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# Effect of Health Education Program about COVID 19 on Older Adults Knowledge, Practice and Perception

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## ABSTRACT

Older adults are more at risk for serious sickness from COVID 19 because of their basic therapeutic conditions. **Study aim:** to determine the effect of health education program about covid 19 on older adults' knowledge, practice and perception. **Subjects & method**: Quasi-experimental design was used. **Settings:** the study was conducted at Assiut city older adults clubs (The Legitimacy Assembly elderly club and the Islamic Cultural Center elderly club). The program was conducted on the participants who agreed to participate in the study; their number was 50 older adults. Tools: Three tools were utilized. Tool I: Structured interview schedule: It include sociodemographic characteristics as age, sex residence, etc. Tool II: Knowledge and practices related to coronavirus pandemic. Tool III: Brief Illness Perception Questionnaire BIP-Q. **Results:** score of good knowledge level increased from 34.0% in pre-test to 82.0% in post-test & poor knowledge level decreased from 42.0% in pretest to 8.0% in the posttest. Also, there was a significant upgrade in the knowledge level of the studied sample as there was a statistically significant difference between pretest, & posttest P-value= 0.000. **Conclusion**: The present study concluded that: older adults aged ≥70 years had poor knowledge level about covid 19 than elderly aged 60-69 years old; also there was significant positive upgrade among the older adults participants regarding their knowledge and practice about novel corona virus. **Recommendations**: Frequent health education programs, especially focusing on lower information more seasoned adults' people with respect to covid 19, are basic for empowering their positive state of mind and keep up secure practices.

**Key Words:** COVID 19, Older Adults, Health Education, Program, Perception.

## Introduction

In Egypt, nowadays the percentage of elder people in 2020 is 6.9% and it is expected to rise to 11.5% in 2031. The anticipated rate of increment of add up to populace from 1996 to 2026 is approximately 57 % whereas all through the same period the anticipated rate of increment among more seasoned people is approximately 79% (Central Statistical Processing Center Egypt, 2020).

Coronavirus infection 2019 (COVID-19) is an rising respiratory infection caused by a single-strand, positive-sense ribonucleic acid (RNA) infection, extreme intense respiratory disorders coronavirus-2 (CoV-2) infection. The clinical side effects of COVID-19 include fever, which is the foremost common symptom, fatigue, cough, discomfort, and shortness of breath with an incubation period of 2-14 days after the exposures to the infection (Shigemura, et al., 2020).

One of the characterizing highlights of COVID 19 is the preference for of more seasoned grown-ups and people with incessant basic wellbeing conditions, coming about in higher assault rates and mortality. Given that more seasoned grown-

ups encounter a more prominent number and seriousness of inveterate maladies and inabilities, as well as resistant brokenness (Li, 2020).

Numerous of COVID 19 indications can be treated and getting early care from a healthcare supplier can make the illness less unsafe. There are a few clinical trials that are being conducted to assess potential therapeutics for COVID-19 (Cascella et al., 2020).

This COVID-19 causes dismalness within the run of gentle to serious respiratory ailment. Worldwide concerns around the infection have risen due to its tall transmission capability, which may be coupled with dreariness and mortality. The elderly and patients with comorbidities are more likely to be contaminated and are also more inclined to genuine complications (Huang, 2020).

Complications characterized by intense respiratory trouble disorder, septic stun, and other metabolic and hemostasis clutters and passing. Most of the deadly cases and serious ailments like intense respiratory trouble disorder (ARDS) happened in more seasoned grown-ups and individuals who have basic restorative comorbidities like diabetes, cancer, hypertension, heart, lung, and kidney infections (Guo, 2020).

A precise audit on COVID-19 patients appeared that people with hypertension, diabetes, cardiovascular and respiratory system illnesses were the foremost defenseless bunches. Persistent obstructive aspiratory malady patients have a five-fold expanded chance of serious COVID-19 disease (Li, 2020).

