Human Resources for Health

REVIEW

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Factors affecting nurses retention during the COVID-19 pandemic: a systematic review

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Abstract

Background The global nursing shortage was a well-known issue before the Covid-19 pandemic, but the Covid-19 pandemic has exacerbated the current nursing workforce shortage and reduced nursing retention. This systematic review aimed to explore factors affecting retention of nurses.

Methods The PubMed, Web of Science, Scopus and Proquest databases were searched for relevant primary studies published on nurses retention during Covid-19 pandemic. Finally, Google Scholar was searched for retrieving more related documents that may not be indexed in other searched databases. Inclusion criteria were research articles and gray literature related to nursing retention in Covid-19 pandemic, articles published in English, access to the full-texts, and without time limitation. Both qualitative and quantitative studies focusing on factors affecting the nurses retention were included. The Joanna Briggs Institute checklists were used for assessing quality of quantitative and qualitative studies. Qualitative and thematic content analysis methods based on Braun and Clark's model were used to analyze the data.

Results Eighteen studies were identified through a systematic search of the literature. The results showed that seven factors include personal, interpersonal, organizational, social media, educational, emotional, and protective factors are the factors affect the nurses retention.

Conclusion The findings of this study showed that retention of nurse is complex and multi-factorial issue that factors from micro to macro-level affect it. Managers and health policy-makers based on the results obtained from this study can plan appropriate measures to increase the retention of nurses.

Keywords Retention, Nurse, Nurse shortages, COVID-19, Systematic review

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Background

Effective human power is the main factor of continuity, success and achievement of organizations' goals. Studying nursing staff as the largest group of the health care team that has the most contact with patients is of particular importance [1]. The lack of professional staff in the health field can be a big obstacle in achieving the goals of the health system [2]. In 2019–2020, the global nursing workforce was estimated at 27.9 million people, and the greatest shortage was among low- and middle-income countries [3]. Although the factors contributing to the global nursing shortage are different because of the uniqueness of each country and its health care system but there are some key factors in common. For example, the aging of the nursing workforce, increasing numbers of retirees, and low recruitment of nursing graduates have led to nursing shortages worldwide [4]. On the other hand, nurses face special job stress due to dealing with human health problems and special conditions of their work environment, which can lead to negative job outcomes such as job burnout and leaving the job. Job burnout and physical, emotional and mental fatigue after being in a difficult work situation for a long time leads to a decrease in strength and ability and ultimately reduces their desire to stay in the job and continue the activity [5].

The global nursing shortage was a well-known issue before the Covid-19 pandemic. Evidence shows that the Covid-19 pandemic has exacerbated the current nursing workforce shortage and reduced nursing retention [6–8]. For example, the Covid-19 epidemic has led to many challenges, including an increase in the volume of patients, an increase in the burden of patients, and an aggravation of the shortage of available nursing staff through the impact on the predictors of the intention to leave of nurses, such as job satisfaction, job commitment, stress, anxiety and job burnout. According to the International Association of Nurses, if only 4% of the world's nursing workforce leaves their profession due to the impact of the pandemic, the increase in the number of nurses leaving will exceed one million nurses and the shortage of nurses in the world will reach seven million nurses. This issue requires quick and emergency responses of the health system in all countries of the world in order to properly distribute and maintain the staff of health care centers to improve the performance of health systems [2, 9].

The intention to leave refers to the behavior of any member of the organization who has left the organization or is looking for a job. On the other hand, the intention to stay refers to the behavior of each member of the organization who continues to work with the intention of staying in that organization. Intention to stay or leave are considered as different concepts. Intention to leave is caused by dissatisfaction due to external conditions related to job performance. Intention to stay is induced by the nature of work, personal achievements, responsibility and recognition felt through work, which are related to the motivation factor. Therefore, managing intention to leave passively helps to retain nursing staff, while managing intention to stay actively helps to retain nursing staff [10–12]. The term "retention" can be defined as a systematic effort to create and improve an environment that continues to encourage employees to work while implementing policies and practices that suit their various needs. Employee retention is the process of keeping employees or encouraging them to stay in the workplace for a long period of time. Employee retention is the method by which organizations maintain an efficient workforce and meet operational requirements [13].

Improving nurses' intention to stay in the profession is an effective way to address the problem of nurse shortage [14]. The problem of nurse shortage not only leads to a stressful work environment, but also to several problems such as reducing the quality of patient care and increasing adverse outcomes including mortality and costs for the patient, family and health care system. Sustained success in improving nurse retention requires planned interventions and multiple related policies and guidelines, not isolated interventions. However, in a systematic review of interventions aimed at nurse retention, only a small amount of evidence supported the positive effect of the supportive intervention for newly graduated nurses (at the individual level) and leadership style aimed at maintaining group cohesion (at the micro-organizational level) [15].

Many individual, organizational, economic and social factors play a vital role in retaining nurses and by reducing role conflict and job burnout among nurses, strengthen the intention to stay. Examples of these factors include high performance work system (HPWS) (methods that provide employees with skills, information, motivation, commitment and freedom to act in important decisions, such as: creating innovation, improving quality and finally responding quickly to such prepares changes) [16], reward system [17], organizational support [18] and strategic leadership [19], nursing professionalism (refers to the sum of beliefs, ideas and perceptions that nurses have about nursing or the nursing profession) [20, 21], nursing work environment (physical environment, interactions between nurses and other health care professionals and organizational policies) [4, 22].

