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Impact of Morbidity, Socio-demographic Variables and Length of Stay on the Nutritional Status of Patients through SGA Scores among Hospitalized Patients in Makkah Al-Mukarramah

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Abstract The Self-Global Assessment (SGA) is a clinical nutrition assessment method widely used to assess the nutritional status of adults for clinical and research purposes. This tool facilitates the identification of clinically significant malnutrition and enables the monitoring of nutritional changes. Its practicality and comprehensive approach make it valuable for nutritional screening of a diverse patient population. This study aimed to validate the SGA criteria in identifying malnutrition and examine its association with illness, social factors, and length of hospital stay. The research focused on exploring how nutritional status relates to these variables and their impact on patient outcomes. This study was conducted from October 2023 to March 2024 in Makkah and included a random sample of 75 hospitalized patients. The cohort consisted of 40 men (53.3%) and 35 women (46.6%), with a mean age of 57.9 ± 12.9 years, and an age range of 18–75 years. Data collection included structured interviews using standardized SGA questionnaires, complemented by comprehensive physical and clinical examinations to determine the patients' nutritional status. Results revealed that morbidity was significantly affected by subcutaneous fat loss, muscle wasting, weight loss, and poor food intake ($P < 0.05$). Nutritional status, as assessed by SGA, showed significant associations with these clinical factors and related socioeconomic variables. Among the participants, 55 patients (73.3%) were classified as well-nourished, while 18 (24%) and 2 (2.7%) were classified as moderately and severely malnourished, respectively. Of note, the length of hospital stay was significantly longer in malnourished patients than in their well-nourished counterparts ($P < 0.05$). Malnutrition was found to be prevalent among hospitalized patients, with clear associations with sociodemographic variables, increased morbidity, and length of hospital stay. Early detection and timely nutritional interventions are critical to mitigate these negative effects. The Scale of Malnutrition (SGA) has proven to be a reliable, sensitive, and specific tool for early detection and assessment of malnutrition in various patient populations, confirming its suitability for routine use in clinical settings.

Key word: *SGA,Subcutaneous fat, Screening protocol, severely malnourished, well-nourished*

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1. Introduction

Malnutrition is a pervasive global health issue that affects both community-dwelling individuals and hospitalized patients. Among those with acute or chronic illnesses, malnutrition exerts a detrimental effect on clinical outcomes by impairing physical function, delaying recovery, increasing susceptibility to infections, and prolonging hospital stays [1]. The term "malnutrition" encompasses all forms of nutritional imbalance, including both undernutrition and overnutrition, which lead to measurable negative consequences on body composition, physiological function, and overall clinical outcomes [2]. Malnutrition may arise from various contributing factors. Inadequate dietary intake remains a primary cause; however, increased metabolic demands associated with disease states, complications from underlying medical conditions—such as malabsorption syndromes—and excessive nutrient loss further exacerbate the risk. Frequently, a combination of these elements interacts to precipitate and sustain a state of malnutrition, underlining the importance of early detection and intervention.Studies have shown that patients who receive appropriate nutritional support have shorter hospital stays and fewer hospital-acquired infections and complications [3]. Regular nutritional screening during hospitalization will provide early awareness, diagnosis, and effective treatment. A nutritional assessment tool should be cost-effective, reliable, easy to apply, reproducible, and have high sensitivity and specificity rates for diagnosing

malnutrition. Early detection of malnutrition and provision of appropriate treatment will improve quality of life [4]. Nutritional screening and the provision of appropriate nutrition are fundamental patient rights in any healthcare setting. Nutrition has been recognized as the **second most significant predictor** of long-term prognosis, underscoring its vital role in patient recovery and overall health outcomes [5]. Failure to identify and diagnose malnutrition can result in the oversight of essential nutritional support during illness, thereby exacerbating morbidity and complicating treatment. Studies have shown that proactive nutritional interventions significantly improve patient outcomes while simultaneously reducing treatment-related costs, particularly among individuals with severe malnutrition [6]. Accurate assessment of nutritional status is critical to formulating effective medical nutrition therapy. Numerous assessment tools and scoring methods are available to identify patients at risk of malnutrition [7]. Among these, the **Subjective Global Assessment (SGA)** stands out as a reliable and validated screening tool. It utilizes a combination of seven key medical history elements and clinical findings to evaluate a patient's nutritional status comprehensively [8]. The SGA's simplicity and practicality make it highly versatile, allowing it to be administered not only by healthcare professionals, including paramedical staff, but also as a self-assessment tool for patients [9]. Its ease of use ensures widespread applicability in various clinical settings, promoting early detection and timely intervention for malnutrition.Importantly, because malnutrition is linked to diminished quality of life, the SGA's utility extends beyond curative treatments to include palliative care settings. Patients are categorized as well-nourished, moderately nourished, or severely malnourished based on their clinical findings and medical history [10]. The SGA tool has been validated in various clinical contexts, including among **75 patients**, confirming its safety, affordability, reliability, and ease of use [11,12]. Its robust clinical validity supports its widespread application in hospital environments, especially for early identification of malnutrition and the development of targeted nutritional interventions.

