3.5.3. Psychological Well-Being and Employees' Safety

3.5.3. Psychological Well-Being and Employees' Safety

In this chapter, we present the findings of a scoping review on the psychological wellbeing of miners in the mining industry. We found 46 relevant articles: three defining and measuring psychological wellbeing, 27 identifying risk factors, four programs to improve psychological wellbeing, eight psychosocial climate (PSC), and four regulation related to psychological risk factors. For the purposes of this scoping review, psychological wellbeing is defined as "an individual's subjective positive experience at work" (Dagenais-Desmarais & Savoie, 2012, p. 676).

The question that guided our search was "What influence does psychological wellbeing have on employees' safety engagement?"

Method

A scoping review of the literature was undertaken using a formal and informal search. The initial formal search was conducted using the following key words:

1. Miners (Miners OR workers OR employees OR "mining communities" OR communities)
2. Psychological Wellbeing ("Psychological Well-being" OR "psychological health" OR "work life balance" OR "psychological wellness" OR flourish*)
3. Safety Engagement ("Safety Engagement" OR "risk taking behavior" OR "risk taking behaviour" OR OR "safety behavior" OR "safety behaviour" OR safety OR "high risk behavior" OR "high risk behaviour" OR "safety rule violation" OR "accident proneness" OR "risk perception" OR "perception of safety" OR "workplace safety" OR "work safety" OR "risk tolerance" OR "occupational safety")

Search Strategy. The databases searched are listed in the results. From this search, we selected articles based on the inclusion/exclusion criteria. The inclusion and exclusion criteria were kept broad in that we did not specify the types of research methods to be included or excluded in order to capture as many research articles on the topic as possible. In our search, we collected articles that were pertinent in this topic area. The broad inclusion and exclusion criteria allowed us to explore the literature in this area more completely, see Table 1.

Table 1. Psychological Well-Being and Employees' Safety: Inclusion/Exclusion Criteria for Article Selection

Inclusion Criteria	Exclusion Criteria
• Articles with key terms in the title or abstract	• Editorials
• Peer reviewed	• Commentaries
• Within 5 years	• Book reviews
• English language articles	

Screening Strategy. From the search results, we reviewed the title and abstract of each article to determine its inclusion in the scoping review. Each selected article was read by a team member and information pertinent to the study was extracted. Those not applicable to the scoping review were excluded. The selected articles were reviewed by another team member to prior to inclusion into the study.

Results

A brief summary of each article including its location, population studied, main issue addressed, comparison group, and primary outcomes is provided in Appendix G. Table 2 is an overview of the scope of the review.

Table 2. .Psychological Well-Being and Employees' Safety – Number of Articles per Database

Database	No of articles found from search	Articles Selected for Review	Final article selection
Academic Search Complete	26	173	46
CINAHL	5		
Medline	9		
Nursing Allied Health	6		
Engineering Village	11		
PsyInfo	20		
CBCA Business	12		
CBCA Education	0		
Embase	6		
Scopus	22		
Web of Science	19		
ABI Inform Complete	37		

Description of Included Articles. Table 3 provides an overview of the types of publications, country of publication, and populations studied.

Description of Identified Factors. In order to make it easier to describe the results of the scoping review, the articles were divided into the following categories: definitions of psychological wellbeing, psychosocial risk factors, psychosocial safety climate, and regulation of psychosocial risks.

Definitions of psychological wellbeing. Three articles were related to definitions of psychological wellbeing and one article was related to measures of psychological wellbeing.

Table 3. Psychological Well-being and Employees' Safety – Population, Country of Research, and Publication Type

Publication Type	Country of Research	Population
Quantitative Studies • Secondary analysis of data (4) • Surveys (20) • Controlled trials (2) • Longitudinal study (1) Qualitative Studies • Case studies (2) • Grounded theory (1) • Descriptive (4) Mixed methods (2) Other • Literature reviews (4) • Theoretical papers (2) • Systematic review (1) • Articles (3)	Ghana (2) Denmark (2) Nigeria (1) Australia (15) USA (1) France (1) Canada (3) Norway (2) Germany (2) Spain (1) Iran (1) Malaysia (2) Japan (1) Europe (2) China (3) Italy (1) UK (4)	Production (1) Other (15) Miners and mining communities (6) City (1) Education (2) Construction (1) Nursing and healthcare (2) Shift workers (1) Public and private (1) Manufacturing (1) Older workers (1) Crude oil production (1) Sunday workers (1) Merchandising (1)

