

The Relationship between Emotional Intelligence, Feeling of Happiness, and Quality of Life among Older Adults Residing in the Assisted Living Facilities in Alexandria, Egypt

Hanaa Abou El-soued Hussein, Nancy Mahmoud Elsakhy

Gerontological Nursing, Faculty of Nursing, Alexandria University, Egypt, Gerontological Nursing, Faculty of Nursing, Matrouh University

Corresponding Author: Hanaa Abou El-soued Hussein

Abstract:

Background: High emotional intelligence has important practical implications because it is linked to happy and satisfied life, which leads to a higher quality of life and a more subjective well-being.

Objective: to examine the relationship between emotional intelligence, feeling of happiness, and quality of life among older adults residing in the assisted living facilities in Alexandria, Egypt.

Design: A descriptive correlational research design.

Setting: The study was carried out in two assisted living facilities in Alexandria, Egypt namely; Dar El Hana (governmental elderly home) and Dar Mohammed Ragab (none governmental elderly home).

Subjects: 150 older adults (out of 168) of both sexes residing in the previously mentioned settings.

Tools: five tools were used for data collection: 1) Mini-Mental State Examination (MMSE), 2) Socio-demographic and Clinical Data Structured Interview Schedule of Older Adults Residing in the Assisted Living Facilities, 3) Wong and Law Emotional Intelligence Scale (WLEIS), 4) Subjective Happiness Scale (SHS), 5) The LIEPAD Questionnaire Scale.

Results: The key results of this study showed that while the study subjects reported reasonably high emotional intelligence in its total domains with a mean percent score of (72.8 ± 13.1) , they typically feel moderately happy (53.3 ± 15.7) . In addition, more than one-half (54.0%) of the participants had mild impairment in their quality of life and the rest (46.0%) had moderate impairment.

Conclusion: The emotional intelligence is positively associated with subjective happiness and cognitive well-being, although there is a clear negative correlation between the emotional intelligence of the study subjects and their quality of life.

Recommendations: Designing and implementing of educational intervention programs for elderly people residing in assisted living facilities by gerontological nurses, focusing on improvement of emotional skills and the most appropriate coping techniques for their feelings to enhance their quality of life and subjective well-being.

Key words: Emotional intelligence; Feeling of happiness; quality of life; Older adults; Assisted living facilities

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I. Introduction

Population ageing is a worldwide issue; between the years 2010 and 2050, the global population of individuals over 60 years of age is predicted to rise, from approximately 523 million to 1486 million. These statistics identify the ageing population as a major global challenge in policy making, including initiatives to enhance care and quality of life (QoL) ^(1, 2). As life expectancy increases, old age disabilities are becoming more common. With a rise in age, there is a 1-2% decline in functional capacity each year. More than forty-six percent of older adults have certain types of disabilities and more than 250 million older persons experience moderate to severe disability ⁽³⁾. Older-age disability reduces elderly people's quality of life and predisposes them to increased hospital visits and need for seeking long-term health care services. Residential care facilities or assisted living homes are one solution that may discourage or postpone the placement of elderly disabled people in nursing homes when in-home support is no longer adequate and when the older adults require assistance with some of the day-to-day tasks such as, cooking meals, going to the bathroom in the middle of the night, housekeeping, and traveling for appointments ^(4, 5).

Older adults' happiness and quality of life (QOL) have become critically important concepts for the gerontological nurses in recent years ⁽⁶⁾. Happiness, described as "the overall enjoyment of one's life-as-a-whole, has increasingly been shown to confer a number of protective health benefits". Happier people tend to

live much longer, maintain improved physical health, possess greater psychological resilience and higher quality of life ⁽⁷⁾. Within the assisted living field, examining the older adults' QOL and happiness is relevant; some studies indicate that older adults living in residential care settings could be at risk of depression, lower sense of happiness and reduced QOL relative to older adults living in the community ^(8,9). Living in residential care can also limit the independence, autonomy and decision-making of older adults by means of by administrative routine procedures and rules intended to protect elderly residents ⁽¹⁰⁾.

The ability of the elderly people to cope with health limitations is a factor that can affect self-reported health status. Emotional influences are highlighted because they are related to their various levels of QoL and relate directly to the capacity of the emotional system to help control and interact with the environment in an adaptive way ⁽¹¹⁾, thus, the need for emotionally intelligent older adults has increased. In this regard, emotional intelligence (EI) has been well developed in positive psychology studies and is considered to be a set of mental abilities, particularly in terms of the ability to perceive, assimilate, identify, and regulate one's own emotions and the capacity to detect and interpret the emotions of others ⁽¹²⁾.

Emotional intelligence (EI) comprises four dimensions: (a) assessment and expression of emotion in one self; (b) assessment and awareness of emotion in others; (c) control of emotion in one-self; and (d) use of emotion to enhance performance. Individuals who are able to maintain positive emotions most of the time in these dimensions will be able to inspire themselves to do better continuously, thereby increasing their quality of life ^(13,14). Emotional intelligence can lead older adults on the path to a satisfied, happy, and comfortable life by providing a context for applying intelligence principles to emotional responses and recognizing that these responses may be logically compatible or inconsistent with specific emotional beliefs ⁽¹⁵⁾.

Having high levels of emotional intelligence equips older people to better handle negative feelings such as insecurity, anger or fear, and respond effectively and thoughtfully to these feelings, moreover, forming and developing meaningful human relationships. In older adults, developing emotional intelligence promotes several positive qualities ranging from resilience to communication, motivation to stress management, all of which can be seen as conducive to achieving successful personal, physical, psychological, and social health and performance ⁽¹⁶⁾.

In this respect, researches in Egypt have been restricted to studying the emotional intelligence of older adults and its relation to their feeling of happiness and quality of life, although this relation has less focus ⁽¹⁷⁾. It is currently unclear if, and to what degree, the emotional intelligence of elderly people contributes for successful living in a residential care environment, this is due to the few published studies that have specifically explored this relationship ⁽¹⁸⁾. So, the present study aims to examine the relationship between emotional intelligence, feeling of happiness, and quality of life among older adults residing in the assisted living facilities in Alexandria, Egypt.

Aim of the study

The present study aimed to: examine the relationship between emotional intelligence, feeling of happiness, and quality of life among older adults residing in the assisted living facilities in Alexandria, Egypt.

Research Question:

What is the relationship between emotional intelligence, feeling of happiness, and quality of life among older adults residing in the assisted living facilities in Alexandria, Egypt?

II. Materials And Method

2.1. MATERIALS

Design: This study utilized a descriptive correlational research design.

Setting: The study was carried out in two assisted living facilities in Alexandria, Egypt namely; Dar El Hana (governmental elderly home) and Dar Mohammed Ragab (private elderly home).

