

WHAT THE PUBLIC KNOWS AND BELIEVES ABOUT NICOTINE: INSIGHTS FROM RECENT QUANTITATIVE AND QUALITATIVE EVIDENCE

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DISCLOSURE

- The work presented was federally funded (NIH and FDA).
- The presenter has not received any industry funding.
- No off-label medication use will be discussed.

OVERVIEW

1. Introduction and background
2. Recent quantitative evidence
 - PATH Study Wave 1
 - HINTS-FDA Survey
3. Recent qualitative evidence
 - CTP Qualitative Study on Nicotine
4. Discussion: Integration of evidence

BACKGROUND

- Why does it matter what people know or believe about nicotine?
- Motivational theories of health behavior posit that what people *think* (and feel) can be an important determinant of health-related behavior (Noar & Zimmerman, 2005).
- What people “think” is captured by a range of constructs, including: attitudes, beliefs, risk perceptions and judgments, knowledge, and affect.

BACKGROUND

- Previous studies suggest some proportion of smokers associate nicotine with cancer.
- A 2001 survey of U.S. smokers found that 1/3rd disagreed with the statement “Nicotine is a cause of cancer”.¹
- ITC data (2002-2009) found that close to half of U.S. smokers said ‘yes’, nicotine is the chemical in cigarettes that causes most cancer.²
- Previous studies suggest smokers lack knowledge and have misconceptions about the safety and efficacy of NRT; these misconceptions are associated with likelihood of trying NRT.³

¹ Bansal et al., 2004; Cummings et al., 2004

² Siahpush et al., 2006; Borland et al., 2011

³ Bansal et al., 2004; Cummings et al., 2004; Ferguson et al., 2011; Shiffman et al., 2008

BACKGROUND, CONT'D

- The available evidence is largely from surveys limited to smokers, and much of it is over a decade old.
- It is unclear how the evolving tobacco landscape might affect these beliefs; ENDS have evoked new discussions around nicotine, and raised awareness of nicotine.
- This presentation will use recent evidence to better understand current beliefs about nicotine among the U.S. population.

QUANTITATIVE EVIDENCE:

- PATH STUDY: WAVE 1 (2013-2014)
- HINTS-FDA SURVEY (2015)

QUANTITATIVE EVIDENCE: PATH STUDY

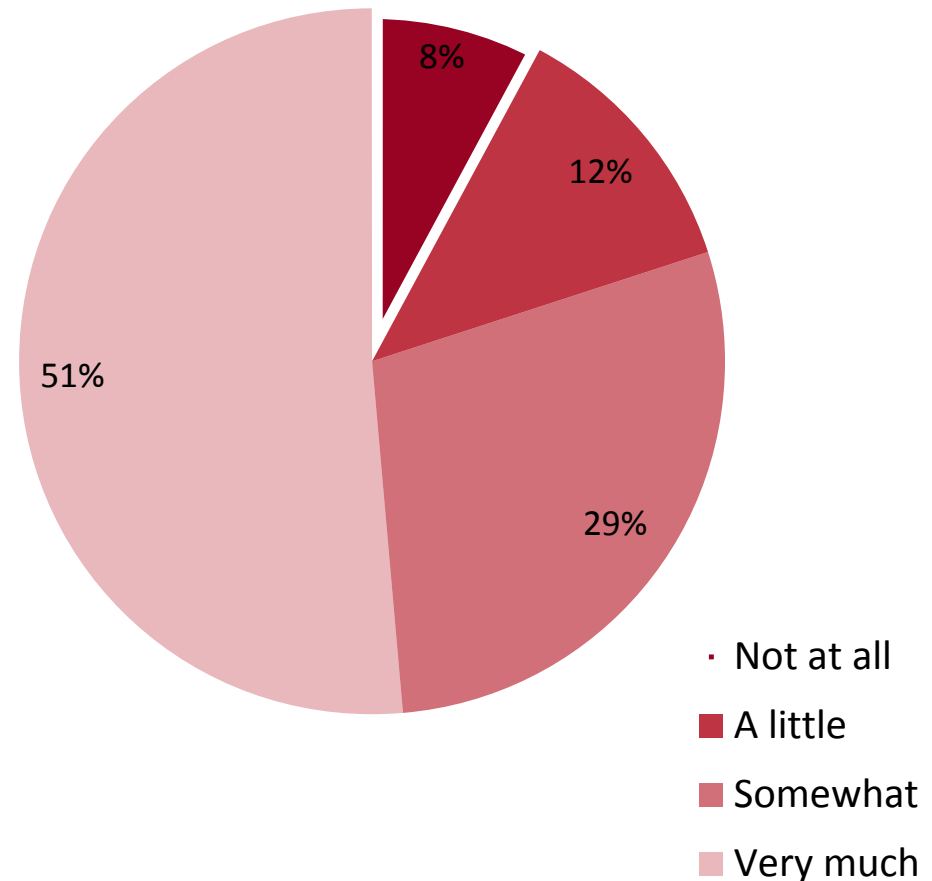
- The Population Assessment of Tobacco and Health (PATH) Study is a nationally-representative, longitudinal cohort study of civilian, non-institutionalized US residents ages 12 years and older.
- Data from Wave 1 (Sept. 2013 to Dec. 2014) adult sample (18+) (n = 32,320) were analyzed.

