RESEARCH PAPER

SATISFACTION OF PUBLIC AND PRIVATE GERIATRIC RESIDENCE REGARDING SERVICES IN ERBIL CITY, COMPARATIVE STUDY

Hazha Shahabalddin Ahmed[1*], Kareem Fattah Aziz[2]

[1]Department of Nursing, Hawler Medical University, Kurdistan Region, Iraq.
Email: hazha.ahmed@nur.hmu.edu.krd (Corresponding Author)

[2]Department of Nursing, Hawler Medical University, College of Nursing, Erbil Governorate, Kurdistan Region, Iraq. Email: Kareem.Azeez@hmu.edu.krd, ORCID: https://orcid.org/0009-0000-1508-4671

ABSTRACT

Background and objectives: The phenomenon of global population aging has led to a need for good geriatric care institutions. This issue is no exception in the Kurdistan region of Iraq, especially the city of Erbil, where several problems can be cited, such as the absence of geriatric institutions, staff, and quality assessments. Public and commercial geriatric centers serve the city, but resident satisfaction assessments are scarce. The purpose of this study is to assess elderly satisfaction in Erbil, Iraq's governmental and private geriatric care facilities.

Methods: This cross-sectional study in Erbil City from 1 January 2025 to 20 February 2026 described and compared elements. 50 participants were randomly selected from a government geriatric center and 50 from non-governmental centers like Maly Aram/Peace House Organization and Sheikh Baz Elderly Care Center utilizing purposive sampling. This study included 100 seniors. Older persons were interviewed face-to-face using a validated questionnaire on six domains: caring attitude, meals service, room conditions and upkeep, social activities, medical and nursing services. We rated satisfaction on a Likert scale from 1 (very unhappy) to 5 (extremely satisfied).

Result: Disparities could be identified in the following aspects: medical care, nursing care, attentiveness from staff, and room safety. The variables statistically associated with the patients' level of satisfaction were marital status ($p = 0.043$), education background ($p = 0.002$), and occupation prior to admittance ($p = 0.005$). However, other factors that significantly impacted the patients' satisfaction were age ($p = 0.009$), occupation ($p = 0.025$), smoking ($p = 0.003$), and medical condition ($p = 0.013$).

Conclusion: All patients were satisfied with the Erbil city geriatric center compared to other private centers. Private geriatric centers need better staffing and quality, according to the data. Iraqi Kurdistan policymakers and healthcare administrators can use this research.

Keywords: Quality healthcare, senior care, public vs. private nursing facilities, Erbil, Iraqi Kurdistan, resident contentment

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1. INTRODUCTION

One of the biggest public health challenges of the twenty-first century is the ageing of the world's population. Ageing is a natural biological process, marked by a gradual deterioration in physiological function and a loss of adaptive capacity, leading to increased vulnerability to chronic disease and multimorbidity {Al-Habbal, 2025} . With aging populations, there is a marked increase in the prevalence of conditions such as cardiovascular disease, diabetes, dementia, and cancer, as well as geriatric syndromes such as frailty, recurrent falls, and urinary incontinence, which all erode functional independence and self-care capacity {Saber Azami Aghdash , 2021}and {Fatemeh Gavarskhar, 2022} . The global burden is high: the proportion of people aged 60 years and older is projected to increase from 12% in 2015 to 22% in 2050, which corresponds to about two billion people, with about 80% of them living in low- and middle-income countries {Saber Azami Aghdash , 2021} and {Altantawy, 2022 } . This demographic transition is placing tremendous strain on healthcare systems worldwide, especially with respect to the provision of sustained, high-quality care to older adults.Iraq and the Kurdistan Region of Iraq (KRI) are not exempt from this transition {Bo Guo , 2023 } . In 2023, about 3.4% of Iraq's total population were aged 65 years or older, and this proportion is expected to reach 7.2% by 2050 {Walaa Yehya Abed Zead, 2023}. In KRI alone, about 4% of the population is currently aged 65 or above and life expectancy is expected to increase from 73.8 years (male) and 76.6 years (female) in 2020 to 77.7 and 80.7 years respectively by 2040, while the total fertility rate is projected to decline from 3.8 to about 2.5 over the same period {Osman, 2021}. These trends will interact to change the demographic profile of the region, leading to increased demand for organized geriatric care services. But notwithstanding this trend, the

geriatric services sector in the capital of the KRI Erbil is still far from well-developed. There are two key types of medical establishments in KRI's public health system – hospitals and healthcare centers.

