



September 2015

Is It a Quit Attempt If It Doesn't Last a Day? Predictors of Serious Quit Attempts of at Least 24 Hours Duration

Many researchers use a definition of quit attempt that requires any attempt at cessation to last longer than 24 hours.^{1,2} This definition has been put into place in order to make a distinction between substantive quit attempts and trivial quit attempts. Previous studies have found that excluding quit attempts that are less than 24 hours in duration reduces the estimates of the number of quit attempts that are taking place in a community. As part of a study of smoking cessation, Shiffman and colleagues³ found that excluding quit attempts lasting less than 24 hours resulted in missing 13% of quit attempts.

Key Message: Excluding quit attempts of less than one day will systematically bias estimates of serious quit attempts.

Using the Tobacco Use Supplement to the US Current Population Survey (TUS-CPS), Hughes and Callas⁴ compared characteristics of those who met the 24 hours definition of a quit attempt with those who used a self-reported definition. They found that using the 24 hour definition would have excluded 17% of quit attempts in the past 12 months, and 6% of lifetime quit attempts. Also, requiring a defined length of abstinence to count as a quit attempt may be systematically biasing results against those who have the greatest difficulty in quitting and who are unable to maintain a quit attempt for more than 24 hours.

We compiled data from 4500 adult smokers from the Ontario Tobacco Survey, a population-representative cohort of smokers in Ontario, Canada. We examined factors associated with making a self-reported quit attempt, comparing those quit attempts with duration of more than 24 hours to those that were less. Guided by social cognitive theory, we chose the following covariates measured at the time point prior to the reported quit attempt: socio demographic characteristics, smoking addiction, quitting history, intentions, beliefs, and social and environmental factors. We examined the bivariate associations with each of the predictors, and then developed a fully adjusted model using Generalized Estimating Equations with a Poisson link. We conducted analysis using Stata 14 accounting for the complex survey design.

Among 2974 quit attempts reported over the period of the study, 11.1% did not last one day. Predictors of quitting for less than 24 hours were higher heaviness of smoking index score, belief that it was hard to quit, belief that it would be hard to refrain from smoking, being a daily smoker, having lower level of education, and older age ($p < 0.05$). In the fully adjusted model, higher levels of addiction, prior pharmaceutical cessation aid use, being a daily smoker and older age were independent predictors of failing to successfully abstain from smoking for 24 hours (Table 1).

Table 1: Factors Associated with 24 Hour Quit Attempts vs. Quit Attempts of Shorter Duration

	Quit Attempt >24 Hours		Quit Attempt <24 Hours	
	%	CI	%	CI
Sex				
Female	45.4	[41.6,49.3]	46.8	[36.9,57.0]
Male	54.6	[50.7,58.4]	53.2	[43.0,63.1]
Age				
18-29	19.4	[16.2,23.1]	15.3	[7.8,27.8]
30-39	17.1	[14.5,20.1]	12.5	[7.1,21.2]
40-49	22.6	[19.6,25.9]	26.0	[18.0,36.0]
50-59	24.0	[20.8,27.5]	23.6	[16.8,32.1]
60-69	9.5	[7.8,11.5]	10.0	[6.7,14.6]
70+	7.4	[5.4,10.1]	12.7	[6.8,22.3]
Marital Status				
Not Married	58.3	[54.4,62.1]	56.2	[45.5,66.4]
Married	41.7	[37.9,45.6]	43.8	[33.6,54.5]
Education				
Less than High School	12.8	[10.7,15.2]	16.3	[11.4,22.9]
Completed High School	31.2	[27.5,35.0]	33.3	[23.7,44.5]
Some College	34.0	[30.5,37.8]	36.6	[27.3,47.1]
Completed College/University	20.5	[17.3,24.1]	12.2	[6.9,20.7]
Refused	1.6	[0.9,2.8]	1.5	[0.4,5.9]
Children in the Home				
None	58.1	[54.2,61.9]	56.8	[46.1,67.0]
One or more	41.9	[38.1,45.8]	43.2	[33.0,53.9]
Perceived Health				
Excellent	11.3	[9.2,13.9]	5.7	[3.1,10.1]
Very Good	29.8	[27.1,32.7]	30.7	[22.6,40.2]
Good	38.5	[35.5,41.6]	31.8	[24.3,40.3]
Fair	15.5	[13.5,17.6]	26.7	[18.5,36.8]
Poor	4.9	[3.9,6.0]	5.2	[3.2,8.2]
Previous Use of Pharmacotherapy				
No	44.3	[40.4,48.3]	39.7	[29.6,50.8]
Yes	55.7	[51.7,59.6]	60.3	[49.2,70.4]

