



ORIGINAL ARTICLE

Correlation between experiences of clinical nurses in the COVID-19 pandemic with learning agility and readiness level for future pandemics

Nagihan Sim Aygül PhD, APRN, PhD Student¹  |
Emine Senyuva PhD, BSN, Associate Professor² 

¹Institute of Graduate Studies, Istanbul University- Cerrahpasa, Istanbul, Turkey

²Nursing Education Department, Florence Nightingale Faculty of Nursing, Istanbul University- Cerrahpasa, Istanbul, Turkey

Correspondence

Emine Senyuva, Nursing Education Department, Florence Nightingale Faculty of Nursing, Istanbul University-Cerrahpasa, Izzetpasa, Abide-i Hürriyet Cd, 34381 Sisli/İstanbul, Turkey.
Email: esenyuva@iuc.edu.tr

Abstract

Aims and objectives: The study aimed to determine the impact of clinical nurses' experiences during the COVID-19 pandemic on their learning agility and readiness for other future pandemics.

Background: It is important that nurses have high learning agility so they can successfully adapt their experience to COVID-19 and other pandemics that may occur in the future. This will positively affect the readiness of nurses to fight against possible future pandemics.

Design: The study is cross-sectional, descriptive, correlational research.

Methods: The study was carried out by data collection from 383 nurses. Data were collected via online survey using social media. The study methods were followed by the STORBE guidelines.

Results: The average score of nurses on the Marmara Learning Agility Scale was $4.07 \pm .030$. The level of readiness of nurses for new pandemics was 96.1%. Positive but weak correlations were found between the effect of nurses' experiences in the COVID-19 pandemic with their readiness for potential future pandemics and their learning agility.

Conclusions: It was observed that nurses have high learning agility, gained experience during the COVID-19 pandemic and these experiences affected their readiness for other potential future pandemics.

Relevance to clinical practice: Health institutions to develop learning agility to support career management, manager selection and performance improvement for clinical nurses.

KEYWORDS

clinical nursing, COVID-19, learning agility, nurses, pandemic, readiness

1 | INTRODUCTION

COVID-19 is a deadly viral disease with high transmission potential, causing severe acute respiratory syndrome and pneumonia (Cai et al., 2020; Huang, 2020). The global spread of the virus was declared a 'pandemic' by the World Health Organisation (WHO) due to affecting millions of people and involving serious mortality (WHO Covid

Dashboard, 2021). This rapidly mutating virus has developed 13 variants to date. There is always the possibility of new variants spreading which will also negatively affect the death rates, transmission rate and recovery time from the disease (Huang et al., 2020; Özkocak, 2020). The first case of COVID-19 was reported in Turkey in March 2020, and since then, cases and casualties are still being observed due to COVID-19 (COVID-19 weekly situation, 2020; Sohrabi et al., 2020).

Since the beginning of modern nursing, nurses have fulfilled the roles of making effective assessments, determining priorities, providing cooperation and performing nursing care in the most efficient way in extraordinary situations (Glassman & Withall, 2018). The COVID-19 pandemic once again demonstrated the importance of the strength and infrastructure of health systems within countries and the key position of nurses within these systems (Ashley et al., 2021; Turale et al., 2020). Nurses struggling with COVID-19 successfully performed their duties by taking great risks and caring for patients 7 days 24 h. Clinical nurses were accepted as the real heroes of the pandemic all around the world and were praised (Celik et al., 2020; COVID-19 weekly situation, 2020; Turale et al., 2020). As in other countries, nurses were at the forefront of the fight against COVID-19 and were the most fundamental health professionals supporting the health system in Turkey (Gabel Speroni, 2020; Kiraner & Terzi, 2020; Sohrabi et al., 2020; Turale et al., 2020). However, in this process involving many unknowns, nurses needed new information about how to fight against the COVID-19 pandemic and care for patients diagnosed with COVID-19. They obtained this knowledge from studies conducted at the international and national level as well as research by the WHO. Within the scope of national studies, the Ministry of Health established the COVID-19 Scientific Committee in Turkey in order to combat the COVID-19 pandemic, and the committee published the '2019-nCoV Disease Health Workers Guidelines'. The guidelines include general information about the virus and the disease, care and isolation rules for patients and healthcare professionals, the necessary conditions for the identification of cases and information about the methods to be followed after diagnosis. Additionally, up-to-date data about COVID-19, together with preventive measures, diagnosis, treatment, patient care, filiation (contact tracing), vaccination, etc., are available on the Ministry of Health's COVID-19 website (COVID-19 weekly situation, 2020). The Turkish Nurses Association published the 'COVID-19 Nurse Training Guide and Care Algorithms' guidelines in April 2020 (Celik et al., 2020). The 'COVID-19 Pandemic Guideline' specific to intensive care nurses was published by the Turkish Intensive Care Nurses Association Education Commission in April 2020 (Kiraner et al., 2020). 2020 has been a challenging year for nurses and full of new learning experiences. Potentially more important than the prepared training, guidance and research on learning agility was nurses' experiences of combating the pandemic by living and working through it (Celik et al., 2020; Cevirme, 2020).

