



# Perception of distance learning of nursing course among nursing students during COVID - 19 pandemic

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## ABSTRACT

**Background:** In many countries, due the pandemic of COVID-19, the presence of nursing students in health care centers has been suspended. Multiple education solutions have been deployed, all of which are based on distance learning.

**Objective:** The aim of the present study is to describe nursing student's perception of distance education

**Methods:** A questionnaire was sent online to all registered nursing students during the academic year 2019/2020. It included beside the general characteristics, 6 domains related to perception of distance learning. Each domain included a number of questions (items). Each item has 5 responses starting from 4 for the highest positive perception and 0 for lowest negative perception. Total score for each domain was transformed into percentage score.

**Results:** The final analysis was performed on 146 nursing students. Perception of the distance education of the nursing course by the participating students was measured through 6 domains and 34 items. The highest positive perception score was related to course structure and contents (67.6%) and evaluation and examination (67.7%). The least score was recorded for the multimedia (51.0%) and ease and speed of the course (54.3%), with a significant difference ( $F = 16.46, p < 0.001$ ).

**Conclusions:** Nursing students were just fairly or moderately satisfied with online nursing course.

## INTRODUCTION:

The world is facing unprecedented challenges in the face of a global pandemic. The fast progression of the COVID-19 led to be considered on 13 March 2020 by the WHO as a pandemic disease. (WHO, 2020a; WHO, 2020b) As the disease had infected many persons in most countries in an international pattern. The world faced a serious public health emergency. The

main public health recommendation was to remain at home and stay safe within it. (Remuzzi and Remuzzi, 2020; Torri et al., 2020; (Jackson et al., 2020)

This health crisis impacted not only the area of health but all systems and communities. COVID-19 has also already disrupted universities and academic institutions including nursing institutes. (Dewart et al., 2020). In many countries, the health authorities preferred to suspend the presence of nursing students in health

care facilities. (Jackson et al., 2020; UNESCO, 2020) The question was how to continue to educate nurses in a society facing social distancing, isolation, and quarantine measures. Ethically weighing the value of education against the risk and strain to the learner personally and professionally should be considered. (Dewart et al. 2020)

Multiple solutions have been suggested for education, all of which are based on distance learning. As a result of constrictions, the world experiencing in all sectors including education specially applied sciences which was the most affected, many countries including Kuwait adopted distance learning as a favorite option to complete the academic year 2019/2020. The professors, educators and experts in traditional education arts, have obliged to deal with distance e-learning, although the majority of them were not ready for this process. Also, students faced the problem of change from face-to-face learning, to distance e-learning. (Ramos-Morcillo et al., 2020)

Although distance learning is not new concept in many countries, it was not considered as a main teaching resource in Kuwait. Thus, many challenges emerged as a result for administrative and teaching staff, but more to the students. It is important to know how students participated in this experience, and how successful was the effort, from their point of view. It is essential to know how students react to this experience, content, styles used and their personal aspect and their acceptance for the new education technology. The aim of the present study is to describe nursing student's perception of different domains of distance education

## SUBJECTS AND METHODS:

### Settings:

Nursing institute is one of the structures of the public Authority for Applied Education and Training in Kuwait. Nursing student should pass through a preparatory course and 3 academic years. The total number of nursing students in the academic years during 2019/2020 was 420. All of them were invited to participate in the present study after performing their examination through an online questionnaire.

### Study design:

An observational cross-sectional study design was adopted for this study. Data of this study was collected through an online specially designed questionnaire that was sent to all registered nursing students during the academic year 2019/2020. This questionnaire consisted of several sections. The first section dealt with general characteristics, including age,

sex, marital state, academic years, presence of job beside studying. The second section include 6 domains related to perception of distance learning: experience in general (7 items), course structure and contents (8 items), examination and evaluation (7 items), ease and speed (3 items), multimedia (5 items) and interactivity (4 items). Each item has 5 responses starting from 4 for the highest positive perception and 0 for lowest negative perception. Total score for each domain was transformed into percentage score calculated sum of items scores multiplies by 100 / number of items under the specific domain. The sum was treated to yield a range of 100% with a minimum of zero and a maximum of 100. A pilot study was carried out on 10 nursing students. All the necessary approvals for carrying out the research were obtained.

### Statistical analysis:

Descriptive (count, percentage, minimum, maximum, arithmetic mean, median and standard deviation) and analytic measures (One way ANOVA) were performed. The level of significance selected for this study was  $P \leq 0.05$ . The questionnaire was tested for its reliability. Cronbach's alpha were 0.80, 0.79, 0.63, 0.93, 0.88 and 0.78 for the studied 6 domains.