	Quit Attempt >24 Hours		Quit Attempt <24 Hours	
Previous Use of Behavioural Therapy				
No	66.0	[62.0,69.7]	61.6	[51.2,70.9]
Yes	34.0	[30.3,38.0]	38.4	[29.1,48.8]
Previous Quit Attempts				
None	92.2	[89.5,94.2]	90.1	[80.1,95.4]
More than one	7.8	[5.8,10.5]	9.9	[4.6,19.9]
Occasional Smoker				
Daily or almost daily	78.8	[75.7,81.6]	99.6	[98.4,99.9]
Occasional smoker	21.2	[18.4,24.3]	0.4	[0.1,1.6]
Hard to Refrain from Smoking Where It Is Not Allowed				
No	88.6	[86.0,90.8]	70.4	[58.6,80.0]
Yes	11.4	[9.2,14.0]	29.6	[20.0,41.4]
Think It Would Be Hard to Quit				
No	57.7	[53.8,61.6]	29.3	[20.3,40.3]
Yes	42.3	[38.4,46.2]	70.7	[59.7,79.7]
Heaviness of Smoking				
Low/Moderate	68.3	[65.2,71.3]	35.9	[27.8,45.0]
High	31.7	[28.7,34.8]	64.1	[55.0,72.2]

Smokers who described a serious quit attempt but had difficulty abstaining from smoking for 24 hours were systematically different from smokers who were able to abstain for at least 24 hours. Excluding quit attempts of less than one day will systematically bias estimates of serious quit attempts and artificially lower estimates of the number of quit attempts. Many programs and services in Ontario, including the Ontario Tobacco Research Unit report on Data Standards⁵ use a 24 hour definition to count quit attempts). There is no evidence to suggest that the use of the 24 hour criterion is able to identify more serious quit attempts than simple self-report.

Author: Michael Chaiton

References

- ¹ Starr G, Rogers T, Schooley M, Porter S, Wiese, E, & Jamison N. *Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs*. Atlanta, GA: Centers for Disease Control and Prevention, 2005.
- ² Carpenter MJ, & Hughes JR. Defining quit attempts: What difference does a day make? *Addiction* 2005; 100(2): 257–258. <http://doi.org/10.1111/j.1360-0443.2004.00952.x>
- ³ Shiffman S, Brockwell SE, Pillitteri JL, & Gitchell JG. Use of smoking-cessation treatments in the United States. *American Journal of Preventive Medicine* 2008; 34: 102–111.
- ⁴ Hughes JR, & Callas PW. Definition of a quit attempt: A replication test. *Nicotine and Tobacco Research* 2010; 12(11):1176–1179. <http://doi.org/10.1093/ntr/ntq165>.
- ⁵ Diemert L, Keller-Olaman S, Schwartz R, O'Connor S, & Babayan A. *Data Standards for Smoke-Free Ontario Smoking Cessation Service Providers: Core Indicators and Questions for Intake and Follow-up of Adult Respondents*. Toronto, ON: Ontario Tobacco Research Unit, August 2013. Available at: <http://otru.org/data-standards-for-smoke-free-ontario-smoking-cessation-service-providers/>. Accessed on September 29, 2015.