Gerontological nursing part play a basic part within the endless group of elderly individuals and organizations included in overseeing this emergency among more seasoned grown-ups. Mindfulness of potential key clinical contrasts of COVID19 in geriatric populace; rapidly starting suitable behaviors to oversee the disease offer assistance geriatrics healthcare suppliers get it the COVID19 widespread, provide effective direct to the foremost current data and will proceed to screen the circumstance and overhaul as rapidly as they can (Zhong, 2020).

**Significance of the study:**

The widespread of coronavirus malady of 2019 (COVID 19) is having a worldwide inconspicuous effect on elderly population. All viewpoints of life have changed drastically for presently. The bunches most helpless to COVID-19 are more seasoned grown-ups and those with incessant basic therapeutic clutters **(Egyptian PM, 2020)**. So this study was suggested to assess the effect of educational program on older adults' knowledge, practice and perception, about COVID 19.

**Study aim:** to determine the effect of health education program about covid 19 on older adults' knowledge, practice and perception.

**Study hypothesis:**

- There will be improving in knowledge, practices and perception about COVID 19 among elderly people after program implementation.

**Subjects and Method**

**Research design:** Quasi-experimental design.

**Setting:** The study was conducted in two geriatric clubs in Assiut city (The Geriatric club in Legitimacy Assembly and the Geriatric club of Islamic cultural center).

**Sampling:**

A convenient sample was used to assess the awareness and perception among elderly participants about COVID-19. The program was conducted on participants who agreed to participate in the study that their number was 50 calculated by using Open Epi, Version 3, Sample size $n$ = [DEFF*Np(1-p)]/ [$(d^2/Z^2_{1-\alpha/2}$*(N-1)+p*(1-p)].

**Study tools**: ***three tools were used for data collection:***

**Tool I**: **Structured interview Questionnaire:** It was created by the analysts, based on significant

writing, ***it included)***: Socio-demographic data as, age, gender**,** marital status, income….etc.

**Tool II: Self-reported knowledge, and practices related to Corona virus pandemic (Zhong et al., 2020):-** to assess the knowledge of elderly and practices of participants about COVID-19, assessed by 16 questions that elderly responded to with "yes" or "no."

**Scoring system:** A scoring system was applied to assess the level of knowledge of each subject: correct answer took 1 point. Zero for an incorrect answer. Participants were divided into three categories according to their level of knowledge: low (<10 points), moderate (10<13) points, and high (13 points).

**Tool III: The Brief Illness Perception Questionnaire BIP-Q (Justė & Kastytis, 2020):** made up of nine open-ended questions. The BIP-Q5 includes five items on perception of threat from illness, where participants rate their agreement with the statements on a Likert-type scale from 0 to 10.

**Scoring system:** elderly answered questions on a 10-point Likert scale, (always, sometimes, and never) scores ranging (0, 1, to 10) respectively. The test provided an overall score on their presentation of the illness. The higher the score is, the greater the perception of the illness as a threat.

**Validity & Reliability of the tools: -**

Tools were tested for their content validity by a group of five experts in gerontological health nursing. The required modifications were done. Testing reliability of the study tools was done by to alpha Cronbach test and the test result was r= 0.8.

**I- Administrative stage**:

Official letter of endorsement was accomplished from the Dignitary of the Nursing Workforce, to directors of geriatric clubs. The letter included an endorsement to carry out the think about, the nature and reason of the think about.

**II- Pilot study**:

Carried out on 10% of older adults who were excluded from the sample to test tools clarity and to estimate the time needed for fulfilling it. Based on the pilot study results, the necessary modifications in sheets were done.

**III- Data collection stage:**

The data collection started from the end of July 2020 to the end of October 2020. The data was collected 2 days per week. The structured interview questionnaire filled by the researchers. The length of each interview took from 40-45 minutes. The researcher was available at the club to answer any questions and for further explanations. The educational program was implemented in three months for (50 elderly) who were divided into 24 groups; each group consisted of 2-3 participants. One group was met every two days/week to implement the program at 2 sessions each session took 45 minutes, and then the program was completed using means of communication such as phone and WhatsApp group due to the ban and quarantine periods.

