ORIGINAL ARTICLE

CONTENTS

Clinico-epidemiological spectrum of constipation patients at a tertiary care center in Ajman, UAE – a descriptive 5 year data analysis

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ABSTRACT

Aim: This research aims to assess the clinical and epidemiological profile of elderly patients reported to a tertiary care centre in Ajman, UAE.

Materials and Methods: A retrospective cross-sectional review of electronic medical records was conducted for patients diagnosed with constipation between January 2020 and July 2025. Sociodemographic characteristics, anthropometric measures, functional status, lifestyle factors, comorbidities, gastrointestinal history, and treatment outcomes were extracted using a structured proforma. Descriptive statistics were applied.

Results: Eighty elderly patients were included, predominantly male (71.3%) and aged 60–69 years (78.8%). Abnormal BMI was present in 76.3%. Chronic symptoms were common, with 52.5% reporting constipation ≥3 months and 47.5% >6 months. Low fluid intake (66.3%), low dietary fiber intake (67.5%), and sedentary lifestyle (62.5%) were highly prevalent. Cardiometabolic comorbidities were frequent, including hypertension (68.8%), diabetes mellitus (65.0%), and hypercholesterolemia (63.7%). Only 38.8% achieved good therapeutic response, while 61.3% had poor or partial improvement.

Conclusions: Constipation in elderly patients at this tertiary center represents a persistent, multifactorial condition requiring comprehensive, individualized, and lifestyle-integrated management strategies to improve outcomes.

KEY WORDS: elderly, lifestyle factors, comorbidities, body mass index, treatment outcomes

Wiad Lek. 2026;79(3):482-490. doi: 10.36740/WLek/218273 DOI

INTRODUCTION

Constipation is one of the most frequently faced gastrointestinal complaints in both primary care and tertiary healthcare settings. Although often perceived as a minor discomfort, it is a complex multisystemic issue that significantly impairs an individual's physical comfort, psychological well-being, and overall quality of life [1, 2]. Clinically, constipation is a heterogeneous symptom-based disorder defined by infrequent bowel movements, difficulty passing stools, hard consistency, excessive straining, or a sensation of incomplete evacuation [3]. The Rome IV criteria currently serve as the gold standard for clinical diagnosis, shifting the focus from simple stool frequency to a broader spectrum of sensory and oscillatory symptoms [4, 5].

Globally, the prevalence of chronic constipation is estimated between 10% and 20% in the adult population [6]. Epidemiological data consistently presented

a higher predilection among women, possibly due to hormonal influences on gut motility, and the elderly, where polypharmacy and age-related physiological decline play major roles [7,8]. Beyond the physical burden, the condition is a significant cause of healthcare utilization, contributing to millions of outpatient visits and billions in annual costs related to over-the-counter laxatives and diagnostic procedures [9]. If left unmanaged, chronic constipation can lead to debilitating complications such as hemorrhoids, anal fissures, rectal prolapse, and fecal impaction [10].

In the Middle East and North Africa (MENA) region, the clinical landscape of gastrointestinal health is undergoing a rapid shift. Rapid urbanization has led to a "nutritional transition" characterized by the increased consumption of processed foods, low fiber intake, and inadequate hydration [11]. Furthermore, the high regional prevalence of metabolic disorders, such as Diabetes Mellitus and Obesity, contributes to autonomic neuropathy and altered colonic transit times [12, 13]. Recent studies also highlight the importance of the gut-brain axis, where high stress levels and sedentary lifestyles, common in urbanized Gulf centers, exacerbate functional bowel disorders [14].

The United Arab Emirates (UAE) reflects these regional shifts, yet hospital-based data regarding the specific demographic and clinical characteristics of these patients remains sparse. In tertiary care settings, patients often present with constipation that is either idiopathic or secondary to other comorbidities. Identifying the interplay between lifestyle determinants (such as daily fluid and fiber intake) and objective clinical markers (such as BMI and existing comorbidities like Hypertension or Hypercholesterolemia) is essential for a holistic management approach [15].

Despite the rising incidence, public awareness regarding the modifiable risk factors of constipation remains limited in Ajman and the surrounding Northern Emirates. This study aims to provide a comprehensive five-year descriptive analysis of the clinical epidemiological spectrum of constipation patients at a tertiary care center in Ajman, UAE. By examining demographic trends, lifestyle habits, and associated medical conditions, this research seeks to provide the local evidence needed to optimize preventive strategies and promote healthy gastrointestinal aging within the UAE.

