Knowledge and Attitude of Undergraduate Nursing Students Toward COVID 19 and their Correlation with Stress and Hope Level

Samah Ramadan Shaheen[1], Amal Awad Moussa[2,] & Engy Abdel Rahman Khamis[3]

[1.] Lecturer of Medical- Surgical Nursing Department, Faculty of Nursing, Alexandria University, Egypt.

[2.] Assistant Professor of Psychiatric Nursing and Mental Health, Faculty of Nursing, Damanhour University, Egypt

[3.] Lecturer of Medical-Surgical Nursing Department, Faculty of Nursing, Modern University for Information & Technology, Egypt

Abstract:

Background: Knowledge and attitudes of nursing students toward COVID-19 play a significant role in preparing their willingness to accept measures of behavioral change from health professionals. **Objectives:** Assess undergraduate nursing students' attitude and knowledge towards COVID 19 and their correlation with stress and hope level. **Setting:** The research was performed at the Faculties of Nursing of Alexandria University, Damanhour University, and Modern University for Technology and Information. **Subjects:** a convenient sample of 443 students. A cross-sectional study design was implemented. **Tools:** Five tools were used; socio-demographic questionnaire, knowledge about COVID-19, attitude of nursing students towards Corona virus, perceived stress scale, and Herth hope index. **Results:** The majority of nursing students (83%) had high levels of COVID 19 knowledge, (91%) had a positive attitude toward Corona virus, (30 %) of students had high level of perceived stress, and the mean percent scores of hope was 74.5±10.9. **Conclusion:** Negative correlations were detected between students' knowledge and attitude, students' attitude and stress, and students' stress and hope. **Recommendations:** Counseling services and effective coping strategies workshops need to be implemented for students by online methods to teach them how to deal with stress in an adaptive manner.

Keywords: Attitude, COVID 19, Hope, Knowledge & Stress.

Introduction:

The novel-coronavirus disease is now a global health threat and an international emergency for public health (**Zhou et al., 2020**). The nature of this virus is evolving rapidly, and new COVID-19 knowledge is pouring out regularly. Updated information and training are also very important to cope with this deadly virus (**Alwani et al., 2020**).

Knowledge and attitudes of nursing students toward COVID-19 play a vital role in determining their willingness to simply accept measures of behavioral change from health authorities. It provides baseline information to determine the type of intervention that's needed to change misconceptions about the virus. In addition, it would be beneficial to examine the knowledge and attitudes associated with COVID19 among nursing students to generate deeper insight into thinking about inadequate knowledge of the disease and therefore the creation of preventive strategies and programs for health promotion (**Person B 2004**). Among the lessons learned from the SARS outbreak is that the degree of fear and various negative emotions are connected to awareness and behaviors that could further complicate actions to monitor the spread of the disease (**Person B.2004 & Tao N., 2003**)

Having inadequate knowledge about COVID-19 and being overwhelmed by its coverage within the media can cause anxiety and fear within the nursing students. They experience distress, frustration, and irritability during the implementation of isolation measures (**Viner RM et al., 2020 & Brooks et al. 2020**) . Quarantine can result in loneliness, grief, physical separation from loved ones, anxiety, and chronic stress, which may have long-lasting psychological effects (**Banerjee, 2020).** The intensity of anxiety increases even more because the outbreak and end processes are unknown (**Ekiz et al., 2020**). Also, the interruption of education for nursing students has been unanticipated from students. Additionally, nursing students' clinical experience in hospitals has also been discontinued. This is often creating a serious concern for students about being inadequate within the development of clinical skill (**Aslan et al., 2020**).

In this respect, **Savitsky et al., (2020)** in their study reported that the reason for the high prevalence of anxiety and stress in nursing students is explained by the extremely exceptional living situations during the continuing COVID-19 pandemic. These situations include social isolation, economic instability, uncertainty about the future, challenges of remote

learning, fear of getting infected, and concern about the continuation of this academic year.

In addition, students expressed concern about what would affect their future careers as registered nurses as a result of the interruption of their nursing education (**Dewart, 2020**). Stress and anxiety can have a long-term impact on nursing students that will later influence their career choices. In this regard, during Middle East Respiratory Syndrome (MERS) outbreak (2016), a study carried out among nursing students in Saudi Arabia found that healthcare students expressed their reluctance to work in healthcare facilities with weak infection control isolation policies (**Elrggal et al., 2018**). During the MERS outbreak in South Korea, higher levels of stress were found to be negatively linked to the aim to provide treatment for patients with a newly emerging infectious disease in the future (**Oh et al., 2017**).

It seems to be crucial for nursing students to manage their stress to decrease the negative effect on both their work and their lives (**Karimi et al., 2013**). Therefore, they need to use all the available resources to induce all possible positive outcomes of the stress they encounter and to travel ahead. These resources could include using different coping strategies, additionally having hope and better expectation (**Bakr, et al 2013).**

Hope is a positive construct that motivates nursing students, makes them feel comfortable with today, and having faith in tomorrow. To be clear, having hope means to believe in the individual ability to practice some control over the growing events (**Snyder, 2002**). The power to possess hope in severely stressful situations is influenced by a cognitive evaluation of matters. So that, the individual ability to cope effectively with stress over time depends at least partly on having hope regarding the expected outcome. Therefore, hope is taken under consideration as a very important construct for those who face serious and/or prolonged stress. (**Folkman, 2010**). This could be the case in coronavirus pandemic. In this respect, earlier findings have shown that hopeful people recover sooner from stressful events (**Ong AD., 2006**).