	South Africa (1) The Netherlands (1)	

In an inductive grounded theory study, Dagenais-Desmarais and Savoie (2012) defined psychological wellbeing as, "an individual's subjective positive experience at work" (p. 676). They identified five dimensions related to work life: interpersonal fit, thriving, feeling competent, perceived recognition, and desire for involvement. Dagenais-Desmarais and Savoie suggested even though psychological wellbeing at work and away from work are similar, there is a uniqueness to work-related psychological wellbeing related to the social and organizational aspects which lends value to testing interrelationships across life, including work. In a qualitative study, MacLean (2012) identified themes related to psychological wellbeing as: importance of relationships, impact of lifestyle, mental health attitudes, and work characteristics. In this study, miners reported increased pressures related to productivity, remoteness, relationship strain, loneliness, and boredom. MacLean found lack of family supports, extended work shifts, and social isolation led to stress which led to a lack of health seeking behaviors and increased risk taking behaviors on days off. Robertson and Cooper (2010) looked at the concepts of psychological wellbeing and employee engagement in an attempt to merge the two concepts into one: full engagement. They proposed individuals with higher levels of psychological wellbeing would be expected to have higher levels of engagement; and the inclusion of psychological wellbeing strengthens the relationship between engagement and beneficial outcomes. They suggested further research to explore the relationship between psychological wellbeing and engagement.

Measures of psychological wellbeing. Strumpfer and Eiselen (2010) explored a means of assessing psychological wellbeing through three surveys: Antonovsky's Sense of Coherence (SOC) scale, Block & Kremen's Ego-resiliency scale and Goldberg's Emotional Stability scale. They surveyed workers in two different hazardous occupations, a mine rescue team and a police special task force, and compared them with regular miners and police officers. They found the SOC scale was the best means of measuring psychological wellbeing; however, they caution the samples were small and the study has not been replicated.

Psychosocial risk factors. 24 articles were identified which related to psychosocial risk factors. These articles were further divided into general risk factors, shift work, occupational stress, job demands, and self-scheduling and work-life balance.

General risk factors. Five articles were related to general risk factors. Through stakeholder interviews, Amponsah-Tawiah, Jain, Leka, Hollis, & Cox (2013) identified high workload, lack of job security, poor colleague support, poor supervisory support, and lack of role clarity as psychosocial hazards which were related to the personal safety experience. They defined the personal safety experience as the number of near misses, disabling injuries, accident experiences, and witnessing other workers' injuries. According to Amponsah-Tawiah et al., psychosocial hazards in the mining industry were increased due to poor personal safety experience. They concluded there is higher number of accidents in non-gold mining industry compared to gold mining industry, and poor mining conditions were associated with poor personal safety experiences. In a qualitative analysis, Bodner, Kraner, Bradford, Hammer & Truxillo (2014) found worker's psychosocial health is related to their injury and

illness rate. They stated workers who suffer from more job demands and higher work-to-family conflicts had higher rates of injury outcomes compared to others. Bodner et al. stated workers' psychosocial health is important for better safety outcomes.

Zhang (2014) developed a theoretical model relating psychological and physiological function to human errors. The author found a significant relationship between life events causing psychological stress and the influence on occupational errors. He stated in order to reduce errors in coal mining, the employers must support employees through significant life events such as marriage, divorce, birth of a child, death of a family member. In a survey study of 231 Australian coal mine workers, Carlisle and Parker (2014) found a clear link between pain and psychological distress with more distress felt by operators, drivers, young workers, and obese workers. They found pain and distress were also associated with fatigue, and a perceived good sleep quality reduced distress. Although this study did not identify the causes of psychological distress, the authors suggested exercise time and sleep quality were important for improving the psychological wellbeing of coal miners. In a self-reported survey questionnaire of Norwegian adults, Emberland and Rundmo (2010) found an indirect link between perceived job insecurity and psychological wellbeing. They postulated employees viewed the employer's failure to provide job security as a breach of the psychological contract, and employees were more likely to be psychologically dissatisfied which would eventually affect safety compliance.

