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Original Article

Exploring Self-Negligence and Awareness in Patients with Oral Premalignant and Malignant Conditions: A Comparative Cross-Sectional Study

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ABSTRACT

Background: Oral cancer remains a major public health concern in South Asia, where preventable risk factors, limited awareness, poor oral hygiene, and delayed healthcare-seeking may contribute to disease burden. Objective: This study aimed to assess awareness, self-negligence behaviors, psychosocial impact, treatment adherence, and perceived quality of life among patients diagnosed with oral cancer in Sindh, Pakistan. Methods: This cross-sectional study included 374 oral cancer patients recruited from NIMRA Cancer Hospital, Jamshoro, and the Oral and Maxillofacial Surgery Department, Liaquat University of Medical & Health Sciences, Hyderabad. Data were collected using a structured questionnaire covering sociodemographic characteristics, diagnosis and treatment status, awareness, oral hygiene practices, dental attendance, lifestyle modification, psychosocial impact, treatment adherence, and perceived quality of life. Data were analyzed descriptively using frequencies and percentages. Results: Most participants were male (75.9%), aged 20–59 years (84.8%), married (92.5%), and unemployed (77.3%). All participants had oral cancer and were receiving treatment or follow-up care. Awareness gaps were evident, as 44.7% were unaware of their condition before diagnosis and 68.7% had not received formal education about risk factors. Self-negligence was reflected by rare or absent oral hygiene in 54.0% and symptom-driven dental visits in 46.0%. Lifestyle modification was reported by 89.8%, while 41.4% experienced negative emotional impact. Family support was reported by 99.7%, and 89.0% rated quality of life as good or excellent. Conclusion: Oral cancer patients demonstrated important awareness and preventive-care gaps despite strong post-diagnosis support and behavioral adaptation. Keywords: Oral cancer, awareness, self-negligence, oral hygiene, dental visits, psychosocial impact, quality of life, Pakistan.

INTRODUCTION

Oral cancer is a major public health concern and represents a clinically important subset of head and neck malignancies arising within the oral cavity. Its burden is particularly relevant in South Asia, where tobacco use, smokeless tobacco, betel quid chewing, poor oral hygiene, low awareness of early warning signs, and delayed health-seeking behavior contribute to preventable morbidity and mortality (1–4). Despite advances in surgery, chemotherapy, radiotherapy, and supportive oncology care, patient outcomes remain strongly influenced by the timing of diagnosis, continuity of treatment, and the ability of patients to recognize symptoms and modify risk-related behaviors (5–8). Early detection is therefore

central to improving prognosis, reducing treatment-related disability, and preserving quality of life among affected individuals (6,8).

In Pakistan, oral cancer prevention and early diagnosis remain challenging because many individuals present to healthcare services only after symptoms become functionally or psychologically distressing. This pattern may be shaped by limited formal education about oral cancer risk factors, socioeconomic constraints, normalization of oral lesions or tobacco-related symptoms, inadequate routine dental attendance, and low prioritization of oral hygiene practices (9–13). Self-negligence in this context does not simply refer to personal behavior but reflects a broader interaction between awareness, access to dental care, health literacy, cultural practices, and perceived seriousness of oral symptoms. Poor oral hygiene, irregular dental check-ups, delayed consultation, and failure to modify risk-related habits may collectively increase the likelihood of late clinical presentation and more intensive treatment needs (13–18).

Although previous literature has examined epidemiology, risk factors, screening, and treatment outcomes in oral cancer, fewer local studies have focused on the combined assessment of awareness, self-negligence, psychosocial impact, treatment-related behavior, and perceived quality of life among diagnosed oral cancer patients. This gap is important because clinical management alone may not fully address the behavioral and psychosocial factors that influence prevention, adherence, recovery, and long-term survivorship. Understanding these dimensions in Pakistani patients may help guide community education, dental screening strategies, family-inclusive counseling, and patient-centered supportive care.

Therefore, this study aimed to assess awareness, self-negligence behaviors, psychosocial impact, treatment adherence, and perceived quality of life among patients diagnosed with oral cancer attending tertiary care oncology and oral surgery services in Sindh, Pakistan. The study specifically sought to describe demographic patterns, oral hygiene practices, dental attendance behavior, lifestyle modification after diagnosis, emotional well-being, family support, and treatment-related status among these patients.