Considering that in the literature, there was no agreement about the factors affecting the retention of the nursing force during the Covid-19 epidemic, therefore, the present study was done with the aim of identifying, synthesize, and evaluate the evidence related to the factors affecting the retention of the nursing force during the

Covid-19 epidemic in order to plan appropriate measures to increase the retention of nurses based on the results obtained.

Methods

This systematic review was conducted in 2022 based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) statement [23]. The researchers investigated and found that there are few research on the shortage of nurses regarding the effective factors on nursing retention and the diversity of services during the COVID-19 pandemic in the territory of EMRO (Eastern Mediterranean Regional Office of WHO), it was settled to be pursued a qualitative–quantitative review design model (multi-method approach). This type of multi-methods approaches authorizes us to focus on intricate phenomena, assists us to achieve in-depth understanding, enhances the robustness of our perceptions, and obtains knowledge about the phenomenon and its dimension [24, 25]. Since there were two questions relate to a common phenomenon (the nurses' willingness to job intention, identifying its effective factors in the COVID-19 pandemics, and how policymakers can maintain the nursing workforce in the pandemics). For this reason, we followed a convergent integrated approach to its synthesis and integration based on the JBI Mixed Methods Systematic Review Methodology Group (MMSRs). This methodology is considered an important development in applying evidence-based documents in healthcare to amplify the ability of conclusions reached from reviews to accommodate clinical and policy decision-making [26]. This review was registered in PROSPERO in September 2022 with the registered number: CRD42022357793.

Eligibility criteria

We selected medical sciences databases including PubMed because of having related articles about medical sciences such as nursing. We also search citation databases such as Web of Science and Scopus because of indexing medical sciences documents and accessing to more related records by cited or citing documents' links. Another valuable full-text database was Proquest for providing different types of documents including grey literatures. Finally, Google Scholar was searched for retrieving more related documents that may not be indexed in other searched databases. Also, these databases covered English scientific records before 2000.

Information sources

In relation to the purpose of the research, which was a review of the effective factors on nursing retention in COVID-19 pandemic, the PubMed, Scopus, Web of Science, Proquest, and Google Scholar databases were searched for English documents without time limitation. The most important search terms included nursing retention and COVID-19 along with their synonyms in medical subject headings (MeSH).

This strategy has been defined and used for other databases based on the characteristics of each database. The search strategy of other databases is presented in supplementary materials. These searches were done by N.S as a medical library and information science specialist and M.AF.

Selection of sources of evidence

The reference list of related studies was also reviewed in order to identify more relevant articles. Inclusion criteria were research articles (qualitative and quantitative studies) and gray literature related to nursing retention in COVID-19 pandemic, articles published in English, access to the full-texts, and without time limitation. Case studies, letters, letters to the editor, editorial articles, comments, and conference articles were excluded from the study. The abstract of all identified records was entered into EndNote×8. After deleting duplicates, the titles and abstracts of all articles were screened and those related to nursing retention in COVID-19 pandemic were identified. This step was repeated by four reviewers independently and disputed cases were resolved by consulting with a fifth person. Finally, the full-text of the related studies was studied by four reviewers independently and disagreements in including the full-texts were resolved by consulting with a fifth person. The researchers prepared a data extraction form in MS Excel 2016 and recorded the bibliographic characteristics of each record, including the authors, publish year, the country, type of study, study design, sample size, data collection tool, data analysis method, results, qualitative finding, main themes and sub-themes, and quality assessment score. Details of the article selection process are shown in Fig. 1.

Critical appraisal of individual sources of evidence

We used JBI (Joanna Briggs Institute) checklists for assessing quality of cross-sectional research (8 items) and qualitative studies (10 items) [27], respectively. Studies with a score of above 85%, between 85 and 75%, between 75 and 55%, and below 55% were categorized as "excellent quality," "very good," "good," and "poor quality, respectively. Qualification of the evidence was conducted independently by four reviewers. In the case of disagreement, the article was reviewed by the fifth reviewer.

Synthesis of result

In order to analyze the data, qualitative and thematic content analysis methods were used based on Braun

