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Correlation between community participation, nutritional appetite and psychological distress among comorbid older persons

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Abstract

Background Poor appetite is a common problem among older people; it is known to contribute to weight loss, nutritional deficiencies, and increased mortality, which can affect their community participation and psychological status. In this study, we aimed to identify the relationship between community participation, nutritional appetite, and psychological distress among comorbid older people. This cross-sectional study included 300 elderly people, of whom 100 participated in geriatric clubs and 200 did not. Older people assessment sheet, the Australian Community Participation Questionnaire, the Council on Nutrition Appetite Questionnaire, and Kessler Psychological Distress Scale were used.

Results Majority of geriatric club members had high community participation, while half of the older people who were not members of the club had moderate community participation levels. Approximately 41.0% of the participants at geriatric clubs had no risk at this time for a nutritional decline, while less than three-quarters of those who are not geriatric club members need frequent appetite reassessment. A correlation was observed between community participation with appetite and psychological distress in those who attended geriatric clubs. Those who are not geriatric club members had correlation between appetite with community participation and psychological distress ($P \leq 0.001$).

Conclusions Good appetite and psychological status are positively impacted by engaging in social activities among older people. Findings suggest that community programs, such as Meal on Wheels programs, and shared group activities can improve appetite and social interaction among older people.

Keywords Community participation, Loneliness, Comorbid, Nutritional appetite, Older person, Psychological distress

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Background

The process of acquiring and maintaining the functional capacity that promotes well-being in old age is known as healthy aging according to the World Health Organization (WHO). Building and maintaining relationships and contributing to society, which entail taking part in both personal- and societal-level activities, are important functional ability aspects. Social engagement, also known as community participation or social involvement, serves as the cornerstone of social relationships or community participation and offers a sense of belonging, social identity, and fulfillment [1].

Community participation is defined as a person's involvement in activities that offer opportunities for interactions with others in the community or society concerning its relationship with appetite improvement. Social engagement has been positively correlated with eating at least five servings of fruit and vegetables per day. Regular social interaction is linked to a higher quality diet and a healthy nutritional status, both of which are found related to a better appetite [2]. In addition, less social interaction has been linked to weight loss. Recently, a lower appetite score has been linked to "social frailty," which is often characterized as a loss of social activities, general resources, and social resources [3].

The desire to eat or one's appetite has been identified to be a key element in maintaining good health in older people [4]. Aging-related alterations to taste and smell perception, stomach compliance, and persistent low-grade inflammation are just a few examples of factors that might cause an older person's appetite to drop [5]. Declined appetite can have various risk factors, including aging-related psychological changes, acute sickness, chronic disorders, and medication use. Appetite regulation is often influenced by complex systems [6]. Older people need to have a healthy appetite to preserve good physical and mental health and continue living in their communities [7].

Care providers such as doctors and nurses must look at elements that increase appetite in older people to prevent appetite decline. The loss of social roles after retirement, the loss of a spouse or friend, and other life events that are associated with decreased appetite should all be acknowledged by care providers. Hence, care providers should make arrangements to extend older people's leisure time and improve their appetite using their leisure time. Earlier studies have revealed that engaging in social activities can improve one's appetite by 24% when engaging in at least one type of social activity and by 63% when engaging in three categories of social activities [8].

Healthy aging is linked to various factors, such as psychological capacity, satisfaction with life, socialization, functionality, and personal development. Well-being is also linked to health and age, and it refers to how people evaluate the quality of life, including emotional status, pleasure, depression, frustration, worry, and a sense of meaning and purpose in life [9]. One purpose of effective aging is to increase healthy life expectancy and quality of life as we grow, but it is also necessary to optimize opportunities for participation in the social, economic, cultural, spiritual, and political realms, as well as in our health. A shortage of social care has been demonstrated to negatively impact the quality of life of older people in the future [10].

Paying attention to the concept of community participation in the older person is of particular importance, and its promotion is one of the key recommendations of the WHO in response to concerns about the aging population [11]. One of the primary causes of poor nutritional status in older people is reduced appetite. The incidence of poor appetite in elderly people living in the community ranges from 10.6% to 21.8% [12]. A poor appetite is also considered a risk factor for incident impairment, frailty, and higher mortality. It frequently results in weight loss and a decrease in food consumption [13]. Conversely, a healthy appetite is favorably linked to an older people's physical and mental quality of life [14]. A higher level of community involvement has been linked to a lower likelihood of poor nutrition, an increased appetite, psychological distress symptoms, and cognitive impairment. Furthermore, older adults living with spouse/partner, living in near-poor household, and suffering pain/discomfort were all more likely to be at risk for depression [15]. Conversely, little social interaction increases the risk of death, much like smoking, a sedentary lifestyle, and other well-known cardiovascular risk factors. In addition, several long-term studies have demonstrated a link between social involvement and a decreased risk of cancer and heart diseases [16]. Therefore, in this study, we aimed to identify the relationship between community participation, appetite improvement, and psychological distress among comorbid older people.

This study proposes to address the following research questions: (1) what are the levels of community participation, nutritional appetite, and psychological distress among comorbid older people? (2) Is there a correlation between community participation, nutritional appetite, and psychological distress among comorbid older people? (3) How does older people's characteristic affect their community participation, nutritional appetite, and psychological status?

Methods

Study design

Descriptive cross-sectional research design.

