BPR MCS Bulletin of Pioneering Researches of Medical and Clinical Science

Bulletin of Pioneering Researches of Medical and Clinical Science

Available online: https://bprmcs.com
2023 | Volume 3 | Issue 1 | Page: 109-115

Impact of Perceived Stress, Coping Strategies, and Psychiatric History on Quality of Life After Corrosive Ingestion

Samuel K. Otieno[1]*, Hana T. Desta[1], Yusuf A. Saleem[1]

[1]Department of Clinical Medicine, University of Nairobi, Nairobi, Kenya.

Abstract

This investigation sought to identify determinants of quality of life (QOL) in individuals suffering from corrosive injuries, a condition increasingly reported worldwide and especially in developing regions. Corrosive substance ingestion represents both a significant public health issue and a frequent method of self-harm. A cross-sectional design with purposive sampling was adopted. In total, 82 patients hospitalized for corrosive injuries in the gastroenterology ward of a Taiwanese medical center from June 2018 to July 2020 completed the Perceived Stress Scale, the Coping Strategy Scale, and the WHO Quality of Life Scale. Independent t-tests and ANOVA were used to compare variations in demographic and clinical variables, perceived stress, and coping strategies. Key predictors of QOL were identified through multiple linear regression. Participants' mean age was 58.2 years (standard deviation = 2.4). Individuals with a prior mental health diagnosis displayed significantly different stress levels ($P < .05$). Overall, patients demonstrated high stress and tended to rely on emotion-focused coping. Perceived stress showed a strong negative association with total QOL. Regression findings indicated that a previous mental illness was an important factor influencing global QOL. These outcomes highlight that mental illness history plays a critical role in shaping the QOL of those with corrosive gastrointestinal damage, underscoring the need for routine evaluation and continual follow-up.

Keywords: Corrosive ingestion, Gastrointestinal, Mental illness, Quality of life

Corresponding author: Samuel K. Otieno
E-mail: samuel.otieno@gmail.com

How to Cite This Article: Otieno SK, Desta HT, Saleem YA. Impact of Perceived Stress, Coping Strategies, and Psychiatric History on Quality of Life After Corrosive Ingestion. Bull Pioneer Res Med Clin Sci. 2023;3(1):109-15. https://doi.org/10.51847/XTj2JhvxWw

Introduction

Corrosive ingestion constitutes a major worldwide health concern and is frequently linked to intentional self-harm; its prevalence has risen in developing nations in recent years [1–3]. Contact with acidic or alkaline agents causes extensive injury to the digestive tract. Risk factors differ by age group, with adult cases frequently tied to psychological stressors or suicidal thoughts [3, 4]. Nevertheless, most earlier work has emphasized clinical outcomes and the consequences of corrosive damage [5, 6].

In Taiwan, the estimated annual rate of corrosive injuries is 4 to 5 per 100,000 individuals [7]. Adults rarely ingest corrosive agents by accident; instead, deliberate ingestion is more often related to suicidal behavior or psychiatric disorders. Among Taiwanese patients, esophageal strictures occur in up to 50%, and mortality reaches 8%. In contrast, foreign cases are comparatively uncommon, generally unintentional, involve smaller quantities of corrosive agents, and show a 20% stricture rate and a 1% mortality rate. Consequently, outcomes among Taiwanese patients tend to be poorer [8].

Management strategies vary with symptom severity and injury grade. Minor ingestion may lead to severe oral

burns and mucosal ulceration, resulting in pain, hypersalivation, and bleeding throughout the esophagus and gastrointestinal lining, followed by strictures and a heightened risk of esophageal malignancy. More serious injuries may progress to tissue necrosis or perforation, necessitating surgical intervention [6, 9]. Although treatment can stabilize the condition, the associated discomfort, prolonged recovery, and adverse effects significantly impair daily QOL [10, 11]. Approximately 70% to 80% of patients with corrosive gastrointestinal injuries develop esophageal stenosis, necessitating major adjustments to eating habits and lifestyle. After surgery, physical function often deteriorates, increasing dependence on caregivers. These burdens intensify emotional strain, fostering hopelessness and diminished QOL [12, 13]. Because many patients struggle with oral intake, they may require repeated dilatation procedures or reconstruction using the large intestine, and resuming normal eating patterns may take considerable time. This protracted course is physically and mentally taxing for both patients and families [14, 15]. As a result, individualized nursing interventions are essential to facilitate faster return to routine life, reducing caregiver strain and health-system costs. Nurses play a central role in helping patients cope both physically and psychologically, particularly with respect to stress and QOL. When patients cannot regulate their emotions and experience anxiety or depression, their motivation for treatment declines, leading to poorer QOL.

