

## Elderly residents and family caregiver's satisfaction with the services provided by geriatric homes in Beni-Suef city:

### A comparative study

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#### Abstract

The aim was to compare the satisfaction with the services provided by geriatric homes in Beni Suef city as perceived by of residents and their families. Method: The study carried out in two geriatric homes in Beni-Suef city using an analytic cross-sectional design. It included a group of 87 elderly people residing in these settings, and an equal group of their family caregivers. Two interview questionnaires including a satisfaction scale and the Healthqal tool forms were used to collect data, one for the elderly and another for the family caregiver. Data collection: from November to March 2023. Results: Elderly median age was 66 years, with 54% males. Family caregivers' age ranged between 22 and 69 years, with 54% males. Satisfaction and expectations scores were almost equal between elderly and their caregivers. Only satisfaction with the recreation services was significantly higher among caregivers ( $1.2\pm 0.6$ ) in comparison with the elderly ( $1.0\pm 0.7$ ),  $p=0.049$ . Their expectations scores had a significant strong positive correlations ( $r=0.835$ ). The scores of satisfaction and expectation varied between the two homes and according to elderly and caregivers' characteristics. Conclusion: Elderly residents and caregivers have generally high satisfaction with the services provided, whereas their expectations are slightly lower, with no significant differences. Their scores are positively correlated. Recommendations: periodic assessment of elderly residents and family caregivers' expectations and satisfaction with the services. Community health nurses should be trained in conducting such surveys. Further research is proposed for improvement based on the identified needs of residents and family caregivers' satisfaction.

**Keywords:** Geriatric homes, elderly residents, family caregivers, satisfaction, expectations

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## INTRODUCTION

Aging is a progressively process, occurring as a series of changes over time (20); (30), with decline in physiological functions with reduced adaptive and regenerative capacity that may affect functional performance and increase morbidities (29). From another perspective, aging is considered as socially constructed phenomenon and its perception is prejudiced by individuals' familiarities culture values, social beliefs, and (34). However, Governmental polices has establishing a specific chronological age to signify old age as it used to suitability of certain services areas (14).

Meanwhile, ill healthiness is not an inevitable significance of aging. Many terms are familiar to indicate “ageing well” such as healthy, positive, productive, successful, and active ageing (18). Factors related to health perceptions and societal background like education, functional activity, fiscal stresses, and societal activities have major impacts on elderly health trajectories (5). Other influencing factors include income and wealth. With the manipulation of these factors, over 66% of the elderly in the lowliest healthiness arcs might have healthier senior (12).

Elderly living self-sufficiently in the community -dwelling or in long-term care services as senior nursing homes, and prolonged and long-term care hospices and residences (8). The increasing numbers of elderly people and their need for interventions because of chronic diseases, injury or frailty constitute a major challenge to healthcare systems (1). Some may even need special programs as hospices that are designed for terminally-ill patients to provide symptom management as well as psychological and spiritual support (5); (31).

Population aging as a universal phenomenon is also affecting Egypt. By the past fifty years, the aged people 65+ years in Egypt markedly increasing as of 1,488.42 to 5,456.14 thousand persons as annual rate increasing; which extended a Maximum of 3.78% in 2013 and then declined to 3.01% in 2020. The peoples aged 65 and older in 2021 constituted 5.4% of the total population. The life expectancy at birth for Egyptian women was 75 years and 70 for men in 2021 (35).

Loss of independence with inability of decisions making and/or do the daily Activities of Daily Living (ADLs) is linked to aging (11). It can lead to the need for specialized care due to related family consequences (16), with increased caregiver burden affecting physical health, psychological wellbeing, finances, and social life (27). Thus, dwelling of elderly person in nursing homes has become an increasing necessary services as the needs and demands increase (5);(6). This occurs despite the cultural norms and values considering placing elderly people in nursing homes a violation to tradition and personal beliefs especially in Upper Egypt norms. Satisfaction with the care provided in geriatric homes is of major importance. Thus, it is important to evaluate the satisfaction with nursing home service both from residents and families' viewpoints.