Study site

Assiut City has three geriatric clubs, namely, Almarkaz Althaqafiu Alaslamiu, Aljameiat Alshareia, and Nadi Almysiyn Bialarbaeyn. These clubs are organized to fulfill the concerns of the older people by providing diverse activities, such as physical, psychological, psychosocial, and rehabilitative services, meals (lunch), and some sort of amusement activities. Participants, who represent those with community participation because of their membership in the clubs, were recruited from all the above-mentioned clubs. In addition, participants, who represent the members without community participation, as they were not members of the clubs, were interviewed in the chronic disease outpatient clinics (Diabetic Center, Rheumatology and Rehabilitation Center, and Internal Medicine) at Assiut University Main Hospital as regular checkup for their health.

Participants

Convenience sampling included 300 older people aged ≥ 60 years of both sexes and can communicate and associated with comorbidities; this included 200 people who are not geriatric club members and have visited Assiut University main hospital as regular checkup for their health and 100 older people who are members of the three geriatric clubs at Assiut City. We excluded participants with cognitive problems, psychiatric illness and diseases that caused dysphagia, such as cerebrovascular stroke and myasthenia gravis.

Sample size and sampling technique

The sample size was calculated according to the following: first, the participants from all three geriatric clubs at Assiut City (to represent community participation) accounted for 130 participants in 2021. The number was estimated as $98 + 2$ using software EPI/info version 3.3 with a 95% confidence interval to avoid the refusal rate. The total sample was 100 elderly members in the three clubs who were enrolled in this study. Second, the participants from the outpatient clinic (to represent a lack of community participation) included the total number of older people who come for follow-up in the chronic diseases clinics and have agreed to participate in the study during the 5 months of data collection, accounting for 200 participants.

Measures

The older people assessment sheet was used to assess older person characteristics and health history, including age, sex, occupation and educational level, residence, weight, height, and body mass index (BMI). Health history included a history of chronic diseases (hypertension, osteoarthritis, rheumatoid, diabetes mellitus, liver, and kidney diseases, etc.). Furthermore, researchers designed a semi-structured psychiatric interview to rule out psychiatric diseases based on Diagnostic and Statistical Manual of Mental Disorders-5th Edition (DSM-5) [17].

The Australian Community Participation Questionnaire (AC PQ) was used to assess community engagement. This test consists of 15 items, including contact with the immediate household, extended family, friends, and neighbors; religious observance; organized community activities; and active interest in current affairs. Participants are asked to rate each item using a 7-point scale ranging from “never or almost never” (1) to “often or almost always” (7). An index of the breadth of participation can be calculated using a mean-split to divide average scores for each participation type as follows: a score of 1 denotes a “participator” for those at or above the mean, while a score of 0 indicates a “non-participator,” i.e., those below the mean. Each of the seven types is subjected to this mean-split process. The scores are then added together to provide an 8-point index with a range of 0–7 [18]. Cronbach’s alpha was used to test the internal consistency of the tool in this current study, which was 0.931.

The Council on Nutrition Appetite Questionnaire (CNAQ) was designed to assess the appetite of older adults. It consists of eight questions, and the total score was calculated by adding the numbers associated with the patient’s response. A score of < 28 is considered a cause for concern. A total score of 8–16 indicates the risk for anorexia and the need for nutrition counseling, 17–28 indicates the need for frequent reassessment, and > 28 indicates no risk at this time [19]. The reliability of the tool was estimated in this current study by Cronbach’s alpha to test the internal consistency, which was 0.895.

Kessler Psychological Distress Scale (K10) was developed to assess psychological distress based on anxiety and depression experienced in the previous 4 weeks. It consists of 10 items, each with 5 responses (1–5) on a Likert scale, and the total scores ranged from 10 to 50. The following cutoff scores were proposed to evaluate the level of psychological discomfort: 10–15 points indicate “low discomfort,” 16–21 points indicate “moderate,”

22–29 points indicate “high,” and 30–50 points indicate “extremely high.” The Cronbach’s alpha value calculated from the original scale corroborated the K10 scale’s internal consistency (0.910) [20]. Cronbach’s alpha was used to test the internal consistency of the tool in this current study, which was 0.934.

Procedures

The ACPQ, CNAQ, and K10 were translated into Arabic and back translated to English by two bilingual translators. The study tools were tested for content validity by a panel of five psychiatric nursing science specialists at Assiut University, who evaluated the tools for clarity, comprehensiveness, understanding, and applicability. A pilot study involving 10% (30) of the older participants was conducted to evaluate the clarity of the research tools and determine the time required to complete each tool. Necessary adjustments were made following the pilot study results. Samples included in this pilot study were excluded from the total sample due to the changes and to ensure the stability of the findings. The obtained data from the panels of experts and the pilot study were manually analyzed.

Data were gathered utilizing the tools following official approval. The researchers collected the data from the geriatric clubs and outpatient clinics 3 days a week for a total of 4 h between 9 am and 1 pm in the outpatient clinics and the afternoon in the geriatric clubs during the study’s 5-month period from February 1 to June 30, 2022. On average, four to five older people were interviewed each day. The researchers gave each participant, who volunteered to participate in this study, a description of the study’s goals and methodology before answering the questions. Filling out the assessment form took roughly 20–30 min.