**The educational program:**

The educational program was developed by the researchers based on relevant literatures. Brochure was prepared which included summarized simple information about definition, causes, signs & symptoms, complications, preventive measures against COVID-19 and recommendations for elderly to protect themselves against COVID-19 as proper nutrition and using online media (videos, posters, and simple pictures) to conduct the program through WhatsApp group.

1. **General objective of the health education program:**

Assess effect of health education program about covid 19 on older adults' knowledge, practice and perception.

**Specific objectives:-**

1. To assess level of knowledge regarding covid 19 among older adults.
2. To assess level of practice regarding covid 19 among older adults.
3. To detect the effect of health education program about covid 19 on older adults' perception.
4. Plan, implement and evaluate health education program sessions.

**2. Content of the health education program:**: The program included 2 parts:

**A. Theoretical part:**

Definition, causes, signs & symptoms, complications, preventive measures against COVID-19 and recommendations for elderly to protect themselves against COVID-19 as, good hygiene, avoid crowded and poor ventilated places, maintain physical and social distance between other people, use only personal tools, washing foods & fruits thoroughly, control & management of chronic diseases, proper nutrition, and guidelines to promote older adults' immunity.

**B. Practical part:**

It included proper hand washing technique, proper wearing & taking off face mask and face shield, proper coughing & sneezing ways (how to covering mouth & nose during coughing & sneezing) how open & close different doors as elevators, and breathing & coughing exercises.

**Program stages:**

**Planning stage:** Arrangement of program conducted was done; sessions and time of the program decided, other facilities were checked as teaching place, online media, audiovisual aids.

**Teaching Time:** decided according to clubs' time table & older adults time.

**Teaching place:** clubs' garden and clubs' halls arrangement was done with the directors of the clubs, and during pan periods the program was conducted through online by WhatsApp group.

**Teaching methods and materials*:*** include lectures, discussions power-point, demonstration, re-demonstration, media as pictures, posters & videos and sometimes online discussions.

**I- Implementation phase:** Before beginning the first session, an orientation to the program and its purpose was done to older adults' participants, each session begun by amendment around what was given amid the past session and the targets of the unused subjects.

**Number of sessions and time:**

***The program was given in two sessions.***

The 1st session contain definition, signs & symptoms, causes, complications, preventive measures against COVID-19 and recommendations for elderly to protect themselves against COVID-19 as, good hygiene, avoid crowded and poor ventilated places, maintain physical and social distance between other people, use only personal tools, washing foods & fruits thoroughly, control & management of chronic diseases, proper nutrition, and guidelines to promote older adults' immunity.

The 2nd session included proper hand washing technique, proper wearing & taking off face mask and face shield, proper coughing & sneezing ways (how to covering mouth & nose during coughing & sneezing) how open & close different doors as elevators, and breathing & coughing exercises.

**II- Evaluation phase:** to evaluate the effect of health education program about covid 19 on older adults' knowledge, practice and perception through immediate posttest.

**Results:**

**Table (I):** Showed that 64% of the studied sample aged 60-69 years, while 36% of them aged 70 years and older. The mean age was 65.39±3.226, 80% of the studied sample were female. According to residence, 76% of them live in the urban area. Regarding level of education, it was observed that 34% of the studied elderly had secondary education and 30% of them living with their spouse and 76% of them had income equal or more than 1000 LE.

**Figure (I):** Revealed that 80 % of the studied sample suffering from hypertension, while 39.4% of them had diabetes mellitus and 70 % of them living with other chronic diseases.

**Table (II):** Illustrated that there was statistical significant difference between pretest & posttest regarding most of knowledge statement of elderly participants about novel corona virus (COVID-19) P-value=0.000.

**Figure (II):** Revealed that there was upgrade in knowledge level of the studied sample as there was statistical significance difference between pretest, & posttest P-value= 0.000, as score of good knowledge level increase from 17 % in pretest to 41 % in posttest & poor knowledge level decrease from 21 % in pretest to 4 % in posttest.