### **Aim:**

To relate the satisfaction with the services provided by geriatric homes in Beni-Suef city as perceived by of elderly residents and by their families.

### **Research questions:**

1. Are elderly residents satisfied with the services provided to them in geriatric homes?
2. Are elderly residents' families satisfied with the services provided in geriatric homes?
3. Is there a difference between residents and families' satisfaction?

## Research Methodology

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### Settings & Design

Carried out in two geriatric homes purposively selected in Beni-Suef city. Home (A) Dare El-khare in mile east beni-suef was public and charge-free, but recently residents may pay for extra-services. Home (B) Dare Ahalina is private with fees. Both are for men and women, but home (B) has a central location in the city with easy transportation.

### Participants

The study included two groups, namely elderly home residents and their family caregivers.

**Elderly residents' group:** Any elderly person residing in any of the two selected geriatric homes was eligible to the inclusion as of actuality  $60 \geq$  yrs & residing in the geriatric home for at least 6 months. Those with severe physical or mental illness or disability are omitted. To estimate an ambivalent satisfaction rate of fifty percent (50%) or upper with 5% standard error & ninety five (95%) level of confidence, with considering the finite population correction. Using the Open-Epi software package, the required sample size was 87 elderly residents. Elderly were recruited by convenience sampling according to the eligibility criteria from the two geriatric homes with almost equal size.

**Family caregivers:** For each elderly person recruited in the sample, a family member was selected with the inclusion criteria of being adult (18-year or older), a relative of the elderly person, having visited the geriatric home at least twice during the preceding year, and able to communicate.

### Data collection tools

Two interview questionnaire forms were used to collect data, one for the elderly and another for the family caregiver.

**Elderly resident form:** This included two tools in addition to sections for elderly demographic characteristics and medical history. The satisfaction tool was developed by the researcher based on pertinent literature (15); (17). It covered seven areas of satisfaction: Health services (3 items), Dietary services (7 items), Hygiene services (6 items), General cleanliness (4 items), Recreation services (5 items), Visits (4 items), and Relationships with staff (8 items). Items' answer stayed on a 3-point scale: "agree/uncertain/disagree" plus a Not-Applicable" (NA) response. Scoring, 2, 1, and

zero points. The scores of every domain & for the total scale is summed and divided by the number of consisting items. Then, standardized means, standard deviations, and medians were computed with a range from 0.0 to 2.0. The items with NA responses were discounted from the totals.

**The second tool** was a recent healthcare-oriented version of the Healthqual tool (23). It covers respondents' expectations and perceptions of five dimensions of service quality: Empathy (7 items as staff behavior is respectful), Tangibility (5 items as availability of high technology equipment), Safety (6 items as rest and security), Efficiency (6 items as suitable fees), and Improvement potentials (7 items as improvement in resident care). The response to each item was on a 5-point Likert type scale ranging from strongly agree to strongly disagree. For scoring, these response were given points from 5 to 1 so that a higher score indicates higher expectations. The scores of each domain and for the total scale were summed and divided by the number of corresponding items. Then, standardized means, standard deviations, and medians were computed with a range from 1.0 to 5.0.

**Family caregiver form:** This included the same satisfaction and Healthqual tools as for the elderly resident besides a section for caregiver's demo-graphic features & relationship to the elderly person.

**Tools validity and reliability:** To ensure tools validity they were translated into Arabic using a translate-back-translate procedure according to (10); The two tools used have documented high validity and reliability. Then presented to five experts in community (three) and geriatric nursing (two) nursing for expression of contented validation. The tools were finalized according to their comments and counsels. The reliability of the two tools was measured using the internal stability method. They confirmed high levels of reliability with Cronbach's alpha coefficients 0.82 and 0.85 for the satisfaction tool, and 0.96 and 0.96 for the expectation tool for elderly and caregivers, correspondingly.

## Study Piloting

The piloting was conducted on nine elderly residents and nine of their family caregivers to evaluate the clarity of the items, the suitability of the settings, and the feasibility of the study. Based on the pilot results, the approximate time needed for the interviews was estimated. As no modifications were done in the two tools, it was included in the main sample size 87.