Statistical analysis

The Statistical Package for the Social Sciences version 26 software package was used for data entry and statistical analysis. Continuous variables were described by the mean and standard deviation (SD), whereas categorical variables were described by frequency. The Chi-square test was employed for analysis between categorical groups, whereas the *t* test was used to detect the presence of significant differences in group mean values. The Pearson correlation coefficient has been utilized to evaluate the relationship between continuous variables. Statistical significance was defined as a two-tailed *P* value of <0.05.

Results

Older people’s characteristics and health history

Table 1 reveals the mean age of non-members in geriatric was older (70.87 ± 7.25) than members in geriatric

(66.81 ± 5.64). Males were dominate in older people who are not members, while females were dominant in members of geriatric clubs, respectively. In addition, more than half of those who had no community participation and more than three-fifths of those who are members of geriatric clubs were married. The highest reported percentages of secondary education (46%) were among the geriatric club members. Moreover, most of the geriatric club members (93.0%) were living in urban areas, while more than half of those who are not members (52.5%) live in rural areas.

Table 2 represents the BMI of participants, wherein 44% of those who are not members of geriatric clubs and 50% of older people members of geriatric clubs were overweight. Nearly half of geriatric club members had diabetes mellitus (48.2%). Conversely, 46.9% of older people who were not members of geriatric clubs had hypertension.

Levels of community participation, nutritional appetite, and psychological distress among older people

Figure 1 shows that 41% of the older people who were geriatric club members had high community participation, while 50% of those who were not geriatric club members had moderate community participation levels. A highly significant difference was found between attendance of geriatric clubs and the gained social support through community participation ($P=0.000$).

Figure 2 presents that 41.0% of the geriatric club members were not at risk, at this time, for a nutritional decline, while 67.5% of those who are not geriatric club members needed frequent appetite reassessment. A high significant difference was found in the levels of nutrition and appetite between older people who are members and not a member of geriatric clubs ($P=0.000$).

Figure 3 shows that 40.0% of older people who were geriatric club members have severe psychological distress as compared with 67.5% of those who were not geriatric club members. A high significant difference was found between the geriatric club membership and the psychological distress levels ($P=0.000$).

Correlation between community participation, appetite, and psychological distress among older people

Table 3 reveals the correlation coefficient between community participation with appetite and psychological distress according to the place, with a statistically significant correlation ($P \leq 0.001$) in geriatric club members. A

Table 1 Distribution of the older persons according to their characteristics in Assiut City

Variables	Not members in geriatric club (n = 200)		Members in geriatric club (n = 100)		Chi or t value	P value
	No	%	No	%		
Age (years)					14.838	< 0.001*
60–69	93	46.5	70	70.0		
70 and more	107	53.5	30	30.0		
Mean \pm SD	70.87 \pm 7.25		66.81 \pm 5.64		5.330	< 0.001*
Sex					5.415	0.020*
Male	110	55.0	40	40.0		
Female	90	45.0	60	60.0		
Marital status					9.278	0.026*
Single	7	3.5	8	8.0		
Married	109	54.5	66	66.0		
Divorced	20	10.0	8	8.0		
Widow	64	32.0	18	18.0		
Levels of education					35.148	< 0.001*
Illiterate	78	39.0	20	20.0		
Elementary and preparatory	40	20.0	6	6.0		
Secondary	64	32.0	46	46.0		
University education	18	9.0	28	28.0		
Occupation					15.590	< 0.001*
Working	137	68.5	90	90.0		
Not working	63	31.5	10	10.0		
Residence					57.064	< 0.001*
Rural	105	52.5	7	7.0		
Urban	95	47.5	93	93.0		
Living condition					8.643	0.003*
With family/his children	151	75.5	59	59.0		
Alone	49	24.5	41	41.0		

Chi square test

t: independent t test

* Statistically significant difference ($P < 0.05$)

statistically significant correlation was observed between appetite with community participation and psychological distress ($P \leq 0.001$) in older people who are not geriatric club members.

Relationship between older people's characteristics and their community participation, nutritional appetite, and psychological distress

Table 4 denotes the relationship between the characteristics of older people who were members and not members of geriatric clubs and community participation, with statistically significant differences between community participation, marital status, educational levels, and living condition (P values of 0.006, 0.000, 0.004, 0.043, 0.000, and 0.000, respectively).

Table 5 identifies the relationship between the characteristics of older people who were members and not members of geriatric clubs and nutritional appetite. Statistically significant differences were noted between nutritional appetite and marital status and living conditions (P values of 0.000, 0.041, 0.000, and 0.008, respectively).

