Early Detection of Oral Cancer Through Dental Practice in Jazan Region of Saudi Arabia

VALORIZATION ADDENDUM

Valorization addendum

Relevance

Oral cancer carries a heavy burden for individuals' oral, systemic, emotional, and social health, leading to a high overall cost related to the disease [1]. The survival rate of oral cancer is no more than five years in the best situations [2]. The high mortality rate of oral cancer is because it is frequently detected at a late stage, which is associated with poor prognosis and has a negative effect on the survival rate [3]. In Saudi Arabia, the Jazan region has the highest rate of oral cancer cases in the country – 35% [4].

Evidence has shown that the early detection of oral cancer is associated with a better prognosis for the disease [5-9]. Therefore, it is imperative to control the disease by enacting the best prevention and control interventions. Examinations for oral cancer have been found to be the ultimate strategy for detecting the disease at its early stage [10]. Oral health providers are on the frontline in terms of oral cancer examinations. Therefore, their knowledge, awareness, beliefs, and practices toward oral cancer examination are crucial for the early detection of the disease. Dental schools are the settings where future dentists learn and practice their profession. Furthermore, the majority of Jazan's population receive treatments at Jazan dental school clinics. For this reason, Jazan Dental School (JDS) is the major setting and the main oral health provider where dentists' oral cancer practices can be investigated and clinically observed.

The findings of this dissertation are highly relevant for dentists, dental schools, educational researchers, and policymakers. It draws attention to the gap between knowledge and practice of oral cancer examinations and the possible determinants associated with dentists' behavior towards oral cancer examination practices from different perspectives. In addition, the findings offer insights into ISAC's core components for the active enactment of oral cancer examination practices among dentists, using the Intervention Mapping (IM) approach. Furthermore, the insights gained in this dissertation are highly relevant for other regions that share similar oral cancer issues, such as Yemen and Sudan [11-13].

Target groups

This dissertation's findings are relevant for dentists, patients, dental schools/organizations and policymakers. For dentists, it reveals dentists' health-risk behaviors associated with oral cancer practices, possible explanations and determinants for their behaviors, the hardships that dentists usually encounter as obstacles to performing oral cancer examination practices, and how to overcome these barriers. Furthermore, it describes what evidence-based methods and tools can be used to implement oral cancer examination practices. This dissertation thoroughly describes ISAC intervention protocols and its implementation plan to engage dentists actively in the early detection of oral cancer. Furthermore, it shows that patients are supportive and in favor of being examined and

educated about oral cancer, regardless of the gender of the dentist/patient. Therefore, dentists can use the knowledge generated from this dissertation in their routine dental examination practices to contribute towards reducing the morbidity and mortality rate of oral cancer in the region of Jazan and others.

For patients, it could be useful to know that dentists share positive beliefs towards oral cancer examination practices. Patients can use the knowledge generated from this thesis to learn and ask their dentists about oral cancer and self-examinations. For dental schools and organizations, this dissertation has revealed that the prevailing norm in the institute could have a great impact on dental students' behavior. Therefore, dental schools should emphasize developing and maintaining positive and supporting norms toward oral cancer examination practices. It has demonstrated that JDS dental curriculums were not focusing on local issues related to oral cancer in the region. Indeed, dental schools must stress local oral health issues and needs in educational courses. Furthermore, it is very important to ensure that dental students are acquainted with evidence-based knowledge and meticulous training on oral cancer examination practices, as became evident in this dissertation, since experience, efficacy and skills are major determinants observed among dentists.

For policymakers, it would be interesting to know that patients who participated in the dissertation highlighted the need for oral cancer education programs that include oral cancer self-examination training. Quantity over quality in terms of treatments is frequently observed among dentists' passive behavior toward oral cancer examination. Policymakers can use the knowledge generated in this dissertation to emphasize the need to implement oral cancer practices in the current clinical guidelines. The knowledge generated from this dissertation carries valuable information for the Saudi Ministry of Health, the Saudi Oncology Society, the Saudi Dental Association, and others.

Products and Activities

The central product of this dissertation is ISAC. ISAC aimed for comprehensive oral cancer dental practices by dental interns as the target group and will be implemented by Community Dentistry Division members at JDS. ISAC is an acronym of I=Inform, S=Screen, A=Advise, and C= connect. The ISAC intervention was developed using iterative steps of the IM approach, which included a thorough needs assessment, selecting important determinants and risk behaviors, identifying theory and evidence-based change methods and practical applications. The components of the ISAC intervention were derived from scientific evidence, international guidelines for oral cancer, practical feasibility and the setting features of dental clinics. The ISAC intervention comprises two main components: didactical and practical. The information about each component is covered in the ISAC protocol (Chapter 7).

