

Does Electronic Cigarette Use Impact the Emotional Stability of Users?

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ABSTRACT

- Electronic cigarettes have become a popular alternative for smoking conventional cigarettes. The use of electronic cigarettes has increased among the U.S. population since the devices became available.
- The current study is a quantitative cross-sectional study that uses secondary data collected by the California Health Interview Study (CHIS) 2016.
- The sample consisted of 21,055 adult participants that completed the CHIS 2016.
- A series of chi-square tests were conducted to measure the significance of frequency of electronic cigarette use and emotional instability.
- The results revealed a significant relationship between the frequency of electronic cigarette use and emotional instability.

INTRODUCTION

Significance of the Study

- An estimated 6.9 million adults in the United States use electronic cigarettes as their choice of tobacco product
- The rate of electronic cigarette use among individuals aged 25 to 44 years old increased from 2.4% to 4.2% in 2016

Purpose

- To analyze the significance between the frequency of electronic cigarette use and users' emotional stability.

Research Question

- Does electronic cigarette use predict emotional instability compared to non-cigarette users?

Hypothesis

- Individuals that use electronic cigarettes are more likely to experience emotional instability compared to non-users.

Literature Review

- Numerous research studies have found that conventional cigarette use impacts users' mental health.
- Nicotine dependence impacts brain functioning that controls the executive function, memory, and mood.
- Long exposure to nicotine may impact a users' inability to experience the feeling of pleasure.
- In addition, literature has revealed that nicotine addiction is associated with psychological distress.
- Smoking behavior has been found to be more prevalent among the population with a lifetime mental illness.
- However, there is limited research being conducted on the effects of electronic cigarette use on users' mental health.
- The existing literature on electronic cigarettes suggest an association among electronic cigarette use and a range of mental health symptoms and disorders.
- The mental health symptoms associated with electronic cigarette use include psychological distress, anxiety, and fatigue.
- Additional studies have found a positive association among electronic cigarette use and depressive symptoms.
- Currently, there is a lack of research on the impact of cigarette use on the emotional stability of users.

Theoretical Conceptual Framework:

- Social learning theory supports the rationale for the increased use of electronic cigarette use due to social media marketing.

