**Mental Health and Intentions to Quit among Nurses in Iran: A Social Identity Approach**

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**Abstract**

The positive effects of social identification on mental health are well documented in the literature. However, most of this research has been conducted among small groups in WEIRD settings. Understanding how social identity as a psychological source can improve resilience and welfare among frontline healthcare workers in non-WEIRD contexts can help to alleviate the negative impact of large-scale epidemics overall especially in resource poor settings and contribute towards improved welfare of key healthcare workers. The present research investigates whether identifying as a nurse could influence mental health and intentions to quit directly and indirectly via positive and negative emotions among a unique sample of Iranian nurses (N=462) during a risky period, the Covid-19 pandemic. Multiple regression results showed that identifying as a nurse was negatively associated with negative emotions which in turn was positively related to depressive symptoms. In a similar vein, identifying as a nurse was positively associated with positive emotions which, in turn, was negatively related to intentions to quit. Results also confirmed that risk perceptions related to Covid-19 positively moderated the effect of social identification on negative emotions only. That is, identification as nurse was associated with reduced negative emotions only when perceived risk was low. We discuss the theoretical and practical implications of findings.

Keywords: Group identity, Emotions, Intentions to quit, Depressive symptoms, Covid-19

Across the world, the raging Covid-19 pandemic has brought frontline healthcare workers under great public and psychological pressure also exposing them to high risk of infection (Mo et al., 2020; Shen X et al., 2020). Understandably, recent research investigated how this exposure to psychological pressure influenced nurses’ well-being as well as their intentions to stay on the job (Id et al., 2020; Mo et al., 2020; Shen X et al., 2020) at a time when they are most needed. Research on social identity and well-being, on the other hand, has demonstrated that a shared sense of identity can have beneficial effects on health and well-being (Jetten et al., 2014). Integrative research on the topic shows that social identification exerts this positive impact on well-being via several process (Postmes et al., 2019a). Identifying with a group provides access to sources of social support, satisfies individuals’ basic needs of belonging and self-esteem, and enables individuals to locate themselves within a network of social relations providing them a shared interpretation of the social and physical environment (Cruwys et al., 2014).

Social identification with a group can also empower people by improving their perceptions of efficacy (Drury et al., 2016); resilience (Alfadhli et al., 2019; Alfadhli & Drury, 2018); triggering positive emotions (Tewari et al., 2012); and more positive appraisal of coping resources (Isaksson et al., 2017). A shared sense of identity can also reduce depression (Cruwys et al., 2013) and improve self- esteem (Schmitt et al., 2003).

In fact, more recent research shows that the potential beneficial effects of shared identities are not limited to facilitating access to psychological resources that protects the individual in difficult times such as the pandemic. For instance, shared identities can motivate individuals to engage in actions beneficial to the group such as actions aimed at maintaining or improving the conditions for the group (van Zomeren et al., 2012; van Zomeren, Spears, et al., 2008); protecting the group by acting in solidarity (Saab et al., 2015); or by offering mutual help in emergencies (Drury et al., 2019), adhering to protective measures more strictly, and prosocial acts of shopping for others (Vignoles et al., 2021). Accordingly, these psychological tools have the capacity to protect one’s mental health and well-being and promote resilience in the face of adversity.

These positive effects of social identification on well-being notwithstanding, social identification with a group can also have negative effects on well-being by influencing how individuals appraise symptoms and respond to them (Haslam et al., 2009). People report higher level of hearing handicap when they identify as elderly (St Claire & He, 2009) or want to take more medication when they identify with those who suffer from cold (St Claire et al., 2008). More recent research suggests the way social identity influences mental welfare might be influenced by perceptions of uncertainty (Goldberg et al., 2010). For instance, people perceiving higher uncertainty, e.g. having higher risk of cancer reported experiencing more negative affect and more negative life satisfaction (Persoskie et al., 2014).

We observe at least three gaps in this literature. First, most of this research has been conducted in WEIRD (Western Educated Industrialized Rich and Democratic Henrich, Heine, & Norenzayan, 2010) contexts. Second, majority of these studies focus on either small interactive groups or social categorical groups such as ethnic groups or gender (Postmes et al., 2019b). Thus, there is very little research on social identity and well-being among non-WEIRD populations in applied settings (see Steffens, Haslam, Schuh, Jetten, & van Dick, 2017). Third, there is very little, research known to us, that investigates how perceived uncertainty imposed by the prolonged pandemic effects the relation between social identity and well-being and work-related outcomes. Understanding how psychological sources can improve resilience and welfare among frontline healthcare workers in non-WEIRD contexts can help to alleviate the negative impact of large scale epidemics overall especially in resource poor settings and contribute towards improved provision of health support and services during a period of emergency (Billings et al., 2021). In the present research, we address this gap by focusing on nurses’ well-being and their intentions to quit during the pandemic in a unique sample of nurses in Iran. More specifically, we investigate whether identifying as a nurse is associated with decreased mental distress and intentions to quit the job via increased positive emotions and via decreased negative emotions. In doing so, we explore whether a shared sense of identity as nurse in a challenging environment is associated with positive feelings and/or decreased negative emotions which nurses might experience as a result of external challenges. Hence, we test these hypotheses among a group of frontline nurses during periods of intensive work in an under-researched context, Iran.