The research aimed to determine the impact of nurses' experiences during the COVID-19 pandemic on their learning agility and readiness for other future pandemics. Research question: What are the learning agility levels of nurses? Is there a relationship between nurses' learning agility levels and their experiences gained during the COVID-19 pandemic?

1.1 | Background

Nurses gained professional experience and acquired learning through experience during their fight against COVID-19 involving

What does this paper contribute to the wider global community?

This study investigated the impact of the Covid-19 pandemic on nurses' learning agility and the level of readiness for future pandemics.

an extraordinary case in the health system while trying to learn patient care for those diagnosed with COVID-19 from guidelines and studies (Vatan et al., 2020). This situation, which is called experiential learning, is the occurrence of learning by exposing individuals to challenging experiences and then appraising the consequences of these experiences. In other words, experiential learning is the process of basing knowledge on experiences, shaping our world as a result of the experiences of our predecessors, and the creation and transformation of knowledge by understanding experience. It is the process of adapting the individual's experience to different situations by constantly acquiring new information (Kolb, 1984 act. Emerald, 2020). This process includes appraising old experiences to plan and prepare for use in future work (Mutlu & Mutlu, 2017). Individuals who learn from their experiences have the characteristics of transferring the 'right lessons' from past experiences to future situations, the skills to use them and high learning agility, etc. (Hallenbeck, 2016; Lombardo & Eichinger, 2000).

Learning agility has its fundamentals in the adult learning approach and it is the ability of a person to evaluate quickly, be willing to act and learn from experience and then successfully adapt this learning to new or similar situations (Canaslan & Güclü, 2020; Derue et al., 2012; Lombardo & Eichinger, 2000). Being open to new experiences creates opportunities for further learning and development. Individuals who close themselves to new experiences due to their difficult experiences or negative criticisms have low-level learning agility. On the contrary, individuals with high learning agility are people who are open to self-improvement and criticism and adapt easily to new situations (Lim et al., 2017; Pathak, 2015). It is expected that nurses with high learning agility will learn new information faster, communicate better with the patient, their family and other members of the medical team, manage the crisis situation more easily by leveraging their experience, and be less likely to make ethical and medical mistakes (Bedford, 2017; Hallenbeck, 2016). When the literature is reviewed, it is seen that the subject of learning agility is mentioned in productivity and leadership studies in business life, but the resources that research learning agility levels in nursing and offer suggestions for improvement are limited (Gravett & Caldwell, 2016; Mitchinson, 2014; Pathak, 2015). However, it is important to investigate the learning agility issue in order to support the well-trained nurse workforce. Therefore, there is a need for research on nurses' learning agility.

Nurses dealt with challenges despite experiencing serious difficulties in the extraordinary situation caused by the COVID-19 pandemic and gained many professional acquirements from their

experience in this process. These challenging experiences affected their learning agility and readiness for other pandemics in the future (Derue et al., 2012). In this context, it is important that nurses have the skills and high learning agility to successfully adapt what they have learned from their experiences in the COVID-19 pandemic to other pandemics that may occur in the future. This will positively affect nurses' readiness to fight against possible future pandemics and their success (COVID-19 weekly situation, 2020; Howard, 2017; Sohrabi et al., 2020; Turale et al., 2020).

2 | METHODS

2.1 | Study design

The research is cross-sectional, descriptive and correlational research. The study methods were followed by the STORBE guidelines (Appendix S1).

2.2 | Settings

The population of the study consisted of nurses working in health institutions in Turkey during the COVID-19 pandemic. It was not possible to calculate the sample size because the total nursing population was unknown. Therefore, a pragmatic approach was taken to achieve the largest response rate within the planned period of the study. The research was carried out with 383 nurses who were caring for patients diagnosed with COVID-19. Nurses participating in the study were selected by the sampling method.

2.3 | Instruments

2.3.1 | Survey on nurses' experiences in the COVID-19 pandemic process

The survey tool designed by the researchers has been developed in line with the literature information and the personal and professional experiences of the researchers since the COVID-19 pandemic began (Celik et al., 2020; COVID-19 weekly situation, 2020; Halcomb et al., 2020; Kiraner et al., 2020). While preparing the survey questions, the researchers benefited from the observations and experiences of both them and their fellow nurses. The draft of the questionnaire was reviewed by expert academics and health administrators before the trial and was corrected by receiving feedback. The questionnaire was prepared only in Turkish. After the pilot study conducted with five nurses for the clarity of the survey questions, the questions were re-evaluated in terms of clarity and intelligibility and the survey was finalised. In the questionnaire, there are seven questions to determine the socio-demographic characteristics of nurses, such as age, gender, marital status, educational status and 12 questions to determine the

experience of nurses during the COVID-19 pandemic process and their readiness for new outbreaks.