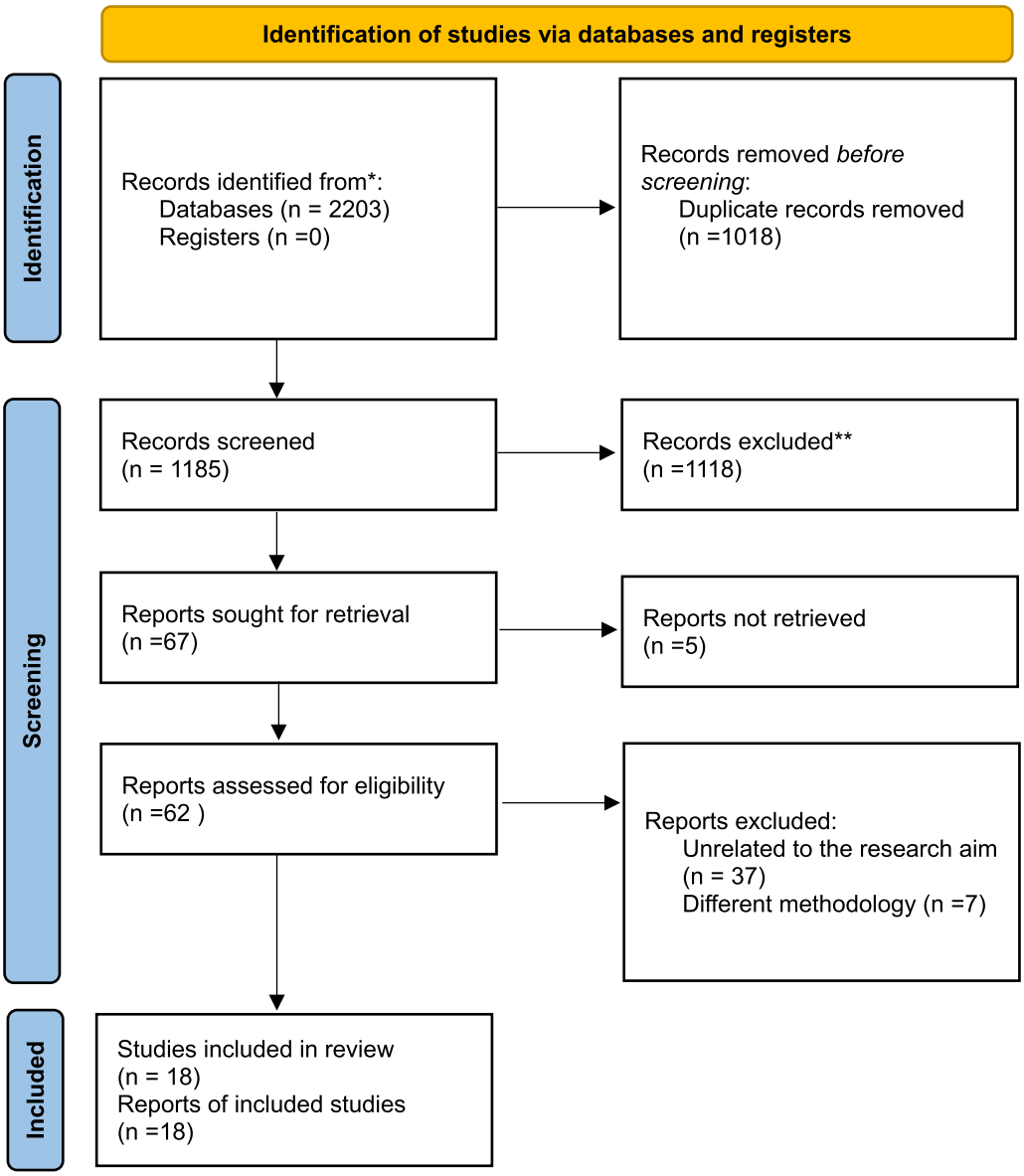

Fig. 1 The study selection process

and Clark's model [28]. The procedures included getting to know the data, creating primary codes, searching for semantic units in the text, reviewing semantic units, defining and naming semantic units, and reporting. Therefore, the effective factors on nursing retention were determined as the main category and the subcategories and the overlapping cases were integrated. The quantitative data also reported in the result section. The data were synthesized in MS Word 2016.

Results

Initially, 484 articles in Web of Science, 527 papers in PubMed, 860 papers in Scopus, 360 papers in ProQuest, and 26 papers in Google Scholar were found in the systematic searching process. Of the 2203 founded articles, finally, 18 studies according to eligibility criteria were included in this study. Details of the included studies are shown in Table 1.

Table 1 Characteristics of studies

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Ball et al., [40]	UK	Qualitative	A thematic analysis, followed by content analysis	2205	Open-ended question	Thematic and content analysis	• Personal protective equipment (PPE)/staff safety • Support to workforce • Better communication • Pay-reward • COVID-19 Testing and Isolating • Staffing and workload
Bell and Sheridan, [37]	Ireland	Quantitative	Cross-sectional study	756	Nurse Retention Index (NRI)	Descriptive statistics	• Nationality • Marital status • Fulltime/part-time • Had dependent children • Organizational commitment • Stress/burnout • Job satisfaction
Almaghrabi et al., [35]	Saudi Arabia	Quantitative	Cross-sectional study	518	An online questionnaire	Descriptive statistics	• Providing PPE • Protecting dependents from illness • Reducing psychological stress • Healthcare worker's training to deal with virus pandemic • Giving incentives to workers and financial support
Blake et al., [41]	UK	Quantitative	Cross-sectional study	296	An online questionnaire	Descriptive statistics	• Give reward and recognition for excellence and engagement • Foster teamwork and collaboration • Demonstrate a clear growth path • Invest in education and continual learning • Those who worked in COVID-19 higher risk areas • Participants who had accessed a Well-being center

Table 1 (continued)

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Liu et al., [30]	China	Quantitative	Cross-sectional study	200	Nurse Intent to Stay Questionnaire developed by Tao and Wang	Descriptive statistics	• Resilience • Post-traumatic growth –Appreciation of life –Personal strength –Relating to others –New possibilities –Self-transformation • Perceived professional benefits –Positive occupational perception –Good nurse–patient relationship –Recognition from family, relatives, and friends –Sense of belonging to a team –Self-growth
Chen et al., [38]	Taiwan	Quantitative	Cross-sectional study	333	Nursing workplace scale	Descriptive statistics	• Education level • Workplace stress • Having taken the course related to providing care to patients after starting work • Frequency of providing care to infection patients in the workplace