**Table (III):** stated that there was a significant relation between pretest & posttest regarding most of practice statement of elderly participants about novel corona virus (COVID-19) P-value=0.000.

**Figure (III):** Illustrated that there was no statistical significance difference between pretest, & posttest P-value = 0.095 regarding studied sample BIP-Q level.

**Figure (IV):** Showed that 88.2% of those who had good knowledge level about COVID -19 were between age 60-69 years, while 66.7% of those who had poor knowledge level about COVID -19 were between age 70 and older.

**Table (IV):** Illustrated that there was statistical significant relationship between age, sex & education level and poor knowledge level of the studied sample P-value = (0.009, 0.044, 0.044) respectively. also it was observed that there was statistical significant differences between high BIP-Q and other socio-demographic data as age, sex, residence, education level & income between pretest and posttest, P-value = 0.019, P= 0.0191, P = 0.091, P = 0.026 and P-value = 0.034 respectively.

**Table (I): Distribution of studied elderly according socio-demographic data (n=50).**

| Socio-demographic data | no. | % |
|---|---|---|
| **Age (years)** | | |
| 60-69 | 32 | **64 .0** |
| ≥70 | 18 | 36.0 |
| **Mean+SD** | **65.39±3.226** | |
| **Sex** | | |
| Male | 10 | 20.0 |
| Female | 40 | **80.0** |
| **Male to Female Ratio** | 1:4 | |
| **Residence** | | |
| Urban | 38 | **76.0** |
| Rural | 12 | 24.0 |
| **Marital status** | | |
| Married | 20 | 40.0 |
| Divorced | 2 | 4.0.0 |
| Widowed | 28 | 56.0 |
| **Level of education** | | |
| Read & Write | 5 | 10.0 |
| Primary education | 7 | 14.0 |
| Preparatory education | 8 | 16.0 |
| Secondary education | 17 | **34.0** |
| University education | 13 | 26.0 |
| **Current occupation** | | |
| House wife | 19 | 38.0 |
| Retired | 31 | 62.0 |
| **Residential state** | | |
| Spouse | 15 | **30.0** |
| Son | 9 | 18.0 |
| Alone | 26 | 52.0 |
| **Income** | | |
| < 1000 LE | 12 | 24.0 |
| ≥ 1000 LE | 38 | **76.0** |
| **Smoking status** | | |
| Yes | 8 | 16.0 |
| No | 42 | 84.0 |

