Project title: The development of prevention strategy targeting oral potentially malignant disorder

The Association between *DSM-5*-defined Betel-Quid Use Disorder and Oral Malignant Disorder in Taiwan

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Background: Oral neoplasm is the 4th most common type of malignancies among men in Taiwan, and is one of the few neoplasms that can be identified and controlled in its premalignant lesions. Creating screening and preventive strategies for oral potentially malignant disorder (OPMD) may diminish oral neoplasm incident and constrain the prognosis for cancer patients. Betel-quid (BQ) chewing is an important risk factor for oral neoplasm. Studies have demonstrated that BQ contains several psychoactive substances, of those, arecoline has a chemical structure comparable to nicotine.

Objective: This study aims to assess the risk of DSM-5-defined BQ use disorder (BUD) on OPMD and oral squamous cell carcinoma (OSCC) using two series of participants.

Materials and Methods: A hospital-based case-control study was conducted in Taiwan to investigate the research questions. We recruited 50 pathologically verified OPMD and 132 OSCC patients and 214 controls. A questionnaire of DSM-5-based substance use disorder was developed to measure a total of 11 disorder symptom for BQ, tobacco and alcohol use, and other covariates. We also performed an oral examination of OPMD for 200 participants recruited from the community to verify the effect of BUD on OPMD. Participants with 0-1, 2-3, 4-5 and ≥6 symptoms were classified as none, mild, moderate and severe disorder, respectively. Multivariable polytomous logistic regression models were used to assess OPMD risk for BUD, and PCA-related biplot was employed to evaluate the clustering of 11 symptoms of BUD.

Results: In the case-control study, we found that moderate/severe BUD was related to a 16.4-54.6-fold risk of OPMD, and a 9.0-33.5-fold risk of OSCC. In the community-based study, we found that BQ chewers with moderate/severe BUD were at a 12.9-fold higher risk of contracting OPMD.

Conclusion: Our results offered data to demonstrate that DSM-5-defined BUD is a vital factor in the development of community screening program for OPMD.