Table 1 (continued)

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Chow et al., [32]	Singapore	Qualitative	Phenomenological approach	35	In-depth semi-structured interview	Thematic content analysis	• Intrinsic volunteer functions – Personal values – sense of duty to their colleagues, – sense of duty to the healthcare system – understanding and enhancement • Extrinsic sources of motivation – Experiences of loved ones – past pandemic experiences – media coverage of national health crisis • Individual Impact – Self-growth, – broadening of perspectives, – opportunity for self-reflection, – affirmation of healthcare role • Team Impact – Importance of teamwork – Recognizing colleagues' contributions • Societal impact: – Heightened awareness of societal inequalities – need for cultural competence • Considerations in promoting volunteerism – The provision of measures such as alternative accommodation – adequate PPE – more information could have been provided for psychological preparedness such as the anticipated workload and mental wellness support – peace-time pandemic response training – increased support from senior management • non-financial means, such as official certificates or special mentions by senior management

Table 1 (continued)

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Gilles et al., [42]	Swiss	Quantitative	Cross-sectional study	8645	A single item	Descriptive statistics	• Reassignment experience • Hospital management responsiveness • Workplace well-being
Jedwab et al., [44]	Australia	Quantitative	Cross-sectional study	942	A question about intention to stay with score out of 10	Descriptive statistics	• Work satisfaction • Well-being • Engagement • Burnout
Courson et al., [33]	USA	Mix-method	Cross-sectional study	107	Initial Utrecht Work Engagement Scale (UWES) and in-depth semi-structured interview	Descriptive statistics and content analysis	• Use of additional personal protective equipment • Staffing shortages • Increased stress levels • Feeling a lack of support from administration • Finding gratification and fulfillment in nursing as a career • Grateful to serve • Receiving education on COVID-19 • Feeling that the hospital provided adequate education • The type of education: In-service education • Directly caring for a patient with COVID-19 • Age • Home unit • Satisfaction in the ability to care for critically ill patients
Sanner-Stiehr et al., [43]	USA	Quantitative	Cross-sectional study	399	A single item	Descriptive and inferential analysis	• Support from work
Shayestehazar et al., [39]	Iran	Quantitative	Cross-sectional study	172	The Meyer and Allen Organizational Commitment Questionnaire	Descriptive and inferential analysis	• Organizational commitment • Work experience
Wang et al., [45]	China	Quantitative	Cross-sectional study	350	Willingness to stay scale	Descriptive and structural equation model of partial least squares regression	• Safety climate • Transactional psychological capital • Social panic

Table 1 (continued)

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Squires et al., [34]	USA	Qualitative	Content analysis	242	Online free-text questionnaire	Traditional summative content analysis	• Communication • In-Person Contact Quality with Hospital Administration • Culture of Response • Staff Treatment • Bonding with co-workers • More team work improved care • Humility & respect • Renewed personal value for nursing work • Public's value of nursing
Varasteh et al., [31]	Iran	Qualitative	Content analysis	16	In-depth, individual semi-structured interviews	Conventional content analysis	• Organizational rewards • Financial incentives • Hope of changing their employment status • Professional commitment • Work conscience • Risk-taking responsibility • Organizational atmosphere of the hospital – Interest in the working environment – Maintaining friendly relationships with colleagues – Presence of kind and compassionate colleagues – Support of nursing managers and supervisors – Support of nursing managers in providing personal protective equipment – Holding training classes to familiarize nurses with the unknown nature of coronavirus at the beginning of pandemic, – Conducting periodic laboratory tests for nurses

Table 1 (continued)

Authors, year	Country	Method	Design	Sample size	Data collection tool	Data analysis method	Results (factors found in the study)
Ke et al., [29]	China	Mix-method	Collect quantitative and qualitative data concurrently	2014	The Connor and Davidson Resilience Scale	Binary logistic regression analysis and content analysis	• Monthly family income • Average working hours per shift • Levels of depression • Belief in their colleagues' preparedness to cope with COVID-19 • Belief in their hospitals' preparedness • Tangible benefits • Patriotism and faith • Commitment to the nursing profession • Previous working experience in taking care of patients with infectious diseases • Organizational commitment
Kim et al., [36]	South Korea	Quantitative	Cross-sectional study	377	Questions from the Theory of Planned Behavior (TPB) developed by Ajzen that measured behavioral intention	Exploratory factor analysis	• Age • Marital status • Income • Type of workplace • Nursing position • Nursing experience
Kleier et al., [46]	USA	Quantitative	Cross-sectional study	189	The Connor and Davidson Resilience Scale	Descriptive statistics analysis	• Affective commitment • Resilient