MATERIALS AND METHODS

This observational cross-sectional study was conducted at the Nuclear Institute of Medicine and Radiotherapy Cancer Hospital, Jamshoro, and the Oral and Maxillofacial Surgery Department of Liaquat University of Medical & Health Sciences, Hyderabad, Pakistan. The study was carried out over a four-month period after approval from the Research Ethics Committee of Liaquat University of Medical & Health Sciences under reference number LUMHS/REC/-552. The cross-sectional design was selected because the study intended to assess awareness, self-negligence behaviors, psychosocial impact, treatment adherence, and perceived quality of life at a single point in time among patients already diagnosed with oral cancer.

A total of 374 patients diagnosed with oral cancer were enrolled using a non-probability convenience sampling technique. Patients were recruited from the participating hospital settings during the study period after confirmation of eligibility. The study included clinically diagnosed oral cancer patients who were receiving treatment or follow-up care at the selected centers and who provided informed consent for participation. Patients who were unwilling to participate, unable to provide reliable responses because of cognitive impairment, or had documented severe psychiatric or antisocial personality disorders affecting questionnaire participation were excluded. Although the initial study concept included oral premalignant and malignant conditions, the final enrolled sample consisted only of patients with oral cancer; therefore, the analysis and reporting were restricted to oral cancer patients to maintain internal consistency.

Data were collected using a structured questionnaire administered to eligible participants after informed consent. The questionnaire captured sociodemographic variables, diagnosis and treatment characteristics, awareness-related factors, self-negligence behaviors, psychosocial impact, treatment

adherence, and perceived quality of life. Sociodemographic variables included gender, age group, marital status, and occupation. Age was categorized into younger participants, adults aged 20–59 years, and older adults aged 60 years or above, consistent with the final analytic grouping. Diagnosis-related variables included type of oral condition, current treatment status, and treatment modality, including surgery, chemotherapy, radiation therapy, and follow-up care. Awareness and self-negligence were assessed through reported oral hygiene practices, dental check-up behavior, and lifestyle modification after diagnosis, including smoking cessation and dietary modification where applicable. Psychosocial impact was assessed through self-reported emotional well-being and perceived support from family and friends. Treatment adherence and perceived quality of life were recorded using categorical response options ranging from poor to excellent.

To improve data quality, the questionnaire was reviewed before data collection and pilot-tested on approximately 10% of the intended sample to assess clarity, feasibility, and participant comprehension. Data were collected in a standardized manner by the research team, and responses were checked for completeness before entry. Operationally, poor self-care behavior was reflected by never or rarely practicing regular oral hygiene and by attending dental check-ups only when symptoms or oral problems occurred. Lifestyle modification was defined as patient-reported adoption of risk-reduction behaviors after diagnosis, including cessation or reduction of harmful habits and dietary modification. Psychosocial impact was operationalized through perceived emotional effect of the oral condition and perceived support from family or friends.

The sample size was determined using a 95% confidence level and 5% margin of error, based on previously reported awareness-related estimates in oral cancer literature and regional data. Statistical analysis was performed using IBM SPSS version 22.0. Categorical variables were summarized as frequencies and percentages. The final analysis was descriptive because the available aggregated data did not include cross-tabulated subgroup counts required for valid inferential testing. Where subgroup-level raw data are available in future analysis, chi-square tests may be used to examine associations between awareness or self-negligence indicators and sociodemographic factors such as gender, age group, marital status, and occupation, with statistical significance set at $p \leq 0.05$. No p-values, confidence intervals, or effect estimates were reported unless directly supported by analyzable data. Ethical approval was obtained before the start of data collection, and all procedures followed the ethical principles of the Declaration of Helsinki. Written informed consent was obtained from all participants. Confidentiality of participant information was maintained during data collection, entry, and analysis, and data were handled only for research purposes.

RESULTS

A total of 374 patients with oral cancer were included in the analysis. Most participants were male (75.9%, n=284), while females represented 24.1% (n=90). The largest age group was 20–59 years (84.8%, n=317), followed by older adults aged 60 years or above (14.7%, n=55), while only two participants were below 20 years of age. Most patients were married (92.5%, n=346), and unemployment was common, affecting 77.3% (n=289) of the study population.