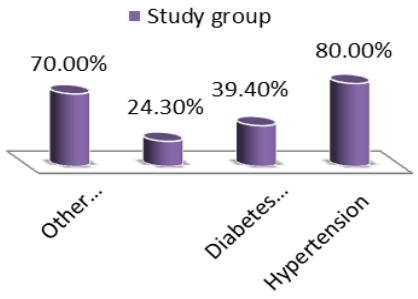


**Figure (I): Chronic diseases among elderly participants for study group (n=50).**

**Table (II): Distribution of elderly participants according to COVID-19 related knowledge (n=50).**

| Items# | Pre test | | | | | | Post test | | | | | | P-value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Yes | | No (n, %) | | I don't Know | | Yes (n, %) | | No (n, %) | | I don't Know | | |
| | n | % | N | % | N | % | N | % | N | % | N | % | |
| Symptoms of COVID-19 are shortness of breath, fever, cough, and fatigue | 22 | 44% | 10 | 20% | 18 | 36% | 39 | 78% | 5 | 10% | 6 | 12% | **0.002*** |
| Less common symptoms of COVID-19 sneezing, stuffy nose, and runny nose. | 17 | 34% | 21 | 42% | 12 | 24% | 42 | 84% | 4 | 8% | 4 | 8% | **0.000*** |
| Symptoms of COVID-19 appear through 2–14 days | 14 | 28% | 25 | 50% | 11 | 22% | 34 | 68% | 10 | 20% | 6 | 12% | **0.002*** |
| As of now, there's no viable treatment or antibody for COVID-2019, but early symptomatic and steady treatment can offer assistance most patients to recoup from the disease | 9 | 18% | 7 | 14% | 34 | 68% | 40 | 80% | 5 | 10% | 5 | 10% | **0.000*** |
| Not all people with COVID-19 will create extreme cases. Those who are elderly, have incessant ailments, and with stifled resistance are more likely to be serious cases | 25 | 50% | 15 | 30% | 10 | 20% | 45 | 90% | 2 | 4% | 3 | 6% | **0.000*** |
| Touching or shaking hands of an tainted individual would result within the contamination by the COVID-19 infection | 13 | 26% | 7 | 14% | 30 | 60% | 38 | 76% | 6 | 12% | 6 | 12% | **0.000*** |
| Touching an question or surface with the infection on it, at that point touching your mouth, nose, or eyes with the unwashed hand would result within the contamination by the COVID-19 infection | 9 | 18% | 34 | 68% | 7 | 14% | 41 | 82% | 2 | 4% | 7 | 14% | **0.000*** |
| The COVID-19 infection spreads by means of respiratory beads of tainted people through the discuss amid wheezing or hacking of contaminated patients | 38 | 78% | 8 | 14% | 4 | 8% | 47 | 94% | 1 | 2% | 2 | 4% | **0.029*** |
| People with COVID-19 cannot contaminate the infection to others in the event that he has no any indication of COVID- 19 | 40 | 80% | 3 | 6% | 7 | 14% | 12 | 24% | 30 | 60% | 8 | 16% | **0.000*** |
| Wearing masks when moving out of domestic is imperative to avoid the contamination with COVID-19 infection | 35 | 70% | 5 | 10% | 10 | 20% | 44 | 88% | 2 | 4% | 4 | 8% | 0.087 |
| More seasoned grown-ups don't have to be take measures to avoid the disease by the COVID-19 infection | 28 | 56% | 12 | 24% | 10 | 20% | 33 | 66% | 10 | 20% | 7 | 14% | 0.570 |
| To anticipate the COVID-19 disease, people ought to maintain a strategic distance from planning to swarmed places such as open transportations, devout places, Healing centers and Work environments | 27 | 54% | 14 | 28% | 9 | 18% | 39 | 78% | 8 | 16% | 3 | 6% | **0.033*** |
| Washing hands habitually with cleanser and water for at slightest 20 seconds or utilize an liquor- based hand sanitizer (60%) is critical to anticipate disease with COVD-19 | 16 | 32% | 16 | 32% | 18 | 36% | 37 | 74% | 6 | 12% | 7 | 14% | **0.000*** |
| Traveling to an irresistible range or having contact with somebody traveled to an range where the contamination show may be a hazard for creating an disease | 23 | 46% | 15 | 30% | 12 | 24% | 29 | 58% | 14 | 28% | 7 | 14% | 0.360 |
| Separation and treatment of individuals who are tainted with the COVID-19 infection are successful ways to diminish the spread of the infection | 11 | 22% | 8 | 16% | 31 | 62% | 34 | 68% | 9 | 18% | 7 | 14% | **0.000*** |
| Individuals who have contact with somebody contaminated with the COVID-19 infection ought to be promptly confined in a appropriate put. | 9 | 18% | 10 | 20% | 31 | 62% | 41 | 82% | 3 | 6% | 6 | 12% | **0.000*** |