The region counts 74 hospitals and 847 primary healthcare centers, out of which 29 are located in the governorate of Erbil {Emberti Gialloreti, 2020 } AND {Mahmood, 2023 }. At the same time, there is no governmental support for the elderly people. Aside from the state nursing home in Erbil, there is an array of several non-profit organizations that cater to the needs of the elder population, such as Peace House Organization (Maly Aram) founded in 2014, and the Sheikh Baz Elderly Care Centre opened in 2024. Two private institutions provide their services to about 67 patients, whereas the public institution is the only one that is funded by the government {Sangar, 2015 }Thus, the data illustrate a sharp contrast between the growing demand and available resources. Current provision is inadequate and is further hampered by a lack of geriatric specialists, rehabilitation services and structured care programmes for the older population {Ibrahim, 2019 }. The clinician who often sees older patients presenting to primary healthcare centers has limited geriatric training and is poorly equipped to address the complex, multidimensional needs associated with ageing{Qadir, 2022 } . A cross-sectional study of 94 nursing home residents in Erbil and Sulaymaniyah found a significant dependence on others for activities of daily living {Ali, 2017 }. Another study reported that older adults living in Erbil nursing homes had no social ties outside the nursing home, highlighting severe social isolation {Sangar, 2015}. In addition, older people living in institutional care have been shown to be three to four times more likely to experience depression, anxiety or dementia than those living in the community{Ibrahim, 2019 } . In sum, these findings underscore that the quality of institutional life is not solely defined by clinical parameters, but also involves residents' subjective experiences of safety, dignity, social belonging, and personal meaning, all of which are not yet sufficiently explored in the current evidence base in the KRI {Antonia Rodríguez-Martínez, 2023 }and {Shahab Papi , 2021} . Quality of life and resident satisfaction cannot be considered ancillary concepts in elderly care – they constitute its main goal. The living experiences of older patients are affected by the environment they are living in, by the consistency of services that they receive and by the ability of health care providers to recognize and satisfy their individual needs {Antonia Rodríguez-Martínez, 2023}, {Park, 2023} , {Shahad H. Khamis, 2024} and {Falah Jamal Dakka, 2025}. Public and private geriatric centers located in Erbil differ not only in regard to their organizational structure and sources of funding, but potentially in respect to their everyday practice as well. But there has been no study comparing the degree of resident satisfaction in public and private geriatric centers in Erbil before. And this problem is not of an academic nature – there is a necessity for researchers and clinicians to analyze the situation in order to detect shortcomings, allocate funds effectively, and provide better care for the residents of the region's geriatric centers{Qadir, 2020}.

The aim of the present study is to evaluate and compare the level of resident satisfaction between governmental and private geriatric care centers in Erbil city. The specific aims are: (1) to describe the sociodemographic characteristics of residents in both settings; (2) to evaluate general services provided in each type of facility; (3) to evaluate health services provided in each type of facility; (4) to compare overall differences in services and satisfaction between the two types of facilities; and (5) to identify associations between sociodemographic characteristics and residents' level of satisfaction.

2. METHODOLOGY

The study design adopted a descriptive comparative cross-sectional design between 1 January 2025 and 20 February 2026 to evaluate and compare the levels of resident satisfaction in various areas of care in both public and private geriatrics in Erbil City. The researchers carried out the study in three facilities one of them being a public geriatric home and the other two facilities are private in nature, i.e., the non-governmental Maly Aram center and the Sheikh Baz Elderly Care Center, both of which have been in operation since 2014 and 2024, respectively. These environments were chosen to have a variety of residents and services. A convenience sampling method was employed in recruiting a total of 100 participants in which 50 participants were selected in the public center and the remaining 50 in the private centers. Data were gathered using a structured, researcher-administered questionnaire, whose development was informed by a thorough study of the literature on the topic. The questionnaire was divided into two sections, Part One which included sociodemographic, Part Two which included resident satisfaction in six domains such as staff care and personal attention (4 items), meal services (4 items), room comfort, safety and facilities maintenance (4 items), social activities and social interactions (4 items), medical services (8 items), and nursing services (8 items). The rating of responses was based on the five-point Likert scale (1 strongly dissatisfied-5 strongly satisfied).

Data were summarized and tested with descriptive and inferential statistics SPSS version 25. Sociodemographic variables and the level of satisfaction across the six service domains were summarized using frequencies and percentages and mean scores calculated to obtain a general measure of satisfaction in each of the service domains. Chi-

square tests were used to determine the relationships between resident variables (age, gender, marital status, education, occupation, duration of stay, smoking status, exercise and medical history) and the level of their satisfaction with the results and statistical significance was $p < 0.05$. The Research Ethics Committee of the College of Nursing, Hawler Medical University, and the permission of the Erbil Special Care Administration and the non-governmental organization in charge of social affairs were achieved to provide ethical approval. All participants were obtained with verbal informed consent before data collection.