## Fieldwork

Once the authorized approvals of the study carry out were secured, the Director of each of the two geriatric homes was meeting by the researcher & explains the study aim to get cooperation in arranging for suitable time for data collection. Then, the scholar meeting



each elderly resident separately explained the aim of the study and the data collection procedures and invited him/her to participate. After informing him/her about his/her rights, an oral informed consent to participate was obtained. The interview was then conducted using the data collection form. It took 20-30 minutes with each participant.

Then, for each participant a family caregiver was recruited according to the eligibility criteria. He/she was contacted by the researcher who invited him/her to participate after being informed about the study aim and his/her moralities. Researcher set a suitable time for each family caregiver to conduct the interview using the proper form. It took 20-30 minutes to interview each family caregiver. Data collection procedure lasted for five months, by the starting of November 2022 to the end of March 2023.

## Ethical considerations

Ethical approval by the Scientific Research and Ethics Committee at the Faculty of Medicine & Nursing, BSU. **Approval No: FMBURE/ 061122/Abozied**. All elderly & their family relative were told that involvement is totally voluntary, namelessness and privacy of each participant was protected by allocation of a coding numbers for each elderly person and family caregiver. With all freedom rights to withdraw from the study at any time without giving any reasons. The study maneuvers could not entail any harmful effect on them

## Statistical analysis

The IBM-SPSS version 20.0 statistic-package was used in data management and statistical analysis. Descriptive statistics as frequencies and percentages were used for categorical variables and means and SD, medians for quantitative ones. Paired t-test for comparison of dependent groups. Spearman rank correlation analysis was applied for examining the inter-relationships among quantitative and ranked variables. For identification of the independent predictors of satisfaction and expectations scores multiple linear regression analysis was used. P-value was considered at  $\leq 0.05$ .

## Results

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The study sample consisted of 87 elderly residents whose median age was 66 years, with slightly more males (54%) as displayed in Table 1. Slightly more than a half of them (54%) had no formal education, sufficient income (57.5%), and only 29.9% were currently married. Their urban/rural residence was almost equal. Concerning the characteristics of the family caregiver, the table shows that age ranged between 22 & 69 years, with slightly more males (54%). Less than a half of them (43.7%) had university education and were employees (42.5%). The majority were married (87.4%), had sufficient income (67.8%), and had urban residence (58.6%). Spouses constituted 43.7% of the caregivers.

Table 1: Socio-demographic characteristics of the elderly and their caregivers in the study sample (n=87)

	Elderly (n=87)		Caregivers (n=87)	
	No.	%	No.	%
Age:				
<50			52	59.8
50+			35	40.2
<70	66	75.9		
70+	21	24.1		
Range	60-83		22-69	
Mean±SD	66.9±4.7		47.4±9.2	
Median	66.0		45.0	
Gender:				
Male	47	54.0	47	54.0
Female	40	46.0	40	46.0
Education:				
None	47	54.0	19	21.8
Basic/secondary	16	18.4	30	34.5
University	24	27.6	38	43.7
Marital status:				
Unmarried (single/divorced/widow)	61	70.1	11	12.6
Married	26	29.9	76	87.4
Previous job:				
Employee	22	25.3	37	42.5
Worker	35	40.2	27	31.0
Housewife/unemployed	30	34.5	23	26.4
Residence:				
Rural	43	49.4	36	41.4
Urban	44	50.6	51	58.6
Income:				
Insufficient	37	42.5	28	32.2
Sufficient	50	57.5	59	67.8
Have chronic disease	72	82.8	5	5.7

Table 2 indicates that the mainstream of them(82.8%) were having chronic diseases, with median 1.0 disease per person; 82.8% were on regular medication. The median number of medications per person was 3.0. The utmost side effect of these medications was the regards their balance and stability. Only 6.9% were having incontinence and 16.1% had disability. As regards their health habits, only 33.3% were having normal sleep and 13.8% of them reported exercising for at least 30 minutes and four times per week.

