# Theorizing to Improve Mental Health in Multicultural Construction Industries: An Intercultural Coping Model

**Qinjun Liu [1], Yingbin Feng [1,\*] and Kerry London [2]**

1   School of Engineering, Design and Built Environment, Western Sydney University, Locked Bag 1797,
    Penrith, NSW 2751, Australia; 19478760@student.westernsydney.edu.au
2   Office of Pro Vice Chancellor (Research), Torrens University Australia, 88 Wakefield St,
    Adelaide, SA 5000, Australia; kerry.london@torrens.edu.au
\*   Correspondence: Y.Feng@westernsydney.edu.au

**Abstract:** Construction workers are exposed to a range of stressors that lead to mental ill-health. In a multicultural construction workplace, the interactions between workers with different cultural backgrounds may aggravate mental health issues. Existing studies on coping typically focus on a reactive approach to managing stressors in the absence of cultural-related factors. This approach is inadequate in addressing mental health issues in a culturally diverse construction workplace. This paper presents a critical review that synthesizes and analyses theories and models of stress and coping, proactive coping, occupational stress, acculturative stress, and intercultural competence to develop a conceptual model for managing mental health in a multicultural construction workforce. The proposed model relies upon a positive coping mechanism, i.e., intercultural coping, to manage stressful events during the entire coping process in a multicultural workplace, towards achieving sustained good mental health. The proposed conceptual model contributes to the development of coping theories and positive psychology approaches and provides effective coping strategies to enhance psychological well-being in a multicultural context.

**Keywords:** mental health; stressors; positive coping; multicultural workplace; construction workers; conceptual model

## 1. Introduction

The construction industry is notorious for its challenging, stressful and dangerous working environment [1]. Construction workers suffer from a variety of mental health problems, including anxiety, depression, and stress [2]. Mental health in the construction industry is an international problem. It has been reported that more than 20% of construction workers in Australia have suffered from psychological disorders for a period of one year [3]. Around 70% of professionals from the UK construction industry were found to have experienced work-related stress, depression, or anxiety [4]. In addition, 55% of UK construction workers have suffered psychological illnesses, and 42% of the workers develop these issues from their work environment [5]. A study by the Construction Industry Rehabilitation Program (CIRP) from Canada reported that 83% of construction industry workers have experienced varying degrees of mental health problems [6]. Mental health problems lead to severe consequences for not only construction workers but also construction organizations [7]. Suicide rates in the construction sector are much higher than those in other occupations [8]. Mental health issues also produce a significant economic loss to construction businesses [9]. Therefore, it is imperative to improve the mental health of construction workers through effective management.

The World Health Organization (WHO) defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" [10]. This definition emphasizes the importance of an individual's abilities,

coping behaviors, and effective functions in facilitating good mental health. Research findings in construction exposed that construction workers were a high-risk group for poor mental health and their levels of psychological distress were substantially higher than their equivalent groups [11]. Workers with psychological issues are more prone to workplace injury and fatalities [12]. Moreover, both job and non-job-related risk factors can lead to mental ill-health, and protracted exposures to psychological disorders are inclined to generate suicide ideation [13]. In contrast, some protective factors, such as social support [14] and marital status [15], were found to produce good mental health. To enhance mental health conditions, Lingard and Turner (2017) suggested the need to address workers' health issues in comprehensive perspectives with a multi-level strategy at individual, family, workplace, and industry levels [2].

Nowadays, more and more workers with various cultural backgrounds are working in the construction industry [16]. For instance, migrant construction workers account for about 52% of the total construction manpower in Australia [17], 30% in Singapore [18], 24% in the US [19], and 40% in London (UK) [20]. "The existence of two or more persons from different cultural groups in any single group or organization" is defined as cultural diversity [21] (p. 485). The construction industry has thus become a culturally diverse workplace in many countries. The interactions between workers with different cultural backgrounds may aggravate the psychological issues in multicultural workplaces. Acculturation is unavoidable for individuals who attempt to cope with stressful events resulting from continuous contact with a new culture [22]. Acculturation refers to a phenomenon that occurs "when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups" [23] (p. 149). Acculturation has been recognized to play a significant role in mental health [24]. Some cultural-related stressors, such as cultural conflicts, language barriers, and workplace confusions, may be generated in a multicultural context [25]. Hence, during the process of acculturation, a variety of mental health problems may arise [26]. Mismanagement of cultural-related stressful events could lead to more severe mental illnesses [27]. The existing studies have mainly linked work stressors to mental ill-health but overlooked other factors influencing the state of mental health among the construction workforce [15]. Particularly, there is a lack of studies examining cultural stressors and how they interact with other stressors to impact on psychological outcomes.

Although previous studies have provided valuable insights into addressing mental ill health, they have mainly focused on reactive approaches to managing mental health issues and neglected the impact of cultural stressors on mental health in a culturally diverse construction workplace. It is, therefore, imperative to examine how mental health is effectively managed in a multicultural context. Thus, this paper aims to conduct a critical review of relevant literature on mental health management within a multicultural construction workplace and propose a conceptual model for the effective management of mental health.

The paper is structured as follows. First, the research methodology of the critical review is described, followed by an exploration of the theoretical concepts underpinning the study. Then, a discussion on the main constructs of the conceptual model is presented and the theoretical foundation of the research is elaborated. After synthesizing the extant literature, a conceptual model regarding the relationships between the constructs is proposed. Finally, implications for future research are provided.

## 2. Methodology

A series of critical review methods were adopted to describe how the research was conducted. The critical literature review intends to review, analyze, and interpret typical literature on a specific subject in a cohesive way towards creating new models or viewpoints on the subject [28]. It concurrently considers the sophistication of the problem to shape theory and synthesizes data across studies [29]. The process of critical review is not as systematic as other types of literature review because it does not propose to cover

comprehensive literature on the topic but to incorporate insights from various research fields/traditions to advance theoretical knowledge and develop conceptual models [30]. In this critical literature review, a three-stage methodology (shown in Figure 1) was followed to achieve the research aim.
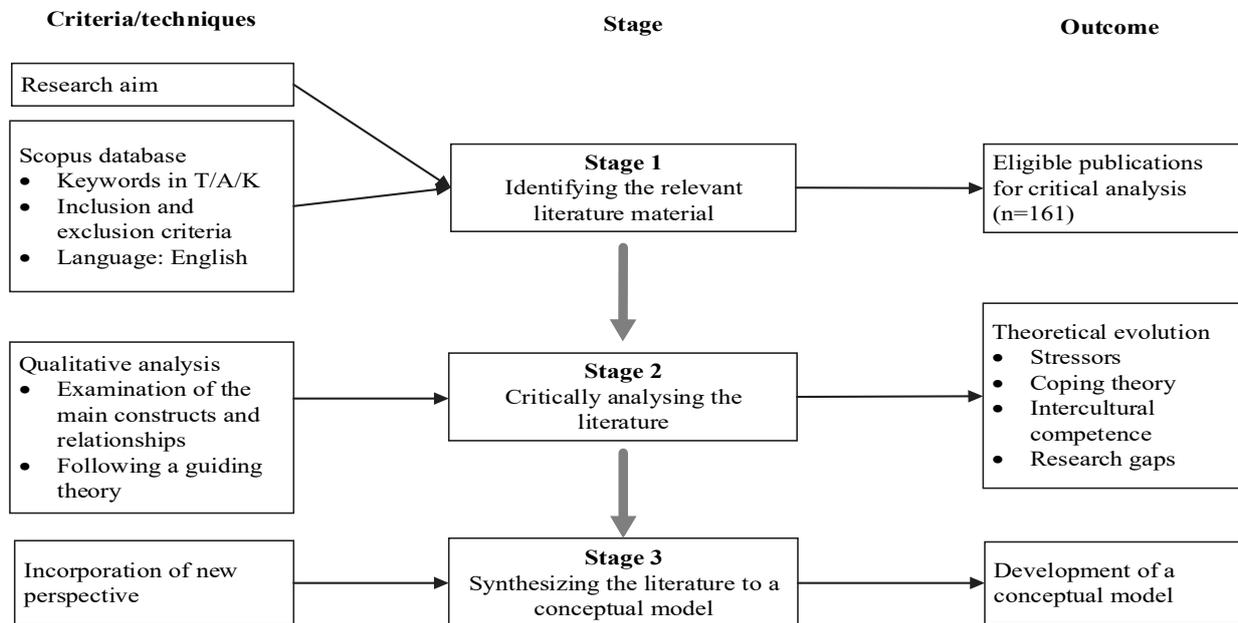


**Figure 1.** Research design.

### 2.1. Stage 1—Identifying the Relevant Literature Material

The first stage involved a desktop search of relevant articles using the Scopus database. Scopus was chosen as the search engine because it covers a broader range of literature in various disciplines and journals than Google Scholar, Web of Science, and PubMed [31]. It also performs better than other search engines regarding coverage and accuracy [32]. Because there is no research on mental health in a multicultural construction workplace, paper searching was conducted separately on topics of mental health of construction workers and multicultural construction workplaces. Within the subject area of the construction industry, mental-health-related keywords (e.g., mental health, psychological problems, depression, stress, and anxiety) and multicultural-context-related keywords (e.g., cultural diversity, multiculturalism, and diverse culture) were included in the initial search under the "title/abstract/keyword" section of Scopus. There was no limitation on the year that the paper was published, and only those papers written in English were included. The preliminary search identified 2230 articles regarding mental health in construction and 184 articles on multiculturalism in construction. However, among the papers, not all of them are relevant to the research topic. Since this study attempts to review the literature on mental health in a multicultural construction workplace, papers not pertinent to the psychological issues of the construction workforce or in a homogenous culture environment were excluded from this research after reviewing the abstract and full contents. As a result, 128 relevant articles on psychological issues in construction and 33 relevant articles on issues in a multicultural construction workplace remained.