Significant of study:

Nursing students are directly or indirectly connected to such pandemics. They're the primary individuals who may have close contact with the affected people. Lack of accurate related knowledge and attitude can make them overestimate the situation, increase their stress and anxiety, and will negatively affect their proper judgments (**Kim & Choi, 2016**). Moreover, the battle against COVID-19 is still continuing in our world, to ensure success against this combat, nursing students' adherence to the preventive measures is essential, which is largely influenced by their knowledge, attitude, stress and hope towards COVID-19. (**Begum 2020**) It's therefore of the greatest importance that the knowledge, attitudes, stress, and hope be studied to guide these efforts (**Azlan et al., 2020**). That's why our objective was to assess the extent of data and attitude of nursing students towards this disease and their correlation with stress and hope level.

Aim of the study:

Assess undergraduate nursing students' knowledge and attitude towards COVID 19 and their correlation with their stress and hope level.

Research questions:

▪ What are the undergraduate nursing students' levels of knowledge and attitude towards COVID 19?
▪ What are the undergraduate nursing students' levels of stress and hope during this period of a pandemic?
▪ Is there any correlation between undergraduate nursing students' knowledge, attitude, stress, and hope?

Materials and Method

Materials:

Research design: The present study utilized cross sectional research design.

Research setting: The present study was carried out at three different faculties of nursing namely, Nursing Faculty University of Alexandria, Nursing Faculty University of Damanhour and Nursing Faculty of Modern University for Information and Technology.

Subjects:

A convenient sample of 443 students constituted the subjects of the study. Epi info 7 software was used to determine sample size. Because of limited similar studies related to corona virus disease during this time, the calculations were constructed on the assumption that the possibility of having good knowledge on and positive attitude towards protective measures against corona virus disease was 50.0%, at 95% confidence interval, limit of precision of 5%, with a design effect of 1.0, the calculated sample size was 384 participants (**Schaeffer, 1990**). Accordingly, the survey portal was closed and data collection stopped at the end of the day when the number of participants exceeded the sample size to be 443 participants.

Study Tools: Five tools were used in the present study as follow:

Tool (1) Socio-demographic questionnaire:

It was developed by researchers to elicit information about students' age, gender, academic year, marital

status, private work, place of residence, availability and using of recreational activities, types of recreational activities that are used and the information sources about COVID 19.

Tool (2) Knowledge about COVID-19:

The tool was developed by **Zhong et al (2020)**. It designed to measure knowledge about COVID-19. It consisted of 13 items distributed as follow; (items 1–4) entails the participants information about clinical manifestations, (from 5–8) routes of transmission and (items 9–13) measures knowledge about control and prevention of COVID-19. The response options to these items were "true,", "false," or "not sure". The right response to an item was allotted 1 point, while wrong/not sure response was given 0 points. The total score ranged from 0–13, with a higher score demonstrating well knowledge about COVID-19. The Cronbach alpha for the tool was 0.655 as reported by the author. Cut of point was determined for the tool in the present research as follow; less than 50% indicate poor knowledge, 50 to less than 75% fair knowledge and 75% and more indicate good knowledge.

Tool (3): Attitude of Undergraduate Nursing Students Toward Corona virus:

The scale was designed by **Ikhlaq et al., (2020)** to assess medical and nursing students' attitude toward corona virus. It is composed of 8 items that are answered with yes or no. Surveyed students were inquired whether they agreed or disagreed that the virus would be successfully controlled. Students also were asked about their sureness towards the capability of the government in captivating the combat against COVID-19 and managing the crisis. Higher score is reflecting positive attitude. In the current study; a score less than 50 % is considered negative attitude and 50% and more indicate positive attitude:

Tool (4) Perceived Stress Scale:

The scale was developed by **Cohen et al., (1983)** to measure one's perception and appraisal of situations of daily life as stressful, which termed Perceived Stress Scale (PSS). It is composed of 10 items that are appraised on a five-points likert scale vacillating from (0) representing "never" to (4) signifying "very often ". Questions (4,5,7 and 8) are stated negatively and were reversely scored. Overall score is attained by calculating grades of all items and fluctuating from 0 to 40, with high scores indicating more perceived stress. The score was distributed as follow:Very low level of perceived stress from (0-7), low level of perceived stress from (8-11), average level of perceived stress from (12-15), high level of perceived stress from (16-20), and finally, very high level of perceived stress from (21 and over). The tool

has internal consistency and reliability and Cronbach's alpha for the entire instrument was 0.73.

Tool (5) The Herth Hope Index (HHI):

The scale was constructed by Herth, at Minnesota State in USA **(Herth K. 1992).** It is comprised of 12 items rated on a four points likert-scale. The reply is ranging from strongly agree "4" to strongly disagree "1". Items 3, 6 are reversed in their scores. The instrument encompasses three categories, namely temporality & future (questions numbers 1, 2, 6, 11), positive readiness & expectancy (4, 7, 10, 12) and finally interconnectedness with self and others (3, 5, 8, 9). All items are summated to get the whole score that ranges from 12 to 48, with high score indicating a higher level of hope. Cronbach alpha for the total scale was α = 0.78 which means that HHI is reliable with a strong internal consistency as reported by the author.

