

When and How Do We Identify Smokers Most Likely to Quit With Our Help? A Secondary Analysis of the STOP Trial

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Purpose: Smoking is associated with a number of complications in the care of orthopaedic trauma patients. It is often thought that getting patients to quit is an unsurmountable task. Orthopaedic trauma represents a “teachable moment” to effect change and initiate smoking cessation—but is this at the time of hospitalization or clinic follow-up? Likewise, which patients are most likely to respond to an intervention? The purpose of our study was to determine when and what characteristics are associated with successful smoking cessation. We hypothesized that the ideal time to initiate cessation would be at patients’ index hospitalization.

Methods: A secondary analysis was performed as part of a prospective randomized trial assessing smoking cessation in 271 orthopaedic trauma patients. Participants were assessed at enrollment and at 3 and 6 months following injury for primary outcome. Cessation was chemically confirmed at all time points. Demographics, drinking habits, depression, e-cigarette use, employment, number of cessation programs tried, importance of quitting, confidence in quitting, readiness to quit, and previously described transtheoretical stage of change was recorded. The primary outcome measure was stages of change measured by ACTION and PREPARATION stage. Secondary outcomes included readiness to quit, importance of quitting, and confidence in quitting at each time point as measured by a 10-point Likert scale. Dichotomous variables were assessed using Fisher’s exact test while continuous variables were assessed utilizing t test/logistic regression.

Results: The proportion of patients in a favorable stage of change was highest at index hospitalization (70%) and declined at each subsequent time point (3 months [53%] and 6 months [46%]) ($P < 0.001$). Patients reported increased readiness to quit at hospitalization (7.9 vs 7.0 at 3 months, $P < 0.001$; 7.9 vs 7.1 at 6 months, $P < 0.001$). Confidence to quit was highest at hospitalization (8.2 vs 7.6 at 3 months, $P = 0.01$; and 6 months 8.2 vs 7.5, $P < 0.001$). Being in a favorable stage of change was significantly associated with cessation at all time points ($P = 0.03$, $P = 0.01$). Gender, e-cigarette use, depression, employment, and cessation programs tried were not associated with cessation. Increased age was associated with cessation at 6 months ($P = 0.02$) but no other time points. Hazardous drinking habits were negatively associated with cessation at 6 weeks ($P = 0.02$) but no other time point (2 weeks $P = 0.10$, 3 months $P = 0.06$, 6 months $P = 0.20$). Income above national average was associated with cessation only at 2 weeks ($P = 0.03$).

Conclusion: Hospitalization appears to be the best time to initiate smoking cessation as patients’ readiness to quit and confidence in quitting are at their highest. Likewise, hospitalization is when the proportion of patients in a favorable stage of is highest. This secondary analysis of a prospective trial indicates that perhaps smoking cessation interventions should be initiated during patients’ initial hospitalization to increase the chances of cessation.