2.3.2 | Marmara Learning Agility Scale

It was developed by Yazıcı (2020) to determine the learning agility of individuals. The scale consists of 30 items and 5 sub-dimensions (Agility in Human Relations [4 items], Agility in Creating Results [6 items], Mental Agility [8 items], Agility in Change [6 items] and Self-awareness [6 items]). The score obtained from each sub-dimension of the scale shows how much the participant has the feature evaluated by the relevant sub-dimension. Response options on the five-point Likert scale are (1) never, (2) rarely, (3) sometimes, (4) often and (5) always. The total score ranges from 1 to 5. The total score of the scale shows the learning agility level of the participant.

The first Cronbach Alpha reliability value for the scale was .938 (Yazıcı, 2020). In the study, the total Cronbach Alpha reliability value of the scale was found to be 0.97.

2.4 | Ethical consideration

Ethics committee approval for the research was received from the University Ethics Committee (02.02.2021 number: 2021/17). Consent was obtained from participants prior to filling out the questionnaire form. Since the developers of the Marmara Learning Agility Scale gave free use permission to other researchers, re-use permission was not obtained.

2.5 | Data collection procedure

Data were collected between 25 February and 1 August 2021 via online survey using social media. The nurse's care for a patient with a diagnosis of COVID-19 was taken as the criterion for inclusion in the study. Student nurses and other disciplines were not included. The questionnaire was prepared only in Turkish. The form was shared with nurses through social media accounts. After the targeted sample number was reached, the form was closed for access. Each data form took 8 to 10 min to complete.

2.6 | Data analysis

The data were analysed in SPSS Statistics 26. Percentage, mean, standard deviation, Cronbach Alpha, Pearson correlation, t-tests and one-way ANOVA tests were used for the analysis of the data. The level of significance was considered as $p < .05$. Qualitative data obtained from the open-ended question were analysed using the content analysis technique. Statements regarding nurses' professional acquisitions during their COVID-19 experience were coded and grouped in six different representative themes (Table 3). The

frequency and percentage calculations were completed after data were uploaded into SPSS (Baltaci, 2019).

2.7 | Limitations of the study

The data in the study are limited to nurses who actively use social media applications due to the nature of the data collection method. Additionally, the research data are limited to the sample in which the research was carried out. It cannot be generalised to all nurses.

3 | RESULTS

3.1 | Characteristics of the participants

Findings regarding the relationship between the introductory and professional characteristics of nurses, their experiences during the COVID-19 pandemic, their learning agility, their learning agility, the effects on their readiness for other epidemics in the future and their professional acquisitions are presented.

The mean age of the nurses was 29.80 ± 6.80 years. Of nurses, 70% were women, 68.7% were single and 68.1% were undergraduates. In terms of employment, 62.4% of the nurses were working as nurses in training and research hospitals for an average of $7.54 \pm .36$ years. For unit of employment, 34.2% of nurses worked as intensive care nurses and 28.2% as bedside/ward nurses (Table 1).

3.2 | Nurses' experiences during COVID-19 pandemic

Of nurses, 35% were infected with COVID-19. While more than 31.3% of them had relatives infected with COVID-19, 38.6% did not have relatives infected with the disease. The employment units of 68.1% of nurses changed during the COVID-19 pandemic. Among those whose units changed, 41.8% of the nurses were assigned to COVID-19 inpatient units, 30.0% to COVID-19 intensive care units and 12.6% to the contact tracing teams. Among nurses, 7.6% of them volunteered for assignment to COVID-19 inpatient units/intensive care units. Additionally, 64% of nurses stated that their working hours increased during the COVID-19 pandemic. In terms of learning, 82.2% of nurses stated that they have acquired their learning experiences during the COVID-19 pandemic from national resources, 82% from nursing-related resources, 63.2% from the Internet and 51.2% from training at the hospital (Table 1).

Concerning the effect of the COVID-19 pandemic on their readiness level for potential future pandemics, 96% of nurses stated that it was helpful to develop their awareness of pandemics and methods for fighting against them, 96.1% stated that it helped to broaden their point of view for problem solving, decision-making and bringing practical solutions, 88.1% stated that it helped them to learn how to

TABLE 1 Nurses experiences in the COVID-19 pandemic (N = 383)

	n	%
Experience related to the COVID-19 pandemic		
Got COVID-19		
Yes	134	35
No	249	65
Relatives suffering from COVID-19		
None	148	38.6
Mother	18	4.7
Father	11	2.9
Child	14	3.7
Spouse	3	.8
Other	69	18.0
More than one relative	120	31.3
Assignment to different units during the COVID-19 pandemic		
Yes	261	68.1
No	122	31.9
Unit assigned during the COVID-19 pandemic (n: 261)		
COVID-19 inpatient care unit	109	41.8
COVID-19 NICU unit	78	30.0
Contact tracing team	33	12.6
Volunteer in COVID-19 inpatient care/intensive care unit	20	7.6
Other (vaccination, emergency room)	21	8.0
Increase in working hours		
Yes	245	64.0
No	138	36.0
Learning experiences from the COVID-19 pandemic ^a		
Obtained information about COVID-19 from national scientific sources	315	82.2
Learned about COVID-19 from nursing-related resources	315	82.2
Learned about COVID-19 online	242	63.2
Learned about COVID-19 from the training at the hospital	196	51.2
Effect of experience during the COVID-19 pandemic on readiness for potential future pandemics ^a		
Helped to develop awareness about pandemics and methods for fighting against them	368	96.1
Allowed them to gain skills and experience in responding to epidemics	368	96.1
Expanded their perspectives on problem solving, decision-making and producing practical solutions	340	88.8
Taught them how to deal with potential future pandemics	321	83.8