The reason for selecting these two facilities is that they have the greatest number of elderly people relative to other facilities for the elderly in the governorate of Alexandria.

Subjects: The study included a purposive sampling of one hundred and fifty (150) older adults (out of 168) of both sexes residing in the above listed settings, of whom 76 were residents of Dar El Hana and 74 were residents of Dar Mohammed Ragab. These subjects should fulfill the following criteria in order to be included in this study:

- Aged sixty (60) years and more.
- Have normal cognitive function (score 24 to 30) or mild cognitive impairment (score 18 to 23) on Mini-Mental State Examination (MMSE) ⁽¹⁹⁾.
- Willing to participate in the study.

2.2. Tools:

Tool I: Mini-Mental State Examination (MMSE):

The MMSE was developed by Folstein *et al* (1975)⁽¹⁹⁾. The tool was translated into Arabic language by Elokli (2002)⁽²⁰⁾ and approved to be valid and reliable ($r = 0.93$). MMSE is an effective screening instrument used to assess cognitive function of the older adults. It comprises 20 questions related to memory, orientation, registration, attention, calculation, recall, language, naming, repetition, and coping of a design. The MMSE score is 30 point and classified as:-

Cognitive function	Scores
Normal cognitive function	24-30
Mild cognitive impairment	18-23
Severe cognitive impairment	0-17

* Eighteen (18) older adults (the number of older adults in the previously mentioned settings) were excluded from the study sample as they suffer from severe cognitive impairment, which hinder their ability to interact with the researchers.

Tool II: Socio-demographic and Clinical Data Structured Interview Schedule of Older Adults Residing in the Assisted Living Facilities:

This tool was designed by the researchers based on a thorough review of related references to elicit the following data:

1: Socio-demographic characteristics of the study subjects such as age, sex, marital status, number of children, and educational achievement. In addition to, occupation, monthly income and its sources, the reason for living in the assisted living facility, and the length of residency.

2: Clinical data of the study subjects includes diagnosed medical disorders, medications consumed, the presence of physical impairments, and assisting devices used.

Tool III: Wong and Law Emotional Intelligence Scale (WLEIS)

The WLEIS is a self-assessment of an individual's emotional intelligence. It was developed by Wong *et al* (2002)⁽²¹⁾ and it is used in this study to measure emotional intelligence of older adults residing in assisted living facilities. The WLEIS consists of **16** items covering **4** dimensions of emotional intelligence as follows;

(1) Self-Emotions Appraisal (4 items, No. 1, 2, 3, and 4), **(2) Others-Emotions Appraisal** (4 items, No. 5, 6, 7, and 8), **(3) Use of Emotion** (4 items, No. 9, 10, 11, and 12), and **(4) Regulation of Emotion** (4 items, No. 13, 14, 15, and 16). Older adults are asked to rate their responses on a 5-point Likert scale which ranges as the following:

Responses of the study subjects	Scores
Strongly disagree	1
Disagree	2
Neither agree nor disagree	3
Agree	4
Strongly agree	5

The mean score for each domain is calculated and the higher the mean score of each domain, the greater emotional intelligence for the participants.

Tool IV: Subjective Happiness Scale (SHS)

The SHS is a self-report scale was designed by Avgoustaki *et al* (2012)⁽²²⁾; this scale is used to judge how people rate their own happiness levels. The SHS is used in the present study to measure the subjectivity of participants' feeling of happiness by using **4** phrases rated on a **7**-point Likert scale. The possible range of scores of Participants' responses is from **4** to **28** and the higher scores representing greater happiness.

Tool V: The LIEPAD Questionnaire Scale

This scale was adopted from the European Office of World Health Organization (1998)⁽²³⁾; it is especially designed to evaluate the older adults' quality of life. The LIEPAD Questionnaire Scale is made up of **49** statements and divided into **12** subscales as follows; **(1) Physical Functioning Scale** (5 items), **(2) Self-care Scale** (6 items), **(3) Depression and Anxiety Scale** (4 items), **(4) Cognitive Functioning Scale** (5 items), **(5) Social Functioning Scale** (3 items), **(6) Sexual Functioning Scale** (2 items), **(7) life satisfaction Scale** (6 items), **(8) perceived Personality Disorder Scale** (6 items), **(9) Anger Scale** (4 items), **(10) Social Desirability Scale** (3items), **(11) Self-Esteem Scale** (3 items), and **(12)Trust in God Scale** (2 items).

* In the current study, the Sexual Functioning subscale (2 items) was omitted by the researchers because most of the participants have no sexual life as they living alone in the assisted living facilities so, some modifications were introduced on the scale to be comprised of 47 items gathered in 11subscales. The scale is developed with a

single scoring design for all of the items with a 4-point scale ranging from 0 to 3; 0= Not at all, 1= a little, 2= somewhat, 3= much. **In general**, 0 reflects (high level of well-being) to 3 (low level of well-being) **except** items No. 1 and 4, 6 to 11, 19, 21 to 23, 26 and 27, 29, 30, 42, 48 and 49 (were reversed in scoring). The total score of this scale is **141** points and classified as:-

Levels of quality of life (QOL)	Scores
High QOL	Less than 35.25 points (< 25%)
Mild impairment in QOL	35.25 to less than 70.5 points (25-< 50%)
Moderate impairment in QOL	70.5 to less than 105.75 points (50-< 75%)
Severe impairment in QOL	105.75 points and more (75% and over)

2.3. METHOD

1- Operation of the study

- Tool II was developed by the researchers after comprehensive reviewing of related literature.
- The Arabic version Tool I was used in this study.
- Tool III, Tool IV, and Tool V were translated into Arabic language by the researchers and reviewed by a jury from related specialties as follows; Gerontological Nursing and Psychiatric Nursing and Mental Health Nursing for content validity, and the required modifications were done.
- Tool III, Tool IV, and Tool V were tested for reliability on 40 older adults; 20 in a private assisted living facility (Dar Ahmous Khalifa) and 20 in a governmental assisted living facility (Dar El-Hadaya for females). This is achieved using the Cronbach alpha test. $r = 0.92$ for Tool III, 0.82 for Tool IV, and 0.87 for Tool V.

2- Approval

- Before conducting the study, an official letter was issued from the Faculty of Nursing, Alexandria University to the manager of each assisted living facility included in the study. The manager of each facility was interviewed personally to obtain his or her permission to collect the data and informed about the purpose of the study, and when to begin data collection.

3- A pilot study

- After preparation of the study's tools for data collection, a pilot study was carried out on 15 older adults from Dar El-Hadaya for females in order to test the tools' precision and applicability. The pilot study demonstrated the feasibility of the study tools.