### 2.2. Stage 2—Critically Analyzing the Literature

The second stage involved critically reviewing the relevant literature material. The critical analysis attempts to (1) review the status of knowledge of mental health management, (2) identify the strengths and deficiencies of previous studies, and (3) reveal the research gaps [28]. Accordingly, the theoretical foundation (i.e., coping theory) of managing mental health in construction was reviewed. The strengths and weaknesses of the coping

theory were also discussed. New perspectives were proposed based on theoretical analyses. Additionally, the main constructs within the multicultural context were carefully examined based on the theoretical foundation. The research gaps, recognized through critical analysis, paved the way for the generation of new knowledge on this topic.

### 2.3. Stage 3—Synthesizing the Literature to a Conceptual Model

After critically reviewing the relevant literature, the core issues of mental health management in construction were identified. Additional literature was further reviewed, and new perspectives were synthesized into existing literature in the form of a conceptual framework, with the aim of addressing the issue and creating new knowledge in this area. The descriptions of the constructs, their relationships, and the proposed hypotheses of the conceptual model are presented based on theoretical analyses.

## 3. Theoretical Evolution

### 3.1. Stressors of Construction Workers' Mental Health

Appropriate interventions require a better understanding of the stressors for the mental health problems of construction workers to create a psychologically healthy work environment [33]. Stressors refer to "the events which generate excessive and undesirable constraints or demands on the individual" [34] (p. 203). The stressors are the causes of physical and mental disorders [35]. The interactions of individual characteristics and potential situational stressors determine the subsequent coping behaviors and adaptational outcomes [36,37]. However, many studies in construction have identified the impact of work stressors on mental health. Few studies have investigated the relationships between other factors and mental health. Moreover, previous studies have mostly explored the impacts of stressors on psychological outcomes in a one-at-a-time manner. The interactions between stressors and how they simultaneously influence psychological outcomes remain to be examined [15]. Through the review of stressors literature, the identification of three major groupings of stressors of construction workers in a multicultural work environment has emerged, including work, personal and cultural stressors. An overview of the major stressors is shown in Table 1. In this section, detailed discussions regarding the stressors are presented.

**Table 1.** Major stressors of construction workers' mental health.

| Major Stressors | Key Sub-Factors | Authors |
|---|---|---|
| Work stressors | Factors intrinsic to a job (work overload/work overtime)<br>Role in organization (role conflict/role ambiguity)<br>Career development (job insecurity/under promotion)<br>Relationships at work (with co-workers/managers/subordinates)<br>Organizational structure and climate (involvement in the job/organizational rules and procedures) | Cooper and Marshall [37]; Yip et al. [38]; Campbell [4]; Love et al. [14]; Sang et al. [39]; Tijani et al. [40]; Leung et al. [35]; Sunindijo and Kamardeen [15]; Leung et al. [41]; Cheng et al. [42]; Leung et al. [43]; Joiner [44]. |
| Personal stressors | Behavior pattern of an individual (Type A and Type B behaviors)<br>Locus of control (external and internal locus of control)<br>Family problems<br>Financial difficulties | Leung et al. [45]; Tijani et al. [40]; Leung and Chan [46]; Loosemore and Lam [47]; Chan et al. [48]; Liang et al. [49]; Al-Maskari et al. [50]. |
| Cultural stressors | Racial discrimination<br>Language barriers<br>Cultural value conflicts | Wu et al. [51]; Chan et al. [52]; Wong and Lin [53]; Loosemore et al. [54]; Ling et al. [55]. |

3.1.1. Work Stressors

Work stressors are defined as negative situational factors associated with a particular job [37] (p. 11). In an organization, the occupational stressors would lead to adverse psychological and physical outcomes [56]. A number of work stressors have been identified in the construction industry, such as role overload [38,57]; work overload, role ambiguity,

overtime work without payment, lack of promotion [4,14]; long working hours, job insecurity, low job satisfaction, control and responsibility [39]; physical work conditions [4]. The work stressors identified in the construction sector can be grouped into the five categories of the occupational stress model [37].

The occupational stress model has been applied broadly in health-related research fields. Previous studies indicated that most of the job stressors were well-fitted in the factors in the occupational stress model [58]. This model determines five classifications of work stressors, including factors intrinsic to a job, role in organization, career development, relationships at work, organizational structure, and climate. Factors intrinsic to a job refer to undesirable working conditions, work overload, or overtime work. The nature of the construction industry is recognized as highly competitive, with lower profit margins, tight deadlines, and constrained budgets [2]. Work overload or overtime work are the most common occupational stressors for construction workforces [40]. Intensive tasks to be completed in a tight timeframe for a construction project lead to an overwhelming workload [35]. On average, due to the intricacy of the construction projects and the culture of the construction companies, construction workers have to work over 60 h per week [14]. The heavy workload and long work hours lead to increased depression and suicidal ideation [50]. The second work stressor is the role in the organization, of which role conflict and role ambiguity are the two most common factors in construction. Role conflict arises when workers are designated multiple contradictory project tasks or tasks they are not willing to do [41]. Due to the complex nature of construction projects, workers may be confused or uncertain about their responsibilities in an organization [46]. Both role conflict and role ambiguity were associated with lower psychological well-being [51]. With the third work stressor, construction career development is involved with job insecurity, promotion, and status incongruence, which have been found to have significant negative relationships with mental health [42]. Construction work is characterized with job insecurity and under-promotion. Workers' concerns over the issues tend to generate more strain and, ultimately, result in psychological problems [48,59]. The fourth variable, relationships at work, refers to the nature of relationships with co-workers, managers, and subordinates [60]. Existing research shows that working relationships are identified as a common stressor among construction workers [40]. A construction project is complicated and fragmented, which requires close teamwork between workers. Poor relationships at work bring about interpersonal strains and decreased job satisfaction, which is a crucial source of mental illnesses [43]. In addition, organizational structure and climate is a primary work stressor that results in psychological issues. It is the hierarchical relationships of an organization that leads to desirable or stressful working experiences, such as involvement in the job, organizational rules, and procedures [37]. The construction industry has a poor organizational culture and configuration caused by the immense organizational processes [61]. Construction employees working in centralized companies may lack the opportunities to get engaged in the decision-making process [44]. Consequently, the absence of participation in decision-making process could lead to higher levels of psychological hazards [62]. Thus, based on the preceding, the first hypothesis is proposed:

**H1.** *Work stressors have a negative impact on the mental health outcomes of workers in a multicultural construction workplace.*

### 3.1.2. Personal Stressors

Personal stressors, which are recognized as an individual's personal/interpersonal characteristics or dimensions, are the antecedents of psychological disorders among workers [45]. They are derived from construction workers' personal attributes and social interactions [40]. There is currently no formal classification for personal stressors in the construction workforce. Through reviewing the literature on the individual characteristics, the behavior pattern of an individual (Type A and Type B behaviors) and the locus of control (external and internal locus of control) were established as the key individual traits in relation to mental health [46,47]. Individuals of Type A behavior tend to be more competitive,

aggressive, impulsive, hostile, ambiguous, impatient, and time-driven. In contrast, people with Type B behavior patterns are inclined to be more relaxed and even-tempered [63]. Type A people were found to suffer from more job stress than Type B [64]. In an aggressive work environment, the construction workforce is more prone to Type A behavior [65]. The concept locus of control is defined as "the extent to which people perceive contingency relationships between their actions and their outcomes" [66] (p. 169). It reflects on the extent the individuals perceive themselves to be in control of their lives. Individuals who think that their lives are determined by external factors such as luck or significant others are the ones with "external locus of control" personal characteristics, and those who believe that they can control and master their lives by their own behaviors are recognized as the "internal locus of control" [67]. An individual with an external locus of control is reported to have a higher level of stress than that of a person with an internal locus of control [68]. Loosemore and Lam (2004) discovered that the overall locus of control was high regarding health issues in the construction industry, particularly for senior managers. However, architects and designers, tradesmen, operatives, and union members had a more external locus of control [47].