TABLE 1 (Continued)

	n	%
Increased their knowledge of pandemics	315	82.2
It allowed them to receive training about pandemics	242	63.2
Professional gains from experiences in the COVID-19 pandemic (N: 364) ^b		
Gained experience in fighting against pandemics	131	36
Gained work experience in crisis situations	55	15.1
Understood the importance and risks of nursing	35	9.6
Developed problem solving, decision-making skills and producing practical solutions	64	17.6
No contribution	25	6.9
Other (experienced intense stress, fatigue, attrition, underpayment, etc.)	54	14.8

^aMore than one option is marked.

^bQualitative data.

handle potential future pandemics, and 83.8% stated that it helped them to receive trainings about the pandemic.

Nurses emphasised the impact of the COVID-19 pandemic on their readiness for potential future pandemics with 96.1%, stating it increased their awareness about epidemics and response to epidemics 96%, stated it helped them gain skills and experience in responding to epidemics 88.1%, stated it expanded their perspectives on problem solving, decision-making and producing practical solutions 83.8%, stated it taught them how to deal with potential future pandemics 83.8%, stated it increased their knowledge about epidemics and 63.2% stated it provided them with training about epidemic diseases (Table 1).

The views of nurses about how their pandemic experience helped their career was described under 6 themes; gaining experience in fighting against pandemics, gaining work experience in crisis situations, understanding the importance and risks of nursing, developing their decision-making skills and producing practical solutions, other (experiencing intense stress, fatigue, attrition, underpayment, etc.), and no contribution (Table 1).

3.3 | Nurses' learning agility

The mean score of nurses on the Marmara Learning Agility Scale (MOCO) was 4.07 ± 0.030 (min. 1.6–max.5). Among all scales, the phrase help people in tasks they are struggling with had the highest score (4.40 ± 0.70), and the phrase 'I'm comfortable with change' had the lowest score (3.77 ± 0.96). Sub-dimension mean scores for nurses were as follows; Agility in Human Relations was 4.25 ± 0.77 , Agility in Result Creation was 3.94 ± 0.87 , Mental Agility was

4.07 ± 0.81 , Agility in Change was 3.98 ± 0.80 , and Self-awareness was 4.16 ± 0.79 (Table 2).

3.4 | Comparison of demographics and professional characteristics with nurses' learning agility

Significant differences were observed between gender of the nurses and their learning agility. The learning agility of male nurses was higher than that of female nurses ($t = -0.593, p = 0.047$).

Significant differences were found between the age of the nurses and their learning agility. Advanced analysis showed that the difference was due to nurses aged 50 and over, and that the learning agility of nurses aged 50 and over was lower than for other age groups ($F = 4.02; p = .01$).

Correlations between nurse marital status ($F = 3.07, p = .08$), level of education ($F = 1.17, p = .19$), the institution of employment ($F = 2.10, p = .08$), their work experience ($F = 1.20, p = .15$) and their specialisation area ($F = 0.90, p = .70$) with learning agility ($p > .05$) were insignificant.

3.5 | Relationship between nurse experiences in the COVID-19 pandemic and their learning agility

When the relationship between nurses' learning experiences and learning agility during the COVID-19 pandemic is examined, a positive but weak relationship was observed between nurses who stated that they obtained information about COVID-19 from nursing-related resources and learning agility ($p < .000, r = .180$) (Table 3). A positive but weak correlation was found between the effects of nurses' experiences during the COVID-19 pandemic on their readiness for future pandemics and learning agility ($p < .001, r = .164$) (Table 3).

4 | DISCUSSION

COVID-19, emerging by the end of 2019, spread rapidly affecting all countries of the world. Since this date, numerous health institutions and organisations emphasised the importance of paying attention

TABLE 2 Nurses' MOCO sub-dimension score averages and standard deviation values (N = 383)

Sub-dimension	Min	Max	M ± SD
Agility in human relations (1–4)	1	5	$4.25 \pm 0.77^*$
Agility in creating results (6–8)	1	5	3.94 ± 0.87
Mental agility (10–16)	1	5	4.07 ± 0.81
Agility in change (16–20)	1	5	$3.98 \pm 0.80^{**}$
Self-awareness (20–30)	2	5	4.16 ± 0.79
Scale total score	1.6	5	4.07 ± 0.03

*Highest score 4.25; **Lowest score 3.98.