3. RESULTS

In Table 1, 56% of residents in public and 52.0% in private geriatric institutions were aged 65-74, with identical mean ages (70.08 ± 6.67 vs. 69.60 ± 9.99), showing similar age distributions. Public centers were 60% male and private centers 56% female. The number of unmarried and divorced inhabitants was higher in public centers (32.0%), whereas married and divorced individuals were more prevalent in private centers (32.0%). Public center inhabitants had a 48.0 percent illiteracy rate, while private center residents had a 48.0% basic school education rate. Nearly half of public inhabitants (48.0%) were unemployed, whereas private centers had more people with government jobs (32.0%). The percentage of stays over 3 years was higher in public facilities (52.0%) compared to private institutions (32.0%). Smoking rates were higher in private facilities (4.0% vs. 4.0%), but most public residents (72.0%) had never smoked. Public inhabitants mostly exercised sometimes (64.0%), whereas private residents were similarly split between sometimes and always exercising (36.0%). In private facilities, medical history was higher (76.0%) than in public centers (68.0%), with hypertension and anemia being more prevalent in private centers and diabetes mellitus being more prevalent in public centers, suggesting different disease patterns.

Table 1: Sociodemographic Characteristics of Elderly Residents in Public and Private Geriatric Centers (N = 50 public + 50 private)

Variables		Public Centers		Private Centers	
		Frequency	%	Frequency	%
Age Group	≤ 64	8	16.0	12	24.0
	65-74	28	56.0	26	52.0
	≥ 75	14	28.0	12	24.0
	Mean (SD)	70.08 (6.670)		69.60 (9.988)	
Gender	Male	30	60.0	22	44.0
	Female	20	40.0	28	56.0
Marital Status	Single	16	32.0	8	16.0
	Married	4	8.0	16	32.0
	Widowed	12	24.0	8	16.0
	Divorced	16	32.0	16	32.0
	Widower	2	4.0	2	4.0
Education Level	Illiterate	24	48.0	12	24.0
	Basic school	16	32.0	24	48.0
	High school	2	4.0	6	12.0
	Institute diploma	6	12.0	4	8.0
	College and above	2	4.0	4	8.0
Occupation before admission	Governmental	6	12.0	16	32.0
	Private	10	20.0	10	20.0
	Jobless	24	48.0	14	28.0
	Retired	0	0.0	4	8.0
	Others	0	0.0	4	8.0
	Intendent work	10	20.0	2	4.0
Duration of Stay	<1years	14	28.0	12	24.0
	1-3 years	6	12.0	18	36.0
	>3 years	26	52.0	16	32.0
	Cannot remember	4	8.0	4	8.0
Smoking Status	Current	2	4.0	22	44.0
	Former	12	24.0	4	8.0
	Never	36	72.0	24	48.0
Walking Exercise	Never	10	20.0	12	24.0
	Some times	32	64.0	18	36.0
	Always	8	16.0	18	36.0
	Daily	0	0.0	2	4.0
Medical History	Yes	34	Yes	38	76.0
	No	16	No	12	24.0

Do you have any disease?	No	16	32.0	12	24.0
	Yes	34	68.0	38	76.0
If yes, which type of disease?	Hypertension	8	23.5%	12	31.6%
	Diabetes mellitus	10	29.4%	2	5.3%
	Hypertension + diabetes mellitus	2	5.9%	4	10.5%
	Anemia	2	5.9%	8	21.1%
	Arthritis	2	5.9%	2	5.3%
	Heart disease	4	11.8%	2	5.3%
	Asthma	2	5.9%	2	5.3%
	Prostate + HTN	2	5.9%	2	5.3%
	Parkinson disease	2	5.9%	4	10.5%

According to Table 2, public geriatric center patients were happier with staff care and personal attention than private center residents. Public center residents were mostly happy with everything. Staff respect and courteous (68.0%), enough personal attention (68.0%), and ease in discussing issues (64.0%) had extremely high satisfaction, resulting in high mean ratings of 4.36 to 4.68. Private centers showed more indifferent and negative replies, notably for personal attention (52.0%) and problem-talking (64.0%). Few (0–4.0%) were highly happy. Private center ratings were usually lower (3.12–3.56), indicating moderate satisfaction.