Apart from prominent personal traits, an individual's social interactions outside the organizations are also acknowledged as critical stressors. Among the interpersonal characteristics, family problems and financial difficulties were identified as the most significant influencing factors for mental health [37,68]. Family-related problems are identified as key risk factors for mental ill-health in the construction industry [48]. The status of construction workers' relationships with their family members can influence their mental health conditions. Undesirable home–family relationships lead to anxiety and depression [69]. In contrast, support from family members can help relieve construction workers' stress [49]. Financial/income difficulty is also an essential stressor for the mental illness of construction workers [48]. Workers with low income were more prone to depression and suicide ideation [50], while workers with higher income were found to be associated with lower anxiety and enhanced coping behaviors [48]. Therefore, the second hypothesis is set out:

**H2.** *Personal stressors have a negative impact on the mental health outcomes of workers in a multicultural construction workplace.*

### 3.1.3. Cultural Stressor

The process of intercultural contact can bring about various conflicts, such as conflicts through a change of beliefs and values, relative status, specific practices, and language exchange. These acculturation experiences may become crucial stressors in daily life [70]. Consequently, coping with cultural-related stressors is inevitable for workers in a culturally diverse work environment [51,71]. Cultural stressors have also been termed acculturative stressors [72]. According to the model of acculturative stress of Berry et al. (1987), acculturative stressors may arise from the experience of intercultural contact [71]. Acculturative stressors refer to the conflicts and difficulties that originated from the process of intercultural contacts [72]. Empirical studies have indicated that cultural stressors can generate psychological disorders, especially among ethnic minorities [25]. Berry et al. (1987) indicated that the emergence of intercultural contact is normally accompanied by a set of negative status outcomes—anxiety, depression, and stress; feeling of isolation and marginality; and confusion of self-identity—that bring about a reduction in an individual's mental health [71]. The interplay of acculturative stressors with other factors is associated with greater levels of suicidal symptoms, social anxiety, and anxious arousal [73]. However, despite the significant role that cultural stressors play in influencing mental health outcomes, there is a scarcity of research addressing cultural stressors in the construction industry.

A limited number of studies have explored the cultural stressors regarding health and safety issues in the construction field. Wu et al. (2018) identified the major barriers of safety challenges experienced by ethnic minority construction workers, among which cultural barriers, particularly language barriers, were the most significant ones [51]. Likewise, the findings of Chan et al. (2017) revealed that language barriers were one of the most

urgent safety issues of construction workers [52]. Wong and Lin (2014) showed that there existed severe racial discrimination and prejudice in Hong Kong construction sites that negatively impacted the well-being of ethnic minority workers [53]. Loosemore et al. (2011) disclosed that operatives and managers were concerned about the safety risk issues due to the prevalence of racial discrimination in Australian construction sites, which was viewed as the negative outcome of intercultural interactions [54]. Furthermore, the research results of Ling et al. (2013) demonstrated the salient national cultural differences among migrant workers from different countries and suggested that culture-targeted strategies were needed to manage diversity among workers with different backgrounds [55]. Aveiga et al. (2011) also revealed that greater conflicts between different cultural groups on construction site caused negative effects on various aspects of construction work [74]. Therefore, the extant literature on multiculturalism in construction has identified racial discrimination, language barriers, and cultural value conflicts as the most prevalent cultural stressors of mental ill-health in the multicultural construction workplace. The third hypothesis is proposed:

**H3.** *Cultural stressors have a negative impact on the mental health outcomes of workers in a multicultural construction workplace.*

Moreover, based on what has been discussed above, the interplay of personal characteristics and situational stressors determine coping behaviors and psychological outcomes, as postulated by the transaction theory of stress and coping [36] and the occupational stress model [37]. Empirical studies have also suggested that different stressors interact with each other to jointly influence mental health outcomes [15,73]. Hence, the following hypotheses are proposed:

**H4.** *Stressors interact with one another to impact mental health in a multicultural construction workplace. (a) Work stressors interact with personal stressors to impact mental health in a multicultural construction workplace. (b) Work stressors interact with cultural stressors to impact mental health in a multicultural construction workplace. (c) Personal stressors interact with cultural stressors to impact mental health in a multicultural construction workplace.*

### 3.2. Coping

### 3.2.1. The Concept of Coping

A good fit between the person–situation transaction and effective coping with stressful situations determine an individual's psychological well-being [75]. Therefore, successfully managing mental health requires the adoption of appropriate coping strategies. Considerable research has been conducted to investigate the coping of psychological well-being. The psychodynamic models of coping [76,77] are the earliest work regarding coping studies, which postulates that coping is determined by stable personality features and perceptual manners [78]. The models focus on the role of the ego defenses mechanism, which attempts to alleviate adverse feelings and distressing impulses [79]. Following the psychodynamic models of coping, Haan (1977) developed a tripartite model of the ego process, including coping, defense, and fragmentation [80]. The ego process is identified as a primary strategy to deal with daily life stressors. Coping is recognized as a conscious construct and has become more predominant in the adaptation process with cognitive development.

The psychodynamic models of coping have paved the way for the formation of cognitive theories of coping. Cognitive theories of coping underline the cognitive process, which plays a mediating role in the relationships between external stimuli and corresponding responses [81]. The transactional theory of stress and coping, developed by Lazarus and Folkman (1984), is the most widely and frequently applied cognitive theory of coping in the health and well-being field. Coping is defined as a person's cognitive and behavioral efforts to manage the demands of a particular person–environment transaction that has relevance to his or her well-being [82]. The transactional theory of stress and coping identifies the antecedents (personal and situational variables), mediators (appraisal and coping), and outcomes (immediate and long-term physical and psychological consequences) over this

cognitive process. This model has laid a solid foundation in examining the relationship between the stressor, coping, and the psychological outcome and made a major contribution to the theoretical and practical developments regarding coping. It identified the two functional classifications of coping behaviors, namely, problem-focused coping and emotion-focused coping. Moreover, the Ways of Coping Questionnaire was also developed in accordance with the coping categories. Following the transactional models of coping [36,83], studies continued to investigate the nature of coping and expanded the coping models into more context-based models [78]. Most distinguished among these models are the sociological model [84], the integrative model [85], and the multidimensional interaction model [86].

The review of coping theories shows that coping models have evolved from psychodynamic models that emphasize the ego defense mechanism to transactional models of coping, which focus on the cognitive process. The transactional model of stress and coping, developed by Lazarus and Folkman (1984), has dominated cognitive coping research since its development. In addition, continuous efforts have been added to the cognitive theories of coping to explore the relationship between antecedents, coping, and adaptational outcomes [78].

### 3.2.2. Coping in Construction

In the construction industry, a few efforts have been made to examine the relationships between coping behaviors and psychological issues. Most studies on coping in construction are based on the cognitive theory of stress and coping developed by Lazarus and Folkman (1984) and analyze workers' coping behaviors following problem-focused coping and emotion-focused coping. Enshassi et al. (2018) investigated the most prevailing coping measures used by construction professionals. In terms of problem-focused coping, planned and constructive review problem-solving, need for social contributory support, and confronted coping were found to be the three most frequently used ones. As for emotion-focused coping, the principal strategies were accepting responsibility, avoidance, and seeking emotional support [87]. Chan et al. (2018) found that Hong Kong expatriate construction professionals employed planned problem-solving and instrumental support seeking (problem-focused coping) as well as emotional support seeking, escapism, emotional discharge, acceptance, positive thinking, and religious support (emotion-focused coping). They summarized that Chinese expatriates preferred to employ emotion- rather than problem-focused coping measures [88]. Yip et al. (2008) examined the degree to which the different types of coping strategies moderate the relationship between role overload and burnout among professional construction engineers. Rational problem solving was discovered to be the most significant one among all the coping strategies [38]. Similarly, Haynes and Love (2004) found that project managers who adopted problem-focused coping such as active coping had better psychological well-being than those who preferred emotion-focused coping such as cognitive avoidance coping and self-controlling coping [59]. Bowen et al. (2014) revealed that both adaptive coping measures, including physical exercise and maladaptive coping measures such as alcohol consumption, smoking, and narcotics usage, were used by construction professionals. They thus suggested that proper and targeted coping strategies should be proposed and employed by construction organizations [89]. The research findings of Langdon and Sawang (2018) indicated that emotion-focused coping behaviors, such as self-blame, disengagement, and acceptance, are related to higher levels of psychological disorders for construction workers. Additionally, substance use can only be recognized as a temporary coping strategy as it is a maladaptive coping strategy. They advised the construction organizations to provide more positive coping measures to enhance mental health for workers [13]. Furthermore, Liang et al. (2018) examined 15 coping behaviors of construction workers. Different from the construction professionals, construction workers used more emotion-focused coping strategies. In particular, emotional discharge is the most widely used one [49].

While existing studies on coping in construction have presented helpful understandings, most of them are focused on construction professionals. Very little research has explored construction workers' coping behaviors and their effect on mental health. Construction workers, however, are involved with monotonous and repetitious project tasks, which lead to musculoskeletal disorders and psychological illnesses [33]. It is necessary to increase research on coping targeted at onsite workers [13]. Moreover, most studies adopted the framework of problem-focused and emotion-focused coping based on the cognitive theory of stress and coping. This coping framework is focused on a reactive approach to dealing with stressors [90]. The research findings showed that construction workers adopted both adaptive and maladaptive coping strategies. Maladaptive coping (e.g., emotion-focused coping) has been related to increased risk of job safety [91] and psychological distress [13]. Given the widespread usage of negative coping strategies among construction workers and the ineffectiveness of most coping measures, researchers have called on the proposal of effective management of mental health for the construction workforce.

### 3.2.3. Proactive Coping

Based on the cognitive theory of stress and coping, coping functions are distinguished as problem-focused and emotion-focused coping. While the distinction of the coping pattern is valuable, it was criticized for failing to reveal the multivariate aspects of coping [92]. The existing studies mainly position coping as managing mental health on a reactive approach because coping behaviors are triggered by a stressful event [90], particularly in the research field of the construction industry. Given that proactive coping focuses on a wider range of risk management, with the incorporation of the active generation of opportunities and the effective management of stress [93], this study underlines the importance of proactive coping to positively managing mental health.