2. Materials and Methods

2.1. Ethical Aspects

This study was conducted to evaluate the level of medical care on patient satisfaction with medical and nutritional health services in the Makkah Al-Mukarramah region in the Kingdom of Saudi Arabia. Ethical approval for this study was obtained from the Medical Research Ethics Committee in Makkah Al-Mukarramah, the Kingdom of Saudi Arabia. Informed consent was obtained from each participant before filling out the questionnaire for the purpose of the study, ensuring that all research data were treated anonymously and that they were volunteers to accept or refuse participation. The following was clarified:

- Disclosure of details of the nature and protocols of the study.
- The potential risks and benefits associated with it were clearly explained.
- Confirmation of voluntary participation in the research.
- Confirmation of free will to withdraw from the study at any time.
- Ensuring confidence in the result.

2.2. Sampling and Selection Procedures

A comprehensive list of wards at Al-Noor Hospital in Makkah Al-Mukarramah was obtained in accordance with the study's inclusion criteria. The eligible wards were classified into two primary categories: medical and surgical. Each category was further divided into specialized sub-wards to ensure comprehensive representation of patient populations.

The surgical category comprised the following four sub-wards:

1. Gastroenterology
2. Urology
3. Thoracic Surgery
4. Neurosurgery

The medical category included the following four sub-wards:

1. Cardiology and Neurology
2. Infectious Diseases
3. Hematology
4. Hematology and Nephrology

The study sample size was allocated proportionally to these departments to reflect patient distribution accurately. Participant recruitment continued until the predetermined sample size was achieved, ensuring balanced representation across all selected wards.

2.3. Study Design and Criteria

This study included Saudi and non-Saudi patients, aged 18 years and above, between October 2023 and March 2024, who gave their consent to participate in the survey among a random sample (75 patients) at Al Noor Specialist Hospital in Makkah Al Mukarramah. All participants met the following inclusion criteria:

1) Of either sex (male or female).
2) Age 18 years or above.
3) Hospitalized.
4) Not receiving enteral or parenteral nutrition.

2.4. Procedures Followed During the Study

The study was conducted on a total of 75 patients who met the inclusion criteria. All participants underwent a comprehensive evaluation comprising three key components: medical history, physical examination, and anthropometric measurements.

1. Medical History:
2. Physical Examination:
3. Anthropometric Measurements:

2.5. Subjective Global Assessment (SGA)

Hospital nutritional assessment is a comprehensive approach designed to determine a patient's nutritional status through various methods. It serves as a crucial

predictor of the length of hospital stay and is among the most widely used techniques for evaluating nutritional health. Accurate assessment enables timely interventions that improve patient outcomes and reduce healthcare costs. One of the most effective and practical tools for this purpose is the Subjective Global Assessment (SGA). The SGA evaluates nutritional status based on two primary components:

- **Medical history:** Including weight changes, dietary intake, gastrointestinal symptoms, and functional capacity.
- **Physical examination:** Focused on identifying muscle wasting, subcutaneous fat loss, edema, and ascites.

The SGA classifies nutritional status into three main categories:

- **SGA A:** Well-nourished
- **SGA B:** Mild to moderate malnutrition
- **SGA C:** Severe malnutrition

2.6. SGA Scoring Guidelines

The questionnaire and SGA were conducted by a dietitian through a face-to-face interview. The questionnaire study was conducted during the patients' stay in the hospital under study. In the SGA assessment, the patient's nutritional assessment score is obtained by summing the data obtained from each question box. SGA-A indicates that the patient is well-nourished or active. SGA-B means suspected malnutrition while SGA-C is used to express severe malnutrition. According to the final score. Table 1 shows the most important symptoms on the basis of which patients are divided into the three categories.

