

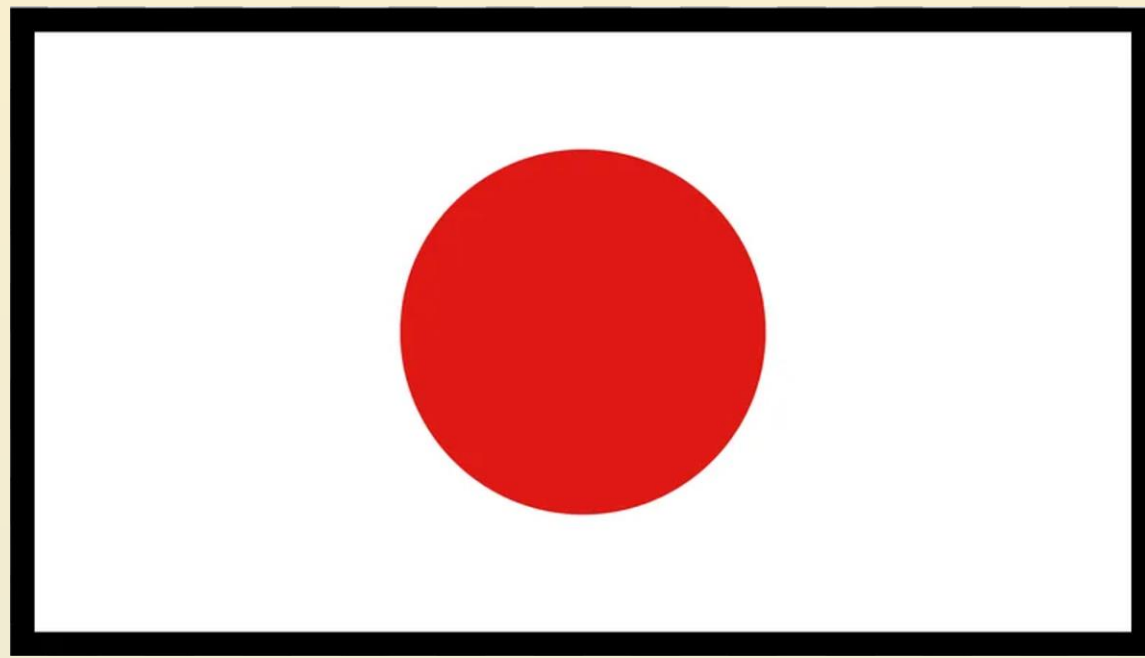
# Trends in Cigarette and Heated Tobacco Products (HTPs) Use in Japan: A Scoping Review

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## Introduction

- Heated tobacco products (HTPs) rapidly emerged in Japan, which provides a unique case study of their potential harm reduction role.
- The rapid rise in HTP sales in Japan since 2014 accompanied an accelerated decline in cigarette sales.