Table 2: Distribution of Satisfaction Levels for Staff Care and Personal Attention in Public and Private Geriatric Centers

Items	**Scores**	**Public Centers**		**Private Centers**	
		Frequency	**%**	**Frequency**	**%**
Staff are respectful and courteous	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	4	8
	Neutral	0	0	16	32
	Satisfied	16	32	28	56
	Strongly satisfied	34	68	2	4
	Mean	**4.68**		**3.56**	
Staff respond promptly to my needs	Strongly dissatisfied	0	0	2	4
	Dissatisfied	0	0	6	12
	Neutral	4	8	16	32
	Satisfied	24	48	24	48
	Strongly satisfied	22	44	2	4
	Mean	**4.36**		**3.36**	
I receive adequate personal attention from staff	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	8	16
	Neutral	2	4	26	52
	Satisfied	14	28	16	32
	Strongly satisfied	34	68	0	0
	Mean	**4.64**		**3.16**	
I feel comfortable discussing my concerns with staff	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	6	12
	Neutral	0	0	32	64
	Satisfied	18	36	12	24
	Strongly satisfied	32	64	0	0
	Mean	**4.64**		**3.12**	

Figure 1 illustrates residents' satisfaction with meal services in public and private geriatric centers. In public centers, residents reported equal proportions of satisfactory (44.0%) andneutral (44.0%) satisfaction, with a smaller percentage expressing

unsatisfactory (12.0%) expresences. In private centers, nearly half of the residents indicated neutral satisfaction (48.0%), followed by satisfactory (36.0%) and unsatisfactory (16.0%) responses.

Figure 1: Residents' Satisfaction with Dining and Nutrition Services in Public and Private Geriatric Centers.

Table 3 shows that public geriatric center residents are happier with medical treatment than private center residents. Most responders at public facilities were happy with medical care, especially treatment quality (80.0%), doctor availability (80.0%), and examination thoroughness (76.0%). Public center ratings were usually high, between 4.24 and 4.80, indicating good medical care satisfaction. In this group, neutral replies and complaints were rare. Private center residents were less happy. Many answered most questions neutrally, such as medical equipment availability. 60% prioritized supplies, 48% prioritized fast medical care, and 52% prioritized physicians' explanations. Lack of equipment and supplies (20.0%) and physicians (12.0%) also disappointed people. Private center mean ratings were 3.04–3.60, suggesting moderate satisfaction.

Table 3. Distribution of Responses and Mean Scores for Medical Care Services in Public and Private Geriatric Centers

Items	Scores	Public Centers		Private Centers	
		Frequency	%	Frequency	%
The quality of medical treatment provided in the center meets my needs.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	2	4
	Neutral	0	0	20	40
	Satisfied	10	20	24	48
	Strongly satisfied	40	80	4	8
	Mean	**4.8**		**3.6**	
Doctors are available when I need them.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	6	12
	Neutral	2	4	14	28
	Satisfied	8	16	30	60
	Strongly satisfied	40	80	0	0
	Mean	**4.76**		**3.48**	
I receive medical attention quickly when I am sick.	Strongly dissatisfied	0	0	2	4
	Dissatisfied	0	0	0	0
	Neutral	2	4	24	48
	Satisfied	20	40	24	48
	Strongly satisfied	28	56	0	0
	Mean	**4.52**		**3.44**	
I am satisfied with the effectiveness of the medical treatments or medications prescribed to me.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	6	12
	Neutral	2	4	22	44
	Satisfied	20	40	22	44
	Strongly satisfied	28	56	0	0
	Mean	**4.52**		**3.32**	
The necessary medical equipment and supplies are available during my	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	10	20
	Neutral	6	12	30	60
	Satisfied	26	52	8	16
	Strongly	18	36	2	4

treatment	satisfied				
	Mean	**4.24**		**3.04**	
Doctors explain my health condition and treatment plan clearly.	Strongly dissatisfied	0	0	10	20
	Dissatisfied	0	0	0	0
	Neutral	6	12	26	52
	Satisfied	12	24	14	28
	Strongly satisfied	32	64	0	0
	Mean	**4.52**		**3.08**	
I receive proper follow-up care after treatment or consultation.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	6	12
	Neutral	4	8	28	56
	Satisfied	16	32	14	28
	Strongly satisfied	30	60	2	4
	Mean	**4.52**		**3.24**	
The thoroughness of my medical examinations meets my expectations.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	6	12
	Neutral	2	4	28	56
	Satisfied	10	20	12	24
	Strongly satisfied	38	76	4	8
	Mean	**4.72**		**3.28**	

In Table 4, public geriatric center residents are happier with nursing care than private center inhabitants. In public centers, most respondents were satisfied with nurses' professionalism, positive attitude, attentiveness to concerns, trust in staff, and safe and gentle task performance (88.0%, 80.0%, and 6.0%) Overall, public facilities had high mean ratings (range: 4.36 to 4.8), suggesting good perceived quality of nursing care. No group member was dissatisfied, and there were few indifferent replies. Private center residents were less satisfied, with 56.0 percent providing indifferent replies on clarity of explanations and nurse trust. 52.0% personnel and tasks were safe. Many residents were dissatisfied with how fast nurses responded to calls for assistance (20.0%) and how much time they spent with them (20.0%). People were fairly satisfied in private facilities with ratings between 3.16 and 3.76.