to masking, distancing and hygiene for protection from COVID-19 (COVID-19 weekly situation, 2020; Kiraner et al., 2020; Senol Celik et al., 2020; Writing & Paper, 2021). However, despite all these measures, the number of cases continued to increase. This situation also led to increasing cases among nurses who are the group with highest contact with patients. The International Council of Nurses (2021) stated that approximately 1.6 million healthcare workers worldwide were infected with COVID-19, and 2262 nurses died due to COVID-19 (International Council of Nurses, 2021). Celik et al. (2020) determined that the rate of being infected with COVID-19 increased due to the fact that nurses had to work in COVID-19 wards and intensive care units without having knowledge, skills and equipment, and without necessary and sufficient training. In a study conducted among nurses in Australia, it was reported that only 32.7% of nurses had knowledge about pandemic diseases before the pandemic (Halcomb et al., 2020). These studies show that nurses were caught unprepared for the COVID-19 pandemic due to lack of education and knowledge and learned information about pandemics during the pandemic. In this study, it was observed that one or more of the nurses' relatives had COVID-19, while 35% of nurses had COVID-19. This result is an expected result in line with the explanations above. The presence of one or more relatives with COVID-19 may be attributed to a lack of attention to protective measures in public. Again, this is due to the lack of knowledge of the society about the prevention of pandemic diseases and the ways of its transmission (Ho et al., 2020).

According to the research, most of the units of employment of nurses changed and their working hours increased during the COVID-19 pandemic. Karakas (2020) also reported in a case study that working hours increased with the increase in COVID-19 cases (Karasu & Öztürk Çopur, 2020). Nurses were assigned to COVID-19 inpatient units, intensive care units and the contact (filiation) tracing teams (Table 2). This result indicated that new units for patients with COVID-19 were opened in health institutions due to the increase in the number of COVID-19 patients. Due to immense number of patients, working hours increased due to the insufficient numbers of nurses. The process of fighting COVID-19 enabled nurses to gain many learning experiences about epidemics. While nurses gained some of these learning experiences by experimentation, some of them obtained information from international and national scientific studies, in-service training in their institutions and from the Internet (Cevirme, 2020). In addition, nurses followed the guidelines and protocols published during this period and learned patient care and nursing approaches for patients diagnosed with COVID-19 (Celik et al., 2020; COVID-19 weekly situation, 2020; Kiraner et al., 2020). In the study, it was observed that nurses obtained their learning experiences during the COVID-19 pandemic from national sources, nursing-related sources, the Internet and training in their institutions. This result, which is similar to the literature, indicates that nurses are aware of the information resources they can use to gain learning experiences and use these resources effectively. Ho et al. (2020) reported that there is a significant relationship between self-leadership and achievement motivation and learning agility (Ho

et al., 2020). Nurses with high learning agility scores have been successful in providing appropriate care to patients with their efforts to access up-to-date information and resources for COVID-19 patient care practices. In the findings given in Table 3, the significant relationship between accessing information resources and learning agility proves this.

Under extraordinary crisis situations such as pandemics and disasters, nurses acquire new personal and professional knowledge and skills, and take on new responsibilities (Peiró et al., 2020). During the COVID-19 pandemic, nurses were able to gain further knowledge, develop attitudes and skills about using scarce resources effectively, producing practical solutions, managing crises, making quick decisions, using initiatives, building up team spirit and coordinating work, etc. This situation enabled them to cope with the problems they experienced during this process and prepared them for other possible extraordinary situations to come in the future. In research conducted by Karakis (2019) before the COVID-19 pandemic, the readiness level of nurses for disasters was determined to be 52% (Karakis, 2019). In a study conducted by Berlin et al. (2021), when nurses do not feel adequately prepared and trained to intervene within infectious diseases, this situation increases their thoughts of leaving the job and leaving the profession due to the problems they experience. In the study, nurses stated that the COVID-19 pandemic increased their awareness about pandemics, provided them with skills and experience, and thus affected their readiness for other pandemics in the future by expanding their perspectives about problem solving, decision-making and producing practical solutions. This result shows that nurses' readiness for new pandemics increased and their commitment to work was positively affected because of their COVID-19 experience.

Learning agility is important so that individuals can adjust to changes quickly and easily and adapt their experiences to new situations (Lombardo & Eichinger, 2000). Nurses acquire new professional knowledge and skills through in-service training, vocational courses and certificate programs and by personal experiences. Thanks to these experiences, they easily adapt to changes and developments in the health field (Bedford, 2017; De Meuse et al., 2010; Lee & Song, 2021). In the study, it was determined that nurses had high learning agility with a score of 4.07 ± 0.03 . This result shows nurses exhibited high performance in adapting to situations, crisis management, decision-making, problem solving and critical thinking, which they encountered for the first time in this period of rapid change, thanks to their newly acquired knowledge and skills. In a study conducted among Korean nurse students using another scale, learning agility was found to be 3.53 points (out of 4) (Ho et al., 2020). If a comparison is made based only on the results of this research, it can be said that the learning agility of nurses increases with their work experiences. In the study, it was determined that the learning agility of male nurses was higher than that of female nurses. In the study conducted by Kaya (2019), the learning agility average score did not change according to gender. This result can be attributed to the fact that social, cultural, managerial support for male nurses is higher than for female nurses in Turkey.

