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Level of Satisfaction on The Flexible Learning Modality in Nursing Orientation

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ABSTRACT

This quantitative, correlational study aimed to determine the nurses' level of satisfaction on the flexible learning modality in the nursing orientation program at Hamad Medical Corporation (HMC) in Qatar during the COVID-19 pandemic. The participants were enrolled in the study using a total enumeration sampling technique which consists of all new nurses hired permanently by HMC from June 2020 until January 2021. The online questionnaire was distributed along with the informed consent/ research information tool and was completed by 212 out of 227 target participants. The survey was divided into these sections: the demographic profile, nurses' level of satisfaction with the flexible learning modality, and their level of technical capability for flexible learning. Statistical treatment using frequencies, means, standard deviation, and Spearman's rank correlation test was used to arrive at the research findings statistically. The study results revealed that nurses who joined HMC during the pandemic were highly satisfied with the nursing orientation program and highly capable of flexible learning. There is also a strong, positive relationship between the participants' level of satisfaction and technical capability. Hence, an enhancement to nursing orientation programs can be developed based on the findings of the study.

Keywords: [Nursing orientation, nursing education, web-based training, flexible learning]

INTRODUCTION

Nurses rely on continuing education programs to maintain and develop new competencies throughout their careers. The scope of healthcare standards and work setting involves a systematic and inclusive approach to educating health care practitioners like nurses. The General Nursing Orientation (GNO) Program is a core program that facilitates the onboarding and clinical preparedness of newly joined nursing staff in Hamad Medical Corporation (HMC) in Qatar. A robust orientation program delivered through classroom instruction and clinical simulations in a secure and productive learning environment enhances the participants' clinical decision-making skills and competence.[1] The advent of the COVID-19 pandemic posed many challenges with the delivery of education; its global spread resulted in the suspension of classes for over 850 million students worldwide, disrupting teaching plans already in place.[2]

From March 2020, following the restrictions imposed by the Centers for Disease Control and Prevention (CDC) and Qatar's Ministry of Public Health (MoPH), face-to-face educational activities were cancelled. This need paved the way for educators to rapidly shift from the traditional face- to-face delivery of the orientation program to a flexible learning modality that utilized web-based and socially distanced simulation platforms to ensure uninterrupted learning educational support for nursing staff deployed to COVID- 19 designated facilities within the organization. In the modified version of the GNO Program,

newly joined nurses were given access to the asynchronous online program, which was reinforced with a 4-hour socially distanced, synchronous simulation training utilizing high-fidelity mannequins to cover core nursing competencies. This flipped classroom model transformed the program from being instructor-led to a learner-led activity which provide a great extent of flexibility and autonomy for the learners, however, their level of engagement with the content may vary participants' learning style.[3] With the massive onboarding of locally available nurses to respond to the rapid expansion of HMC facilities, there has been an influx of nurses who with a wide range of clinical background and demographic characteristics as well as varied learning styles, which may have had an impact on their satisfaction with the nursing orientation program in HMC. Hence, this study allowed the researcher to explore the nurses' level of satisfaction with the flexible learning modality and their level of technical capability to access the e-learning component of the program.

LITERATURE REVIEW

With the dawn of the COVID-19 pandemic globally, nurses are called upon to respond to the unprecedented need to open new services and care for patients with COVID-19. Several studies highlight the critical role of education in nurses' clinical preparedness and willingness to care for COVID-19 patients.[4,5,6] The abrupt closure of educational institutions and the cancellation of educational activities worldwide caused an unplanned shift of conventional teaching strategies to emergency remote teaching and other alternative teaching strategies like online or web-based training.[7,8,9] The flexible learning modality offers a practical alternative strategy to address the challenge of conducting traditional classroom teaching amidst the pandemic.[10, 11, 12, 13]

Effective web-based education programs require meticulous planning and structuring [14] and institutional support and resources.[9,14,15] Studies also show that web-based training must facilitate interaction among learners to peers, learners to faculty members, and learners to the learning environment.[14, 16] The success and effectiveness of the online component of flexible learning modality depend on the content, its organization, accessibility, straightforward navigability, relevance to practice, and ability to keep the learners engaged. Thus, educators must consider these factors when shifting to this mode of teaching.

Clinical simulations have also emerged as one of the preferred teaching strategies during the pandemic.[17] Several advantages of simulation include: facilitates the application of acquired knowledge, refines clinical decision-making, increases knowledge and confidence in practice, and aids in bridging the gap between the current practice and desired performance. [18,19,20,21] Programs that foster patient safety, build confidence, improve critical thinking and decision-making skills, and provide a conducive learning environment are factors that influence learners' satisfaction.