AIM

This research aims to assess the clinical and epidemiological profile of elderly patients with constipation reported to a tertiary care centre in Ajman, UAE.

MATERIALS AND METHODS

STUDY DESIGN, SETTING, AND SAMPLING

A retrospective cross-sectional study was conducted at a tertiary teaching hospital affiliated with a medical university in Ajman, reviewing archived electronic medical records of patients diagnosed with constipation between January 2020 and July 2025. All eligible records within the study period were included, representing a census of cases, irrespective of nationality or gender. Constipation cases were identified using the ICD-10 code from the hospital's EMR system. Records lacking essential demographic or clinical information were excluded.

DATA COLLECTION AND VALIDATION

Data were extracted from the electronic medical records using a structured proforma based on relevant literature and standard clinical documentation. Collected variables included sociodemographic details, constipation-related clinical features, comorbidities, and lifestyle factors. Data accuracy was ensured through systematic validation and cleaning, including the removal of duplicate entries using unique patient identifiers and the exclusion of records with missing essential information. When multiple records existed for a patient, the most complete and diagnostically confirmed entry was retained.

DIAGNOSTIC CRITERIA AND CLINICAL DOCUMENTATION

The diagnosis of constipation was based on documentation by the treating physician, supported by clinical assessment and relevant investigations as recorded in the EMR. Diagnostic consistency was ensured through standardized institutional clinical documentation practices.

ETHICAL APPROVAL

The study was approved by the Institutional Review Board of the Medical University (IRB-COM-STD-203-June-2025), with permission obtained from the University Hospital, Ajman. Informed consent was waived due to the retrospective use of anonymized data, and ethical principles of the Declaration of Helsinki were followed, ensuring confidentiality and anonymity.

DATA MANAGEMENT AND STATISTICAL ANALYSIS

After cleaning, 80 unique patient records were included in the final dataset, which was verified in Microsoft

Table 1. Sociodemographic and anthropometric characteristics of elderly patients with constipation

Variable	Category	Frequency (n)	Percent (%)
Age Group	60-69	63	78.8
	70-79	9	11.3
	≥ 80 years	8	10.0
Gender	Male	57	71.3
	Female	23	28.7
Marital Status	Single	2	2.5
	Married	78	97.5
Nationality / WHO Region	South East Asia Region	13	16.3
	Eastern Mediterranean Region	59	73.8
	Other regions	8	10.0
BMI level	Normal	19	23.8
	Abnormal	61	76.3

Source: Own materials

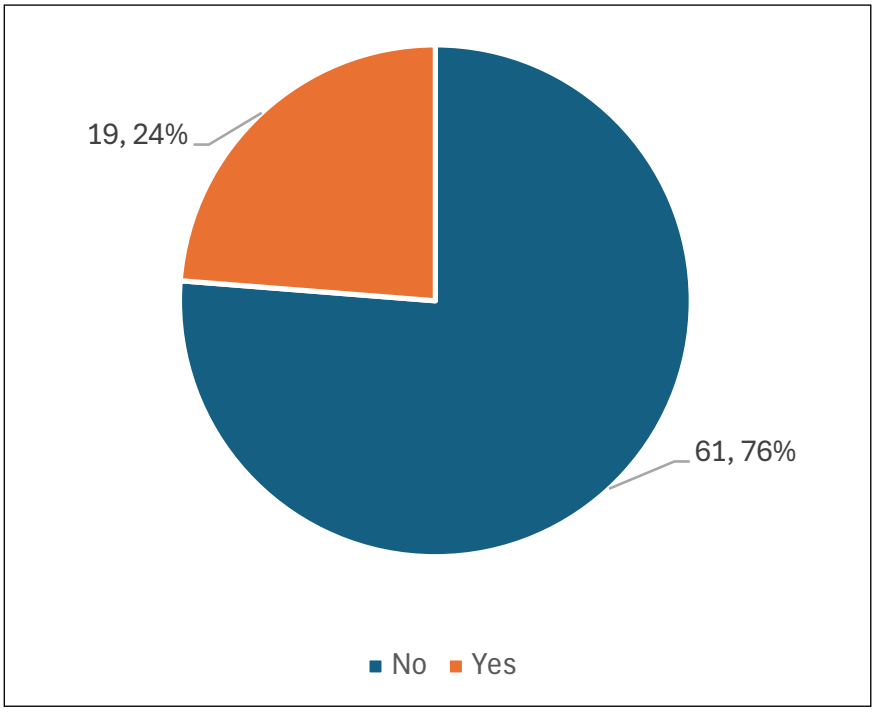

Fig. 1. Prevalence of cognitive impairment among elderly patients with constipation
Source: Own materials