Table 2: Medical characteristics of the elderly in the study sample (n=87)

	Frequency	Percent
Have chronic disease	72	82.8
No. of diseases:		
Range	0-5	
Mean±SD	1.4±1.0	
Median	1.0	
On regular medication	72	82.8
No. of medications:		
Range	0-8	
Mean±SD	2.8±2.0	
Median	3.0	
Medications affect:		
Concentration	7	8.0
Equilibrium	17	19.5
Memory	10	11.5
Have incontinence	6	6.9
Have disability	14	16.1
Sleep:		
Normal	29	33.3
Insomnia	32	36.8
Disordered	26	29.9
Exercise (at least 30 min x 4/week):	12	13.8

Table 3 indicates generally equal scores of satisfaction and expectations between elderly and their caregivers. With few exceptions, the scores tended to be higher among caregivers, particularly the total scores, with no statistically significant differences. The only difference of statistical significance was related to satisfaction with the recreation services, which was higher among caregivers (1.2±0.6) in comparison with the elderly (1.0±0.7), p=0.049.

Table 3: Comparison of satisfaction and expectations scores between elderly and their family caregivers

	Elderly		Caregiver		Mann-Whitney test	p-value
	Mean±SD	Median	Mean±SD	Median		
<b>Satisfaction with (max=2):</b>						
Health services	1.3±0.8	1.67	1.4±0.7	0.50	0.48	0.36
Dietary services	1.6±0.5	1.71	1.5±0.6	1.71	0.03	0.86
Hygiene services	1.6±0.4	1.67	1.6±0.4	1.67	0.04	0.85
General cleanliness	1.3±0.8	1.50	1.3±0.7	1.50	0.05	0.82
Recreation services	1.0±0.7	1.00	1.2±0.6	1.20	3.89	0.049*
Visits	1.6±0.6	2.00	1.6±0.6	1.75	0.07	0.79
Relationships with staff	1.5±0.6	1.60	1.6±0.6	1.80	0.57	0.45
Total	1.4±0.3	1.45	1.5±0.4	1.57	0.88	0.35
<b>Expectations (max=5):</b>						
Empathy	3.6±0.7	3.57	3.7±0.6	3.71	1.28	0.26
Tangibility	3.2±0.9	3.20	3.3±0.9	3.40	1.13	0.29
Safety	3.3±0.8	3.33	3.3±1.0	3.50	0.12	0.73
Efficiency	3.1±1.0	3.17	3.2±1.0	3.33	0.53	0.47
Improvement potentials	3.2±0.9	3.29	3.3±0.9	3.57	1.74	0.19
Total	3.3±0.7	3.29	3.4±0.7	3.48	1.01	0.31

(\*) Statistically significant at  $p < 0.05$

In paired analysis, Table 4 shows a statistically significant difference in the expectations scores ( $p=0.04$ ). The difference indicates higher scores among caregivers. Meanwhile, no any statistical difference was revealed in their satisfaction scores ( $p=0.17$ ).

Table 4: Paired differences between elderly and family caregivers scores of satisfaction and expectations

	Elderly-caregiver difference			Paired t test	p-value
	Range	Mean±SD	Median		
Satisfaction	-0.58-0.47	-0.03±0.2	0.00	1.37	0.17
Expectations	-1.6-0.6	-0.08±0.4	-0.03	2.10	0.04*

(\*) Statistically significant at  $p < 0.05$



Table 5 demonstrates statistically significant weak negative correlations between caregivers' satisfaction and expectation scores and their age, and a weak positive correlation with their income ( $r=0.212$ ). Meanwhile, their scores of satisfaction and expectations was statistical significantly weak positive relationships with elderly's income, whereas their expectation score had a statistically significant weak negative relationship with the number of chronic diseases ( $r=-0.227$ ). The table also points to statistically significant weak to moderate positive correlations between elderly's scores of satisfaction and expectations and their income. Meanwhile, their satisfaction score had a statistically significant weak negative correlation with their number of chronic diseases ( $r=-0.223$ ).