The proactive coping theory suggests that proactive coping is normally beneficial to an individual, given that proactive coping enables a person to prevent, remove, diminish, or alter imminent stressful situations. The stress level would be much lower before it occurs [94]. Proactive coping "consists of efforts undertaken in advance of a potentially stressful event to prevent it or to modify its form before it occurs" [94] (p. 417). It differs from conventional coping concepts in three major aspects [95]. First, conventional coping takes on a reactive approach to dealing with stressful events that have already arisen. It is used for making up for past impairment. Proactive coping is for potentially stressful events. Second, traditional reactive coping is viewed as risk management, while proactive coping is goal management. Individuals utilizing proactive coping appraise the potential stressful events as challenges but not threats. Last, proactive coping is motivated in a positive manner, whereas reactive coping is derived from risk appraisal. The proactive coping process includes the development of skills and resources to general stressors. The likelihood of suffering from stressful situations will be reduced with the increasing development of coping resources and skills [90]. Empirical findings have also demonstrated the positive association between proactive coping and good mental health [96]. Uskul and Greenglass (2005) found that proactive coping was related to a decrease in depression and an increase in life satisfaction [97]. Schwarzer and Knoll (2003) discovered that proactive coping was negatively associated with burnout in teachers [93]. In a cross-sectional study, proactive coping was revealed to be negatively related to burnout and positively correlated with quality of life when managing the occupational stresses of nurses [98].

Consequently, to develop a positive coping mechanism, this study incorporates proactive coping into the coping process, built upon the cognitive theory of stress and coping and proactive coping theory. This positive coping mechanism includes two processes: the proactive coping process before stressful events and the reactive coping process after stressful situations. It is underpinned by appropriate resources and skills cultivated through the proactive coping process and the employment of developed resources through the reactive coping process.

*3.3. Intercultural Coping*

3.3.1. Intercultural Competence

Intercultural competencies are effective abilities to manage mental health in multicultural situations [99]. They are defined as "the abilities to develop targeted knowledge, skills, and attitudes that lead to visible behavior and communication that are both effective and appropriate in intercultural interactions" [100] (p. 243). Intercultural competencies feature the ability to cope with anxiety and uncertainty, the skills to develop relationships and effectively exchange information with others, and knowledge regarding the culture and language [101]. Based on the intercultural competence model, Deardorff (2006) established three constituent elements of intercultural competency: knowledge, skills, and attitudes [100]. Knowledge mainly focuses on the cognitive aspect, such as culture-specific knowledge and socio-linguistic awareness. Attitude targets the emotional reaction, which is constituted by respect, openness, curiosity, and discovery. Skills embody the behavioral responses that are composed of listening, observing, evaluating, analyzing, interpreting, and relating. Similarly, a comprehensive literature review by Lloyd and Härtel (2010) identified three classifications of intercultural competence, including affective, behavioral, and cognitive competences [102]. Affective competence refers to the attitudes, feelings, and personality traits that a person owns in terms of specific cultures and people with whom they interact, including dissimilarity openness, tolerance for ambiguity, and cultural empathy [103]. Behavioral competence emphasizes the skills for stressful situations in intercultural interactions, including intercultural communication competence, emotion management skills, and conflict management skills [104]. Cognitive competence focuses on the abilities to perceive and understand information, including cognitive complexity and goal orientation [104]. Table 2 shows the classification and sub-dimensions of intercultural competence.

**Table 2.** Intercultural competence classification system.

| Classifications of Intercultural Competence [100,102] | Definition | Competences [102] |
| --- | --- | --- |
| Affective competence (Attitudes) | Attitudes, feelings, and personality traits that a person owns in terms of specific cultures and people with whom they interact [103] | Dissimilarity openness Tolerance for ambiguity Cultural empathy |
| Behavioral competence (Skills) | Skills for stressful situations in intercultural interactions [104] | Intercultural communication competence Emotion management skills Conflict management skills |
| Cognitive competence (Knowledge) | Abilities to perceive and understand information [104] | Cognitive complexity Goal orientation |

Many studies have revealed the positive impact of intercultural competence on health management in a multicultural workplace. For instance, "effective emotion management skills involve the ability to identify, monitor, and regulate one's own and others' emotions" [105] (p. 83), which helps team members to reduce social and emotional conflicts. An increase in tolerance for ambiguity and intercultural communication competence would increase the ability to cope with anxiety [101]. Additionally, Torres and Rollock (2004) discovered a negative relationship between culture-related stressors and intercultural competence [27]. Intercultural competence was further found to significantly moderate the relationship between cultural adaptation and depression of migrant workers, which suggested that intercultural competence may significantly influence the psychological outcomes of individuals in different cultural contexts [106].

### 3.3.2. Incorporating Intercultural Competence into Coping

Coping is an initiative mechanism that entails active and conscious responses to specific stressful situations. It is generally the self-help strategies of individuals for mild mental health problems. However, most of the general coping responses adopted by individuals are not effective in dealing with mental health problems. Thus, it is essential to evolve general coping into effective coping in a specific context. A meta-analysis of the current studies in general contexts revealed that positive interventions can constantly ameliorate well-being and alleviate mental illnesses [107]. Therefore, developing positive capacities can significantly benefit workplace mental health [108].

Positive competencies and skills are acknowledged as important personal resources for coping that can reduce the possibility of stressful encounters [95]. In a multicultural environment, the mastery of intercultural competence is crucial to psychological well-being and empowers individuals to successfully accomplish specific tasks [109]. Intercultural competence is thus a type of positive personal resource for mental health management. Before encountering stressors, the development of intercultural competence can help individuals prepare for the upcoming stressful events; after confronting stressful situations, appropriate employment of intercultural competence can help individuals tackle them. Accordingly, to develop an effective coping mechanism, the positive resources of promoting mental health should be exerted actively and as an initiative during the coping process. Only by integrating the initiative mechanism (coping) with positive resources (intercultural competencies) can an individual effectively address mental health problems. Therefore, on the basis of the implications of coping and intercultural competence, this study incorporates intercultural competence into the coping repertoire and proposes the term "intercultural coping" as a positive coping mechanism to effectively manage mental health in a culturally diverse environment.

In accordance with the intercultural competence model [100] and the preceding literature [102], intercultural competence has three dimensions, including affective, behavioral, and cognitive dimensions. Meanwhile, coping includes a wide range of affective, behavioral, and cognitive efforts targeted at both internal and external stressors [78]. Therefore, the concept of intercultural coping can also be examined from the affective, behavioral, and cognitive dimensions. The notion of intercultural coping is defined as an individual's affective, behavioral, or cognitive competencies, developed and employed for stressful events during the entire coping process, towards achieving a sustained improvement of psychological well-being in a multicultural work environment (see Figure 2). The concept of intercultural coping may address the limitations of the traditional coping functions in a culturally diverse work environment.

The following hypotheses are proposed based on the preceding:

**H5.** *Intercultural coping has a positive impact on the mental health outcomes of workers in a multicultural construction workplace.*