Shift work. Five articles were related to shift work. Agyemang, Nyanyofio, & Gyamfi (2014) tested three hypothesis based on employee health and safety in shift workers in Ghana. They found a significant reverse relationship between employee stress and health and safety. Agyemang et al. stated an increase in employee stress leads to a decrease in health and safety and a higher risk of a work related accident. However, they found there was no difference in health and safety among production and non-production workers, though they did find a difference between shift workers and non-shift workers. They found night shift workers suffered from sleep deprivation and anxiety, which increased their risk of an accident. In a cross-sectional study of Iranian industrial mine workers, Halvani, Zare, and Mirmohammadi (2009) found fatigue was a factor in occupational accidents, and shift workers experienced more fatigue and more accidents than non-shift workers. In a review of the literature on shift work and psychosocial wellbeing, Ross (2009) discussed the link between shift work and higher levels of anxiety and job dissatisfaction in offshore workers. However, he suggested there are ways to lessen the burden of shift work such as keeping the same off-work schedule. He called for more research in this area.

Wirtz, Nachreiner, and Rolfes (2011) found working one or more Sundays per month was related to an increase in the reporting of health impairments, an increased risk of occupational injury, and a decreased work-life balance. They suggested the detrimental effects of working Sundays should be taken into account when determining work schedules.

In a survey study, Xiao, Liu, and Liu (2009) found employees who worked longer hours had higher levels of work stress which was mediated somewhat but still significant in jobs where employees reported high job satisfaction. They concluded that job satisfaction played a mediating role in reducing work stress due to the influence of long working hours. Legault (2011) proposed poor quality of sleep due to early

morning wakenings, night shifts, and shift work coupled with a hot working environment in underground mines puts miners and their coworkers at risk for injury. He demonstrated the effect quality of sleep has on performance and vigilance, and he suggested the consequences of sleep pathology is a concern for health and safety professionals. However, Ferguson and Dawson (2012) found shift work alone is not an indicator of psychological wellbeing, rather numerous other factors and combinations of factors may have more influence on outcome, such as work tasks, gender, age, domestic circumstances, commuting and living arrangements, and work environment.

Occupational stress. Four articles were related to occupational stress. In a survey study of workers in manufacturing industries in Nigeria, Babajide and Akintayo (2011) found a significant influence of occupational stress on psychological wellbeing and workers' behaviors such as job compliance, job satisfaction, and compliance to organizational control. They recommended organizational support systems and industrial counseling services should be in place to combat occupational stress with the goal of improving workers' psychological wellbeing. However, Yong, Nasterlack, Pluto, Lang, and Oberlinner (2013) found occupational stress was perceived differently across jobs with frontline operators being more concerned with workplace conditions and professional or managerial staff more concerned with tension, time pressure, and poor work-life balance. They suggested targeting stress management interventions as appropriate to these different work situations.

Garcia-Herrero, Mariscal, Gutierrez, and Ritzel (2013) developed a model of occupational stress due to work demands from the Spanish Ministry of Immigration 2007 survey of 11,054 workers. They found overwork and night shifts increased the risk of occupational stress; and occupational stress was mitigated by social support. They suggested three things a company can do to reduce occupational stress: encourage teamwork, provide individual and collective recognition, and encourage vertical and horizontal communication. In a secondary analysis of a national survey, Lucarelli and Boschetto (2011) found nearly one in five workers were exposed to stress in the workplace over extended periods of time. They suggested rather than spending time on medical intervention more time should be put on determining and alleviating the cause of the stressors.

Job demands. Five articles were related to job demands. Boudrias et al. (2011) found higher job demands led to more psychological health issues, however, individuals who were optimistic suffered less psychological health problems. Therefore, they suggested interventions related to job demands would help to relieve psychological health issues, and supportive social resources also support positive relationships and better psychological health. In a survey study of Peruvian industrial workers, Brunette, Smith, & Punnett (2011) found there were aspects of work that impacted perceived satisfaction and health of the industrial workers. They also found women were affected by extra-organizational factors to a greater extent; and, for men work tasks plus extra-organizational factors were important for work-life balance. The researchers suggested good balance between family commitments, job demands, interesting job, and adequate income would have a good impact on employee health and well-being. The participants volunteered to take the survey.

