Understanding Psychological Wellbeing Among Iranian Healthcare Workers: The Role of Resilience and Social Capital

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Abstract

Background: Psychological well-being is a protective factor against mental disorders. This study aimed to clarify the contribution of resilience and social capital as predictors of psychological well-being as a first step toward developing evidence-based interventions to improve psychological well-being in healthcare workers.

Methods: This cross-sectional study was conducted on Iranian healthcare workers. Systematic random sampling was used to recruit 140 employees working in healthcare centers in Shiraz, Iran, in 2021. Data were collected using a survey that included Ryff's Scale of Psychological Well-Being, the Social Capital at Work Scale, and the Resilience at Work Scale. Data analysis involved correlations and path analysis to clarify the relationship between predictor variables for psychological well-being in healthcare workers.

Results: Significant relationships were found between psychological well-being and resilience ($r=0.29$, $P<0.01$), psychological well-being and social capital ($r=0.31$, $P<0.01$), and resilience and social capital ($r=0.42$, $P<0.01$). Path analysis revealed a significant and direct relationship between social capital and resilience ($\beta=0.56$, $P=0.001$) as well as resilience and psychological well-being ($\beta=0.59$, $P=0.001$). The direct path from social capital to psychological well-being was insignificant ($\beta=0.00$, $P=0.93$). The model explained 36% of the variance in psychological well-being.

Conclusion: Resilience was the most influential predictor of psychological well-being. It was associated with psychological well-being both directly and indirectly through the contribution of social capital. Promoting individual empowerment and developing resilience skills should be considered an essential approach in designing and implementing intervention programs to improve the psychological well-being of healthcare workers.

Introduction

The importance of psychological well-being (PWB) as a fundamental aspect of human life has prompted a considerable increase in scholarly attention over the past two decades.[1] It is defined as a mental feeling of satisfaction, happiness, success, usefulness, and belonging, as well as a lack of distress and concern.[2] It

is a mental state characterized by satisfaction, happiness, success, usefulness, and belonging, alongside a lack of distress and concern.[3] Individuals with high PWB tend to have a positive perception of life events, experience more positive emotions, and report fewer negative feelings, such as anxiety, depression, and anger.[4] Additionally, PWB can support and enhance workers' performance, which benefits organizations.[5]

The literature indicates that various individual and social factors affect PWB.[6] Individual factors such as personality, literacy, prior experiences, and psychological abilities influence PWB. Researchers have tried identifying the key determinants of PWB, which has led to resilience being identified as one such factor.[7] Generally, resilience is defined as the "dynamic process encompassing positive adaptation within the context of significant adversity".[8] In other words, resilience is both the process and the outcome of successfully adapting to challenging life experiences.[9] Individuals who exhibit resilience at work develop coping strategies and skills that can be applied in challenging situations. Resilient individuals approach problems creatively, plan solutions, seek help when needed, and possess comprehensive resources to address challenges. It follows that resilience can serve as a protective factor for employees against mental and emotional distress when faced with work-related challenges, which are common in healthcare settings. Indeed, evidence from a recent systematic review shows a moderate negative relationship between resilience levels and psychological distress in healthcare workers during the COVID-19 pandemic.[10] Additionally, elevated levels of moral injury persist in healthcare workers even after the onset of the pandemic.[11] Furthermore, an exhaustive literature review spanning 20 years identified healthcare workers as particularly vulnerable to poor PWB.[12] These findings highlight the need for further research to understand the relationship between resilience at work and PWB in the healthcare sector.

In the social dimension, a relatively neglected factor that could be important to employee PWB is social capital, the resource derived from social networks.[13] The conceptualization of social capital recognizes two distinct elements: structural social capital, which refers to the externally observable behaviors and actions of actors within the network, and cognitive, social capital, which pertains to the values, attitudes, codes, and beliefs of the relevant individuals.[14] The workplace is a vital source of social capital for many, providing mutual support and meaning to life.[15]

Only a few studies have been conducted to determine the relationship between social capital and PWB in specific population groups.[16-18] The findings of these studies are conflicting, which complicates the generalization of the results to other populations. Regarding employee health, evidence suggests that social capital positively affects job and life satisfaction,[19] reduced sickness absenteeism,[20] and improved health status.[21] The European Working Conditions Survey concluded that higher social capital contributes to higher employee PWB.[22] However, none of these studies convincingly demonstrate a causal relationship between social capital and PWB.