Table 1. Demographic Characteristics of Oral Cancer Patients

Variable	Category	Frequency (n)	Percentage (%)	p-value
Gender	Male	284	75.9	—
	Female	90	24.1	—
Age group	<20 years	2	0.5	—
	20–59 years	317	84.8	—
	≥60 years	55	14.7	—
Marital status	Married	346	92.5	—
	Unmarried	28	7.5	—
Occupation	Employed	85	22.7	—
	Unemployed	289	77.3	—

All participants were diagnosed with oral cancer, and no cases of leukoplakia or erythroplakia were present in the final sample. All patients were receiving treatment or follow-up care. Follow-up care was the most frequently reported treatment-related status (37.7%, n=141), followed by chemotherapy (25.7%, n=96), surgery (20.3%, n=76), and radiation therapy (16.3%, n=61).

Table 2. Diagnosis and Treatment Characteristics

Variable	Category	Frequency (n)	Percentage (%)	p-value
Type of oral condition	Leukoplakia	0	0.0	—
	Erythroplakia	0	0.0	—
	Oral cancer	374	100.0	—
Current treatment status	Yes	374	100.0	—
	No	0	0.0	—
Treatment modality/status	Surgery	76	20.3	—
	Chemotherapy	96	25.7	—
	Radiation therapy	61	16.3	—
	Follow-up care	141	37.7	—

Awareness-related findings showed that 55.3% (n=207) of patients were aware of their oral condition before diagnosis, whereas 44.7% (n=167) were not aware. Knowledge of risk factors was variable: 39.4% (n=147) reported poor knowledge, 21.7% (n=81) reported fair knowledge, and 39.0% (n=146) reported good knowledge. Formal education regarding oral cancer risk factors was limited, as 68.7% (n=257) had not received formal education, while only 31.3% (n=117) reported receiving such information.

Table 3. Awareness and Knowledge Regarding Oral Cancer

Variable	Category	Frequency (n)	Percentage (%)	p-value
Awareness of oral condition before diagnosis	Yes	207	55.3	—
	No	167	44.7	—
Knowledge of oral cancer risk factors	Poor	147	39.4	—
	Fair	81	21.7	—
	Good	146	39.0	—
Formal education about oral cancer risk factors	Yes	117	31.3	—
	No	257	68.7	—

Self-negligence indicators showed that 43.9% (n=164) of patients rarely practiced regular oral hygiene, while 10.1% (n=38) never practiced regular brushing or flossing. Only 46.0% (n=172) reported always maintaining oral hygiene. Dental check-up behavior also suggested delayed care-seeking: 46.0% (n=172) visited a dentist only when experiencing oral problems, while 31.0% (n=116) reported regular dental check-ups. Post-diagnosis lifestyle modification was common, with 89.8% (n=336) reporting behavioral changes such as smoking cessation or dietary modification.

Table 4. Self-Negligence and Health-Related Behaviors

Variable	Category	Frequency (n)	Percentage (%)	p-value
Regular oral hygiene practice	Never	38	10.1	—
	Rarely	164	43.9	—
	Always	172	46.0	—
Dental check-up behavior	Yes/occasional	55	14.7	—
	No	31	8.3	—
	Regularly	116	31.0	—
	Only when experiencing issues	172	46.0	—
Lifestyle modification after diagnosis	Yes	336	89.8	—
	No	19	5.1	—
	Not applicable	19	5.1	—

Regarding psychosocial impact, 41.4% (n=155) reported that oral cancer negatively affected their emotional well-being, while 47.1% (n=176) reported a positive emotional effect and 11.5% (n=43) reported no noticeable impact. Nearly all participants reported family or friend support in managing their condition (99.7%, n=373), with only one participant reporting no support.