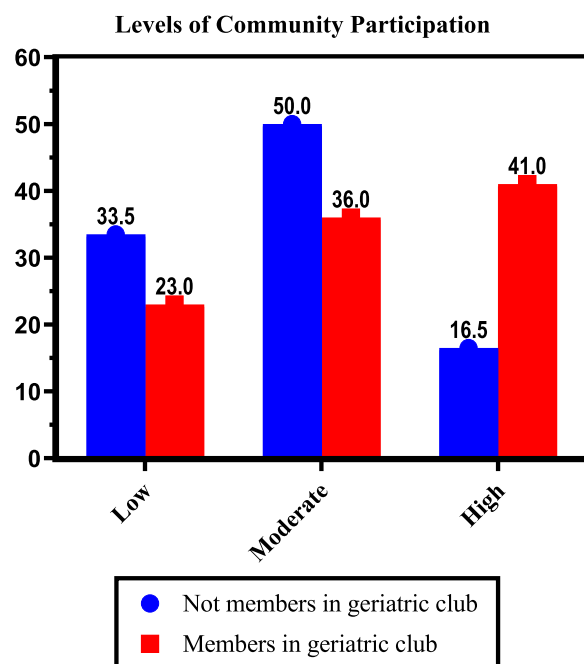
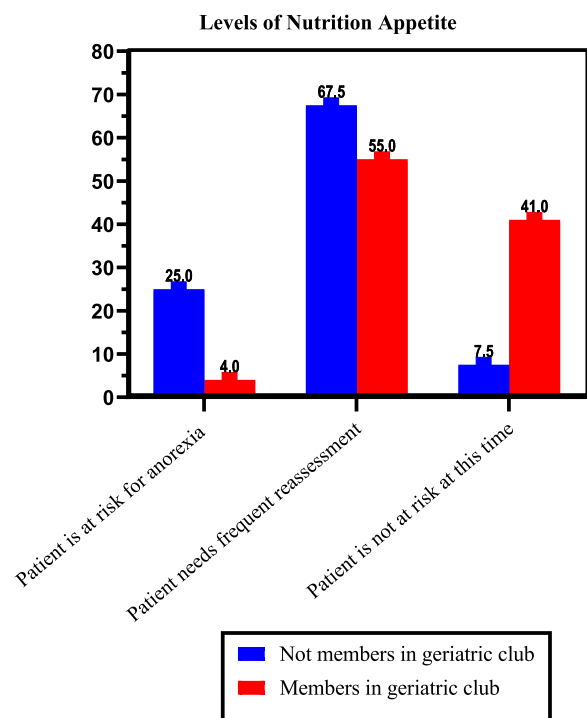
Table 6 shows the relationship between the characteristics of older people who were members and not members of geriatric clubs and psychological distress, with

Table 2 Distribution of the older person according to health history at Assiut City

Variables	Not members in geriatric club (n = 200)		Members in geriatric club (n = 100)		Chi or t value	P value
	No	%	No	%		
Length (mean \pm SD)	164.18 \pm 7.31		166.21 \pm 6.05		- 2.396	0.017*
Weight (mean \pm SD)	75.47 \pm 10.37		79.27 \pm 10.51		- 2.982	0.003*
BMI					8.843	0.065
Underweight	0	0.0	1	1.0		
Healthy	50	25.0	13	13.0		
Overweight	88	44.0	50	50.0		
Obese	60	30.0	36	36.0		
Extreme or high-risk obesity	2	1.0	0	0.0		
Mean \pm SD	28.06 \pm 3.96		28.69 \pm 3.52		- 1.351	0.178
Chronic diseases ^a					27.860	< 0.001*
Hypertension	92	46.9	42	49.4		
Diabetes	96	49.0	41	48.2		
Kidney diseases	61	31.1	12	14.1		
Liver diseases	27	13.8	0	0.0		
Rheumatoid	40	20.4	5	5.9		
Gastrointestinal diseases	33	16.8	11	12.9		

Chi square test

t independent t test

^a More than answer* Statistically significant difference ($P < 0.05$)**Fig. 1** Levels of community participation among the older person at Assiut City**Fig. 2** Levels of nutritional appetite among the older person at Assiut City

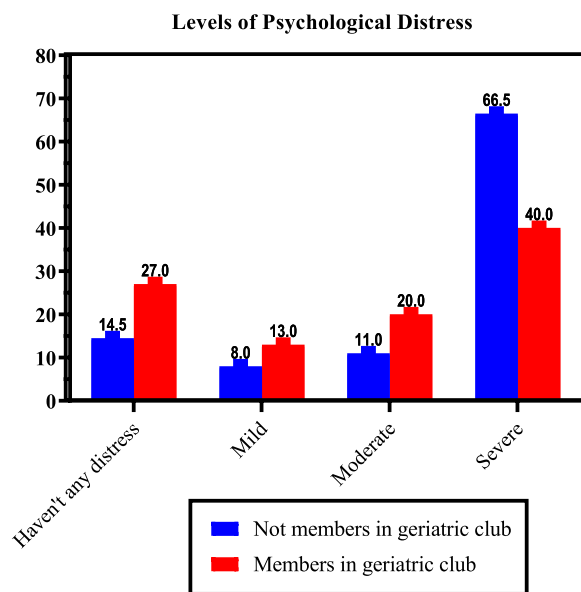


Fig. 3 Levels of psychological distress among the older person at Assiut City

statistical significance in terms of sex (P values of 0.021 and 0.027, respectively). In addition, a statistically significant difference was found between the geriatric club members' educational levels and psychological distress (P value=0.000), as well as the residence and psychological distress of older people who are not geriatric club members (P value=0.000).

Discussion

Community participation can help promote active and healthy aging, as well as prevent non-communicable diseases, death ideations, social isolation, and loneliness in older people. As people age, social networks may shrink, and people may experience the death of friends and/or their partners. These changes can put older people at risk for social isolation and loneliness, both of which have been linked to poor appetite, psychological distress, and adverse health outcomes [21].

“Community participation” is described as “participation in activities that take place outside the home, including getting together with family or friends, participating in leisure activities, volunteering, and cultural or social activities.” “Social participation” is defined as “a person's participation in activities that facilitate interaction with others in society or the community.” Social participation is considered a very valuable concept in old age because it is considered one of the most important components of older people's health.