Table 1. Summary of clinical measurement characteristics of the SGA instruments through physical examination

High stress	Moderate Stress	Lowstress
•Serious illness • Serious trauma • Serious surgery • Serious burns • Sepsis • Perforation or obstruction of the digestive tract • Acute respiratory failure • Pancreatitis • Multiple organ failure • Active inflammatory bowel disease	• Wound drainage/fistula • Congestive heart failure • Asthma • AIDS • Pregnancy • Chemotherapy • Autoimmune diseases • Radiation therapy	• Chronic obstructive pulmonary disease (stable) • Latent infection • Latent cancer • Stable chronic disease (e.g, kidney failure, hepatitis, diabetes) • Hypothyroidism • Autoimmune disease

2.7. Statistical Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) software. The analysis included descriptive statistics to summarize the distribution of study variables. Categorical (nominal) variables were compared using the **Chi-square (χ^2) test,**allowing for the evaluation of associations between qualitative data. For continuous (quantitative) variables, comparisons were performed using the **independent t-test** to assess differences between groups. A **95% confidence interval (CI)** was applied to estimate the precision of the results, with statistical significance determined at a **P-value < 0.05.** This threshold was used to ensure robust and reliable interpretation of the data while minimizing the likelihood of Type I errors.

3. Results

3.1. Socio-demographic Characteristics of Adult Patients

The study included 40 men and 35 women (53.3% and 46.6%, respectively). The mean age the participants were 57.9 ± 12.9 years and the age range was 18–75 years. The majority were from rural areas (57.3%) (n = 43) patients were admitted to the internal medicine ward (72%) (n = 54) and only 28% (n = 21) to the intensive care unit, about 25.3% of the Post graduate. 44% .the participants were Employed workers, about 48% were non-manual workers and about 8% were students. As shown in Table2.

Table 2. Socio-demographic characteristics of adult patients under study at Al Noor Specialist Hospital in Makah Al Mukarramah

Parameters	Number	Percentage %
Gender		
Female	35	46.6
Male	40	53.3
mean age		
18-44	35	46.6
45-65	25	33.3
65-75	15	20
Maritalstatus		
Married	46	61.3
Single	29	38.7
Chronicdisease		
Present	44	58.6
Absent	31	41.3
Residence		
Urban	32	42.6
Rural	43	57.3
Flank		
Internal Medicine	54	72
ICU	21	28
Occupation		
Unemployed	36	48
Employed	33	44
Student	6	8
Level of education		
Post graduate	19	25.3
Under graduate	15	20
Intermediate	4	5.3
Secondary	27	36
Primary	10	13.3

Percentages are from the total number of patients (n = 75).

3.2. Nutritional Risk Status, Length of Hospital Stay and Nutritional Scores by (SGA).

The study findings demonstrated that **73.3%** (n=55) of the **75** patients assessed were well-nourished, whereas

24% (n=18) were categorized as moderately malnourished or suspected of malnutrition, and **2.7%** (n=2) were identified as severely malnourished according to the Subjective Global Assessment (SGA). This distribution underscores the prevalence of malnutrition within the patient population and the need for early nutritional assessments. Table 3. Illustrate the relationship between nutritional status and the length of hospital stay among adult patients. Nutritional status was compared using two groups: **SGA A** (well-nourished) versus **SGA B+C** (moderately and severely malnourished). The data indicated that patients hospitalized for **1–20 days** were approximately **twice as likely** to be malnourished compared to those with shorter stays of **1–10 days (P < 0.05).** This trend was more pronounced with extended hospitalizations, where patients admitted for **1–30 days** had nearly a **four-fold increase** in malnutrition risk compared to those hospitalized for **1–10 days (P < 0.05).** These findings highlight a clear association between prolonged hospitalization and an increased likelihood of malnutrition. Extended stays often correlate with more severe medical conditions, delayed recovery, or increased metabolic demands, all of which can contribute to nutritional deterioration. Therefore, implementing early nutritional interventions for patients expected to stay longer may play a vital role in improving clinical outcomes and reducing hospital-related complications.