**Social Identity and Collective Experience**

Social identity provides a basis for a shared understanding and experience of the social world. Cumulative work on appraisal and coping suggests that emotions are triggered to the extent of self-relevance (Mackie & Smith, 2008) and defining oneself in terms of a shared identity can empower individuals who now perceive themselves as having the capacity to change their physical and social environment accompanied by intense positive affect, i.e. “emotional transformation” (Neville & Reicher, 2011). Research on collective behaviour and emotional experiences for instance shows that individuals experience positive emotions when they perceive themselves and others around in terms of a certain category, i.e., group, and adopt a framework based on values and norms of this category (Hopkins et al., 2016). This consensual perspective of the world then serves as a basis upon which the social world and the external events are evaluated in terms of their relevance to the group (Ray et al., 2014). A shared identity rooted in self-categorization of oneself into a particular group whose members are socially cohesive, and being in close company with these members is then associated with intensive positive feelings (Wlodarczyk et al., 2020).

In a similar vein, a salient social identity also emphasizes the experience of negative emotions as a results of group based disadvantages (van Zomeren et al., 2012). Stronger identification with a disadvantaged group connects the individual with the disadvantage making the disadvantage relevant to the self and reinforcing the attributions of responsibility to external actors which in turn triggers negative emotions, e.g., anger. Surprisingly, most research on collective positive emotions have mainly focussed on the association between shared identity (Hopkins et al., 2016; Neville & Reicher, 2011) and positive feelings within crowds, collective gatherings, and rituals whereas most research on social identity and negative emotions investigated anger and motivations to engage in social change (van Zomeren et al., 2008). Below we elaborate on how experiencing positive and negative emotions might connect with mental health and well-being, and motivate or demotivate nurses to stay on the job despite the adversities they face.

**Emotions and Well-Being**

Extant research demonstrates that identifying as a member of a group has important consequences for how individuals experience affect (see Steffens et al., 2017 for a review). This is mainly because individuals’ appraisal of social objects and events, and their responses to these are determined by the relevancy of the social objects and events to the group individuals identify with (Levine & Reicher, 1996). Thus, when group of individuals interact in a social environment (Niedenthal & Brauer, 2012) their interpretations of the environment, social objects in this environment, and their emotional reactions to this social environment is determined by their social identifications embedded in that social environment. Stronger identification with a particular group, nurses, will elicit stronger, positive or negative, affect related to the nursing environment.

According to the broaden-and-built theory of positive emotions (Fredrickson, 2004), positive emotions increase broaden cognition, trigger broader coping mechanisms, and therefore improves emotional well-being. The availability of psychological, physical, and social sources in turn trigger creativity, exploration, and resilience (Cohn et al., 2009; Gloria & Steinhardt, 2016). Research has also shown that positive emotions are also directly and positively associated with coping (Folkman, 2008; Folkman & Moskowitz, 2000; Gloria & Steinhardt, 2016), and could mediate the effect of resilience on emotional well-being. Research by Tugade and her colleagues (Tugade et al., 2004; Tugade & Fredrickson, 2004) shows that trait resilience is associated with positive emotions which in turn accelerates cardiovascular recovery from negative emotional arousal and finding positive meaning in negative circumstances. (Kuppens & Yzerbyt, 2012). When combined with mutual care and concern, and involve both behavioural and biological synchrony, positive emotions can lead to improved well-being (Major et al., 2018).

**Negative Emotions**

Whereas research shows a consistent link between positive emotions and well-being, evidence on the association between negative emotions and well-being is less conclusive. Experiencing worry about things that might happen in the future for instance is negatively associated with subsequent well-being (Kramer et al., 2021). Conversely, suppression of negative emotions was not associated with improved well-being or reduced stress (Katana et al., 2019). Findings from cross-cultural research on affect and well-being also suggests that these inconsistencies might be due to cultural differences (Wirtz et al., 2010) or gender (Fujita et al., 1991). Wirtz and his colleagues for instance found that while western cultures put more emphasis on positive affect and its role in improving well-being, eastern cultures emphasize the lack of negative affect in promoting well-being. In a similar vein, Fujita et al. (1991) showed that while women experience more negative affect, they express positive affect more intensely, and this in turn, mitigates the impact of stronger negative effect on well-being.