Employees are the most valuable assets of any organization, and poor mental health can directly affect their creativity and performance at work.[23] Critically, low social capital affects employees individually and the organization.[24] This highlights the vital role of substantial social capital in ensuring employees' job satisfaction, participation, and well-being, and interventions to improve social capital would benefit many workplaces.[25] The health and quality of life of employees contribute to the success of any organization, which in turn also impacts the success and service provision to entire communities.[26] We suggest that this is particularly true in healthcare, a sizeable occupational sector whose services affect the well-being of societies.

With this background in mind, the present study focuses on the role of resilience and social capital in employees, aiming to understand their contribution to psychological well-being (PWB) in healthcare workers. This ultimately supports both employee and organizational health. No specific research has been conducted on healthcare workers, even though they comprise a substantial and vital workforce in all communities. Based on the literature, we hypothesized that resilience and social capital would be significant predictor variables of PWB among healthcare workers.

Methods

This research was approved by the ethics committee of Shiraz University of Medical Sciences (IR.SUMS. REC.1400.157). All participants were recruited voluntarily. They were fully informed of the study's aim and procedure, and written informed consent was obtained.

Design and Participants

This cross-sectional survey study recruited healthcare workers employed in two healthcare centers in Shiraz, southern Iran, in late 2021. Information about the study, including the inclusion and exclusion criteria, was posted in the healthcare centers, and direct invitations to join the study were sent to a range of employees at each center during the systematic random sampling procedure. The inclusion criteria included having no acute physical or mental disorders and being 25 to 60. The exclusion criterion was a history of mental disorders that required hospitalization or psychiatric treatment.

The random sampling method involved first preparing a sampling frame, which was a numbered alphabetical list of the names of all employees at the two centers. The target sample size of 140 was determined to ensure an adequate sample size for path analysis. Klein[27] recommended a minimum ratio of 20 cases per measured variable, which, based on the initial conceptual model of this study, resulted in a minimum required sample size of 60 participants. As the stability and accuracy of path analysis depend on both sample size and the number of variables, and given that the response rate for the survey was unknown, we sampled beyond this minimum requirement. Using the sampling frame and a table of random numbers, potential participants were selected randomly until the target sample of 140 individuals who provided informed consent and met the inclusion criteria was reached.

The survey was then distributed to eligible employees who responded to the invitation and provided written informed consent. The surveys were distributed in unsealed envelopes and returned in sealed envelopes to a designated secure box at each healthcare center.

Measures

The survey comprised four sections. The first section gathered demographic characteristics (age, sex, marital status, and level of education). This was followed by three questionnaires to measure social capital, resilience, and psychological well-being, as described below.

Social capital was measured using the validated Persian version of the Social Capital at Work scale.[28] This scale consists of eight items, each scored on a 5-point Likert scale (1=strongly disagree to 5=strongly agree). Therefore, scores ranged from 8 to 40, with higher scores indicating higher social capital. Participants were classified as having high or low social capital using the mean score as a cutoff value.[28]

Resilience was measured using the Resilience at Work (RAW) Scale.[29] This scale consists of 20 items and seven sub-scales: living authentically, finding your calling, maintaining perspective, managing stress, interacting cooperatively, staying healthy, and building networks. Each item is rated on a seven-point Likert scale (1=completely disagree to 7=completely agree), yielding a total resilience score ranging from 20 to 140, where higher scores indicate better resilience. Several studies have explored and confirmed the scale's psychometric properties, although differences in factor structure have been observed.[30] Malik et al.[30] presented findings supporting the reliability and validity of the RAW scale in the Indian context. They suggested that the tool shows potential for successful use in other cultures. Without a validated Persian version of the RAW, this study followed best practices by applying backward-forward translation processes with fluent Persian and English translators.[31] A panel of experts approved the Persian version of the RAW after translation. Its reliability was confirmed using Cronbach's alpha method and test-retest (ICC=0.80) from a previous pilot study, which involved presenting the questionnaire to the same participants after a one-month interval (n=30 students who all provided informed consent). In this study, healthcare workers were classified as having high or low resilience using the total RAW mean score as a cutoff.