***Means there was significant difference**

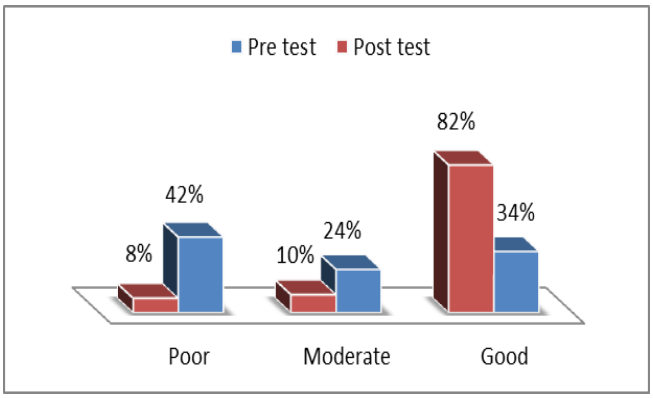


**Figure II: Relation between knowledge level of the studied sample in pretest, & posttest (n=50).**

**Table (III): Distribution of elderly participants according to practices regarding to COVID-19 (n=50).**

| Items | Pre test | | Post test | | P-value |
|---|---|---|---|---|---|
| | Yes (n, %) | No (n, %) | Yes (n, %) | No (n, %) | |
| Do you take an interest in gatherings, devout exercises, occasions, and other social get-togethers or any swarmed put in regions with progressing community transmission? | 20 40% | 30 60% | 40 80% | 10 20% | **0.000*** |
| In later days, have you worn a mask when taking off domestic? | 40 80% | 10 20% | 45 90% | 5 10% | **0.**161 |
| If yes, do you touch the front of the mask when taking it off? **(N=40)** | 35 95% | 5 5% | 10 10% | 30 90% | **0.000*** |
| Do you reuse a mask? **(N=40)** | 20 50% | 20 50% | 12 12% | 28 88% | **0.**311 |
| Do you wash your hands with cleanser and water as often as possible for at slightest 20seconds or utilize sanitizer/60% alcohol? | 8 16% | 42 84% | 35 70% | 15 30% | **0.000*** |
| Do you touch your eyes, nose, and mouth frequently with unwashed hands? | 18 36% | 32 64% | 28 56% | 22 44% | **0.044*** |
| Do you clean and purify as often as possible touched objects and surfaces? | 5 10% | 45 90% | 30 60% | 10 20% | **0.000*** |
| Do you hone "physical distancing" by remaining 2 meters absent from others at all times? | 7 14% | 43 86% | 41 82% | 9 18% | **0.000*** |
| Do you utilize other workers' phones, work areas, offices, or other work materials? | 6 12% | 44 88% | 5 1 % | 45 90% | 0.749 |
| Do you limit your contact? (such as handshakes) | 28 56% | 22 44% | 18 36% | 32 64% | **0.044*** |
| Do you eat or drink in restaurants? | 9 18% | 41 82% | 7 4% | 43 86% | 0.682 |
| Do you cover your nose and mouth amid hacking or sniffling with the elbow or a tissue, at that point toss the tissue within the waste? | 34 68% | 16 32% | 39 78% | 11 22% | 0.585 |
| Do you incline toward to remain at domestic, in a room with the window open amid the transmission period? | 19 38% | 31 62% | 27 54% | 23 46% | 0.108 |
| Do you remain domestic after you were wiped out due to common cold-like contamination? | 40 80% | 10 20% | 44 88% | 6 12% | 0.275 |
| Do you tune in and take after the heading of your state and neighborhood specialists? | 36 72% | 14 28 | 44 88% | 6 12% | 0.045* |

