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# The impact of psychological distress, socio-demographic and work-related factors on coping strategies used by nurses during the COVID-19 pandemic: A cross-sectional study

Farnaz Rahmani[1] | Fatemeh Ranjbar[2] | Elnaz Asghari[3] | Leila Gholizadeh[4]

[1]Social Determinants of Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

[2]Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran

[3]Department of Medical-Surgical Nursing, Nursing and Midwifery Faculty, Tabriz University of Medical Sciences, Tabriz, Iran

[4]Faculty of Health, University of Technology, Sydney, New South Wales, Australia

**Correspondence**
Farnaz Rahmani, Social Determinants of Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.
Email: farnazrahmani58@gmail.com

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## Abstract

**Aim:** This study aimed to determine factors associated with coping strategies used by nursing staff during the COVID-19 pandemic in Iran.

**Design:** Cross-sectional study.

**Methods:** A convenience sample of 365 nurses were selected from referral hospitals for COVID-19 patients in Tabriz, Iran between February 2022 and July 2022. An online self-administered questionnaire was distributed through social media platforms, including WhatsApp and Instagram. The survey package included a modified Brief COPE scale, socio-demographic and work-related questions, and a measure of psychological distress. Multiple regression analysis examined associated factors with coping strategies in SPSS. The study adhered to the STROBE guidelines for reporting.

**Results:** The mean age of participants was 31.2 (7.3) years old. Of the 365 participants, 209 (58.9%) used maladaptive coping strategies, and 214 (57.6%) reported experiencing psychological distress. Psychological distress was the strongest predictor of maladaptive coping strategies ($\beta = 4.473$, $p < 0.001$). Female nurses ($\beta = 3.259$, $p < 0.05$), nurses who were under 35 years of age ($\beta = 3.214$, $p < 0.05$), nurses with fewer than ten years of experience ($\beta = 2.416$, $p < 0.001$), those who worked in COVID-19 ICUs ($\beta = 4.321$, $p < 0.001$), floor nurses ($\beta = 2.344$, $p < 0.001$), and those who worked two or more years in COVID-19 settings ($\beta = 3.293$, $p < 0.001$) had higher mean scores in maladaptive coping strategies.

**Patient or Public Contribution:** No patient or public contributions.

KEYWORDS
Coping, COVID-19, Nurse Practitioners, Occupational Health, Stress

## 1 | INTRODUCTION

The COVID-19 pandemic has had a widespread impact on all sectors of society, with healthcare systems particularly affected (Shanafelt et al., 2020). Among healthcare workers, the pandemic significantly impacted nurses, with many becoming ill, infected, and tragically losing their lives (Bandyopadhyay et al., 2020). Recent estimates suggest that between January 2020 and May 2021, as many as 180,000

healthcare workers may have died from COVID-19 (World Health Organization, 2021). Evidence from past pandemics, such as severe acute respiratory syndrome (SARS) (Chung et al., 2005), MERS-CoV Epidemic (Kim, 2018), Ebola (Liu et al., 2019), and H1N1 influenza (Honey & Wang, 2013), suggests that nurses not only face an increased risk of physical complications such as infection, fatigue, and sleep deprivation during pandemics, but also suffer significantly from psychological impacts, including loneliness, isolation, anxiety, fear, and burnout.

During disasters and pandemics, healthcare workers, including nurses, often face challenges impacting their mental health and well-being (Kim, 2018; Nikeghbal et al., 2021). These challenges can include inadequate hospital resources (Sheikhbardsiri et al., 2022), a lack of support from family and friends, job stress, and work-life balance issues (Ayar et al., 2022). Nurses are often required to manage intense emotional situations, such as caring for critically ill patients, comforting grieving families, and dealing with life-altering decisions (Voultsos et al., 2022). Moreover, healthcare systems worldwide face staffing shortages, placing additional pressure on nurses (Drennan & Ross, 2019). Therefore, nurses, in particular, may be more susceptible to psychological problems such as anxiety and depression than physicians (Cai et al., 2020).

During the COVID-19 pandemic, mental health issues were on the rise. The systematic review of mental health issues related to the COVID-19 pandemic found that 37%, 35%, and 43% of nurses experienced anxiety, depression, and poor sleep quality, respectively (Al Maqbali et al., 2021). According to a large national study, the prevalence rate of 43.7%, 73% and 24% was found for moderate to severe depression, anxiety, and stress during the pandemic, respectively (Sharifi et al., 2022).

## 2 | BACKGROUND

COVID-19 may have affected nurses' emotions and their coping strategies. Furthermore, nurses must be aware of the stressors related to caring (Rahmani et al., 2023) and learn supportive coping strategies to minimize adverse effects (Zheng et al., 2018). Lazarus and Folkman's (1984) classification categorizes coping strategies as emotion-focused or problem-focused based on how individuals manage or reduce the adverse effects of demands beyond their capabilities. However, nurses often lack sufficient psychological self-help training to cope with challenging conditions, resulting in ineffective emotion regulation and tension (Zhan et al., 2020). A recent study by Puto et al. (2021) found that nurses who were caring for COVID-19 patients tended to cope with stress by using strategies that focused on the problem and on emotions, while nurses who cared for non-infected patients were likely to rely on strategies that focused only on the problem. Nurses who provide care in life-threatening situations, such as COVID-19, must utilize appropriate adaptation methods to mitigate the damaging effects of stress (Sinichi et al., 2020). Therefore, it is crucial to understand how nurses cope with a patient suffering from a *life-threatening* illness to prevent or minimize psychological and emotional consequences (Zhang et al., 2021).

The Transactional Model of Stress and Coping (TMSC), developed by Lazarus and Folkman (1984), is a widely recognized framework that explains how individuals perceive and respond to environmental stressors. This model emphasizes the dynamic nature of stress and individuals' active role in coping with stressful situations. According to the TMSC, stress is not solely determined by the objective characteristics of a situation but rather by the individual's subjective appraisal of the situation (Obbarius et al., 2021). TMSC also emphasizes the role of coping strategies in managing stress. As individuals continuously appraise and re-appraise stressors, their coping strategies may evolve and adapt over time (Gratch & Marsella, 2004).

