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# Predictors of Smoking Behavior and Readiness to Quit in Addiction Treatment

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## Abstract

**Background:** Prevalence of tobacco use is 3 times higher for those seeking substance abuse treatment than those in the general population. Clinical practice guidelines recommend addressing smoking cessation. This population has more difficulty quitting than the general population. **Methods:** This paper analyzes predictors of smoking behavior and readiness to quit in patients enrolled in addiction treatment programs. Data from six substance abuse treatment centers was collected. A total of 235 clients were surveyed on their smoking attitudes and behaviors. **Results:** Survey data from 139 current smokers was analyzed. In logistic regression analyses predicting readiness to quit smoking, and controlling for cigarettes per day, and demographic variables, smoking attitudes, perceived risk of lung cancer and awareness of FDA tobacco regulations were significant predictors. Only smoking attitude was significant, controlling for demographic variables, when predicting cigarettes per day. There was an inverse relationship with FDA awareness when predicting readiness to quit. Future analyses will be needed to look at FDA awareness and readiness to quit since this was not an expected outcome. **Conclusions:** Smoking attitudes and perceived self-risk for lung cancer were significant predictors of readiness to quit and cigarettes per day. Improving attitudes toward smoking cessation and increasing perceptions about health risks may help programs address quitting in this population.

## Purpose

The purpose of this study was two fold. First, to measure use of alternative tobacco products other than cigarettes. Second, among smokers, to explore predictors of cigarettes per day and readiness to quit. With these findings treatment programs may use these predictors to better address smoking cessation.

## Introduction

This study was conducted to measure the effect NY policies and taxes had on the smoking behaviors, tobacco knowledge, attitudes, and services that were received by clients in addictions treatment.

### Hypotheses:

1. Cigarettes per day (cpd) will be an inverse predictor of readiness to quit.
2. Perceived risk of lung cancer will be a inverse predictor of cigarettes per day.
3. Education will be an inverse predictor of cigarettes per day.

## Methods

Six randomly selected New York programs funded by the state (OASAS):

- 3 residential
- 2 outpatient
- 1 methadone maintenance

### Clients (n=235)

- Eligible clients were in treatment a minimum of 10 days
- Anonymous survey handouts
- Knowledge, attitudes and services in regards to smoking
- \$20 gift card reimbursement for participation

### SKAS Knowledge, Attitude, and Services

- Four factors developed in previous study.
- Survey questions regarding client's knowledge of smoking, attitude towards smoking cessation, and services received from program and clinicians.

### FDA awareness

- The sum of the following 4 items (recoded as correct = 1, incorrect = 0):
- Govt. restrictions on flavorings in tobacco products
- Tobacco companies required to report ingredients to govt.
- Restrictions on what tobacco companies can say about products
- Which agency is responsible for regulating tobacco products

Perceived self-risk of lung cancer was measured on a scale from 0-100%

### Univariate Linear/Logistic Regression

- Analysis for significance was at <.10
- Readiness to quit was chosen and collapsed into a dichotomous variable (0 = > 6 months, 1 = < 6 months).
- SKAS Attitude, CPD, Self-risk for lung cancer, Tobacco marketing, FDA regulations, Program services, Clinician services, Treatment type, age, and education were all analyzed at the univariate level.