4- Collection of data

- Establishment of rapport relationship with the residents in order to obtain their cooperation before any attempt to collect data. The researchers are preparing the environment to be quiet and comfortable for each participant, with ventilation and adequate light.
- The researchers used to go to the study settings 3 days/week from 2.00 pm to 7.00 pm. Each resident was interviewed individually by the researchers in the garden or in his \ her room or in the club, the interview began with an explanation of the study purpose.
- The study's tools were applied to elderly residents in the previously mentioned sittings. It took about 30-45 minutes to filling the questionnaire. It depended on the level of understanding and cooperation of each participant.
- Data collection covered a period of 5 months from the first of October 2019 to the end of February 2020.

Ethical considerations:

Informed consent was obtained from each participant after clarifying the purpose of the study. Participants were assured that their responses will remain anonymous and the collected data will be kept confidential. Moreover, each participant was informed that participation in the study is voluntary and he/she can withdraw at any time.

Statistical analysis of the data

The collected data was coded and entered, then analyzed with the International Business Machinery Statistical Package for Social Sciences (IBM SPSS version 25.0). Reliability of the tools was determined by Cronbach alpha coefficient. Count and percentage were used for describing and summarizing quantitative data. Minimum, Maximum, Arithmetic mean, and standard deviation (SD) were used as measures of central tendency and dispersion respectively for normally distributed quantitative data. One-way ANOVA test was used to compare means of more than two samples. Pearson correlation coefficient was used to measure the strength of a linear association between two variables. The 0.05 level was used as the cut off value for statistical significance. Included graphs for data visualization were done using Microsoft Excel.

III. Results

Table (1) reveals that more than one half, 52.0%, of the study subjects aged from 60 to less than 75 years, with a mean age of 74.8 ± 7.7 years. Females constitute 68.7% of the study subjects, 58.0% are widows, and more than one half, 53.3% of the study subjects have sons and/or daughters with a mean 2.4 ± 1.2 child. This table also indicates that illiteracy is prevailing among 42.0% of the study subjects approximately one half, 49.3% were housewives prior to their residence in the assisted living facilities, and 34.7% were employee prior to retirement. Moreover, Two thirds, 66.7% of the study subjects reported adequate monthly income and the source of income is mostly from the residents' monthly pension, this is mentioned by 75.3% of them.

In relation to the causes of older adults' residence in the assisted living facilities and the length of stay there, the table reflects that the most common cause is the presence of family troubles (46.7%) followed by unavailability of private home (38.7%), a feeling of loneliness (26.7%), and lack of caregivers (16.7%). More than one half, 52.6%, of the study subjects reside in the assisted living facilities from one year to less than 5 years with a mean of 11.7 ± 23.6 years.

Table (2) shows that 92.2 % of the study elders suffer from cardiovascular disorders such as hypertension, coronary artery disease, and heart failure. This is followed by musculoskeletal disorders such as osteoarthritis, osteoporosis, hip fractures, and rheumatoid arthritis that are reported by more than two thirds (69.0%) of them. The prevalence of diabetes and anemia ranged between 37.2% and 24.8% of the study elders respectively. Cardiac medications are the most widely used drugs (88.5%), followed by analgesics and anti-inflammatory drugs (72.5%). Vitamins and minerals are consumed by one half (50.4%) of the study elders and 33.6% are taking hypoglycemic agents. The same table also represents that the majority (88.0%) of the study elders are follow up their health status through the responsible doctor in the study settings.

Additionally, more than three quarters (76.7%) of the study elders have physical disabilities such as visual problems (68.7%), mobility problems (60.9%), and hearing problems (29.6%). Seventy percent (70.0%) of the study elders use assisting devices; including canes, walkers, and wheel chairs for mobility issues (65.7%), eyeglasses (53.3%), and hearing aids (9.5%).

Figure (1) indicates the cognitive function of the study residents based on Mini-Mental State Examination (MMSE); it notices that more than one half (55.3%) of them have normal cognitive function, while those with mild cognitive impairment are 44.7%.

Table (3) illustrates that the study participants reported reasonably high emotional intelligence in its total domains with a mean percent score of (72.8 ± 13.1) . The highest mean percent score is obtained by participants in self-emotions appraisal dimension (81.4 ± 11.9) ; this suggests that they aware of interpersonal self and they have self-expression skills, which allows them to be aware of and understand their own emotions. Moreover, the study subjects exhibit a high degree of social awareness and interpersonal relationships (80.4 ± 12.8) as they understand how people feel and value the feelings of others. On the other hand, they moderately have high emotional control and regulation (68.3 ± 21.9) which symbolizes that they relatively tolerant of traumatic events and stressful circumstances. Unfortunately, the study participants reported a slightly lower mean percent score in the use of emotion dimension (61.2 ± 23.1) compared to the rest of the dimensions of emotional intelligence, which means that they are less self-motivated.

Table (4) Demonstrates that the mean score of subjective happiness of the study participants' is (14.9 ± 4.4) with a mean percent score of (53.3 ± 15.7) proving that they are moderately feel happy.

Figure (2) clarifies the total quality of life scores obtained by the study participants in accordance with the LIEPAD Questionnaire Scale; it notes that more than one half (54.0%) of the participants have mild impairment in their quality of life, while those with moderate impairment are 46.0%.

Table (5) points out that the study subjects have a great sense of spiritual well-being and reverence for the divine role in their lives (94.77 ± 12.5) . Regarding their social performance; it appears from the table that the study subjects have fair social ties, confident relationships, and are satisfied with such relationships (55.18 ± 28.7) .

In addition, the study subjects exhibit moderate perception of their physical health (54.88 ± 10.7) , their ability to conduct day-to-day tasks without assistance (52.37 ± 31.9) and their cognitive abilities (50.04 ± 17.5) . On the other hand, the table reveals that there is a relative decline in the mean percent of perceived personality disorder domain and anger domain among the study participants (47.44 ± 22.8) and (45.77 ± 29.4) respectively.

The table also shows that the study participants expressed certain subjective feelings of anxiety and depression (44.77 ± 24.4) , additionally; it is observed that they are slightly satisfied with their present lives (42.48 ± 14.0) , and to have a slight desire to be socially interactive with others (41.62 ± 21.3) . In comparison to the previously listed quality of life domains, the study participants reported the lowest mean percent self-esteem score (32.00 ± 29.8) .

Table (6) reflects that there is a highly significant positive correlation between the emotional intelligence of the study subjects and their feeling of happiness and cognitive performance ($r = .452$, $P < 0.001^{**}$), ($r = .523$, $P < 0.001^{**}$) respectively. In contrast, a significant negative relation is found between the emotional intelligence of the study subjects and their quality of life ($r = -.195$, $P .017^*$).