However, challenges are associated with the education solutions presented during the pandemic, like insufficient faculty/ learner training, lack of resources and adequate preparation, lack of familiarity with e-learning/virtual platforms, insufficient IT skills, and lack of support during distance learning. [8,13,15] The level of the technical capability of nurses plays a vital role in overcoming these challenges with flexible learning. A technically adept nurse will be able to acclimate more easily with the novel learning modality by using the readily available resources to easily access the learning materials and optimize the time allocated for learning at a comfortable pace, free from distractions and frustrations caused by technical problems and an unfamiliar learning environment.

Characteristics of effective teaching strategies include those that encourage critical thinking, foster learner engagement and motivation, instill confidence in practice

and performance, allow translation of theory to practice, support achievement of learning outcomes, and facilitate deeper learning through reflection. [14,15,16,22,23]

MATERIALS & METHODS

This study employed a quantitative, correlational research design. It evaluated the level of satisfaction of nurses with the flexible learning modality in a nursing orientation program and their level of technical capability and determined if there has been a relationship between the two.

The study focused in Hamad Medical Corporation (HMC), Qatar's leading healthcare provider, managing twelve hospitals: nine specialist hospitals and three community hospitals, and residential care and national ambulance services. Further, the study sought out nurses who attended the abridged version of the General Nursing Orientation Program which was delivered during the pandemic through the flexible learning modality which utilized the asynchronous web-based training with the synchronous simulation training to educate incoming nurses on the organizational policies, procedures, and guidelines relevant to the delivery of high-quality, patient-centered care.

The study determined the participants using a total enumeration sampling technique that encompassed all 227 new nurses hired permanently by HMC from June 2020 until January 2021 when the restructured GNO Program was delivered. However, only 212 nurses participated in the study.

The study utilized a researcher-made questionnaire. The research instrument used in this study was composed of the following parts: demographic profile, level of satisfaction with the flexible learning modality, and level of technical capability. The researcher- made survey-questionnaire was subjected to a validity and reliability test.

The questionnaire was piloted among 30 nurses who have gone through the GNO Program delivered in the flexible learning modality. For this study, the set of items about their Satisfaction with the General Nursing Orientation Program and their Technical Capability were tested for internal consistency using Cronbach's alpha. The overall alpha coefficient of the test is 0.92 with a 95% confidence interval of (0.88, 0.96). This value is within the "excellent" level of internal consistency; therefore, the set of items for satisfaction on the General Nursing Orientation Program exhibits an excellent internal consistency when measuring the latent construct of satisfaction. Whereas with the technical capability section, the overall alpha coefficient of the test is 0.91 with a 95% confidence interval of (0.86, 0.96). This value is within the "excellent" level of internal consistency; therefore, the set of items for Technical Capabilities exhibits a very high level of internal consistency when measuring the latent construct of technical capabilities. Overall, the set of items for satisfaction and technical capabilities have a high level of reliability.

The participants were informed of the intent to recruit them for the study through their corporate-issued email. After the consent had been obtained, a link to the online questionnaire was sent to them individually to their emails. The participants were given one week to decide on their participation, upon which the researcher sent a follow-up email to remind them to respond either to participate or to decline the invitation. The research questionnaire took about 10 minutes to complete. Only 212 out of 227 nurses completed the survey.

Statistical Analysis

The level of satisfaction was measured using a 10-item 4-point Likert-scale response questionnaire and then their scores were obtained by summing up their corresponding responses for the 10 items. Likewise, their level of technical capability was also measured using a 7-item 4-point Likert-scale questionnaire and used the sum of their responses as their overall capability score. Since the range of values of the two variables are not the same because

satisfaction has more items than capability, a standardization method was used to make the results more comparable. The researcher used range standardization or min-max standardization to transform the scores. The formula for the standardization method is given below.

$$Z_i = \frac{X_i - \min}{max - min} \times 100$$

Where $Z = transformed\ score\ for\ the\ i^{th}\ respondent$
$X = raw\ score\ for\ the\ i^{th}\ respondent$
$min = minimum\ possible\ score$
$max = maximum\ possible\ score$

Using this method, both scores will now have a range of values between 0 and 100 making them easier to compare and interpret.