Table 5: Correlation between elderly's satisfaction and expectations scores and their characteristics

	Spearman's rank correlation coefficient			
	Elderly (n=87)		Caregivers (n=87)	
	Satisfaction scores	Expectation scores	Satisfaction scores	Expectation scores
<b>Caregivers' characteristics:</b>				
Age			-.244*	-.226*
Education level			.118	.004
Income			.212*	.160
<b>Elderly's characteristics:</b>				
Age	.142	.145	.113	.115
Education level	-.055	-.005	-.078	-.057
Income	.498**	.390**	.315**	.241*
No. of chronic diseases	-.223*	-.129	-.180	-.227*
No. of medications	-.125	-.066	-.140	-.110

(\*) Statistically significant at  $p<0.05$

(\*\*) Statistically significant at  $p<0.01$

Concerning the correlations between elderly's and caregivers' satisfaction and expectations scores, Figure 1(a,b) demonstrates statistical signifies strong positive correlations. The strongest relationship was amongst their expectation scores ( $r=0.835$ ).

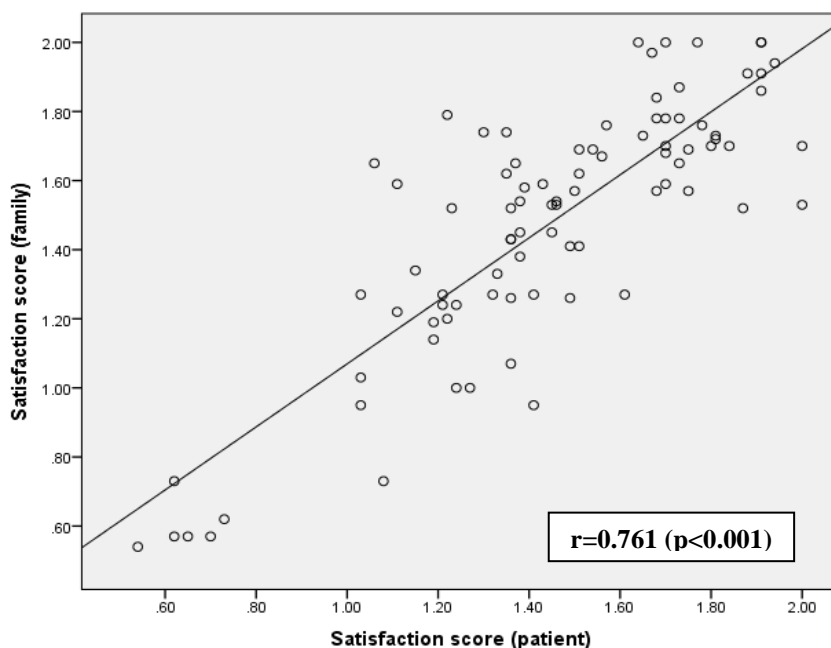


Figure 1a: Correlation between elderly and family caregivers' satisfaction scores