Excel® and analyzed using IBM SPSS Statistics version 30. Descriptive statistics were used to summarize study variables, with categorical variables presented as frequencies and percentages. .

RESULTS

A description of baseline sociodemographic and anthropometric characteristics is essential to contextualize the study population. Accordingly, Table 1 presents the demographic distribution and BMI profile of the 80 elderly patients diagnosed with constipation. There was a clear predominance of male patients, who accounted for 71.3% (n = 57) of the cohort, while females constituted 28.7% (n = 23). Most participants belonged to the younger elderly age group, with 78.8% (n = 63) aged between 60–69 years, followed by 11.3% (n = 9) aged 70–79 years and 10.0% (n = 8) aged 80 years or older. The population was largely married, as 97.5% (n = 78) reported being married, whereas only 2.5% (n = 2) were single. With respect to geographical distribution based on WHO regional grouping, the majority originated from the Eastern Mediterranean Region (73.8%, n = 59), followed by the South-East Asia Region (16.3%, n = 13), while 10.0% (n = 8) were from other regions. Anthropometric assessment demonstrated a high prevalence of abnormal body mass index, observed in 76.3% (n = 61) of patients, whereas only 23.8% (n = 19) had BMI values within the normal range.

Table 2. Duration of symptoms among elderly patients with constipation

Variable	Category	Frequency (n)	Percent (%)
Constipation for more than 6 months	Yes	38	47.5
	No	42	52.5
Duration of constipation	<2 weeks	16	20.0
	2-4 weeks	10	12.5
	1-3 months	12	15.0
	≥ 3 months (chronic constipation)	42	52.5

Source: Own materials

Table 3. Prevalence of metabolic and endocrine comorbidities in elderly patients with constipation

Variable	Category	Frequency [n]	Percent [%]
Hypercholesterolemia	Yes	51	63.7
	No	29	36.3
Hypothyroidism	Yes	11	13.8
	No	69	86.3
Hypertension	Yes	55	68.8
	No	25	31.3
Diabetes Mellitus	Yes	52	65.0
	No	28	35.0

Source: Own materials

Table 4. Associated gastrointestinal conditions among elderly patients with constipation

Variable	Category	Frequency [n]	Percent [%]
Gastritis	Yes	23	28.7
	No	57	71.3
GERD	Yes	41	51.2
	No	39	48.8

Source: Own materials

Table 5. Lifestyle-related factors in elderly patients with constipation

Variable	Category	Frequency [n]	Percent [%]
Alcohol use	Never	72	90.0
	Occasionally	7	8.8
	Regular	1	1.3
Smoking	Never	51	63.7
	Former	21	26.3
	Current	8	10.0
Daily fluid intake	Low	53	66.3
	Moderate	22	27.5
	High	5	6.3
Daily fiber intake	Low	54	67.5
	Moderate	19	23.8
	High	7	8.8
Physical activity levels	Sedentary	50	62.5
	Moderate	20	25.0
	Vigorous	10	12.5

Source: Own materials

Table 6. Surgical history and structural conditions among elderly patients with constipation

Variable	Category	Frequency [n]	Percent [%]
History of abdominal and pelvic hernias (eg, umbilical and femoral hernia)	Yes	11	13.8
	No	69	86.3
Recent major abdominal or pelvic surgeries (last 3 months)	Yes	22	27.5
	No	58	72.5
History of anorectal surgery (e.g., hemorrhoidectomy, prolapse repair)	Yes	15	18.8
	No	65	81.3
History of bowel resection	No	100	100