### Multiple Linear/Logistic Regression

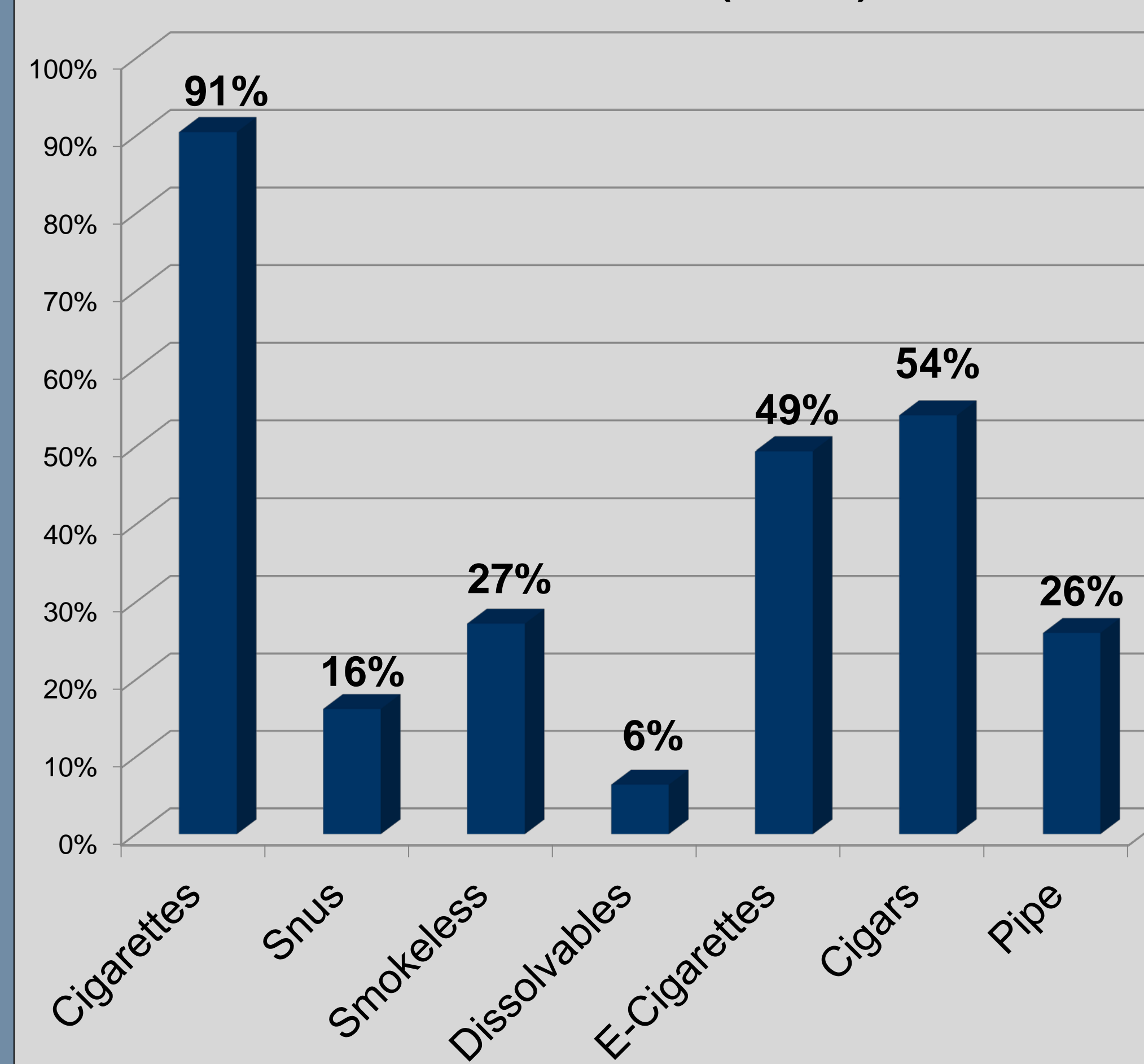
- Analysis for significance was at <.05
- All variables that were significant at <.01 for the univariate analysis were grouped together
- Age and education were chosen as controlling variables.