“Community engagement” is defined as “engagement in events that happen outside the house, including gathering with family or friends, engaging in leisure activities, volunteering, and participating in cultural or social actions.” A person's involvement in events that promote interaction with others in society or in the community is the definition of “social participation” [22]. Social participation is a very crucial topic in old age because it is regarded as one of the most essential health aspects of older people [11].

The demands on healthcare systems are only going to increase due to the aging population and the high frequency of chronic diseases. Nearly half of both groups in this current study had hypertension and diabetes mellitus. A decline in one's capacity to engage in communal life can result from natural changes brought about by advanced age and several hospitalizations. We become feebler and less mobile as we age, making community participation harder, as supported by Gough and colleagues. Participation has emerged as a crucial factor for healthy aging due to increased age and the rising need for healthcare services. A correlation was found between low community engagement and increased mortality and social isolation [22]. The fragility was also linked to malnutrition in elderly diabetes outpatients. Thus, early nutritional screening and other interventions may improve the nutritional status of older outpatients with diabetes to prevent this problem and its repercussions [23].

Regarding community participation, nearly half of the participants at geriatric clubs had high community

Table 3 Correlation between community participation with appetite and psychological distress among the older person at Assiut City

Variables	Not members in geriatric club			Members in geriatric club		
	1	2	3	1	2	3
Community Participation	–			–		
Appetite	0.542*	–		0.356*	–	
Psychological distress	0.485*	0.212*	–	–0.188	–0.742*	–

Pearson correlation coefficient

* Correlation is significant at the 0.05 level (2-tailed)

Table 4 Relation between older person characteristics and their community participation at Assiut City

Variables	Not members in geriatric club (n = 200) N (%)				Members in geriatric club (n = 100) N (%)			
	Low	Moderate	High	Chi (P value)	Low	Moderate	High	Chi (P value)
Age (years)								
60–69	17 (18.3%)	58 (62.4%)	18 (19.4%)	18.196 (0.001*)	19 (27.1%)	22 (31.4%)	29 (41.4%)	3.106 (0.212)
70 and more	50 (46.7%)	42 (39.3%)	15 (14.0%)		4 (13.3%)	14 (46.7%)	12 (40.4%)	
Sex								3.428 (0.180)
Male	37 (33.6%)	52 (47.3%)	21 (19.1%)	1.359 (0.507)	13 (32.5%)	13 (32.5%)	14 (35.0%)	
Female	30 (33.3%)	48 (53.3%)	12 (13.3%)		10 (16.7%)	23 (38.3%)	27 (45.0%)	
Marital status								
Single	7 (100.0%)	0 (0.0%)	0 (0.0%)	18.238 (0.006*)	6 (75.0%)	2 (25.0%)	0 (0.0%)	29.976 (< 0.001*)
Married	32 (29.4%)	54 (49.5%)	23 (21.1%)		9 (13.6%)	26 (39.4%)	31 (47.0%)	
Divorced	7 (35.0%)	12 (60.0%)	1 (5.0%)		6 (75.0%)	1 (12.5%)	1 (12.5%)	
Widow	21 (32.8%)	34 (53.1%)	9 (14.1%)		2 (11.1%)	7 (38.9%)	9 (50.0%)	
Levels of education								
Illiterate	29 (37.2%)	36 (46.2%)	13 (16.7%)	19.308 (0.004*)	4 (20.0%)	4 (20.0%)	12 (60.0%)	13.025 (0.043*)
Elementary and Preparatory	19 (47.5%)	21 (52.5%)	0 (0.0%)		3 (50.0%)	0 (0.0%)	3 (50.0%)	
Secondary	17 (26.6%)	34 (53.1%)	13 (20.3%)		11 (23.9%)	16 (34.8%)	19 (41.3%)	
University education	2 (11.1%)	9 (50.0%)	7 (38.9%)		5 (17.9%)	16 (57.1%)	7 (25.0%)	
Occupation								
Working	42 (30.7%)	68 (49.6%)	27 (19.7%)	3.774 (0.152)	20 (22.2%)	34 (37.8%)	36 (40.0%)	1.246 (0.536)
Not working	25 (39.7%)	32 (50.8%)	6 (9.5%)		3 (30.0%)	2 (20.0%)	5 (50.0%)	
Residence								
Rural	49 (46.7%)	48 (45.7%)	8 (7.6%)	22.818 (< 0.001*)	2 (28.6%)	3 (42.9%)	2 (28.6%)	0.483 (0.785)
Urban	18 (18.9%)	52 (54.7%)	25 (26.3%)		21 (22.6%)	33 (35.5%)	39 (41.9%)	
Living condition								
With family/his children	38 (25.2%)	82 (54.3%)	31 (20.5%)	21.130 (0.001*)	1 (1.7%)	28 (47.5%)	30 (50.8%)	37.050 (0.001*)
Alone	29 (59.2%)	18 (36.7%)	2 (4.1%)		22 (53.7%)	8 (19.5%)	11 (26.8%)	

Chi square test

* Statistically significant difference ($P < 0.05$)

participation, while half of those who were not geriatric club members had moderate levels of community participation. This study was in line with Premnazar et al., who examined a geriatric club adjacent to a primary health-care hospital in Kerala, India, as an attempt to involve the elderly physically, socially, and psychologically. This may be due to the numerous recreational activities and vacations offered by the clubs. The elderly enjoyed conversing with their peers and were attentive to the health education programmes [24].