TABLE 3 Relationship between nurse experiences during the COVID-19 pandemic and learning agility score (N = 383)

	<i>p</i>	<i>r</i>
Learning experiences from the COVID-19 pandemic		
Learned about COVID-19 from nursing-related resources	.000 ^a	.180 ^b
Impact of experiences during the COVID-19 pandemic on readiness for other future pandemics		
Taught them how to deal with future pandemics	.001 ^a	.164 ^b

^aConfidence interval $p < .05$.

^bCorrelation is significant at the .02 level.

In the study, the statement 'help people in tasks they are struggling with' had the highest mean score among the items on the MOCO scale. This result can be considered as a pleasant and expected finding, considering that nurses' desire to help people is included in the basic philosophy of nursing (Petges & Sabio, 2020; Velioglu, 1999). Agility in human relations is the ability to know oneself and interact effectively with people. High agility in human relations, which is an important dimension of learning agility in nursing where teamwork and cooperation are very important, has high importance in establishing relationships based on trust, making difficult decisions and announcing them, delegating difficult tasks, influencing change, managing negative behaviours, cooperating and managing conflicts (Gravett & Caldwell, 2016). In the study, the Agility in Human Relations sub-dimension of the MOCO had the highest average score. This result can be interpreted as nurses knowing themselves well, learning from their experiences, being talented in interpersonal relations, adapting to teamwork and having the skills to deal with ethical dilemmas.

In the study, the expression 'I'm comfortable with change' had the lowest mean score among the MOCO scale items. This result indicates that nurses' experience anxiety, worry, etc., as change is always a difficult and painful process which is not welcome. Change agility is relevant to individuals' curiosity, passion for new ideas, efforts to experience and develop skills and willingness to face new situations and challenges (Focus, 2021; Yockey & Kralowec, 2015). In the study conducted by Cakiroglu and Seren (2019), nurses' openness to change was found to be moderate/low (2.89 ± 0.60). In a study conducted by Cakiroglu and Seren (2019), the changes made by hospital administrators without including nurses in management negatively affected nurses in terms of openness to change. In the study, the 'Agility in Change' sub-dimension of MOCO had the lowest average score. It is thought that the absence of nurses in many health and nursing-related administrative boards/commissions, including the COVID-19 process, and the fact that they are generally absent when decisions are made negatively affect the change agility dimension.

Positive but weak correlations were observed between the effects of nurses' experiences in the COVID-19 pandemic on their readiness for other future pandemics and their learning agility. Taking the principle 'challenging experiences directly affect learning agility' as reference, the difficult experiences nurses encountered

during COVID-19 will have positive effect on their learning agility and their readiness for future pandemics.

5 | CONCLUSION

In the study, it was found that clinical nurses had high learning agility, gained a lot of experience during the COVID-19 pandemic, their experience during the COVID-19 pandemic positively affected their readiness for other potential future pandemics and there was a relationship between these experiences and learning agility. It is recommended to provide institutional support for the development of learning agility of nurses, to plan clinical training to increase the learning agility of nurses, to carry out new studies with different sample groups in this field since learning agility is a new topic in the field of nursing.

6 | RELEVANCE TO CLINICAL PRACTICE

It is recommended that healthcare managers and health policymakers, who believe that the performance management of nurses is important, should consider this research. To positively influence the learning agility of nurses and the level of readiness for future pandemics, attention should be paid to the following points:

1. Learning agility of clinical nurses should be determined and considered as a quantitative evaluation criterion in the career planning of managers;
2. Nurse involvement in decision-making and empowerment should be increased for participation in management;
3. Health policy providers should provide support and resources to empower nursing;
4. The work environment and working hours of nurses should be organised according to needs and research to increase the quality of nursing care should be supported;
5. Working on scenarios for nurse's workforce planning, equipment inventory and supply chain planning according to possible future disasters, epidemics and pandemics;
6. Methods and techniques (case studies, experience sharing, simulation, etc.) and materials should be used to increase the learning agility of nurses in clinical training.

ACKNOWLEDGEMENTS

We would like to thank all our nurse colleagues who worked devotedly during the COVID-19 pandemic.

FUNDING INFORMATION

The authors declared that this study has received no financial support.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interests. The content is solely the authors' responsibility. This paper is our original,

unpublished work, and it has not been submitted to any other journal for review.

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.

ETHICS APPROVAL

Ethics committee approval for the research was received from the Istanbul University-Cerrahpaşa of Social and Human Sciences Ethics Committee (Dated 02.02.2021 Numbered: 2021/17).