Method:

- An authorized permission was obtained from the dean of all faculties of nursing to gain their acceptance and permission for data collection.
- Tool one" socio-demographic questionnaire "was developed by researchers.
- Arabic translation of tools (2-5) were done and verified for content validity by panel composed of five experts in the medical surgical and psychiatric nursing field. This was done to ascertain the appropriateness of these tools for measuring what they are supposed to measure.
- A pilot study was carried out on 10% of the study sample in order to assess the clearness and applicability of the tools as well as estimating the time needed for their application. These subjects were not involved in the actual study.
- Cronbach's alpha was used to test reliability of the study tools and found that they have good internal consistency (α= 0.724 for tool two, 0.763 for tool 3, 0.806 for tool 4 and 0.835 for tool five).
- Data collection was done online by using Google Platform. As it was not feasible to conduct this study through interviewing students face to face during current state of pandemic, the researchers chosen to use an online method by means of Google Platform.
- The researchers utilized several strategies to reach as many nursing students as possible all over the period of collection of data. This includes depending on professional and personal networks of the students (through Face book and WhatsApp) to broadcast and share the study tools.
- A standardized general description about the study was given to the students then the link was provided to them that include all study tools https://docs.google.com/forms/d/e/1FAIpQLSe7Q

- Students who agree to participate in the study would tick the 'Continue' button and would then be directed to complete the self-administered questionnaire.
- The study was carried out from the first to the midst of June 2020.

Ethical consideration*:*

- The present study was revised and accepted by the ethical commission of Nursing Faculty, University of Damanhour (Registration No 2)
- Consent for participating in the study was attained from all participants of the study after giving the necessary information on the aim of the study.
- The participants were secured about secrecy of their personal information and respecting their rights to refuse participation.

Statistical analysis:

- The collected data was coded and entered, then analyzed with the International Business Machinery Statistical Package for Social Sciences (IBM SPSS version 25.0).

- Statistical significance was established at cut off value 0.05 level. The subsequent statistical measures were used:

Descriptive statistics:

- Quantitative data were described and summarized using count and percentage.
- Minimum, Maximum, Arithmetic mean ($\overline{X}$), and standard deviation (SD): they were used as measures of central tendency and dispersion respectively for normally distributed quantitative data.

Analytical statistics:

- To compare means of more than two samples, One-way ANOVA test was used.
- To measure the strength of a linear association between two variables, pearson correlation coefficient was used.

Graphical presentation:

Included graphs for data visualization were done using Microsoft Excel.

Results:

Table (1): Socio-demographic characteristics of nursing students.

Personal data	No. (443)	%
Age		
19 to less than 22	311	70.2
22 and more	132	29.8
Sex		
Male	203	45.8
Female	240	54.2
Marital status		
Single	420	94.8
Married	23	5.2
Educational level		
First year	93	21.0
Second year	150	33.9
Third year	112	25.3
Fourth year	79	17.8
Intern	9	2.0
Residence		
Urban	219	49.4
Rural	224	50.6
Private work		
No	334	75.4
Yes	109	24.6
Recreational activities		
No	291	65.7
Yes	152	34.3
Types of recreation	n.152	
Reading	27	17.8
TV	23	15.1