Table (7) Describes that the higher mean quality of life score (50.3 ± 9.4) is recorded by study subjects residing in the private assisted living facility (Dar Mohamed Ragab) than those residing in government facility (Dar El-Hana) (44.8 ± 6.9) and the difference is statistically significant $F: 9.351$ $P: < 0.001^*$.

Returning to the same table, it is found that the higher mean scores of emotional intelligence (77.2 ± 11.2), quality of life (52.0 ± 9.2), and cognitive performance (87.2 ± 11.0) are identified by study subjects of younger age, 60 to less than 75 years of age with statistically significant difference observed $p: < 0.001^*$. Married participants reported higher mean scores of their emotional intelligence (86.2 ± 0), quality of life (60.9 ± 0), feeling of happiness (60.7 ± 0.0), and cognitive skills (100.0 ± 0.0). The differences are statistically significant, $P: .025^*$, $p: < 0.001^*$, $P: .018^*$, and $P: < 0.001^*$ respectively.

This table also reveals that there is a statistically significant correlation between having three or more children with emotional intelligence (82.1 ± 11.3), feeling happy (61.6 ± 12.6), and cognitive abilities (84.0 ± 12.7). $P: < .001^*$, $P: .001^*$, $P: < 0.001^*$ respectively. On the other hand, study subjects with one to two children reported higher mean quality of life score (53.4 ± 9.7), the statistical difference is significant $F: 7.369$ $P: 0.001^*$.

Higher education (University Schooling and post graduate) is significantly correlated with higher mean emotional intelligence score (91.8 ± 7.9) and cognitive functions score (88.3 ± 16.4). Variations are statistically significant, $F: 5.358$ $P: < .001^*$, $F: 12.659$ $P: < 0.001^*$ respectively. In addition, higher mean emotional intelligence score (79.5 ± 11.1) and cognitive function score (86.6 ± 12.6) are recorded for study subjects residing in assisted living facilities for less than one year and the differences are statistically meaningful, $F: 3.372$ $P: .037^*$, $F: 6.413$ $P: 0.002^*$ respectively.

Table (8) denotes that the participants in the study taking drugs for treatment of their health problems reported lower mean quality of life score (48.6 ± 8.7), the difference being statistically significant, $F: 5.685$ $P: 0.018^*$. The lower mean quality of life (48.4 ± 9.7), feeling of happiness (51.7 ± 16.2) and cognitive abilities (78.3 ± 12.4) are significantly related to the physical deficiencies of the study participants, such as visual problems, mobility problems and hearing problems; the variations are statistically significant, $F: 4.497$ $P: 0.036^*$, $F: 5.185$ $P: 0.024^*$, $F: 11.172$ $P: 0.001^*$, respectively. Moreover, this table also illustrates that the lower mean subjective happiness score (51.3 ± 16.0) is reported by the study participants using assisting devices such as mobility aids, eyeglasses, and hearing aids; the statistical variance is significant, $F: 5.656$ $P: .019^*$.

IV. Discussion

Emotional Intelligence (EI) is the intersection where cognition and emotion meet, and promotes endurance, motivation, empathy, reflection, stress control, communication, and the ability to handle a wide variety of social circumstances and conflicts. High "EI" is a significant and it gives the individuals a chance to live a more satisfying and happier life⁽²⁴⁾. On the other hand, People who fail to use their ability for emotional intelligence are more likely to turn to other less successful ways of handling their lives⁽²⁵⁾.

The current study findings indicate that the study participants as a whole are emotionally intelligent; they have high mean percent score of total EI (72.8 ± 13.1) (table 3). This result is consistent with research conducted by Navarro-Bravo et al. 2019⁽²⁶⁾, but a dispute with Delhom et al. 2020⁽¹¹⁾ who found that the elderly people had a low score and required emotional intelligence-related training. The explanation of the present result may be attributed to the characteristics of the participants in the study as, more than one half of them are less than 75 years of age (Table 1) and the higher mean EI score is reported by young participants aged 60 to less than 75 years of age with a statistically significant difference observed (table 7). Similar supporting study finding by Sliter et al. 2013⁽²⁷⁾ who found that older adults are more likely to be higher in EI; the result implies that EI is a capacity to develop; cumulative life experiences are likely to lead to it.

In addition, more than two thirds of the study participants are females; this is in accordance with Das et al. 2015⁽²⁸⁾ who suggested that gender plays a significant role in the development of EI; female sex has been identified as an independent predictor of a high EI. Moreover, the study participants have 3 or more sons and/or daughters and have recorded ample monthly income. According to the present study findings, these variables have been shown to be significantly correlated with high EI (table 7).

In relation to the EI dimensions of the study participants (table 3); the current findings reflect that they reported the highest mean percent score in self-emotions appraisal dimension (81.4 ± 11.9). This means that they have interpersonal self-awareness and self-expression skills in which they correctly interpret, understand, and embrace themselves. They are assertive in order to express one's feelings efficiently. They are also free from emotional dependence on others and aspire to achieve personal objectives and realize one's prospective⁽²⁹⁾. The researchers suggested the explanation for this finding is that the presence of participants away from their families in assisted living facilities is considered a phase of solitude; "significant need to be alone for a while."

⁽³⁰⁾ This time is a safe period in which they are able to reflect, evaluate, and better understand the nature of life, increasing their creativity and individuality. This may be behind their emphasis on self-emotion assessment. In this sense, Chneiders et al 2015 ⁽³¹⁾ found that some increase in self-reported skills of older adults with mixed emotional experiences, this is contradicted by Brose et al. 2015 ⁽³²⁾.

A notable result in this study also suggest that participants have a high level of social sensitivity and interpersonal relationships (Others-Emotions Appraisal) (80.4 ± 12.8) so, they are empathetic about and appreciate how others feel, in addition, that they have a social obligation to connect with one's social community and to cooperate with others ⁽²⁹⁾. The interpretations for this outcome may be linked to the background of both governmental and private studied assisted living facilities that enable residents to exercise sports, their hobbies and social activities, such as watching TV in the club, attending scheduled parties, controlling journeys and trips outside, which encourage them to be interacted and communicated with each other much of the time. This results in the same direction as the Houston 2020 report, which postulates that older individuals have the potential to control other people's emotions through emotional awareness and use it to develop relationships and communicate with people through abilities such as active listening, verbal and nonverbal communication ⁽²⁴⁾.

