field research design.

### References

- Ahookhosh, P., Bahmani, B., Asgari, A., & Moghaddam, H. H. (2017). Family Relationships and Suicide Ideation: The Mediating Roles of Anxiety, Hopelessness, and Depression in Adolescents. *International Journal of High Risk Behaviors and Addiction, 6*(1).  
<https://doi.org/10.5812/ijhrba.31573>
- Akirmak, U., & Ayla, P. (2021). How is time perspective related to burnout and job satisfaction? A conservation of resources perspective. *Personality and Individual Differences, 181*, 109667. <https://doi.org/10.1016/j.paid.2019.109667>
- Alderson, M., Parent-Rocheleau, X., & Mishara, B. (2015). Critical review on suicide among nurses: What about work-related factors? *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 36*, 91–101. <https://doi.org/10.1027/0227-5910/a000305>
- Allan, B. A., Dexter, C., Kinsey, R., & Parker, S. (2018). Meaningful work and mental health: Job satisfaction as a moderator. *Journal of Mental Health, 27*(1), 38–44.  
<https://doi.org/10.1080/09638237.2016.1244718>
- Allan, B. A., Douglass, R. P., Duffy, R. D., & McCarty, R. J. (2016). Meaningful Work as a Moderator of the Relation Between Work Stress and Meaning in Life. *Journal of Career Assessment, 24*(3), 429–440. <https://doi.org/10.1177/1069072715599357>
- Allan, B. A., Duffy, R. D., & Douglass, R. (2015). Meaning in life and work: A developmental perspective. *The Journal of Positive Psychology, 10*(4), 323–331.  
<https://doi.org/10.1080/17439760.2014.950180>
- Anestis, M., Bryan, C., Cornette, M., & Joiner, T. (2008). Understanding Suicidal Behavior in the Military: An Evaluation of Joiner's Interpersonal-Psychological Theory of Suicidal

- Behavior in Two Case Studies of Active Duty Post-Deployers. *Journal of Mental Health Counseling*, 31(1), 60–75. <https://doi.org/10.17744/mehc.31.1.u394h1470248844n>
- Arnold, K. A. (2017). Transformational leadership and employee psychological well-being: A review and directions for future research. *Journal of Occupational Health Psychology*, 22, 381–393. <https://doi.org/10.1037/ocp0000062>
- Arnold, K. A., Connelly, C. E., Walsh, M. M., & Martin Ginis, K. A. (2015). Leadership styles, emotion regulation, and burnout. *Journal of Occupational Health Psychology*, 20(4), 481–490. <https://doi.org/10.1037/a0039045>
- Arnold, K. A., & Walsh, M. M. (2015). Customer incivility and employee well-being: Testing the moderating effects of meaning, perspective taking and transformational leadership. *Work & Stress*, 29(4), 362–378. <https://doi.org/10.1080/02678373.2015.1075234>
- Arnoux-Nicolas, C., Sovet, L., Lhotellier, L., Di Fabio, A., & Bernaud, J.-L. (2016). Perceived Work Conditions and Turnover Intentions: The Mediating Role of Meaning of Work. *Frontiers in Psychology*, 7. <https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00704>
- Avey, J. B., Luthans, F., Smith, R. M., & Palmer, N. F. (2010). Impact of positive psychological capital on employee well-being over time. *Journal of Occupational Health Psychology*, 15, 17–28. <https://doi.org/10.1037/a0016998>
- Bagge, C. L., Lamis, D. A., Nadorff, M., & Osman, A. (2014). Relations Between Hopelessness, Depressive Symptoms and Suicidality: Mediation by Reasons for Living. *Journal of Clinical Psychology*, 70(1), 18–31. <https://doi.org/10.1002/jclp.22005>

- Bass, B. M. (1999). Two Decades of Research and Development in Transformational Leadership. *European Journal of Work and Organizational Psychology*, 8(1), 9–32.  
<https://doi.org/10.1080/135943299398410>
- Bass, B. M., & Riggio, R. E. (2005). *Transformational Leadership* (2nd ed.). Psychology Press.  
<https://doi.org/10.4324/9781410617095>
- Baumert, J., Schneider, B., Lukaschek, K., Emeny, R. T., Meisinger, C., Erazo, N., Dragano, N., & Ladwig, K.-H. (2014). Adverse conditions at the workplace are associated with increased suicide risk. *Journal of Psychiatric Research*, 57, 90–95.  
<https://doi.org/10.1016/j.jpsychires.2014.06.007>
- Bayraktar, S., & Jiménez, A. (2020). Self-efficacy as a resource: A moderated mediation model of transformational leadership, extent of change and reactions to change. *Journal of Organizational Change Management*, 33(2), 301–317. <https://doi.org/10.1108/JOCM-12-2018-0368>
- Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Hoeber Medical Division, Harper & Row.
- Beck, A. T., Brown, G., Berchick, R. J., Stewart, B. L., & Steer, R. A. (2006). Relationship Between Hopelessness and Ultimate Suicide: A Replication With Psychiatric Outpatients. *FOCUS*, 4(2), 291–296. <https://doi.org/10.1176/foc.4.2.291>
- Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, Depression, Suicidal Ideation, and Clinical Diagnosis of Depression. *Suicide and Life-Threatening Behavior*, 23(2), 139–145. <https://doi.org/10.1111/j.1943-278X.1993.tb00378.x>

- Boccio, D. E., & Macari, A. M. (2013). Fostering Worth and Belonging: Applying the Interpersonal Theory of Suicide to the Workplace. *Journal of Workplace Behavioral Health, 28*(3), 234–245. <https://doi.org/10.1080/15555240.2013.808082>
- Boccio, D. E., & Macari, A. M. (2014). Workplace as Safe Haven: How Managers Can Mitigate Risk for Employee Suicide. *Journal of Workplace Behavioral Health, 29*(1), 32–54. <https://doi.org/10.1080/15555240.2014.866472>
- Bonde, J. P. E. (2008). Psychosocial factors at work and risk of depression: A systematic review of the epidemiological evidence. *Occupational and Environmental Medicine, 65*(7), 438–445. <https://doi.org/10.1136/oem.2007.038430>
- Bowerman, B. L., & O'Connell, R. T. (1990). *Linear Statistical Models: An Applied Approach*. Duxbury Press.
- Breevaart, K., & Bakker, A. B. (2018). Daily job demands and employee work engagement: The role of daily transformational leadership behavior. *Journal of Occupational Health Psychology, 23*, 338–349. <https://doi.org/10.1037/ocp0000082>
- Britt, T. W., Adler, A. B., & Bartone, P. T. (2001). Deriving benefits from stressful events: The role of engagement in meaningful work and hardiness. *Journal of Occupational Health Psychology, 6*, 53–63. <https://doi.org/10.1037/1076-8998.6.1.53>
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A Short Measure of Transformational Leadership. *Journal of Business and Psychology, 14*(3), 389–405. <https://doi.org/10.1023/A:1022991115523>
- Carmeli, A., Sheaffer, Z., Binyamin, G., Reiter-Palmon, R., & Shimoni, T. (2014). Transformational Leadership and Creative Problem-Solving: The Mediating Role of