Additionally, individuals can cope with stressful situations in adaptive or maladaptive ways (Carver et al., 1989). Maladaptive coping is typically described as emotion-based strategies and managing stress by focusing on oneself and reducing unpleasant feelings and emotions. On the other hand, adaptive coping is characterized by problem-focused strategies aimed at changing, reducing, and eliminating stressors (Meyer, 2001; Rodrigues et al., 2022). Studies have shown that adaptive coping mechanisms positively affect well-being and life satisfaction (Zhang et al., 2021). Maladaptive coping strategies, however, are linked to adverse outcomes such as anxiety, stress, and negative feelings (Dolić et al., 2022; Sinichi et al., 2020). According to some studies, nurses who work in stressful situations use adaptive and maladaptive coping strategies (Besirli et al., 2021; Puto et al., 2021). National studies' results have shown that nurses applied more maladaptive than adaptive coping strategies, indicating nurses experienced more stress and anxiety during the COVID-19 pandemic (Sinichi et al., 2020).

Socio-demographic factors are also crucial in shaping individuals' coping strategies during a health crisis (Dolić et al., 2022). The coping strategies of males and females may differ; female nurses would be more likely to utilize social support (Caruso et al., 2017). People with older ages may have more functional coping strategies (for example, a more positive attitude and a more positive orientation to problems) based on developmental processes. Some studies have supported this hypothesis in the general population (Yeung & Fung, 2007) and nurses (Laal & Amiramaie, 2010), but other studies have not confirmed it (Folkman, 2010). Age also plays a significant role in shaping coping strategies during a health crisis. Younger individuals, who are more likely to be in the early stages of their careers, may experience higher levels of stress and uncertainty during a health crisis (Rahmani et al., 2023; Sim et al., 2010).

Working experience is an essential factor influencing coping strategies during a health crisis. A recent study showed that working experience may be associated with more positive coping strategies in nurses, including positive attitudes and problem-solving (Kruczek et al., 2020). Individuals with more work experience might have developed a repertoire of coping strategies through their past experiences (Sinichi et al., 2020).

On the other hand, while coping strategies can help nurses manage work stressors, their effectiveness may vary depending on the nature of the stressor itself (Mehta et al., 2022). A recent study showed that compared with nurses in other units, those involved in direct contact with patients infected with COVID-19 were more likely to adopt emotion-focused coping strategies such as seeking social support (Romero-García et al., 2022). Researching the differences in nurses' work patterns under such conditions is crucial to developing diverse and highly effective intervention strategies in the face of such enormous stress as the COVID-19 pandemic. By equipping nurses with effective coping mechanisms, they can better manage their challenges and stressors, leading to improved well-being, enhanced patient care, and increased job satisfaction (Sehularo et al., 2021).

Recognizing these factors can help develop targeted interventions and support systems for the specific needs of individuals during challenging times. Understanding the relationship between the socio-demographic and work-related variables and nurses' coping is crucial in enhancing the well-being and effectiveness of nurses in their demanding profession. By examining these variables, researchers can gain insights into how nurses manage stress and adversity in their work environment. This knowledge can inform the development of interventions and support systems to improve the coping abilities of nurses, ultimately benefiting both the healthcare professionals and the patients they care for.

Additionally, nursing administrators and researchers are increasingly interested in developing coping strategies to help nurses manage these stressful situations. This study aimed to determine factors associated with coping strategies among nursing staff during the COVID-19 pandemic in Iran.

## 3 | METHODS

### 3.1 | Design

The present cross-sectional study was conducted on nursing staff working in referral hospitals for COVID-19 patients. The study adhered to the STROBE guidelines for reporting.

### 3.2 | Participants and settings

The study was conducted within Iranian's healthcare system, which is based on public system models. Healthcare services are primarily free and delivered by a complex public health system, a large private system that provides secondary and tertiary care, and non-governmental organizations. The study targeted full-time nurses at three centres designated for COVID-19 patients in Tabriz, Iran. During the COVID-19 epidemic, three medical centres with the most beds and better prepared to treat COVID-19 patients were considered referral centres: one general hospital with 400 beds, another with 350 beds, and one specialized hospital for children with 500 beds. Almost two-thirds of their beds were devoted to COVID-19 patients.

The sampling was conducted between February 2022 and July 2022. The sample size of 312 was estimated based on the results of a pilot study on 30 nurses using the results (Confidence Interval (CI) of 95%, test power of 80%, $\alpha=0.05$, $r=0.16$). However, to account for potential non-response and availability of subjects, the required sample size was increased to 360. Participants were required to meet the following criteria:

- Currently working as a nurse at a COVID-19 ward.
- Minimum work experience of 1 year.
- No history of psychiatric illness according to self-reports.

### 3.3 | Data collection

We used a survey link to collect data. Initially, we acquired the administrative assistance of the nursing departments in medical centres. Then, we asked the administrative staff (clinical supervisors) to distribute the survey link via social platforms, including WhatsApp and Telegram. We introduced the purpose of the survey to the nursing staff on the first page of the questionnaire, and the questionnaire was filled out by the nursing staff voluntarily. To ensure the integrity of the data, all entries were set to 'required questions.' The anonymous self-report structured electronic questionnaires included researcher-developed socio-demographic and work-related questions, the Brief-COPE (Brief Coping Orientation to Problems Experienced) (Carver, 1997), and the General Health Questionnaire (GHQ) (Goldberg & Williams, 2000). All of the scales are free for public access.

#### 3.3.1 | Instruments

The socio-demographic and work-related characteristic questionnaire that was developed by the researchers based on a literature review and expert evaluations collects participants' information regarding age, gender, educational level, income, and marital status, and work-related characteristics, including professional role (floor nurse, head nurse, clinical supervisor, and supervisor of nurse education), years of experience as a registered nurse, experience in the context of COVID-19, type of work shift, and healthcare setting.

The Brief-COPE inventory is a self-report questionnaire developed by Carver (1997) to assess a broad range of coping responses. It consists of 28 items measuring 14 factors. Each factor of the Brief-COPE consists of two items measuring different coping strategies. Carver (1997) categorizes acceptance, emotional and social support, humour, positive reframing, and religion as emotion-focused strategies. On the other hand, active coping, instrumental support, and planning are considered problem-focused strategies. As a last point, behavioural disengagement, denial, self-distraction, self-blaming, substance use, and venting are considered dysfunctional coping

strategies. Meyer (2001) classified the Brief-COPE strategies as maladaptive coping, including venting, denial, substance abuse, behavioural disengagement, self-distraction, and self-blame, and adaptive coping, which includes positive framing, social support planning, active coping, emotional and instrumental support, acceptance, religion, and humour. Answers are rated on a 4-point Likert scale ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot). Each factor has two items, and the total scores on each can range from 2 to 8, with higher scores indicating more significant use of coping strategies. The Brief COPE's validity has been assessed in multiple nursing studies, and its reported alpha coefficients have ranged from 0.81 to 0.88 in previous studies (Abdul Rahman et al., 2021; Alnazly & Hjazeen, 2021). We used the Iranian version of the Brief COPE, which had adequate internal consistency reliability ($\alpha = 0.77$), and the intra-class correlation coefficient was reported as acceptable for scale ($r = 0.76$) (Ashktorab, et al., 2017). Cronbach's alpha coefficient of the Brief COPE in this study was 0.86. We used Meyer's categorization to determine the type of coping strategies.