## RESULTS:

Recruitment effort resulted in participation of 149 nursing students. After data entry, 3 questionnaires were deleted due to incompleteness. The final analysis was performed on 146 nursing students. Table 1 shows the general characteristics of the participating students. Their age ranged from 18 to 35 years with a mean  $24.9 \pm 3.7$  years old. Males constituted 44.5% versus 55.5% for females. Just above half of them were single (56.2%) with 34.2% were married and 9.6 divorced. A fifth of them had an additional job beside their study. Regarding their academic year, 17.1%, 22.6% and 60.3% were in the first, second and third year respectively. The higher percentage of them lived in Jahra (38.4%) and the least percentage was in Ahmedi and Mubarak Al-Kabeer (8.2%)

The mean percentage score for each domain of nursing student perception of distance learning was presented in table 2 and figure 1. The highest positive perception score was related to course structure and contents (67.6%) and evaluation and examination (67.7%). The least score was recorded for the multimedia (51.0%) and ease and speed of the course (54.3%), with a significant difference ( $F = 16.46, p < 0.001$ ).

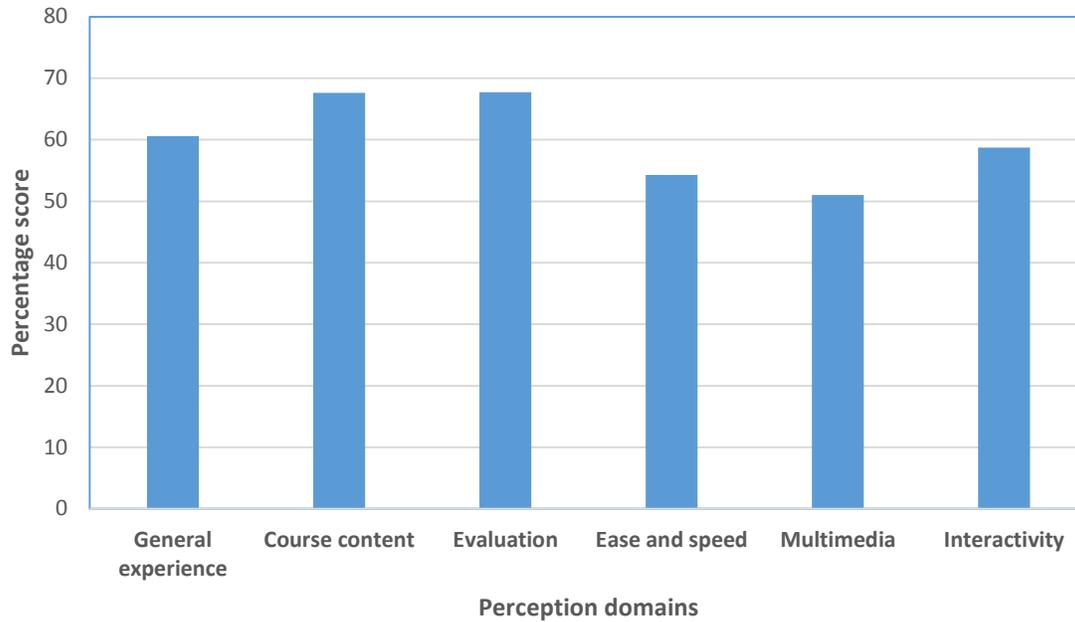
**Table (1): Sociodemographic characteristics of the participating nursing students**

| Characteristic        | Number         | %    |
|-----------------------|----------------|------|
| Age                   |                |      |
| <21                   | 20             | 13.7 |
| 21 - 24               | 42             | 28.8 |
| 25 -29                | 64             | 43.8 |
| >= 30                 | 20             | 13.7 |
| Mean $\pm$ SD         | 24.9 $\pm$ 3.7 |      |
| Sex                   |                |      |
| Males                 | 65             | 44.5 |
| Female                | 81             | 55.5 |
| Marital status:       |                |      |
| Single                | 82             | 56.2 |
| Married               | 50             | 34.2 |
| Divorced              | 14             | 9.6  |
| Educational Stage     |                |      |
| First                 | 25             | 17.1 |
| Second                | 33             | 22.6 |
| Third                 | 88             | 60.3 |
| Working beside study  |                |      |
| No                    | 117            | 80.1 |
| Yes                   | 29             | 19.9 |
| Address (governorate) |                |      |
| Capital               | 14             | 9.6  |
| Hawalli               | 29             | 19.9 |
| Farwaniya             | 23             | 15.8 |
| Ahmadi                | 12             | 8.2  |
| Jahra                 | 56             | 38.4 |
| Mubarak Al-Kabeer     | 12             | 8.2  |