Despite the severity and long-term implications of corrosive gastrointestinal injuries, studies addressing stress responses and QOL in this population remain scarce. Although symptom relief is the priority in acute care, prolonged rehabilitation can be exhausting, heightening emotional distress and impairing QOL. Therefore, this study sought to explore QOL and associated factors among patients with corrosive gastrointestinal injuries. The findings are expected to support clinical practice and expand empirical knowledge to guide patient care.

Materials and Methods

Design

A cross-sectional approach was utilized, with purposive recruitment of individuals who had sustained corrosive injuries to the gastrointestinal tract. The project was carried out at a single medical center in Taiwan, specifically within its gastroenterology ward, during the period from June 2018 to July 2020.

Inclusion and exclusion criteria

Participants were adults (> 18 years) who showed persistent signs of esophageal or gastric erosion and were receiving gastroenterological care. Written consent was required. Individuals were excluded if the corrosive event occurred < 6 months prior, if they declined to join, or if their clinical status was too unstable to allow participation.

Measures

One trained evaluator conducted all assessments, using the local dialect, shortly after admission and only once the immediate emotional and physiological disturbances from the ingestion episode had subsided. Data collection involved a structured questionnaire incorporating demographic items, a stress assessment, a coping-behavior inventory, and a QOL measure.

Basic demography

Demographic variables were compiled based on literature, professional experience, and expert consultation. The items included sex, age, educational achievement, religious background, employment situation, marital and economic status, number of children, and history of psychiatric illness.

Perceived stress scale

The perceived stress scale—first introduced in 1983—captures subjective stress levels through appraisal of recent thoughts, emotions, and stressful life conditions. The translated version by Assistant Professor Chu Lijuan (Sun Yat-sen Medical University) has demonstrated internal consistency with Cronbach α values of 0.84–0.86, and test–retest reliability of 0.55–0.85. It employs a 5-point Likert response format; higher values reflect greater stress. In the present study, Cronbach α was 0.94.

Coping strategy scale

Coping behaviors were evaluated using the Jalowiec scale created by Jalowiec and Powers, which has a reported reliability coefficient of 0.80 [16]. The instrument includes 40 items: 15 representing problem-oriented strategies and 25 emotion-oriented responses. Scores range from 40 to 200, generated by a 5-point rating system. A higher total indicates more frequent reliance on those coping modes. In this study, the Cronbach α reached 0.91.

QOL

Quality of life was assessed using the abbreviated WHO QOL questionnaire, covering physical, psychological, social, and environmental dimensions. Raw values were converted to a 0–100 scale; higher scores indicate better perceived QOL. The scale's reliability was 0.90, with subscale α values between 0.83 and 0.89. The formal testing in this study yielded a Cronbach α of 0.92.

Ethics

Approval for the study was granted by the Institutional Review Board of the Chang Gung Medical Foundation at

Linkou Chang Gung Memorial Hospital (IRB no. 201700316B0C501). All procedures complied with national ethical regulations, institutional guidelines, and the principles of the 1975 Helsinki Declaration and subsequent revisions. Written informed consent was obtained from all participants.

Statistical analysis

Data were coded, entered, and verified prior to analysis. Statistical procedures were carried out using SPSS version 20.0 (International Business Machines Corp., Armonk, NY). Descriptive indicators—frequency, percentages, means, and standard deviations—were generated for demographic variables, perceived stress, coping behaviors, and QOL. One-way ANOVA and Pearson correlations were used to examine variations across stress, coping patterns, and QOL scores. Multiple linear regression included two predictors: mental illness history and perceived stress. A $P < .05$ criterion was applied to determine statistical significance.