The GHQ consists of 12 items designed to evaluate the degree of psychological distress experienced over the past few weeks using a 4-point Likert-type scale. The binary method for scoring recommended by Goldberg and William (2000) is used to identify cases. In this method, the two least symptomatic responses are scored as 0, and the two most symptomatic responses are scored as 1 (i.e., 0–0–1-1). The GHQ-12 total scores can range from 0 to 12. In Iranian version of GHQ-12, two cut-off points of 3.7 and 4 are commonly used to indicate the threshold for severe psychological distress, depending on the study's region, population, and time (Jamali & Ayatollahi, 2015; Namjoo et al., 2017). This study used a cut-off point of 4 to categorize participants as having or not having severe psychological distress. The validity and reliability of the GHQ have been examined in previous studies. The reliability of the GHQ-12 using Cronbach's alpha coefficient ranged from 0.85 to 0.93 in various studies (Cuéllar-Flores et al., 2014; Namjoo et al., 2017). We used a Persian version that has been reported as being a reliable (Cronbach's alpha coefficient = 0.87) and valid ($r = -0.56$) instrument to measure psychological distress in Iran. Cronbach's alpha coefficient of this study's Iranian version of GHQ-12 was 0.89.

To examine the face and content validity, the questionnaires were given to 12 professors of Tabriz University of Medical Sciences. They were revised as their opinions about the level of linguistic and cultural adaptation of this scale.

### 3.4 | Data analysis

To ensure the integrity of the data, all entries were set to 'required questions.' Hence, there were all the data. The data were analysed using SPSS (version 13; SPSS Inc., Chicago, IL, USA). Descriptive statistics were computed for all variables, including frequencies, means, and standard deviations (SD). The Brief COPE and GHQ variables were found to be normally distributed, with skewness and kurtosis indices less than ±2 (Kim, 2013). The data were analysed using the Pearson correlation coefficient, t-tests, and ANOVA. Variables with a significance level of $p < 0.05$ in the univariate analysis were entered into a multiple linear regression model. The independent variables in this study were a mixture of continuous and categorical variables. In multiple regression analysis, the categorical variables with more than two groups were coded as 'dummy variables'. All assumptions of linear regression analysis (linearity, normality, and independence of error terms) and multicollinearity of independent variables using the variance inflation factor of tolerance were examined. A statistical significance level of $p < 0.05$ was used for all tests.

### 3.5 | Ethics considerations

The current research project has been approved by the Vice-Chancellor for Research and the Ethics Committee of Tabriz University of Medical Sciences with the code IR.TBZMED.REC.1400.505. The study was conducted considering the essential research ethics of the Declaration of Helsinki (WMA, 2013), and the sampling permission was given by the Tabriz University of Medical Sciences. The data were sent to the researcher in anonymized form and were handled in such a way that no respondent could be identified. Responding to the questionnaire was voluntary, and all participants provided informed consent before completing the survey link. The research goals, participants' anonymity, voluntary participation, and study information were first explained at the beginning of the survey. The researchers did not collect any identifiable personal information from them to maintain complete privacy.

## 4 | RESULTS

### 4.1 | Demographic and work characteristics of participants

Among the participants, 57.8% were women, and the mean age was 30.7 ± 7.7 years. The average nursing experience in years and experience in COVID-19 wards were 8.6 ± 3.4 years and 2.9 ± 0.7 years, respectively. Additional characteristics of the sample are presented in Table 1.

### 4.2 | The mean scores (SD) of coping strategies and psychological distress

According to the Brief COPE inventory, nurses working with patients infected with COVID-19 tended to adopt more maladaptive

**TABLE 1** Distribution of nursing socio-demographic and work-related characteristics ($N = 360$).

| Characteristics | | N (%) |
|---|---|---|
| Age (years) | ≤35 | 208 (62.1) |
| | >35 | 127 (37.9) |
| Gender | Male | 149 (44.5) |
| | Female | 186 (55.5) |
| Marital status | Married | 112 (33.4) |
| | Single | 223 (66.6) |
| Income | Less than expenditure | 45 (13.4) |
| | Equivalent to expenditure | 223 (66.6) |
| | More than expenditure | 67 (20.0) |
| Health care setting | COVID-19 ICU | 153 (45.7) |
| | General COVID-19 ward | 182 (54.3) |
| Work experience-years | <10 | 217 (64.8) |
| | ≥10 | 118 (35.2) |
| Work experience in COVID-19 wards-years | <2 | 154 (46.0) |
| | ≥2 | 181 (54.0) |
| Professional role | A floor nurse | |
| | Head nurse/clinical nurse | 231 (69.0) |
| | supervisor/ nurse education | 104 (31.0) |
| Type of shift | Fixed | 123 (37.7) |
| | Rotating | 212 (63.3) |

**TABLE 2** Distribution of nurses' coping strategies.

| Variables | Mean (SD) |
|---|---|
| Adaptive coping (total) | 1.93 ± 0.52 |
| Adaptive coping (categories) | |
| Active coping | 1.63 ± 0.41 |
| Planning | 1.75 ± 0.61 |
| Seeking instrumental support | 1.91 ± 0.52 |
| Acceptance | 1.84 ± 0.63 |
| Sense of humour | 1.54 ± 0.56 |
| Seeking emotional support | 2.82 ± 0.64 |
| Positive reframing | 1.92 ± 0.62 |
| Turning to religion | 2.14 ± 0.68 |
| Maladaptive coping (total) | 2.26 ± 0.74 |
| Maladaptive coping (categories) | |
| Self-distraction | 2.63 ± 0.84 |
| Denial | 2.66 ± 0.62 |
| Venting | 2.71 ± 0.53 |
| Self-blame | 2.29 ± 0.64 |
| Substance use | 0.83 ± 0.36 |
| Behavioural disengagement | 2.44 ± 0.49 |