| Personal data	No. (443)	%
Computer game	25	16.4
Mobile game	25	16.4
Walking	18	11.8
Football	34	22.4
Time spent in recreation		
Less than 2 hours	50	11.3
2 to less than 4 hours	65	14.7
4 hours and more	37	8.4
Drinking tea & coffee		
No	151	34.1
Yes	292	65.9
Smoking		
No	409	92.3
Yes	34	7.7
Main source of information		
Search in specialized web	109	24.6
Social media	211	47.6
Academic staff	30	6.8
Working at private hospital	60	13.5
Family and friends	33	7.4
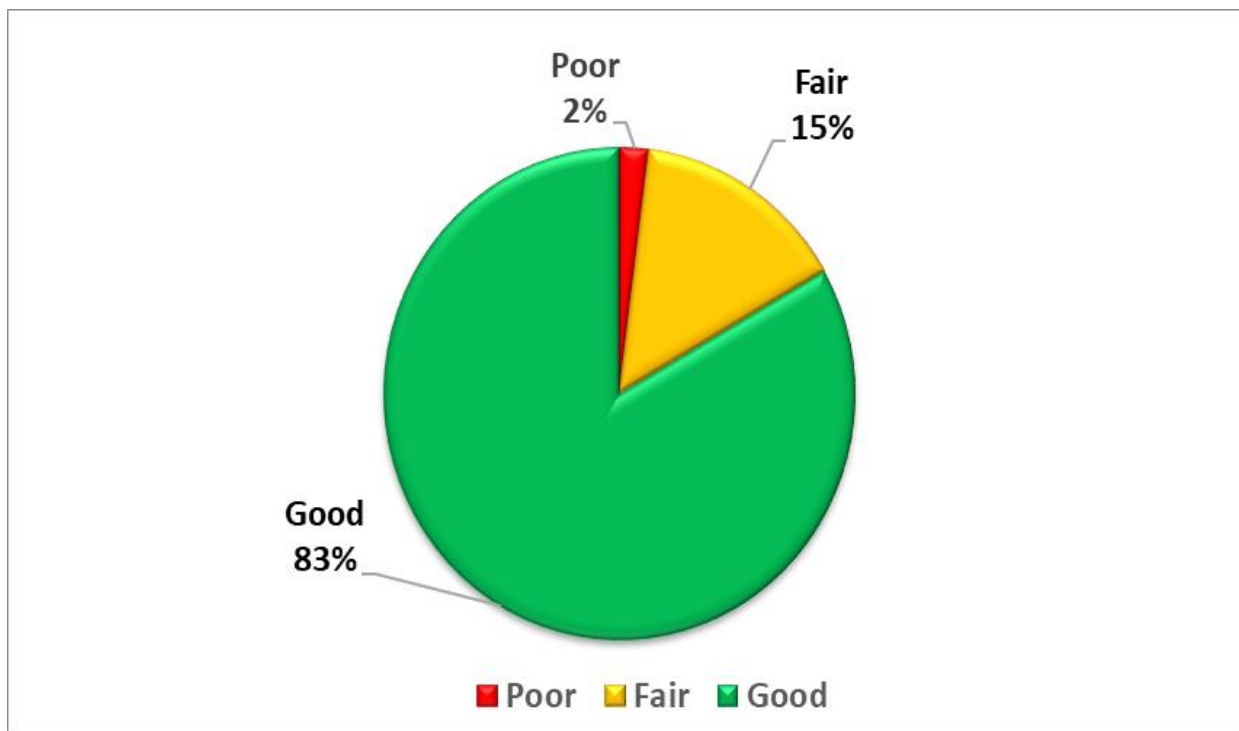
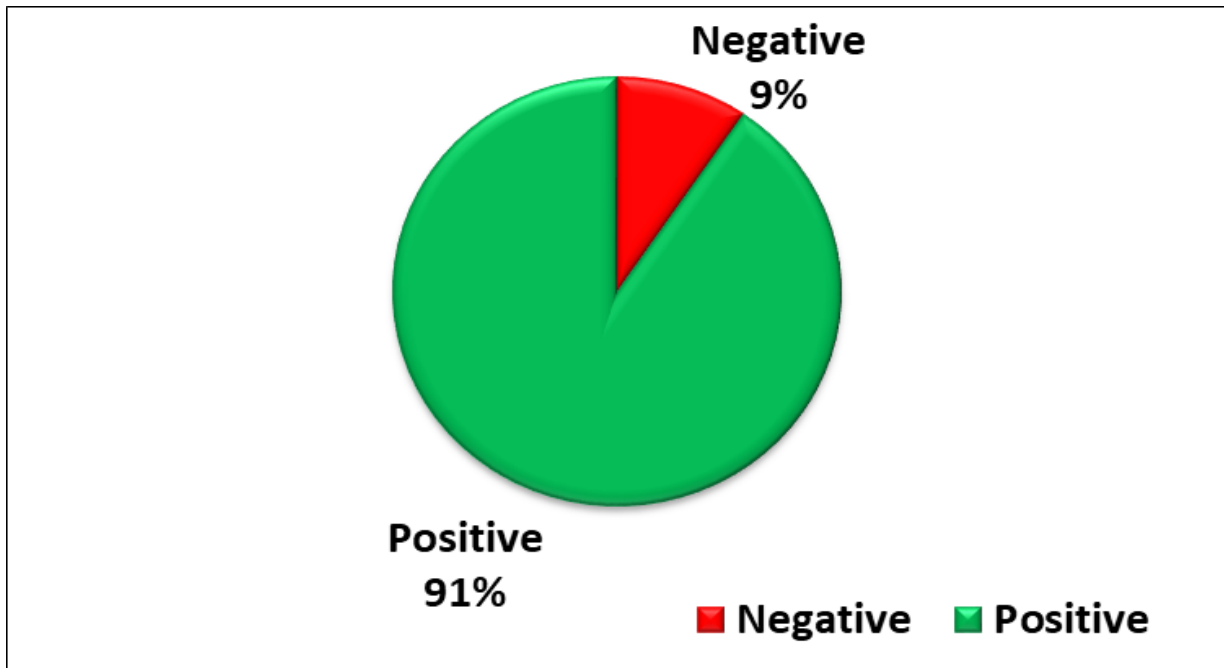**Figure (1): Nursing Students' Knowledge Level about COVID 19**

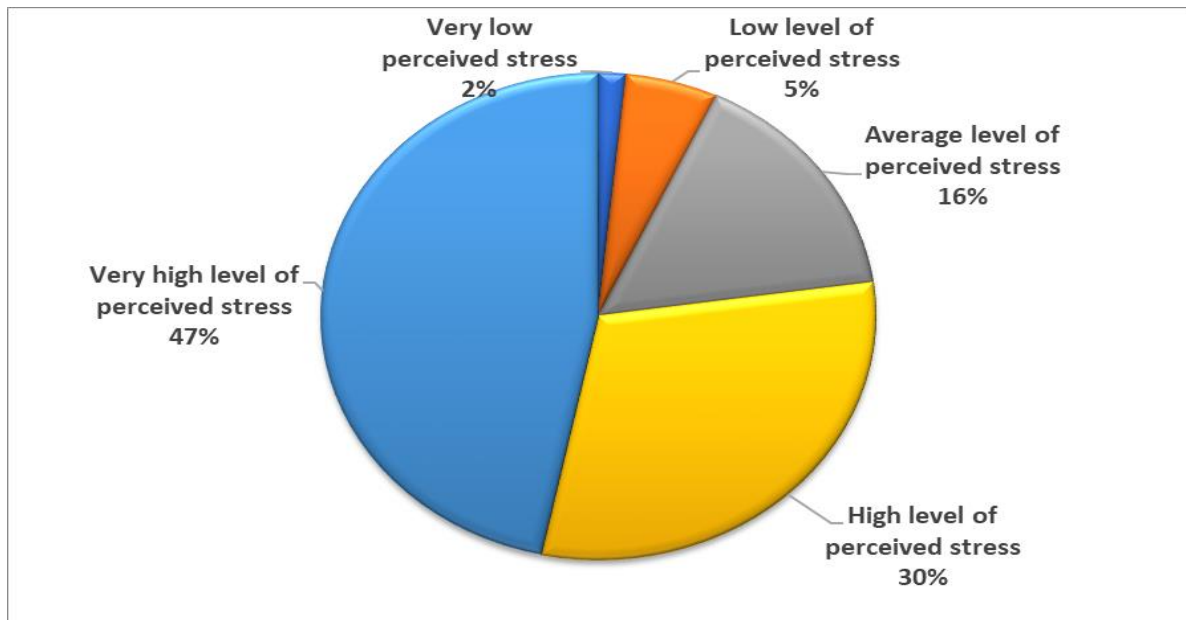**Figure (2): Nursing Students' Attitude toward COVID-19**