On the other hand, the study participants have moderately high emotional regulation (68.3 ± 21.9) which symbolizes their relative resistance to upsetting events and stressful situation ⁽²⁹⁾. Unfortunately, they reported a slightly lower mean percent score in the use of emotion dimension (61.2 ± 23.1) compared to the rest of the dimensions of EI, which means that they are less self-motivated. The explanation for this finding can be attributed to the clinical data of the study subjects (table 2); the majority suffers from health issues such as cardiovascular diseases and more than two-thirds complain of skeletal problems. In addition, more than three quarters of them consume multiple forms of medications; have physical disabilities such as visual, mobility, and hearing issues In addition, more than two thirds use assisting devices.

These justifications are congruent with the study carried out by Burgdorf et al. 2019 ⁽³³⁾, which indicates a strong correlation between EI and disease susceptibility; when the mind is overloaded with tension and discomfort, it signals a decrease in energy directed towards disease control. The vulnerability to an attack is increased by this move. Thus, it has been shown that teaching emotional intelligence skills to people with health problems decreases the risk of recurrence, increases rehabilitation, and lowers death rates ⁽³⁴⁾. Whereas the results are inconsistent with the Mayo-Gamble et al. 2018 study ⁽³⁵⁾ which indicated that more than half of its test subjects had a good and very good health status.

Emotional intelligence increases cognitive capacity to deal with diverse social circumstances and difficulties. This is supported by Checa et al 2019 ⁽³⁶⁾ who mentioned that cognition and emotion are two key facets of the personality, and it is difficult to distinguish their impact in the success of daily life's activities. Recent study has shown that EI plays an important role in cognitive processes when emotions are involved in tasks ⁽³⁷⁾. This is in complete accordance with one of a salient finding of the present study that there is a very powerful positive relationship between the participants' EI and their cognitive output (table 6). This result is also consistent with Luchesi et al. 2018 ⁽³⁸⁾ who demonstrated that the cognitive well-being of older adults could be improved by the EI. Thus, it is important that subjects participating in the present study are cognitively intact or have mild impairment as an inclusion criterion (fig 1); this is regular with a study carried out by Pottie et al. 2016 ⁽³⁹⁾ which showed that cognitive disability occurs on a continuous basis, beginning with age-related cognitive decline, and progressing to mild cognitive impairment. On the other hand, it is inconsistent with the study by Piper et al. 2018 ⁽⁴⁰⁾ which suggested that older age predicted poorer cognitive functions.

Undeniably, the people who are emotionally smart are more likely to feel happy and comfortable with themselves, others and life ^(24, 25). This is may be because they are completely reasonable to themselves the way they are and due to their willingness to understand their own strengths and limitations. In this regard, the mean percent score of the participants in this study is 53.3 ± 15.7 on the subjective happiness scale, indicating that they are moderately feel happy (table 4). This is also consistent with a prominent finding in the current research that there is a very strong positive correlation between the EI of the study subjects and their feeling of happiness (Table 6). Rey-Extremiera et al. 2017 ⁽⁴¹⁾ supported this correlation, detecting that perceived EI was positively linked to life satisfaction and feeling of happiness, also Kim et al. 2020 ⁽⁴²⁾ agreed with this finding and reported that more than one half of the subjects surveyed in his study had a moderate level of happiness, while Sakamoto et al. 2016 ⁽⁴³⁾ found that the subjects surveyed had a low level of subjective happiness.

Undeniably, the people who are emotionally smart are more likely to feel happy and comfortable with themselves, others and life ^(24, 25). This is may be because they are completely reasonable to themselves the way they are and due to their willingness to understand their own strengths and limitations. In this regard, the mean percent score of the participants in this study is 53.3 ± 15.7 on the subjective happiness scale, indicating that they are moderately feel happy (table 4). This is also consistent with a prominent finding in the current research that there is a very strong positive correlation between the EI of the study subjects and their feeling of happiness (Table 6). Rey-Extremiera et al. 2017 ⁽⁴¹⁾ supported this correlation, detecting that perceived EI was positively linked to life satisfaction and feeling of happiness, also Kim et al. 2020 ⁽⁴²⁾ agreed with this finding and reported

that more than one half of the subjects surveyed in his study had a moderate level of happiness, while Sakamoto et al. 2016⁽⁴³⁾ found that the subjects surveyed had a low level of subjective happiness.

Add to that, in ALFs, many older people can feel a loss of control over their personal decision-making and a lack of attention to their physical and psycho-social needs. These causes are believed to have adverse effects on the QOL of the elders. This is in the same line with a study done by Burg et al. 2010⁽⁴⁷⁾. The second interpretation of this result is that the various chronic conditions and physical deficits are widespread among the majority of study participants that have a deleterious impact on their overall QOL (table 2). This is in agreement with Groessl et al. 2019⁽⁴⁵⁾.

It is plausible to find a significant better QOL among older adults residing in a private ALF (Dar Mohamed Ragab) than of the governmental ALF (Dar El-hana) (Table 7); Private ALF residents have privacy in separate rooms with private bathrooms, good food served with attention to their likes and dislikes, and a health condition via 24-hour nurses available. In addition, they continue to have contact with the community through social events. All of these will help to improve their overall QOL. From this viewpoint, the results were confirmed by the analysis by Arastoo et al 2012.⁽⁴⁸⁾

Regarding QOL domains (table 5), the current study reveals that the participants in the study have a great level of spiritual well-being (94.77 ± 12.5); a possible reason for these results might be that they have deep faith and believe in God. They're praying on a daily basis. Muslim Egyptians believe in their Holy Books and see them as an alternate source of physical and psychological healing; thus, they are more able to embrace and praise God for everything they have. This finding does not fit those of pilger et al. 2017⁽⁴⁹⁾ who reported that most of older adults had a moderate overall degree of spiritual well-being.

Although the study participants exhibit reasonable social performance (55.18 ± 28.7), as they have intact social ties, confident relationships, and are happy with such relationships, their willingness to be socially involved with others is somewhat diminished (41.62 ± 21.3). This may be due to the fact that physical and sensory disability as well as chronic health issues impaired the desire of the elderly to stay actively engaged in social activities. Additionally, in this study, family troubles considered to be the main cause of the admission of the elders to ALFs (table 1) are therefore hindering the development of significant relationships. This rationale is consistent with the study carried out in Taiwan by Meichen et al. 2016⁽⁵⁰⁾ which claimed that physical disabilities and multiple chronic disorders disrupt the social life of the elderly, and in comparison, pilger et al. 2017⁽⁴⁹⁾ recorded that the majority of older adults undergoing hemodialysis had the highest mean social relationship scores.