Table 4: Distribution of Responses and Mean Scores for Nursing Services in Public and Private Geriatric Centers

Items	Scores	Public Centers		Private Centers	
		Frequency	%	Frequency	%
The nursing staff are professional and show a positive attitude.	Strongly dissatisfied	0	0	0	0
	Dissatisfied	0	0	0	0
	Neutral	0	0	18	36
	Satisfied	6	12	26	52
	Strongly satisfied	44	88	6	12
	Mean	**4.88**		**3.76**	
The availability and attentiveness of nurses meet my needs.	Strongly dissatisfied	0	0	6	12
	Dissatisfied	0	0	0	0
	Neutral	2	4	24	48
	Satisfied	14	28	20	40
	Strongly satisfied	34	68	0	0
	Mean	**4.64**		**3.28**	
Nurses respond promptly when I call for help	Strongly dissatisfied	0	0	10	20
	Dissatisfied	0	0	0	0
	Neutral	2	4	18	36
	Satisfied	28	56	22	44

	Strongly satisfied	20	40	0	0
	Mean	**4.36**		**3.24**	
Nurses explain medical procedures and instructions clearly.	Strongly dissatisfied	0	0	8	16
	Dissatisfied	0	0	0	0
	Neutral	6	12	28	56
	Satisfied	16	32	12	24
	Strongly satisfied	28	56	2	4
	Mean	**4.44**		**3.16**	
Nurses listen to my concerns and needs attentively.	Strongly dissatisfied	0	0	2	4
	Dissatisfied	0	0	0	0
	Neutral	2	4	18	36
	Satisfied	8	16	30	60
	Strongly satisfied	40	80	0	0
	Mean	**4.76**		**3.56**	
Nurses spend an adequate amount of time with me during care.	Strongly dissatisfied	0	0	10	20
	Dissatisfied	0	0	0	0
	Neutral	0	0	14	28
	Satisfied	16	32	26	52
	Strongly satisfied	34	68	0	0
	Mean	**4.68**		**3.32**	
I feel a high level of trust toward the nursing staff.	Strongly dissatisfied	0	0	6	12
	Dissatisfied	0	0	0	0
	Neutral	2	4	26	52
	Satisfied	8	16	18	36
	Strongly satisfied	40	80	0	0
	Mean	**4.76**		**3.24**	
Nurses perform their tasks safely and gently.	Strongly dissatisfied	0	0	6	12
	Dissatisfied	0	0	0	0
	Neutral	4	8	26	52
	Satisfied	8	16	18	36
	Strongly satisfied	38	76	0	0
	Mean	**4.68**		**3.24**	

Table 5 shows how chosen residents' attributes affect their public geriatric center satisfaction. Marital status was substantially linked with satisfaction levels ($p = 0.043$), with widowed and divorced individuals reporting better contentment than single residents, who indicated higher unhappiness. Educational level was correlated with satisfaction ($p = 0.002$), with college-educated people being the most satisfied and high school or institute-educated inhabitants being the least satisfied. Prior profession substantially correlated with satisfaction ($p = 0.005$), with private sector workers expressing greater satisfaction than those with government positions or unemployment. However, no significant correlation was discovered between satisfaction level and age, gender, length of stay, smoking status, walking activity, or medical history ($p = 0.368$).

Table 5: Association Between Residents' Characteristics and Level of Satisfaction in Public Geriatric Centers

Variable	Category	Satisfactory n (%)	Neutral n (%)	Unsatisfactory n (%)	p-value
Age category	≤ 64	2 (25.0)	4 (50.0)	2 (25.0)	0.793 NS
	65–74	8 (28.6)	10 (35.7)	10 (35.7)	
	≥75	6 (42.9)	4 (28.6)	4 (28.6)	