## Results

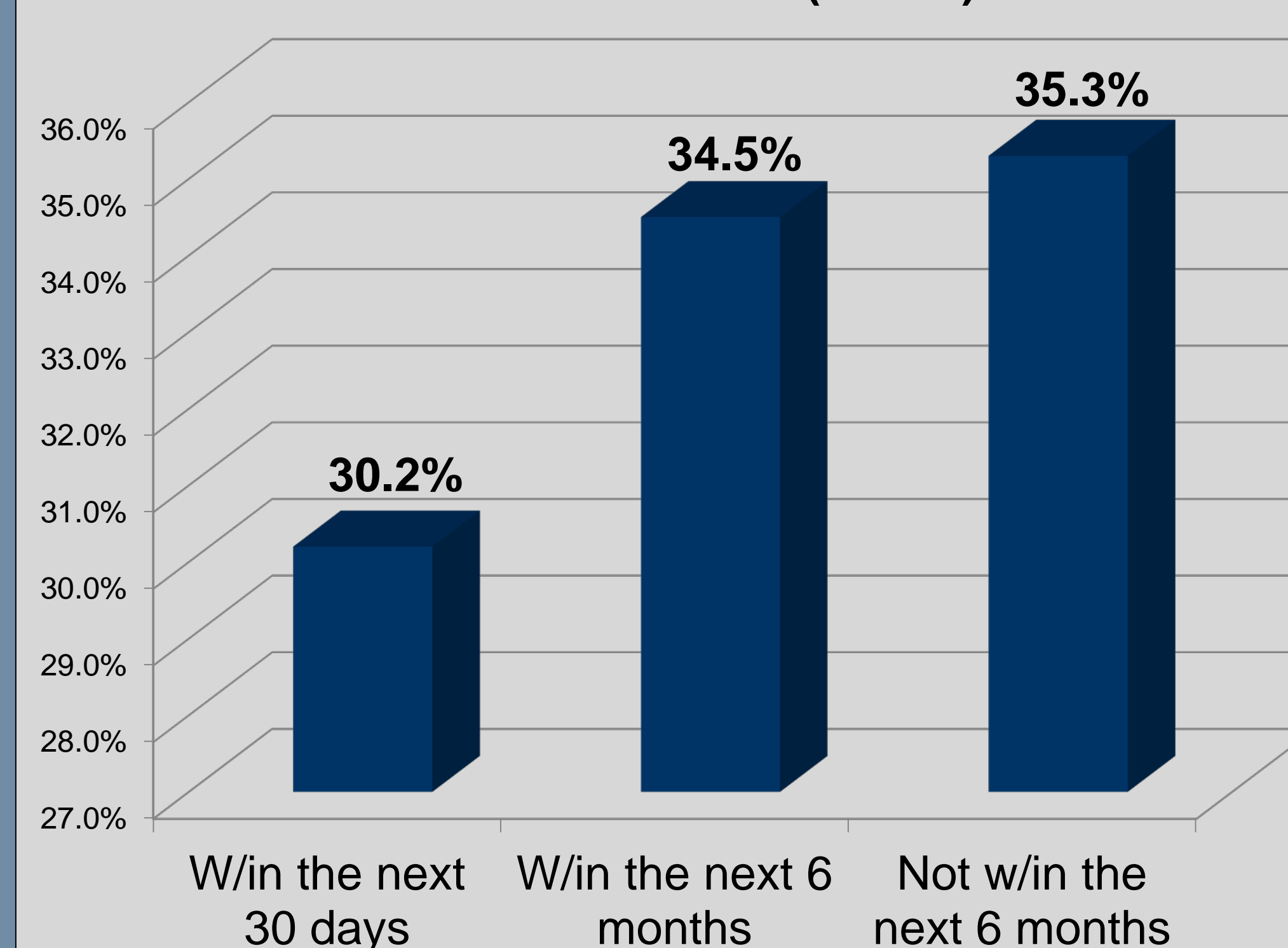
### Demographic characteristics of clients in addiction treatment