Psychological Well-being was measured using the validated Persian version of Ryff's Scale of Psychological Well-Being.[32] This questionnaire consists of 18 items encompassing the six core dimensions of psychological well-being: autonomy, purpose in life, personal growth, environmental mastery, positive relations with others, and self-acceptance.[6] Each dimension has three items assessed on a six-point Likert scale. The scale has been used in many studies across various contexts, although the multidimensionality of this scale has not always been supported.[33] Therefore, in this study, we used the overall scale scores. These ranged from 18 to 108, with higher scores indicating better psychological well-being. We report the dimensional scores and classify participants as having good or poor psychological well-being based on the mean score as a cutoff.

Statistical Analysis

Missing data was less than 10% and was managed using individual mean imputation, deemed the most appropriate method when using self-report scales.[34] Data analyses were performed in SPSS version 24 and Amos 24. Associations between participants' demographic characteristics and the study variables were assessed using chi-square (χ^2) analyses. As all variables had skewness and kurtosis coefficients less than 3 and 10, confirming that all study variables were normally distributed, Pearson's correlation analyses were used to evaluate the relationships between resilience at work, social capital, and psychological well-being (PWB). These variables were then included in a multiple regression path analysis, with a 95% bootstrap confidence interval and 10,000 bootstrap resampling, to consider the unique contributions of resilience and social capital to psychological well-being. A combination of fit indices was used to determine the adequacy of the theoretical model's fit with the data. To assess the strength of associations between two variables, standardized beta (β) coefficients were measured, and two-tailed P values<0.05 were considered significant. A comparative fit index (CFI), normed fit index (NFI), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), and a

Tucker-Lewis index (TLI)>0.90, a root mean square error of approximation (RMSEA)<0.08, and values of the chi-square test divided by degrees of freedom (χ^2/df)<5, with a non-significant P value, were regarded as indicating a good fit.[27]

Results

The survey was sent to 145 individuals to achieve the target sample size, as five participants who had given informed consent did not return their surveys. The response rate was 93.3%. In total, 140 participants were included in the study. Of these, 71.4% were female and 28.6% were male. The mean age of participants was 40.8 years, ranging from 25 to 59 years. Regarding marital status, 20.7% of participants were single, and 79.3% were married. All participants had at least a bachelor's degree, with 22.9% holding a Master's degree and 8.6% having a doctorate. Chi-square tests showed no significant differences between the two centers in terms of demographic variables (gender, education level, marital status) (P>0.05). In other words, the two centers had identical demographic characteristics. The results of an independent t-test showed no statistically significant difference between the average age of employees in the two centers (P=0.14).

Table 1 reports the mean scores of the study's predictor variables: social capital, resilience, and PWB. Table 2 shows the predictor variables' association with the participants' demographic characteristics. The results from these chi-square tests confirmed no associations among these variables.

Pearson's correlation coefficients demonstrated a significant relationship between PWB and resilience (r=0.28, P<0.01) and between PWB and social capital (r=0.31, P<0.01). A significant association was also found between resilience and social capital (r=0.42, P<0.01) (Table 3). In addition, there were no significant differences between the studied variables in the two groups (P>0.05).

To further understand the relationship between the predictor variables, resilience and social capital, a path analysis was performed. The initial evaluation and analysis of the standardized coefficients of paths in the model showed that the direct path from social capital to psychological well-being was not significant. However, the two-variable correlation coefficients of all these paths were significant (P<0.001). The first model fit indices were not good (X²/df=9.75, GFI=0.95, AGFI=0.73, CFI=0.87, TLI=0.61, NFI=0.86, and RMSEA=0.25). Therefore, an adjusted path analysis

Table 1: Mean (SD) scores of study variables

Characteristics	Mean	SD
Social capital	25.49	6.06
Structural	15.94	3.89
Cognitive	9.55	2.39
Resilience at Work	75.15	8.96
Psychological wellbeing	57.88	4.97
Autonomy	10.60	1.68
Environmental mastery	10.50	1.46
Personal growth	10.17	1.36
Positive relations	8.19	1.49
Purpose in life	8.56	1.69
Self-acceptance	9.83	1.50

SD: Standard deviation

Table 2: Social capital, resilience, and psychological well-being according to healthcare workers' demographic characteristics