***Means there was significant difference**

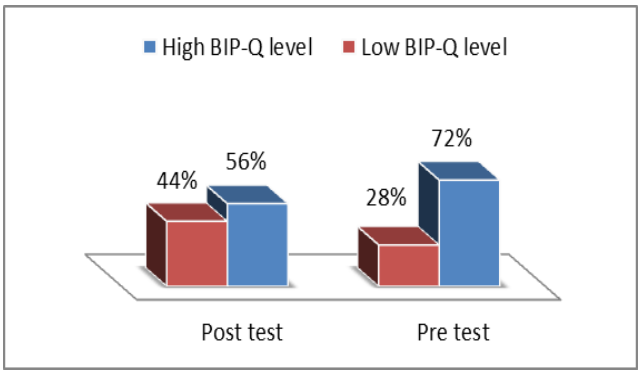


**Figure (III): Distribution of elderly participants regarding their BIP-Q level in pre & post-test (n=50).**

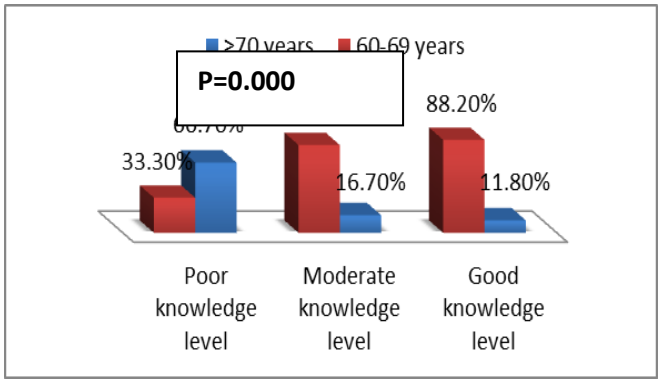


**Figure (IV): Relationship between age group of elderly participants and their knowledge level (n=50).**

**Table (IV): Relation between poor knowledge level, high BIP-Q and some socio-demographic characteristics in pre & posttest for study group (n=50).**

| Socio-demographic data | High BIP-Q | | | | P 1 | Poor knowledge level | | | | P2 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pre (n=36) | | Post (n=28) | | | Pre (n=21) | | Post (n=4) | | |
| | no. | % | no. | % | | no. | % | no. | % | |
| **Age (years)** | | | | | | | | | | |
| 60-69 | 18 | 50.0 | 22 | 78.6 | **0.019*** | 18 | 85.7 | 1 | 25.0 | **0.009*** |
| ≥70 | 18 | 50.0 | 6 | 21.4 | | 3 | 14.3 | 3 | 75.0 | |
| **Sex** | | | | | | | | | | |
| Male | | 80.5 | 1 | 3.6 | **0.0191*** | 5 | 23.8 | 3 | 75.0 | **0.044*** |
| Female | 27 | 9.5 | 27 | 96 4 | | 16 | 76.2 | 1 | 25 | |
| **Residence** | | | | | | | | | | |
| Urban | 29 | 66.7 | 16 | 57.1 | **0.091*** | 9 | 42.9 | 2 | 50.0 | 0.791 |
| Rural | 7 | 33.3 | 12 | 42.9 | | 12 | 57.1 | 2 | 50.0 | |
| **Education** | | | | | | | | | | |
| Read & write | 5 | 13.9 | 3 | 10.7 | **0.026*** | 5 | 23.8 | 3 | 75.0 | **0.044*** |
| Primary | 7 | 19.4 | 4 | 14.3 | | 7 | 33.3 | 1 | 25.0 | |
| Preparatory | 1 | 2.8 | 8 | 28.6 | | 4 | 19.0 | 0 | 0.0 | |
| Secondary | 16 | 44.5 | 12 | 42.9 | | 3 | 14.2 | 0 | 0.0 | |
| University | 7 | 19.4 | 1 | 3.5 | | 2 | 9.7 | 0 | 0.0 | |
| **Income** | | | | | | | | | | |
| < 1000 LE | 12 | 33.3 | 3 | 10.7 | **0.034*** | 12 | 57.1 | 4 | 100.0 | 0.826 |
| ≥1000 LE | 24 | 66.7 | 25 | 89.3 | | 9 | 42.9 | 0 | 0.0 | |

***Means there is significant difference**

**P-value 1:** Relation between pretest and posttest between sociodemographic data and high BIP-Q.

**P-value 2:** Relation between pretest and posttest between sociodemographic data and poor knowledge level.

## Discussion:

COVID-19 illness was to begin with distinguished amid the flare-up of serious intense respiratory disorder in Wuhan, China, in December 2019. On the 11th of Walk 2020, the World Wellbeing Organization (WHO) characterized the malady as the primary widespread caused by a coronavirus. The malady had spread in more than 200 nations with a mortality rate of around 5.7% (World Wellbeing Organization, 2020).