PATH STUDY

FINDINGS: NICOTINE AND CANCER

To what extent, if at all, do you believe the nicotine in cigarettes to be the chemical that causes most of the cancer caused by smoking?

The majority (80%) believe (*very much* or *somewhat*) that nicotine causes cancer.



QUANTITATIVE EVIDENCE: HINTS-FDA

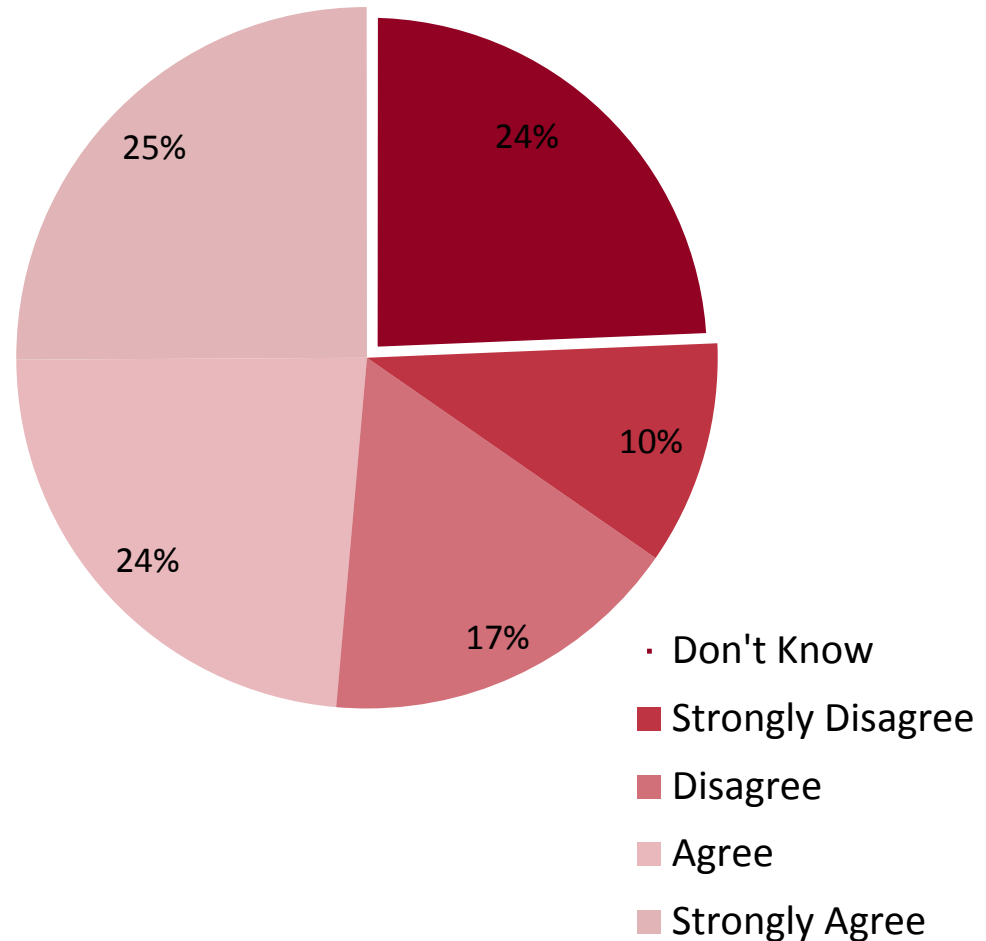
- Health Information National Trends Survey (HINTS) is a mail-based survey of non-institutionalized adults in the U.S. and weighted to reflect national estimates. An additional HINTS cycle funded by the FDA was included in the fourth iteration of HINTS.
- Data from HINTS-FDA (May to September 2015) ($N = 3,738$) were analyzed.