Demographic characteristics		Resilience			Social capital			Psychological wellbeing		
		Low N (%)	High N (%)	P	Low N (%)	High N (%)	P	Poor N (%)	Good N (%)	P
Sex	Male	22 15.7%	18 12.9%	NS	16 11.4%	24 17.1%	NS	16 11.4%%	24 17.1%	NS
	Female	68 48.6%	32 22.9%		49 35.0%	51 36.4%		47 33.6%	53 37.9%	
Marital status	Single	20 14.4%	8 5.8%	NS	15 10.8%	13 9.4%	NS	17 12.2%	11 7.9%	NS
	Married	69 49.6%	42 30.2%		50 36.0%	61 43.9%		46 33.1%	65 46.8%	
Education level	Diploma / Bachelor's	60 43.5%	35 25.4%	NS	42 30.4%	53 38.8%	NS	38 27.5%	57 41.3%	NS
	Masters / Doctorate	29 21.0%	14 10.1%		22 15.7%	21 15.2%		25 18.1%	18 13.0%	

*Significance level P<0.05; NS: Not significant

Table 3: Pearson's correlation coefficients among social capital, resilience, and psychological wellbeing

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Social capital	1										
2. Structural social capital	0.98**	1									
3. Cognitive, social capital	0.94**	0.86**	1								
4. Resilience	0.42**	0.41**	0.30**	1							
5. Living authentically	0.28**	0.26**	0.28**	0.80**	1						
6. Finding your calling	0.40**	0.37**	0.42**	0.75**	0.52**	1					
7. Maintaining perspective	0.13	0.13	0.12	0.02	0.01**	0.05**	1				
8. Stress management	0.12	0.11	0.14	0.70**	0.50**	0.40**	0.23**	1			
9. Creating a social network	0.59**	0.60**	0.55**	0.70**	0.50**	0.50**	0.13	0.25**	1		
10. Being healthy	0.08	0.07	0.07	0.47**	0.04	0.06	0.05	0.27**	0.21**	1	
11. Psychological wellbeing	0.31**	0.25**	0.37**	0.29**	0.27**	0.40**	0.40**	0.21**	0.24**	0.18*	1

**P<0.01 level (2-tailed)

model was re-fitted after removing the non-significant path from social capital to psychological well-being ($\beta=0.00$, P=0.93). The fit indices were re-examined (X^2/df=4.87, GFI=0.95, AGFI=0.87, CFI=0.89, TLI=0.83, NFI=0.86, and RMSEA=0.16). While the RMSEA was relatively high, it has been noted that RMSEA can be misleading when degrees of freedom are low. Figure 1 shows the significant and direct relationships from the path of social capital to resilience ($\beta=0.56$, P<0.001) and from the path of resilience to psychological well-being ($\beta=0.59$, P<0.001). The indirect path from social capital to psychological well-being ($\beta=0.00$, P=0.93) was not statistically significant. Regarding the total effect, resilience had the most influence on psychological well-being (Table 4). Finally, the model shows that 36% of the variance in psychological well-being was explained by the two variables, social capital and resilience.

Discussion

The current study evaluated the relationships between resilience at work, social capital, and psychological well-being (PWB) among healthcare workers in Iran. Each of these variables independently predicted PWB, supporting our hypotheses. However, the findings also indicated that it would be inappropriate to consider these two variables in isolation, as there was a significant positive correlation between social capital and resilience at work. The additional path analysis, aimed at extending our understanding of the relationships, revealed that resilience at work is the more important predictor of PWB. At the same time, social capital is directly and indirectly related to PWB through its relationship with healthcare worker (HCW) resilience.

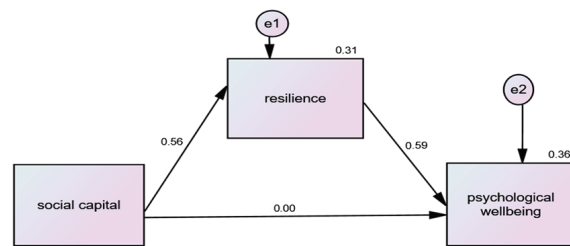Our finding that there is a relationship between

Figure 1: Path analysis of the study variables.