Figure (3): Nursing students' perceived stress level

Table (2): Mean Scores of Nursing Students' Hope and Its Domains.

Hope domains	Maximum allowed scores	Mean %±SD
Temporality and future	16 points	70.1±12.3
Positive readiness and expectancy	16 points	79.3±12.3
Interconnectedness with self and others	16 points	74.2±13.4
Total hope	**48 points**	**74.5±10.9**

Table (3): Correlation matrix between nursing students' knowledge, attitude, stress, and hope.

	Knowledge		Attitude		Stress		Hope	
	r	**P**	**R**	**p**	**r**	**p**	**R**	**P**
Knowledge			-.119*	.012	.027	.564	-.023	.624
Attitude	-.119*	.012			-.120*	.011	.160**	.001
Stress	.027	.564	-.120*	.011			-.450**	.000
Hope	-.023	.624	.160**	.001	-.450**	.000		

r: Pearson correlation coefficient   P: P value of Pearson correlation coefficient
**: Correlation is significant at the 0.01 level *. Correlation is significant at the 0.05 level

Table (1): Illustrates the socio-demographic characteristics of nursing students. Regarding nursing students' age, more than two thirds of students (70%) were less than 22 years old. As regards to their sex, more than half of students were female (54.2%) while, male constituted 45.8%. Concerning marital status, almost all students were single (94.8%). As for level of education, the highest percentage was on the second year (33.9%) and the lowest one was in the intern (2%).

In relation to residence, students from rural and urban areas nearly take the same percentage (50.6%, 49.4% respectively). As regards private work, more than two thirds of students did not work in any private hospital (75.4%) compared to only 24.6 % who done.

Concerning recreational activities, only 34.3% of students practice recreational activities as, playing football (22.4%), and the lowest percentage (11.8%) practice walking exercise. 14.7% of students spent 2 to less than 4 hours per day in recreation. Regarding smoking and drinking tea and coffee, almost all students (92.3%) were non- smokers and around two thirds of them (65.9%) drink tea and coffee. Finally, 47.6% of students obtained their information about COVID19 from social media, compared to only 6.8% of them ask academic staff.

Figure (1): Shows nursing students' knowledge level about COVID 19. It can be observed that, most of students (83%) had good level of knowledge about COVID 19 in contrast to only 2 % who had poor level of knowledge.

Figure (2): Displays nursing students' attitude toward COVID 19. It was found that, the vast majority (91%) of nursing students had positive attitude toward Corona virus, compared to 9% only who had negative attitude.

Figure (3): Illustrates nursing students' level of perceived stress. It was noted that, those who had very high level and high level of perceived stress constituted the highest percentage (47%, 30 % respectively) while, only 2% of students had very low level of perceived stress.

Table (2): Presents the mean percent scores of nursing students' hope and its domains; it was noted that, the mean percent scores of total hope was 74.5±10.9 and the positive readiness and expectancy domain takes the highest mean (79.3±12.3%) while the lowest domain was temporality and future (70.1±12.3).

Table (3): Illustrates the correlation matrix between nursing students' knowledge, attitude, stress, and hope. A statistically significant negative correlations were found between firstly; students' knowledge and attitude (r = -.119*, P = .012). Secondly, between students' attitude and stress (r = -.120*, P = .011). Thirdly, between stress and hope (r = - .450 **, P = .000). In contrast, a statistically significant positive correlation was detected between students' attitude and hope (r = 160**) (P= .001).

Discussion
The COVID-19 pandemic has become an urgent global public health challenge, world countries had a high-speed connection as they follow the infection prevention and control measures to mutilate the spread of the COVID-19 virus (**Reuben et al, 2020**). While medical students were strongly encouraged to sit out of COVID-19 care, nursing students take the responsibility to join the front lines in prevention of spreading and care of COVID-19 patients **(Embler, 2020).** Overall effect of this situation may lead to increased stress, anxiety and generalized feelings of being overwhelmed. Therefore, it is important to

assess undergraduate nursing students' knowledge and attitude towards COVID-19 and their correlation with stress and hope level.