**TABLE 3** Association between coping strategies and psychological distress.

| | Psychological distress | |
|---|---|---|
| Variables | *r* | *p* |
| Adaptive coping (total) | −0.29 | 0.02 |
| Adaptive coping (categories) | | |
| Active coping | −0.24 | <0.001 |
| Planning | 0.04 | 0.28 |
| Seeking instrumental support | −0.09 | 0.32 |
| Positive reframing | −0.21 | 0.02 |
| Seeking emotional support | −0.27 | <0.001 |
| Acceptance | −0.24 | 0.004 |
| Sense of humour | −0.28 | <0.001 |
| Turning to religion | 0.03 | 0.14 |
| Maladaptive coping (total) | 0.35 | <0.001 |
| Maladaptive coping (categories) | | |
| Self-distraction | 0.32– | 0.03 |
| Denial | 0.23 | 0.01 |
| Venting | 0.27 | 0.02 |
| Self-blame | 0.29 | <0.001 |
| Substance use | 0.04 | 0.17 |
| Behavioural disengagement | 0.08 | 0.24 |

coping strategies (2.26 ± 0.74). Seeking emotional support (2.82 ± 0.6) and venting (2.71 ± 0.53) were the most frequently used strategies by these nurses. Conversely, the least commonly used strategies were substance use (0.8 ± 0.3) and sense of humour (1.54 ± 0.56) (Table 2). Based on the GHQ scores, participants' mean level of psychological distress was 5.1 ± 1.7, and 58.9% experienced psychological distress.

### 4.3 | Correlations between coping strategies and psychological distress

The Pearson correlation coefficient analysis showed significant positive moderate correlations between psychological distress and maladaptive coping strategies ($r=0.35$, $p<0.01$), specifically self-distraction ($r=0.32$, $p=0.03$), denial ($r=0.23$, $p=0.01$), venting ($r=0.27$, $p=0.01$), and self-blame ($r=0.29$, $p<0.001$). In contrast, adaptive coping strategies exhibited a significant negative small relationship with psychological distress. Specifically, active coping ($r=-0.24$; $p<0.001$), positive reframing ($r=-0.21$, $p<0.02$), seeking emotional support ($r=-0.27$, $p<0.001$), acceptance ($r=-0.24$, $p<0.004$), and sense of humour ($r=-0.28$, $p<0.001$) were found to be negatively correlated with psychological distress, as presented in Table 3.

### 4.4 | Variables associated with coping strategies and psychological distress

In the univariate analysis, variables including psychological distress, age, gender, total work experience, work experience in COVID-19 wards, professional role, and healthcare setting had a significance level of $p<0.05$ (Tables 4–6). They, therefore, were entered into a multiple linear regression model (Table 7). The results of the multiple linear regression analysis revealed that older age than 35 years old ($\beta=3.491$, $t=2.412$, $p<0.012$), male gender ($\beta=3.472$, $t=2.473$, $p=0.027$), having work experience of 10 years or more ($\beta=3.174$, $t=2.635$, $p<0.001$), working in dedicated COVID-19 wards for less than 2 years ($\beta=3.793$, $t=2.315$, $p<0.001$), working in general COVID-19 wards ($\beta=3.836$, $t=2.429$, $p<0.001$), working as head nurse/clinical nurse supervisor ($\beta=2.629$, $t=4.229$, $p<0.001$) and having lower psychological distress ($\beta=-3.721$, $t=2.325$, $p<0.001$), were determinant of greater use of adaptive coping strategies ($R2=0.562$, $F(7)=9.241$, $p=0.000$).

Psychological distress was the strongest predictor of maladaptive coping ($\beta=4.473$, $t=3.741$, $p<0.001$). A one-point increase in the nurses' psychological distress score resulted in a 4.473-point increase in their maladaptive coping score. It was followed by working in COVID-19 ICUs ($\beta=4.321$, $t=2.421$, $p<0.001$), female gender ($\beta=3.259$, $t=2.659$, $p<0.001$), having work experience less than 10 years ($\beta=2.416$, $t=2.293$, $p<0.001$), working in COVID-19 wards for 2 years or more ($\beta=3.293$, $t=2.685$, $p<0.001$), and working as floor nurses ($\beta=2.344$, $t=4.254$, $p<0.001$). These variables collectively accounted for 51.2% of the variance (variability)

**TABLE 4** Coping strategies and psychological distress by age and gender.

| | Age | | | | Gender | | | |
|---|---|---|---|---|---|---|---|---|
| | ≤35 | >35 | | | Male | Female | | |
| Variables | Mean ± SD | Mean ± SD | *t* | *p* | Mean ± SD | Mean ± SD | *t* | *p* |
| Adaptive coping (total) | 1.98 ± 0.56 | 2.38 ± 0.59 | 2.96 | 0.01 | 2.49 ± 0.55 | 2.14 ± 0.39 | 1.67 | 0.04 |
| Adaptive coping (strategies) | | | | | | | | |
| Active coping | 1.47 ± 0.62 | 1.12 ± 0.91 | 0.82 | 0.12 | 1.37 ± 0.63 | 1.24 ± 0.73 | 0.42 | 0.17 |
| Planning | 1.72 ± 0.83 | 1.94 ± 0.73 | 1.63 | 0.02 | 1.86 ± 0.65 | 1.43 ± 0.96 | 1.91 | 0.02 |
| Seeking instrumental support | 1.32 ± 0.71 | 1.82 ± 0.83 | 2.12 | 0.01 | 1.67 ± 0.74 | 1.39 ± 0.64 | 1.88 | 0.01 |
| Positive reframing | 1.92 ± 0.97 | 2.15 ± 0.66 | 0.74 | 0.15 | 1.97 ± 0.83 | 2.62 ± 0.73 | 2.31 | <0.001 |
| Acceptance | 2.09 ± 0.64 | 2.21 ± 0.53 | 0.81 | 0.28 | 1.86 ± 0.52 | 2.31 ± 0.67 | −0.72 | 0.59 |
| Sense of humour | 1.62 ± 0.83 | 1.97 ± 0.92 | 1.93 | 0.03 | 1.41 ± 0.84 | 2.17 ± 0.79 | 2.66 | 0.001 |
| Seeking emotional support | 3.17 ± 0.92 | 3.42 ± 0.61 | 2.81 | 0.01 | 2.93 ± 0.46 | 3.29 ± 0.86 | 2.77 | 0.03 |
| Turning to religion | 2.21 ± 0.74 | 2.49 ± 0.72 | 0.64 | 0.88 | 1.94 ± 0.71 | 2.19 ± 0.64 | 0.73 | 0.23 |
| Maladaptive coping (total) | 2.32 ± 0.76 | 2.12 ± 0.41 | 1.84 | 0.03 | 2.05 ± 0.56 | 2.34 ± 0.82 | 2.89 | <0.001 |
| Maladaptive coping (strategies) | | | | | | | | |
| Self-distraction | 2.54 ± 0.34 | 2.12 ± 0.47 | 0.62 | 0.08 | 2.62 ± 0.51 | 2.91 ± 0.44 | 2.33 | 0.02 |
| Denial | 2.55 ± 0.37 | 2.34 ± 0.41 | 0.43 | 0.19 | 2.14 ± 0.62 | 2.89 ± 0.77 | 1.81 | 0.01 |
| Venting | 2.91 ± 0.81 | 2.29 ± 0.72 | 2.97 | 0.02 | 2.17 ± 0.87 | 2.82 ± 0.69 | 2.35 | <0.001 |
| Self-blame | 2.43 ± 0.93 | 1.73 ± 0.63 | 3.21 | <0.001 | 1.72 ± 0.84 | 2.27 ± 0.74 | 2.91 | 0.03 |
| Substance use | 0.42 ± 0.72 | 0.82 ± 0.52 | 0.31 | 0.17 | 0.82 ± 0.39 | 0.67 ± 0.53 | 0.59 | 0.41 |
| Behavioural disengagement | 2.47 ± 0.53 | 2.31 ± 0.49 | 0.78 | 0.26 | 2.36 ± 0.45 | 2.51 ± 0.32 | 0.86 | 0.47 |
| Psychological distress | 5.62 ± 1.43 | 4.72 ± 1.14 | 2.73 | <0.001 | 5.43 ± 1.37 | 5.91 ± 1.53 | 2.93 | <0.001 |

