

Title: Differences in risk perception associated with occasional and regular smoking and e-cigarette use

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Conference: ENSP Conference Belgrade October 2025

Background

Teenagers' risk perception differs across tobacco products^{1 2}. Higher prevalence of substance use (alcohol and cannabis) is associated with fewer respondents perceiving great harm in using³. Risk perception of e-cigarettes relative to combustible cigarettes may influence whether teenagers use e-cigarettes instead of or in addition to combustible cigarettes⁴.

Objectives

This study examines:

- prevalence of smoking and e-cigarette use;
- teenagers' risk perception of regular or occasional use of cigarettes or e-cigarettes;
- *gender differences in risk perception*;
- *associations between risk perception and prevalence of smoking and e-cigarette use*.

Methods

The total valid sample comprised a nationally representative, stratified random sample of 5,587 15- to 18-year-olds from 268 classes (Years 3, 4, 5), with data collected online in 2024 using the ESPAD (European School Survey Project on Alcohol and other Drugs) questionnaire and protocol. Ever and current smoking/e-cigarette use were assessed using lifetime and past 30-day use. Risk perception was measured by the questions "How much do you think PEOPLE RISK harming themselves (physically or in other ways), if they ... smoke cigarettes occasionally? smoke one or more packs of cigarettes per day? try e-cigarettes once or twice? use e-cigarettes on a daily basis?" (No/Slight/Moderate/Great risk/Don't know).

Results

31% were ever-smokers and 14% were current smokers. 39% were ever e-cigarette users and 20.5% were current e-cigarette users. As regards "great risk", occasional e-cigarette use was perceived by 6.7% as great risk, occasional smoking by 24.9%, regular e-cigarette use by 44.3% and regular smoking by 68.3%. 40.5% perceived "no risk" in occasional use of e-cigarettes compared with 10.5% who perceived "no risk" in occasional smoking. 5.3% and 5.6% perceived "no risk" in regular smoking and regular e-cigarette use respectively. Very few responded "don't know" as regards risk, only 3.9% for regular smoking.

Conclusions

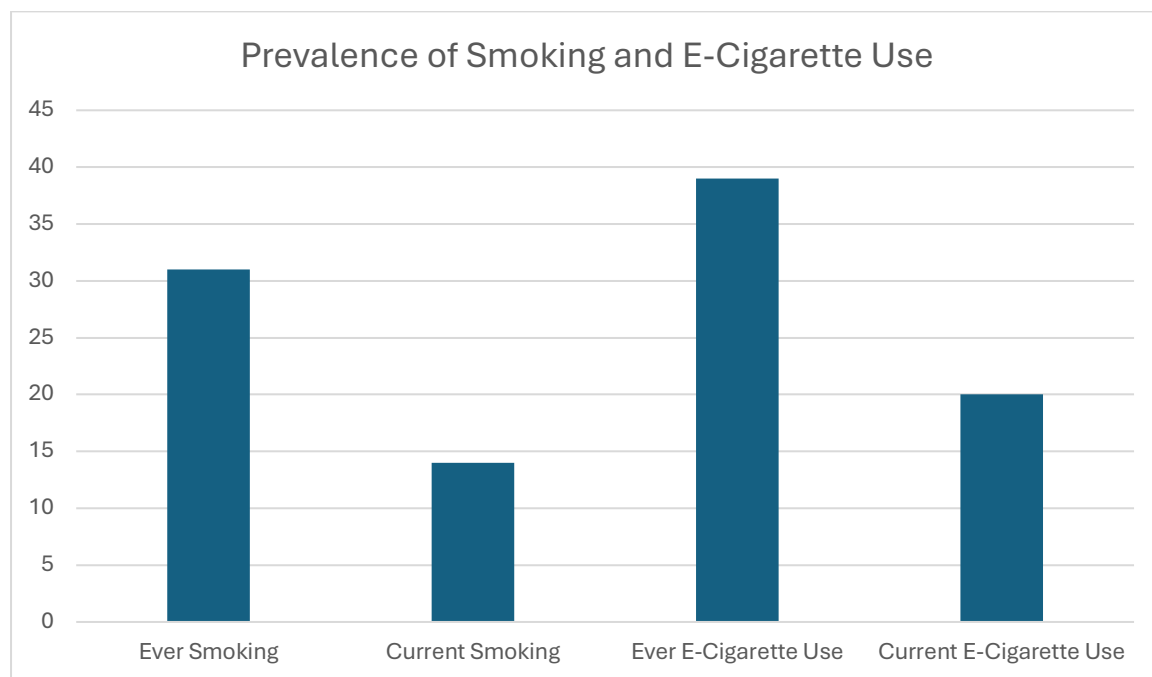
Teenagers perceived greater risk of physical or other harm through smoking than through e-cigarette use, and at greater risk from regular than from occasional use. Messaging about risk from smoking has been somewhat successful for regular smoking but more is needed for occasional smoking and also for e-cigarette use.