3.3. Comparison of Socio-demographic and Nutritional Status

The results of the SGA application showed that the percentage of males suffering from malnutrition or at risk of malnutrition was higher than females, and the percentage of married people suffering from malnutrition was higher than the percentage of unmarried people. The high rate of malnutrition was observed among patients admitted to the internal medicine department, and although admission to the intensive care unit increases the risk of complications, it was lower than the rate of internal medicine patients. Also, living in rural areas rather than in urban areas had a greater share and the presence of chronic diseases. There was no significant relationship in chronic diseases, age and residence. But there was a significant relationship in the rest of the variables (P < 0.05). As shown in Table 4.

Table 3. Nutritional assessment of the studied patients and showing the SGA range between severe, moderate and good nutrition

SGA rating	No.	Percentage %
(A)well nourished	55	73.3
(B)moderately malnourished	18	24
(C) severely malnourished	2	2.7
Total	75	100.0

Percentages are from the total number of patients (n = 75)

Table 4. Comparison of socio-demographic characteristics according to nutritional status in the SGA rating survey

	Malnutrition		**Normalnutritionalstatus**		P – value
	Number	**%**	**Number**	**%**	
Gender					
Female	**9**	**12**	**30**	**40**	**0.002**
Male	**11**	**14.6**	**25**	**13.3**	
Maritalstatus					
Married	**13**	**17.3**	**23**	**30.6**	**0.002**
Single	**7**	**9.3**	**32**	**42.6**	
Age					
≥ 60 yrs.	**5**	**6.6**	**36**	**48**	**0.117**
< 60 yrs.	**15**	**20**	**19**	**25.4**	
Chronicdisease					
Present	**18**	**24**	**53**	**70.6**	**0.213**
Absent	**2**	**2.7**	**2**	**2.7**	
Residence					
Urban	**9**	**12**	**36**	**48**	**0.0218**
Rural	**11**	**14.6**	**19**	**25.3**	
Flank					
Internal Medicine	**20**	**26.6**	**55**	**73.4**	**<0.002**
ICU	**20**	**26.6**	**55**	**73.4**	

Percentages are from the total number of patients (n = 75).

Table 5. Subjective Global Assessment (SGA) and disease outcomes in patients studied during the study

Variables	Frequency (N = 75)	%
Section name		
Surgery ward	38	50.7
Medical ward	28	37.3
Orthopedic ward	4	5.3
Gynecology ward	5	6.7
Disease leading to admission		
Fracture	7	9.3
Gall stone	11	14.7
Minor surgery	7	9.4
Hernia	4	5.3
Accidents	3	4
Appendicitis	3	4
Cancer	5	6.7
Hemorrhoids	3	4
Diabetes	10	13.3
Heart disease	5	6.7
Infection	7	9.3
Anemia	4	5.3
Others	6	7.9
Duration of disease		
One-10 days	29	38.6
11 -1 month	26	34.6
2-6 months	20	26.6

Percentages are from the total number of patients (n = 75).

Table 6. Comparison of nutritional status and physical examination variables according to the standard SGA questionnaire

Variables	Frequency(N=75)	Percentage%	P – value
Weight change			
(A)Not change	56	74.7	0.001
(B) weight loss	10	13.3	0.001
(C) more	9	12	0.002
Food intake consistency			
(A) Not change.	54	72.0	0.001
(B)Poor but improving or borderline but decline	18	24.0	0.001
(C) Starvation, unable to eat.	3	4.0	0.006
Muscle wasting			
Normal (0-20mm)	20	26.7	0.003
Mild (21-40 mm)	46	61.3	0.007
Sever (over 40 mm)	9	12.0	0.003
Loss of subcutaneous fat.			
Normal (10-20 mm)	14	18.7	0.001
Mild (21-40 mm)	50	66.7	0. 001
Sever(over 40 mm)	11	14.7	0.001

Percentages are from the total number of patients (n = 75).

3.4. Incidence Rate of the Disease among the Patients Studied During the Study

Table 5 showed that the incidence rate of some diseases appeared at high rates, the most important of which was in the surgery ward (50.7%), and on the contrary, the lowest rate was in the accident and appendix department (4%). Also, the diseases that led to hospitalization, such as diabetes, were 13.0%, and gallstone diseases were the highest rate (14.7%), and the rest were less prevalent. The length of stay differed according to the rate of the disease.