Egypt is one of the greatest nations within the Middle easterner locale, Africa and the Center East. With more than 100 million citizens, Egypt is among the foremost crowded countries in Africa. This tall number of citizens may well be related with a incredible chance of spread and mortality, particularly among ancient people and those with persistent illnesses. Worldwide endeavors have been exerted to anticipate the spreading of the infection. These endeavors incorporate political endeavors by the governments, along with individual state of mind and behaviors, which depend on the mindfulness of the common open almost the infection (Egyptian PM, 2020).

The current study showed that less than two third of the studied sample aged 60-69 years, while more than one third of them aged 70 years and older with mean age was 65.39±3.226, 80% of the studied sample were female. This agree with Li, et al., 2020, who reported that 93.3% of the studied sample aged 60-69 years with mean age was 65.43±3.526

Also, the present study showed that there was a statistical significant effect between the age group of the studied elderly & poor knowledge level, as two third of those who had poor knowledge level about COVID -19 were between age 70 and older P=0.000, this may be because of as people age became not motivated to gain more health information compared to younger ones. This similar to Ahmed et al., 2020, who founded that knowledge level about COVID-19 was significantly lower among older people P=0.000.

According to residence, the present study revealed that most of the study participants live in the urban areas, this because of the greater distance for elderly live in rural areas, this agree with Ahmed et al., 2020, who reported that 79.2% of the study group live in the urban areas.

Concerning the level of education, it was observed that one tenth of the studied elderly were only read & write and while less than one - fifth of them had primary education, this may be due to in the past the people were not interested of their educational levels. This is similar to Awad et al., 2018, who reported that 10% of the studied group were only read and write while one- fifth of them had primary education.

Also, the present study showed that there was statistical significant effect between the educational level of the studied group & poor knowledge level about COVID-19 in pre and posttest P=0.044, as there poor knowledge level among primary educated elderly participants percent decrease from one third in pretest to one quarter, this may be because the educated people had health awareness regarding their health and seeking help as early as possible in reverse to illiterate ones. Furthermore, the current study agrees with Mohammed et al., 2020, who founded that knowledge score increases with elderly participants with higher educational attainment compared to those with low educational level.

Concerning the knowledge level for the studied older adults, the current results reflected that there was statistical significant difference between knowledge level for the studied sample in pre and posttest P=0.000 as good knowledge level score increased from 43% in pretest to 82% in posttest. This result agrees with Arielle, 2020, who founded that there was improved knowledge related to COVID-19 on post-test scores over pre-test scores.

Based on the overall practice score the current study illustrated that there was statistical significant difference between practice related COVID 19 among the studied elderly in pre and posttest regarding most of practice statements as the majority of them use preventive measures to avoid COV-19 infection, this may be due to primarily attributed to the vast broadcasting by the government and the good knowledge considering the high infectivity and easy transmission of COVID-19 virus through droplets. This in the same line with **Amirhossein, 2020,** who founded that (89%), most of the participants took precautions to avoid contamination by COVID-19.

Also, the present study showed that there was statistical significant difference between BIP-Q and age & gender of the studied elderly in pre and posttest regarding P-value = 0.019, this agree with Justė & Kastytis, 2020, who reported that there was there was statistical significant difference between illness perception total score and age & gender of the studied elderly P-value = 0.001.

**Conclusion:** The present study concluded that: older adults aged ≥70 years had poor knowledge level about covid-19 than elderly aged 60-69 years old; also there was significant positive upgrade among the elderly participants regarding their knowledge and practice about novel corona virus.

**Recommendations:**

- Frequent health education programs, especially focusing on lower information more seasoned adults' people with respect to covid 19,are basic for empowering their positive state of mind and keep up secure practices.

- Health awareness by increasing knowledge about COVID-19 through mass media using effective teaching media as videos, role play, demonstration & re-demonstration.

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The authors declare that there is no conflict of interest

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