Idris and Dollard (2011) used the psychosocial safety climate (PSC) scale with 269 public and private sector employees, and they found the PSC was lower when job demands were high and higher

when job resources were high. The authors stated the effect of job demands on PSC resulted in anger and depression, and the effects of job resources on PSC resulted in engagement. In this study, there was no difference between employees in the public or private sectors. In a longitudinal study of workers between the ages 45 and 64, Leijten et al. (2013) found a relationship between lower autonomy and high job demands, and increased illness and sickness absence. They suggested these factors should be modified to reduce sickness absence and increase sustainability in employing this age group. Li, Jiang, Yao, & Li (2013) studied the job demands-resources (JD-R) model to determine its effectiveness in explaining the relationship of job demands and resources with safety outcomes. They found both job demands and job resources (supports) could affect psychological wellbeing and risk of being injured at work with job demands relating to more risks and job resources to fewer risks.

       Self-scheduling and work-life balance. Five articles were related to self-scheduling and work-life balance. In a quasi-experimental study of workplaces in Denmark, Albertson et al. (2014) found an overall positive effect of work-life balance among shift workers using a self-scheduling system which allowed them flexibility in work hours. They also found workers in workplaces with difficult self-scheduling systems had lower motivation to engage in self-scheduling, thus did not have as big an effect on perceptions of work-life balance.

       In an evaluation of an intervention program with the construction industry, Bradley, Brown, Lindgard, Townsend, and Bailey (2010) found employees who were able to engage in work scheduling were more productive in their work time. They indicated managers' attitudes and behaviors played an important role in the success of this work-life balance program. Bradley et al. also found managers' attitudes and behaviors played an important role in the success of a work-life balance program. They found employees were very appreciative of support for the program from managers, and this resulted in more productive organizational outcomes.

       Kubo et al (2013) studied the influence of work-time control over fatigue, sleep quality, work-life balance, and near misses at work. They found high control over work time was associated with better health and work-life balance but had no effect on near misses at work.
Zheng, Molineux, Mirshekary, and Scarparo (2015) explored the role of work-life balance programs in improving employee health and wellbeing. They found when employees were able to manage their own work-life balance, their health and wellbeing was better; and though the organizations' programs were found to be helpful in reducing stress, they had no effect on work-life balance or on employee overall health. Walters (2011) concluded the health consequences of worker wellbeing required attention from labor unions and health and safety representatives in order to ensure quality of life for the workers. Walters found the modern work organization (due to restructuring, downsizing, privatizing, and outsourcing) makes it difficult to ensure worker wellbeing and contributes to the risk in psychosocial risk factors in the workplace, and traditional approaches no longer work. He sees a role for organized labor to expand beyond the boundaries of the trade union and encompass other forms of employment.

       Health and wellbeing programs. Four articles were related to health and wellbeing programs. In a case study of one company's documents, Mellor & Webster (2013) identified enablers and challenges to implementing a workplace health and wellbeing approach. They found a need for strong leadership,

dedicated resources, and stakeholder involvement in the process. They suggested front-line managers make better use of regular processes to improve employee well-being. In a small qualitative study, Perring et al. (2014) investigated the effect of recreational infrastructure on improving psychological wellbeing of fly-in, fly-out mining workers in Australia. They found recreational infrastructure at the mine site enhanced the experience of workers at the mines, promoted social interaction, provided social inclusion, fostered a sense of community, and improved their overall psychological wellbeing.

In a randomized, controlled trial, Feicht et al (2013) put employees through a web-based happiness training program for stabilizing psychological wellbeing and work-life balance. They found a perceived improvement in happiness, satisfaction, quality of life, mindfulness, flourishing, and recovery; and they also found a reduction in perceived stress. However, they could not identify which part of the training led to the effects. In a descriptive qualitative study with fly-in, fly-out and drive-in, drive-out miners, Torkington, Larkins, and Gupta (2011) found both positive and negative impacts to family life, relationships, social life, work satisfaction, mood, sleep, and finances. However, miners reported they were reluctant to use Employee Assistance Programs and sought the help of friends and colleagues for support. Therefore, Torkington et al. espoused EAPs cannot be relied on as the sole means of support.