In relation to the physical functioning and self-care domains of QOL, the study participants have a moderate degree. The reason for this result may be due to the prevalence of cardio vascular and musculoskeletal disorders in the vast majority of the participants (table 1). These conditions are thought to negatively impact their physical health and thereby affect the ability of elders to perform their day-to-day activities without assistance, and result in certain impairments in their QOL. This is similar to a study conducted by Nelis et al. 2019⁽⁵¹⁾ who showed that Co-morbid conditions significantly affect the physical functioning and self-care capability of older adults and correlated with moderate QOL scores, and this is inconsistent with Pérez-Ros et al. 2020⁽⁵²⁾ who found that about one-half of the elderly had serious problems with self-care. Eliason et al. 2020⁽⁵³⁾ endorse this result, in which the QOL of the community dwelling older adults were poor in terms of physical health-related quality of life.

In addition, one finding in the present study suggests that the participants received a moderate score in the QOL cognitive functioning domain, likely due to negative consequences of age, illiteracy, poor health status, and the use of various types of medications (Table 1, 2), this interpretation is in harmony with Nelis et al. 2019⁽⁵¹⁾.

On the contrary, the present results reflect that relative decline in the mean percent scores of perceived personality disorder, anger, anxiety & depression domains of the QOL, in addition to life satisfaction domain. These disrupted outcomes may be due to chronic disorders, physical and sensory deficiencies, and diminished cognitive capacity, and numerous losses as more than one half of the participants are widows. Furthermore, most participants expressed their lack of enjoyment of life; they sheared some concern about their future, contributing to dissatisfaction, Meichen et al. 2016⁽⁵⁰⁾ was on the same line. These adversely impact their self-esteem. The findings of the current study also confirm this view, as the research subjects received the lowest mean percent score (32.00 ± 29.8) on the QOL scale in the self-esteem domain.

The capacity of older adults to control negative emotions during their lives and their level of QOL seems to be correlated, to some degree, with their personal and psychosocial capabilities⁽⁵⁴⁾. In this context, there is a plethora of studies exploring the explicit relation between EI and QOL; Rey et al. 2013⁽⁵⁴⁾ reported that EI was positively associated with different dimensions of HQOL. Moreover, a remarkable body of literature suggests that EI has a huge effect on the psychological, social, spiritual, and physical component of the QOL of older adults⁽⁵⁵⁻⁵⁷⁾. These are inconsistent with the surprising, unexpected result of the current research, which

indicates that the IE of the participants is negatively correlated with their quality of life ($r = -.195, P.017 *$) (table 6); despite being emotionally intelligent, they have certain types of deficiency in their overall QOL.

From the researchers' point of view, the reasons for this outcome can be attributed to the socio-demographic characteristics of the study participants; they are widows and have lived alone for a long time, the prevalence of family messes and illiteracy. Add to that their health status; most of them have chronic disorders, multiple medications, and physical and sensory issues. They often use assisting devices such as cane, walkers, wheel chairs, hearing aids, and eye glasses, which makes them less involved and not self-motivated to participate in the local community, therefore they easily get into the unpleasant sensations of discomfort, stress, and anxiety. Undressed feelings are straining the mind and the body, consequently, their level of satisfaction with life drops, and all these factors adversely affect their quality of life. Mayer et al. 2011⁽⁵⁸⁾ noted that QOL is a dynamic and multidimensional construct involving both objective and subjective variables, and also suggested that EI showed distinct and important differences in the prediction of various dimensions of quality of life.

Finally, younger age, higher education and marriage are factors that have a beneficial impact on the emotional intelligence, quality of life, feelings of happiness and cognitive abilities of the subjects studied (Table 7). In contrast, taking multiple drugs to treat health conditions and having physical and sensory disabilities such as visual, mobility and hearing issues have a negative effect on the same variables (table 8). Burgdorf et al. 2019⁽³³⁾, Mortazavi et al. 2018⁽⁵⁹⁾, and Chen et al 2016⁽¹⁸⁾ are supported these observations.

It is evident from the foregoing discussion, that the emotional intelligence of the study participants is correlated with their quality of life, feeling of happiness, and cognitive performance; emotionally self-aware elderly people are better at identifying, naming their emotions, and understand the cause of their feelings. This perspective enhances the lifestyle and overall quality of life of individuals who can better handle their relationships. Future research may be worthwhile to understand how the EI relates prospectively to QOL outcomes and to further explain the degree to which IE contributes to an adaptive mechanism aimed at enhancing or maintaining the quality of life of elderly people regardless of the residential context⁽⁵⁴⁾.

V. Conclusion

Based on the findings of the current study, it can be concluded that the emotional intelligence of the study participants is positively related to their feeling of happiness and cognitive well-being, although there is a clear negative association between the emotional intelligence of the study subjects and their quality of life.

Recommendations

Based on the findings of the present study, the researchers highlighted the following recommendations:

- The assessment of physical, psycho-social, cognitive and spiritual aspects of quality of life should be carried out on a daily and consistent basis by gerontological nurses and should be incorporated into standard nursing practices in assisted living facilities, thereby providing a comprehensive care plan for elderly residents.
- The assisted living facilities should represent a home-like atmosphere in order to ensure the safety of elderly residents and enhance their sense of happiness and contentment.
- Special attention should be given to the design and implementation of social and recreational services aimed at fostering socialization and relationships within assisted living facilities, which would have a positive effect on the quality of life of elderly residents.
- The gerontological nurses should encourage and enable the elderly residents to engage in community activities outside the assisted living facilities with a view to enhancing their sense of life and increasing their self-esteem.
- Designing and implementing of educational interventions program for elderly people residing in assisted living facilities by gerontological nurses, focusing on improvement of emotional skills and the most appropriate coping techniques for their feelings to enhance their quality of life and subjective well-being.

Recommendations for future researches:

- Future research to explore which individual factors of emotional intelligence have the greatest effect on quality of life among older adults residing in assisted living facilities compared with community dwelling older adults.
- Researches are needed to assess the effect of the placement of older adults in assisted living facilities on their emotional intelligence, feeling of happiness, and quality of life.
- There is an urgent need to develop innovative nursing strategies for older adults residing in assisted living facilities to ensure best practice in order to improve their quality of life.