Results and Discussion

Demography and baseline data

A total of 82 individuals with corrosive gastrointestinal injuries were hospitalized, of whom 48.8% were men. Their mean age was 58.2 ± 2.4 years. A substantial proportion (92.7%) had a diagnosed mental illness. Marked differences in basic characteristics and overall QOL were detected between patients with versus without mental illness ($P < .05$). When examining the four QOL domains, sex was significantly associated with the psychological domain, with men scoring higher than women, while age was significantly associated with the physical domain ($P < .05$) **(Table 1)**.

Table 1. Patient demographics and quality of life (N = 82).

Variable	n (%) / M ± SD	Psychological domain (M ± SD)	Physical domain (M ± SD)	Social relationships domain (M ± SD)	Environment domain (M ± SD)	Total QoL score (M ± SD)
Sex						
Male	40 (48.8)	17.6 ± 2.2	21.2 ± 2.3	10.8 ± 1.5	26.1 ± 2.7	79.0 ± 5.5
Female	42 (51.2)	16.4 ± 2.7	21.6 ± 2.9	10.5 ± 1.7	25.6 ± 2.5	77.3 ± 5.8
t / P		0.031*	0.473	0.321	0.383	0.181
Age (years)	58.2 ± 2.4 (③ > ②, ①)					
① < 44	26 (31.7)	17.4 ± 2.2	20.5 ± 2.1	10.6 ± 1.5	25.4 ± 2.2	76.9 ± 4.7
② 45–64	25 (30.5)	16.8 ± 2.8	21.5 ± 2.8	10.6 ± 1.6	25.7 ± 2.9	78.0 ± 6.5
③ ≥ 65	31 (37.8)	16.7 ± 2.8	22.0 ± 2.8	10.7 ± 1.7	26.3 ± 2.7	79.2 ± 5.7
F / P		0.587	0.045*	0.698	0.427	0.221
Education level						
Under junior high school	51 (62.2)	17.0 ± 2.7	21.6 ± 2.8	10.7 ± 1.7	26.2 ± 2.8	78.9 ± 6.3
High school (vocational)	16 (19.5)	17.4 ± 2.2	21.0 ± 2.3	10.4 ± 1.5	24.8 ± 1.9	76.7 ± 3.5
Junior college or above	15 (18.3)	16.3 ± 2.1	21.1 ± 2.5	10.7 ± 1.3	25.7 ± 2.4	76.9 ± 5.3
F / P		0.533	0.458	0.809	0.315	0.145
Religious belief						
No	18 (22.0)	17.2 ± 2.8	20.7 ± 1.8	10.1 ± 1.2	24.8 ± 2.7	76.2 ± 6.1
Yes	64 (78.0)	16.9 ± 2.5	21.6 ± 2.8	10.8 ± 1.7	26.1 ± 2.5	78.6 ± 5.5
t / P		0.741	0.349	0.062	0.197	0.120
Currently working						
Yes	26 (31.7)	16.5 ± 2.3	21.0 ± 2.4	10.4 ± 1.7	25.7 ± 2.2	76.6 ± 4.7
No	56 (68.3)	17.1 ± 2.6	21.6 ± 2.7	10.8 ± 1.5	25.9 ± 2.8	78.8 ± 6.0