Psychosocial safety climate. Eight articles were related to psychosocial safety climate. In a population-based study of workers in Australia, Bailey, Dollard, McLinton, and Richards (2015) found a relationship between workers' compensation claims from physical injuries and emotional exhaustion due to psychosocial risks (such as bullying and violence) in the workplace. They suggested organizations should focus on the psychosocial safety climate (PSC) in order to reduce workers' injury risk. Dollard and Bakker (2010) modeled psychosocial safety climate in the workplace, and they determined when PSC is supported through policies, practices, and procedures, employees are more engaged and the organization is more successful. Dollard et al (2012) found a positive relationship between the PSC and psychological health. They noted organizational contextual factors are origins of the work stress process, and that a low level of PSC is an underlying cause for hazardous work conditions and psychological injury.

Hall, Dollard, and Coward (2010) developed a survey instrument to measure the psychological safety climate of a workplace. According to the authors, this instrument may be used to identify the cause of psychological stress and measure worker engagement. This tool may be used for future studies of psychological wellbeing, and it may be adapted to measure safety engagement. Hall, Dollard, Winefield, Dormann, and Bakker (2013) tested the psychosocial safety climate scale with 2343 Australian workers from a wide range of employment areas, and they found it was a good resource for identifying hazards and for building safe environments promoting worker psychological health and wellbeing, and for building positive work behaviors.

Idris, Dollard, Coward, and Dormann (2012) used the psychosocial safety climate scale in a cross-sectional study of two different countries: Australia and Malaysia. They found the psychosocial safety climate was stronger in Australia but still significantly lower than the physical safety climate. Idris et al. found the PSC scale superior to other measures in its negative relationship to job demands. Dollard and McTernan (2011) developed a model showing how psychosocial safety climate at work can be linked to safety outcomes such as accidents, injuries, errors, and service and care quality. Law, Dollard, Tuckey,

and Dormann (2011) analyzed data from the Australian Workplace Barometer project related to psychosocial safety climate (PSC), and they found PSC was an indicator of psychosocial hazards at work leading to psychological health problems and lack of work engagement. They also found a health PSC in the workplace mitigated the effects of harassment or bullying and helped to reduce psychological health problems.

Regulation of psychosocial issues. Four articles were related to the regulation of psychosocial issues. Rasmussen, Hansen, and Nielsen (2011) discussed the development of a psychosocial wellbeing guidance tool in Denmark that allows the Working Environment Authority to assess work related stress and violence and issue notices to employers to improve working conditions. This tool is specifically designed for inspectors and includes risks related to workload, pace, emotional demands, violence, traumatic experiences, night shifts and shift work, bullying, and sexual harassment. They found this tool allowed inspectors to address these areas of psychosocial wellbeing and put the employer on notice to improve their standards.

Vestly Bergh, Hinna, Leka, and Jain (2014) described the development of a psychosocial risk indicator for a performance management system. They noted the risk indicator pertained specifically to the organization for which is was developed, and they stated organizations should develop this tool in their management systems in order to manage psychosocial risks across the company.

Leka, Jain, Widerszal-Bazyl, Zreda, and Zwetsloot (2011) highlighted the benefits of having a psychosocial risk management system in an organization. They stated a healthy organization that manages psychosocial risks may benefit by: reduced sick and injury costs, reduced medical costs and insurance premiums, being seen as good employer by staff and customers, improved work and communication processes, health promotion to broader community, and being seen as having an innovative and future-oriented corporate culture. Shain, Arnold, and GermAnn (2012) discussed the development of a Canadian standard on psychological safety in the workplace. They stated employers must change attitudes and beliefs about their responsibilities and seek ways to overcome threats to psychological safety in the workplace. They suggested national standards would be one step in ensuring employers are encouraged to become involved in psychological safety and wellbeing.