Source: Own materials

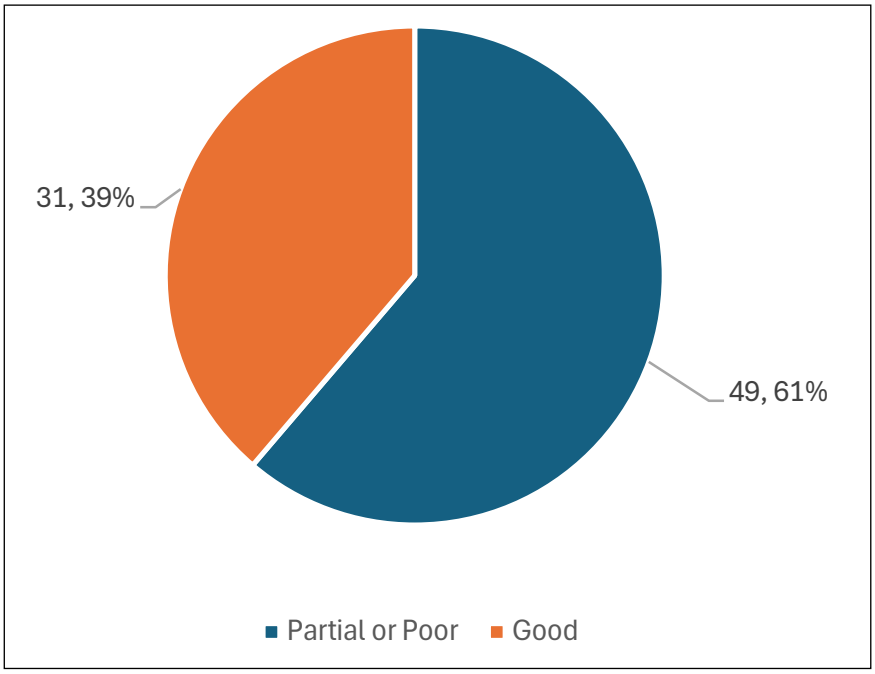

Fig. 2. Treatment outcomes in elderly patients with constipation
Source: Own materials

Cognitive impairment is a highly prevalent state among the elderly; many recent studies have also highlighted the potential influence of cognitive function on bowel habits. Therefore, cognitive impairment was assessed and is illustrated in Figure 1. Cognitive impairment was documented in 23.8% (n = 19) of patients, while 76.3% (n = 61) had no evidence of cognitive impairment.

The duration of constipation symptoms is an important variable of interest, since it helps determine if the condition is acute or chronic and therefore will also influence the management strategies, respectively. The findings of this symptom duration are summarized in Table 2. More than half of the patients (52.5%, n = 42) reported constipation lasting three months or longer, consistent with chronic constipation, while 47.5% (n = 38) had symptoms persisting for more than six months. Shorter symptom durations were less common, with 20.0% (n = 16) reporting symptoms for less than two weeks, 12.5% (n = 10) between two and four weeks, and 15.0% (n = 12) between one and three months.

Because constipation in the elderly frequently coexists with chronic systemic illnesses, the prevalence of major metabolic and endocrine comorbidities was assessed. As shown in Table 3, hypertension was present in 68.8% (n = 55) of patients, while diabetes mellitus was identified in 65.0% (n = 52). Hypercholesterolemia was reported in 63.7% (n = 51) of participants. Hypothyroidism, a condition known to influence gastrointestinal motility, was documented in 13.8% (n = 11) of the cohort.

In order to obtain a more comprehensive understanding of constipation, associated gastrointestinal conditions were also evaluated. These findings are presented in Table 4. Gastroesophageal reflux disease (GERD) was present in 51.2% (n = 41) of patients, whereas gastritis was identified in 28.7% (n = 23). Conversely, 48.8% (n = 39) had no history of GERD and 71.3% (n = 57) had no history of gastritis.

Lifestyle-related factors represent the modifiable contributors to constipation and were therefore systematically analyzed. Table 5 summarizes fluid intake, fiber intake,

physical activity levels, smoking status, and alcohol consumption. Low daily fluid intake was observed in 66.3% (n = 53) of individuals, while 27.5% (n = 22) reported moderate intake and only 6.3% (n = 5) reported high intake. Low dietary fiber intake was common, affecting 67.5% (n = 54) of patients, whereas 23.8% (n = 19) reported moderate intake and 8.8% (n = 7) reported high intake. Physical activity levels were predominantly low, with 62.5% (n = 50) classified as sedentary, 25.0% (n = 20) reporting moderate activity, and 12.5% (n = 10) engaging in vigorous activity. Regarding smoking status, 63.7% (n = 51) were never smokers, 26.3% (n = 21) were former smokers, and 10.0% (n = 8) were current smokers. Alcohol consumption was uncommon, with 90.0% (n = 72) reporting no alcohol use, 8.8% (n = 7) occasional use, and 1.3% (n = 1) regular use.