ORCID

Nagihan Sim Aygul  <https://orcid.org/0000-0002-2675-3444>

Emine Senyuva  <https://orcid.org/0000-0001-8855-6692>

REFERENCES

- Ashley, C., James, S., Stephen, C., Mursa, R., McInnes, S., Williams, A., Calma, K., & Halcomb, E. (2021). Primary health care nurses' perceptions of risk during covid-19: A qualitative study. *Journal of Nursing Scholarship*, 53, 689–697. <https://doi.org/10.1111/jnu.12698>
- Baltacı, A. (2019). Qualitative research process: How to conduct a qualitative research? *Journal of Ahi Evran University Institute of Social Sciences*, 5(2), 426–438. <https://doi.org/10.31592/aeusb.ed.598299>
- Bedford, C. L. (2017). *The role of learning agility in workplace performance and career advancement*. Doctoral Thesis, 1–47.
- Berlin, G., Lapointe, M., Murphy, M., & Viscardi, M. (2021). Nursing in 2021: Retaining the healthcare workforce when we need it most. *McKinsey & Company Healthcare System & Services*. <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/nursing-in-2021-retaining-the-healthcare-workforce-when-we-need-it-most#>
- Cai, J., Sun, W., Huang, J., Gamber, M., Wu, J., & He, G. (2020). Indirect virus transmission in cluster of COVID-19 cases, Wenzhou, China, 2020. *Emerging Infectious Diseases*, 26(6), 1343–1345.
- Cakıroğlu, O. C., & Seren, A. K. H. (2019). The relationship between attitudes towards change and five factor personality traits in nurses. *Journal of Psychiatric Nursing*, 10(3), 211–217. <https://doi.org/10.14744/phd.2019.34713>
- Canaslan, A., & Güclü, N. (2020). Teacher's learning agility: Scale development study. *Kastamonu Education Journal*, 28(5), 2071–2083. <https://doi.org/10.24106/kefdergi.746504>
- Celik, G. O., Üyesi, Ö., Evkaya, N., & Gör, A. (2020). Surgery in the COVID-19 outbreak: An overview of the surgical process and nursing care / management. *Journal of the Izmir Katip Celebi Faculty of Health Sciences of the University*, 5(2), 221–227.
- Cevirme, A. (2020). The COVID-19 pandemic and its reflections on the nursing profession. (ASEAD) *Eurasian Journal of Researches in Social and Economics (EJRSE)*, 7(5), 46–52.
- COVID-19 weekly situation. (2020). Republic of Turkey Ministry of Health Covid-19 Weekly Situation Report (2020) 24.08–30.08 2020. www.saglik.gov.tr
- De Meuse, K. P., Dai, G., & Hallenbeck, G. S. (2010). Learning agility: A construct whose time has come. *Consulting Psychology Journal*, 62(2), 119–130. <https://doi.org/10.1037/a0019988>
- Derue, D. S., Ashford, S. J., & Myers, C. G. (2012). Learning agility: In search of conceptual clarity and theoretical grounding. *Industrial and Organizational Psychology*, 5(3), 258–279. <https://doi.org/10.1111/j.1754-9434.2012.01444.x>
- Focus, K. F. (2021). The Organisational X-factor: Learning Agility. <https://focus.kornferry.com/leadership-and-talent/the-organisational-x-factor-learning-agility/>
- Gabel Speroni, K. (2020). Call to action for a us nurse general: From ebola to corona. *Journal of Nursing Administration*, 50(5), E1–E2. <https://doi.org/10.1097/NNA.0000000000000899>
- Glassman, K. S., & Withall, J. (2018). Nurse manager learning agility and observed leadership ability: A case study. *Nursing Economics*, 36(2), 74–82.
- Gravett, L. S., & Caldwell, S. A. (2016). *Learning agility*, 64–66. <https://doi.org/10.1057/978-1-137-59965-0>
- Halcomb, E., McInnes, S., Williams, A., Ashley, C., James, S., Fernandez, R., Stephen, C., & Calma, K. (2020). The experiences of primary health-care nurses during the COVID-19 pandemic in Australia. *Journal of Nursing Scholarship*, 52(5), 553–563. <https://doi.org/10.1111/jnu.12589>
- Hallenbeck, G. (2016). *Learning agility: Unlock the lessons of experience*. Center for Creative Leadership Press.
- Ho, H. Y., Chen, Y. L., & Yen, C. F. (2020). Different impacts of COVID-19-related information sources on public worry: An online survey through social media. *Internet Interventions*, 22, 100350. <https://doi.org/10.1016/j.invent.2020.100350>
- Howard, D. (2017). *Learning agility in education: An analysis of pre-service teacher's learning agility and teaching performance*. College of Graduate Studies of Tarleton State University.
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., ... Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, 395(10223), 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- International Council of Nurses. (2021). ICN at the 73rd World Health Assembly, 2020 and the 148th WHO executive board, 2021.
- Karakas, M. (2020). The multidimensional sociology of the covid-19 pandemic and the new normal issue. *Istanbul University Journal of Sociology*, 40(1), 541–573. <https://doi.org/10.26650/sj.2020.40.1.0048>
- Karakis, S. (2019). *Disaster preparedness and psychological resilience of nurses working in public hospitals*. [Unpublished Master's thesis]. Marmara University.
- Karasu, F., & Öztürk Çopur, E. (2020). An intensive care nurse in the forefront of the epidemic while increasing cases of Covid-19: "HEROES IN FRONT-LINE". *Journal of Intensive Care Nursing*, 24(1), 11–14.
- Kaya A. (2019). Teachers' views on learning agility, teacher quality, and teacher's attitude to stay in school. [Unpublished Doctoral thesis]. Abant İzzet Baysal University, 1–9.
- Kiraner, E., & Terzi, B. (2020). Intensive care nursing in the covid-19 pandemic process. *Journal of Intensive Care Nursing*, 24(1), 83–88.
- Kiraner, E., Terzi, B., Turkmen, E., Kebapçı, A., & Bozkurt, G. (2020). Experiences of turkish intensive care nurses in the covid-19 outbreak. *Journal of Education and Research in Nursing*, 17(3), 284–286. <https://doi.org/10.5222/head.2020.35556>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliff Prentice Halls.
- Lee, J., & Song, J. H. (2022). Developing a measurement of employee learning agility. *European Journal of Training and Development*, 46(5/6), 450–467. <https://doi.org/10.1108/EJTD-01-2021-0018>
- Lim, D. H., Yoo, M. H., Kim, J., & Brickell, S. A. (2017). *Learning agility: The nexus between learning organization, transformative learning, and adaptive performance* (Vol. 1, pp. 1–8). New Prairie Press.
- Lombardo, M. M., & Eichinger, R. W. (2000). High potentials as high learners. *Human Resource Management*, 39(4), 321–329. [https://doi.org/10.1002/1099-050X\(200024\)39:4<321::AID-HRM4>3.0.CO;2-1](https://doi.org/10.1002/1099-050X(200024)39:4<321::AID-HRM4>3.0.CO;2-1)
- Mitchinson, A. (2014). *Learning about learning agility*. Center for Creative Leadership.
- Mutlu, A. P., & Mutlu, M. E. (2017). Learning experience design. *Journal of Open Education Practices and Research*, 3(1), 39–76.