**Emotions in Organizational Settings**

Positive emotions are considered as a key component of employee well-being (Diener et al., 2019; Sonnentag, 2015) and most research focused on emotions within organizational settings has investigated emotion regulation, i.e. emotional labour. Other research that conceptualizes emotions as affective states, processes, and functions shows that positive emotions are associated with collaboration and cooperation (Baron, 1990; Doorn et al., 2012). When displayed openly, positive emotions can also function as social information spreading to others and inducing a general sense of positivity at the workplace (van Kleef, 2009), and thus can buffer the effect of negative experiences on job satisfaction (Dimotakis et al., 2011). Various lines of research also show that positive emotions can lead to decreased turnover intentions by increasing motivations to invest effort in work, enhancing dedication and commitment to one’s tasks, and reinforcing absorption in work (Siu et al., 2015). Thus, we hypothesize that positive emotions triggered by a sense of shared identity can simultaneously improve well-being and motivate staying on the job.

Among healthcare professionals, emotions in general, can influence decision making (Heyhoe et al., 2016). Negative emotions like agitation (Erickson & Grove, 2007); fear and anxiety (Hu et al., 2020) can be associated with burnout and lower job satisfaction. In a similar vein, experiencing negative affect (e.g., nervousness and concern) can trigger discriminatory attitudes and temporal distancing from patients and work (Harris et al., 2020). Emergent research in the context of pandemic shows that physical proximity to known COVID-19 outbreak zone is associated with sadness, worry, and anger which in turn are associated with problem and emotion focused coping (Id et al., 2020). Conversely, experiencing discreet emotions of fear, guilt, and sadness were not related negative behaviour towards patients (Jalil et al., 2017).

**The Present Study**

Official statistics confirm that the first cases of COVID-19 were detected on 19th of February, 2020 in Iran while unofficial reports argue that the infected existed from at least 45 days before official confirmation. In the middle of June (2020), when we collected data, the infected cases were reported 182,545 while two months later the number almost doubled (equal to 343,203 people; Worldometers, 2021). At the time of writing present research (24 August, 2021), the cumulative count of infected Iranians is more than 4.7 million, while more than 103,000 were died. It is hence not difficult to imagine that how nurses have been under pressure during the period after contagion. According to statistics, from 145,000 employed nurses, 60,000 were infected by the Covid-19 and 100 of them died until 17 Dec of 2020 (Isna, 2021). Nowadays, administrative of hospitals and health institutions relentlessly express their concerns about the negative consequences of such heavy pressures on nurses while demands for immediate recruitment of new nurses (Mehrnews, 2021). The outlined situation questions the capacity of hospitals and health care professionals to provide suitable care to all who need urgent medical attention.

In this study, we aimed to test the conceptual model presented in Figure 1. As shown, we hypothesized that identifying as nurse would be directly and negatively associated with both depressive symptoms and intentions to quit (Hypothesis 1a: H1a). In addition, identification as nurse would be positively associated with positive emotions and negatively with negative emotions (Hypothesis 1b: H1b). In turn, positive emotions would be negatively associated with intentions to quit and depressive symptoms (Hypothesis 2a: H2a), and negative emotions would be positively associated with intentions to quit and depressive symptoms (Hypothesis 2b: H2b). As a result, identification as nurse would be also negatively and indirectly associated with depressive symptoms via increased positive emotions and decreased negative emotions (Hypothesis 3; H3). In a similar vein, identification as nurse would be also negatively and indirectly associated with intentions to quit via increased positive emotions and decreased negative emotions (Hypothesis 4; H4). We expect that risk perceptions would moderate these associations. More specifically, among those who perceive the risk of Covid-19 contagion as higher, identification as nurse would be more strongly associated with intentions to quit and depressive symptoms (Hypothesis 4: H4). Moreover, identification as nurse would be associated less strongly with positive emotions and more strongly with negative emotions among those who perceive the risk of Covid-19 contagion as higher (Hypothesis 5: H5). Similarly, positive emotions would be less strongly and negative emotions would be more strongly associated with intentions to quit and depressive symptoms among those who perceive the risk of Covid-19 contagion as higher (Hypothesis 5: H5). As a result, indirect associations of identification as nurse with depressive symptoms and intentions to quit would be moderated by risk perceptions (moderated mediation). Among those who perceive higher risk of Covid-19 contagion, identification as nurse would be less strongly and indirectly associated with depressive symptoms via positive emotions (Hypothesis 6a: H6a); it would also be more strongly and indirectly associated with intentions to quit via negative emotions (Hypothesis 6b: H6b). Finally, identification as nurse would be less strongly and indirectly associated with depressive symptoms via positive emotions (Hypothesis 7a: H7a); it would also be more strongly and indirectly associated with intentions to quit via negative emotions (Hypothesis 7b: H7b).