Finally, to evaluate the response to therapy among patients receiving treatment for constipation, treatment outcomes were analyzed and are presented in Figure 2. A good treatment outcome was observed in 38.8% (n = 31) of patients, whereas 61.3% (n = 49) demonstrated partial or poor response.

DISCUSSION

The study reveals a distinct clinico-epidemiological signature of constipation in the elderly population of Ajman. The findings show a high prevalence of male dominance, prevalence in early elderly (60-69 years), and high prevalence of cardiometabolic multimorbidity. The most important finding is the high prevalence of chronic symptoms (>3 months) and the "lifestyle triad" of low fluid, low fiber, and low physical activity. The most worrisome finding is that more than 60% of patients had suboptimal treatment outcomes, which indicates that the current management practices are not addressing the complex issue of geriatric constipation.

In contrast to the global trend, where the prevalence of constipation is more common in females because of the dynamics of the pelvic floor and hormonal changes, in this study, the predominance of males (71.3%) was found, which is contrary to most of the community-based studies that have shown a higher prevalence of constipation in females, especially in the older population living in the community. [16,17]. The prevalence of constipation in the older population has been estimated to range between 15% and 25% globally, with higher prevalence rates found in hospitalized and institutionalized patients. [17,18]. This "gender paradox" observed in the UAE may be due to the differences in the healthcare-seeking behavior of the population in this region, where the older males may have a tendency to seek tertiary care for their quality-of-life issues, while the females may have a preference for home remedies or traditional practices.

The age distribution in our cohort showed a preponderance of patients in the younger elderly subgroup (60-69 years), with 78.8% of patients in this subgroup. This is slightly at variance with the general epidemiological trend that the prevalence of chronic constipation increases with age, particularly in those aged ≥70-80 years, as reflected in recent systematic reviews and population studies [16,19]. For example, pooled data show that the prevalence of constipation increases substantially with age, with higher rates observed in those >70 years compared with the younger elderly subgroup [19,20]. There are several possible explanations for the underrepresentation of the oldest age subgroup in our tertiary care population. It is likely that patients aged ≥80 years have already developed bowel care practices in the community or long-term care facilities that reduce the need for tertiary care referral, or that they may be physically or cognitively impaired and lack access to tertiary care. In contrast, the "younger elderly" subgroup may be more likely to be mobile, health-seeking, or newly presenting with age-related bowel symptoms.

A striking observation was that 52.5% of patients with symptoms for ≥3 months, and almost half of patients with symptoms for >6 months, chronicity is the rule rather than the exception. Chronic constipation in the elderly indicates deferred healthcare-seeking, normalization of the passage of bowel changes with advancing age, and the presence of multifactorial contributing factors like decreased colonic motility, comorbidities, and polypharmacy. Chronic symptoms cause substantial impairment in the quality of life and functional mobility in the elderly. Chronic constipation also increases the risk of severe complications like fecal impaction, which is a frequent problem in the elderly population and is linked to high morbidity [21-24].

The prevalence of cardiometabolic comorbidities, namely hypertension (68.8%), diabetes mellitus (65.0%), and hypercholesterolemia (63.7%), reflects the international recognition that an ageing population is increasingly affected by multimorbidity. In the Middle Eastern hospital setting, there is also evidence of the frequent co-existence of diabetes and cardiometabolic risk factors with constipation and gastrointestinal symptoms, particularly in older or systemically ill patients [20,25]. Chronic non-communicable diseases may affect bowel motility either directly through autonomic neuropathy (diabetes) or indirectly through polypharmacy and reduced mobility [20]. Moreover, a study conducted in Saudi Arabia showed that nearly one-third of diabetic patients had symptoms of constipation, thus supporting the relationship between metabolic disease and bowel dysfunction in the local population [26].