**TABLE 5** Nurses' coping strategies and psychological distress by work experience in years and work experience in COVID-19 wards.

| | Work experience in years | | | | Work experience in COVID-19 wards | | | |
|---|---|---|---|---|---|---|---|---|
| | <10 | ≥10 | | | <2 | ≥2 | | |
| Variables | Mean ± SD | Mean ± SD | *t* | *p* | Mean ± SD | Mean ± SD | *t* | *p* |
| Adaptive coping (total) | 2.62 ± 0.73 | 2.94 ± 0.93 | 2.51 | 0.01 | 2.54 ± 0.63 | 2.26 ± 0.52 | 2.83 | 0.01 |
| Adaptive coping (strategies) | | | | | | | | |
| Active coping | 1.49 ± 0.72 | 3.19 ± 0.92 | 2.84 | <0.001 | 2.62 ± 0.72 | 2.15 ± 0.53 | 2.32 | 0.02 |
| Planning | 2.6 1 ± 0.75 | 2.78 ± 0.96 | 0.65 | 0.18 | 1.81 ± 0.34 | 1.75 ± 0.48 | 0.98 | 0.54 |
| Seeking instrumental support | 2.47 ± 0.56 | 3.18 ± 0.75 | 1.81 | 0.02 | 2.92 ± 0.85 | 2.16 ± 0.62 | 3.21 | <0.001 |
| Positive reframing | 2.42 ± 0.52 | 2.57 ± 0.49 | 0.72 | 0.41 | 2.32 ± 0.75 | 2.47 ± 0.96 | −2.12 | 0.61 |
| Acceptance | 1.76 ± 0.73 | 1.91 ± 0.53 | 0.86 | 0.16 | 1.67 ± 0.73 | 1.53 ± 0.48 | 0.31 | 0.12 |
| Sense of humour | 3.19 ± 0.95 | 2.41 ± 0.62 | 2.91 | 0.01 | 1.91 ± 0.42 | 2.4 5 ± 0.73 | 1.94 | 0.01 |
| Seeking emotional support | 2.92 ± 0.66 | 2.49 ± 0.54 | 2.63 | 0.03 | 2.39 ± 0.54 | 2.85 ± 0.79 | 2.45 | 0.02 |
| Turning to religion | 2.73 ± 0.83 | 2.62 ± 0.85 | −2.36 | 0.28 | 2.45 ± 0.45 | 2.72 ± 0.62 | −2.17 | 0.62 |
| Maladaptive coping (total) | 2.21 ± 0.59 | 2.07 ± 0.38 | 2.61 | 0.01 | 2.03 ± 0.39 | 2.49 ± 0.73 | 2.59 | 0.01 |
| Maladaptive coping (strategies) | | | | | | | | |
| Self-distraction | 1.47 ± 0.34 | 1.56 ± 0.42 | 0.61 | 0.17 | 1.72 ± 0.62 | 1.94 ± 0.47 | −0.71 | 0.34 |
| Denial | 1.71 ± 0.79 | 1.82 ± 0.94 | 0.42 | 0.21 | 1.93 ± 0.76 | 1.73 ± 0.85 | 0.66 | 0.90 |
| Venting | 2.92 ± 0.91 | 2.48 ± 0.69 | 2.69 | 0.01 | 1.82 ± 0.70 | 2.14 ± 0.87 | 2.71 | 0.01 |
| Self-blame | 3.12 ± 0.80 | 2.44 ± 0.73 | 2.94 | 0.01 | 2.73 ± 0.83 | 3.43 ± 0.93 | 2.66 | 0.01 |
| Substance use | 1.66 ± 0.42 | 1.73 ± 0.68 | −1.35 | 0.36 | 1.83 ± 0.71 | 1.91 ± 0.46 | −1.42 | 0.12 |
| Behavioural disengagement | 2.39 ± 0.41 | 2.42 ± 0.47 | 0.96 | 0.23 | 2.17 ± 0.39 | 2.42 ± 0.41 | 0.83 | 0.29 |
| Psychological distress | 5.43 ± 0.62 | 4.91 ± 0.47 | 2.34 | <0.001 | 5.62 ± 0.75 | 4.72 ± 0.39 | 2.74 | <0.001 |

of emotion-focused coping ($R^2 = 0.262$, $F(7) = 8.539$, $p = 0.000$). (Table 7).