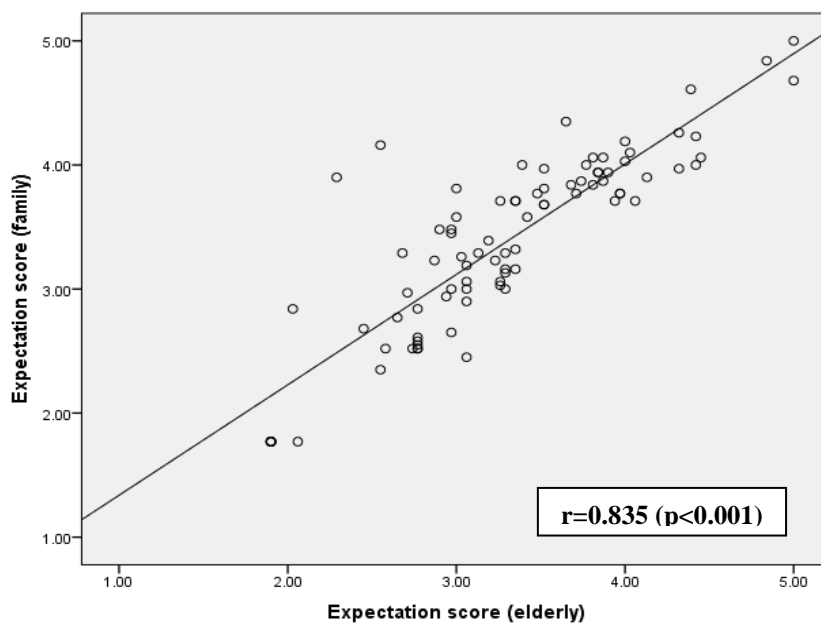


Figure 1b: Correlation between elderly and family caregivers' expectation scores

In multivariate analysis, Tables 6 demonstrate that the statistically significant independent positive predictors of elderly' expectation score were their being in geriatric home B and their income. The model explains 23% of the variation in the expectation score. As for their satisfaction score, the table indicates that being in geriatric home B, having urban residence, as well as the expectation score were its statistically significant independent

positive predictors. On the other hand, the number of medications was a negative predictor. The model explains 64% of the variation in the satisfaction score.

Table 6: Best fitting multiple linear regression model for the elderly expectations and satisfaction scores

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
<b>Elderly expectations score</b>							
Constant	2.45	0.21		11.561	<0.001	2.03	2.87
Geriatric home B	0.43	0.14	0.30	3.011	0.003	0.15	0.71
Income	0.33	0.11	0.29	2.926	0.004	0.11	0.56
r-square=0.23                      Model ANOVA: F=12.85, p<0.001 Variables entered and excluded: age, gender, education, marital status, residence, job, number of diseases and medications, incontinence, disability, exercise							
<b>Elderly satisfaction score</b>							
Constant	.15	.13		1.153	.252	-.11	.40
Geriatric home B	.12	.05	.18	2.426	.017	.02	.22
Urban residence	.11	.05	.17	2.387	.019	.02	.21
No. of medications	-.03	.01	-.17	2.508	.014	-.05	-.01
Expectation score	.31	.03	.67	9.209	<0.001	.25	.38
r-square=0.64                      Model ANOVA: F=36.23, p<0.001 Variables entered and excluded: age, gender, education, marital status, income, job, number of diseases, incontinence, disability, exercise							

Concerning family caregivers' expectation score, Table 7 indicates that elderly's income and disability were statistically significant independent positive predictors, while their number of diseases were negative predictors. Meanwhile, caregivers' age and female gender were negative predictors. The model explains 30% of the variation in caregivers' expectations score. As for their satisfaction score, the table shows that its statistically significant independent positive predictors were being the spouse, as well as the caregiver's expectations score and elderly's satisfaction score. Conversely, elderly's incontinence was a negative predictor. The model clarifies 78% of the variation in the caregivers' satisfaction score.

Table 7: Best fitting multiple linear regression model for caregivers' expectations and satisfaction scores

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
<b>Caregiver expectations score</b>							
Constant	4.48	.44		10.194	<0.001	3.61	5.36
Elderly:							
Income	.35	.11	.30	3.151	.002	.13	.58
No. of diseases	-.17	.07	-.23	2.317	.023	-.31	-.02
Disability	.40	.20	.20	2.014	.047	.00	.79
Family caregiver:							
Age	-.02	.01	-.24	2.479	.015	-.03	.00
Female gender	-.33	.15	-.23	2.219	.029	-.63	-.03
r-square=0.30      Model ANOVA: F=5.59, p<0.001 Variables entered and excluded: elderly's age, gender, education, marital status, residence, job, number of medications, incontinence, exercise, type of geriatric home – family caregivers' relationship, education, marital status, income,							
<b>Caregiver satisfaction score</b>							
Constant	-.10	.10		1.028	.307	-.30	.10
Elderly incontinence	-.16	.07	-.11	2.195	.031	-.31	-.02
Spouse/children relationship	.12	.04	.16	3.028	.003	.04	.19
Caregiver expectation score	.17	.04	.34	4.401	<0.001	.09	.24
Elderly satisfaction score	.67	.08	.61	7.994	<0.001	.50	.84
r-square=0.78      Model ANOVA: F=71.86, p<0.001 Variables entered and excluded: elderly's age, gender, education, marital status, residence, job, income, number of diseases and medications, exercise, type of geriatric home, satisfaction score – family caregivers' age, gender, job, education, marital status, income, expectations score							

## DISCUSSION

The study aimed to measure satisfaction of elderly geriatric home residents & their families with the services provided by geriatric homes in Beni Suef city. The results indicate generally high satisfaction scores among elderly and their family caregivers, with slightly lower expectations among them. Elderly's expectations and satisfaction are positively correlated with those of caregivers and are influenced by certain demographic characteristics as elderly's income, residence, and caregivers' age, gender, and relationship to the elderly, in addition to geriatric home type.