t / P		0.284	0.318	0.387	0.700	0.103
Economic status						
① Well	12 (14.6)	16.0 ± 1.6	20.8 ± 2.0	10.6 ± 1.3	25.5 ± 2.3	76.3 ± 4.0
② Enough	52 (63.4)	17.1 ± 2.5	21.7 ± 2.8	10.6 ± 1.6	26.0 ± 2.5	78.4 ± 5.9
③ Inadequate	18 (22.0)	17.2 ± 3.0	20.9 ± 2.3	10.9 ± 1.7	25.6 ± 3.2	78.3 ± 6.1
F / P		0.264	0.981	0.555	0.949	0.396
Marital status						
Single/Divorced/Widowed	43 (52.4)	17.0 ± 2.7	21.4 ± 2.6	10.4 ± 1.6	26.1 ± 2.6	78.3 ± 5.5
Married	39 (47.6)	16.9 ± 2.4	21.3 ± 2.6	10.9 ± 1.6	25.5 ± 2.6	77.8 ± 5.9
t / P		0.957	0.853	0.173	0.314	0.691
Number of children						
0	15 (18.3)	16.3 ± 2.1	21.1 ± 2.5	10.7 ± 1.3	25.7 ± 2.4	76.9 ± 5.3
≤ 2	36 (43.9)	16.6 ± 2.6	21.3 ± 2.6	10.8 ± 1.7	25.6 ± 3.0	77.9 ± 6.4
> 2	31 (37.8)	17.6 ± 2.6	21.6 ± 2.8	10.5 ± 1.5	26.1 ± 2.2	78.4 ± 5.1
F / P		0.069	0.575	0.544	0.602	0.267
History of mental illness						
No	6 (7.3)	18.0 ± 1.9	23.0 ± 2.8	11.3 ± 0.8	26.0 ± 4.0	82.8 ± 5.3
Yes	76 (92.7)	16.9 ± 2.5	21.3 ± 2.6	10.6 ± 1.6	25.8 ± 2.5	77.7 ± 5.6
t / P		0.158	0.113	0.316	0.523	0.015*

*QOL = quality of life; SD = standard deviation; P < .05.

Perceived stress, coping strategies, and QOL score analysis

The average perceived stress score among patients was 61.1 ± 3.5, and overall coping strategy scores ranged from 96 to 173. Emotional coping behaviors were used more frequently than problem-focused strategies. QOL scores fell between 62 and 94, with a mean total QOL score of 78.1 ± 5.7. Ranking QOL domains from highest to lowest yielded: physical health, environment, psychological health, and social relationships **(Table 2)**.

Table 2. Perceived stress, coping strategies, and quality of life score analysis (N = 82).

Instrument / Domain	Possible score range	SD	Mean	Standardized score*	Rank
Perceived stress	54–69	3.5	61.1	—	—
Coping strategies (total)	96–173	14.2	126.2	—	—
├ Emotional-focused	70–135	11.1	96.4	77.1	1
└ Problem-focused	16–42	7.7	29.8	39.7	2
Quality of life (total)	62–94	5.7	78.1	—	—
├ Physical / Physiological domain	17–28	2.6	21.4	61.1	1
├ Environmental domain	18–32	2.6	25.8	57.3	2
├ Psychological / Mental domain	12–22	2.5	16.9	56.3	3
└ Social relationships domain	6–14	1.6	10.6	53.0	4

SD = standard deviation; standardized score = (mean × 100) / total domain score.

Relationship between perceived stress, coping strategies, and QOL

Perceived stress showed a significant negative relationship with total QOL (r = −.252, P < .05), indicating that greater stress was associated with poorer QOL **(Table 3)**. Neither

emotional nor problem-based coping strategies—nor total coping use—had any meaningful association with QOL.

Table 3. Relationship between perceived stress, coping strategies, and quality of life.

Variable	Emotional-focused coping (r)	Perceived stress (r)	Problem-focused coping (r)	Total coping strategies (r)
Physical / Physiological domain	−.017	−.009	0.025	−.004
Psychological / Mental domain	0.035	−.108	−.025	0.021
Environmental domain	−.033	−.102	0.050	−.007
Social relationships domain	−.039	−.038	0.062	−.007
Total Quality of Life	0.123	−.252*	0.098	0.071

*QOL = quality of life; P < .05.

Factors influencing quality of life in patients with esophageal corrosive injuries

To identify predictors of QOL in patients with esophageal corrosive damage, chi-square procedures and Pearson correlations were conducted. Variables selected for further analysis included history of mental illness and perceived stress level, based on the assumption that both could affect QOL. Multiple linear regression showed that a history of mental illness was a significant determinant of overall QOL, accounting for 20.1% of the variance **(Table 4)**.

Table 4. Multiple regression analysis results on the overall quality of life of patients with corrosive gastrointestinal injury.