3.5. Comparison of Nutritional Indicators and Physical Examination Variables Associated with the SGA Questionnaire

In this Table 6 showed the nutritional variables were compared, showing the highest percentage of the sample, approximately (74.7%) did not have any significant change in body weight according to SGA rating (A) , as for the food intake changes, about(72%) of the sample did not show any significant change with rate of SGA (A),

and about (24%) of the sample show a food intake reduction as (B) rating and (4%) of them showed starvation and disability to eat with SGA rating (C). Also show about (66.7%) had mild subcutaneous fat loss with the rate of SGA (B) and (14.7%) of sample had sever (C) and about (18.7%) of sample did not show any subcutaneous fat loss and (61.3%) also had mild Muscle wasting. these variables were statistically significant among the variables ($P < 0.05$).

4. Discussion

This study aimed to investigate the relationship between socioeconomic factors and the prevalence of malnutrition among patients aged 18 to 75 years residing in Mecca. The findings revealed that **26.7%** of participants experienced malnutrition or were at risk of developing it, highlighting the significant influence of socioeconomic conditions on nutritional status. The nalysis demonstrated that several social determinants, particularly rural residency and advanced age, played a pivotal role in elevating the risk of malnutrition. Most participants hailed from rural regions and belonged to the elderly demographic, emphasizing the vulnerability of these groups. Notably, the prevalence rate identified in this research aligns with existing literature. For instance, a Spanish study utilizing the Subjective Global Assessment (SGA) tool reported a malnutrition prevalence of **46%** [13]. This comparison underscores the global relevance of socioeconomic influences on nutrition. Further supporting this connection, another investigation documented the progression of malnutrition during hospital stays. Patients assessed later during hospitalization exhibited a higher likelihood of developing moderate to severe malnutrition compared to those evaluated shortly after admission [14]. This finding underscores the importance of early nutritional screening upon hospital entry to mitigate deterioration. Age emerged as a critical factor in this study. Participants aged **60 years and older** showed a pronounced tendency towards malnutrition, often accompanied by increased complication risks. Gender differences were also significant, with male patients exhibiting a higher propensity for malnutrition-related complications. These findings mirror previous research that identified older men, particularly those aged **60 and above**, as a high-risk group for nutritional decline [15]. Another notable investigation evaluated the nutritional status of female patients admitted to orthopedic departments and compared them to age-matched women from the general population. Despite focusing on females, the study concluded that malnutrition was notably more prevalent among males, positioning male gender as an independent and significant risk factor [16]. Other demographic factors such as age, gender [17,18], marital status, educational attainment [19], and household income [20] have consistently been linked to variations in nutritional health.The underlying causes of malnutrition discovered in this research often stem from inadequate nutrient intake, predominantly driven by challenging socioeconomic conditions. Limited financial resources restrict access to sufficient energy, proteins, and other essential nutrients, creating a cycle of nutritional inadequacy. This scenario is exacerbated by disease-related malnutrition, where patients experience diminished appetite, absorption issues, digestion disorders, and health deterioration, often complicated further by the side effects of medical treatments [21]. This study utilized the Subjective Global Assessment (SGA) to determine the nutritional status and prevalence of malnutrition among patients. The SGA, recognized for its simplicity and clinical relevance, serves as an effective screening tool that evaluates both objective and subjective criteria. These criteria encompass a wide range of clinical symptoms associated with malnutrition, ultimately facilitating the classification of malnutrition into various levels of severity. In a multi-center investigation involving patients from 47 hospitals, the prevalence of malnutrition was reported at **44.9%** [22]. Consistent with these findings, Fernandez et al. documented a malnutrition rate of **62.1%** among hospitalized individuals [23]. Similarly, Kontorek et al. conducted a survey of 815 inpatients and identified a malnutrition prevalence of **44.6%** [24]. Contrasting these results, Olivares et al. reported a comparatively lower rate of **19.5%** in their patient cohort [25]. Raslan et al. explored the predictive capacity of the SGA in determining malnutrition-related clinical outcomes and found that **38.9%** of patients were classified under moderate or severe malnutrition categories (SGA B or C) [26]. Within the context of the present study, the malnutrition rate was established at **26.7%**, aligning with a substantial portion of the previous literature.While both objective and subjective criteria offer valuable insights into patients' nutritional status, reliance on a single set of indicators may introduce limitations. Therefore, it is strongly recommended to integrate both assessment modalities to ensure a comprehensive evaluation [27]. In this study, **73.3%** of participants were categorized as well-nourished, while **24%** were deemed moderately malnourished or at risk, and **2.7%** were identified as severely malnourished according to the SGA classification system. Further analysis revealed that **74.7%** of the sample reported no significant changes in body weight or dietary intake. However, **24%** experienced a noticeable decline in food consumption, and **4%** exhibited severe hunger and an inability to eat. Subcutaneous fat loss was evident in **66.7%** of patients, with **14.7%** experiencing severe depletion, whereas **18.7%** maintained normal fat reserves. Muscle wasting was notably prevalent, affecting **61.3%** of the cohort.