Discussion

Psychological wellbeing is defined as, "an individual's subjective positive experience at work" (Dagenais-Desmarais & Savoie, 2012, p. 676). Included in this definition are themes related to interpersonal relationships both at home and at work, work characteristics such as remoteness or overwork, personal attributes, feelings of competence, and workplace recognition (Dagenais-Desmarais & Savoie, 2012; Maclean, 2012; Robertson & Cooper, 2010). By defining and understanding psychological or psychosocial wellbeing, a means of assessing it in the workplace can be used. In a comparison of three scales, Strumpfer and Eiselen (2010) found Antonovsky's Sense of Coherence (SOC) scale was the best indicator of psychological wellbeing; however, their sample size was small and more research is required.

Risk factors for psychosocial wellbeing have been identified in the literature. Risk factors are related to both organizational/work factors and individual/personal factors. The organizational factors include job demands, job insecurity, poor support from colleagues/supervisors, lack of role clarity, and

shift work (Amponsah-Tawiah et al., 2013; Bodner et al., 2014; Carlisle & Parker, 2014; Emberland & Rundmo, 2010). Individual factors are related to work-family conflicts including commuting/living arrangements and physiological conditions. Shift work, self-scheduling, and work-life balance garnered more interest in the literature (Bodner et al., 2014; Carlisle & Parker; 2014). In considering risk factors for poor psychological wellbeing, both individual and organizational factors must be taken into account.

Shift work as a risk factor has received more attention in the literature. When combined with other risk factors, shift work may contribute to poor psychological wellbeing. Shift workers may suffer from fatigue, stress, anxiety, job dissatisfaction, decreased work-life balance, and increased risk of injury (Agyemang et al., 2014; Halvani et al., 2009; Ross, 2009; Wirtz et al., 2011; Xiao et al., 2009; Legault, 2011). The effects of shift work can also be diminished by keeping the same off-work schedule and improving job satisfaction (Ross, 2009; Xiao et al., 2009). Job satisfaction appears to be a mitigating factor in perceptions of psychological wellbeing.

Occupational stress and job demands are linked to psychological wellbeing and job satisfaction. Occupational stress can lead to issues with compliance; however, it can be lessened by organizational support systems such as counseling, team work, stress management interventions, recognition, and good communication (Babajide & Akintayo, 2011; Nasterlack et al., 2013; Garcia-Herrero et al., 2013). High job demands can lead to occupational stress and may result in health issues, lower satisfaction, anger, depression, and lower autonomy (Boudrias et al., 2011; Idris & Dollard, 2011; Leijten et al., 2013). The effects of high job demands may be alleviated by higher job resources.

Job resources were identified as social support, work-life balance, income, and interesting work (Brunette et al., 2011), and may improve psychological wellbeing. Improved job resources and lower job demands may lead to higher psychological wellbeing (Li et al., 2013). Self-scheduling of work rosters can be considered a job resource and may improve work-life balance as well as positively influencing psychological wellbeing. Self-scheduling allows for flexibility, increased productivity, better health, and better work-life balance (Albertson et al., 2014; Bradley et al., 2010; Kubo et al., 2013; Zheng et al., 2015). Managerial and union support for self-scheduling may have an influence on the benefits of a self-scheduling program (Bradley et al., 2010; Walters, 2011). Another job resource may be health and wellbeing programs. These programs can enhance workers experiences, foster a sense of community, and improve psychological wellbeing (Perring et al., 2014; Feicht et al., 2013). However, interpersonal relationships between friends and colleagues may be a more effective resource than organizational employee programs (Gupta, 2011).

When considering psychological wellbeing, both individual and organizational factors should be considered. Organizational factors, such as job resources and job demands, play an important role. Organizational factors may be assessed by looking at the psychological safety climate (PSC). The PSC is influenced by job resources and demands; and it affects the psychological wellbeing of the workers (Dollard et al., 2012; Hall et al., 2010; Hall et al., 2013; Law et al., 2011). The PSC of an organization can be developed through policies, practices, and procedures (Dollard & Bakker, 2010). A psychological safety climate scale was developed and tested, and it was found to be a good measure of PSC (Hall et al., 2010, Hall et al., 2013; Idris et al., 2012).