**Table (2): Percentage scoring of distant learning nursing curriculum domains**

| Curriculum Domain               | Min. | Max.  | Mean  | SD    | Median |
|---------------------------------|------|-------|-------|-------|--------|
| 1.Experience in general         | 7.1  | 100.0 | 60.64 | 17.71 | 57.1   |
| 2.Course structure and contents | 21.9 | 100.0 | 67.59 | 15.32 | 68.8   |
| 3.Examination and evaluation    | 21.4 | 92.9  | 67.74 | 16.33 | 67.8   |
| 4.Ease and speed                | 0.0  | 100.0 | 54.34 | 26.74 | 54.2   |
| 5.Multimedia                    | 0.0  | 100.0 | 51.03 | 25.03 | 40.0   |
| 6.Interactivity                 | 0.0  | 100.0 | 58.73 | 17.73 | 56.3   |

F 16.46 , p &lt; 0.001



**Figure (1): Mean percentage score of different domains of distance learning of nursing course**

## DISCUSSION:

As COVID-19 became a pandemic and lockdown started worldwide, most of the academic facilities converted to use online learning as an alternative during this period to ensure the safety of staff and students. (Harvard Medical School, 2020) The educational establishments in Kuwait is not different including Nursing Institute. Thus, the educational system is shifting toward a new entirely system of online teaching and examination. (Sandhu and de Wolf, 2020) As we experienced a massive transition to online learning, it was extremely important to study the effects of online learning using several parameters on nursing students especially, it is known that practical courses need on-ground interaction for the purpose of practice, on the contrary, basic science courses are more flexible to be converted to online as it needs a minimal real-time interaction between the lecturer and the students. Identifying the weak domains of the online nursing curriculum was the main outcome. Thus, improvement of the whole nursing curriculum was the ultimate goal of the study. (Keane, 2020).

The current study revealed that, the scoring of different domains of nursing curriculum ranged from 51.03% for the quality and integration of multimedia to 67.74% for examination and evaluation of the course as well as 67.59% for the course structure and content. This reveals that nursing students were just fairly or moderately satisfied with online nursing course. Some studies (Jwayyed et al., 2011; Lewis et al., 2001) revealed negative results for the use of distance teaching while other studies showed an equal or superior learning outcomes of online learning as compared with traditional learning methods. (Rosenberg

et al., 2003; Chumley-Jones et al., 2002) Nearly 90% of students, needed at least some in-person instruction. (Brockman et al., 2020) Also, Kay et al. (2018) found that half of the studied students prioritized both physical (in person) and virtual (online) access to the lab work. However, Salter and Gardner (2016) found that most students prefer in-person labs over online labs.

Experience of nurses about on-line learning may be an important factor for this low rating; as this was the first on-line course. This is congruent with other authors who revealed that most the students were not pleased with their online experience especially those with first-time online experience who showed worse results compared with experienced students. (Freeze et al., 2010; Sindiani et al., 2020) Another study found that e-learning readiness influenced students' satisfaction. Increased satisfaction might be related to increased self-efficacy in e-learning. ( Sandhu and de Wolf, 2020).

The results of the current study revealed that course structure and content was one of the highest scored domains (67.59%). Similar results were demonstrated in other online courses. In one study participants expressed high satisfaction with the content structure of the course. They declared that the course was highly educational, the rich and relevant information. (Maćznik et al., 2015).

There are four interactions that online teachers should consider: students' interaction with resources, interaction with the instructor, interaction with the peer, and interaction with self. (Hirumi, 2009; Moore, 1989) These interactions have been found crucial for meaningful learning experiences and effectiveness in online learning. (Swan, 2002) In this study, interactivity domain scored less than 60 percent (58.73%) indicating low satisfaction with interactivity while learning through

on-line approach. Salter and Gardner (2016) found that students felt more involved and bound in the learning process when face to face physically interact with an educators. On the other hand, some previous studies reported increased gains of knowledge and higher satisfaction with learner and more interactivity in e-education. (Liberati et al., 2009; Pace et al. 2012)

The current study also revealed that the ease and speed curriculum domain scored only 54.34%. Asynchronous interaction was the main approach used for this on-line course. Synchronous online interactions, however, can be effective in discussing topics with some preparation work, creating social presence among members as well as planning tasks that need real-time feedback. (Rhim and Han, 2020; Braun and Kearns, 2008).

Research on the use of web-based technologies in nursing is at its infancy, which impacted on the present results in several respects. COVID-19 changed the world, it helps us to discover a new way of learning by setting up the borders for a new era of online learning keeping the progress of the teaching process is of high value during this critical situation with maintaining students and lecturers' health as our priority. (Sindiani et al., 2020) The nurses training programs have been designed to equip nurses with competencies in providing safe and effective nursing care of high standard in a variety of settings.

The use of convenience sampling technique and cross-sectional design that is based on a questionnaire are the main limitations of the current study which may affect the generalizability of the findings. Further research studies are recommended using a more representative sample of nursing students from all over Kuwait, applying a longitudinal design that is based on a valid and reliable tool to help improving the external validity of the results.

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