METHODS

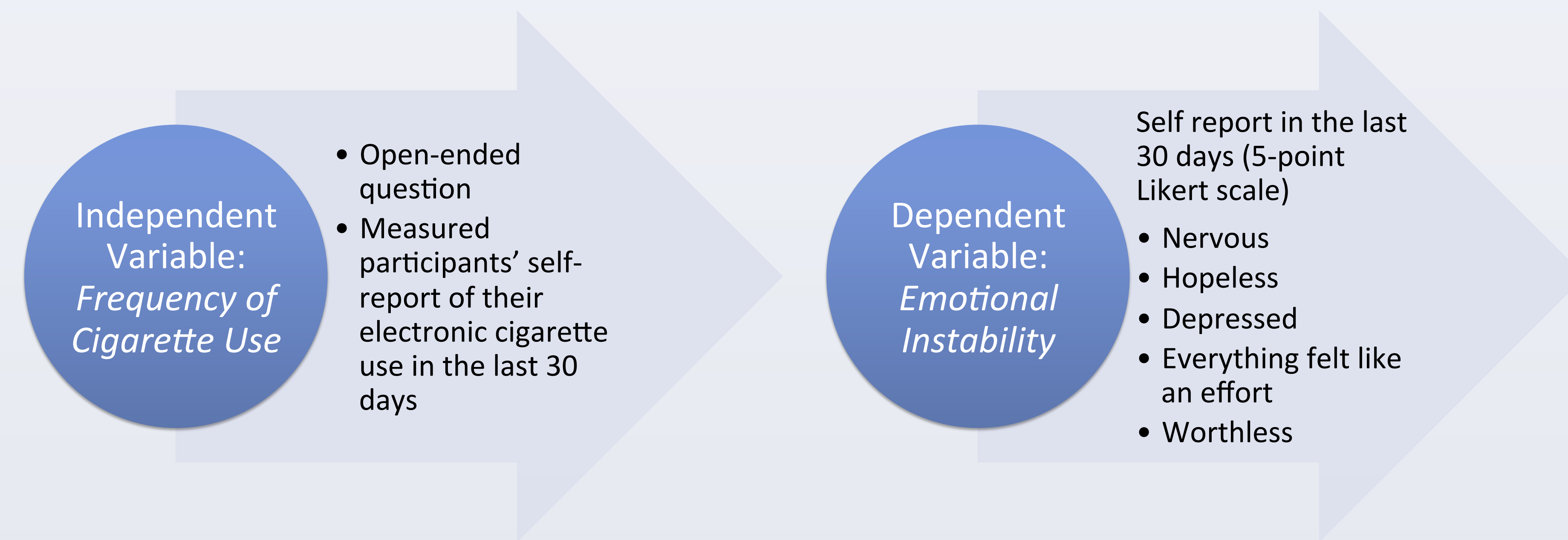
Research Design

- The current study is a secondary data analysis of data collected through the California Health Interview Survey (CHIS) conducted by the UCLA Center for Health Policy Research (UCLA-CHPR).
- The current study is designed as a quantitative cross-sectional study that utilizes the adult data set collected from CHIS 2016.
- The Adult CHIS was collected in 2015 using telephone interviews where participants completed a survey questionnaire.
- The self-report survey was used to gather information about participants' demographics, health behaviors, health conditions, insurance status, health care utilization, and socio-economic status.
- The current study utilized the CHIS data to determine participants who utilized electronic cigarettes and non-users.

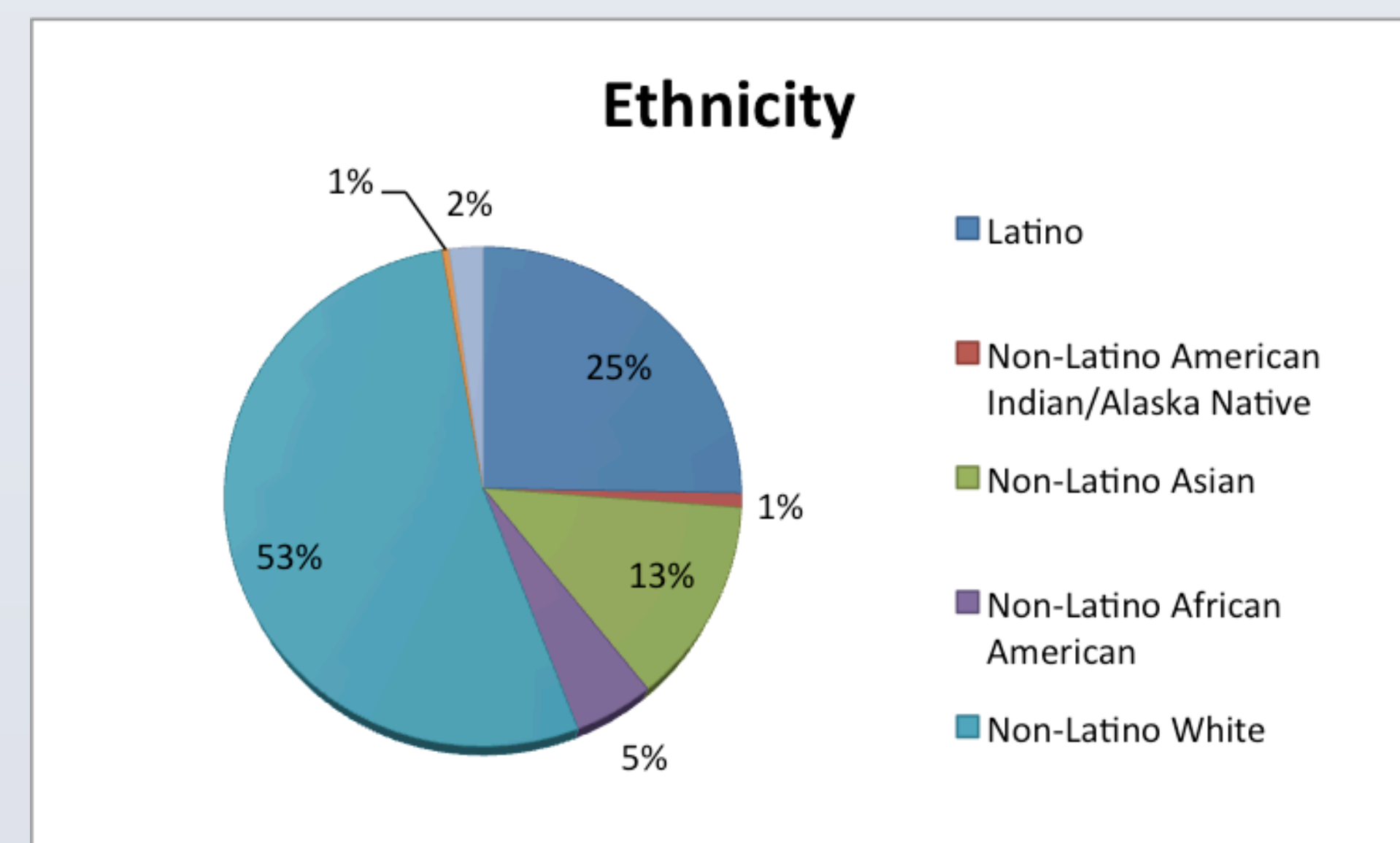
Sample

- The CHIS implemented a random-digit-dial method to collect landline and cellular numbers in all 58 counties in California.
- The survey utilized probability sampling to collect 50% of landline and 50% of cellular numbers and randomly selected an adult in the household to complete the survey.
- The sample size collected was 21,055 adult participants in California.