Besides cardiometabolic disease, more than half of our patients also had gastrointestinal comorbidities like

GERD (51.2%) and gastritis (28.7%). While there is no direct literature to support the association of these gastrointestinal disorders with constipation, there is recent evidence in our region showing a significant overlap between reflux symptoms and functional constipation, implying a common pathophysiology of dysmotility or symptom complexes in gastrointestinal disorders [27]. Postoperative conditions were also prevalent, with 27.5% having recent major abdominal/pelvic surgery and 18.8% having anorectal surgery, both of which are known to increase the risk of delayed bowel function due to postoperative ileus and anorectal dysfunction [28]. None of our patients had bowel resection, thus ruling out resection-related dysmotility.

Constipation in the elderly population may also be a sign of overall health risks, including cognitive impairment. Recent studies have shown associations between constipation and mild cognitive impairment, possibly through the gut-brain axis, including microbiota changes and inflammation. In our study, 23.8% had cognitive impairment, consistent with the literature that suggests a neurological component in chronic constipation [17, 18,29].

In the present study, the sample revealed the following important modifiable risk factors for constipation: low fluid intake (66.3%), low dietary fiber (67.5%), and sedentary lifestyle (62.5%), which were all significant risk factors for constipation. Low fluid and fiber intake leads to decreased stool volume and slowed colonic transit times, thus contributing to the functional obstruction of the bowel, as evidenced in the elderly population [21, 30]. Recent studies also suggest that moderate to high levels of physical activity can reduce the risk of constipation by a significant margin, thus establishing the role of lifestyle modification as a treatment modality [31].

The large proportion of abnormal BMI (76.3%) in our population may also interact with the risk of constipation, since abnormal weight is a marker of underlying nutritional and metabolic disturbances that can negatively impact bowel function. Although BMI does not distinguish between adiposity and lean body mass, there is substantial evidence from large population databases that there is a strong association between indices of elevated body adiposity and the risk of constipation, with individuals who had higher BMI or indices of obesity being at increased risk of constipation in adjusted analyses, with nonlinear associations observed between BMI and the risk of constipation, especially above the threshold of excess weight [32,33]. Mechanistically, abnormal BMI is known to be associated with derangements in gastrointestinal motility, systemic inflammation, and alterations in gut microbiota, all of which have been shown to play a role in delayed colonic transit and constipation pathophysiology [33-35]. Moreover, underlying abnormal nutritional status, such as undernutrition or poor dietary intake, may also contribute to this interaction, especially in the elderly, in whom low nutrient intake and changes in eating habits are associated with an increased burden of constipation [35].

A critical finding was the suboptimal treatment outcome, with only 38.8% of patients obtaining good outcomes. This indicates that current management strategies may not adequately target the complex, multifactorial pathophysiology of constipation in older patients. Evidence suggests that individualized, multimodal strategies often provide better outcomes than current standard therapy alone, emphasizing the importance of comprehensive evaluation and individualized management that considers lifestyle, comorbidities, mobility, and medication burden [36, 37].

The study has the advantage of including a 5-year population and a comprehensive evaluation of clinical, lifestyle, and comorbid variables in a real-world tertiary population. Disadvantages include the descriptive nature of the study, which does not allow for causality, possible information bias due to self-reported dietary and activity data, and the lack of classification of constipation subtypes. Results may not be generalizable to older patients living in the community. Public health initiatives should emphasize high-fiber diets, adequate fluid intake, and regular physical activity in the elderly. Future studies should utilize longitudinal study designs, incorporate assessments of frailty and functional status, objectively assess lifestyle variables, and investigate structured, multidisciplinary treatment pathways to optimize constipation management and geriatric outcomes.

CONCLUSIONS

This five-year analysis demonstrates that constipation in older adults is a persistent and clinically relevant condition, with a high proportion experiencing chronic symptoms (≥3 months: 52.5%) and suboptimal therapeutic outcomes (poor/partial response: 61.3%), indicating that current management often remains insufficient. The coexistence of metabolic comorbidities such as hypertension (68.8%) and diabetes mellitus (65.0%), together with lifestyle-related risks, suggests a broader systemic context influencing bowel health. Future healthy-aging strategies should prioritize early lifestyle interventions, routine assessment of metabolic and functional factors, and stronger continuity of care, ensuring constipation is addressed proactively rather than as an afterthought, thereby reducing physical discomfort, psychological burden, and decline in quality of life among elderly populations.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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A – Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of the article

RECEIVED: 30.11.2025
ACCEPTED: 15.02.2026