Table 5. Psychosocial Impact of Oral Cancer

Variable	Category	Frequency (n)	Percentage (%)	p-value
Effect on emotional well-being	Negative	155	41.4	—
	Positive	176	47.1	—
	No noticeable impact	43	11.5	—
Support from family and friends	Yes	373	99.7	—
	No	1	0.3	—

Treatment adherence and perceived quality of life were generally favorable. Most participants rated treatment adherence as good (54.0%, n=202) or excellent (39.0%, n=146), while only 1.6% (n=6) rated it as poor. Perceived quality of life followed a similar pattern, with 49.2% (n=184) reporting good and 39.8% (n=149) reporting excellent quality of life, although 10.9% collectively reported poor or fair quality of life.

Table 6. Treatment Adherence and Perceived Quality of Life

Variable	Category	Frequency (n)	Percentage (%)	p-value
Treatment adherence	Poor	6	1.6	—
	Fair	20	5.3	—
	Good	202	54.0	—
	Excellent	146	39.0	—
Perceived quality of life	Poor	14	3.7	—
	Fair	27	7.2	—
	Good	184	49.2	—
	Excellent	149	39.8	—

Inferential statistics were not reported because the available results were aggregated frequencies only and did not include subgroup cross-tabulations required for valid chi-square testing, odds ratios, confidence intervals, or effect-size estimation.

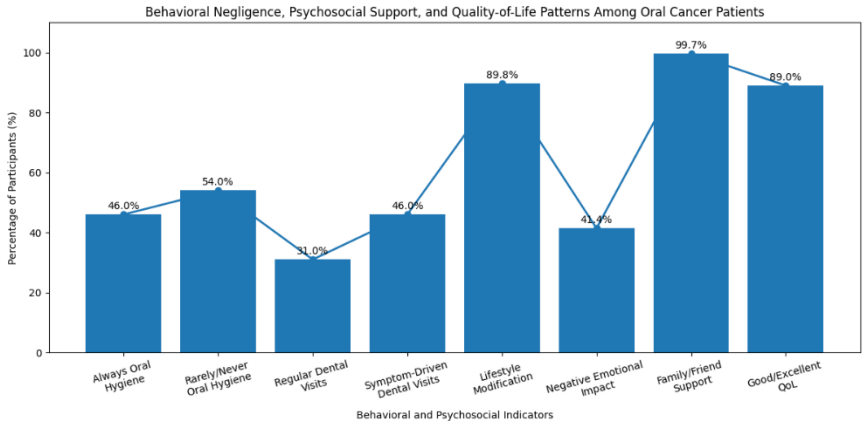

Figure 1 Behavioral Negligence, Psychosocial Support, and Quality-of-Life Patterns Among Oral Cancer Patients

The integrated behavioral and psychosocial profile demonstrated substantial variability across preventive practices and survivorship-related indicators. Poor oral self-care remained common, with 54.0% of participants reporting rare or absent routine oral hygiene practices, while only 31.0% attended regular dental check-ups. Symptom-driven healthcare-seeking behavior was observed in 46.0% of patients, suggesting delayed preventive engagement prior to diagnosis. Despite these self-negligence patterns, post-diagnosis behavioral adaptation was notably high, as 89.8% reported lifestyle modifications such as smoking cessation or dietary changes. Psychosocial findings revealed that 41.4% experienced negative emotional impact from oral cancer; however, perceived family and social support was exceptionally strong (99.7%), potentially contributing to the favorable treatment adherence and quality-of-life ratings observed in the cohort. Overall, 89.0% of participants rated their quality of life as good or excellent, indicating that although preventive awareness and early healthcare utilization were suboptimal, strong social support and post-diagnosis behavioral adjustment may positively influence survivorship outcomes in oral cancer patients.

DISCUSSION

This cross-sectional study assessed awareness, self-negligence, psychosocial impact, treatment adherence, and perceived quality of life among 374 patients diagnosed with oral cancer in tertiary care settings in Sindh, Pakistan. The findings show that the study population was predominantly male, married, unemployed, and within the adult age range of 20–59 years. These demographic patterns are consistent with regional literature showing that oral cancer in South Asia is strongly shaped by behavioral, socioeconomic, and healthcare-access factors, particularly among working-age men exposed to preventable risk factors such as tobacco, smokeless tobacco, betel quid, and poor oral hygiene (2,10–13). The high proportion of unemployed participants is clinically relevant because financial vulnerability may reduce preventive dental attendance, delay consultation, and limit access to continuous supportive care, although this study did not directly measure income or diagnostic delay.