The current study found that most of the nursing students had good level of knowledge regarding COVID 19 including transmission routes, prevention and control during the outbreak. This may point out that effective health education was provided by the massive public education. Moreover, students may search in specialized web sites to obtain information about COVID 19 and may ask academic staff to gain reliable information. In addition to the effect of their working at private hospitals. All of these sources may provide a lot of necessary information for students and positively impact on their level of knowledge about COVID 19. There were different studies showed significant levels of knowledge about COVID-19 in the same line with current study, **Taghrir (2020)** found that Iranian medical students had considerable level of knowledge in prevention of COVID-19. Also, **Peng et al (2020)** who studied a cross-sectional survey of knowledge, attitude and practice associated with COVID-19 among undergraduate students in China, found that most undergraduates acquired necessary knowledge about COVID-19 outbreak. On the other hand, study done by **Begum (2020)** in nursing institution in Saudi Arabia during COVID-19 outbreak found that nursing students had average knowledge about COVID-19.

As for students' attitude, the current study found that the most of students maintained positive attitudes toward overcoming COVID-19 pandemic period. This may be due to nursing students' conviction that pandemic state would be successfully controlled (this is reflected in more than two thirds of students have high level of hope) and had a confidence of the government in winning the battle against COVID19. Furthermore, these positive attitudes were revealed in the study had been done in Saudi Arabia by **Begum (2020)**. As well, a study had done in Jordon by **Alzoubi et al., (2020)** found high level of attitude held by medical and non-medical students and they agreed that hand hygiene is necessary for prevention of infection. In China; **Zhong et al., (2020)** found that majority of hospital residents had optimistic attitude toward COVID-19.

In relation to nursing students perceived stress, it was found that most of nursing students in the current study had high level of stress; this may be due to irritability during the implementation of isolation measures, unexpected discontinuance of education for nursing students and excessive worry about being infected. In the same line of our study **Kwok et al., (2020)** found that the majority of the participants were worried about COVID-19,

and their daily routines were greatly disrupted on a study had been done in Hong Kong. On the contrary, study was done in Turkey by **Aslan and Pekince, (2020)** found that the nursing students had a moderate level of stress.

Concerning students' level of hope, the present study showed that the highest percentage of students had high level of hope in total score as well as in positive readiness and expectancy towards COVID-19 pandemic period. High level of hope among nursing students may be attributed to the impact of online nursing education that lead to bracing nursing students for particular challenges related to their role in providing help and developing as care providers. In this respect, **Dewart et al, (2020)** stated that in the face of fear and anxiety, there are learned lessons in hope without direct clinical education, these nursing students are learning through online courses about their future role and responsibilities as professional nurse. Also, nursing students had hope that was provided globally by the appreciation of the commitment, roles, and significant contributions of the nurses` role in the health care system.

Speaking of the correlation between knowledge and attitude, the present study found statistically significant negative correlation between students' knowledge and attitude. It means that when students' knowledge increased their attitude toward illness become negative. This may be explained by the fact that when the person become knowledgeable and oriented about everything on the illness this is may lead to increase fears and anxiety and being oversensitive toward any symptoms occurs to him and may interpret it by false and exaggerated way. Subsequently, this is may reflect in bad manner on his attitude and feel loss of control over the situations at all and loss ability to overcome this horrible disease. This explanation is consistent with **Wong et al., (2005)** study, they found there were significant association between stress included loss of control and vulnerability to infection, fear for personal own health and news outspread of the novel virus.

In relation to correlation between attitude and hope, the present study found that there is a statistically significant positive correlation between students' attitude and hope. Increase level of hope is associated with presence of positive attitude. This is expected and acceptable result and consistent with what is commonly known about characteristics of hopeful people. They have a positive belief in their ability to overcome negative situations rapidly and do their best to achieve their goals. In this respect, **Snyder (2000)** stated that (those who have high levels of hope can try many methods to achieve their goals). Also, **Pierce & Gardner (2004)** reported that people who think positively about themselves show attitudes

that will enhance their thinking. Moreover, **Hasnain et al., (2014)** emphasize on the effect of thinking with hope on preventing problems and expanding strength and highlighted that hope would have grant before and after the emergence of problems. This finding is consistent with **Abdelhafiz et al. (2020)** study, they found that the most of participants were eager to undergo the examination to detect the virus and hope to be vaccinated once it is available. They also stated that personal attitude and behaviors, which depend on the awareness of the disease along with the political efforts by the governments, are efforts that are employed to prevent the pervasion of the virus.

Regarding correlation between attitude and stress, a statistically significant negative correlation was found between students' attitude and stress level. When students' stress level elevated their attitude become negative and vice versa. In fact, high level of stress impedes person's ability to see situations accurately and behave in effective manner. As well as individual's ability to perceive possibilities and opportunities to change difficult situations become eroded. This is consequently affecting their ability to cope adaptively. This explanation is concordant with **Cai et al., (2020)** they stated that positive self-attitude toward virus and knowledge of virus prevention and transmission are among personal coping strategies applied by the medical staff to reduce stress among professionals. In addition, a study conducted by **Aslan & Pekince, (2020)** found that the students' attitude regarding the transmission of the virus affected their perceived stress. Accordingly, nursing students should be led to improve their ability to cope with the stress in period of spreading infection around world to protect themselves, their families and the community. Accordingly, nursing students will afford important role in helping individuals and communities to cope with stress.

Finally, when we discern the findings of the study that examined the correlation between hope and perceived stress, a negative correlation was detected between the level of hope and perceived stress. This finding shows inverse relationship between level of hope of the students, and the perceived stress. The literature indicated that, stress is related to hope and hopeful people recover more quickly from stressful events **(Ong et al., 2006)**. In the same line, **Sucan (2019)** stated that fighting with stress is essential for students to develop appropriate adaptive behaviors, to be outstanding in their career and to achieve their profession. The author also reported that the only way for students to be successful is to master the coping techniques to stress, that will be extremely

hopeful. **Sucan (2019)** actually, said that "those with high levels of hope experience less stress and higher quality of life" **(Runcan & Iovu, 2013)**.

