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The Cardiovascular Implications of Vaping: A Scoping Review

Decker College of Nursing
and Health Sciences

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Background

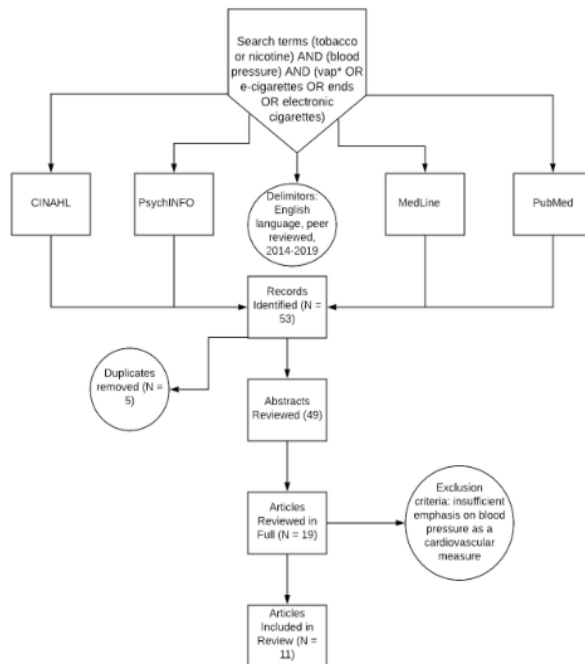
Vaping first introduced by tobacco companies as a smoking cessation aide. In 2019, there were 41 million vapers across the globe. There has been an increase in research about the health effects of vaping on respiratory and cardiovascular health, including the long-term risk of heart attack and stroke. Nicotine is a common chemical found in both traditional cigarettes and e-cigarettes and is attributed to higher risk of cardiovascular events.

Purpose

To identify what is currently known about the impact of vaping on blood pressure.

Methods

- The PRISMA-ScR protocol: CINAHL, Medline, PubMed, psychINFO databases.
- Keywords: (tobacco OR nicotine) AND (blood pressure) AND (vap* OR e-cigarette OR ENDS OR electronic cigarette).
- Inclusion/Exclusion Criteria: English, peer reviewed, 2014-2019.



Results

- 11 studies from the four databases used
- Total sample: N= 897
- 7 studies in the U.S.
- 4 studies outside the US European Union (n = 3), New Zealand (n = 1)

Reference	Sample n	Themes
Biondi-Zoccai et al. (2019)	20	1,2,3
Cobb et al. (2019)	28	1,2,3
Veldheer (2019)	263	1,3
Franzen et al. (2018)	15	1,2,3
Tsioufis et al. (2018)	10	1,2
D'Ruiz et al. (2017)	105	1,2,3
Polosa et al. (2016)	89	3
Farsalinos et al. (2016)	300	3
Vlachopoulos et al. (2016)	24	1,2,3
Cooke et al. (2015)	20	1,2,3
Yan et al. (2015)	23	2

Themes

- Vaping increases blood pressure (n = 8)
- Increases in blood pressure due to vaping are comparable to cigarettes (n = 8)
- Cardiovascular effects of vaping and cigarettes are due to nicotine (n = 9)



Conclusions and Recommendations

- People who smoke cigarettes have higher baseline blood pressure than people who vape
- Increases in blood pressure stimulated by nicotine are comparable between vaping and smoking
- All studies used well-controlled lab conditions
- None investigated how vaping-related behavior patterns impact blood pressure
- Future studies should focus on the impact of real-life vaping habits on blood pressure.

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