As anticipated, a great majority of the elderly geriatric home's residents were having chronic diseases, with a few of them having incontinence or disability, These ailments would need more care from service care providers, which could have a negative impact on elderly's



satisfaction with services. This is in resemblance with the findings reported conducted in Mexico where multiple chronic diseases were associated with low quality of life among geriatric home residents (4): (2). Additionally, the mainstream of these elderly are regularly taking multiple medications, which would add to the burdens of the service providers in monitoring their regular intake. The side effects of these polypharmacy could also negatively affect elderly's satisfaction. In fact, some of them reported the affection of their equilibrium as a side effect of their medications. Similar findings were reported in a study of Mexican elderly home care residents (4).

As regards family caregivers, the majority are marital and less than a half of them were working. This indicates that they have family and work commitments and obligations, which could be the reason underlying their elderly's residence in geriatric homes. Moreover, many of them reported having sufficient income, which would make them able to afford the expenses of the geriatric home. Similar socio-demographic characteristics of family relatives of geriatric care residents in a randomized clinical trial in Canada (3).

The present study assessed elderly geriatric home residents' satisfaction with the services and compared it to that of their family caregivers. The findings revealed that the majority of both had high satisfaction scores. Their satisfaction was also found to be positively correlated to each other, which is quite plausible since when the elderly resident is satisfied, his/her family caregiver would also be satisfied. In line with this, a study in Turkey showed high levels of satisfaction among elderly and their family members (28), On the same line, a study in Iran showed high levels of satisfaction with geriatric care services among family verscaregi (21) Conversely, a study in Japan revealed high dissatisfaction with services among elderly (36).

Meanwhile, a slight discrepancy was revealed between elderly residents and their family caregivers' satisfaction. The area of visits was the highest among elderly, whereas their family caregivers were most satisfied with the relationships with staff. Elderly residents' high satisfaction with the visits might be attributed to the flexibility of the visiting schedules allowing more opportunities to see their family members. In congruence with this, a study in Australia stated that open and flexible visiting hours are associated with higher levels of satisfaction (9).

On the other hand, for both elderly and family caregivers the area having the lowest level of satisfaction was that of recreation services. The scores of this area were also significantly lower among elderly residents. This might be related to the limited resources. However, the geriatric homes' administrations should pay more attention to this type of services given their positive impact of the mental and psychological wellbeing of their residents. Like results in a Turkish reported that the lowest satisfaction was of the social and recreational activities (28).

As regards the elements influencing elderly residents' satisfaction, present study showed that residents in geriatric home (B) had significantly higher level of satisfaction. This would undoubtedly be due to differences in the structure and functions of the two geriatric homes. In fact, the geriatric home (B) has easier access with more available transportation. Thus, the two geriatric homes should exchange their experiences to identify the weaknesses that need remedial and the strengths that need to be fostered. In this respect, (13) who examined the role of comprehensive geriatric assessment in the United Kingdom elderly care homes recommended that staff views as well as residents' level of satisfaction be solicited using objective quality of care indicators.

Another factor affecting elderly geriatric home residents' satisfaction was their income. The present study results showed that sufficient income was associated with more satisfaction, and elderly's scores of satisfaction and income were positively correlated. However, in the multivariate analysis, income was not a significant predictor of satisfaction score but rather the urban residence, which could be a surrogate of higher income given the association between rural residence and low income. The positive effect of income on satisfaction was demonstrated in a longitudinal study of aging in Canada (32); (33).