Table 2 The factors affect nurses retention

Personal	Interpersonal	Organizational	Social media	Educational	Emotional	Protectional
Nationality [37]	Better communication [40]	Support to workforce [40]	Media coverage of national health crisis [32]	Healthcare worker's training to deal with virus pandemic [35]	Reducing psychological stress [35]	Providing personal protective equipment [35]
Marital Status [36, 37]	Foster teamwork and collaboration [41]	Staffing and workload [40]	Heightened awareness of societal inequalities [32]	Managers invest in education and continual learning [41]	Workplace stress [38]	Personal protective equipment (PPE)/Staff safety [40]
Fulltime/Part-time [37]	Support from work [43]	Organizational commitment [37]	Public's value of nursing [34]	Having taken the course related to providing care to patients after starting work [38]	Increased stress levels [33]	COVID-19 testing and isolating [40]
Had dependent children [37]	Relating to others [30]	Job satisfaction [37]		Receiving education on COVID-19 [33]	Less of depression [29]	Protective equipment [33]
Education level [38]	Good nurse–patient relationship [30]	Demonstrate a clear growth path [41]		Feeling that the hospital provided adequate education [33]	Affective commitment [46]	Providing personal protective equipment [31]
Age	Recognition from family, relatives, and friends [30]	Staffing shortages [33]		The type of education [33]	Resilient [46]	Conducting periodic laboratory tests for nurses [31]
Home unit [33]	Belief in their colleagues' preparedness to cope with COVID-19 [29]	Hospital management responsiveness [42]		Holding training classes to familiarize nurses with the unknown nature of coronavirus at the beginning of pandemic [31]	Resilience [30]	Personal protective equipment [32]
Reassignment experience [42]	Maintaining friendly relationships with colleagues [31]	Workplace well-being [42]		Peace-time pandemic response training [32]	Transactional psychological capital [45]	
	Presence of kind and compassionate colleagues [31]	Work satisfaction [44]			Social panic [45]	
	Importance of teamwork [32]	Organizational commitment [29]			Psychological preparedness such as the anticipated workload and mental wellness support [32]	
Income [36]	Recognizing colleagues' contributions [32]	Organizational commitment [39]			Stress/Burnout [37]	
Work experience [39]	Increased support from senior management [32]	Hope of changing their employment status [31]			Burnout [44]	
Nursing position [36]	Communication [34]	Professional commitment [31]			Humility and respect [34]	

Table 2 (continued)

Personal	Interpersonal	Organizational	Social media	Educational	Emotional	Protectional
Nursing experience [36]	In-Person Contact Quality with Hospital Administration [34]	Work conscience [31]			Well-being [44]	
Monthly family income [29]	Bonding with co-workers [34]	Interest in the working environment [31]				
Average working hours per shift [29]	More team work [34]	Safety climate [45]				
Patriotism and faith [29]		Non-financial means, such as official certificates or special mentions by senior management [32]				
Commitment to the nursing profession [29]		The provision of measures such as alternative accommodation [32]				
Previous working experience in taking care of patients with infectious diseases [29]		Frequency of providing care to infection patients in the workplace [38]				
Renewed personal value for nursing work [34]		Belief in their hospitals' preparedness [29]				
Appreciation of life [30]		Work engagement [44]				
Personal strength [30]		Work in COVID-19 higher risk areas [41]				
New possibilities [30]		Access to Well-being center [41]				
Sense of belonging to a team [30]		Directly caring for a patient with COVID-19 [33]				
Self-transformation [30]		Culture of response [34]				
Positive occupational perception [30]		Staff treatment [34]				
Self-growth [30]		Type of workplace [36]				
Risk-taking responsibility [31]		Support of nursing managers and supervisors [31]				
Personal values [32]		Tangible benefits [29]				
Understanding and enhancement [32]		Organizational rewards [31]				
Past pandemic experiences [32]		Financial incentives [31]				

Table 2 (continued)

Personal	Interpersonal	Organizational	Social media	Educational	Emotional	Protectional
Self-growth [32]		Pay-reward [40]				
Broadening of perspectives [32]		Give reward and recognition for excellence and engagement [41]				
Opportunity for self-reflection [32]						
Affirmation of healthcare role [32]						
Experiences of loved ones [32]						
Need for cultural competence [32]						
Protecting dependents from illness [35]						
Finding gratification and fulfillment in nursing as a career [33]						
Satisfaction in the ability to care for critically ill patients [33]						
Sense of duty to their colleagues [32]						
Sense of duty to the healthcare system [32]						

From the analysis of 18 papers, eight factors that affect the nurses job retention were found (Table 2).

Personal factors

Several studies pointed to some personal factors that had an effect on the retention of nurses. These factors included two categories of personal values and demographic characteristics of nurses. The factors related to personal values and beliefs include patriotism and faith, commitment to the nursing profession [29], sense of belonging to a team, appreciation of life, personal strength, new possibilities, self-transformation, positive occupational perception, self-growth [30], risk-taking responsibility [31], sense of duty to their colleagues, sense of duty to the healthcare system, personal values, understanding and enhancement, self-growth, broadening of perspectives, opportunity for self-reflection, affirmation of healthcare role, need for cultural competence, experiences of loved ones [32], finding gratification and fulfillment in nursing as a career, satisfaction in the ability to care for critically ill patients [33], renewed personal value for nursing work [34], and protecting dependents from illness [35].

The demographic characteristics that were reported in studies include monthly family income, average working hours per shift, previous working experience in taking care of patients with infectious diseases [29], past pandemic experiences [32], age [33, 36], home unit [33], nationality, fulltime/part-time, had dependent children [37], marital status [36, 37], income, nursing position, nursing experience [36], education level [38], and work experience [39].