Conclusions:
In summary, the study was able to provide a comprehensive assessment of undergraduate nursing students' knowledge, attitudes, stress and hope toward COVID-19. The study findings submit that, students had high level of knowledge about COVID-19, suffered from high level of stress and at the same time had a positive attitude and outlook toward overcoming the pandemic state. Also, negative correlations were detected between students' knowledge and attitude, students' attitude and stress and students' stress and hope. While paradoxically; a statistically significant positive correlation was noticed between students' attitude and hope.

Recommendations:
Based on the results and finding of the study, the subsequent recommendations are suggested:
- Mental health issues of undergraduate nursing students during a pandemic need to be addressed and promoted. This is can be done by careful assessment of students' stress and anxiety.
- Nursing faculty play an important role in minimize students' stress and generate a sense of control among them by maintain and expand a stable educational structure for nursing students through online courses in order to alleviate their worries about educational materials.
- Frequent reassuring, hopeful messages and practical ways to elevating students' hope and maintaining positive attitude toward overcoming this stressful period should be offered to students by faculty instructors.
- Counseling services and effective coping strategies workshops need to be implemented for students by online methods to teach them how to deal with stress in adaptive manner.

References
- **Abdelhafiz A., Mohammed Z., Ibrahim M., Ziady H., Alorabi M., Ayyad M., & Sultan E. (2020):** Knowledge, Perceptions, and Attitude of Egyptians Towards the Novel Coronavirus Disease (COVID-19). Journal of Community Health.
- **Alwani, S., Majeed, M., Hirwani, M., Rauf, S., Saad, S., M., Shah, S., & Hamirani, F. (2020):** Evaluation of Knowledge, Practices, Attitude and Anxiety of Pakistans Nurses towards COVID-19 during the Current Outbreak in Pakistan. medRxiv.
- **Aslan H., & Pekince H. (2020):** Nursing students' views on COVID-19 panemic and their perceived

stresss levels. Psychiatric Care; July; 1-7. DOI:10.1111/ppc.12597

▪ **Azlan A., Hamzah M., SernID Th., AyubID S., & Mohamad E. (2020):** Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia. PLoS ONE 15(5): e0233668. https://doi.org/10.1371/journal.pone.0233668

▪ **Alzoubi H., Alnawaiseh N., Lubad MA., Aqel A., & Al-Shagahin H. (2020):** COVID-19 - knowledge, attitude and practice among medical and non-medical university students in Jordan. J Pure Appl Microbiol.;14(1):17–24. doi:10.22207/JPAM.14.1.04

▪ **Bakr, M., Sherif, N., Eid, N., & ELshal, S. (2013):** Factors influencing decision making and its effect on intern students clinical performance. World Applied Programming, 3 (2), 75-84. Available at http:// www.waprogramming.com

▪ **Banerjee D. (2020):** How COVID-19 is overwhelming our mental health. Nature India.

▪ **Begum F. (2020):** Knowledge, attitudes, and practices towards covid-19 among b.sc. Nursing students in selected nursing institution in Saudi Arabia during COVID-19 outbreak: An online survey. Saudi Journal of Nursing and Health Care; 3(7): 194-198.DOI: 10.36348/sjnhc.2020.v03i07.002

▪ **Brooks, S., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020).** The psychological impact of quarantine and how to reduce it: rapid review of the evidence. The Lance ;395:912-920.

▪ **Cai H., Tu B., Ma J., Chen L., Fu L., Jiang Y., & Zhuang Q. (2020):** Psychological Impact and Coping Strategies of Frontline Medical Staff in Hunan between January and March 2020 During the Outbreak of Coronavirus Disease 2019 (COVID-19) in Hubei, China. Journal of Med Sci Monit; 26: e924171.

▪ **Cohen, S., Kamarck, T., & Mermelstein, R. (1983).** A global measure of perceived stress. Journal of Health and Social Behavior; 4(24): 385-95.

▪ **Dewart, G., Corcoran, L., Thirsk, L., & Petrovic, K. (2020):** Nursing education in a pandemic: Academic challenges in response to COVID-19. Nurse education today, 92, 104471. https://doi.org/10.1016/j.nedt.2020.104471

▪ **Ekiz T., Ilıman E., Dönmez E., & Bireylerin Sağlık Anksiyetesi Düzeyleri (2020):** İle Covıd-19Salgını Kontrol Algısının Karşılaştırılması. Uluslararası Sağlık Yönetimi ve Stratejileri Araştırma Dergisi.;6(1):139-154.

▪ **Elrggal, M., Karami, N., Rafea, B., Alahmadi, L., Al Shehri, A., Alamoudi, R., & Cheema, E. (2018):** 'Evaluation of preparedness of healthcare student volunteers against Middle East respiratory syndrome coronavirus (MERS-CoV) in Makkah, Saudi Arabia: a cross-sectional study', Journal of Public Health (Germany). J. Publ. Health 26 (6), 607–612. https://doi.org/10.1007/s10389-018-0917-5.

▪ **Embler P. (2020):** COVID-19 crisis: Faculty support for nursing students. Health. https://www.wolterskluwer.com/en/expert-insights/covid-19-crisis-faculty-support-for-nursing-students.