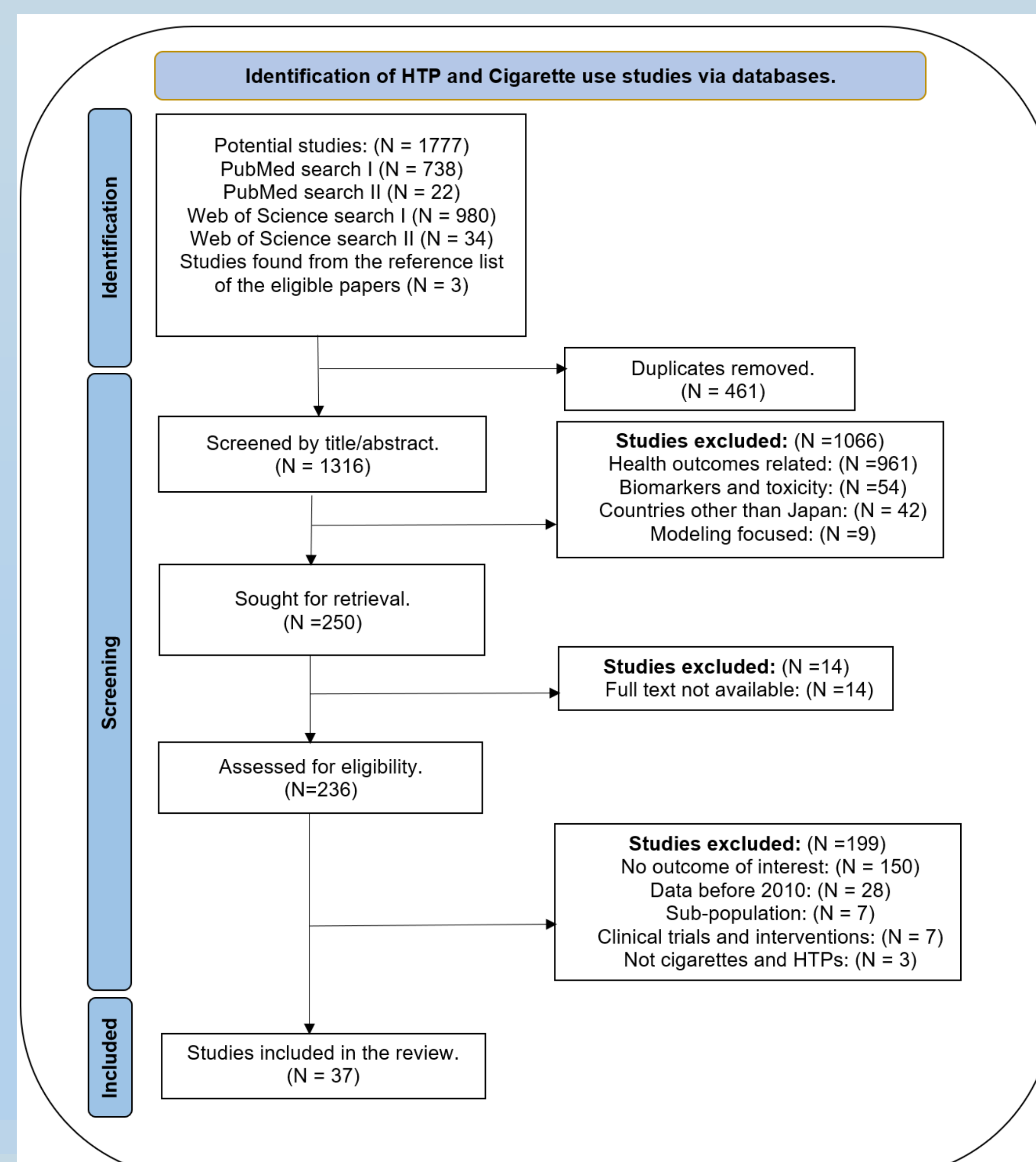


*Like e-cigarettes, HTPs are inhaled and have similar sensorimotor experiences and "throat-hit" to cigarettes, but they heat treated tobacco leaves rather than vaporize a nicotine solution.*

**Research Questions:** What is the role of HTPs with respect to cigarettes? Reductions in cigarette sales resulted from smokers switching to HTPs but continuing smoking as dual users or from smokers completely quitting cigarettes?

## Methods

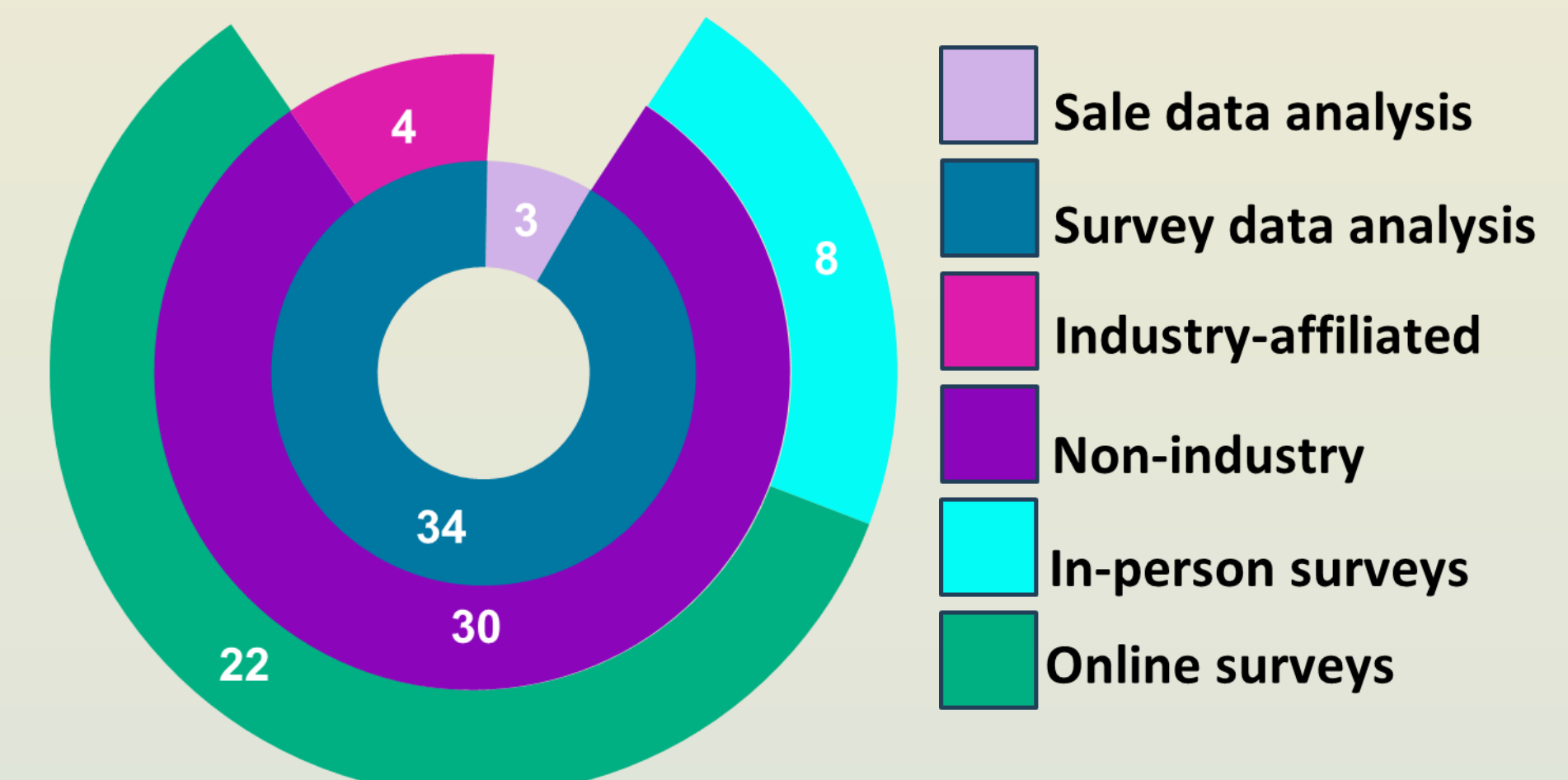
- The literature on recent HTP and cigarette use trends was reviewed, including studies on sales and nationwide in-person and online surveys.
- Inclusion criteria:** studies of cigarette or HTP prevalence rates, prevalence trends, sales trends, or transitions, such as initiation, cessation, or switching rates between products.
- Exclusion criteria:** clinical trials, modeling, and simulation studies focusing on the health impacts of HTP/cigarette use, analyses of biomarkers and toxicity, studies that only consider data pre-2010, countries other than Japan, or tobacco products other than cigarettes and HTPs.