Interpersonal factors

Some studies pointed to factors in nurses' job retention that were related to nurses' interpersonal relationships. These interpersonal factors include relating to others, good nurse–patient relationship, recognition from family, relatives, and friends [30], maintaining friendly relationships with colleagues, presence of kind and compassionate colleagues [31], importance of teamwork, recognizing colleagues' contributions [32], communication, in-person contact quality with hospital administration, bonding with co-workers, more team work [34], better communication [40], foster teamwork and collaboration [41], and nurses belief in their colleagues' preparedness to cope with Covid-19 [29].

Organizational factors

Several studies mentioned organizational factors that affect nurses' job retention. Some of these factors were related to the leadership and management, some others were related to the workplace and work environment, some were related to work values and others were related to financial supports.

Factors that were related to the leadership and management include, support of nursing managers and supervisors, nurses hope of changing employment status [31], non-financial means, such as official certificates or special mentions by senior management, support from senior management, provision of measures such as alternative accommodation [32], culture of response, staff treatment [34], support to workforce [40], demonstrate a clear growth path [41], hospital management responsiveness [42], and support from work [43].

The factors related to the workplace include staffing shortages, directly caring for a patient with Covid-19 [33], type of workplace [36], frequency of providing care to infection patients in the workplace [38], work engagement [44], staffing and workload [40], work in Covid-19 higher risk areas, access to well-being center [41], belief in their hospitals' preparedness [29], workplace well-being [42], and safety climate [45],

The factors related to the work values include organizational commitment [29, 31, 37, 39], work conscience, interest in the working environment [31], job Satisfaction [37], and work satisfaction [44].

The factors related to financial support that affect nurses' job retention include tangible benefits [29], organizational rewards, financial incentives [31], giving incentives to workers and financial support [35], pay-reward [40], and give reward and recognition for excellence and engagement [41].

Social media factors

Some studies pointed to social media factors that were related to nurses' retention. These social media factors include media coverage of national health crisis, heightened awareness of societal inequalities [32] and publics value of nursing [34].

Educational factors

Educational factors were another factor that has been mentioned in studies to have an effect on job retention in nurses. These educational factors include holding training classes to familiarize nurses with the unknown nature of coronavirus at the beginning of pandemic [31], peacetime pandemic response training [32], receiving education on COVID-19, feeling that the hospital provided adequate education, type of education [33], healthcare worker's training to deal with virus pandemic [35], having taken the course related to providing care to patients after starting work [38] and managers invest in education and continual learning [41].

Emotional factors

Emotional factors were another factor that has been reported in studies to have an effect on job retention in nurses. These emotional factors include less of depression [29], psychological preparedness such as the anticipated workload and mental wellness support [32], stress levels, humility and respect [34], reducing psychological stress [35], workplace stress [38], burnout [37, 44], well-being [44], transactional psychological capital, social panic [45], affective commitment [46], and resilient [30, 46].

Protectional factors

In various studies, protective factors have been mentioned as one of the factors affecting nursing retention. These protectional factors include providing personal protective equipment [31–33, 35, 40], conducting periodic laboratory tests for nurses [31], and staff safety, Covid-19 testing and isolating [40].

Discussion

In this study, the factors affecting the retention of nurses during the Covid-19 crisis were investigated. The results showed that personal, interpersonal, organizational, social, educational, emotional, and protective factors are the factors influencing the nurses retention. The retention rate of nurses can be a suitable criterion for the evaluating the overall performance of the organization in the management of hospitalized patients with Covid-19. The analyses of findings of this study also provide necessary insights into the working conditions experienced by nurses during the Covid-19 pandemic. Therefore, this study can be used for policy-making in the field of nurses' working conditions.

Many personal factors affect the retention of nurses. Patriotism is a set of attitudes and beliefs towards oneself, attachment and loyalty to the nation and the country. The patriotism and commitment of nurses to work are the factors that force nurses to leave their families and do their duty, even knowing that they are putting themselves in danger. Patriotism has religious and cultural dimensions [47] so that these factors in interaction with each other can justify the professional commitment and persistence of nurses in the profession. On the other hand, professional commitment is related to culture, context, time and religion. So that the existence of religious beliefs and people who are influenced by religious and moral teachings have more spirit of sacrifice and commitment and work harder to achieve valuable social goals [31, 48–50]. The importance of professional commitment shows that employees believe in the goals and values of the organization and are willing to work for that organization. Therefore, the most important and main reason for nurses to stay and even volunteer in the covid-19 wards, despite the fear of contracting the disease, is the sense of commitment and professional conscience of the nurses [37].

The findings of present study indicated that age and work experience are important factors that affect nursing retention. Consistent with the finding of this study, several studies have shown that nurses with older age and more work experiences are more likely to intend to stay [51–57]. This hypothesis may be due to the fact that people with older age face more adversities and problems during life, and some resilience characteristics such as equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness in these people cause them better self-protection, higher mental safety, more commitment, more desire to care for patients and finally less desire to leave their job [31, 36, 58–61]. Also, it is seen that mid-age nurses compared to their younger counterparts, demonstrated better mental health, reporting lower role overload and role conflict, reduced stress levels, emotional exhaustion, depersonalization, and depression. Additionally, they displayed higher organizational commitment compared to their younger counterparts. As nurses reach mid-age, they are more likely to adapt to the demands of their role and develop more effective coping mechanisms for dealing with stressors. Therefore, the older nurses exhibit better coping mechanisms for handling job requirements and displayed a higher level of commitment towards the hospital where they work [62]. Also, younger nurses have a lower perception of organizational support and career opportunities compared to their older counterparts [63]. These younger nurses often perceive inadequacy towards their job, leading them to leaving their current position [62]. These explanations can also be related to work experience because age and years of experience go in parallel and older nurses generally having more experience in the nursing field [52]. Considering the effect of work experience on the retention of nurses, it seems necessary to share the work experiences of nurses with more experience with younger and less experienced colleagues through the formation of work teams in order to increase their participation and professional attachment.