Measures



RESULTS



Inferential Analysis

- A series of chi-square tests were calculated to analyze the relationship of days spent smoking electronic cigarettes and emotional instability.
- The results of the chi-square analysis revealed that feeling nervous (χ^2 (2, N = 21,055) = 469.221, $p < .01$), hopeless χ^2 (2, N = 21,055) = 368.970, $p < .01$), depressed (χ^2 (2, N = 21,055) = 284.892, $p < .01$), worthless (χ^2 (2, N = 21,055) = 234.559, $p < .01$), and feeling like everything is an effort in the last 30 days (χ^2 (2, N = 21,055) = 390.709, $p < .01$) was significant in relation to the frequency of electronic use.

Descriptive Analysis

- Gender:** 9,307 (44.2%) reported they were male and 11,748 (55.8%) reported as female
- Marital Status:** 9,643 (45.8%) were married, 1,169 (5.6%) were living with a partner, 5,817 (27.6%) were widowed, separated, and or divorced, and 4,426 (21%) were never married
- Educational Attainment:** 1,421 (6.7%) participants had no formal education or attended grade 1-8, 1,044 (5%) attended grade 9-11, 4,919 (23.4%) reached 12th grade or received their high school diploma, 3,093 (14.7%) attended some college, 524 (2.5%) attended vocational school, 1,736 (8.2%) received their AA or AS degree, 4,992 (23.7%) attained a BA or BS degree or some grad school, 2,452 (11.6%) received their MA or MS degree, and 874 (4.2%) attained a Ph.D. or equivalent

| Feeling | Days E-Cigarette Use | | | | df | Chi-square | Sig |
|-------------------|----------------------|----------|-----------|----------|----|------------|-------|
| | Inapplicable | 3-5 Days | 6-29 Days | Everyday | | | |
| Nervous: | | | | | | | |
| All of the time | 313 | 6 | 6 | 10 | 25 | 469.22 | .000* |
| Some of the time | 3317 | 21 | 33 | 33 | | | |
| Not at all | 8754 | 31 | 30 | 43 | | | |
| Depressed: | | | | | | | |
| All of the time | 140 | 0 | 2 | 0 | 25 | 284.89 | .000* |
| Some of the time | 1211 | 10 | 18 | 14 | | | |
| Not at all | 15302 | 60 | 88 | 95 | | | |

Note * $p < .001$

The results indicated that the relationship between participants' reports of feeling nervous, hopeless, depressed, worthless, and everything was an effort was significant in relation to the frequency of electronic cigarette use.

| Feeling | Days E-Cigarette Use | | | | df | Chi-square | Sig |
|--|----------------------|----------|-----------|----------|----|------------|-------|
| | Inapplicable | 3-5 Days | 6-29 Days | Everyday | | | |
| Hopeless: | | | | | | | |
| All of the time | 163 | 1 | 3 | 3 | 25 | 368.97 | .000* |
| Some of the time | 1337 | 13 | 8 | 17 | | | |
| Not at all | 14614 | 60 | 26 | 84 | | | |
| Everything felt like an effort: | | | | | | | |
| All of the time | 767 | 5 | 16 | 18 | 25 | 390.71 | .000* |
| Some of the time | 2632 | 28 | 23 | 28 | | | |
| Not at all | 11267 | 32 | 52 | 55 | | | |
| Worthless: | | | | | | | |
| All of the time | 147 | 0 | 3 | 2 | 25 | 234.56 | .000* |
| Some of the time | 923 | 9 | 15 | 8 | | | |
| Not at all | 16219 | 72 | 96 | 10 | | | |

Note * $p < .001$

DISCUSSION

Significance of the Findings

- The results of the current study supported the hypothesis and indicated there is a statistically significant relationship between frequency of electronic cigarette use and emotional instability.
- The results were consistent with existing literature that indicated that electronic cigarette use is associated with higher levels of psychological distress.

Strengths

- Large sample size affirms a strong external validity.
- The sample size includes participants from different age ranges (18 years old+), genders, geographic areas in California, and socio-economic backgrounds.

Limitations:

- Secondary date use, cross-sectional design, survey question design, self-reported data, and sampling method.
- The sample size only included participants that lived in the state of California.
- The current study had no control over the design of the survey questions to account for brands of electronic cigarettes, and history of mental health conditions.

Implications for Social Work Practice:

- Psychoeducation on the impact of electronic cigarette use may decrease the frequency of cigarette use and emotional instability.
- Studies that had a higher rate of electronic cigarette use. The current study suggests social workers focus on this high-risk age group by implementing preventive programs at secondary schools

Future Research

- Further research on causality between nicotine level in the electronic cigarettes and emotional distress is suggested.
- The current study advocates for future longitudinal research among electronic cigarette use and measures of emotional distress.

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