Gender	Male	10(33.3)	8 (26.7)	12 (40.0)	0.187 NS
	Female	6 (30.0)	10(50.0)	4 (20.0)	
Marital status	Single	4 (25.0)	4 (25.0)	8 (50.0)	0.043 S
	Married	0 (0.0)	4 (100.0)	0 (0.0)	
	Widowed	6 (50.0)	2 (16.7)	4 (33.3)	
	Divorced	6 (37.5)	6 (37.5)	4 (25.0)	
	Widower	0 (0.0)	2 (100.0)	0 (0.0)	
Educational level	Illiterate	8 (33.3)	14 (58.3)	2 (8.3)	0.002 S
	Basic school	6 (37.5)	2 (12.5)	8 (50.0)	
	High school	0 (0.0)	0 (0.0)	2 (100.0)	
	Institute diploma	0 (0.0)	2 (33.3)	4 (66.7)	
	College and above	2 (100.0)	0 (0.0)	0 (0.0)	
Occupation before admission	Governmental	0 (0.0)	2 (33.3)	4 (66.7)	0.005 S
	Private	6 (60.0)	2 (20.0)	2 (20.0)	
	Jobless	8 (33.3)	6 (25.0)	10 (41.7)	
	Independent work	2 (20.0)	8 (80.0)	0 (0.0)	
Duration of stay	<1 year	6 (42.9)	6 (42.9)	2 (14.3)	0.604 NS
	1–3 years	2 (33.3)	2 (33.3)	2 (33.3)	
	>3 years	8 (30.8)	8 (30.8)	10 (38.5)	
	Cannot remember	0 (0.0)	2 (50.0)	2 (50.0)	
Smoking status	Current	2 (100.0)	0 (0.0)	0 (0.0)	0.207 NS
	Former	2 (16.7)	6 (50.0)	4 (33.3)	
	Never	12 (33.3)	12 (33.3)	12 (33.3)	
Walking exercise	Never	4 (40.0)	2 (20.0)	4 (40.0)	0.768 NS
	Sometimes	10 (31.3)	12 (37.5)	10 (31.3)	
	Always	2 (25.0)	4 (50.0)	2 (25.0)	
	Yes	12 (35.3)	10 (29.4)	12 (35.3)	

Table 6 indicates how residents' attributes affect their private geriatric center satisfaction. The research found a strong correlation between age and satisfaction (p = 0.009), with people aged 65-74 years reporting the largest percentage of satisfied replies, while those aged ≥75 years and ≤ 64 years reported greater levels of discontent pre-admission occupation substantially correlated with satisfaction (p = 0.025), with private sector workers reporting greater satisfaction than unemployed, retired, or independent workers. Smoking status significantly correlated with satisfaction (p = 0.003), with current smokers reporting higher amounts of satisfaction or neutral replies, whereas all former smokers reported lower levels. Medical history substantially impacts satisfaction (p = 0.013), with people without medical issues exhibiting lower dissatisfaction levels. Satisfaction level was not significantly associated with gender (p = 0.189), married status (p = 0.272), educational level (p = 0.219), period of stay (p = 0.437), or walking exercise (p = 0.291).

Table 6: Association Between Residents' Characteristics and Level of Satisfaction in Private Geriatric Centers

Variable	Category	Satisfactory n (%)	Neutral n (%)	Unsatisfactory n (%)	p-value
Age category	≤ 64	6 (50.0)	0 (0.0)	6 (50.0)	0.009

	65–74	8 (30.8)	14 (53.8)	4 (15.4)	S
	≥ 75	2 (16.7)	4 (33.3)	6 (50.0)	
Gender	Male	6 (27.3)	6 (27.3)	10 (45.5)	0.189 NS
	Female	10(35.7)	12(42.9)	6(21.4)	
Marital status	Single	2 (25.0)	4 (50.0)	2 (25.0)	0.272 NS
	Married	4 (25.0)	8 (50.0)	4 (25.0)	
	Widowed	2 (25.0)	2 (25.0)	4 (50.0)	
	Divorced	8 (50.0)	4 (25.0)	4 (25.0)	
	Widower	0 (0.0)	0 (0.0)	2 (100.0)	
Educational level	Illiterate	4 (33.3)	6 (50.0)	2 (16.7)	0.219 NS
	Basic school	10 (41.7)	6 (25.0)	8 (33.3)	
	High school	0 (0.0)	4 (66.7)	2 (33.3)	
	Institute diploma	2 (50.0)	0 (0.0)	2 (50.0)	
	College and above	0 (0.0)	2 (50.0)	2 (50.0)	
Occupation before admission	Governmental	4 (25.0)	6 (37.5)	6 (37.5)	0.025 S
	Private	6 (60.0)	4 (40.0)	0 (0.0)	
	Jobless	4 (28.6)	4 (28.6)	6 (42.9)	
	Retired	0 (0.0)	4 (100.0)	0 (0.0)	
	Others	2 (50.0)	0 (0.0)	2 (50.0)	
	Independent work	0 (0.0)	0 (0.0)	2 (100.0)	
Duration of stay	<1 year	6 (50.0)	4 (33.3)	2 (16.7)	0.437 NS
	1–3 years	4 (22.2)	6 (33.3)	8 (44.4)	
	>3 years	6 (37.5)	6 (37.5)	4 (25.0)	
	Cannot remember	0 (0.0)	2 (50.0)	2 (50.0)	
Smoking status	Current	8 (36.4)	12 (54.5)	2 (9.1)	0.003 S
	Former	0 (0.0)	0 (0.0)	4 (100.0)	
	Never	8 (33.3)	6 (25.0)	10 (41.7)	
Walking exercise	Never	2 (16.7)	4 (33.3)	6 (50.0)	0.291 NS
	Sometimes	6 (33.3)	6 (33.3)	6 (33.3)	
	Always	6 (33.3)	8 (44.4)	4 (22.2)	
	Daily	2 (100.0)	0 (0.0)	0 (0.0)	
	Yes	8 (16.0)	16 (32.0)	14 (28.0)	