[Figure 1 about here]

**Method**

**Participants**

For the current study, we analysed the data collected from a cross-sectional study carried out from 12 June to 16 August of 2020 in Iran. Ethical approval was obtained from [Blinded] University Central Research Ethics Committee. All research activities comply with the 1964 Helsinki Human Rights Declaration. The data reported in this manuscript were collected as part of a larger data collection. One variable *intentions to quit* has been used in another publication that reports the impact of internal and external workplace violence on intentions to quit via job satisfaction (Cakal, Keshavarzi, & Ruhani, Dakhil-Abbasi, in press). Here we consider how identifying as nurse affects mental health and intentions to quit via positive and negative emotions and whether risk perception influences these associations. We invited nurses who were in active duty to participate in a study “on difficulties faced by nurses during the pandemic”. Those who were interested were directed to the study link and completed the survey upon their consent. Overall, 462 Iranian nurses across the country participated in the study (Mage = 31.6 SD = 8.78). The sample included 313 females (67.7%) and 132 males (28.6%), while 17 ones (3.7%) that chose not to express their gender. This Noting that the high proportion of females seems not problematic to our sampling method, as according to the latest statistics, 78% of the net population of Iranian nurses has been female (Fardanews, 2021) which is not too far from the proportion in our sample. All respondents held university degrees; including 85% with bachelor, 14% with master or Ph.D. degree, and four participants did not answer the question. Moreover, nearly 40% of our respondents were expected to contact frequently with the Covid-19 positive cases due to their working sections, e.g., emergency, infection control, or newly established sections exclusively for Covid-19 patients. Other participants belonged to units, e.g., neonatal and oncology, at risk of Covid infection, possibly in lower levels than the former group. We did not have any missing data.

**Measures**

All items were measured on a 7-point Likert-type scale anchored 1 not at all to 7 very much (See the appendix for a full list of the items).

**Identification as nurse*.*** was measured by four items (α = .83) adapted from (van Stekelenburg et al., 2011). We asked our participants to respond to statements on different dimensions (emotional commitment, significance of being a nurse, shared sense of ‘we’, involvement) of their sense of belongingness to the nurse group (e.g., I am happy to be a member of the nurses’ team).

**Positive Emotions**.Participants were asked to think about their job regarding the Covid-19 pandemic and then to indicate the extent that they feel the following emotions: *hope*, *happiness*, and *excitement* (α = .82).

**Negative Emotions.** Participants reported the extent that they experience*worry*, *desperation*, and *fear* (α = .82).

**Depressive Symptoms.** was measured by three items adapted from Goldberg et al. (2010) with modification. A sample question read as “Have you been feeling unhappy and depressed?” (α = .82).

**Intentions to quit**.We used four items to measure the nurses’ willingness to quit their job. Thus, a sample item reads “If an opportunity comes up, I am ready to leave my job”. (α = .91).

**Risk Perception**. was measured by eight items adapted from (Wu et al., 2009). The respondents were asked to indicate their agreements with the items. A sample item read as “I am afraid of falling ill with the coronavirus” (α = .77).

**Results**

In Table 1, we report descriptive statistics and correlations between our variables of interest. Results show that the respondents had a strong sense of belongingness to the nurse group. They also perceived the risk frequently and felt worried about their situation at work. Above the mean level of depressive symptoms demonstrates widespread prevalence of depressive symptoms among nurses at the time of Covid-19 contagion. As shown in Table 1, collective identity and experiencing positive emotions negatively, and experiencing negative emotions and perception of risk correlated positively with our dependent variables.

[Table 1 about here]

In line with our hypotheses, we first tested the indirect effects via Model 4 in PROCESS (Hayes, 2018) first. We then used Model 59 to test the full moderated mediation model. As PROCESS does not allow testing two outcome variables at a same time, we entered the outcome variable that is not being tested as a co-variant to control for any effect it might have in the model. Thus, we first entered identification as nurse as predictor, positive and negative emotions as parallel mediators, risk perception as moderator, intentions to quit our outcome variable, and depressive symptoms as *co-variant*. Next, we entered depressive symptoms as our outcome variable and intentions to quit as *co-variant*. Below, we report the full regression results including direct, indirect, and the moderating effects. Accordingly, we tested whether our independent variable, identifying as nurse, would be associated with reduced depressive symptoms and reduced intentions to quit via our mediating variables, positive emotions, and negative emotions. We then proceeded to test whether if these associations, if any, would be moderated by risk perception. The effects are significant when the calculated confidence interval does not include zero (Hayes, 2018).