The entertainment program in geriatric clubs consisted of a variety of activities, including games, film screenings, brief picnics, and festival celebrations that are planned and organized by the members with the assistance of social workers. They began celebrating their birthdays, wedding days, and family events, such as birthdays, exam successes, and grandchildren's weddings, during the sessions. Conversely, most of the older people who are not geriatric club members live in rural areas, where

transportation and most services remain lacking and geriatric clubs are absent. Older people in these areas do not leave their homes unless they go to the hospital in case of severe illness, but they are participating in social activities, such as family celebrations.

It can be noted that the older population has seen a more rapid increase than any other age group over the past few decades, and older age is associated with increased morbidity. Age-related changes in nutritional requirements, decreased appetite, chewing issues, sensory deterioration, food instability, social isolation, and poor psychological health have been determined to contribute a significant percentage of older people being undernourished. Creating successful interventions to combat malnutrition in older individuals is a top public health goal because lunch clubs are community-based initiatives, where meals are provided with chances for social interaction and a distinctive dining experience of both commercial and communal nature [25].

Table 5 Relation between older person characteristics and their nutritional appetite at Assiut City

Variables	Not members in geriatric club (n = 200) N (%)				Members in geriatric club (n = 100) N (%)			
	Patient is at risk for anorexia	Patient needs frequent reassessment	Not at risk at this time	Chi (P value)	Patient is at risk for anorexia	Patient needs frequent reassessment	Not at risk at this time	Chi (P value)
Age (years)								
60–69	18 (19.4%)	67 (72.0%)	8 (8.6%)	3.029 (0.220)	4 (5.7%)	37 (52.9%)	29 (41.4%)	1.920 (0.383)
70 and more	32 (29.9%)	68 (63.6%)	7 (6.5%)		0 (0.0%)	18 (60.0%)	12 (40.0%)	
Sex				1.610 (0.447)				8.987 (0.011*)
Male	27 (24.5%)	77 (70.0%)	6 (5.5%)		0 (0.0%)	17 (42.5%)	23 (57.5%)	
Female	23 (25.6%)	58 (64.4%)	9 (10.0%)		4 (6.7%)	38 (63.3%)	18 (30.0%)	
Marital status								
Single	6 (85.7%)	1 (14.3%)	0 (0.0%)	22.966 (<0.001*)	2 (25.0%)	4 (50.0%)	2 (25.0%)	13.117 (0.041*)
Married	18 (16.5%)	80 (73.4%)	11 (10.1%)		1 (1.5%)	38 (57.6%)	27 (40.9%)	
Divorced	4 (20.0%)	14 (70.0%)	2 (10.0%)		1 (12.5%)	4 (50.0%)	3 (37.5%)	
Widow	22 (34.4%)	40 (62.5%)	2 (3.1%)		0 (0.0%)	9 (50.0%)	9 (50.0%)	
Levels of education								
Illiterate	11 (14.1%)	61 (78.2%)	6 (7.7%)	17.037 (0.009*)	0 (0.0%)	9 (45.0%)	11 (55.0%)	12.503 (0.052)
Elementary and preparatory	18 (45.0%)	22 (55.0%)	0 (0.0%)		0 (0.0%)	3 (50.0%)	3 (50.0%)	
Secondary	17 (26.6%)	40 (62.5%)	7 (10.9%)		2 (4.3%)	33 (71.7%)	11 (23.9%)	
University education	4 (22.2%)	12 (66.7%)	2 (11.1%)		2 (7.1%)	10 (35.7%)	16 (57.1%)	
Occupation								
Working	34 (24.8%)	95 (69.3%)	8 (5.8%)	1.824 (0.402)	4 (4.4%)	51 (56.7%)	35 (38.9%)	1.877 (0.391)
Not working	16 (25.4%)	40 (63.5%)	7 (11.1%)		0 (0.0%)	4 (40.0%)	6 (60.0%)	
Residence								
Rural	24 (22.9%)	72 (68.6%)	9 (8.6%)	0.782 (0.676)	0 (0.0%)	4 (57.1%)	3 (42.9%)	0.314 (0.885)
Urban	26 (27.4%)	63 (66.3%)	6 (6.3%)		4 (4.3%)	51 (54.8%)	38 (40.9%)	
Living condition								
With family/his children	26 (17.2%)	110 (72.8%)	15 (9.9%)	22.406 (<0.001*)	2 (3.4%)	40 (67.8%)	17 (28.8%)	9.631 (0.008*)
Alone	24 (49.0%)	25 (51.0%)	0 (0.0%)		2 (4.9%)	15 (36.6%)	24 (58.5%)	

Chi square test

* Statistically significant difference ($P < 0.05$)

As per the results of this current study, it was found that less than half of the participants at geriatric clubs were not at risk for nutritional decline at this time, while half of those who were not geriatric club members needed frequent appetite reassessment. According to studies, eating with others enhances a person's appetite and consumption of essential nutrients. Older individuals have recently emphasized the importance of a sense of community, social support, social network, and a decrease in social isolation in diet quality. In addition, the senior sees lunch groups as a way to lessen their sense of isolation. These results are consistent with the findings of Tsofliou et al., who studied the effects of lunch club attendance on the dietary intake of older adults in

the United Kingdom [26]. BMI may be inversely related to depressed symptoms, because muscular mass protects against depression [27].