**H6.** *Intercultural coping reduces the level of stressors through the proactive coping process.*

**H7.** *Intercultural coping reduces the impact of stressors on mental health outcomes through the reactive coping process.*
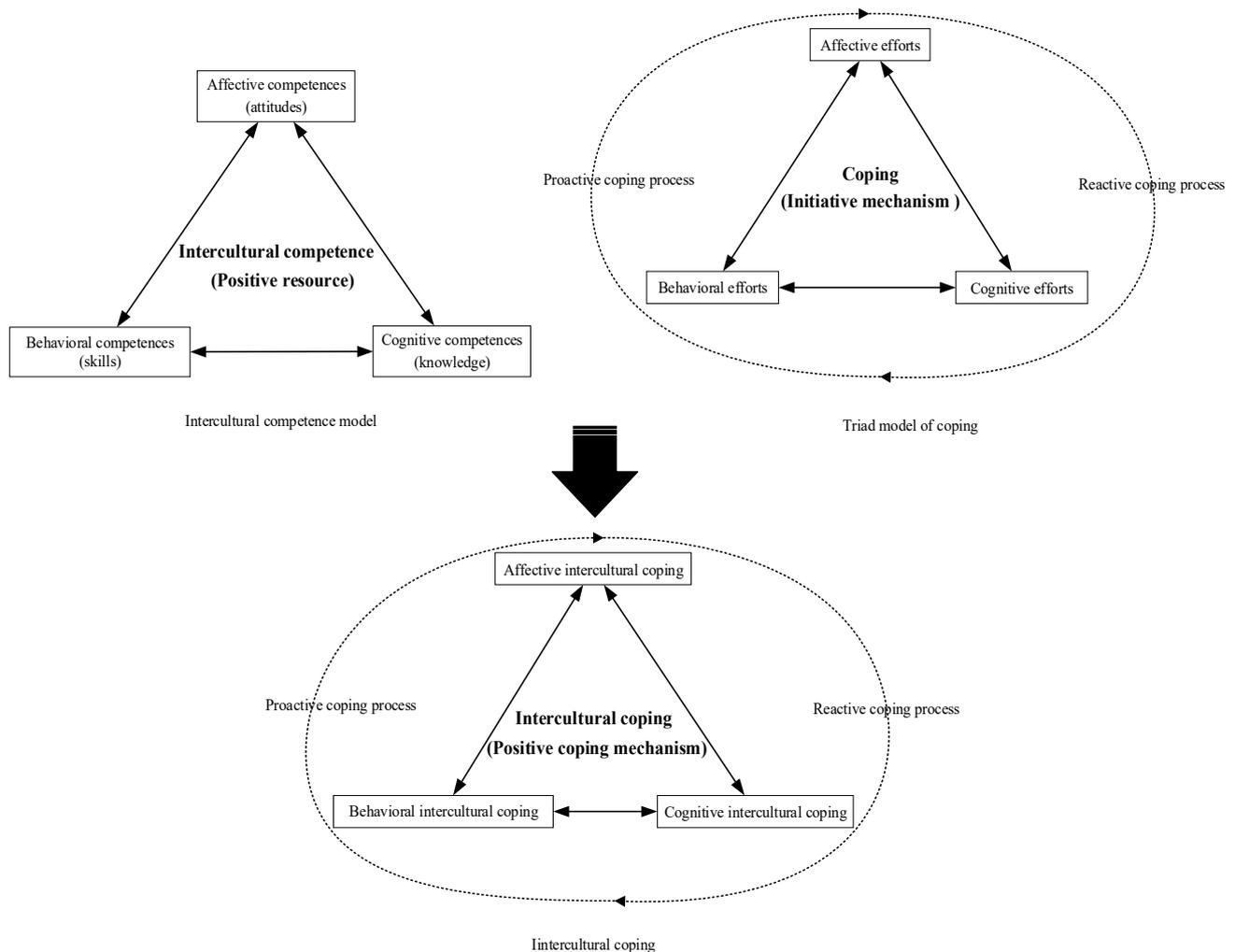
**Figure 2.** Integration of intercultural competence and coping.

## 4. Conceptual Model

The conceptual model for effectively managing the mental health of construction workers in a multicultural work environment was developed after analyzing and synthesizing the literature. The constructs and their hypothesized relationships are described in the model (see Figure 3). The conceptual model presents how a positive coping mechanism works during the entire coping process, in which intercultural coping interacts with the major stressors (work, personal, and cultural stressors) to impact mental health outcomes in a multicultural context. Work stressors, personal stressors, and cultural stressors interact in concert to negatively predict mental health outcomes. Intercultural coping is hypothesized to directly exert positive effects on mental health outcomes. Moreover, intercultural coping can reduce the level of stressors through the proactive coping process and reduce the impact of stressors on mental health outcomes through the reactive coping process.

The conceptual model has important implications for research on mental health management in a multicultural construction workplace. First, a novel notion of intercultural coping is proposed, which is a positive coping approach to effectively managing mental health in a multicultural context through integrating intercultural competence (positive resource) into coping (initiative mechanism). Three dimensions of intercultural coping are identified, including affective, behavioral, and cognitive aspects. Second, intercultural coping is employed during the entire coping process, including reactive and proactive coping processes. Distinguished from previous studies, which typically concentrate on reactive coping after stressful events occur, this model emphasizes the vital role of proactive

coping in preventing and reducing potential stressful events. Proactive coping focuses on goal management, which can complement the function of reactive coping, which focuses on risk management. Thus, through combining the proactive and reactive coping processes, the comprehensive management of mental health is developed during the entire coping process to minimize stressors and maximize good mental health. Third, the positive coping mechanism highlights the importance of resource cultivation and appropriate employment of resources. To effectively manage psychological problems, relevant resources are required as well as the correct adoption of the coping strategies. In addition, three major stressors (work, personal, and cultural stressors) and their key sub-factors of mental health for construction workers were identified on the basis of an extensive literature review. Particularly, the essential role of cultural stressors on mental health in a multicultural workplace is recognized in this model. Lastly, this study takes into account the simultaneous impact of the major stressors on mental problems. Previous studies have explored the direct impacts of stressors on psychological outcomes. However, investigating the interactive effects of stressors on mental health is considered necessary as different types of stressors can interact with each other and collectively influence psychological well-being.
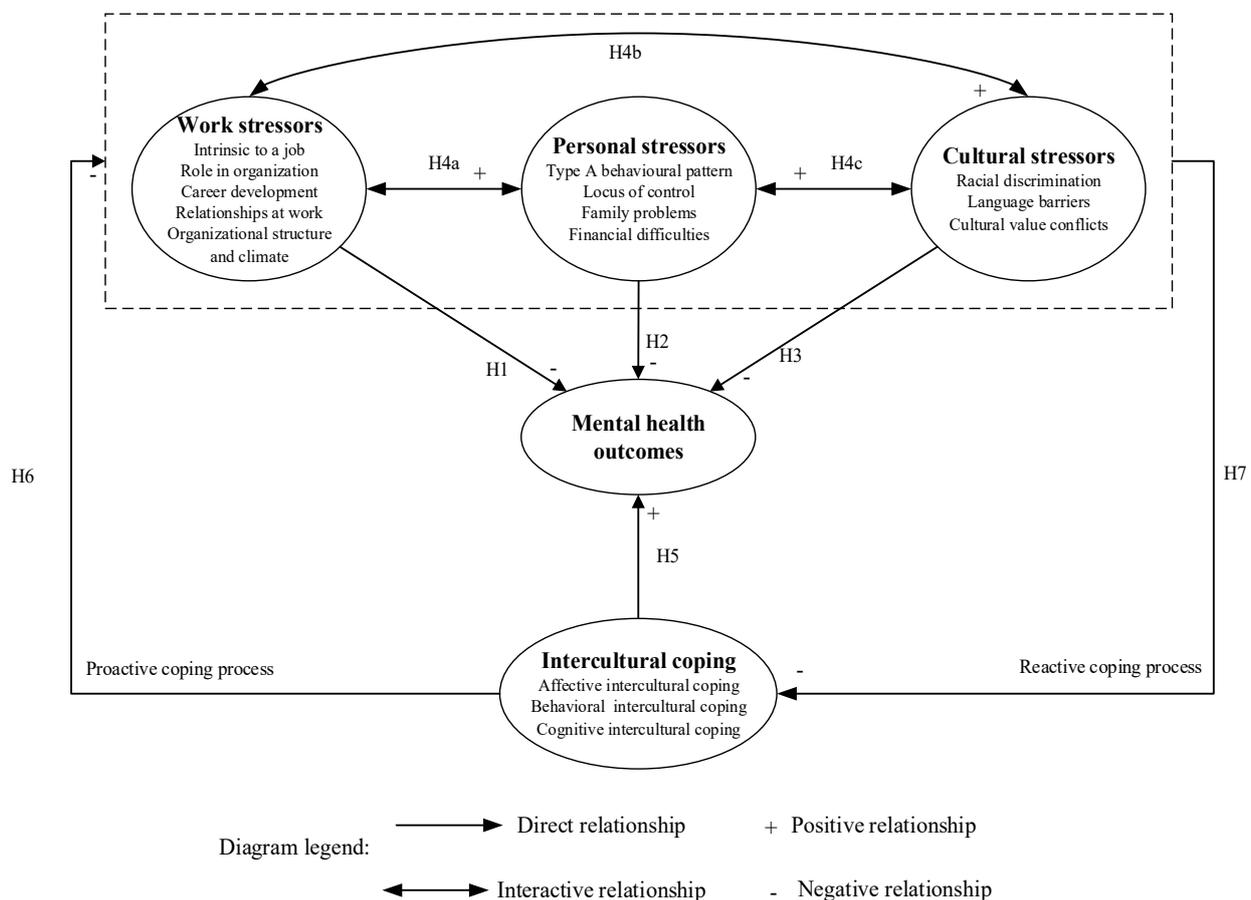


**Figure 3.** Conceptual model for managing mental health in a multicultural construction workplace.

The proposed conceptual model contributes to the theoretical development by complementing the coping theories and positive psychology approaches in a multicultural context. Practically, the model has implications for both construction organizations and construction workers. The model provides knowledge of how major stressors interact with each other to influence mental health and how to effectively cope with the stressors in the whole lifecycle, which could assist managers in identifying potential stressors and designing a mentally healthy work environment. At the individual level, training involving the development and employment of intercultural competence can be provided to enable

construction workers to effectively cope with stressful events in a multicultural workplace and help them achieve sustained mental health in the long term.

## 5. Implications for Future Research

### 5.1. Investigation of Different Types of Psychological Problems

The literature revealed a high level of psychological disorders among the construction workforce. However, research on mental health in the construction industry has mostly focused on the stress management of construction professionals. Other common psychological problems, such as anxiety, depression, substance use disorder, and posttraumatic stress disorder (PTSD), have been rarely investigated for the construction workforce. The experience of stressful situations could lead to various psychological disorders. Thus, to have a comprehensive view of the mental health conditions of construction workers, different types of psychological problems need to be investigated for not only construction professionals but also frontline workers.