## 5 | DISCUSSION

This study aimed to determine factors associated with coping strategies among nursing staff during the COVID-19 pandemic in Iran. Nurses in this study tended to use more maladaptive coping strategies than adaptive ones, such as venting, blaming themselves, self-distraction, denial, and behavioural disengagement. This finding is consistent with the results of Zhang et al.'s (2021) study in China, which showed that nurses used more maladaptive coping strategies than adaptive strategies during the COVID-19 pandemic. Similar to our finding, seeking emotional support was the most commonly used strategy reported in Zhang et al.'s study (2021). Lazarus and Folkman (1984) suggest that individuals are more likely to use problem-focused coping when stressors are controllable and emotion-focused coping when stressors are perceived as uncontrollable coping. Nurses may perceive the pandemic as being mainly beyond their control (Sinichi et al., 2020), and therefore it is not surprising that they rely more heavily on maladaptive coping. Inadequate staffing levels and a lack of psychological and social support at workplace can further exacerbate the stress and anxiety experienced by nurses (Besirli et al., 2021). In the absence of proper support, nurses may resort to maladaptive coping strategies as a means to cope with the challenging circumstances they face daily (Smallwood et al., 2021). Moreover, it should be noted that more than half of the nurses in the current study worked in dedicated COVID-19 wards for 2 years or more. The high morbidity and mortality rates associated with COVID-19 during the study period (Ahmadi et al., 2021), and their prolonged presence in the workplace (Nikeghbal et al., 2021), may also have affected nurses' mental health.

In the current study, more than half of the nursing staff reported experiencing psychological distress, which is similar to the rate of 58.7% reported by Bizri et al. (2022) among 150 nurses and physicians who worked in COVID-19 wards in Lebanon. However, studies conducted in China (Nie et al., 2020) and Canada (Côté et al., 2022) reported much lower rates of psychological distress among nurses working with COVID-19 patients, with only 25.6% and 20% of nurses experiencing it, respectively. Findings of a systematic review also showed that more than one-third of nurses experienced poor mental health during the COVID-19 pandemic (Al Maqbali et al., 2021). The difference in the rates may reflect cross-cultural variations in

**TABLE 6** Nurses' psychological distress and coping strategies by professional role, working shift type, and care setting.

| | Professional role | | | | Health care setting | | | |
|---|---|---|---|---|---|---|---|---|
| | A floor nurse | Head nurse/clinical nurse supervisor | | | COVID-19 general Ward | COVID-19 ICU | | |
| Variables | Mean ± SD | Mean ± SD | *t* | *p* | Mean ± SD | Mean ± SD | *t* | *p* |
| Adaptive coping (total) | 2.16 ± 0.59 | 2.38 ± 0.62 | 2.79 | 0.01 | 2.82 ± 0.91 | 2.46 ± 0.69 | 2.49 | 0.01 |
| Active coping | 1.81 ± 0.47 | 2.17 ± 0.62 | 2.17 | 0.01 | 2.49 ± 0.81 | 1.96 ± 0.62 | 1.80 | 0.02 |
| Planning | 1.92 ± 0.73 | 2.42 ± 0.81 | 2.72 | 0.03 | 2.73 ± 0.83 | 2.33 ± 0.72 | 1.66 | 0.01 |
| Seeking instrumental support | 1.83 ± 0.52 | 1.73 ± 0.63 | 0.91 | 0.24 | 2.52 ± 0.44 | 2.34 ± 0.67 | 0.93 | 0.52 |
| Positive reframing | 1.73 ± 0.49 | 1.62 ± 0.72 | 0.79 | 0.08 | 2.31 ± 0.72 | 2.19 ± 0.93 | 0.83 | 0.42 |
| Acceptance | 2.10 ± 0.52 | 2.36 ± 0.41 | 0.86 | 0.29 | 2.36 ± 0.74 | 2.63 ± 0.60 | −1.74 | 0.67 |
| Sense of humour | 2.13 ± 0.89 | 2.98 ± 0.65 | 2.81 | <0.001 | 1.89 ± 0.66 | 2.62 ± 0.82 | 1.83 | 0.01 |
| Emotional support seeking | 2.49 ± 0.94 | 3.19 ± 0.54 | 3.14 | <0.001 | 2.33 ± 0.59 | 2.91 ± 0.71 | 2.14 | <0.001 |
| Turning to religion | 2.43 ± 0.64 | 2.75 ± 0.57 | 0.62 | 0.57 | 2.55 ± 0.86 | 2.74 ± 0.95 | 0.72 | 0.14 |
| Maladaptive coping (total) | 2.18 ± 0.64 | 1.76 ± 0.47 | 2.49 | <0.001 | 2.04 ± 0.73 | 2.57 ± 0.82 | 2.49 | <0.001 |
| Self-distraction | 2.41 ± 0.62 | 1.93 ± 0.49 | 2.62 | <0.001 | 1.94 ± 0.67 | 2.66 ± 0.73 | 1.92 | 0.01 |
| Denial | 2.36 ± 0.76 | 1.87 ± 0.51 | 3.40 | <0.001 | 2.12 ± 0.63 | 2.81 ± 0.97 | 1.74 | <0.001 |
| Venting | 1.92 ± 0.63 | 2.40 ± 0.81 | 2.94 | 0.01 | 2.42 ± 0.62 | 2.8 3 ± 0.53 | 0.73 | 0.31 |
| Self-blame | 2.68 ± 0.88 | 1.91 ± 0.46 | 2.41 | 0.02 | 2.17 ± 0.54 | 2.32 ± 0.72 | −1.67 | 0.28 |
| Substance use | 1.84 ± 0.42 | 1.65 ± 0.33 | −1.74 | 0.62 | 1.96 ± 0.45 | 1.83 ± 0.56 | −1.22 | 0.39 |
| Behavioural disengagement | 2.42 ± 0.81 | 1.91 ± 0.72 | 1.92 | 0.01 | 1.82 ± 0.83 | 2.39 ± 0.64 | 1.92 | 0.01 |
| Psychological distress | 5.92 ± 0.87 | 4.53 ± 0.21 | 2.79 | <0.001 | 4.59 ± 0.43 | 5.91 ± 0.84 | 2.71 | 0.01 |

psychological response to a life-threatening event, the severity of COVID-19, or differences in the availability of support services such as personal protective equipment across countries during pandemics or disasters (Sheikhbardsiri et al., 2022). On the other hand, this study was conducted between February 2022 and July 2022 in a setting with a high mortality rate from COVID-19 (3.5% of confirmed cases) (Ahmadi et al., 2021). The constant exposure to patient deaths can result in feelings of complicated grief (Rahmani et al., 2023), sadness, and powerlessness. Nurses may experience symptoms of anxiety and depression, which can significantly impact their mental health and psychological well-being (Cai et al., 2020). The high level of psychological distress may also be related to more than half of the nurses working in COVID-19-designated wards for over 2 years in this study. As described by Obbarius et al., (2021), stress and coping are dynamic processes that are not solely determined by a situation's objective characteristics, but also by an individual's interpretation and evaluation of it. Therefore, nurse managers should know the differences between individuals when dealing with work environment stressors, particularly during pandemics such as COVID-19 (Moore, 2020).