The results of the first two studies (Chapters 2 and 3) in the dissertation were presented at the International Conference on Oral Cancer that was held at Jazan University, in 2017. The conference involved panels of experts and prominent international figures specialized in oral cancer and related medical fields, and was publicized by means of a press release and media coverage under the support of the Prince of the Jazan region.

Innovation

To the best of our knowledge, this is the first study that integrated dentists (students, interns, faculties), stakeholders and dental patients to develop an evidence-based clinical dental policy, to improve the early detection of oral cancer in the Jazan region. Most dental training programs in Saudi Arabia are focused on dental students' knowledge and skills for treating patient's chief dental complaints. An important realm that is often disregarded is the dentists' practice of oral cancer examinations, including their efficacy beliefs, capabilities as well as facilitators and barriers. These factors are incorporated and underlined in the ISAC intervention, including the most suitable evidence-based methods to enhance these factors. Another innovative aspect in this dissertation lies the two studies, which explored and assessed dental patients' perceptions regarding dentists' practice of oral cancer examinations and patient education. Patient beliefs constitute a valuable assessment for dentists' behavior in a clinical setting. Furthermore, this type of work also highlights areas that may not have been previously observable by researchers.

References

1. Epstein JB, Güneri P, Barasch A. Appropriate and necessary oral care for people with cancer: guidance to obtain the right oral and dental care at the right time. Support Care Cancer. 2014;22(7):1981-8.
2. Cleveland JL, Thornton-Evans G. Total diagnostic delay in oral cancer may be related to advanced disease stage at diagnosis. J Evid Based Dent Pract. 2012;12(2):84-6.
3. Gomez I, Seoane J, Varela-Centelles P, Diz P, Takkouche B. Is diagnostic delay related to advanced-stage oral cancer? A meta-analysis. Eur J Oral Sci. 2009;117(5):541-6.
4. Allard WF, DeVol EB, Te OB. Smokeless tobacco (Shamma) and oral cancer in Saudi Arabia. Community Dent Oral Epidemiol. 1999;27(6):398-405.
5. Rodrigues PC, Miguel MC, Bagordakis E, Fonseca FP, de Aquino SN, Santos-Silva AR, et al. Clinicopathological prognostic factors of oral tongue squamous cell carcinoma: a retrospective study of 202 cases. Int J Oral Maxillofac Surg. 2014;43(7):795-801.
6. Rikardsen OG, Bjerkli IH, Uhlin-Hansen L, Hadler-Olsen E, Steigen SE. Clinicopathological characteristics of oral squamous cell carcinoma in Northern Norway: a retrospective study. BMC Oral Health. 2014; 14:103.
7. Monteiro LS, Amaral JB, Vizcaino JR, Lopes CA, Torres FO. A clinical-pathological and survival study of oral squamous cell carcinomas from a population of the North of Portugal. Med Oral Patol Oral Cir Bucal. 2014;19(2):e120-6.
8. Ling W, Mijiti A, Moming A. Survival pattern and prognostic factors of patients with squamous cell carcinoma of the tongue: a retrospective analysis of 210 cases. J Oral Maxillofac Surg. 2013;71(4):775-85.
9. Dissanayaka WL, Pitiyage G, Kumarasiri PV, Liyanage RL, Dias KD, Tilakaratne WM. Clinical and histopathologic parameters in survival of oral squamous cell carcinoma. Oral Surg Oral Med Oral Pathol Oral Radiol 2012;113(4):518-25.
10. Brocklehurst P, Kujan O, Glenny AM, Oliver R, Sloan P, Ogden G, et al. Screening programmes for the early detection and prevention of oral cancer. Cochrane Database Syst Rev. 2010(11): Cd004150.
11. Halboub ES, Abdulhuq M, Al-Mandili A. Oral and pharyngeal cancers in Yemen: a retrospective study. East Mediterr Health J. 2012;18(9):985-91.
12. Warnakulasuriya S. Global epidemiology of oral and oropharyngeal cancer. Oral Oncol. 2009;45(4-5):309-16. doi: 10.1016/j.oraloncology.2008.06.002.
13. Saeed IE, Weng H-Y, Mohamed KH, Mohammed SI. Cancer incidence in Khartoum, Sudan: first results from the Cancer Registry, 2009-2010. Cancer Med. 2014;3(4):1075-84.