- Psychological Safety and Reflexivity. *The Journal of Creative Behavior*, 48(2), 115–135.  
<https://doi.org/10.1002/jocb.43>
- Clausen, T., & Borg, V. (2011). Job demands, job resources and meaning at work. *Journal of Managerial Psychology*, 26(8), 665–681. <https://doi.org/10.1108/02683941111181761>
- Clausen, T., Christensen, K. B., & Borg, V. (2010). Positive work-related states and long-term sickness absence: A study of register-based outcomes. *Scandinavian Journal of Public Health*, 38(3 Suppl), 51–58. <https://doi.org/10.1177/1403494809352105>
- Cole, D. A. (1989). Psychopathology of adolescent suicide: Hopelessness, coping beliefs, and depression. *Journal of Abnormal Psychology*, 98, 248–255. <https://doi.org/10.1037/0021-843X.98.3.248>
- Cooper, C. D., Kong, D. T., & Crossley, C. D. (2018). Leader Humor as an Interpersonal Resource: Integrating Three Theoretical Perspectives. *Academy of Management Journal*, 61(2), 769–796. <https://doi.org/10.5465/amj.2014.0358>
- Culbertson, S. S., Fullagar, C. J., & Mills, M. J. (2010). Feeling good and doing great: The relationship between psychological capital and well-being. *Journal of Occupational Health Psychology*, 15(4), 421–433. <https://doi.org/10.1037/a0020720>
- Czyz, E. K., & King, C. A. (2015). Longitudinal Trajectories of Suicidal Ideation and Subsequent Suicide Attempts Among Adolescent Inpatients. *Journal of Clinical Child & Adolescent Psychology*, 44(1), 181–193. <https://doi.org/10.1080/15374416.2013.836454>
- Dik, B. J., Steger, M. F., Fitch-Martin, A. R., & Onder, C. C. (2013). Cultivating Meaningfulness at Work. In J. A. Hicks & C. Routledge (Eds.), *The Experience of Meaning in Life: Classical Perspectives, Emerging Themes, and Controversies* (pp. 363–377). Springer Netherlands. [https://doi.org/10.1007/978-94-007-6527-6\\_27](https://doi.org/10.1007/978-94-007-6527-6_27)

- Duffy, R. D., Autin, K. L., & Bott, E. M. (2015). Work Volition and Job Satisfaction: Examining the Role of Work Meaning and Person–Environment Fit. *The Career Development Quarterly*, 63(2), 126–140. <https://doi.org/10.1002/cdq.12009>
- Dunn, S. L., Olamijulo, G. B., Fuglseth, H. L., Holden, T. P., Swieringa, L. L., Sit, M. J., P, N., & Tintle, N. L. (2013). *Article The State–Trait Hopelessness Scale: Development and Testing.*
- Dussault, M., & Frenette, É. (2015). Supervisors' Transformational Leadership and Bullying in the Workplace. *Psychological Reports*, 117(3), 724–733.  
<https://doi.org/10.2466/01.PR0.117c30z2>
- Dyer, J. a. T., & Kreitman, N. (1984). Hopelessness, Depression and Suicidal Intent in Parasuicide. *The British Journal of Psychiatry*, 144(2), 127–133.  
<https://doi.org/10.1192/bjp.144.2.127>
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology*, 87, 565–573.  
<https://doi.org/10.1037/0021-9010.87.3.565>
- Elliott, J. L., & Frude, N. (2001). Stress, coping styles, and hopelessness in self-poisoners. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, 22, 20–26.  
<https://doi.org/10.1027/0227-5910.22.1.20>
- Erlmaier, T., Brosi, P., & Welpe, I. M. (2022). Taking a closer look at the bidirectional relationship between meaningful work and strain at work: A cross-lagged model. *European Journal of Work and Organizational Psychology*, 31(3), 341–351.  
<https://doi.org/10.1080/1359432X.2021.1990265>



- Evans, J., & Repper, J. (2000). Employment, social inclusion and mental health. *Journal of Psychiatric and Mental Health Nursing*, 7(1), 15–24. <https://doi.org/10.1046/j.1365-2850.2000.00260.x>
- Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and health: A meta-analysis. *Occupational and Environmental Medicine*, 62(2), 105–112. <https://doi.org/10.1136/oem.2002.006734>
- Feskanich, D., Hastrup, J. L., Marshall, J. R., Colditz, G. A., Stampfer, M. J., Willett, W. C., & Kawachi, I. (2002). Stress and suicide in the Nurses' Health Study. *Journal of Epidemiology and Community Health*, 56(2), 95–98. <https://doi.org/10.1136/jech.56.2.95>
- Field, A. (2017). *Discovering statistics using IBM SPSS statistics, 5th edition*. SAGE Publications. <http://sro.sussex.ac.uk/id/eprint/77862/>
- Franke, F., & Felfe, J. (2011). How does transformational leadership impact employees' psychological strain?: Examining differentiated effects and the moderating role of affective organizational commitment. *Leadership*, 7(3), 295–316. <https://doi.org/10.1177/1742715011407387>
- George, J. M., & Jones, G. R. (1996). The experience of work and turnover intentions: Interactive effects of value attainment, job satisfaction, and positive mood. *Journal of Applied Psychology*, 81, 318–325. <https://doi.org/10.1037/0021-9010.81.3.318>
- Gilbert, S., & Kelloway, E. K. (2014). Using single items to measure job stressors. *International Journal of Workplace Health Management*, 7(3), 186–199. <https://doi.org/10.1108/IJWHM-03-2013-0011>

- Gillet, N., Fouquereau, E., Huyghebaert, T., & Vandenberghe, C. (2016). Transformational leadership, work-family conflict and enrichment, and commitment. *Le travail humain*, 79(4), 339–362. <https://doi.org/10.3917/th.794.0339>
- Glazer, S., Kozusznik, M. W., Meyers, J. H., & Ganai, O. (2014). Meaningfulness as a Resource to Mitigate Work Stress. In *Contemporary Occupational Health Psychology* (pp. 114–130). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118713860.ch8>
- Glenn, C. R., Kleiman, E. M., Cha, C. B., Deming, C. A., Franklin, J. C., & Nock, M. K. (2018). Understanding suicide risk within the Research Domain Criteria (RDoC) framework: A meta-analytic review. *Depression and Anxiety*, 35(1), 65–88. <https://doi.org/10.1002/da.22686>
- Government of Canada. (2020a, July 17). *Suicide in Canada: Key Statistics*. [Education and awareness]. <https://www.canada.ca/en/public-health/services/publications/healthy-living/suicide-canada-key-statistics-infographic.html>
- Government of Canada. (2020b, August 7). *The cost of injury in Canada* [Backgrounders;research]. <https://www.canada.ca/en/public-health/services/injury-prevention/cost-injury-canada.html>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of Conflict Between Work and Family Roles. *Academy of Management Review*, 10(1), 76–88. <https://doi.org/10.5465/amr.1985.4277352>
- Greenhaus, J. H., & Powell, G. N. (2006). When Work And Family Are Allies: A Theory Of Work-Family Enrichment. *Academy of Management Review*, 31(1), 72–92. <https://doi.org/10.5465/amr.2006.19379625>

