

The development and assessment of modified fagerstrom test for nicotine dependence scale among Malaysian single electronic cigarette users

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ABSTRACT

Background: The Fagerstrom test for nicotine dependence (FTND) is the most widely used scale for assessing nicotine dependence on conventional tobacco cigarettes (TCGs). But the FTND does not evaluate the subject's nicotine dependence to electronic cigarette (EC). **Objective:** The aim of this study was to develop and assess an equivalent modified FTND scale that measures the nicotine dependency via EC. **Materials and Methods:** The investigator developed the equivalent modified FTND scale that scores identical to the original scale, that is, 0–10. The developed scale piloted among 15 EC single users, that is, use only EC verified by carbon monoxide (CO) level of <8 ppm. The assessment of the scale was done among 69 EC single users and observed for 1 year to determine their nicotine status. **Results:** The modified scale revealed an acceptable Cronbach α value of 0.725. Further test–retest reliability of the scale showed a satisfactory Spearman's rank correlation coefficient value of 0.730 ($P > 0.05$). A 1-year observation showed that of 69 single users, 11 single users completely stopped nicotine intake, 24 remained as EC single users, 15 shifted to dual-use, and 19 relapsed to TCG. Surprisingly, the EC users who completely stopped nicotine intake after 1 year had a low average nicotine dependence value of 3 that was measured by the modified FTND scale at the baseline. **Conclusion:** The modified FTND scale precisely identifies the physical dependence to nicotine via EC. Therefore, as per this study results the modified FTND scale can be applied in any EC-related studies to assess nicotine dependency via EC.

KEYWORDS

Dependence; Electronic cigarette; Nicotine; Scale; Tobacco cigarette

ACKNOWLEDGEMENT

We sincerely thank our participants for joining this study and providing information about electronic cigarettes. This was a self-financed study, and all authors did not receive any funding from any sponsor or organization.