Variable	Standard error	β	*t*	R^2	Adjust R^2	*F*	*B*
Perceived Stress	0.22	−0.14	−1.26	0.019	0.007	1.59	−2.82
Mental illness	6.81	−0.46	−4.62*	0.211	0.201	21.33	−31.43

P < .05.

The findings indicate that QOL in patients with corrosive gastrointestinal injury is influenced by both perceived stress and the presence of a mental illness history, with the latter explaining 20.1% of total QOL variation. The mean QOL score of 78.1 ± 5.7 was higher than the value reported by Anand *et al.* [17]. despite using the same assessment tool. This discrepancy may stem from differences in timing and patient circumstances: the present study evaluated individuals during acute inpatient care, when symptom control tends to dominate attention, possibly minimizing awareness of QOL. Anand *et al.* [17]. evaluated individuals more than six months after injury during outpatient follow-up, when patients had already returned to routine living, which may alter QOL perceptions.

In this study, social relationship QOL scores were the lowest, followed by psychological health, environmental quality, and physical health. This pattern suggests heightened concerns about social reintegration and emotional well-being during hospitalization. Anand *et al.* [17]. observed a comparable trend among patients undergoing endoscopic dilation for corrosive esophageal strictures. By contrast, findings by Ohkura *et al.* [18]. differed, likely due to their focus on a cancer population, where declines in psychological QOL are more common.

The study revealed that individuals suffering from corrosive-related gastrointestinal damage frequently reported significant pain and physical discomfort. Additionally, lesions around the lips and chin altered facial appearance, further diminishing their QOL within the social-relations domain. Other complications—including swallowing difficulties due to treatment and loss of appetite—contributed to functional decline and impaired social interaction [19–21]. Caring for these patients is also challenging, so clinicians generally employ supportive management. Because treating corrosive gastrointestinal injury is complex, prevention is emphasized; items containing strong acids or alkalis should be clearly labeled, kept in their original packaging, and stored securely. For patients living with mental illness, physicians should assist with medication monitoring and reinforce family support [8]. Consequently, appropriate interventions during both treatment and recovery help enhance functional capacity, reduce accidental or deliberate ingestion, and improve social connectedness.

In this study, female participants outnumbered males, and the mean age was 58.2 ± 2.4 years. No major differences appeared in baseline characteristics or overall QOL between groups. Patients with a history of psychiatric illness, however, scored lower on global QOL and perceived stress than those without such a history. As previously noted, overall QOL and perceived stress displayed a marked negative association [18, 20, 22, 23]. Prior research has indicated that several sociodemographic variables may influence QOL in patients with corrosive gastrointestinal damage. Here, a notable sex difference was detected in psychological QOL, with male patients showing higher scores than females. Unlike earlier

publications, comparable patterns were not described. These distinctions may reflect male behavioral traits, personality, or social expectations. Men might adjust psychologically more effectively to this type of illness, creating a sex-specific gap. Clinicians should therefore tailor treatment and rehabilitation based on the individual's condition and needs. Bilal *et al.* [24] reported that treatment modality, marital condition, occupation, and age influenced QOL, while another study found family finances and marital status also played roles [25]. A patient's motivation, family involvement, and medical support strongly shape outcomes. Healthcare teams should encourage patients to plan for care needs and emphasize adjustments required after medical or surgical management [26], ultimately improving physical recovery and psychological burden.

The mean perceived-stress score for patients with corrosive gastrointestinal injury in this study was 61.1 ± 3.5, reflecting substantial stress. Earlier studies have not thoroughly examined stress in this specific population. Ohkura *et al.* [18] evaluated individuals with esophageal cancer, and Anand *et al.* [17] found that those undergoing endoscopic dilation for corrosive-induced esophageal strictures experienced significant psychological distress. Combined, these findings suggest that intentional or accidental ingestion of corrosive liquids triggers considerable emotional strain. When hoarseness or stridor develops, involvement of the throat or epiglottis is possible. Aspiration pneumonia may cause esophageal and gastrointestinal mucosal bleeding, eventually resulting in strictures. These patients also face an elevated risk of esophageal cancer. In critical situations, necrosis or perforation may arise, demanding surgery or rehospitalization [9]. Nurses should therefore evaluate stress sources before admission, eliminate modifiable stressors, and connect patients with social resources to address physical and financial strain. Interventions such as referrals to hospital social workers or access to subsidy programs can help lessen stress and enhance QOL.