Social participation is a crucial component of successful and healthy aging in response to concerns over the aging of the population. Psychological distress is a condition of emotional suffering marked by depressive symptoms and anxiety. Several studies found links between psychological discomfort and an increased risk of death [28].

Concerning psychological distress among the older person, this present study revealed that more than half of older people who were not geriatric club members have severe psychological distress as compared with more

Table 6 Relation between older person characteristics and psychological distress at Assiut City

Variables	Not members in geriatric club (n = 200) N (%)				Chi (P value)	Members in geriatric club (n = 100) N (%)				Chi (P value)
	No distress	Mild	Moderate	Severe		No distress	Mild	Moderate	Severe	
Age (years)										
60–69	8 (8.6%)	9 (9.7%)	11 (11.8%)	65 (69.9%)	5.191 (0.158)	15 (21.4%)	9 (12.9%)	15 (21.4%)	31 (44.3%)	3.996 (0.262)
70 and more	21 (19.6%)	7 (6.5%)	11 (10.3%)	68 (63.6%)		12 (40.0%)	4 (13.3%)	5 (16.7%)	9 (30.0%)	
Sex										
Male	23 (20.9%)	8 (7.3%)	14 (12.7%)	65 (59.1%)	9.767 (0.021*)	16 (40.0%)	4 (10.0%)	10 (25.0%)	10 (25.0%)	9.218 (0.027*)
Female	6 (6.7%)	8 (8.9%)	8 (8.9%)	68 (75.5%)		11 (18.3%)	9 (15.0%)	10 (16.7%)	30 (50.0%)	
Marital status										
Single	2 (28.6%)	0 (0.0%)	2 (28.6%)	3 (42.8%)	12.317 (0.196)	2 (25.0%)	2 (25.0%)	0 (0.0%)	4 (50.0%)	12.807 (0.172)
Married	17 (15.6%)	10 (9.2%)	15 (13.8%)	67 (61.4%)		19 (28.8%)	11 (16.7%)	13 (19.7%)	23 (34.8%)	
Divorced	2 (10.0%)	0 (0.0%)	0 (0.0%)	18 (90.0%)		0 (0.0%)	0 (0.0%)	2 (25.0%)	6 (75.0%)	
Widow	8 (12.5%)	6 (9.4%)	5 (7.8%)	45 (70.3%)		6 (33.3%)	0 (0.0%)	5 (27.8%)	7 (38.9%)	
Levels of education										
Illiterate	12 (15.4%)	8 (10.3%)	11 (14.1%)	47 (60.2%)	12.646 (0.179)	16 (80.0%)	2 (10.0%)	2 (10.0%)	0 (0.0%)	48.830 (< 0.001*)
Elementary and preparatory	9 (22.5%)	4 (10.0%)	5 (12.5%)	22 (55.0%)		1 (16.7%)	0 (0.0%)	2 (33.3%)	3 (50.0%)	
Secondary	8 (12.5%)	4 (6.3%)	5 (7.8%)	47 (73.4%)		2 (4.3%)	7 (15.2%)	8 (17.4%)	29 (63.1%)	
University education	0 (0.0%)	0 (0.0%)	1 (5.6%)	17 (94.4%)		8 (28.6%)	4 (14.3%)	8 (28.6%)	8 (28.5%)	
Occupation										
Working	24 (17.5%)	11 (8.0%)	18 (13.1%)	84 (61.4%)	6.300 (0.098)	21 (23.3%)	13 (14.4%)	18 (20.0%)	38 (42.3%)	7.037 (0.071)
Not working	5 (7.9%)	5 (7.9%)	4 (6.3%)	49 (77.9%)		6 (60.0%)	0 (0.0%)	2 (20.0%)	2 (20.0%)	
Residence										
Rural	24 (22.9%)	14 (13.3%)	17 (16.2%)	50 (47.6%)	35.771 (< 0.001*)	2 (28.6%)	1 (14.3%)	2 (28.6%)	2 (28.6%)	0.539 (0.727)
Urban	5 (5.3%)	2 (2.1%)	5 (5.3%)	83 (87.3%)		25 (26.9%)	12 (12.9%)	18 (19.4%)	38 (40.8%)	
Living condition										
With family/his children	20 (13.2%)	9 (6.0%)	15 (9.9%)	107 (70.9%)	6.274 (0.099)	13 (22.0%)	11 (18.6%)	10 (16.9%)	25 (42.5%)	5.713 (0.126)
Alone	9 (18.4%)	7 (14.3%)	7 (14.3%)	26 (53.0%)		14 (34.1%)	2 (4.9%)	10 (24.4%)	15 (36.6%)	

Chi square test

* Statistically significant difference ($P < 0.05$)

than one-third of those who were geriatric club members. Previous research has demonstrated a positive relationship between older individuals' social engagement and mental health [29].

Actively participating in volunteer work, religious activities, and groups has been linked to greater mental health and less psychological distress symptoms according to several research. This was supported by Amagasa et al. [28]. Higher levels of interpersonal ties between older people, such as those with family, friends, and neighbors, may make them more vulnerable to problems and traumatic or stressful events, such as a loved one's death from illness, which makes them more likely to experience emotional closeness and depression [28].