- Groholt, B., Ekeberg, Ø., & Haldorsen, T. (2006). Adolescent Suicide Attempters: What Predicts Future Suicidal Acts? *Suicide and Life-Threatening Behavior*, *36*(6), 638–650.  
<https://doi.org/10.1521/suli.2006.36.6.638>
- Halbesleben, J. R. B., & Rathert, C. (2008). The role of continuous quality improvement and psychological safety in predicting work-arounds. *Health Care Management Review*, *33*(2), 134–144. <https://doi.org/10.1097/01.HMR.0000304505.04932.62>
- Hamama-Raz, Y., Hamama, L., Pat-Horenczyk, R., Stokar, Y. N., Zilberstein, T., & Bron-Harlev, E. (2021). Posttraumatic growth and burnout in pediatric nurses: The mediating role of secondary traumatization and the moderating role of meaning in work. *Stress and Health*, *37*(3), 442–453. <https://doi.org/10.1002/smi.3007>
- Hao, Q., Wang, D., Xie, M., Tang, Y., Dou, Y., Zhu, L., Wu, Y., Dai, M., Wu, H., & Wang, Q. (2021). Prevalence and Risk Factors of Mental Health Problems Among Healthcare Workers During the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *Frontiers in Psychiatry*, *12*.  
<https://www.frontiersin.org/articles/10.3389/fpsy.2021.567381>
- Harmer, B., Lee, S., Duong, T. vi H., & Saadabadi, A. (2022). Suicidal Ideation. In *StatPearls*. StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK565877/>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (pp. xvii, 507). Guilford Press.
- Heath, C., Sommerfield, A., & von Ungern-Sternberg, B. S. (2020). Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: A narrative review. *Anaesthesia*, *75*(10), 1364–1371.  
<https://doi.org/10.1111/anae.15180>

- Henkel, V., Bussfeld, P., Möller, H.-J., & Hegerl, U. (2002). Cognitive-behavioural theories of helplessness/hopelessness: Valid models of depression? *European Archives of Psychiatry and Clinical Neuroscience*, 252(5), 240–249. <https://doi.org/10.1007/s00406-002-0389-y>
- Hildenbrand, K., Sacramento, C. A., & Binnewies, C. (2018). Transformational leadership and burnout: The role of thriving and followers' openness to experience. *Journal of Occupational Health Psychology*, 23(1), 31–43. <https://doi.org/10.1037/ocp0000051>
- Hobfoll, S. E. (1989). Conservation of resources. A new attempt at conceptualizing stress. *The American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037//0003-066x.44.3.513>
- Hobfoll, S. E. (2011). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology*, 84(1), 116–122. <https://doi.org/10.1111/j.2044-8325.2010.02016.x>
- Hobfoll, S. E., & Shirom, A. (2001). Conservation of resources theory: Applications to stress and management in the workplace. In *Handbook of organizational behavior, 2nd ed., rev. Ed. And exp.ed* (pp. 57–80). Marcel Dekker.
- Hobfoll, S. E., Vinokur, A. D., Pierce, P. F., & Lewandowski-Romps, L. (2012). The combined stress of family life, work, and war in Air Force men and women: A test of conservation of resources theory. *International Journal of Stress Management*, 19, 217–237. <https://doi.org/10.1037/a0029247>
- Holstad, T. J., Korek, S., Rigotti, T., & Mohr, G. (2014). The relation between transformational leadership and follower emotional strain: The moderating role of professional ambition. *Leadership*, 10(3), 269–288. <https://doi.org/10.1177/1742715013476083>
- Horwitz, A. G., Berona, J., Czyz, E. K., Yeguez, C. E., & King, C. A. (2017). Positive and Negative Expectations of Hopelessness as Longitudinal Predictors of Depression,

- Suicidal Ideation, and Suicidal Behavior in High-Risk Adolescents. *Suicide and Life-Threatening Behavior*, 47(2), 168–176. <https://doi.org/10.1111/sltb.12273>
- Howard, M. C., Follmer, K. B., Smith, M. B., Tucker, R. P., & Van Zandt, E. C. (2022). Work and suicide: An interdisciplinary systematic literature review. *Journal of Organizational Behavior*, 43(2), 260–285. <https://doi.org/10.1002/job.2519>
- Howard, M. C., & Krannitz, M. (2017). A Reanalysis of Occupation and Suicide: Negative Perceptions of the Workplace Linked to Suicide Attempts. *The Journal of Psychology*, 151(8), 767–788. <https://doi.org/10.1080/00223980.2017.1393378>
- Iacovides, A., Fountoulakis, K. N., Kaprinis, S., & Kaprinis, G. (2003). The relationship between job stress, burnout and clinical depression. *Journal of Affective Disorders*, 75(3), 209–221. [https://doi.org/10.1016/S0165-0327\(02\)00101-5](https://doi.org/10.1016/S0165-0327(02)00101-5)
- Isaksen, J. (2000). Constructing Meaning Despite the Drudgery of Repetitive Work. *Journal of Humanistic Psychology*, 40(3), 84–107. <https://doi.org/10.1177/0022167800403008>
- Joiner, T. E., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M. D., & Lester, D. (2002). Perceived Burdensomeness And Suicidality: Two Studies On The Suicide Notes Of Those Attempting And Those Completing Suicide. *Journal of Social and Clinical Psychology*, 21(5), 531–545. <https://doi.org/10.1521/jscp.21.5.531.22624>
- Jordan, J. R. (2017). Postvention is prevention—The case for suicide postvention. *Death Studies*, 41(10), 614–621. <https://doi.org/10.1080/07481187.2017.1335544>
- Kamdron, T. (2005). Work Motivation and Job Satisfaction of Estonian Higher Officials. *International Journal of Public Administration*, 28(13–14), 1211–1240. <https://doi.org/10.1080/01900690500241085>