The study revealed that increased use of maladaptive coping strategies among participants was associated with higher levels of psychological distress. Maladaptive strategies such as avoidance and denial do not address the underlying causes of distress (Lazarus & Folkman, 1984). They can lead to a suppression of feelings, which can be damaging in the long term (Zhang et al., 2021). In response to stressful situations, maladaptive coping strategies are used to regulate or manage emotions (Romero-García et al., 2022). This type of coping can be ineffective in the long run and lead to increased psychological distress (Sim et al., 2010). People who use maladaptive coping strategies tend to focus on their immediate feelings rather than how their actions will impact them in the long run. Making decisions based on short-term considerations can be helpful in the short run, but ultimately unhelpful over time, leading to increased psychological distress (Ding et al., 2021).

According to our findings, some socio-demographic and work-related factors were also associated with a higher likelihood of using maladaptive coping and higher risk of experiencing psychological distress. Younger nurses experienced more significant psychological distress and tended to use more maladaptive coping methods than their older and male counterparts. This finding aligns with previous research demonstrating more effective coping strategies in older adults' strategies, including older nurses who work with COVID-19 patients (Dolić et al., 2022). Problem-solving abilities develop with age (Laal & Aliramaie, 2010), and individuals learn more effective strategies to handle daily stressors as they age (Rahmani et al., 2019). According to the TMSC, individuals gradually become more aware of the stress they encounter through a process of appraisal and reappraisal. People's perceptions and understanding of stress evolve over time as they assess and reevaluate their experiences (Gratch & Marsella, 2004). Furthermore, age-related differences in emotional responses may contribute to this finding. Older adults remember negative emotional experiences less vividly than positive ones (García-Bajos

**TABLE 7** Predictors of nurses' coping strategies in multiple linear regression analysis.

| Criterion | Predictors | Unstandardized coefficients (β) | Std. error | Standardized coefficients (Beta) | *t* | *p*-value | 95% CI | Statistics |
|---|---|---|---|---|---|---|---|---|
| Adaptive coping | Constant | −0.471 | 7.83 | | −0.719 | 0.972 | (−0.783 to −0.265) | $R=0.562$<br>$R^2=0.315$<br>$F(7)=9.241$<br>$p=0.000$ |
| | Age (Reference: ≤35) | 3.491 | 2.45 | 0.146 | 2.412 | 0.012 | (1.299 to 4.993) | |
| | Gender (Reference: Female) | 3.472 | 2.61 | 0.184 | 2.473 | 0.027 | (1.429 to 5.718) | |
| | Healthcare setting (Reference: COVID-19 ICU) | 3.836 | 2.83 | 0.151 | 2.429 | <0.001 | (2.674 to 4.327) | |
| | Nursing work experience (Reference: <10 years) | 3.174 | 2.66 | 0.173 | 2.635 | <0.001 | (1.362 to 3.351) | |
| | Work experience in COVID-19 settings (Reference: ≥2 years) | 3.793 | 3.21 | 0.159 | 2.315 | <0.001 | (2.291 to 4.927) | |
| | Type of nursing role (Reference: A floor nurse) | 2.629 | 3.41 | 0.193 | 4.229 | <0.001 | (1.293 to 3.937) | |
| | Psychological distress | −3.721 | 3.62 | −0.145 | 2.325 | <0.001 | (−4.325 to −2.391) | |
| Maladaptive coping | Constant | −0.431 | 6.84 | | −0.711 | 0.635 | (−0.654 to −0.2751) | $R=0.512$<br>$R^2=0.262$<br>$F(7)=8.539$<br>$p=0.000$ |
| | Age (Reference:> 35) | 3.214 | 2.23 | 0.132 | 2.621 | 0.017 | (2.423 to 4.232) | |
| | Gender (Reference: Male) | 3.259 | 2.72 | 0.156 | 2.659 | 0.039 | (2.417 to 4.621) | |
| | Healthcare setting (Reference: General ward for COVID-19) | 4.321 | 2.71 | 0.173 | 2.421 | <0.001 | (3.529 to 5.718) | |
| | Nursing work experience (Reference: ≥ 10 years) | 2.416 | 3.59 | 0.154 | 2.293 | <0.001 | (1.743 to 3.241) | |
| | Work experience in COVID-19 settings (Reference:<2) | 3.293 | 4.62 | 0.171 | 2.685 | <0.001 | (2.752 to 4.221) | |
| | Type of nursing role (Reference: Head nurse/clinical nurse supervisor) | 2.344 | 3.97 | 0.132 | 4.245 | <0.001 | (1.934 to 3.417) | |
| | Psychological distress | 4.479 | 2.83 | −0.174 | 3.741 | <0.001 | (3.761 to 5.112) | |

et al., 2017). Similarly, during the SARS pandemic, young individuals were found to experience a higher degree of psychological complications than older adults (Sim et al., 2010).

Similar to our finding, previous studies have shown that female nurses are at a higher risk of experiencing psychological distress than their male counterparts (Lai et al., 2020; López-Atanes et al., 2021). Women healthcare workers are often expected to fulfil multiple roles, such as being a caregiver both at work and at home when schools and childcare supports were restricted during health crises (Morgan et al., 2022). These additional responsibilities and societal pressures can exacerbate their stress levels and negatively impact psychological well-being (Lai et al., 2020). In the regression analysis, nurses who were female were more likely to utilize maladaptive coping strategies. Consistent with our findings, previous studies mostly show greater use of maladaptive coping strategies among female healthcare providers than men (Caruso et al., 2017; Yeung & Fung, 2007). Female nurses are more likely to use less effective coping strategies, such as avoidance and seeking emotional support during the COVID-19 pandemic (Cai et al., 2020). Nursing is emotionally demanding, requiring nurses to manage their own emotions while providing care and support to patients. Female nurses may face additional challenges related to emotional labour, as they are more likely to be empathetic and nurturing in their approach (Martínez-Morato et al., 2021). This constant emotional strain can contribute to higher levels of burnout, which in turn may increase the likelihood of resorting to maladaptive coping strategies as a means of dealing with stress (Lin et al., 2022).