social capital and resilience supports previous assertions that building resilience at work requires the presence of social capital, which includes resources, services, and political tools.[35, 36] Specifically, the existing connections within organizations, including healthcare settings, are crucial for developing employees' mental and physical coping skills.[36, 37] Ultimately, our analyses indicated that social capital influenced individuals' psychological well-being (PWB) through resilience at work, both directly and indirectly. Social capital encompasses mutual understanding, friendship, sympathy, and social interactions within a network of relationships.[13] In this context, it is essential for organizations to recognize the significance of social capital as a supportive factor that can protect employees in stressful situations, which are prevalent in the healthcare sector.[11] In other words, social capital represents an asset available to people in networks that can be leveraged in decision-making and managing their resources when facing challenges, ultimately enhancing their resilience. Beyond our study, there is evidence from other workplaces that individuals with higher social capital experience more favorable outcomes, including increased PWB, greater participation at work, and improved job performance.[38] Social capital provides essential opportunities for individuals to access interpersonal social resources in their environment,

Table 4: Paths and standardized β coefficients of the final model of psychological well-being

Path	Direct effects		Indirect effects		Total effects	
	β	P	β	P	β	P
Resilience to psychological wellbeing	0.58	<0.001	-	-	0.58	<0.001
Social capital to resilience	0.32	<0.001	-	-	0.32	<0.001
Social Capital to psychological well-being	0.53	<0.001	0.33	<0.001	0.53	<0.001

which, in turn, fosters social and emotional growth through organizational characteristics such as networks, norms, and trust, facilitating cooperation and collaboration. Based on the findings of this study, we suggest that enhancing social capital will support the improvement of employees' resilience skills, helping them cope with work-related stressors.

Resilience at work is a multifaceted phenomenon influenced by the presence or absence of various stressors. This can enhance employees' ability to cope with their jobs when personal and environmental resources are available.[39] Several studies have demonstrated a significant relationship between resilience and psychological well-being (PWB) regarding health and educational outcomes,[7, 8, 40] which is consistent with our findings. Here, we extend these findings to the workplace context and support the assertion that resilience should be recognized as a mechanism to achieve PWB.[40] Consequently, organizations should focus on promoting the resilience skills of their employees. Resilient individuals can better maintain their physical and mental health, and their recovery from stressful situations is quicker than that of non-resilient individuals. Furthermore, resilience at work plays a central role in helping employees adapt successfully to challenging work environments, manage emotional pressures, develop effective coping strategies, and enhance professional development. Therefore, to adopt best practices, organizations must focus on supporting their employees by fostering their resilience skills and coping behaviors to manage the work-related stressors inherent in many jobs.

One of the strengths of the current research is that this original study is the first to assess how social capital and resilience impact the psychological well-being (PWB) of healthcare workers (HCWs) in Iran. It highlights the benefits of employee development and training programs for HCWs, healthcare organizations, and by extension, the entire community. However, several limitations must be acknowledged. First, using self-report questionnaires in a cross-sectional design limited our ability to establish causality, even with the path analysis approach. Additionally, there is a lack of verified benchmark data to measure social capital, resilience, and psychological well-being accurately. Despite these limitations, we are confident that demographic differences do not influence our findings. This was a key reason for exploring associations of the study variables in a predominantly female and married population, with fewer male and single employees. Most participants were highly educated, as expected in this sector, and there were no significant relationships between education level and the study variables. Another limitation is the relatively small sample size. However, there was sufficient statistical power to support the path analysis and assess the general hypotheses. Furthermore, we focused only on social capital within the workplace, even though both individual and social interactions shape the concept and are also influenced by social capital outside the workplace.

Conclusion

This study provides evidence that social capital and resilience are crucial factors influencing the psychological well-being of healthcare workers. It also highlights the importance of developing resilience skills for employees' and organizations' health and well-being. Therefore, promoting resilience skills should be considered a key strategy when designing and implementing employee health promotion intervention programs. Furthermore, our study underscores that psychological well-being is not solely dependent on resilience and social capital; other variables must also be considered. Based on these findings, we recommend that future studies further explore workplace psychological well-being to understand better the factors that contribute to it.

Authors' Contribution

MA and MK contributed to the original design, data collection, analysis, and manuscript writing. RC contributed to the original design and editing of the manuscript. RC, MJ, and CR approved and edited the final version of the manuscript. All authors read and approved the final manuscript.

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