- Kanste, O., Kyngäs, H., & Nikkilä, J. (2007). The relationship between multidimensional leadership and burnout among nursing staff. *Journal of Nursing Management, 15*(7), 731–739. <https://doi.org/10.1111/j.1365-2934.2006.00741.x>
- Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. Basic Books.
- Karatepe, O. M., Yavas, U., Babakus, E., & Deitz, G. D. (2018). The effects of organizational and personal resources on stress, engagement, and job outcomes. *International Journal of Hospitality Management, 74*, 147–161. <https://doi.org/10.1016/j.ijhm.2018.04.005>
- Kato, T. (2014). Insomnia Symptoms, Depressive Symptoms, and Suicide Ideation in Japanese White-Collar Employees. *International Journal of Behavioral Medicine, 21*(3), 506–510. <https://doi.org/10.1007/s12529-013-9364-4>
- Kelloway, E. K. (2014). *Using Mplus for Structural Equation Modeling: A Researcher's Guide*. SAGE Publications.
- Kelloway, E. K., & Day, A. L. (2005). Building healthy workplaces: What we know so far. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement, 37*, 223–235. <https://doi.org/10.1037/h0087259>
- Kelloway, E. K., Weigand, H., McKee, M. C., & Das, H. (2013). Positive Leadership and Employee Well-Being. *Journal of Leadership & Organizational Studies, 20*(1), 107–117. <https://doi.org/10.1177/1548051812465892>
- Kim, E.-J., & Park, S. (2020). Transformational leadership, knowledge sharing, organizational climate and learning: An empirical study. *Leadership & Organization Development Journal, 41*(6), 761–775. <https://doi.org/10.1108/LODJ-12-2018-0455>

- Kim, H., Im, J., & Shin, Y. H. (2021). The impact of transformational leadership and commitment to change on restaurant employees' quality of work life during a crisis. *Journal of Hospitality and Tourism Management, 48*, 322–330.  
<https://doi.org/10.1016/j.jhtm.2021.07.010>
- Kinder, A., & Cooper, C. L. (2009). The Costs of Suicide and Sudden Death Within an Organization. *Death Studies, 33*(5), 411–419.  
<https://doi.org/10.1080/07481180902805624>
- Kleiman, E. M., & Beaver, J. K. (2013). A meaningful life is worth living: Meaning in life as a suicide resiliency factor. *Psychiatry Research, 210*(3), 934–939.  
<https://doi.org/10.1016/j.psychres.2013.08.002>
- Klonsky, E. D., May, A. M., & Saffer, B. Y. (2016). Suicide, Suicide Attempts, and Suicidal Ideation. *Annual Review of Clinical Psychology, 12*(1), 307–330.  
<https://doi.org/10.1146/annurev-clinpsy-021815-093204>
- Knox, K. L., Litts, D. A., Talcott, G. W., Feig, J. C., & Caine, E. D. (2003). Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: Cohort study. *BMJ, 327*(7428), 1376. <https://doi.org/10.1136/bmj.327.7428.1376>
- Konick, L. C., & Gutierrez, P. M. (2005). Testing a Model of Suicide Ideation in College Students. *Suicide and Life-Threatening Behavior, 35*(2), 181–192.  
<https://doi.org/10.1521/suli.35.2.181.62875>
- Kost, D., Fieseler, C., & Wong, S. I. (2018). Finding meaning in a hopeless place? The construction of meaningfulness in digital microwork. *Computers in Human Behavior, 82*, 101–110. <https://doi.org/10.1016/j.chb.2018.01.002>

- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a Brief Depression Severity Measure. *Journal of General Internal Medicine, 16*(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kuo, W.-H., Gallo, J. J., & Eaton, W. W. (2004). Hopelessness, depression, substance disorder, and suicidality. *Social Psychiatry and Psychiatric Epidemiology, 39*(6), 497–501. <https://doi.org/10.1007/s00127-004-0775-z>
- LaRocca, M. A., Scogin, F. R., Hilgeman, M. M., Smith, A. J., & Chaplin, W. F. (2018). The impact of posttraumatic growth, transformational leadership, and self-efficacy on PTSD and depression symptom severity among combat Veterans. *Military Psychology, 30*(2), 162–173. <https://doi.org/10.1080/08995605.2018.1425073>
- Lease, S. H., Ingram, C. L., & Brown, E. L. (2019). Stress and Health Outcomes: Do Meaningful Work and Physical Activity Help? *Journal of Career Development, 46*(3), 251–264. <https://doi.org/10.1177/0894845317741370>
- Liao, H., & Chuang, A. (2007). Transforming service employees and climate: A multilevel, multisource examination of transformational leadership in building long-term service relationships. *Journal of Applied Psychology, 92*, 1006–1019. <https://doi.org/10.1037/0021-9010.92.4.1006>
- Liaw, Y.-J., Chi, N.-W., & Chuang, A. (2010). Examining the mechanisms linking transformational leadership, employee customer orientation, and service performance: The mediating roles of perceived supervisor and coworker support. *Journal of Business and Psychology, 25*, 477–492. <https://doi.org/10.1007/s10869-009-9145-x>
- Links, P., Nisenbaum, R., Ambreen, M., Balderson, K., Bergmans, Y., Eynan, R., Harder, H., & Cutcliffe, J. (2012). Prospective study of risk factors for increased suicide ideation and



behavior following recent discharge. *General Hospital Psychiatry*, 34(1), 88–97.

<https://doi.org/10.1016/j.genhosppsy.2011.08.016>

Lips-Wiersma, M., & Wright, S. (2012). Measuring the Meaning of Meaningful Work:

Development and Validation of the Comprehensive Meaningful Work Scale (CMWS).

*Group & Organization Management*, 37(5), 655–685.

<https://doi.org/10.1177/1059601112461578>

Madathil, R., Heck, N. C., & Schuldberg, D. (2014). Burnout in Psychiatric Nursing: Examining

the Interplay of Autonomy, Leadership Style, and Depressive Symptoms. *Archives of*

*Psychiatric Nursing*, 28(3), 160–166. <https://doi.org/10.1016/j.apnu.2014.01.002>

Madsen, T., Spijker, B. van, Karstoft, K.-I., Nordentoft, M., & Kerkhof, A. J. (2016).

Trajectories of Suicidal Ideation in People Seeking Web-Based Help for Suicidality:

Secondary Analysis of a Dutch Randomized Controlled Trial. *Journal of Medical*

*Internet Research*, 18(6), e5904. <https://doi.org/10.2196/jmir.5904>

Maharaj, I., & Schlechter, A. F. (2007). Meaning in life and meaning of work: Relationships

with organisational citizenship behaviour, commitment and job satisfaction. *Management*

*Dynamics : Journal of the Southern African Institute for Management Scientists*, 16(3),

24–41. <https://doi.org/10.10520/EJC69726>

Mäkikangas, A., Minkkinen, J., Muotka, J., & Mauno, S. (2023). Illegitimate tasks, job crafting

and their longitudinal relationships with meaning of work. *The International Journal of*

*Human Resource Management*, 34(7), 1330–1358.