- Özkocak, V. (2020). Anthropological overview of pandemics: Coronavirus example. *Turkish Studies*, 15(2), 1183–1195. <https://doi.org/10.29228/TurkishStudies.42679>
- Pathak, M. (2015). *Learning agility*. Human Capital.
- Peiró, T., Lorente, L., & Vera, M. (2020). The COVID-19 Crisis: Skills That Are Paramount to Build into Nursing Programs for Future Global Health Crisis. *International Journal of Environmental Research and Public Health*, 17(18), 6532. <https://doi.org/10.3390/ijerph17186532>
- Petges, N., & Sabio, C. (2020). Understanding the enrollment decisions of associate degree nursing students: A qualitative study. *Teaching and Learning in Nursing*, 15(1), 25–31. <https://doi.org/10.1016/j.teln.2019.08.006>
- Senol Celik, S., Atli Ozbas, A., Celik, B., Karahan, A., Bulut, H., Koc, G., Cevik Aydın, F., & Ozdemir Ozleyen, C. (2020). COVID 19 pandemic process: Turkish nurses association. *Journal of Education and Research in Nursing*, 17(3), 279–283. <https://doi.org/10.5222/kuhead.2020.34603>
- Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., Losifidis, C., & Agha, R. (2020). World health organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, 76, 71–76. <https://doi.org/10.1016/j.ijssu.2020.02.034>
- Turale, S., Meechamnan, C., & Kunaviktikul, W. (2020). Challenging times: Ethics, nursing and the COVID-19 pandemic. *International Nursing Review*, 67(2), 164–167. <https://doi.org/10.1111/inr.12598>
- Vatan, F., Unsal Avdal, E., Yagcan Dag, H., & Sanlı, D. (2020). COVID-19 pandemic and nursing education association activities. *Journal of Education and Research in Nursing*, 17, 369–373. <https://doi.org/10.5222/kuhead.2020.32858>
- Velioglu, P. (1999). *Concepts and theories in nursing*. Academic Publish.
- WHO Covid Dashboard. WHO Covid Dashboard (2021). <https://covid19.who.int>
- Yazıcı, S. (2020). Development, validity and reliability study of marmara learning agility scale. *Journal of History School*, 44, 365–393. <https://doi.org/10.29228/Joh41492>
- Yockey, R. D., & Kralowec, C. J. (2015). Confirmatory factor analysis of the procrastination assessment scale for students. *SAGE Open*, 5(4), 215824401561145. <https://doi.org/10.1177/2158244015611456>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Aygul, N. S., & Senyuva, E. (2022). Correlation between experiences of clinical nurses in the COVID-19 pandemic with learning agility and readiness level for future pandemics. *Journal of Clinical Nursing*, 00, 1–9. <https://doi.org/10.1111/jocn.16536>