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Table (1): Description of the study participants according their socio-demographic characteristics

Socio-demographic characteristics	The studied participants (no.= 150)	
	no.	%
Sex		
Female	103	68.7
Male	47	31.3
Age(in years)		
60-	78	52.0
75-	49	32.7
85 +	23	15.3
Mean±SD	74.8±7.7 years old	

Marital status		
Widow	87	58.0
Divorced	31	20.7
Single	30	20.0
Married	2	1.3
Having children (sons \ daughters)		
Yes	80	53.3
1-2	44	55.0
3+	36	45.0
No	70	46.7
Mean±SD	2.4±1.2 child	
Educational level		
Illiterate	63	42.0
Basic education	29	19.3
Secondary education	42	28.0
Higher education	16	10.7
Occupation		
Housewife	74	49.3
Employees	52	34.7
Professional	14	9.3
Skilled work	10	6.7
Monthly income		
Enough	100	66.7
Not enough	50	33.3
Source of income #		
Pension	113	75.3
Family/Friend assistance	45	30.0
Social Affair	30	20.0
Private properties	25	16.7
Causes of residence in the assisted living facility #		
Family troubles	70	46.7
Un availability of private home	58	38.7
Feeling of loneliness	40	26.7
Lack of caregivers	25	16.7
Length of stay in the assisted living facility		
< 1 year	10	6.7
1 to < 5 years	79	52.6
5+	61	40.7
Mean±SD	11.7±23.6 years	

#More than one answer was allowed

Table (2): Distribution of the study participants according their clinical data

Health history	The studied participants (no.= 150)	
	no.	%
A- Health problems		
Yes	129	86.0
Disorders related to: #		
Cardiovascular system	119	92.2
Musculoskeletal system	89	69.0
Endocrinal system	48	37.2
Anemia	32	24.8
Respiratory system	15	11.6
Cancers	10	7.8
Gastrointestinal system	9	7.0
Neurological system	6	4.7
No	21	14.0
B- Medication taken		
Yes	131	87.3
Types of medication: #		
Cardiovascular medication	116	88.5
Analgesics & anti-inflammatory	95	72.5
Vitamins & minerals	66	50.4
Diabetes medication	44	33.6
Orthopedic medication	30	22.9
Respiratory medication	15	11.5
Chemotherapy	3	2.3
No	19	12.7

C- Follow up their health status through: #		
Physician of assisted living facility	132	88.0
Private physician if necessary	69	46.0
Health insurance	47	31.3
Private physician regularly	18	12.0
D- Physical disabilities		
Yes	115	76.7
Types of physical disability: #		
Visual problems	79	68.7
Mobility problems	70	60.9
Hearing problems	34	29.6
Speech problems	3	2.6
No	35	23.3
E- The usage of assisting devices		
Use #	105	70.0
Mobility aids	69	65.7
Eye glasses	56	53.3
Hearing aid	10	9.5
Denture	8	7.6
Not use	45	30.0

Multiple response

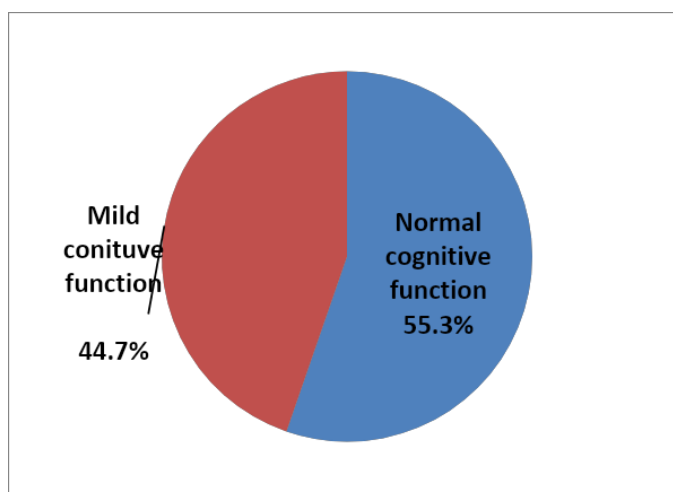


Figure (1) Description of the study subjects according to their cognitive functions

Table (3): Distribution of the study participants according to their emotional intelligence

Dimensions of Emotional Intelligence scale (EIS)	Maximum allowed scores	Mean±SD	Mean percent score
Self-Emotions Appraisal	4 items (20 points)	16.2±2.3	81.4±11.9
Others-Emotions Appraisal	4 items (20 points)	16.0±2.5	80.4±12.8
Use of Emotion	4 items (20 points)	12.2±4.6	61.2±23.1
Regulation of Emotion	4 items (20 points)	13.6±4.3	68.3±21.9
Total Emotional Intelligence scale (EIS)	16 items (80 points)	58.3±10.5	72.8±13.1

Table (4): Distribution of the study participants according to their feeling of happiness

Subjective Happiness Scale SHS	Maximum allowed scores	Mean±SD	Mean percent score
Feeling of happiness	7 items (28 points)	14.9±4.4	53.3±15.7

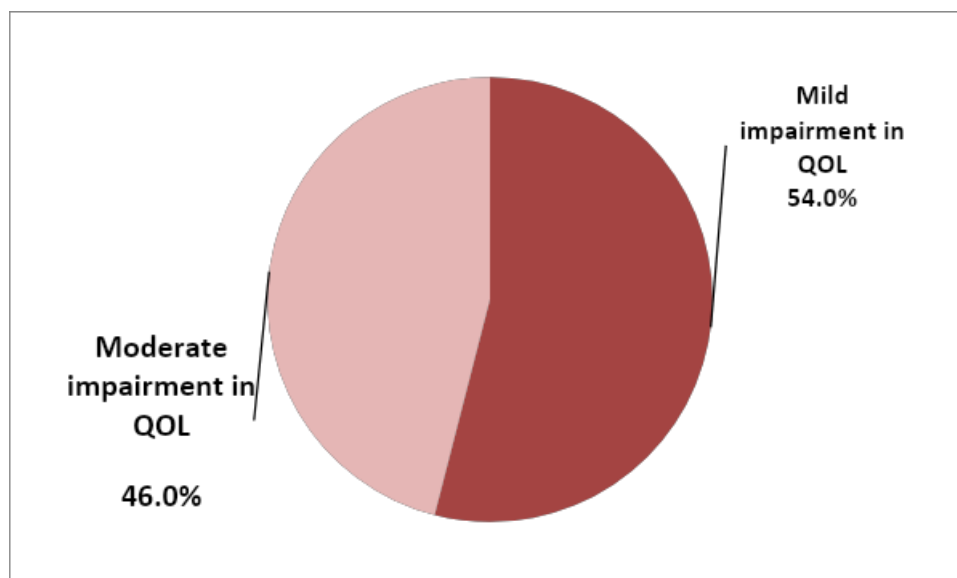


Figure (2) Description of the overall quality of life scores obtained by the study participants