<https://doi.org/10.1080/09585192.2021.1987956>

- May, A. M., & Klonsky, E. D. (2016). What distinguishes suicide attempters from suicide ideators? A meta-analysis of potential factors. *Clinical Psychology: Science and Practice*, 23, 5–20. <https://doi.org/10.1037/h0101735>
- Meng, L., Du, J., & Lin, X. (2022). Surviving bench stress: Meaningful work as a personal resource in the expanded job demands-resources model. *Current Psychology*. <https://doi.org/10.1007/s12144-022-02956-9>
- Montano, D., Reeske, A., Franke, F., & Hüffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: A comprehensive meta-analysis from an occupational health perspective. *Journal of Organizational Behavior*, 38(3), 327–350. <https://doi.org/10.1002/job.2124>
- Mooney, C. Z., Duval, R. D., & Duvall, R. (1993). *Bootstrapping: A Nonparametric Approach to Statistical Inference*. SAGE.
- Munir, F., Nielsen, K., & Carneiro, I. G. (2010). Transformational leadership and depressive symptoms: A prospective study. *Journal of Affective Disorders*, 5.
- Mustard, C. A., Bielecky, A., Etches, J., Wilkins, R., Tjepkema, M., Amick, B. C., Smith, P. M., Gnam, W. H., & Aronson, K. J. (2010). Suicide mortality by occupation in Canada, 1991-2001. *Canadian Journal of Psychiatry. Revue Canadienne De Psychiatrie*, 55(6), 369–376. <https://doi.org/10.1177/070674371005500606>
- Niedhammer, I., Bèque, M., Chastang, J.-F., & Bertrais, S. (2020). Psychosocial work exposures and suicide ideation: A study of multiple exposures using the French national working conditions survey. *BMC Public Health*, 20(1), 895. <https://doi.org/10.1186/s12889-020-09019-3>

- Niedhammer, I., Coindre, K., Memmi, S., Bertrais, S., & Chastang, J.-F. (2020). Working conditions and depression in the French national working population: Results from the SUMER study. *Journal of Psychiatric Research, 123*, 178–186.  
<https://doi.org/10.1016/j.jpsychires.2020.01.003>
- Nielsen, K., Nielsen, M. B., Ogbonnaya, C., Känslä, M., Saari, E., & Isaksson, K. (2017). Workplace resources to improve both employee well-being and performance: A systematic review and meta-analysis. *Work & Stress, 31*(2), 101–120.  
<https://doi.org/10.1080/02678373.2017.1304463>
- Nielsen, K., Randall, R., Yarker, J., & Brenner, S.-O. (2008). The effects of transformational leadership on followers' perceived work characteristics and psychological well-being: A longitudinal study. *Work & Stress, 22*(1), 16–32.  
<https://doi.org/10.1080/02678370801979430>
- Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., Bruffaerts, R., Chiu, W. T., Girolamo, G. de, Gluzman, S., Graaf, R. de, Gureje, O., Haro, J. M., Huang, Y., Karam, E., Kessler, R. C., Lepine, J. P., Levinson, D., Medina-Mora, M. E., ... Williams, D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *The British Journal of Psychiatry, 192*(2), 98–105.  
<https://doi.org/10.1192/bjp.bp.107.040113>
- O'Brien, S., Galavan, E., & O'Shea, D. (2022). Developing a competency framework for managers to address suicide risk in the workplace. *Human Resource Development Quarterly, 33*(2), 157–178. <https://doi.org/10.1002/hrdq.21437>
- Passmore, S., Hemming, E., McIntosh, H. C., & Hellman, C. M. (2019). The Relationship Between Hope, Meaning in Work, Secondary Traumatic Stress, and Burnout Among

- Child Abuse Pediatric Clinicians. *The Permanente Journal*, 24, 19.087.  
<https://doi.org/10.7812/TPP/19.087>
- Perko, K., Kinnunen, U., & Feldt, T. (2014). Transformational leadership and depressive symptoms among employees: Mediating factors. *Leadership & Organization Development Journal*, 35(4), 286–304. <https://doi.org/10.1108/LODJ-07-2012-0082>
- Perry, S. J., Witt, L. A., Penney, L. M., & Atwater, L. (2010). The downside of goal-focused leadership: The role of personality in subordinate exhaustion. *Journal of Applied Psychology*, 95, 1145–1153. <https://doi.org/10.1037/a0020538>
- Peterson, C., Stone, D. M., Marsh, S. M., Schumacher, P. K., Tiesman, H. M., McIntosh, W. L., Lokey, C. N., Trudeau, A.-R. T., Bartholow, B., & Luo, F. (2018). Suicide Rates by Major Occupational Group—17 States, 2012 and 2015. *Morbidity and Mortality Weekly Report*, 67(45), 1253–1260. <https://doi.org/10.15585/mmwr.mm6745a1>
- Prinstein, M. J., Nock, M. K., Simon, V., Aikins, J. W., Cheah, C. S. L., & Spirito, A. (2008). Longitudinal trajectories and predictors of adolescent suicidal ideation and attempts following inpatient hospitalization. *Journal of Consulting and Clinical Psychology*, 76, 92–103. <https://doi.org/10.1037/0022-006X.76.1.92>
- Reis, D., Hoppe, A., & Schröder, A. (2015). Reciprocal relationships between resources, work and study engagement, and mental health: Evidence for gain cycles. *European Journal of Work and Organizational Psychology*, 24(1), 59–75.  
<https://doi.org/10.1080/1359432X.2013.834891>
- Ribeiro, J. D., Huang, X., Fox, K. R., & Franklin, J. C. (2018). Depression and hopelessness as risk factors for suicide ideation, attempts and death: Meta-analysis of longitudinal

- studies. *The British Journal of Psychiatry*, 212(5), 279–286.  
<https://doi.org/10.1192/bjp.2018.27>
- Ribeiro, N., Semedo, A. S., Gomes, D., Bernardino, R., & Singh, S. (2021). The effect of workplace bullying on burnout: The mediating role of affective well-being. *Management Research Review, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/MRR-07-2021-0514>
- Roberts, S. E., Jaremin, B., & Lloyd, K. (2013). High-risk occupations for suicide. *Psychological Medicine*, 43(6), 1231–1240. <https://doi.org/10.1017/S0033291712002024>
- Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior*, 30, 91–127.  
<https://doi.org/10.1016/j.riob.2010.09.001>
- Rousseau, M. B., Eddleston, K. A., Patel, P. C., & Kellermanns, F. W. (2014). Organizational Resources and Demands Influence on Workplace Bullying. *Journal of Managerial Issues*, 26(3), 286–313.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315. <https://doi.org/10.1002/job.248>
- Sheehan, M., Garavan, T. N., & Morley, M. J. (2020). Transformational leadership and work unit innovation: A dyadic two-wave investigation. *Journal of Business Research*, 109, 399–412. <https://doi.org/10.1016/j.jbusres.2019.10.072>
- Steger, M. F., & Dik, B. J. (2009). If One is Looking for Meaning in Life, Does it Help to Find Meaning in Work? *Applied Psychology: Health and Well-Being*, 1(3), 303–320.  
<https://doi.org/10.1111/j.1758-0854.2009.01018.x>

- Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring Meaningful Work: The Work and Meaning Inventory (WAMI). *Journal of Career Assessment, 20*(3), 322–337.  
<https://doi.org/10.1177/1069072711436160>
- Steger, M. F., Littman-Ovadia, H., Miller, M., Menger, L., & Rothmann, S. (2013). Engaging in Work Even When It Is Meaningless: Positive Affective Disposition and Meaningful Work Interact in Relation to Work Engagement. *Journal of Career Assessment, 21*(2), 348–361. <https://doi.org/10.1177/1069072712471517>
- Stein, M., Schümann, M., & Vincent-Höper, S. (2021). A conservation of resources view of the relationship between transformational leadership and emotional exhaustion: The role of extra effort and psychological detachment. *Work & Stress, 35*(3), 241–261.  
<https://doi.org/10.1080/02678373.2020.1832610>
- Syrek, C. J., Apostel, E., & Antoni, C. H. (2013). Stress in highly demanding IT jobs: Transformational leadership moderates the impact of time pressure on exhaustion and work–life balance. *Journal of Occupational Health Psychology, 18*, 252–261.  
<https://doi.org/10.1037/a0033085>
- Takada, M., & Shima, S. (2010). Characteristics and Effects of Suicide Prevention Programs: Comparison between Workplace and Other Settings. *Industrial Health, 48*(4), 416–426.  
<https://doi.org/10.2486/indhealth.MS998>
- Tan, L., & Xia, T. (2021). Predictors on workplace suicidal ideation: From a social interaction perspective. *Current Psychology*. <https://doi.org/10.1007/s12144-021-01928-9>
- Tang, N. K. Y., & Crane, C. (2006). Suicidality in chronic pain: A review of the prevalence, risk factors and psychological links. *Psychological Medicine, 36*(5), 575–586.  
<https://doi.org/10.1017/S0033291705006859>

- Thibodeau, M. A., & Asmundson, G. J. G. (2014). The PHQ-9 assesses depression similarly in men and women from the general population. *Personality and Individual Differences, 56*, 149–153. <https://doi.org/10.1016/j.paid.2013.08.039>
- Torres Stone, R. A., Sabella, K., Lidz, C. W., McKay, C., & Smith, L. M. (2018). The meaning of work for young adults diagnosed with serious mental health conditions. *Psychiatric Rehabilitation Journal, 41*, 290–298. <https://doi.org/10.1037/prj0000195>
- Trachik, B., Oakey-Frost, N., Ganulin, M. L., Adler, A. B., Dretsch, M. N., Cabrera, O. A., & Tucker, R. P. (2021). Military suicide prevention: The importance of leadership behaviors as an upstream suicide prevention target. *Suicide and Life-Threatening Behavior, 51*(2), 316–324. <https://doi.org/10.1111/sltb.12707>
- Treadgold, R. (1999). Transcendent Vocations: Their Relationship to Stress, Depression, and Clarity of Self-Concept. *Journal of Humanistic Psychology, 39*(1), 81–105. <https://doi.org/10.1177/0022167899391010>
- Troister, T., & Holden, R. R. (2013). Factorial Differentiation Among Depression, Hopelessness, and Psychache in Statistically Predicting Suicidality. *Measurement and Evaluation in Counseling and Development, 46*(1), 50–63. <https://doi.org/10.1177/0748175612451744>
- Tsai, W.-C., Chen, H.-W., & Cheng, J.-W. (2009). Employee positive moods as a mediator linking transformational leadership and employee work outcomes. *The International Journal of Human Resource Management, 20*(1), 206–219. <https://doi.org/10.1080/09585190802528714>
- Tudor-Locke, C., Leonardi, C., Johnson, W. D., & Katzmarzyk, P. T. (2011). Time Spent in Physical Activity and Sedentary Behaviors on the Working Day: The American Time Use Survey. *Journal of Occupational and Environmental Medicine, 53*(12), 1382–1387.

- Ul Hassan, F. S., Karim, W., Shah, H. A., & Khan, N. U. (2023). Role stress and organizational commitment in the service industry: A moderated mediation model of job burnout and transformational leadership. *Journal of Management Development, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/JMD-10-2021-0292>
- Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, T. E. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behavior among adults. *Journal of Consulting and Clinical Psychology, 76*(1), 72–83. <https://doi.org/10.1037/0022-006X.76.1.72>
- Violanti, J. M., Andrew, M. E., Mnatsakanova, A., Hartley, T. A., Fekedulegn, D., & Burchfiel, C. M. (2016). Correlates of hopelessness in the high suicide risk police occupation. *Police Practice and Research, 17*(5), 408–419. <https://doi.org/10.1080/15614263.2015.1015125>
- Virtanen, M., Honkonen, T., Kivimäki, M., Ahola, K., Vahtera, J., Aromaa, A., & Lönnqvist, J. (2007). Work stress, mental health and antidepressant medication findings from the Health 2000 Study. *Journal of Affective Disorders, 98*(3), 189–197. <https://doi.org/10.1016/j.jad.2006.05.034>
- Walsh, M., Dupré, K., & Arnold, K. A. (2014). Processes through Which Transformational Leaders Affect Employee Psychological Health. *German Journal of Human Resource Management, 28*(1–2), 162–172. <https://doi.org/10.1177/239700221402800109>
- Wetzel, R. D., Margulies, T., Davis, R., & Karam, E. (1980). Hopelessness, depression, and suicide intent. *The Journal of Clinical Psychiatry, 41*, 159–160.



- Widianto, S., & Wilderom, C. P. M. (2017). Transformational Leadership, Service Climate, Psychological Capital and Job Performance/Engagement. *Academy of Management Proceedings*, 2017(1), 10318. <https://doi.org/10.5465/AMBPP.2017.10318abstract>
- Wingerden, J. V., & Poell, R. F. (2019). Meaningful work and resilience among teachers: The mediating role of work engagement and job crafting. *PLOS ONE*, 14(9), e0222518. <https://doi.org/10.1371/journal.pone.0222518>
- Woosley, J. A., Lichstein, K. L., Taylor, D. J., Riedel, B. W., & Bush, A. J. (2014). Hopelessness mediates the relation between insomnia and suicidal ideation. *Journal of Clinical Sleep Medicine: JCSM: Official Publication of the American Academy of Sleep Medicine*, 10(11), 1223–1230. <https://doi.org/10.5664/jcsm.4208>
- Wright, T. A., & Hobfoll, S. E. (2004). Commitment, Psychological Well-Being and Job Performance: An Examination of Conservation of Resources (COR) Theory and Job Burnout. *Journal of Business and Management*, 9(4), 389–406.
- Wrzesniewski, A., LoBuglio, N., Dutton, J. E., & Berg, J. M. (2013). Job Crafting and Cultivating Positive Meaning and Identity in Work. In A. B. Bakker (Ed.), *Advances in Positive Organizational Psychology* (Vol. 1, pp. 281–302). Emerald Group Publishing Limited. [https://doi.org/10.1108/S2046-410X\(2013\)0000001015](https://doi.org/10.1108/S2046-410X(2013)0000001015)
- Xiao, J., Guan, S., Ge, H., Tao, N., Zhang, Y., Jiang, Y., Ning, L., Liu, J., & Lian, Y. (2017). The impact of changes in work stressors and coping resources on the risk of new-onset suicide ideation among Chinese petroleum industry workers. *Journal of Psychiatric Research*, 88, 1–8. <https://doi.org/10.1016/j.jpsychires.2016.12.014>