[Figure 2]

We report the effect sizes of all significant paths in Figure 2 and Table 2. Overall, our model explained 66% and 43% of variance in our mediating variables, positive and negative emotions, respectively, and 51% and 47% of variance of our dependent variables, intentions to quit and depressive symptoms, respectively. Confirming H1a results showed that identifying as nurse was directly and negatively associated with depressive symptoms (B = -0.23, 95% CI [-0.48, -0.02]) and intentions to quit (B = -0.69, 95% CI [-1.14, -0.24]). In a similar vein and confirming H1b identification as nurse was associated with positive emotions (B = 0.42, 95% CI [0.11, 0.73]) and negatively with negative emotions (B = -0.43, 95% CI [-0.76, -0.09]). Partially confirming H2a, positive emotions were only associated with intentions to quit (B = -0.45, 95% CI [-0.89, -0.00]).In a similar vein, Negative emotions were positively associated with depressive symptoms (B = 0.24, 95% CI [-0.03, 0.44]) but not with intentions to quit ergo, H2b was only partially confirmed.

In line with our hypotheses, we then tested whether ingroup identification is indirectly associated with depressive symptoms and intentions to quit. Here, we first report the indirect effects. We then report the results of moderated mediation tests in the following section. Partially confirming H3 identification as nurse was also negatively and indirectly associated with depressive symptoms via increased positive emotions (B = -0.06, 95% CI [-0.11, -0.02]) but not via decreased negative emotions. Fully confirming H4, identification as nurse was negatively and indirectly associated with intentions to quit via increased positive emotions (B = -0.19, 95% CI [-0.26, -0.02]) and decreased negative emotions (B = -0.08, 95% CI [-0.13, -0.04]).

**Tests of Moderation and Moderated Mediation**

In line with our predictions (H4-H7b), we also tested whether any direct or indirect effects of our independent variable, identification as nurse, on our criterion variables, depressive symptoms and intentions to quit, via our mediating variables, positive and negative feelings, would be moderated by risk perception. To do so, we used PROCESS Macro (Model 59, Hayes, 2018). Contrary to our expectations, none of the direct paths from our independent variable, identification as nurse, to our criterion variables, intentions to quit and depressive symptoms were moderated by risk perceptions. The paths from our mediation variables, positive and negative emotions to our criterion variables did not also change at different levels of risk perception. We only detected evidence partially confirming H5 and H7b. Perceived risk of Covid-19 contagion moderated the association between identification as nurse and negative emotions. (B = .08, 95% CI [0.09, 0.14]). When perceived risk was low (-1 SD) the association between identification as nurse and negative emotions was negative (B = -0.17, 95% CI [-0.31, -0.03.]), When perceived risk was at mean, this association decreased and became non-significant (B = -0.10, 95% CI [-0.21, 0.01.]). The association changed direction but remained non-significant (B = .001, 95% CI [-0.13, 0.13.]) when perceived risk was high (+1SD). Accordingly, and partially confirming H7b, the indirect effect of identification as nurse on depressive symptoms was negative (B = -.03, 95% CI [-0.05, -0.01]) when perceived risk was low (-1SD); decreased and became non-significant (B = -.01, 95% CI [-0.03, 0.01]) when perceived risk was at mean; and became positive but remained non-significant (B = .01, 95% CI [-0.01, 0.01]) when perceived risk was high (+1SD).

[Table 3 about here]

Thus, these results partially supported H5 and H7a that risk perception would moderate the direct effect of identification as nurse on negative emotions and indirect effect of identifying as nurse on depressive symptoms via negative emotions.

**Discussion**

The aim of present study was to examine effects of group identity on depressive symptoms and intentions to quit among nurses during the Covid-19 contagion in Iran. We argued that sense of belongingness as a nurse would be related to positive and negative emotions which in turn would be associated with reduced depressive symptoms and intentions to quit. We also hypothesized that these associations would be moderated by perceived risk of being infected with Covid-19.

In line with our expectations, our results underlined the crucial role of social identification as nurse in reducing depression and intentions to quit during a period of duress. In line with previous studies, we addressed the role of emotions in alleviating of work-related challenges (Folkman, 2008; Folkman & Moskowitz, 2000; Gloria & Steinhardt, 2016; Major et al., 2018). In our sample, we did not find a significant effect of positive emotions on well-This might be due to contextual effects imposed by the pandemic. Previous research showed that socio-cultural context can supress or incite emotion regulation strategies (Snyder et al., 2013). Alternatively, this might be purely the result of direct effects social identification on depressive symptoms as the simple negative correlation between positive emotions and depressive symptoms disappeared in the model.