The findings of present study indicated that gender affect nursing retention. Consistent with the finding of this study, several studies indicated that female nurse have more intention to stay [55, 64]. Male nurses' attrition from the nursing profession could be due to job satisfaction, which is significantly lower for male nurses than for female nurses [65]. According to role strain theory, male nurses were expected to be dissatisfied because they are a minority in a profession that is predominantly occupied by women. In addition, the main barrier for men to continue in the nursing profession was the

higher value men place on earnings by men compared to women, which is consistent with the predictions of multiple role theory. Men tend to place greater importance on the role of being the primary earner in the family and have higher salary expectations, irrespective of the nature of their occupation [66].

The findings of this study indicated that those who were married or have children have more intention to stay. In this regard, some studies showed that married nurses and those married with children were more likely to indicate intention to stay in their current job as compared to their unmarried nurses [52, 67–69]. It is possible that this occurrence related to that unmarried nurses have the freedom to switch jobs if they are dissatisfied, without needing permission from their family members [70]. The unmarried nurses were of a younger age in comparison to married ones, which might imply that they lack the necessary clinical and life skills to adapt to an unexpected working environment [71]. Furthermore, unmarried nurses may face greater work demands due to the assumption that they have more availability for overtime compared to married nurses who have familial responsibilities [70]. This could potentially lead to an increased workload for unmarried nurses, which may influence their decision to leave the nursing profession [67].

It also shows that retention of stay of nurses with children is higher than without children. It could prove difficult to move with the whole family when moving to another institution. In addition, nurses with children or dependents have greater financial obligations than nurses without children [64]. Individuals with children may be more likely to stay at their jobs because of their greater financial obligations to their children [72]. However, some studies showed contrary results, indicating that single nurses without children were more likely to report an intention to stay in their current job compared to married nurse [64, 73, 74].

The findings of present study indicated that educational level in one of the factors that affect nursing retention. Consistent with the finding of this study, several studies indicated that those who have more educational level have less intention to stay [64, 68, 75, 76]. One possible explanation for this outcome is that nurses with a higher level of education often have greater expectations, including the desire to work in a supportive work environment that offers equal professional opportunities. If such an environment is not available, they may choose to leave their current job in search of better prospects [68].

The result of this study indicated that home unit is one of the factors affect nursing retention. Consistent with this result, the results of Albougami et al. study [67] indicated that nurses from the medical and surgical units had a higher probability of resigning than those from other clinical units [67]. This may be related to the workload and stress level of different units. The study of Alharbi et al., study indicated that nurses working in the medical and surgical units exhibited a higher vulnerability to stress compared to their counterparts in other clinical units [77]. Also, the result of Tavakoli et al. study indicated that nurses employed in internal and external medical units experienced more depression and stress, thereby, they are more likely have intention to leave their job [78].

Team work, including interpersonal relationships, is effective and has an impact on nurses' sense of security at work and their retention in the profession [79]. Establishing teamwork is one of the leadership strategies implemented with the aim of increasing job performance and maintaining safety during the pandemic. The needs of nurses, their interpersonal relationships, their motivations and their satisfaction should be considered to create good teamwork. If leaders pay more attention to these matters, they can strengthen cooperation and communication between nurses, which leads to stability and psychological safety in the work environment, reducing stress in nurses and retention them in the profession [80].

The support of the managers of the organization to the nurses also affects the stability and safety of the work environment and finally the desire to retain of the nurses. The more safe and calm the working environment is, the more it affects the dimensions of well-being and productivity and increases the safety and satisfaction of nurses' lives. The support of organizational managers is also one of the important factors to deal with stress and reduce absenteeism among nurses. The organizational support for nurses has various dimensions, such as the supportive behavior of managers and social leadership, employees' access to support resources, levels of organizational participation, and providing strategies to reduce employee stress [81–84]. How much the organization support increases, the nurses leaving jobs will be less and it leads to an increase in their job satisfaction because the lack of job satisfaction is one of the important motivating factors for the intention to leave the job among nurses [85]. It seems that if the managers of an organization allocate more resources that help nurses, they will be faced with reducing job burnout, improving job satisfaction and retaining nurses [86].