With respect to coping patterns, prior work indicates that patients mainly rely on emotion-focused strategies. According to Lazarus and Folkman's coping theory [27], emotion-centered approaches are common when problems cannot be changed, while problem-focused methods apply when modification is possible. Although corrosive gastrointestinal injury requires extended monitoring and treatment, adequate management of complications can slow clinical deterioration and reduce risks [28]. Nurses should help patients express emotions, apply adaptive coping methods, resolve modifiable problems, and prepare for future needs.

Because this investigation captures QOL at a single time point, changes over time remain unclear. Constraints in staffing and time led to the use of a cross-sectional design; thus, long-term studies are recommended. Furthermore, the key factors noted here warrant more in-depth exploration. Future QOL assessments should also incorporate patients' inner perceptions and thoughts, which may reveal additional determinants.

The findings suggest that the likelihood of developing psychiatric disorders can be estimated with reasonable precision using the clinical variables examined. As such, these preliminary results hold potential value for future patient care and for strengthening clinical datasets relevant to psychological recovery.

Overall, mental illness and perceived stress showed significant relationships with QOL in patients with corrosive injuries. Nursing staff should continuously monitor related symptoms, consider individual variation, and provide active interventions and health education to mitigate negative outcomes. Families and primary caregivers can also be taught effective care strategies. During acute hospitalization, special attention should be paid to the burden of frequent treatments and to patient needs, with referrals or community resources provided when appropriate to support coping and improve QOL. In addition to instruction in corrosive-injury care, clinical education should include material on symptom-distress assessment, evidence-based interventions, and psychosocial management.

This study has limitations. Few reports exist on QOL among patients with corrosive injuries, and the single-center design with a relatively small sample restricts generalizability. Larger external validation or multicenter international studies are required to confirm these findings. Additionally, several variables possibly associated with psychological distress during corrosive-injury treatment could not be fully controlled. Despite this, the results indicate that psychological distress risk can be estimated with acceptable accuracy using the clinical indicators examined. Prospectively collecting data through this model could ultimately support improved psychological care for patients undergoing treatment for corrosive injury.

Acknowledgments: The authors would like to thank the participants who completed the intervention.

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Chirica M, Bonavina L, Kelly MD, Sarfati E, Cattan P, Munoz-Bongrand N. Caustic ingestion. Lancet. 2017;389(10083):2041–52.