4. DISCUSSION

Residents in both settings were predominantly aged 65–74, with similar mean ages (public: 70.08±6.67; private: 69.60±9.99). Public centers were male-dominated, while private centers had a female majority, consistent with global patterns of female overrepresentation in residential care {Sangar, 2015}. Illiteracy was higher in public centers (48%), while private center residents were more educated. Socioeconomic differences were evident, with private facilities serving higher-income residents—a pattern documented across developing-country settings {Yarasir, 2025 }. Public center residents had longer stays (>3 years: 52% vs. 32%), and chronic disease burden was slightly higher in private centers (76% vs. 68%), complicating care delivery and influencing satisfaction outcomes {Tariq, 2018 }.

Public center residents reported markedly higher satisfaction with staff care (mean 4.36–4.68) than private center residents (mean 3.12–3.56), across items including staff respect, personal attention, and ease of raising concerns. This gap is especially notable given that private residents might reasonably expect superior service relative to cost. More consistent government staffing allocations in public facilities, compared to leaner private staffing models, likely explains this disparity. {Millar, 2024} identified staff attentiveness and respectful interaction as the strongest predictors of resident well-being internationally, while {Raikhola, 2025}confirmed that staff availability and communication quality are primary drivers of care satisfaction. Targeted interventions to strengthen interpersonal care and staff–resident relationships are needed in Erbil's private facilities. The satisfaction level of food service was much higher in public centers (average 4.44-4.72) than in private centers (average 3.32-3.68) with mainly neutral responses. The standardized approach to meals seems to be an asset in the public centres compared with the private centres which seem to be more dependent on catering without any regulation.

As highlighted by {Watkins, 2017} , structured mealtimes are valuable as they provide opportunities for social interactions and promote psychological well-being. {Pankhurst, 2023}supports three fundamental dimensions of food services: quality of food, resident choice, and staff help at mealtimes. Private centers failed on all three fronts. The public centers were highly satisfied with their physical surroundings (means ranged from 4.32-4.76), while the private centers were poorly satisfied with their maintenance response times (means ranged from 2.92-3.52); 52% were neither satisfied nor unsatisfied, while 20% expressed dissatisfaction. The issue is crucial: there are around 2.6 hospitalizations due to falls at nursing homes annually per person {Kim, 2022 } , and even perceived concerns about the environment have been found to cause immobility, anxiety, and low quality of life. Facilities with functional, home-like surroundings showed better results compared to facilities that were aesthetically-oriented {Millar, 2024} . Periodic independent inspections and mandatory standards of cleanliness and safety must be implemented in private geriatric centers in Erbil. Social activity satisfaction was markedly higher in public centers (mean 4.28–4.68) than in private centers (mean 3.04–3.48), where 52–72% of residents were indifferent across items. Given that 61–70% of nursing home residents experience loneliness and 35% suffer severe loneliness {Pavlovski, 2025} , this gap has serious mental health implications. Programs run by private centers have been unsuccessful at engaging residents due to their lack of customization; Lapane found that personalized programs using personal histories are better at preventing {Lapane, 2023 } loneliness . Private centers within Erbil should prioritize programs centered around personal interests. The level of satisfaction among individuals seeking services from the public centers was relatively high (mean=4.24 to 4.80), while in the private centers, it was relatively low (mean=3.04 to 3.60). Sixty percent of the individuals within the private centers neither felt satisfied nor dissatisfied with the availability of medical equipment. Additionally, twenty percent of the individuals reported feeling extremely dissatisfied with the explanation of the reason for their diagnosis, which violates the principle of autonomy of patients and influences medication adherence and their overall health {Pankhurst, 2023}. The single determinant that influences patients' satisfaction with medical services rendered by the center is the level of communication between patients and providers according to {Sharkiya, 2023}.