The findings of present study indicated that financial support is one of the organizational factors that affect nursing retention. Failure to retain nurses during the Covid-19 crisis can be due to the lack of financial incentives to keep nurses in the organization. The structure of incentive and reimbursement systems for nurses can play an important role in their retention. For example, in the

US health care system, where there is no financial support or reward for nurses, nurses are laid off or fired at a higher rate than doctors [34, 87]. Based on the results of a study, establishing the job security of nurses is more important than financial incentives and it has affected the retention rate of nurses [31, 88]. Canceling the contract or suspending the degree because of leaving the job is a fear that nurses were facing [31]. In some countries, participation in the control of public diseases is mandatory, and otherwise their certificate will be invalidated [89]. In some studies, it has been stated that labor compensation can be effective in retaining nurses [29, 90]. Payment of financial compensation can have a positive effect on job satisfaction and commitment of nurses [31, 91]. Although financial incentives are one of the factors influencing the retention of nurses, but considering the impact of the Covid-19 disease on people's lives, financial incentives had little value. Especially for nurses who are committed to their jobs, financial incentives cannot compensate for the unprecedented pressure of this disease [85]. Therefore, the supportive measures of the organization, such as supporting work transfers for low-volume situations, removing the paid leave ceiling, remote work, allocating appropriate physical capacity, have been among the factors affecting the longevity of nurses [43, 83].

On the other hand, in order to retain the nurses, some countries have applied prohibiting the departure of nurses laws, which is one of the severe pressures on health care professionals. In fact, nurses in the origin country gained clinical and professional experiences so that they could migrate through their jobs [92]. Also, the increase in the need for labor, especially in developed and rich countries, has played a significant role in the migration of nurses. So that some countries even canceled the requirement of having at least 12 months of clinical experience for foreign nurses but the widespread opposition of nurses to the laws prohibiting them from leaving and refusing to work shows that trying to keep nurses by preventing their migration cannot lead to a reduction in leaving the job. Nurses who do not have organizational support and proper organizational relations will leave their jobs more than others [93].

Protective measures are needed to increase the retention of nurses who care for patients with Covid-19. Clear and fair personal protective equipment (PPE) standards provide a platform for creating a safe work environment. Clarifying PPE policies and procedures, training in the proper use of PPE, and ensuring equitable access to equipment that can reduce risk and disability can reduce fear, confusion, frustration, as well as the inevitable stress that comes with providing patient care during a global pandemic among nurses [94]. Failure to provide adequate personal protective equipment to employees leads employees to feel that they are physically and psychologically at risk, which can have a negative effect on the trust and relationships between employees and managers, and in the long term, makes the motivation, morale, and sustainability of nurses vulnerable [40, 95].

The nature of health care professions, especially the nursing profession, involves working in highly stressful situations. According to the results of a large survey of health care professionals in eight European countries, anxiety and depression were higher among nurses and doctors compared to non-medical professions [96]. The worry of transmitting the disease to the family, the fear of the unknown aspects of the disease, the worry of making a wrong decision, the insistence of the family to leave the job, working in difficult conditions, the lack of personal protective equipment and the feeling of rejection are examples of stress experienced by nurses during the pandemic [97]. Also, distress caused by work pressure leading to anxiety and depression is expected for health care professionals, especially nurses [98]. However, long-term exposure to stress can cause nurses and other health care professionals to suffer consequences such as reduced physical and mental health, reduced job satisfaction, reduced efficiency and quality of care, increased burnout, and less desire to stay in the profession [99].

Part of the stress of nurses in the era of Covid-19 is related to the lack of preparation in caring for patients due to the lack of knowledge and necessary training in the field of personal protective equipment (PPE), hand hygiene, ward disinfection, medical waste management, patients care devices sterilization and occupational exposure management. Increasing the knowledge of nurses about how to effectively manage patients through the continuous education program was recognized as one of the important factors in nurses retention in the pandemic crisis [81, 100]. In the meantime, the role of mass media as channels for acquiring and sharing information about COVID-19 was highlighted. In addition, the mass media served as channels for promoting the nursing profession, sharing the heroic actions of frontline workers in the pandemic by portraying critical working conditions. Also, the nurses used mass media to educate people to do the right "Covid-19" behaviors in the community [101].

The findings of this study can be considered by managers when preparing policies and planning to reduce the negative effect of COVID-19 on the retention of nurses. In general, all of these points refer to the hierarchy of needs that all people have basic needs that must be met in order to reach their full potential. In this theory, meeting essential needs before higher order needs leads to creating belonging and motivation in people. Therefore, creating a safe working environment is one of the essential needs of nurses [40, 102].

Conclusion

The Covid-19 pandemic has exacerbated the nursing workforce shortage and reduced nursing retention. The nurse shortage leads to a stressful work environment, reducing the quality of patient care and increasing adverse outcomes including mortality and costs for the patient, family and health care system. Therefore, the first step to increase the retention of nurses is to identify the factors related to it. The findings of this study showed that retention of nurses is a complex and multi-factorial issue that factors from micro to macro-level affect it. Managers and health policy-makers based on the results obtained from this study can plan appropriate measures to increase the retention of nurses and take an effective step in reducing the nursing staff shortage and improving the quality of care in healthcare systems.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12960-024-00960-7.

Additional file 1.

Author contributions

The S.S, M.AF, Z.D and F.HB are contributors responsible for study conception or design, overseeing study implementation, providing methodological support to coordinators and revising the manuscript critically. The S.N, N.S, S.S, and M.AF participated in data collection, data analysis, interpretation of data and drafting the manuscript. All authors read and approved this final manuscript.

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Availability of data and materials

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participation

Not applicable.

Consent for publication

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Competing interests

The authors declare that they have no competing interests.

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