Table (5): Description of quality of life domains of the study participants

The LIEPAD Questionnaire Scale	Maximum allowed scores	Mean±SD	Mean percent score
Quality of life Domains			
Physical Functioning	5 items (15 points)	8.23±1.6	54.88±10.7
Self-care	6 items (18 points)	9.42±5.7	52.37±31.9
Depression and Anxiety	4 items (12 points)	5.37±2.9	44.77±24.4
Cognitive Functioning	5 items (15 points)	7.50±2.6	50.04±17.5
Social Functioning	3 items (9 points)	4.96±2.5	55.18±28.7
Life satisfaction	6 items (18 points)	7.64±2.5	42.48±14.0
Perceived Personality Disorder	6 items (18 points)	8.54±4.1	47.44±22.8
Anger	4 items (12 points)	5.49±3.5	45.77±29.4
Social Desirability Scale	3 items (9 points)	3.74±1.9	41.62±21.3
Self-Esteem Scale	3 items (9 points)	2.88±2.6	32.00±29.8
Trust in God Scale	2 items (6 points)	5.68±.7	94.77±12.5
Total LIEPAD Questionnaire Scale	47 items (141 points)	69.50±13.1	49.29±9.3

Table (6): Emotional Intelligence, Feeling of Happiness, Quality of Life, and Cognitive Function Correlation Matrix

	Emotional Intelligence	Quality of life		Subjective Happiness		Cognitive functions	
		r	p	r	p	r	p
Emotional Intelligence (EI)		-.195	.017*	.452	<0.001**	.523	<0.001**

r: Person correlation coefficient

P:P value of Person correlation coefficient

** : Correlation is significant at the 0.01 level

*. Correlation is significant at the 0.05 level

Table (7): The relation between socio-demographic characteristics of the study subjects and their emotional intelligence, feeling of happiness, quality of life, and cognitive functions

Socio-demographic characteristics	Emotional Intelligence		Quality of life		Subjective Happiness		Cognitive functions	
	Mean±SD	Test of significance	Mean±SD	Test of significance	Mean±SD	Test of significance	Mean±SD	Test of significance
Place of residence								
Dar Mohamed Ragab	73.3±13.2	F:182 P: .834	50.3±9.4	F:9.351 P:<0.001*	54.5±14.5	F: .477 P: .622	80.9±13.1	F: .308 P: .735
Dar El-Hana	72.8±14.2		44.8±6.9		51.6±18.3		79.9±11.9	
Sex								
Male	75.2±13.2	F:2.291 P: .132	48.4±9.8	F: .513 P: .475	55.4±15.2	F:1.262 P: .263	82.7±13.0	F:2.734 P: .100
Female	71.7±12.9		49.6±9.0		52.3±15.9		79.0±12.7	
Age (Years)								
60 to less than 75	77.2±11.2	F:10.233 P:<.001*	52.0±9.2	F: 8.349 P:<0.001*	53.3±15.5	F: .028 P: .972	87.2±11.0	F:39.817 P:<0.001*
75 to less than 85	68.4±12.9		46.8±7.9		53.5±14.2		74.5±9.9	
85 and more	67.5±14.7		44.9±9.4		52.6±19.7		68.2±9.5	
Marital status								
Single	67.7±12.7	F:3.192 P: .025*	47.6±6.6	F:21.031 P:<0.001*	51.4±14.9	F:3.453 P: .018*	72.0±11.8	F:8.949 P:<0.001*
Married	86.2±0		60.9±0		60.7±0		100.0±0	
Divorced	71.2±8.3		58.6±8.1		46.4±11.2		86.0±11.9	
Widow	74.8±14.1		46.2±8.1		56.2±16.7		80.4±12.0	
Having children (sons \ daughters)								
No	67.7±13.1	F:17.502 P:<.001*	48.3±8.8	F:7.369 P:0.001*	49.2±17.0	F:7.690 P: .001*	75.7±12.5	F:8.534 P:<0.001*
1-2	73.4±9.9		53.4±9.7		53.0±13.3		84.0±11.5	
3+	82.1±11.3		46.1±8.1		61.6±12.6		84.0±12.7	
Education								
Illiterate	68.7±12.7	F:5.358 P:<.001*	48.1±9.3	F:1.961 P: .088	51.3±15.5	F:1.417 P: .222	72.0±10.0	F:12.659 P:<0.001*
Basic education	80.6±9.2		52.3±8.0		55.9±12.0		88.1±11.0	
Secondary education	76.8±10.1		52.1±11.2		57.5±14.4		86.6±11.8	
Higher education	91.8±7.9		49.2±16.5		62.5±2.5		88.3±16.4	
Income								
Not enough	71.3±13.6	F: .516 P: .598	48.7±9.3	F:2.149 P: .120	50.2±15.0	F:1.417 P: .246	78.4±13.2	F:2.756 P:0.067
Enough	73.7±12.3		52.6±9.9		55.1±12.2		85.3±14.5	
Length of stay in the assisted living facility								
< 1 year	79.5±11.1	F:3.372 P: .037*	48.7±10.7	F:1.942 P: .147	59.2±14.4	F:2.742 P: .068	86.6±12.6	F:6.413 P:0.002*
1 to < 5 years	74.3±12.9		47.9±9.1		55.1±16.9		82.6±13.2	
5+	69.9±13.1		51.0±9.1		49.9±13.7		75.9±11.4	

F: ANOVA test

P:P value of ANOVA test

Significant at p≤0.005

Table (8): The relation between clinical data of the study subjects and their emotional intelligence, feeling of happiness, quality of life, and cognitive functions

Clinical Data	Emotional Intelligence		Quality of life		Subjective Happiness		Cognitive functions	
	Mean+SD	Test of significance	Mean+SD	Test of significance	Mean+SD	Test of significance	Mean+SD	Test of significance
Health problems								
No	77.6±10.8	F:3.321 P:.070	52.2±12.2	F:2.544 P:.113	59.01±12.9	F:3.219 P:.075	83.3±13.8	F:1.442 P:.232
Yes	72.0±13.3		48.8±8.6		52.4±16.0		79.6±12.7	
Medication taken								
No	71.6±9.5	F:.190 P:.663	53.9±11.8	F:5.685 P:0.018*	55.8±12.2	F:.543 P:.462	80.1±14.6	F:.000 P:.993
Yes	73.0±13.5		48.6±8.7		52.9±16.2		80.2±12.7	
Presence physical disabilities								
No	76.3±12.0	F:3.330 P:.070	52.1±7.1	F:4.497 P:0.036*	58.5±12.8	F:5.185 P:.024*	86.3±12.6	F:11.172 P:0.001*
Yes	71.8±13.3		48.4±9.7		51.7±16.2		78.3±12.4	
The usage of assisting devices								
No	73.7±13.5	F:.267 P:.606	50.6±7.7	F:1.319 P:.253	57.9±14.2	F:5.656 P:.019*	81.7±14.0	F:.871 P:.352
Yes	72.5±12.9		48.7±9.8		51.3±16.0		79.5±12.3	

F: ANOVA test

P: P value of ANOVA test

* Significant at $p \leq 0.005$

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