▪ **Folkman, S. (2010):** Stress, coping, and hope. Psychooncology. Sep;19(9):901-8. doi: 10.1002/pon.1836.

▪ **Hasnain, N., Wazid, S., & Hasan, Z., (2014):** Optimism, Hope, and Happiness as Correlates of Psychological Well-Being Among Young Adult Assamese Males and Females. IOSR Journal Of Humanities And Social Science (IOSR-JHSS), 19(2), 44-51. https://doi.org/10.9790/0837-19224452

▪ **Herth, K. (1992):** Abbreviated instrument to measure hope: Development and psychometric evaluation. Journal of Advanced Nursing, 17, 1251-1259.

▪ **Ikhlaq A., Bint-E-Riaz H., Bashir I., & Ijaz F. (2020):** Awareness and Attitude of Undergraduate Medical Students towards 2019-novel Corona virus. Pakistan Journal of Medical Science, 36 , COVID19-S4

▪ **Karimi , L., Leggat, S., Donohue, L., Farrell, G., & Couper, G. (2013):** Emotional rescue: the role of emotional intelligence and emotional labour on well-being and job-stress among community nurses. Journal of advanced Nursing, 176-186.

▪ **Kim, J., & Choi, J. (2016):** Middle East respiratory syndrome-related knowledge, preventive behaviours and risk perception among nursing students during outbreak. Journal of Clinical Nursing, 25(17–18), 2542–2549. https://doi.org/10.1111/jocn.13295

▪ **Kwok KO, Li KK, & Chan HH. (2020).** Community responses duringthe early phase of the COVID-19 Epidemic in Hong Kong: riskperception, information exposure and preventive measures. https://www.medrxiv.org/content/10.1101/2020.02.26.200217v1.full.pdf

▪ **Oh, N. (2017):** Exploring nursing intention, stress, and professionalism in response to infectious disease emergencies: the experience of local public hospital nurses during the 2015 MERS outbreak in

South Korea. Elsevier. Asian Nurs. Res., vol. 11 (3).

- **Ong AD, Edwards LM, & Bergeman CS. (2006):** Hope as a source of resilience in later adulthood. Personality and Individual Differences.; 41(1):1263-73
- **Peng Y., Pei Ch., Zheng Y., Wang J., Zhang K., Zheng Z., & Zhu P. (2020)** Cross-sectional survey of knowledge, attitude and practice associated with COVID-19 among undergraduate students in China. Journal of BMC Public Health 20:1292
- **Person B., Sy F., Holton K., Govert B., & Liang A. (2004):** Fear and stigma: the epidemic within the SARS outbreak. Emerg Infect Dis. 10:358–63. https://doi.org/10.3201/eid1002.030750 PMID: 15030713
- **Pierce, J., & Gardner, D. (2004):** Self-Esteem Within the Work and Organizational Context: A Review of the Organization-Based Self-Esteem Literature. Journal of Management, 30(5), 591-622. https://doi.org/10.1016/j.jm.2003.10.001
- **Reuben, R., Danladi, M., Saleh, D., & Ejembi, P. (2020):** Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria. Journal of community health, 1–14. Advance online publication. https://doi.org/10.1007/s10900-020-00881-1
- **Runcan, P., & Iovu, M. (2013):** Emotional intelligence and life satisfaction in Romanian University students: The mediating role of self-esteem and social support. Review of Research and Social Intervention. 40. 137-148.
- **Savitsky B., Findling Y., Ereli A., & Hendel T. (2020):** Anxiety and coping strategies among nursing students during the covid-19 pandemic. Nurse Education in Practice 46 102809
- **Schaeffer Rl., Mendenhall W., & Ott L. (1990):** Elementary Survey Sampling, 4th ed. Duxbury Press, Belmont, California.
- **Snyder, C. (2000):** The Past and Future of Hope. Journal of Social and Clinical Psychology, 19, 11-28. https://doi.org/10.1521/jscp.2000.19.1.11
- **Snyder CR. (2002):** Hope theory: Rainbows in the mind. Psychological Inquiry, 13:249–76
- **Sucan S. (2019):** The Relationship between Hope and Perceived Stress in Teacher Candidates. International Journal of Higher Education; 8 (2) ISSN 1927-6044 E-ISSN 1927-6052
- **Taghrir MH. (2020):** Borazjani R, Shiraly R. COVID-19 and Iranian medical students; a survey on their related-knowledge, preventive behaviors

and risk perception. Arch Iran Med.;23(4):249–254. doi:10.34172/aim.2020.06
- **Tao N. (2003):** An analysis on reasons of SARS-induced psychological panic among students. J Anhui Inst Educ.; 21:78–9.
- **Viner RM., Russell SJ., & Croker H. (2020):** School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. Lancet Child Adolesc Health.;4(5):397-404. https://doi.org/10.1016/S2352-4642(20)30095-X
- **Wong TW., Yau JKY., & Chan CLW. (2005).** The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. Eur J Emerg Med; 12(1): 13 – 18
- **Zhong B., Luo W., Li H., Zhang Q., Liu X., & Li W. (2020):** Knowledge, attitudes and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. Int J Biol Sci.; 16:1745–1752. https://doi.org/10.7150/ijbs.45221 PMID:32226294
- **Zhou, P., Yang, X., Wang, X., Hu, B., Zhang, L., Zhang, W., & Chen, H. (2020):** A pneumonia outbreak associated with a new coronavirus of probable bat origin. nature, 579(7798), 270-273.