HINTS-FDA FINDINGS: NICOTINE AND CANCER

The nicotine in cigarettes is the substance that causes most of the cancer caused by smoking.

Just under half (49%) agreed (*strongly agree* and *agree*) nicotine causes cancer.

24% selected *don't know*.



QUANTITATIVE EVIDENCE SUMMARY

- PATH Study results suggested that a majority (80%) believe that nicotine is the chemical that causes cancer.
 - Compared to previous findings, these data suggest an even larger majority associate nicotine with cancer;
 - Never tobacco users were more likely to hold this belief (87%), compared to current tobacco users (69%).
- HINTS data showed that just under half (49%) of respondents agreed; and nearly a quarter (24%) selected *don't know*, suggesting a higher degree of uncertainty than previously recognized.

QUANTITATIVE EVIDENCE DISCUSSION

- These data highlight challenges of survey methods.
 - Response options can affect conclusions.
 - The limitations of self-report survey items may be exacerbated when assessing topics involving confusion and/or uncertainty.
- Qualitative methods may be particularly useful for topics like this, allowing an in-depth investigation of attitudes and beliefs in participants' own words.

QUALITATIVE STUDY ON NICOTINE: KNOWLEDGE, BELIEFS, AND PERCEPTIONS

QUALITATIVE STUDY ON NICOTINE

STUDY AIM

- CTP-led study to gain insight into what cigarette smokers know and believe about nicotine and addiction.

Current Research Question:

- What do adult smokers know and believe about what nicotine is, where it comes from, and what effects it has?

QUALITATIVE STUDY ON NICOTINE STUDY METHOD

- Focus groups (N = 12) conducted from Oct – Nov 2014
- Participants: Adult current smokers, segmented by:
 - Age group: 3 groups with young adult smokers (18-25 years)
9 groups with adults smokers (≥ 26 years)
 - Product use: current cigarette use, dual use, intermittent use, and typical use of menthol.
 - Recruited for mix of gender, race/ethnicity, and education.
- 3 U.S. cities: Washington, D.C.; Columbus, OH; New Orleans, LA
- Professional moderators led 60-min discussions with structured guide.
- Analytic Approach: Two independent coders reviewed and coded verbatim transcripts (NVivo 9) using a set of codes corresponding to each topic of interest; phenomenological approach used to identify emergent themes and patterns.

QUALITATIVE STUDY ON NICOTINE SAMPLE CHARACTERISTICS

Participants ($N = 108$)

- Mean age: 34 years
- Gender: 53% female
- Ethnicity
 - Hispanic: 6%
 - Non-Hispanic: 93%
- Race
 - White: 64%
 - Black: 29%

QUALITATIVE STUDY ON NICOTINE FINDINGS: NICOTINE CONCEPT AND SOURCE

What is nicotine?