- To test if there is a significant relationship between the level of satisfaction and level of technical capability of the respondents, the author used Spearman's Rank Correlation Test. Spearman's rank can be used as an alternative to Pearson's correlation for both continuous and ordinal data as well as Likert-scale items with no linear relationship as it does not carry any assumptions with distribution patterns and linear relationships. It can determine whether the data have a monotonic relationship wherein one variable increase or decreases as the other one does, although not in the same rate. [24,25]

RESULT AND DISCUSSION

Demographic Profile

Table 1. Demographic Profile of Respondents

Variable	Frequency	Percentage
Gender		
Female	141	66.51%
Male	71	33.49%
Age group		
20-24 years old	3	1.42%
25-29 years old	32	15.09%
30-34 years old	66	31.13%
35-39 years old	84	39.62%
40 years old and above	27	12.74%
Educational Attainment		
BS Nursing	186	87.74%
MA/MS Nursing	20	9.43%
Ph.D. in Nursing	6	2.83%
Years of Clinical Experience		
Less than 2 years	3	1.42%
2-5 years	21	9.91%
6-10 years	71	33.49%
More than 10 years	117	55.19%

Based on the table above, about two-thirds (66.51%) of the sample are females. Most of them are aged 35 to 39 years old while only about 1.4% are 20 to 24 years of age. A huge portion of the respondents has only a bachelor's degree. About 9.4% have MA or MS degrees and only 2.8% have a doctorate in nursing. Furthermore, more than half or around 55.2% of the sample have more than 10 years of clinical experience. This indicates that most of the attendees of the GNO Program are highly experienced nurses. In addition, all of them reported that they do not have a gap in their clinical experience.

Nurses' Level of Satisfaction with the GNO Program and Level of Technical Capability for Flexible Learning

Table 2. Summary Statistics of the Satisfaction and Technical Capabilities Scores

Variable	Mean	SD	Median	Minimum	Maximum
Level of Satisfaction with GNO Program	88.5	14.4	96.7	33.3	100
Level of Technical Capability	85.4	14.2	90.5	52.4	100

Based on Table 2, the average level of satisfaction of the sampled nurses on the general orientation program is 88.5 points with a standard deviation of 14.4 points. This suggests that on average, the nurses are highly satisfied with the orientation program. Notice that the median score is 96.7 points which indicates that more than 50% of the respondents have a level of satisfaction that is greater than or equal to

96.7; further suggesting that the nurses are totally satisfied with the GNO Program. The lowest recorded satisfaction score is 33.3 points while the highest recorded score is perfect 100 points. The results can be attributed to the careful restructuring of the GNO program that integrates simulation-based education with the asynchronous web- based training component. The asynchronous WBT materials were uploaded in PowerPoint formats with embedded links leading to essential policies and other web/ online resources to reinforce the concepts within the presentations, like coronavirus updates from the CDC and WHO websites. These files can be easily downloaded and reviewed anytime at the learner's convenience and can be used as a reference throughout their practice. In addition, the synchronous simulation- based education, which was conducted in full compliance with the infection control guidelines mandated by Qatar's Ministry of Public Health, has proved to be a driving factor in increasing the nurses' satisfaction with the GNO Program. The use of high-fidelity mannequins and real-life clinical settings enhanced the realism of the patient scenarios presented during the program and allowed the participants to practically apply what they have read or seen in the WBT in a safe learning environment. Moreover, simulation-based education contrasts with conventional lectures and demonstrations by transforming educators into facilitators who guide nurses in achieving learning outcomes through debriefing and reflection, allowing them to self-reflect and critically analyze what transpired during the simulation instead of spoon-feeding the information to the learners.

This abridged version of the GNO program enhanced the learning experience of new nurses during the pandemic by employing methods that encourage critical thinking and problem-solving.[10,14,15,26] As discussed a robust orientation program must provide learning materials that help bridge the gap from theory to practice[1] which was covered by the asynchronous web-based training, adequate support by educators to new nurses during the simulation training which provided the new comers an safe outlet to voice out their concerns, and established, efficacious teaching methods like online and simulation based education. The learner-centered, flipped classroom approach to nursing orientation has overall positively impacted the nurses' satisfaction with the teaching strategies and learning outcomes. [11, 12, 27]

Meanwhile, the average level of technical capabilities of the respondents is 85.4 points with a standard deviation of 14.2 points. This suggests that nurses are highly capable of flexible learning programs. The minimum recorded score is 52.4 points while the maximum score is a perfect 100 points. The findings were attributed to the integration of technology in the healthcare settings as well as its proliferation in regular day-to-day activities. Computers have become compact and can be brought anywhere in the form of smart phones, laptops, and other digital devices. Further, all HMC facilities provided free limited internet access to guests, patients, and staff. Since majority of the respondents have Bachelor's Degree in Nursing with some having higher degrees like Master's and PhD Degrees, they must be well-exposed to computers and possessed essential IT skills. Further, their clinical experience and age could have contributed to their ability to critique the quality of information and discern malicious from trustworthy resources. Possessing these abilities allowed the respondents to overcome challenges associated with flexible learning- making them technically adept.