A major finding of this study was the presence of substantial awareness gaps among diagnosed oral cancer patients. Although 55.3% of participants reported awareness of their oral condition before diagnosis, 44.7% were unaware, and 68.7% had not received formal education about oral cancer risk factors. This supports previous evidence that oral cancer awareness remains insufficient in high-risk populations and that many patients lack adequate knowledge of early warning signs and modifiable risk factors (25,26,33). These findings are particularly important in Pakistan, where smokeless tobacco and betel-related products are widely used and where structured oral cancer education and screening programs remain limited (12,25,29). The results indicate that public health interventions should not be restricted to clinical treatment but should also include community-level education, risk-factor counseling, and routine oral screening.

Self-negligence was evident through irregular oral hygiene and symptom-driven dental attendance. More than half of participants either rarely or never practiced routine oral hygiene, while only 31.0% attended regular dental check-ups. Nearly half visited dental services only when symptoms appeared. These behaviors are consistent with previous reports linking poor oral hygiene and delayed oral examination with increased oral cancer risk and advanced clinical burden (13,18,28). However, the present findings should be interpreted descriptively because the study did not include cancer stage, lesion duration, or diagnostic interval data. Therefore, although poor oral self-care and symptom-driven visits suggest missed opportunities for early detection, direct conclusions about late-stage presentation cannot be made from the available data.

An encouraging finding was the high rate of lifestyle modification after diagnosis, with 89.8% of participants reporting behavioral changes such as smoking cessation or dietary modification. This suggests that patients may become more receptive to health education after diagnosis and during treatment. Similar behavior-change patterns have been reported in cancer populations where diagnosis creates a strong motivational window for risk reduction and adherence to medical advice (17,20). This finding highlights the value of integrating structured counseling into oncology and dental care pathways, particularly for tobacco cessation, nutrition, oral hygiene, and follow-up compliance.

The psychosocial results showed a mixed emotional response. While 41.4% reported negative emotional impact, nearly all participants reported support from family and friends. This finding reflects the dual nature of oral cancer survivorship: patients may experience emotional distress related to diagnosis, treatment, function, appearance, pain, or fear of recurrence, while family systems may simultaneously provide emotional and practical support (14,22–24). The high level of perceived support is clinically important because social support has been associated with better coping, adherence, and quality-of-life outcomes in cancer care (16,24). Nevertheless, the proportion reporting negative emotional impact indicates that psychosocial screening and counseling should be embedded into routine oral cancer management.

Treatment adherence and perceived quality of life were generally favorable, with most participants rating adherence and quality of life as good or excellent. These findings may reflect active engagement with treatment services, strong family support, and post-diagnosis lifestyle modification. However, self-reported adherence and quality of life may be affected by social desirability bias, cultural stoicism, or gratitude toward healthcare providers. Future studies should include validated quality-of-life instruments, treatment adherence scales, psychological distress measures, and subgroup analysis by treatment modality, cancer stage, and socioeconomic status.

This study has several limitations. Its cross-sectional design prevents causal interpretation, and the use of convenience sampling limits generalizability. The final sample included only oral cancer patients, although the initial concept included premalignant conditions; therefore, comparison between premalignant and malignant conditions was not possible. The absence of staging data, lesion duration, diagnostic delay, tobacco exposure categories, and subgroup cross-tabulations limited inferential analysis. Despite these limitations, the study provides useful descriptive evidence regarding awareness gaps, self-negligence behaviors, psychosocial needs, and post-diagnosis behavioral adaptation among oral cancer patients in a high-burden Pakistani setting.

CONCLUSION

This study found that oral cancer patients in tertiary care settings in Sindh, Pakistan, had substantial awareness gaps and self-negligence behaviors, including limited formal education about oral cancer risk factors, irregular oral hygiene, and symptom-driven dental attendance. Although post-diagnosis lifestyle modification, perceived family support, treatment adherence, and self-rated quality of life were generally favorable, a considerable proportion of patients reported negative emotional impact. These findings support the need for community-based oral cancer education, routine dental screening, tobacco-risk counseling, psychosocial support, and family-inclusive survivorship care to improve early recognition, preventive behavior, and patient-centered outcomes.

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