### 5.2. Interactive Effects of Stressors on Mental Health Outcomes

The construction sector has typically emphasized the role that work stressors play in psychological outcomes. Research on the impacts of other stressors on mental health is insufficient. Studies from the field of psychology suggest that a range of stressors can influence mental health in the workplace and that the interactions between stressors determine the psychological outcomes. In the construction sector, only a limited number of variables have been identified as personal stressors or cultural stressors. Thus, more research is required to explore the specific sub-factors for other major types of stressors. Additionally, the extant research in construction has mostly explored the impacts of stressors on psychological outcomes in a one-at-a-time manner, yet how the stressors interact with one another and jointly impact mental health remains unclear. Hence, empirical studies examining the interactive effects of different types of stressors on mental health outcomes for construction workers are needed in future research.

### 5.3. Development of Positive Interventions

The significant effect of positive management of mental health has been emphasized in the psychological literature. Research in construction has mainly focused on reactive coping to deal with stressful situations. Proactive coping measures have been neglected by the previous studies. The proactive intervention highlights the importance of resource cultivation and accumulation, which is an essential aspect of positive interventions for preventing stressors. Studies need to consider a combination of the proactive coping process and positive resources with the reactive coping process to form a positive coping approach that best suits construction workers in different situations.

### 5.4. Mental Health Management from Different Levels of Cultural Diversity

Cultural diversity has a significant impact on mental health outcomes from both the individual level and the group level [99]. However, both aspects are neglected in the studies on mental health in the construction industry. This study focuses on the multicultural aspects at an individual level: this is about managing psychological issues in multicultural (heterogeneous) workforces, working at one location or in one organization. Cultural stressors generated from intercultural interactions and coping strategies in this multicultural environment have been identified. On the other hand, cross-cultural aspects focus on working in teams that are homogeneous with regard to their national culture. Interests in the mental issues of expatriate professionals/workers in multinational companies should refer to this aspect. At an individual level, cultural interactions in a multicultural environment can lead to psychological distress, while national culture can influence the perception of stressors and selection of coping at a group level. Future research from different levels of cultural diversity could provide a better understanding of the mental health conditions in a culturally diverse construction workforce.

*5.5. Empirical Examinations on the Conceptual Model*

The conceptual model proposed in this study is based on the literature review of the construction industry and psychosociology theories. Future studies are needed to collect empirical data and test the model in multicultural construction workplaces. It is also recommended that empirical studies be conducted from construction sites of a particular size and specific kinds of work, based on this model, to compare the characteristics of mental health issues in different contexts.

## 6. Conclusions

This study examined the mental health management of construction workers in a culturally diverse environment. The prevalent stressors of the construction workforce were identified based on an extensive literature review, including work stressors, personal stressors, and cultural stressors. Coping theories were reviewed, particularly the cognitive theory of stress and coping [36], which emphasizes the crucial role of coping in determining mental health outcomes. Studies based on prevailing coping theory typically focus on a reactive coping approach in the absence of cultural stressors. Therefore, this paper adopts a positive coping approach to effectively manage mental health in a multicultural context. A conceptual model for managing the mental health of construction workers in a multicultural work environment was developed by synthesizing the literature findings. The conceptual model is innovative in that it incorporates proactive coping into the entire coping process to form a positive coping mechanism, i.e., intercultural coping. This intercultural coping mechanism underlines the importance of resource development in the proactive coping process and appropriate employment of the coping strategies in the reactive coping process to enhance good mental health in a multicultural context. The outcomes of this study may contribute to the improvement of the mental ill-health of the working population in the construction industry as well as other culturally diverse workplaces globally. Following the theoretical guidance, empirical examination of the model can be conducted to test the relationships between stressors, intercultural coping, and mental health outcomes in different national cultures and industrial contexts.

## References

1. Loosemore, M.; Phua, F.; Dunn, K.; Ozguc, U. Operatives' experiences of cultural diversity on Australian construction sites. *Constr. Manag. Econ.* **2010**, *28*, 177–188. [CrossRef]
2. Lingard, H.; Turner, M. Promoting construction workers' health: A multi-level system perspective. *Constr. Manag. Econ.* **2017**, *35*, 239–253. [CrossRef]
3. PricewaterhouseCoopers. *Creating a Mentally Healthy Workplace: Return on Investment Analysis*; PricewaterhouseCoopers: Australia, 2014. Available online: http://www.headsup.org.au/docs/default-source/resources/beyondblue_workplaceroi_finalreport_may-2014.pdf (accessed on 17 December 2021).
4. Campbell, F. *Occupational Stress in the Construction Industry*; Chartered Institute of Building: Berkshire, UK, 2006.
5. Alderson, L. Uncovered: The Truth behind Construction's Mental Health. Available online: https://www.constructionnews.co.uk/agenda/mind-matters/uncovered-the-truth-behind-constructions-mental-health-27-04-2017/ (accessed on 7 October 2021).

6.    BCBuildingTrades. 83% of Construction Workers Have Experienced a Mental Health Issue. Available online: https://bcbuildingtrades.org/83-of-construction-workers-have-experienced-a-mental-health-issue/ (accessed on 28 July 2021).

7.    Wong, J.; Teo, M.; Cheung, Y.K.F. Cultural determinants of stress in the construction industry. In Proceedings of the 2010 International Conference On Construction & Real Estate Management, Brisbane, Australia, 1–3 December 2010; pp. 44–49.

8.    Milner, A.; Law, P.C.F. *Summary Report: Mental Health in the Construction Industry*; University of Melbourne: Melbourne, Australia, 2017.

9.    Stevenson, D. *Thriving at Work: The Stevenson/Farmer Review of Mental Health and Employers*; Department for Work and Pensions: London, UK; Department of Health: London, UK, 2017.

10.   WHO. *Strengthening Mental Health Promotion: Mental Health Is Not just the Absence of Mental Disorder*; WHO: Geneva, Switzerland, 2001.

11.   Pidd, K.; Duraisingam, V.; Roche, A.; Trifonoff, A. Young construction workers: Substance use, mental health, and workplace psychosocial factors. *Adv. Dual Diagn.* **2017**, *10*, 155–168. [CrossRef]

12.   Park, H.; Sprince, N.L.; Lewis, M.Q.; Burmeister, L.F.; Whitten, P.S.; Zwerling, C. Risk factors for work-related injury among male farmers in Iowa: A prospective cohort study. *J. Occup. Environ. Med.* **2001**, *43*, 542–547. [CrossRef] [PubMed]

13.   Langdon, R.R.; Sawang, S. Construction Workers' Well-Being: What Leads to Depression, Anxiety, and Stress? *J. Constr. Eng. Manag.* **2018**, *144*, 04017100. [CrossRef]

14.   Love, P.E.D.; Edwards, D.J.; Irani, Z. Work stress, support, and mental health in construction. *J. Constr. Eng. Manag.* **2010**, *136*, 650–658. [CrossRef]

15.   Sunindijo, R.Y.; Kamardeen, I. Work Stress Is a Threat to Gender Diversity in the Construction Industry. *J. Constr. Eng. Manag.* **2017**, *143*, 04017073. [CrossRef]

16.   Rosewarne, S.; Shin, J.S.; McGrath-Champ, S.; Toner, P. The globalisation of the construction work force: The impact on the Australian building and construction industry. In Proceedings of the 4th Asia-Pacific Building Unions Seminar, Beijing, China, 23 August 2006.

17.   Loosemore, M. Work Force Diversity is Key to Construction Innovation. *Sourceable*. 12 October 2015. Available online: https://sourceable.net/workforce-diversity-is-key-to-construction-innovation/ (accessed on 30 May 2021).

18.   Statista. Number of Foreign Construction Workers Employed in Singapore from 2013 to 2019. Available online: https://www.statista.com/statistics/1054354/singapore-foreign-construction-workers-employed/ (accessed on 30 May 2021).

19.   NAHB, E. Immigrant Workers in the Construction Labor Force. Available online: https://www.nahbclassic.org/fileUpload_details.aspx?contentTypeID=3&contentID=272199&subContentID=738700 (accessed on 30 May 2021).

20.   Office for National Statistics. Migrant Labour Force within the UK's Construction Industry: August 2018. Available online: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/migrantlabourforcewithintheconstructionindustry/august2018 (accessed on 18 December 2021).

21.   DeSimone, R.L.; Harris, D.M. *Human Resource Development*; The Dryden Press: Orlando, FL, USA, 1998.

22.   Berry, J.W. Immigration, acculturation, and adaptation. *Appl. Psychol.* **1997**, *46*, 5–34. [CrossRef]

23.   Redfield, R.; Linton, R.; Herskovits, M. Memorandum for the study of acculturation. *Am. Anthropol.* **1936**, *38*, 149–152. [CrossRef]

24.   Matsudaira, T. Measures of psychological acculturation: A review. *Transcult. Psychiatry* **2006**, *43*, 462–487. [CrossRef]

25.   Cano, M.Á.; Schwartz, S.J.; Castillo, L.G.; Romero, A.J.; Huang, S.; Lorenzo-Blanco, E.I.; Unger, J.B.; Zamboanga, B.L.; Des Rosiers, S.E.; Baezconde-Garbanati, L. Depressive symptoms and externalizing behaviors among Hispanic immigrant adolescents: Examining longitudinal effects of cultural stress. *J. Adolesc.* **2015**, *42*, 31–39. [CrossRef] [PubMed]

26.   Vega, W.A.; Alegría, M. Latino mental health and treatment in the United States. *Health Issues Lat. Community* **2001**, *7*, 179–208.