Concerning the health factors influencing elderly residents' satisfaction, the research results revealed significantly weak negative association with their number of chronic diseases. However, in the multivariate analysis, the number of medications rather than that of chronic diseases was the negative predictor of the satisfaction score. This could be explained by the side-effects and burden of polypharmacy and the related difficult compliance. Thus, (7) in a study in the Netherlands suggested that healthcare providers discuss with elderly people the concept of deprescribing with use of a lower number of medications and of alternatives.

As for family caregivers, the elderly residents' personal factors influencing their satisfaction were their age and income. Their satisfaction scores were adversely correlated to elderly's oldness age, and positively correlated to elderly's income. Negative correlation with elderly's age could be explained by the increasing care needs with increasing age. As for the positive correlation with income, it is quite conceivable since it lessens the financial burden on the family caregiver. A similar finding was reported in a study of family caregivers' burden in China, where the family income was a significant predictor (24); (25).

The type of relationship between the family caregivers and the elderly residents also has significant influence on caregivers' satisfaction. Consequently, multivariate analysis acknowledges that being the spouse/children of elderly resident as a positive predictor of family caregiver's satisfaction score. This might be explained by the close relationship between the elderly and his/her spouse or children allowing them to have more accurate judgement of the quality of services provided. In similarity with this, a study in US (United State (22) revealed that the burden of caregiving to elderly was least felt by their spouses, which may explain their higher satisfaction.

The current study also assessed elderly residents and family caregivers' expectations of the services provided by the geriatric homes. The results showed close scores of expectations with no significant differences. For both, empathy was the highest among the expectation domains whereas efficiency was the lowest, indicating that both give more importance to the way geriatric home staffs are dealing with residents than to their professional competencies. In resemblance with, a study in Brazil verified that elderly and caregivers' satisfaction was significantly linked to the interchange and adequacy of the emotional livelihood received (26).

As regards the factors influencing elderly residents' expectations, the present study revealed higher expectations among those in home (B). This coincides with their higher satisfaction. Moreover, the multivariate analysis confirmed as being in geriatric home B( private one) was a positive predictor of elderly' expectation score. Which again indicates the variations among geriatric homes that would affect residents' expectations and satisfaction. Another factor influencing the expectations of the elderly residents was their income as shown in bivariate and multivariate analyses. The finding is explained by that being more affluent is certainly associated with higher prospects of better services to be provided (5);(6).

As for family caregivers' expectations, the present study demonstrated that they are positively influenced by elderly resident's sufficient income. This could be explained by that for an elderly resident with a higher income the financial load on family caregiver is less, and thus the satisfaction and expectation would be higher. Similarly; a study in Canada reported significant effect of income on family caregivers of elderly people (37).

Concerning the personal factors affecting family caregivers' expectations, the current study clarifying that younger oldness is correlated with higher expectations. This might be attributed to that younger family caregivers are probably from a newer generation that is more knowledgeable of proper geriatric care services with newer technologies. Meanwhile, caregiver's being a female masculinity was recognized as a negative predictor of the expectation score, thus indicating that female family caregivers had lower expectations. This might be attributed to their being more tolerant in accepting minor shortcomings and deficiencies in the services provided. A similar gender difference in trust, tolerance, and expectations was reported in a study in Ethiopia (19).

## Study limitations

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The study has two main limitations. First, it was carried out only in two geriatric homes in Beni-Suef so that the results cannot be generalized to other types of geriatric homes. Second, the COVID-19 pandemic and its related precautions particularly in geriatric homes led to difficulties with data collection that needed much longer time than expected and scheduled.

## CONCLUSION

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Elderly residents and caregivers have generally high satisfaction with the services provided, whereas their expectations are slightly lower, with no significant differences. The scores of expectations and satisfaction are positively correlated for both elderly and caregivers.

## RECOMMENDATIONS

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The study recommends periodic assessment of elderly residents and family caregivers' expectations and satisfaction with the services, and actions to be taken for improvement. Community health and gerontology nurses should be trained in conducting such surveys. The areas of recreation activities need prompt action from geriatric homes administration. Another research studies propos to investigatethe effectiveness of interventions aimed at improvement based on the identified needs in ameliorating elderly residents and their family caregivers'.satisfaction

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