|                                   | N(%)        | M(SD) |
|-----------------------------------|-------------|-------|
| <b>Gender</b>                     |             |       |
| Male                              | 129(54.9%)  |       |
| Female                            | 105(44.7%)  |       |
| Other (e.g. transgender)          | 1(0.4%)     |       |
| <b>Age (yrs.)</b>                 | 39.1(13.37) |       |
| <b>Race/ethnicity</b>             |             |       |
| American Indian or Alaska Native  | 10(4.3%)    |       |
| Asian                             | 3(1.3%)     |       |
| Black or African-American         | 52(22.1%)   |       |
| White                             | 145(61.7%)  |       |
| Other                             | 36(15.3%)   |       |
| Hispanic                          | 48(20.4%)   |       |
| <b>Education</b>                  |             |       |
| Less than high school             | 48(20.5%)   |       |
| High school                       | 81(34.5%)   |       |
| Some college                      | 77(32.8%)   |       |
| College degree or diploma         | 29(12.3%)   |       |
| <b>Cigarettes per day (N=145)</b> | 11.0(7.79)  |       |
| <b>Current smokers</b>            | 142(61.5%)  |       |
| <b>SKAS</b>                       |             |       |
| Knowledge                         | 3.52(0.61)  |       |
| Attitudes                         | 3.20(0.74)  |       |
| Program Services                  | 3.49(1.29)  |       |
| Clinician Services                | 2.22(1.01)  |       |

### Tobacco Ever Use (N=235)



### Readiness to Quit (N=139)



### Multiple Linear Regression analysis predicting CPD (N=142)

| Model         | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  |
|---------------|-----------------------------|------------|---------------------------|--------|-------|
|               | B                           | Std. Error | Beta                      |        |       |
| (Constant)    | 21.156                      | 4.520      |                           | 4.681  | .000  |
| SKAS Attitude | -2.366                      | 1.002      | -.213                     | -2.361 | .020* |
| SKAS PS       | -.743                       | .534       | -.123                     | -1.392 | .166  |
| Age           | -.032                       | .053       | -.053                     | -.613  | .541  |
| Education     | .428                        | .701       | .052                      | .611   | .542  |

### Multiple Logistic Regression Analysis Predicting Readiness to Quit (N=139)

|                        | B      | S.E.  | Wald   | df | Sig.   | Exp(B) | 95% C.I. for EXP(B) |        |
|------------------------|--------|-------|--------|----|--------|--------|---------------------|--------|
|                        |        |       |        |    |        |        | Lower               | Upper  |
| CPD                    | -.043  | .039  | 1.202  | 1  | .273   | .958   | .887                | 1.034  |
| SKAS Attitude          | 2.285  | .534  | 18.300 | 1  | .000** | 9.824  | 3.449               | 27.984 |
| SKAS PS                | .057   | .208  | .075   | 1  | .785   | 1.058  | .704                | 1.590  |
| FDA awareness          | -.939  | .311  | 9.127  | 1  | .003** | .391   | .213                | .719   |
| Self-risk              | .036   | .014  | 6.079  | 1  | .014*  | 1.036  | 1.007               | 1.066  |
| Age                    | .024   | .022  | 1.229  | 1  | .268   | 1.024  | .982                | 1.068  |
| Education <sup>a</sup> |        |       | 3.007  | 3  | .391   |        |                     |        |
| Less than high school  | -.218  | 1.013 | .047   | 1  | .829   | .804   | .110                | 5.854  |
| High school/GED        | -.876  | .905  | .936   | 1  | .333   | .416   | .071                | 2.456  |
| Some college           | -1.326 | .938  | 1.998  | 1  | .157   | .266   | .042                | 1.669  |
| Constant               | -6.882 | 2.090 | 10.845 | 1  | .001   | .001   |                     |        |

\*significant at <.05  
\*\*significant at <.01  
a. College degree is the reference category

## Discussion

Smoking attitudes are the best predictor for cigarettes per day and readiness to quit. Clinicians may address attitudes toward smoking cessation as part of their client's treatment plan to decrease smoking rates. Staff can have discussions with clients about reducing or quitting smoking. Higher perceived self-risk for lung cancer can help clients in treatment be ready to quit. Education on the health risks of smoking and/or using other tobacco products may increase clients to be ready to quit. More analyses needs to be explored with FDA awareness since it was not expected to be an inverse predictor of readiness to quit.

## Conclusion

- Smoking attitudes are best predictor for cigarettes per day and readiness to quit.
- Self-risk for lung cancer is a significant predictor for readiness to quit.

## References

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