27.   Torres, L.; Rollock, D. Acculturative distress among Hispanics: The role of acculturation, coping, and intercultural competence. *J. Multicult. Couns. Dev.* **2004**, *32*, 155–167. [CrossRef]

28.   Torraco, R.J. Writing integrative literature reviews: Guidelines and examples. *Hum. Resour. Dev. Rev.* **2005**, *4*, 356–367. [CrossRef]

29.   Finfgeld-Connett, D. Use of content analysis to conduct knowledge-building and theory-generating qualitative systematic reviews. *Qual. Res.* **2014**, *14*, 341–352. [CrossRef]

30.   Snyder, H. Literature review as a research methodology: An overview and guidelines. *J. Bus. Res.* **2019**, *104*, 333–339. [CrossRef]

31.   Hong, Y.; Chan, D.W. Research trend of joint ventures in construction: A two-decade taxonomic review. *J. Facil. Manag.* **2014**, *12*, 118–141. [CrossRef]

32.   Falagas, M.E.; Pitsouni, E.I.; Malietzis, G.A.; Pappas, G. Comparison of PubMed, Scopus, web of science, and Google scholar: Strengths and weaknesses. *FASEB J.* **2008**, *22*, 338–342. [CrossRef] [PubMed]

33.   Boschman, J.S.; van der Molen, H.F.; Sluiter, J.K.; Frings-Dresen, M.H.W. Psychosocial work environment and mental health among construction workers. *Appl. Ergon.* **2013**, *44*, 748–755. [CrossRef]

34.   Bhagat, R.S.; McQuaid, S.J.; Lindholm, H.; Segovis, J. Total life stress: A multimethod validation of the construct and its effects on organizationally valued outcomes and withdrawal behaviors. *J. Appl. Psychol.* **1985**, *70*, 202. [CrossRef]

35.   Leung, M.Y.; Ng, S.T.; Skitmore, M.; Cheung, S.O. Critical stressors influencing construction estimators in Hong Kong. *Constr. Manag. Econ.* **2005**, *23*, 33–43. [CrossRef]

36.   Lazarus, R.S.; Folkman, S. *Stress, Appraisal, and Coping*; Springer Publishing Company: New York, NY, USA, 1984.

37.   Cooper, C.L.; Marshall, J. Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill health. *J. Occup. Organ. Psychol.* **1976**, *49*, 11–28. [CrossRef]

38. Yip, B.; Rowlinson, S.; Siu, O.L. Coping strategies as moderators in the relationship between role overload and burnout. *Constr. Manag. Econ.* **2008**, *26*, 869–880. [CrossRef]

39. Sang, K.; Dainty, A.; Ison, S. *Warning: Working in Construction May Be Harmful to Your Psychological Well-Being! In People and Culture in Construction: A Reader*; Taylor & Francis Group: London, UK, 2007; pp. 127–143.

40. Tijani, B.; Jin, X.; Osei-kyei, R. A systematic review of mental stressors in the construction industry. *Int. J. Build. Pathol. Adapt.* **2021**, *39*, 433–460. [CrossRef]

41. Leung, M.Y.; Chan, Y.S.; Yu, J. Integrated model for the stressors and stresses of construction project managers in Hong Kong. *J. Constr. Eng. Manag.* **2009**, *135*, 126–134. [CrossRef]

42. Cheng, Y.; Chen, C.W.; Chen, C.J.; Chiang, T.L. Job insecurity and its association with health among employees in the Taiwanese general population. *Soc. Sci. Med.* **2005**, *61*, 41–52. [CrossRef] [PubMed]

43. Leung, M.Y.; Liang, Q.; Chan, I.Y.S. Development of a Stressors-Stress-Performance-Outcome Model for Expatriate Construction Professionals. *J. Constr. Eng. Manag.* **2017**, *143*, 04016121. [CrossRef]

44. Joiner, T.A. The influence of national culture and organizational culture alignment on job stress and performance: Evidence from Greece. *J. Manag. Psychol.* **2001**, *16*, 229–242. [CrossRef]

45. Leung, M.Y.; Skitmore, M.; Chan, Y.S. Subjective and objective stress in construction cost estimation. *Constr. Manag. Econ.* **2007**, *25*, 1063–1075. [CrossRef]

46. Leung, M.Y.; Chan, I.Y.S. Exploring stressors of Hong Kong expatriate construction professionals in Mainland China: Focus group study. *J. Constr. Eng. Manag.* **2012**, *138*, 78–88. [CrossRef]

47. Loosemore, M.; Lam, A.S.Y. The locus of control: A determinant of opportunistic behaviour in construction health and safety. *Constr. Manag. Econ.* **2004**, *22*, 385–394. [CrossRef]

48. Chan, A.P.; Nwaogu, J.M.; Naslund, J.A. Mental ill-health risk factors in the construction industry: Systematic review. *J. Constr. Eng. Manag.* **2020**, *146*, 04020004. [CrossRef]

49. Liang, Q.; Leung, M.Y.; Cooper, C. Focus Group Study to Explore Critical Factors for Managing Stress of Construction Workers. *J. Constr. Eng. Manag.* **2018**, *144*, 04018023. [CrossRef]

50. Al-Maskari, F.; Shah, S.M.; Al-Sharhan, R.; Al-Haj, E.; Al-Kaabi, K.; Khonji, D.; Schneider, J.D.; Nagelkerke, N.J.; Bernsen, R.M. Prevalence of depression and suicidal behaviors among male migrant workers in United Arab Emirates. *J. Immigr. Minor. Health* **2011**, *13*, 1027–1032. [CrossRef] [PubMed]

51. Wu, C.; Luo, X.; Wang, T.; Wang, Y.; Sapkota, B. Safety challenges and improvement strategies of ethnic minority construction workers: A case study in Hong Kong. *Int. J. Occup. Saf. Ergon.* **2018**, *26*, 80–90. [CrossRef] [PubMed]

52. Chan, A.P.C.; Wong, F.K.W.; Hon, C.K.H.; Javed, A.A.; Lyu, S. Construction safety and health problems of ethnic minority workers in Hong Kong. *Eng. Constr. Archit. Manag.* **2017**, *24*, 901–919. [CrossRef]

53. Wong, J.K.W.; Lin, A.H.Q. Construction workplace discrimination: Experiences of ethnic minority operatives in Hong Kong construction sites. *Eng. Constr. Archit. Manag.* **2014**, *21*, 403–420. [CrossRef]

54. Loosemore, M.; Phua, F.T.T.; Dunn, K.; Ozguc, U. The politics of sameness in the Australian construction industry: Comparing operative and manager attitudes towards cultural diversity. *Eng. Constr. Archit. Manag.* **2011**, *18*, 363–380. [CrossRef]

55. Ling, F.Y.Y.; Dulaimi, M.F.; Chua, M. Strategies for managing migrant construction workers from China, India, and the Philippines. *J. Prof. Issues Eng. Educ. Pr.* **2013**, *139*, 19–26. [CrossRef]

56. Spector, P.E. Employee control and occupational stress. *Curr. Dir. Psychol. Sci.* **2002**, *11*, 133–136. [CrossRef]

57. Love, P.E.D.; Edwards, D.J. Taking the pulse of UK construction project managers' health: Influence of job demands, job control and social support on psychological wellbeing. *Eng. Constr. Archit. Manag.* **2005**, *12*, 88–101. [CrossRef]

58. Johnson, S.; Cooper, C.; Cartwright, S.; Donald, I.; Taylor, P.; Millet, C. The experience of work-related stress across occupations. *J. Manag. Psychol.* **2005**, *20*, 178–187. [CrossRef]

59. Haynes, N.S.; Love, P.E.D. Psychological adjustment and coping among construction project managers. *Constr. Manag. Econ.* **2004**, *22*, 129–140. [CrossRef]

60. Cooper, C.L. Group training for individual and organizational development. *Interpers. Dev.* **1972**, *3*, 174.

61. Ng, S.T.; Skitmore, R.M.; Leung, T.K.C. Manageability of stress among construction project participants. *Eng. Constr. Archit. Manag.* **2005**, *12*, 264–282. [CrossRef]

62. French, J.R.; Caplan, R.D. Organizational stress and individual strain. *Fail. Success* **1972**, *30*, 66.

63. Friedman, M.; Rosenman, R.H. *Type A Behavior and Your Heart*; Fawcett: Greenwich, CT, USA, 1974.

64. Ganster, D.C. Type A Behavior and Occupational Stress. *J. Organ. Behav. Manag.* **1987**, *8*, 61–84. [CrossRef]

65. Leung, M.Y.; Zhang, H.; Skitmore, M. Effects of organizational supports on the stress of construction estimation participants. *J. Constr. Eng. Manag.* **2008**, *134*, 84–93. [CrossRef]

66. MacDonald, A.P. Internal-external locus of control. In *Measures of Social Psychological Attitudes*; Robinson, J.P., Shaver, P.R., Eds.; Institute for Social Research, The University of Michigan: Ann Arbor, MI, USA, 1973.