. Consistent with the literature (Hoeve et al., 2020; Kramer et al., 2021), our findings also show that undesirable feelings experienced by the employees have detrimental impact on their well-being and could led them to leave their jobs. As expected, our results confirm the role of emotions in mediating the impact of identification as nurse on intentions to quit. Contrary to our expectations, however, negative emotions did not mediate the association between identification as nurse and depressive symptoms. Broadly speaking, these results support the findings from extant research on the topic (Mackie & Smith, 2008; Yzerbyt et al., 2003) evincing that a sense of shared identity is related to experiencing of positive and negative emotions which are in turn related to mental health and job related outcomes.

It is somewhat surprising that among all proposed associations, risk perception only moderated the association between identification as a nurse and negative emotions. As expected, the mitigating effects of shared sense of identifying on negative emotions disappeared when nurses experience high risk of being infected. This finding highlights the important role of contextual factors for the identity outcomes (Ding et al., 2020; Trifiletti et al., 2021). What is surprising is that risk perceptions did not moderate any other path, that is, the effects of identification as a nurse on positive emotions and in turn emotions on well-being and intentions to quit were independent of risk perceptions not significantly different at various levels of risky conditions.

Risk perception only buffered the indirect effects of group identification on depressive symptoms but not intentions to leave. This means that when employees experience risk of being infected at the high levels, the positive outcomes of shared identity on employees’ well-being is not significant. This is good news for at least two reasons. First, the direct and indirect, via positive emotions, effects of identifying as nurse on depressive symptoms are consistent and remain unaltered across different levels of perceived risk. These findings suggest that in a negative socio-cultural context risk perceptions have limited impact on how social identity modulates mental health and well-being, e.g., supressing the mitigating effect of social identity on negative emotions. By the same logic, future research could explore whether a positive socio-cultural context would boost the positive effects of social identity on positive feelings. Second, the positive direct and indirect effects of social identity on intentions to quiet appear to be independent of risk perceptions. This means that negative socio-cultural context does not impact upon the *retainer* effects of social identity.

One of the issues that emerges from these findings is developing the possibility of linking social identity and emotions literature. This study, to our knowledge, is one of the first that brings together research on emotions and social identity to identify the psychological consequences of the Covid-19 pandemic among health care workers, i.e., nurses in an underrepresented context, Iran. Our findings once more underscore the importance of identity-based mechanisms in response to the COVID-19 pandemic.

**Theoretical and Practical Implications**

We believe these results are important both theoretically but also for practical reasons.

Most research investigating the positive effects of social identification on mental health is limited in the sense that it has focused on small interactive groups and/or on social categorical groups such as ethnic groups or gender. Here we extend this research by investigating the positive effects of social identification among a non-WEIRD sample in an applied setting (see Steffens, Haslam, Schuh, Jetten, & van Dick, 2017). These results, in line with previous research by Vignoles and his colleagues (Vignoles, Jaser, Taylor, & Ntontis, 2021) show, how shared identities can provide a sense of direction and keep people motivated even in risky contexts as well as promoting resilience in the face of adversity.

These results provide additional evidence on the protective effects of social identification in organizational settings (Steffens et al 2017). by showing that these positive effects are (a) partially independent of perceived risk triggered by the context; and (b) extend to organizational outcomes, i.e., intentions to quit. Last but not least, our results also underline the positive effects of social identity on health and applied outcomes are both direct and also via positive emotional experiences thus calling for more research on other alternative intermediary processes.

As for the practical implications, our findings suggest that social identification in organizational settings can be *harnessed* to keep employees resilient and on the task. Both of these consequences are equally important in difficult times especially when the employees provide services and support essential for public health. Thus, organizations providing such services should pay particular attention. Measures could focus on reinforcing job-related identification and providing safer environments that could improve positive emotional experiences while decreasing negative emotional experiences. Given that the positive effects of social identification are mainly direct and via positive emotions, future interventions could focus on these processes.

**Implications for Future Research and Limitation of the Present Study**

We acknowledge some limitations. First, our data is correlational data hence our causal claims should be taken with a pinch of salt. Longitudinal and experimental data is needed to support our findings. Second, since the data for this study collected online, all limitations and bias of such studies are to be acknowledged here. For instance, it is likely that those nurses with limited access to the internet have been excluded. In a similar vein, some of the nurses we approached declined to participate due to their high and stressful workload. Third, we conducted this study in a highly stressful context. i.e., Covid-19 pandemic in Iran, hence the full generalizability of such findings to other periods and contexts should be applied with caution. Future research could investigate whether these results would apply to other service personnel (aid workers, security forces, firefighters to name a few). Fourth, we operationalized emotions at the personal level. One could argue that there is a mismatch between our focus, group level emotions, and our measures of emotions at the individual level. Because we ask our participants to report their emotions regarding their work environment, we think our operationalization is still valid. However, a task for the future research would be to replicate these results by improving the measures, emotions at the group level. Given the strong associations between identification as nurse and emotions in the current study, we do not think that the results will deviate. Lastly, in this study, our focus was on the negative and positive feelings experienced by nurses. Still, there is abundant room for further progress in determining the effects of emotion in the organizational settings, particularly when compared with not so high stressful work conditions.