Comparative data from other regions highlight both consistencies and discrepancies with these findings. A study conducted in Riyadh, Saudi Arabia, revealed that **19.4%** of elderly participants were malnourished [28]. Such variations may be attributed to differences in sample selection methods and demographic distributions. The association between advancing age and increased malnutrition risk was corroborated in the current study. This trend is further supported by evidence indicating that older adults (aged >60 years) typically exhibit diminished muscle mass coupled with elevated fat accumulation, predisposing them to heightened nutritional vulnerability [29]. These findings align with research conducted in Jeddah, which demonstrated a heightened prevalence of malnutrition among older adults due to age-related sensory changes. Diminished senses of smell, sight, and

taste often contribute to reduced appetite and lower food intake [30]. Additionally, gastrointestinal alterations common with aging can impair nutrient absorption and digestion, exacerbating malnutrition risks. Hospital stay duration emerged as a significant factor in malnutrition prevalence. Patients hospitalized for **1–20 days** were approximately twice as likely to be malnourished as those admitted for **1–10 days**, while stays extending to **1–30 days** quadrupled the malnutrition risk. This observation aligns with prior studies indicating that patients at risk of malnutrition tend to have prolonged hospitalizations, with malnourished patients averaging **40% longer** stays. Notably, individuals with severe malnutrition experienced hospital stays that were **five times longer** compared to well-nourished counterparts [31]. A substantial body of literature has sought to elucidate the connection between malnutrition and hospital length of stay. Chronic conditions and severe illnesses often precipitate appetite loss, while the physiological stress of inflammation and catabolic processes intensifies nutritional decline [32]. These factors collectively contribute to extended hospitalizations, which, in turn, escalate healthcare costs for medical institutions [33]. Longer hospital stays not only strain hospital resources but also elevate the risk of nosocomial infections, impede patient flow, and delay access to optimal care. Furthermore, patients enduring prolonged admissions frequently require heightened nursing care due to increased infection rates, higher complication risks, and diminished functional capacity [34].Beyond financial and logistical implications, malnutrition during hospitalization significantly contributes to elevated morbidity and mortality rates [35]. In the context of this study, prolonged hospital stays were directly correlated with malnutrition as classified by the SGA, reinforcing the crucial link between nutritional status and patient outcomes. These findings underscore the imperative of early nutritional assessments and interventions to mitigate malnutrition's far-reaching consequences.

5.Conclusion

Malnutrition has widespread effects on physiological functions. It is associated with high morbidity and mortality rates in hospitalized patients and significantly increases healthcare costs. A simple screening tool could identify patients at risk, allowing appropriate treatment to be initiated; this could significantly improve clinical outcomes and reduce healthcare expenditures. The results of this study indicate the need for further efforts to improve the nutritional conditions of hospitalized patients. Furthermore, it is crucial to identify effective methods for preventing and treating malnutrition in hospitals to shorten length of stay, improve patient quality of life, and enhance treatment effectiveness.

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Conflict of Interest

The author declares no conflict of interest. He is responsible for data collection, analysis, interpretation, manuscript writing, and the decision to publish the results.