- Yip, P. S. F., & Caine, E. D. (2011). Employment status and suicide: The complex relationships between changing unemployment rates and death rates. *Journal of Epidemiology & Community Health, 65*(8), 733–736. <https://doi.org/10.1136/jech.2010.110726>
- Ylipaavalniemi, J., Kivimäki, M., Elovainio, M., Virtanen, M., Keltikangas-Järvinen, L., & Vahtera, J. (2005). Psychosocial work characteristics and incidence of newly diagnosed depression: A prospective cohort study of three different models. *Social Science & Medicine, 61*(1), 111–122. <https://doi.org/10.1016/j.socscimed.2004.11.038>
- Zhang, J., & Li, Z. (2013). The association between depression and suicide when hopelessness is controlled for. *Comprehensive Psychiatry, 54*(7), 790–796. <https://doi.org/10.1016/j.comppsy.2013.03.004>
- Zwingmann, I., Wegge, J., Wolf, S., Rudolf, M., Schmidt, M., & Richter, P. (2014). Is Transformational Leadership Healthy for Employees? A Multilevel Analysis in 16 Nations. *German Journal of Human Resource Management, 28*(1–2), 24–51. <https://doi.org/10.1177/239700221402800103>

## Appendix A

### Questionnaires

#### Demographic Questions

Are you currently employed full-time?

Scale:

- *Yes – Please proceed.*
- *No – You are not eligible for participating in this study. Thank you for your interest!*

Do you report to a direct supervisor at work and are able to answer questions about the supervisor's leadership style?

- *Yes – Please proceed.*
- *No – You are not eligible for participating in this study. Thank you for your interest!*

How long have you been working with your current supervisor/manager?

Scale: *drop-down options*

Which of the following best describes your role in your current organization?

- *Management*
- *Administrative staff*
- *Support staff*
- *Trained professional*
- *Skilled laborer*
- *Consultant*
- *Researcher*

*Other (please specify): \_\_\_\_\_*

What industry do you work in?

- Goods-producing sector (e.g., agriculture, forestry, fishing, mining, oil & gas, hunting, trapping)
- Utilities
- Construction
- Manufacturing
- Services-producing sector (e.g., retail)
- Trades
- Transportation
- Finance, insurance, real estate, rental and leasing
- Professional, scientific and technical services
- Business, building and other support services (e.g., administration)
- Education

- Healthcare and social assistance
- Information, culture, and recreation
- Arts, entertainment, and recreation
- Accommodation and food services
- Public administration
- Other.

What is your age? (In years, for example, 34)

How do you currently describe your gender identity?

*Scale:*

- *Male*
- *Female*
- *Non-binary*
- *Prefer not to answer*

With which ethnic group(s) do you identify? Select all that apply.

*Scale:*

- *North American Indigenous*
- *Hispanic, Latino or Spanish origin (e.g., Mexican, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian)*
- *White (e.g., German, Irish, English, Italian, Polish, French)*
- *Asian (e.g., Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese)*
- *Middle Eastern or North African (e.g., Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian)*
- *Black (e.g., Jamaican, Haitian, Nigerian, Ethiopian, Somalian)*
- *Native Hawaiian or Other Pacific Islander (e.g., Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese)*
- *Another race, ethnicity or origin, please specify: \_\_\_\_\_*
- *Prefer not to answer*

**Job Stress (single-item facet measure of job stressors; Gilbert and Kelloway, 2014)**

Please read each statement regarding your experience at work and decide how much you agree or disagree with that statement.

Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
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I feel I am recognized for the work I do  
I decide how to spend my time at work  
It is hard for me to keep up with the workload  
It is difficult to balance my work and family demands  
My supervisor looks out for his/her people  
My job allows me to use my skills and abilities  
I have a say in how the work gets done  
My work is important to the organization  
I have the tools I need to do my job  
There is little variety in the tasks that I do  
My co-workers treat me with respect and courtesy

**Global Transformational Leadership scale (Carless et al., 2000)**

Please rate your direct supervisor/leader in terms of how frequently they engage in the behaviour described.

1 – Rarely or Never, 2 – Once in a While, 3 – Sometimes, 4 – Fairly Often, 5 – Very Frequently or Always.

My leader communicates a clear and positive vision of the future

My leader treats staff as individuals, supports and encourages their development

My leader gives encouragement and recognition to staff

My leader fosters trust, involvement and cooperation among team members

My leader encourages thinking about problems in new ways and questions assumptions

My leader is clear about his/her values and practises what he/she preaches

My leader instills pride and respect in others and inspires me by being highly competent

**Perceived Supervisor Support (Eisenberger et al., 2002)**

Please rate your direct supervisor/leader in terms of how much you agree or disagree with each statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. My supervisor strongly considers my goals and values.
2. Help is available from my supervisor when I have a problem.
3. My supervisor really cares about my well-being.
4. My supervisor would forgive an honest mistake on my part.
5. My supervisor is willing to help me when I need a special favor.
6. If given the opportunity, my supervisor would take advantage of me. (R)
7. My supervisor shows very little concern for me. (R)
8. My supervisor cares about my opinions.

**Work as Meaning Inventory (WAMI; Steger et al., 2012)**

Please read each statement and decide how much you agree or disagree with that statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

I have found a meaningful career

I understand how my work contributes to my life's meaning

I have a good sense of what makes my job meaningful

I have discovered work that has a satisfying purpose

I view my work as contributing to my personal growth

My work helps me better understand myself

My work helps me make sense of the world around me

My work really makes no difference to the world.

I know my work makes a positive difference in the world

The work I do serves a greater purpose.



**Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001)**

Over the last 2 months, how often have you been bothered by any of the following problems?

0 = Not at all; 1 = Several days; 2 = More than half the days; 3 = Nearly every day

Little interest or pleasure in doing things

Feeling down, depressed, or hopeless

Trouble falling or staying asleep, or sleeping too much

Feeling tired or having little energy

Poor appetite or overeating

Feeling bad about yourself - or that you are a failure or have let yourself or your family down

Trouble concentrating on things, such as reading the newspaper or watching television

Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual

Thoughts that you would be better off dead or of hurting yourself in some way

**State and Trait Hopelessness Scales (Dunn et al.) – Modified**

Please read each statement and decide how much you agree or disagree with that statement.

Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
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In the past 2 months, I feel...