These limitations notwithstanding, we believe we contribute to research on social identity and well-being in an applied setting. Most research to date has investigated social identification and related positive or negative processes among the patients or general public. Thus, by focussing on mental health and well-being in an applied setting, health-care delivery during the pandemic, we contribute toward a more social understanding of healthcare and well-being from the supplier, nurses, point of view (Jetten, 2012). Future research could investigate other processes such as resilience or norms in similarly applied settings from the supply side of healthcare.

Our data comes from Iran, one of the least researched contexts globally. The present research then joins the ranks of a handful number of studies conducted in this less known context. Thus, we add to the expanding research in non-WEIRD (Henrich et al., 2010) populations.

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Appendix

**Identity** (Strongly Disagree 1 Strongly Agree 7)

1. I'm happy to be a member of the nurses' team.

2. Committed to the goals of nurses.

3. I feel belonging to the group of nurses.

4. I have a lot in common with other nurses.

**Emotions** (Never 1 Always 7)

When you think about your job during the pandemic, how much of each of the following emotions do you experience?)

1. Hope

2. Happiness

3. Excitement

4. Frustration

5. Desperation

6. Worry

7. Fear

**Depressive Symptoms** (Never 1 Always 7)

Taking into account everything this outbreak has implied

1. Have you been able to concentrate? R

2. Have you had any kind of loss of sleep over worry?

3. Have you felt constantly under strain?

4. Have you been able to face problems? R

5. Have you been feeling unhappy and depressed?

6. Considering all the circumstances, are you reasonably happy? R

**Risk perception** (Never 1 Always7)

1. I feel I have little control over whether I would get infected or not

2. I think I would be unlikely to survive if I were to get the coronavirus

3. I am afraid I would pass it on to others

4. Because I want to help the coronavirus patients, I am willing to accept the risks involved R

5. I am worried of losing my job and/or that a close one does as a result of Covid.

6. I am worried about having more conflicts with someone in my household as a result of Covid

7. I am afraid of falling ill with the coronavirus

8. I am worried about suffering violence from someone in my household (e.g., partner, spouse, relative, etc.) as a result of Covid.

**Intentions to quit** (Strongly Disagree 1 Strongly Agree 7)

1. If an opportunity arises, I am ready to leave my job.

2. If I have the financial ability, I will take my job.

3. Those who left this job in recent years acted logically.

4. The best option these days is to say goodbye to nursing.

**Table 1** Means, standard deviations, and correlations between main variables

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variables | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 Collective Identity | |  |  |  |  |  |  |
| 2 Risk Perception | | 0.01ns |  |  |  |  |  |
| 3 Positive Emotions | | .53\*\*\* | -.10\*\*\* |  |  |  |  |
| 4 Negative Emotions | | -.28\*\*\* | -.33\*\*\* | -.44\*\*\* |  |  |  |
| 5 Depressive Symptoms | | -.28\*\*\* | .52\*\*\* | -.42\*\*\* | .48\*\*\* |  |  |
| 6 Intentions to Quit | | -.56\*\*\* | .14\*\*\* | -.57\*\*\* | .48\*\*\* | .37\*\*\* |  |
| *M* | | 5.59 | 4.37 | 4.00 | 4.84 | 4.10 | 4.12 |
| *SD* | | 1.20 | 1.11 | 1.42 | 1.44 | 1.05 | 1.89 |

Valid *N* (listwise) 462. Note. The scale ranges from 1 to 7 for all measures. \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001, one-tailed.

Table 2. Full Regression Models Predicting Depressive Symptoms and Intentions to quit