67. Rotter, J.B. Generalized expectancies for internal versus external control of reinforcement. *Sycholog. Monogr. Gen. Appl. Adhes. Sci.* **1966**, *80*, 1. [CrossRef]

68. Hendrix, W.H.; Ovalle, N.K.; Troxler, R.G. Behavioral and physiological consequences of stress and its antecedent factors. *J. Appl. Psychol.* **1985**, *70*, 188. [CrossRef]

69. Kamardeen, I.; Sunindijo, R.Y. Personal Characteristics Moderate Work Stress in Construction Professionals. *J. Constr. Eng. Manag.* **2017**, *143*, 04017072. [CrossRef]
70. Riedel, J.; Wiesmann, U.; Hannich, H.-J. An integrative theoretical framework of acculturation and salutogenesis. *Int. Rev. Psychiatry* **2011**, *23*, 555–564. [CrossRef] [PubMed]
71. Berry, J.W.; Kim, U.; Minde, T.; Mok, D. Comparative studies of acculturative stress. *Int. Migr. Rev.* **1987**, *21*, 491–511. [CrossRef]
72. Joiner, T.E., Jr.; Walker, R.L. Construct validity of a measure of acculturative stress in African Americans. *Psychol. Assess.* **2002**, *14*, 462. [CrossRef] [PubMed]
73. Zvolensky, M.J.; Jardin, C.; Garey, L.; Robles, Z.; Sharp, C. Acculturative stress and experiential avoidance: Relations to depression, suicide, and anxiety symptoms among minority college students. *Cogn. Behav. Ther.* **2016**, *45*, 501–517. [CrossRef] [PubMed]
74. Aveiga, F.; Valverde, O.; Jaselskis, E.J.; Strong, K.C. Integration-communications training for improving productivity and conflict resolution strategies among culture and language diverse construction sites. *Int. J. Hum. Resour. Dev. Manage.* **2011**, *11*, 16–37. [CrossRef]
75. Matheny, K.B.; Aycock, D.W.; Pugh, J.L.; Curlette, W.L.; Silva Cannella, K.A. Stress coping: A qualitative and quantitative synthesis with implications for treatment. *Couns. Psychol.* **1986**, *14*, 499–549. [CrossRef]
76. Freud, S. *Civilization and Its Discontents. Standard Edition*; Hogarth Press: London, UK, 1930; Volume 21, pp. 59–145.
77. Freud, A. *The Ego and the Mechanisms of Defense*; International Universities Press: New York, NY, USA, 1946.
78. Livneh, H.; Martz, E. An introduction to coping theory and research. In *Coping with Chronic Illness and Disability*; Springer: Boston, MA, USA, 2007; pp. 3–27.
79. Menninger, K. Regulatory devices of the ego under major stress. *Int. J. Psycho-Anal.* **1954**, *35*, 412–420.
80. Haan, N. *Coping and Defending: Processes of Self-Environment*; Academic Press: New York, NY, USA, 1977.
81. Radnitz, C.L.; Tiersky, L. Psychodynamic and cognitive theories of coping. In *Coping with Chronic Illness and Disability*; Springer: Boston, MA, USA, 2007; pp. 29–48.
82. Folkman, S.; Lazarus, R.S.; Dunkel-Schetter, C.; DeLongis, A.; Gruen, R.J. Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *J. Pers. Soc. Psychol.* **1986**, *50*, 992–1003. [CrossRef] [PubMed]
83. Lazarus, R.S.; Launier, R. Stress-related transactions between person and environment. In *Perspectives in Interactional Psychology*; Springer: Boston, MA, USA, 1978; pp. 287–327.
84. Pearlin, L.; Schooler, C. The structure of coping. *J. Health Soc. Behav.* **1978**, *19*, 2–21. [CrossRef]
85. Moos, R.H. *Coping with Physical Illness 2: New Perspectives*; Plenum Press: New York, NY, USA, 1984.
86. Endler, N.S. Stress, Anxiety and coping: The multidimensional interaction model. *Can. Psychol. Psychol. Can.* **1997**, *38*, 136–153. [CrossRef]
87. Enshassi, A.; Al-Swaity, E.; Abdul Aziz, A.R.; Choudhry, R. Coping behaviors to deal with stress and stressor consequences among construction professionals: A case study at the Gaza Strip, Palestine. *J. Financ. Manag. Prop. Constr.* **2018**, *23*, 40–56. [CrossRef]
88. Chan, I.Y.S.; Leung, M.Y.; Liang, Q. The roles of motivation and coping behaviours in managing stress: Qualitative interview study of Hong Kong expatriate construction professionals in mainland China. *Int. J. Environ. Res. Public Health* **2018**, *15*, 561. [CrossRef]
89. Bowen, P.; Edwards, P.; Lingard, H.; Cattell, K. Workplace stress, stress effects, and coping mechanisms in the construction industry. *J. Constr. Eng. Manag.* **2014**, *140*, 04013059. [CrossRef]
90. Wong, P.T.P.; Reker, G.T.; Peacock, E. *The Resource-Congruence Model of Coping and the Development of the Coping Schemas Inventory*; Springer: New York, NY, USA, 2006.
91. Minchin, R.E., Jr.; Glagola, C.R.; Guo, K.; Languell, J.L. Case for drug testing of construction workers. *J. Manag. Eng.* **2006**, *22*, 43–50. [CrossRef]
92. Greenglass, E.; Schwarzer, R.; Jakubiec, D.; Fiksenbaum, L.; Taubert, S. The proactive coping inventory (PCI): A multidimensional research instrument. In Proceedings of the 20th International Conference of the Stress and Anxiety Research Society (STAR), Cracow, Poland, 12–14 July 1999; p. 14.
93. Schwarzer, R.; Knoll, N. Positive coping: Mastering demands and searching for meaning. In *Handbook of Positive Psychological Assessment*; American Psychological Association: Washington, DC, USA, 2003.
94. Aspinwall, L.G.; Taylor, S.E. A stitch in time: Self-regulation and proactive coping. *Psychol. Bull.* **1997**, *121*, 417–436. [CrossRef] [PubMed]
95. Schwarzer, R. Manage stress at work through preventive and proactive coping. In *The Blackwell Handbook of Principles of Organizational Behavior*; Blackwell: Oxford, UK, 2000; pp. 342–355.
96. Taylor, S.E.; Kemeny, M.E.; Reed, G.M.; Bower, J.E.; Gruenewald, T.L. Psychological resources, positive illusions, and health. *Am. Psychol.* **2000**, *55*, 99. [CrossRef] [PubMed]
97. Uskul, A.K.; Greenglass, E. Psychological wellbeing in a Turkish-Canadian sample. *Anxiety Stress Coping* **2005**, *18*, 269–278. [CrossRef]
98. Cruz, J.P.; Cabrera, D.N.C.; Hufana, O.D.; Alquwez, N.; Almazan, J. Optimism, proactive coping and quality of life among nurses: A cross-sectional study. *J. Clin. Nurs.* **2018**, *27*, 2098–2108. [CrossRef]
99. Starren, A.; Luijters, K.; Drupsteen, L.; Vilkevicius, G.; Stulginskis, A.; Eeckelaert, L.; Elsler, D. *Diverse Cultures at Work: Ensuring Safety and Health through Leadership and Participation*; European Agency for Safety and Health at Work: Bilbao, Spain, 2013.

100. Deardorff, D.K. Identification and assessment of intercultural competence as a student outcome of internationalization. *J. Stud. Int. Educ.* **2006**, *10*, 241–266. [CrossRef]

101. Gudykunst, W.B. Applying anxiety\uncertainty management (AUM) Theory to intercultural adjustment training. *Int. J. Intercult. Relat.* **1998**, *22*, 227–250. [CrossRef]

102. Lloyd, S.; Hartel, C. Intercultural competencies for culturally diverse work teams. *J. Manag. Psychol.* **2010**, *25*, 845–875. [CrossRef]

103. Gudykunst, W.B.; Kim, Y.Y. *Communicating with Strangers: An Approach to Intercultural Communication*; McGraw-Hill: New York, NY, USA, 1997.

104. Dodd, C. An introduction to intercultural effectiveness skills. In *Intercultural Skills for Multicultural Societies*; SIETAR International: Washington, DC, USA, 1987; pp. 3–12.

105. Ayoko, O.B.; Härtel, C.E. Cultural differences at work: How managers deepen or lessen the cross-racial divide in their workgroups. *Qld. Rev.* **2000**, *7*, 77–87. [CrossRef]

106. Torres, L.; Rollock, D. Acculturation and depression among Hispanics: The moderating effect of intercultural competence. *Cult. Divers. Ethn. Minor. Psychol.* **2007**, *13*, 10. [CrossRef] [PubMed]

107. Sin, N.L.; Lyubomirsky, S. Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *J. Clin. Psychol.* **2009**, *65*, 467–487. [CrossRef]

108. LaMontagne, A.D.; Martin, A.; Page, K.M.; Reavley, N.J.; Noblet, A.J.; Milner, A.J.; Keegel, T.; Smith, P.M. Workplace mental health: Developing an integrated intervention approach. *BMC Psychiatry* **2014**, *14*, 131. [CrossRef]

109. LaFromboise, T.; Coleman, H.L.; Gerton, J. Psychological impact of biculturalism: Evidence and theory. *Psychol. Bull.* **1993**, *114*, 395. [CrossRef]