According to our findings, nurses working in COVID-19 wards for longer periods with <10 years of nursing experience were in a particularly vulnerable position, facing a higher risk of psychological distress. Studies found that nurses in COVID-19 wards are exposed to more stressful situations, such as caring for critically ill patients and dealing with death and grief environments (Mehta et al., 2022; Rahmani et al., 2023). Thus, nurses may experience higher psychological distress in dealing with the fear and uncertainty of working in such stressful conditions (Cai et al., 2020; Kruczek et al., 2020). In addition, having less work experience was associated with an increased risk of psychological distress and using more maladaptive coping strategies. Baker (2020) showed that nurses with less experience may not have the necessary skills or expertise to handle their job's physical and emotional demands effectively. As a result, they may resort to maladaptive coping strategies, such as avoidance of difficult situations, which can lead to increased psychological distress (Dolić et al., 2022; Sinichi et al., 2020).

Compared to previous studies (Romero-García et al., 2022), this study suggests that nurses who work in COVID-19 ICU experienced an alarmingly higher level of psychological distress. This could be because the nurses working in the ICU have commonly reported higher levels of fatigue and work-related stress (Côté et al., 2022). These experiences appeared to be exacerbated during the pandemic due to frequent exposure to life-threatening situations and patient death (Puto et al., 2021; Sinichi et al., 2020). A study in Iran found that ICU nurses experienced greater grief during the pandemic than in the general ward nurses' environment (Rahmani et al., 2023). Moreover, a nationwide survey in Spain found that avoidance, as maladaptive coping strategy, was the most common coping strategy among ICU workers during the pandemic (Romero-García et al., 2022).

According to the findings of this study, nurses who worked fixed shifts reported significantly less psychological distress than those who worked rotating shifts. This may be because nurses working fixed shifts have more opportunities to establish long-term relationships with their colleagues, allowing them to support one another better during crises (Mehta et al., 2022). Additionally, the study findings align with the research conducted in Croatia, demonstrating that floor nurses tend to use emotion-oriented coping strategies more frequently than nurses in managerial positions managers (Kim et al., 2019).

### 5.1 | Strengths and limitations

This study was conducted 2 years after the start of the COVID-19 pandemic. So, it can provide insight into the long-term impact of COVID-19, which is still ongoing. By looking at the results 2 years after the pandemic started, we can gain a better understanding of how it has impacted nurses' mental health and the long-term effects it may have. Additionally, the study's results can be used to inform public health policies and strategies in the future. By understanding the long-term effects of the pandemic, we can better prepare for future health crises and provide timely support and resources to nurses.

There were some limitations to this study. Data collection through social media platforms and convenience sampling may be the study's methodological limitations. Examining other potential factors associated with coping strategies is necessary, considering that the predictive nature of research findings based on coping strategies is limited. Moreover, further studies should consider other coping strategies, such as seeking organizational support and spirituality-related practices.

## 6 | CONCLUSION

The results of this study indicate that healthcare organizations must support nurses during pandemics, particularly for less experienced nurses, female nurses, and nurses in front. Strategies such as providing paid sick leave, mental health support, and reducing working hours should be considered to mitigate these effects. Furthermore, nurse managers should implement a rotation system for nurses between regular and COVID-19 dedicated wards. It will allow nurses to take time to recover from the trauma of working in high-stress environments. When creating work schedules, it is also essential to consider a mix of skill levels, age groups, and genders. It can allow nurses to learn from one another and share coping strategies while receiving mutual support.

Future research should consider longitudinal studies to examine the long-term effects of psychological distress on nurses' coping

strategies. In addition, comparative studies can be conducted to compare coping strategies and outcomes among different groups of nurses. Exploring variations in coping mechanisms across different sociodemographic and work-related factors can help tailor interventions to specific groups and provide targeted support where needed.

## 7 | IMPLICATIONS FOR NURSING PRACTICE

This study highlights the effect of psychological distress on the coping strategies nurses' use. The findings helped identify critical factors that contribute to nurses' using emotion-focused coping strategies, which is valuable information in planning interventions to enhance nurses' resilience. Research suggests that nurses who utilize problem-focused coping strategies, such as seeking support from colleagues or, experience lower levels of psychological distress. This finding emphasizes the importance of creating a supportive work environment that encourages open communication, teamwork, and access to resources necessary for problem-solving. By understanding the effectiveness of problem-focused and emotion-focused coping strategies, healthcare organizations can focus on providing more psychological support to nurses, arranging for adequate medical protective equipment, and developing a broad range of interventions to block the spread of infectious diseases to form a safe environment for nursing staff. It will create an optimistic environment and guarantee nurses' safety, enabling them to carry on with the highest quality patient care to win the battle against this epidemic. In addition, nurse managers should organize educational and training programs to improve nurses' coping skills and provide social support for nurses to reduce psychosocial distress.

### AUTHOR CONTRIBUTIONS

FR has contributed to the study supervision, conception, design, data analysis, manuscript writing, editing, and review. EA and FR have made contributions to the conception, design, acquisition, analysis, and interpretation of data and prepared the first draft. LGH revised the final draft of the manuscript. All Authors have read and approved the final manuscript.

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### CONFLICT OF INTEREST STATEMENT

No conflict of interest has been declared by the authors.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. The authors have checked to make sure that our submission conforms as applicable to the Journal's statistical guidelines. Due to the number of variables examined in the article, the number of references cited is more than those specified in the Journal's guidelines.

### ETHICS STATEMENT

The current research project has been approved by the Vice-Chancellor for Research and the Ethics Committee of Tabriz University of Medical Sciences with the code TBZMED.REC.1400.505. The study was conducted considering the essential research ethics of the Declaration of Helsinki (WMA, 2013), and the sampling permission was given by the Ethics Committee of Tabriz University of Medical Sciences. The data were sent to the researcher in anonymized form and were handled in such a way that no respondent could be identified. Responding to the questionnaire was voluntary, and all participants provided informed consent before completing the survey link. The research goals, participants' anonymity, voluntary participation, and study information were first explained at the beginning of the survey. The researchers did not collect any identifiable personal information from them to maintain complete privacy.

### ORCID

*Farnaz Rahmani* https://orcid.org/0000-0002-1126-8593
*Leila Gholizadeh* https://orcid.org/0000-0002-6711-3312

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