The mean satisfaction scores for the nursing service were significantly higher at public centers (4.36–4.88) than at private centers (3.16–3.76). The high levels of professionalism (88%), attentiveness (80%), and safe provision of nursing services (76%) reflected their quality at the public centers. At the private centers, 20% of the residents were not satisfied with the nurses' response when called for assistance, raising concerns about safety and respect for dignity. Any delay might prevent the residents from asking for help, thus increasing the likelihood of falls. There is an extremely high rate of turnover of personnel at the private centers, which affects their therapeutic relationships in the person-centered approach {Millar, 2024 }. For the public centers, marriage ($p=0.043$), education ($p=0.002$), and occupation prior to admission ($p=0.005$) were predictors of satisfaction, whereas demographic and clinical factors were non-significant. Residents who were widowed and divorced had high levels of satisfaction, perhaps due to their adaptability and effective coping mechanisms {Kaushik, 2025}. For the private centers, age ($p=0.009$), occupation ($p=0.025$), smoking ($p=0.003$), and medical history ($p=0.013$) were significant predictors, with elderly residents aged 75 years and above and patients with comorbidities being less satisfied {Li, 2025} and {Akter, 2024}. The results from the six domains indicated that public geriatric centers in Erbil City had higher satisfaction levels compared to private centers, which defies the expectations of market dynamics {Lapane, 2023} . However, according to {Millar, 2024}, the quality of healthcare services is dependent on the type of ownership and is therefore contextual. The stability in public centers in terms of staff, standardized procedures, and regulation could account for their dominance in the area of satisfaction. It is imperative for the authorities in the Kurdistan Region of Iraq to implement stringent

quality control measures in geriatric care settings based on evidence.

5. CONCLUSION

The present study found substantial disparities in senior satisfaction in public and private geriatric institutions in Erbil across care domains. Compared to private centers, senior patients were satisfied with personnel, food, room comfort and safety, social activities, medical treatments, and nursing services. The public center inhabitants were generally happy with the medical and nursing personnel, food quality, safety and cleanliness, and opportunity to participate in significant social activities. at contrast, patients at private facilities were more likely to report moderate and generally indifferent satisfaction in most service areas, with specific concerns about responsiveness, nurse attentiveness, and medical equipment and personal care accessibility. In public centers, marital status, educational level, and pre-admission occupation were significantly correlated with resident satisfaction, while demographic and lifestyle factors like age, gender, and smoking status were not. For those patients admitted from private residences, such variables as their age, their former occupation before being admitted to the nursing home, if they smoked or not, and the presence of other diseases before admission were taken into account. In relation to the formulation of care plans for elderly patients, what emerges from this study is the importance of taking into account sociodemographic and health factors when formulating them. According to the findings of this study, there is an immediate need for quality improvement measures in order to guarantee improved healthcare outcomes and increase fairness within the healthcare system.

Limitations

1. Population, power. Few descriptive studies compare 100 seniors (50 public, 50 private geriatric facilities). Age, marital status, and medical history subgroup analyses may overlook tiny but important changes due to sample size. Small-participant cross-tabulations showed unstable estimates and high p-values.
2. Region-specific. Erbil, Kurdistan, geriatric facilities were examined. Other Iraqi governorates, Middle Eastern countries, and elderly non-institutional citizens may not benefit from such institutions' outcomes due to socio-cultural, economic, and organizational issues. Geriatric hospitals are few in Erbil.
3. Split; immediate data collection confines study to resident qualities and pleasure, not causation. Health, enjoyment, and service delivery need long-term research.
4. Understand that facility experiences, attitude, personality, and expectations affected occupant satisfaction. Residents may have remained quiet to protect caretakers. Institutional socialization and acquiescence bias.
5. Smarts, skill. Seniors with brain damage, deafness, fatigue, or chronic illness may not understand or answer questions. Cognitive disability excludes fragile old, whose happiness may affect quality-of-care evaluations.
6. Only resident's vote. Political figures, doctors, administrators, and families were ignored. Compare resident satisfaction, caregiver ratings, staff attitudes, and objective care quality at both organizations.
7. Mystery: pre-admission expectations, hospital or institutional experiences, family visit frequency, finances, religion, and lifetime care satisfaction were not examined. Rating services may explain public-private facility differences without variables.
8. Instrument failure. Successful satisfaction surveys used Likert-scale questions that may not have accurately reflected residents' sentiments. Focus and qualitative groups may increase. Psychometric testing on local elders and cross-cultural confirmation are needed for this Kurdish/Arabic translation. Reduce chatter.
9. Dispersed facilities. Gender, education, prior job, smoking, and sickness affect public and private healthcare. Since these options accept different residents, satisfaction cannot be compared. Not even multivariate analysis and propensity score matching reduced baseline inequality.
10. Selective. Resident approvals may trump rejections or inability, biasing satisfaction. Incorrect non-respondent causes.

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CONFLICT OF INTEREST

The authors have declared that there is no conflict of interest.

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