Regarding psychological discomfort, this current study indicated the correlation coefficient between higher community participation and decreased psychological distress with statistical significance. This study is also consistent with the findings of Wang and colleagues who discovered the same finding in their social impact investigation [29]. Participation in social activities can also confer substantial social roles, self-esteem, and social competence, which then may protect against neuropathology, such as stress response reduction [30].

Maintaining a healthy nutritional condition is critical at any age. Hence, geriatric nutrition is nutrition that aids in reducing the effects of aging and illness, as well as the management of the physical, psychological, and psychosocial states of the aged population. Physical, psychological, social, and health-related changes can impact an older person's nutritional status and food intake habits.

This present study revealed the correlation coefficient between community participation, nutritional appetite, and psychological distress. This was matched with another study by Kawaharada et al. who found active participation in social activities as a positive influence on good appetite by preventing depressive symptoms among older adults. Depressive symptoms can have a significant impact on appetite reduction in older adults. Social activities are linked with depression symptoms and appetite reduction [8].

This study showed no statistically significant difference between males and females in both groups, which was agreed with Naud et al. who studied social participation in older females and males regarding differences in community activities and barriers according to the region and population size in Canada. No practical differences were found in social participation between females and males [31].

This study also revealed that the highest scores were found among the married sample in both groups regarding the link between social participation and marital status. In addition, married older adults prefer

to have more social participation and maintain greater social interaction than widows, singles, or divorced individuals who may experience poor social participation. This was consistent with the findings of Wang and colleagues who investigated the significance of social participation and married status in later life in China after retirement. Social engagement, such as connection with friends, participation in hobby groups, sports teams, and volunteering, may reduce physical frailty among the older married Chinese population. Theoretically, having a spouse improves social support, integration, and involvement, all of which are connected to better health and well-being. In addition, married people tend to live longer than single people. Encouraging unmarried older persons to participate in hobby groups, such as playing chess or Mahjong with others, may be a particularly successful strategy to lessen frailty [32].

Similar to the findings of Naud et al., a statistically significant difference was found between the living conditions of both samples in the two groups in terms of social participation scores, with the highest scores occurring among the sample living with their family. In addition, elderly people living with their families are more engaged in their communities than those living alone. Older adults who are married assist one another with community activities [31].

Following Bjornwall et al., a statistically significant difference was found in the nutritional appetite between the two groups based on marital status (married) and living with family among the sample of individuals living with their families. In addition, elderly folks who live with their families assist one another in food preparation and encourage one another to eat. The prevalence of reported loneliness and food-related difficulties increases with age; thus, it is typically multifactorial due to significant physiological, social, and psychological changes associated with aging [33].

Psychological distress has been identified as an important factor in psychosocial functioning and functional incapacity of the elderly. The proposed results presented a statistically significant difference in psychological distress and sex of both groups. This observation was supported by Matud and García, who have studied psychological distress and found a significant association between females and males with worse social functioning, which was also lower in older people and females with lower self-esteem. Gender is a critical element in the experienced psychological distress and its predictors; moreover, psychological distress has a significant impact on social functioning in older people [34].

Limitations and recommendations of the study

To achieve a homogeneous sample, all subjects with cognitive impairment and dysphagia-causing diseases were excluded from the study, which is a significant limitation of this research. This study provides important clinical and public health implications. The findings of this study recommend providing educational materials, such as posters in the outpatient clinics to increase public awareness regarding the importance of community participation activities for older people's health and well-being, because reduced social participation of older adults may lead to poor appetite and increase in psychological distress. Community programs, such as Meal on Wheels programs, and shared group activities can improve nutritional appetite and social interaction among older people. Geriatric clubs provide nutritious attractive meals for older people while concurrently providing a chance for chatting and sharing a hot meal with peers. Geriatric social clubs should also be present in rural communities to engage older people in physical, mental, and social activities, which have a positive impact on their lives. Furthermore, women should be given extra attention and assistance in restoring their appetite especially if they had any abdominal surgery after surgery [35].

Conclusion

Older people who were geriatric club members and participated routinely in the community and had societal interaction were noted to have decreased psychological distress levels and good appetite than those who were not geriatric club members. In addition, a statistically significant relationship was found concerning community participation and its associated factors, such as marital status, educational levels, and living conditions. Furthermore, a statistically significant relationship was found between nutritional appetite and their associated factors, such as sex, marital status, and living conditions of the examined sample. Moreover, a statistically significant relationship was found between psychological distress and their related factors, such as sex and education of the studied groups.

Abbreviations

WHO	The World Health Organization
ACPQ	The Australian Community Participation Questionnaire
CNAQ	The Council on Nutrition Appetite Questionnaire
K10	Kessler Psychological Distress Scale

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Author contributions

SK, GA, SO and MI recruited participants, analysis, and interpreted data, and were the contributors in writing the manuscript. All authors have read and approved the manuscript.

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Availability of data and materials

All data generated or analysed during this study are available from correspondence on request.

Declarations

Ethics approval and consent to participate

This study was approved by the institutional review board of Assiut University's Faculty of Nursing. There was no risk to the study subject when the research was applied. The subjects' written informed consent to participate was obtained following an explanation of the study's objectives. For illiterate participants, consent was given in presence of a witness. They were offered the chance to refuse and were informed that they may withdraw from the study at any time. In addition, they received guarantees that data would remain private and would only be used for this study. Moreover, this study was conducted following the latest version of the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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