References

[1] World Health Organization (WHO). Palliative Care. Aug 2020.
[2] Isenring E, Elia M. Which screening method is appropriate for older cancer patients at risk for malnutrition? Nutrition. 31(4): 594-597. April 2015.
[3] Mendes NP, Barros TA, Rosa COB, Franceschini SDCC.Nutritional screening tools used and validated for cancer patients: a systematic review. Nutr Cancer. 71(6): 898-907. April 2019.
[4] Isenring EA, Banks M, Ferguson M, Bauer JD. Beyond malnutrition screening: appropriate methods to guide nutritioncare for aged care residents. J AcadNutr Diet. 112(3): 376-381. March 2012.
[5] Jones, J.M. The Methodology of Nutritional Screening and Assessment Tools. Journal of Human Nutrition and Dietetics.15 (1): 59-71. February 2002.
[6] Kondrup, J., Allison, S.P., Elia, M., Vellas, B., Plauth, M. ESPEN Guidelines for Nutrition Screening. Clinical Nutrition. 22(4), 415-421. Augusts 2003.
[7] ASPEN Board of Directors and the Clinical Guidelines Task Force. Guidelines for the Use of Parenteral, Enteral Nutrition in Adult and Pediatric Patients.Journal of Parenteral and Enteral Nutrition, Volume26,Issue1SJanuary 2002.
[8] Silva Fink, J., Daniel de Mello, P. and Daniel de Mello, E. Subjective Global Assessment of Nutritional Status-A Systematic Review of the Literature. Clinical Nutrition. 34(5): 785-92. October 2015.
[9] Wu, B., Yin, T.T., Cao, W., Gu, Z.D., Wang, X., Yan, M. and Liu, B. Validation of the Chinese Version of the Subjective Global Assessment Scale of Nutritional Status in a Sample of Subjects with Gastrointestinal Cancer. International Journal of Nursing Studies,47(3), 323-331.March., 2010.
[10] Locher, J.L., Bonner, J.A., Carroll, W.R., et al. Prophylactic Percutaneous Endoscopic Gastrostomy Tube Placement in Treatment of Head and Neck Cancer: A Comprehensive Review and Call for Evidence-Based Medicine. Journal of Parenteral and Enteral Nutrition, 35, 365-374. May 2011.
[11] Isenring, E.A., Capra, S. and Bauer, J.D. Nutrition Intervention Is Beneficial in Oncology out Subjects Receiving Radiotherapy to the Gastrointestinal or Head and Neck Area. British Journal of Cancer, 91(3), 447-452Augsts 2004.
[12] Canzan, F., Caliaro, A., Cavada, M.L., Mezzalira, E., Paiella, S. and Ambrosi, E. The Effect of Early Oral Postoperative Feeding on the Recovery of Intestinal Motility after Gastrointestinal Surgery: Protocol for a Systematic Review and MetaAnalysis. PLOS ONE, 17, e0273085 Augusts 2022.
[13] Planas M, Audivert S, PérezPortabella C, Burgos R, Puiggrós C, Casanelles JM, RosellóJ.Nutritional status among adult patients admitted to an university-affiliated hospital in Spain at the time of the genoma. Clin. Nutr. 23(5): 1016 -1024 October 2004.
[14] Baccaro F, Moreno JB, BorlenghiC,Aquino L, Armesto G, Plaza G, Zapata S. Subjective GlobalAssessment in Clinical Setting. JPEN; 31 (5): 406 – 409. October2007.
[15] Kyle UG, Schneider SM, PirlichM,Lochs H, Hebuterne X, Pichard C. Does nutritional risk, as assessed by Nutritional Risk Index, increase during hospital stay? A multinational population-based study. ClinNutr 24 (4): 516 – 524. Augusts 2005.
[16] Lumbers M, New SA, Gibson S,Murphy MC. Nutritional status in elderly female hip fracture patients:comparison with an age matchedhome living group attending day centers. Br. J. Nutr. 85 (6): 733– 40.January 2001.

[17] Ghimire S, Baral BK, Callahan K. Nutritional assessment of communitydwelling older adults in rural Nepal. PLoS One 12:e0172052. February 2017.

[18] Verlaan S, Ligthart-Melis GC, Wijers SL, Cederholm T, Maier AB, devan der Schueren MA. High prevalence of physical frailty among community-dwelling malnourished older adults-a systematic review and meta-analysis. J Am Med Dir Assoc 18:374-382. May 2017.