A PRISMA diagram of the reviewed studies.

## Results

- Sales studies:** the rate of decline in smoking prevalence increased after 2014, especially in 2016 and 2017.
- Studies using in-person surveys:** decreasing smoking prevalence post-introduction of HTPs.
- Industry-affiliated studies:** decreasing cigarette use from 2014-2018 as HTP use increased.
- Online surveys:**
  - A rapid increase in HTP use after its introduction to the Japanese market
  - High rates of dual cigarette-HTP use among HTP users.
  - HTPs (since about 2018) may be associated with increased cigarette use.



Types of the reviewed studies.

Major surveys reviewed.

Survey	Type	Years conducted	Sample size	Nationally representative?	Ages	Current use definition	Collected HTP data?
NHNS	In-person	1945-2019	5,709 (2019)	Yes	20+	Every day or some days	Yes
CSLC	In-person	1986-2019	720,000 (2019)	Yes	20+	Every day or some days	No
JASTIS	Online	2015-current	28,124 (2022)	Yes (by statistical adjustment)	15+	At least monthly use	Yes
ITC	Online	2018-current	4,408 (2021)	Yes (by statistical adjustment)	20+	At least monthly cigarette and at least weekly HTP use	Yes
PMI/JGAP	In-person	2016-2019	~5,000 per year	Yes	20+	At least monthly use, >100 times lifetime use	Yes
PMI/JAIQOS	Online	2016-2019	~2,000 per year	No	20+	At least monthly use, >100 times lifetime use	Yes
BAT <sup>a</sup>	In-person	2018, 2019	5,306 (2019)	Yes	20+	At least 100 times use lifetime	Yes

## Conclusions

- The role of HTPs with respect to cigarette use may have changed over time.
- HTPs may have initially impacted those most likely to quit smoking cigarettes, leaving smokers less inclined to completely switch to HTPs in later years.
- Weak smoke-free laws have impacted the relationship between HTP and cigarette use.
- Increases in the price of cigarettes and HTPs in 2018 and 2020 were also associated with a reduction in smoking initiation and relapse and an increase in cessation.
- Other influential factors include:
  - The COVID pandemic
  - Industry marketing strategies
- Differences in study results also may stem from:
  - The timing of the studies
  - Different survey types
  - Different tobacco use measures
  - Types of questions asked

This research was funded by grant 2U54CA229974 from the National Institutes of Health, National Cancer Institute and Food and Drug Administration (FDA).

	Tobacco Industry	E-cigarette & nicotine product industry	Pharma Industry
Please add "yes" or "no" to each table cell. If "yes," please turn cell background color to yellow.			
The work being presented has received funding or other means of support from any of the following sources:	no	no	no
Any of the authors have received funding (including consultancy) from any of the following sources in the past 5 years:	no	no	no