- Concepts of nicotine: a stimulant; a drug; a poison.
- A wide range of responses that varied in content and certainty:
 - There was awareness that nicotine is addictive;
 - a lack of knowledge or interest, or uncertainty; and
 - differing opinions about whether nicotine itself is harmful vs. harmless.

“No idea.”

“Never thought about it.”

“The nicotine itself, from what I understand, isn’t carcinogenic but it’s addictive... but it’s not what causes health problems.”

“It’s definitely bad for you...”

Where does nicotine come from?

- Differing opinions about whether nicotine is *naturally occurring* in tobacco vs. *added* to tobacco.

QUALITATIVE STUDY ON NICOTINE FINDINGS: NICOTINE EFFECTS

What does nicotine do to the body and brain?

- Nicotine experiences as both stimulating and calming:
 - Many described effects on heart rate, nicotine “buzz”, endorphins; and also smoking to relax, needing cigarettes to calm down.
 - Some addressed this duality, explaining the effect depends on the situation.
- There were differing opinions and uncertainty about the role of nicotine in health effects:
 - Some mentioned specific health outcomes: harm to lungs (COPD), lung and other cancers, effects on skin/teeth.
 - Some stated health effects were not from nicotine but from other things in cigarettes (e.g., tar).
 - Many were uncertain and/or hadn’t thought about nicotine on its own, couldn’t separate it from cigarettes.

“I mean, I’m a college graduate. I still know nothing about nicotine in a cigarette.”

“Exactly, like, to me if you say nicotine, boom, just cigarette. I can’t just think about nicotine, you know?”

QUALITATIVE STUDY ON NICOTINE CONCLUSIONS

- The findings suggest there is heterogeneity in beliefs, as well as prevalent uncertainty, lack of knowledge, and/or lack of interest about nicotine.
- The immediate subjective experience of smoking (stimulant/calming) is salient; whereas discussion of health effects was less prevalent.
- When health effects did come up, there was wide variability in opinions.

DISCUSSION

DISCUSSION

INTEGRATING LINES OF EVIDENCE

- Together, the evidence describes heterogeneity in knowledge and beliefs about nicotine, including appreciable uncertainty.
- Survey evidence is useful in quantifying population prevalence of beliefs, but may mask some complexity.
- Qualitative evidence suggests many smokers do not think about nicotine on its own—but rather, in the context of the product it's in; and direct experience with those products shapes judgments.
- Consumers' evaluations of tobacco products are summaries of many factors; beliefs about nicotine are just one aspect.
- Experience, appeal, and other motivational factors matter when thinking about consumer goods, and predicting use.

FUTURE DIRECTIONS

- Future research can examine potential group differences, including sociodemographic and behavioral correlates of beliefs.
- Extant evidence shows that nicotine-cancer beliefs are prevalent even among college professors, nurses.¹
- Experience with tobacco/nicotine: PATH Study data suggest difference in beliefs about nicotine and cancer by tobacco use status.
- There is a gap in information on nicotine beliefs among youth:
 - Forthcoming waves of the PATH Study will assess nicotine beliefs among youth.
 - Qualitative study included subset of (4) adolescent groups, analysis forthcoming.

¹ Patel et al., 2013; Borrelli & Novack, 2007

IMPLICATIONS

- Survey research on attitudes and beliefs about nicotine is complicated:
 - Item wording and response options can affect results, conclusions.
 - Context matters: Smokers are accustomed to thinking about nicotine in cigarettes—not on its own; their beliefs about nicotine may vary by products. Asking questions specifically (e.g., “the nicotine in e-cigarettes”) can reduce ambiguity.
- Communicating to the public about the harms of tobacco products is becoming increasingly complex in the context of the growing diversity of tobacco products.
- Addressing the significant gaps in knowledge about nicotine will be central to promoting consumer understanding of the harm continuum of nicotine-containing products.

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CTP Nicotine Qualitative Study Analysis

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