It is difficult for me to imagine my future  
I believe I cannot make a difference  
I believe I am powerless to change my future  
I see my future as gloomy  
I feel giving up would be easier  
Things do not work out as I would like  
Negative things seem to happen to me  
I doubt that anything is worthwhile

**Depressive Symptom Index Suicidality Subscale (DSI-SS; Joiner et al., 2002)**

On this questionnaire are groups of statements. Please read all of the statements in a given group. Pick out and circle the one statement in each group that describes you best for the **past two months**. If several statements in a group seem to apply to you, pick the one with the higher number. **Be sure to read all of the statements in each group before making your choice.**

**(A)**

- 0 I do not have thoughts of killing myself.
- 1 Sometimes I have thoughts of killing myself.
- 2 Most of the time I have thoughts of killing myself.
- 3 I always have thoughts of killing myself.

**(B)**

- 0 I am not having thoughts about suicide
- 1 I am having thoughts about suicide but have not formulated any plans.
- 2 I am having thoughts about suicide and am considering possible ways of doing it.
- 3 I am having thoughts about suicide and have formulated a definite plan.

**(C)**

- 0 I am not having thoughts about suicide.
- 1 I am having thoughts about suicide but have these thoughts completely under my control.
- 2 I am having thoughts about suicide but have these thoughts somewhat under my control.
- 3 I am having thoughts about suicide but have little or no control over these thoughts.

**(D)**

- 0 I am not having impulses to kill myself.
- 1 In some situations I have impulses to kill myself.
- 2 In most situations I have impulses to kill myself.
- 3 In all situations I have impulses to kill myself.

**Suicidal Behaviors Questionnaire—Revised (SBQ-R; Osman et al.,2001)**

Instructions: please circle the number beside the statement or phrase that best applies to you.

Have you ever thought about or attempted to kill yourself?

- 1 = Never
- 2 = It was just a brief passing thought
- 3a = I have had a plan at least once to kill myself but did not try to do it
- 3b = I have had a plan at least once to kill myself and really wanted to die
- 4a = I have attempted to kill myself, but did not want to die
- 4b = I have attempted to kill myself, and really hoped to die

How often have you thought about killing yourself in the past two months?

- 1 = never
- 2 = rarely (1 time)
- 3 = sometimes (2 times)
- 4 = often (3-4 times)
- 5 = very often (5 or more times)

Have you ever told someone that you were going to kill yourself, or that you might do it?

- 1 = no
- 2a = yes, at one time, but did not really want to die
- 2b = yes, at one time, and really wanted to do it
- 3a = yes, more than once, but did not want to do it
- 3b = yes, more than once, and really wanted to do it

How likely is it that you will attempt suicide someday?

- 0 = never
- 1 = no chance at all
- 2 = rather unlikely
- 3 = unlikely
- 4 = likely
- 5 = rather likely
- 6 = very likely

## Appendix B

## Supplementary Materials

Table 9

*Standardized Parameters for Model 1: Meaningfulness of work as Predictor (N = 600)*

	$\beta$	SE	p
<b>Meaningfulness of Work</b>			
WAMI1	0.88	0.01	<.001
WAMI2	0.82	0.02	<.001
WAMI3	0.87	0.01	<.001
WAMI4	0.91	0.01	<.001
WAMI5	0.79	0.02	<.001
WAMI6	0.78	0.02	<.001
WAMI7	0.82	0.01	<.001
WAMI8	0.46	0.03	<.001
WAMI9	0.85	0.01	<.001
WAMI10	0.85	0.01	<.001
<b>Job Stress</b>			
JS1	0.71	0.02	<.001
JS2	0.48	0.04	<.001
JS3	0.27	0.04	<.001
JS4	0.22	0.04	<.001
JS5	0.64	0.03	<.001
JS6	0.71	0.02	<.001
JS7	0.62	0.03	<.001
JS8	0.62	0.03	<.001
JS9	0.56	0.03	<.001
JS10	0.37	0.04	<.001
JS11	0.60	0.03	<.001
<b>Hopelessness</b>			
STH1	0.84	0.01	<.001
STH2	0.81	0.02	<.001
STH3	0.84	0.01	<.001
STH4	0.90	0.01	<.001
STH5	0.80	0.02	<.001
STH6	0.80	0.02	<.001
STH7	0.77	0.02	<.001
STH8	0.85	0.01	<.001
<b>Depression</b>			
PHQ1	0.83	0.02	<.001
PHQ2	0.85	0.01	<.001
PHQ3	0.61	0.03	<.001
PHQ4	0.72	0.02	<.001

PHQ5	0.63	0.03	<.001
PHQ6	0.81	0.02	<.001
PHQ7	0.65	0.03	<.001
PHQ8	0.38	0.04	<.001
PHQ9	0.62	0.03	<.001
<hr/>			
Suicidal Ideation			
DSI-SS1	0.94	0.01	<.001
DSI-SS2	0.93	0.01	<.001
DSI-SS3	0.92	0.01	<.001
DSI-SS4	0.75	0.02	<.001

**Table 10***Standardized Parameters for Model 2: Transformational Leadership as Predictor (N = 600)*

	$\beta$	SE	p
<b>Transformational Leadership</b>			
GTL1	0.83	0.01	<.001
GTL2	0.91	0.01	<.001
GTL3	0.87	0.01	<.001
GTL4	0.87	0.01	<.001
GTL5	0.81	0.02	<.001
GTL6	0.83	0.01	<.001
GTL7	0.89	0.01	<.001
<b>Job Stress</b>			
JS1	0.75	0.02	<.001
JS2	0.44	0.04	<.001
JS3	0.27	0.04	<.001
JS4	0.24	0.04	<.001
JS5	0.78	0.02	<.001
JS6	0.63	0.03	<.001
JS7	0.57	0.03	<.001
JS8	0.55	0.03	<.001
JS9	0.54	0.03	<.001
JS10	0.30	0.04	<.001
JS11	0.58	0.03	<.001
<b>Hopelessness</b>			
STH1	0.84	0.01	<.001
STH2	0.81	0.02	<.001
STH3	0.84	0.01	<.001
STH4	0.90	0.01	<.001
STH5	0.81	0.02	<.001
STH6	0.80	0.02	<.001
STH7	0.77	0.02	<.001
STH8	0.85	0.01	<.001
<b>Depression</b>			
PHQ1	0.84	0.01	<.001
PHQ2	0.81	0.02	<.001
PHQ3	0.84	0.01	<.001
PHQ4	0.90	0.01	<.001
PHQ5	0.81	0.02	<.001
PHQ6	0.80	0.02	<.001
PHQ7	0.77	0.02	<.001
PHQ8	0.85	0.01	<.001
PHQ9	0.84	0.01	<.001
<b>Suicidal Ideation</b>			
DSI-SS1	0.94	0.01	<.001

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DSI-SS2	0.93	0.01	<.001
DSI-SS3	0.92	0.01	<.001
DSI-SS4	0.75	0.02	<.001

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