[19] Amarya S, Singh K, Sabharwal M. Changes during aging and their association with malnutrition. J ClinGerontolGeriatr; 6 (3): 78-84. September 2015.

[20] Camina-Martín MA, de Mateo-Silleras B, Malafarina V, Lopez-MongilR, Niño-Martín V, López-Trigo JA, Redondo-del-Río MP. Nutritional status assessment in geriatrics: consensus declaration by the Spanish Society of Geriatrics and Gerontology Nutrition Work Group. Maturitas 81(3): 414-419. May 2015.

[21] Papparotto C, Bidoli E, Palese A. Risk factors associated with malnutrition in older adults living in Italian nursing homes: across-sectional study. Res GerontolNurs; 6 (3):187-197. july 2013.

[22] Pineda JCC, Gómez García A, Velasco N, Graf JIDP, Adámes AM, Torre AM. Nutritional assessment of hospitalized patients in Latin America: association with prognostic variables. The ENHOLA study. NutrHosp; 33(3): 655-662. January 2016.

[23] Fernández AC, Casariego AV, Rodríguez IC Pomar MDB. Eficaciayefectividad de lasdistintasherramientas de cribadonutricional en un hospital de tercernivel. NutrHosp 31:2240-6. May.2015.

[24] Konturek PC, Herrmann HJ, Schink K, Neurath MF, Zopf Y. Malnutrition in Hospitals: It Was, Is Now, and Must Not Remain a Problem! Med SciMonit2; 21:2969–2975. October 2015.

[25] Olivares J, Ayala L, Salas-Salvadó J, et al. Assessment of risk factors and test performance on malnutrition prevalence at admission using four different screening tools. NutrHosp 29(3): 674-680. Mar 2014.

[26] Raslan M, Gonzalez MC, Torrinhas RS, Ravacci GR, Pereira JC, Waitzberg DL. Complementarity of Subjective Global Assessment (SGA) and Nutritional Risk Screening 2002 (NRS 2002) for predicting poor clinical outcomes in hospitalized patients. ClinNutr30(1): 49-53. February 2011.

[27] Borek P, Chmielewski M, Małgorzewicz S, Slizie´n DA. Analysis of outcomesof the NRS 2002 in patients hospitalized in nephrology wards. Nutrients 16; 9(3): 287. March 2017.

[28] Alghofaili, A. A., Aladel, A. I., Alsoghier, A. M., Othman, F.,Shoqeair, M. M., Alqahtani, S. M., Alnughaimish, A. M.,Alanazi, B. A., AI Mosallam, S. A., Alharbi, A. S., &Alquraishi, M. Association of Oral and GeneralHealth with Nutritional Status of Older Adults AttendingTwo Medical Centers in Riyadh, Saudi Arabia: A CrossSectional Study. Nutrients 15(18): 4032. September 2023.

[29] Besora-Moreno, M., Llauradó, E., Tarro, L., &Solà, R. Social and Economic Factors and Malnutrition or the Riskof Malnutrition in the Elderly: A Systematic Review andMeta-Analysis of Observational Studies. Nutrients.11; 12(3): 737. March 2020.

[30] Alzahrani, S. H., &Alamri, S. H. Prevalence of malnutrition and associated factors among hospitalized elderly patients in King Abdulaziz University Hospital, Jeddah,Saudi Arabia. BMC Geriatrics, 17(1): 136-142. July 2017.

[31] italized older adults: a multicentre observational study of prevalence, associations andoutcomes. J Nutr Health Aging 21(7): 830-836. July 2017.

[32] Barker LA, Gout BS, Crowe TCJIjoer, health p. Hospital malnutrition: prevalence, identification and impact on patients and the healthcare system. 8(2): 514-527 February 2011.

[33] Khalatbari-Soltani S, Marques-Vidal PJCnE. The economic cost of hospital malnutrition in Europe; a narrative review. 10(3):e89-e94. January 2015.

[34] Norman K, Pichard C, Lochs H, PirlichMJCn. Prognostic impact of disease-related malnutrition.ClinNutr.27(1): 5-15 February 2008.

[35] Velasco C, García E, Rodríguez V, Frías L, Garriga R, Álvarez J, et al. Comparison of fournutritional screening tools to detect nutritional risk in hospitalized patients: a multicentre study.ClinNutr. 65(2): 269-274. February 2011.