By addressing psychological wellbeing in the workplace, it can be managed and regulated. National guidelines and local standards are being developed to regulate this area (Rasmussen et al., 2011; Vestly et al., 2014; Shain et al., 2012). Psychological wellbeing and the PSC should become part of the risk management system of an organization and will promote employee-employer relationships, communication, innovation, and community support (Leka et al., 2011). A model of psychological wellbeing and its relationship to safety is presented in Figure 1.
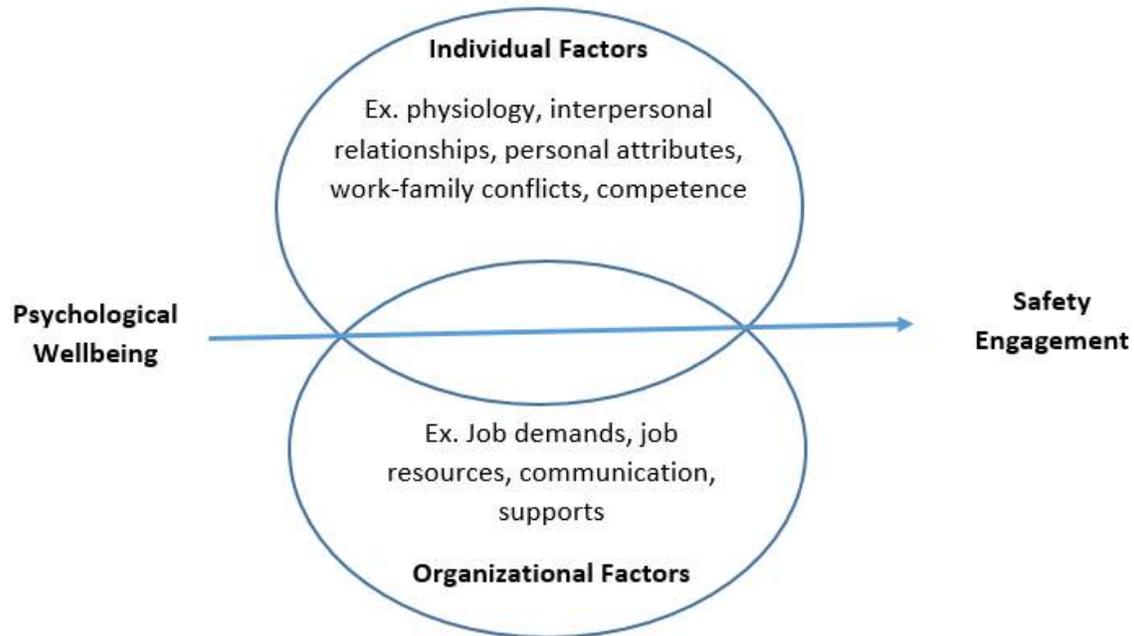
Figure 1. The relationship between psychological wellbeing and safety engagement.

Gaps in the literature. These studies and articles provide a good picture of psychological wellbeing and the relationship between the organization's psychosocial safety climate and an individual's psychological wellbeing. The researchers have indicated a link between psychological wellbeing, engagement, and safety outcomes. More research is required to strengthen this relationship and to confirm the model presented above.

Recommendations. Psychosocial risk factors can affect injury rates, have a direct link to safety outcomes (Bailey et al., 2015; Dollard & McTernan, 2011; Leka et al., 2011), and can influence employee engagement in general (Robertson & Cooper, 2010). The personal safety experience is defined as an individual's near misses, accidents and injuries, and coworkers' injuries (Amponsah-Tawiah et al., 2013). As well, poor psychological health and a poor psychosocial safety climate may lead to decreased engagement, decreased compliance with safety policies, and more risk-taking behaviors (MacLean, 2012; Robertson & Cooper, 2010; Amponsah-Taiwiah et al., 2013, Bodner et al., 2014; Zhang, 2014; Halvani et al., 2009; Wirtz et al., 2011; Legault, 2011; Idris & Dollard, 2011; Li et al., 2013; Emberland & Rundmo, 2010; Bailey et al., 2015; Dollard & Bakker, 2010; Dollard et al., 2012; Hall et al., 2012; Dollard &

McTernan, 2011; Law et al., 2011). As a result, an individual's psychological wellbeing can affect his or her level of safety engagement. Based on the current scoping review, the following are recommendations for workplaces:

- Policies should be in place to ensure healthy workplaces.
- Regular surveying of the workplace can help to ensure companies are meeting the psychosocial needs of their employees.

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