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predictors | Positive Emotions | | | Negative Emotions | | | Depressive Symptoms | | | Intentions to quit | | |
|  | B | SE | 95% CI | B | SE | 95% CI | B | SE | 95% CI | B | SE | 95% CI |
| IN | 0.42 \*\* | 0.15 | [0.11,.73] | -0.43\*\* | 0.16 | [-0.76,-0.09] | -.23\* | 0.09 | [-0.48,-0.02] | -.69\*\*\* | 0.22 | [-1.14,-0.24] |
| PR | -0.01 | 0.17 | [-0.35,0.34] | 0.35 | 0.19 | [-0.44,0.31] | .36 | 0.22 | [-0.06,0.78] | -.40 | 0.38 | [-1.15,0.34] |
| IN x PR | -0.01 | 0.03 | [-0.07,0.05] | 0.08\*\* | 0.03 | [0.09,0.14] | .03 | 0.03 | [-0.02,0.08] | .03 | 0.05 | [-0.06,0.12] |
| Positive Emotions |  |  |  |  |  |  | -0.16 | 0.12 | [-0.41,0.08] | -.45\* | 0.22 | [-0.89,-0,01] |
| Positive Emotions  x PR |  |  |  |  |  |  | -0.01 | 0.03 | [-0.05,06] | .02 |  | [-0.07,0.11] |
| Negative Emotions |  |  |  |  |  |  | 0.24\*\* | 0.10 | [0.03,0.44] | .13 |  | [-0.22,0.50] |
| Negative Emotions  x PR |  |  |  |  |  |  | -.02 | 0.02 | [-0.07,0.02] | .04 |  | [-0.04,0.11] |
| *F* | *F*(4,457) = 66.17\*\*\* | | | *F*(4,457) = 43.43\*\*\* | | | *F*(8,453) = 47.44\*\*\* | | | *F*(8,453) = 51.11\*\*\* | | |
| *R2* | 0.36 |  | 0.47 | 0.27 | |  | 0.45 |  | | 0.47 | | |

Notes: IN identification as nurse; PR perceived risk.

\* p < .05

\*\* p < .01

\*\*\* p < .001

Table 3. Conditional Direct and Indirect Effects of Identification as Nurse on Depressive Symptoms and Intentions to Quit at Different Levels of Perceived Risk

|  |  |  |  |
| --- | --- | --- | --- |
| Direct Effects | B | SE | 95% CI |
| IN-Depressive Symptoms |  |  |  |
| (−1SD) 3.33 | -0.12 | 0.05 | [-0.22,.-0.02] |
| (Mean) 4.22 | -0.09 | 0.04 | [-0.17,.-0.01] |
| (+1SD) 5.55 | -0.05 | 0.05 | [-0.14,0.05] |
| IN-Intentions to Quit |  |  |  |
| (−1SD) 3.33 | -0.59 | 0.09 | [-0.76,.-0.41] |
| (Mean) 4.22 | -0.56 | 0.07 | [-0.69,.-0.43] |
| (+1SD) 5.55 | -0.51 | 0.08 | [-0.67,.-035] |
| Indirect Effects | B | SE | 95% CI |
| IN-Positive Emotions -Depressive Symptoms |  |  |  |
| (−1SD) 3.33 | -0.06 | 0.02 | [-0.11,.-0.02] |
| (Mean) 4.22 | -0.06 | 0.02 | [-0.10,.-0.03] |
| (+1SD) 5.55 | -0.06 | 0.02 | [-0.11,-0.02] |
| IN-Negative Emotions -Depressive Symptoms |  |  |  |
| (−1SD) 3.33 | -0.03 | 0.01 | [-0.05,.-0.01] |
| (Mean) 4.22 | -0.01 | 0.01 | [-0.03,.0.01] |
| (+1SD) 5.55 | 0.01 | 0.02 | [-0.01,0.01] |
| IN-Positive Emotions –Intentions to Quit |  |  |  |
| (−1SD) 3.33 | -0.19 | 0.05 | [-0.30,.-0.11] |
| (Mean) 4.22 | -0.19 | 0.04 | [-0.26,-0.02] |
| (+1SD) 5.55 | -0.17 | 0.05 | [-0.27,-0.09] |
| IN-Negative Emotions –Intentions to Quit |  |  |  |
| (−1SD) 3.33 | -0.08 | 0.03 | [-0.15,.-0.03] |
| (Mean) 4.22 | -0.08 | 0.02 | [-0.12,-0,04] |
| (+1SD) 5.55 | -0.06 | 0.03 | [-0.11,-0,01] |

Figure 1 The conceptual model: The direct and indirect effects (via positive and negative emotions indepedently) of identification as nurse on intentions to quit and depressive symptoms.

Identification as nurse

Positive Emotions

Negative Emotions

Intentions to quit

Depressive symptoms

Moderator: Risk perception

Figure 2. The effects of identifiying as Nurse on Intentions to Quit and Depressive Symptompts via Positive and Negative Emotions

R² = .66\*\*\*

Positive Emotions

Intentions to quit

Identification as nurse

Moderator: Risk perception

Depressive symptoms

Negative Emotions

R² = .51\*\*\*

R² = .47\*\*\*

R² = .43\*\*\*

.24\*\*

-.23\*\*

-.45\*\*

-.69\*\*

.42\*\*

-.43\*\*

.08\*\*