The fundamental principles to keep in mind when implementing flexible learning include, but are not limited to, dependable internet infrastructures, an appropriate e-learning environment, and digital resources, and technical support for users/learners.[13] Furthermore, the following factors influence the quality of online programs: the content should allow learners to achieve their learning objectives, the e-learning

environment should be comfortable to use, and the structure of the learning system must be easy to navigate through with learning resources readily accessible to its users. These elements improved the learning experience in web-based educational programs.[28]

Relationship between the Level of Satisfaction and Level of Technical Capability of Nurses for Flexible Learning

Table 3. Test for the Significance of Relationship between Level of Satisfaction and Technical Capabilities

Spearman Rank-order Correlation	
Coefficient $(\hat{\rho})$	0.722
p-value	< 0.0001**

***** - significant at a 1% alpha***

Table 3 presents the result of the Spearman rank-order correlation test for the level of satisfaction of nurses on the GNO Program and their technical capabilities for flexible learning. This test was selected over the Pearson correlation test since the two variables were non-parametric and did not follow a normal distribution pattern when treated statistically. The estimated degree or strength of correlation was 0.722. In Spearman's Rank if the correlation coefficient is between 0.70-0.89, it indicates there is a strong positive relationship between the two variables. This meant that if the level of the technical capability of a nurse increases, the level of satisfaction with the GNO Program is expected to increase also. With a p-value less than 0.0001, the estimated coefficient is deemed significant at a 1% significance level. The findings indicated that nurses with advanced technical skills were able to focus more on the content and information gained from the asynchronous WBT rather than spending more time on the technical aspect of accessing the WBT materials like troubleshooting the computer, finding the webpage, and exploring the e-learning platform. In addition, nurses who were adept with computers were also more comfortable learning in the online environment, as they had full control of their pace in learning and managed their time to complete the asynchronous WBT within the specified timeframe. With this, their learning experience has been optimized; they were well-informed of the concepts relevant to their practice and could quickly achieve learning outcomes thus, making them highly satisfied with the GNO Program.

The finding was consistent with studies which revealed that computer self- efficacy is the strongest determinant of the learner's satisfaction with the e- learning system as well as their ability to navigate through the e-learning environment with ease and confidence.[8.28.29]

CONCLUSION

Based on the findings of the study, the following conclusions were drawn:

1. The sudden shift to a flexible learning modality was required to support the onboarding and orientation of incoming nurses within HMC during the pandemic.
2. Given the high level of technical capability of newly joined nurses, most of the participants were highly satisfied with the GNO Program that was delivered through a combination of asynchronous web-based training and synchronous simulation-based education.
3. There is a significant relationship between the level of satisfaction and level of technical capability of the respondents.

Hence, the author recommends that nurse educators to explore alternative but equally effective teaching modalities for delivering programs, not just during a pandemic but also in other instances where the delivery of continuing nursing education is disrupted unexpectedly. This increases curriculum planners' and designers' readiness to switch to a flexible teaching mode in the case of rapid, unanticipated disruptions to the standard model of instruction. Additionally, this study can be used to offer a plan for

designing educational programs that meet the difficulties inherent in online or web-based training. For facilitators, the study results convey the importance of engaging preceptors in actively supporting the new staff by being adept in computers and various e-learning platforms. The author suggests conducting regular preceptor updates and training programs to maintain the competence of preceptors. The lessons learned during the pandemic should be brought forward to improve and future-proof the program without compromising the standards. The study results also point to the importance of involving clinical stakeholders and engaging them in dialogues on how to support new staff in their departments to motivate them to take an active part in learning during their orientation.

To researchers, the author recommends conducting similar studies exploring other educational programs delivered during the pandemic. Researchers can also use various research methods to cover a broader scope and overview of the study and a much larger sample size and a new location. Researchers are also advised to conduct studies on different educational programs and learning modalities to ensure a good comparison of variables to be used, which is also a limitation of this study.

Conflict of Interest: None

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