2. Mahawongkajit P, Tomtitchong P, Boochangkool N, Chansriwong P, Kachintorn U, Akaraviputh T. Risk factors for esophageal stricture in grade 2b and 3a corrosive esophageal injuries. J Gastrointest Surg. 2018;22(10):1659–64.
3. Mahawongkajit P, Tomtitchong P, Boochangkool N, Chansriwong P, Kachintorn U, Akaraviputh T. A prospective randomized controlled trial of omeprazole for preventing esophageal stricture in grade 2b and 3a corrosive esophageal injuries. Surg Endosc. 2021;35(6):2759–64.
4. Havanond C. Clinical features of corrosive ingestion. J Med Assoc Thai. 2003;86(9):918–24.
5. Hoffman RS, Burns MM, Gosselin S. Ingestion of caustic substances. N Engl J Med. 2020;382(18):1739–48.
6. Uygun I, Bayram S. Corrosive ingestion management in children. Esophagus. 2020;17(4):365–75.
7. Ministry of Health and Welfare (Taiwan). Statistical analysis of death, 2021. Taipei: Ministry of Health and Welfare; 2022. Available from: http://www.doh.gov.tw/statistic/data/
8. Liang Y, Huang X, Wu P, Lin Y, Chen J, Wang Z. Respiratory care experience for a patient with severe airway injury caused by ingestion of caustic alkali agent. J Respir Ther. 2015;14(1):53.
9. Jacobs JR, John W. Symptom overview and quality of life. In: The Esophagus. 2nd ed. Cham: Springer; 2021. p. 1–17.
10. Chang TH, Hsieh CM, Wu CT, Chen YL, Lin LM, Chen YK. Management of chemical injury in the oral cavity and esophageal tract: a case report. Taiwan J Oral Maxillofac Surg. 2013;24(3):134–42.
11. Faron M, Corte H, Poghosyan T, Cattan P, Munoz-Bongrand N, Sarfati E. Quality of life after caustic ingestion. Ann Surg. 2021;274(5):e529–34.
12. Abdel Jalil AA, Katzka DA, Castell DO. Approach to the patient with dysphagia. Am J Med. 2015;128(10):1138.e17–1138.e23.
13. Aziz Q, Fass R, Gyawali CP, Miwa H, Pandolfino JE, Zerbib F. Esophageal disorders. Gastroenterology. 2016;150(6):1368–79.
14. Almario CV, Ballal ML, Chey WD, Nordstrom C, Khanna D, Spiegel BMR. Burden of gastrointestinal symptoms in the United States. Am J Gastroenterol. 2018;113(11):1701–10.
15. Cho SY, Choung RS, Saito YA, Schleck CD, Zinsmeister AR, Locke GR. Prevalence and risk factors for dysphagia: a USA community study. Neurogastroenterol Motil. 2015;27(2):212–9.
16. Jalowiec A, Power MJ. Stress and coping in hypertension and emergency room patients. Nurs Res. 1981;30(1):10–5.
17. Anand N, Sharma A, Shah J, Jain A, Gupta S, Bansal A. Quality of life in patients with corrosive esophageal stricture treated with endoscopic dilatation. JGH Open. 2021;5(3):301–6.
18. Ohkura Y, Ichikura K, Shindoh J, Ueno M, Udagawa H, Matsubara H. Relationship between psychological distress and health-related quality of life during treatment of esophageal cancer. Esophagus. 2020;17(3):312–22.
19. Jehn P, Stier R, Tavassol F, Möhlhenrich SC, Dittmann J, Gellrich NC. Physical and psychological impairments associated with mucositis after oral cancer treatment. Oncol Res Treat. 2019;42(6):342–9.
20. Mikkelsen A, Boye B, Diseth TH, Emblem R, Bjørnland K, Nøvik TS. Traumatic stress, mental health, and quality of life in adolescents with esophageal atresia. J Pediatr Surg. 2022;57(7):1423–31.
21. Silva ARP, Bodanezi AV, Chrun ES, Nascimento GG, De-Carli AD, Baldissera EZ. Palliative oral care in terminal cancer patients: an integrative review. World J Clin Cases. 2023;11(13):2966–80.
22. Visacri MB, Ferrari GB, Dias P, Rodrigues A, Mazzola PG, Lima CSP. Quality of life of patients with squamous cell carcinoma of the head and neck receiving high-dose cisplatin chemotherapy and radiotherapy. South Med J. 2015;108(6):343–9.
23. Zeng X, Li L, Wang W, Liu J, Zhang Y, Chen J. Rehabilitation nursing intervention improves dysphagia and quality of life in patients undergoing radiotherapy for esophageal cancer. J Oncol. 2021;2021(1):1–6.
24. Bilal S, Doss JG, Cella D, Rogers SN, Rodrigues J, de Souza JA. Quality of life–associated factors in head and neck cancer patients using FACT-H&N. J Craniomaxillofac Surg. 2015;43(2):274–80.
25. Liao LJ, Hsu WL, Lo WC, Cheng PW, Shueng PW, Hsieh CH. Health-related quality of life and utility in head and neck cancer survivors. BMC Cancer. 2019;19(1):425.
26. Malmstrom M, Klefsgard R, Johansson J, Ivarsson B, Ahlberg K. Patients' experiences of supportive care after oesophageal cancer surgery. Eur J Oncol Nurs. 2013;17(6):856–62.
27. Lazarus RS, Folkman S. Stress, appraisal, and coping. New York: Springer;1984.
28. Stuart GW. Principles and practice of psychiatric nursing. 10th ed. St. Louis (MO): Mosby;2013.