References

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2. Hanafin J, Sunday S, Clancy L. Teenagers' perceptions of risk from cigarettes and e-cigarettes. *Tobacco Prevention & Cessation*. 2022 Jul 5;8(Supplement)
3. Andersson, B., Miller, P., Beck, F., & Chomynova, P. (2009). The prevalences of and perceived risks from drug use among teenagers in 33 European countries. *Journal of Substance Use*, 14(3-4), 189-196. <https://doi.org/10.1080/14659890802668805>
4. Wackowski OA, Delnevo CD. Young Adults' Risk Perceptions of Various Tobacco Products Relative to Cigarettes: Results From the National Young Adult Health Survey. *Health Education & Behavior*. 2015;43(3):328-336. doi:10.1177/1090198115599988

Tables and Figures

Figure 1: Prevalence of Smoking and E-Cigarette Use



Prevalence of Ever and Current Smoking 2024

Occasions Smoked, $p=0.04$	Total N (%)	Male N (%)	Female N (%)	Rather not say N (%)
None	3640 (68.9)	1819 (69.3)	1764 (68.9)	57 (57.0)
<i>Ever smoked</i>	1646 (31.1)	807 (30.7)	796 (31.1)	43 (43.0)
Last 30 days	746 (14.1)	351 (13.4)	370 (14.5)	25 (25.0)
Last 12 months	564 (10.7)	285 (10.9)	266 (10.4)	13 (13.0)
More than 12 months	336 (6.4)	171 (6.5)	160 (6.3)	5 (5.0)

Total	5286 (100.0)	2626 (49.7)	2560 (48.4)	100 (1.9)
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Table 1: Smoking Prevalence by Gender

Prevalence of Ever and Current E-Cigarette Use

E-cigarette use, p=0.11	Total N (%)	Male N (%)	Female N (%)	Rather not say N (%)
Never	3164 (60.7)	1613 (62.3)	1495 (59.4)	56 (56.0)
Ever	2045 (39.3)	978 (37.7)	1023 (40.6)	44 (44.0)
Current (last 30 days)	1069 (20.5)	503 (19.4)	539 (21.4)	27 (27.0)
Last 12 months	588 (11.3)	273 (10.5)	304 (12.1)	11 (11.0)
More than 12 months	388 (7.4)	202 (7.8)	180 (7.1)	6 (6.0)
Total	5209 (100.0)	2591 (49.7)	2518 (48.3)	100 (1.9)

Table 2: Prevalence of E-Cigarette Use by Gender

Perceived Risk of Smoking Occasionally

Risk Perception Cigarettes Occasionally, p<0.001	Total N (%)	Male N (%)	Female N (%)	Rather not answer N (%)
No risk	515 (10.2)	289 (56.1)	207 (40.2)	19 (3.7)
Slight risk	1332 (26.5)	607 (45.6)	700 (52.6)	25 (1.9)
Moderate risk	1722 (34.2)	832 (48.3)	866 (50.3)	24 (1.4)
Great risk	1255 (24.9)	645 (51.4)	590 (47.0)	20 (1.6)
Don't know	211 (4.2)	114 (54.0)	92 (43.6)	5 (2.4)
Total	5035 (100.0)	2487 (49.4)	2455 (48.8)	93 (1.8)

Table 3: Gender Differences in Risk Perception of Occasional Use of Combustible Cigarettes

Perceived Risk of Using E-Cigarettes Occasionally

Risk Perception of Occasional E-Cigarette Use, p=0.002	Total N (%)	Male N (%)	Female N (%)	Rather not say N (%)
No risk	2031 (40.5)	1040 (51.2)	955 (47.0)	36 (1.8)
Slight risk	1869 (37.3)	861 (46.1)	976 (52.2)	32 (1.7)
Moderate risk	556 (11.1)	276 (49.6)	272 (48.9)	8 (1.4)
Great risk	334 (6.7)	172 (51.5)	152 (45.5)	10 (3.0)
Don't know	224 (4.5)	129 (57.6)	88 (39.3)	7 (3.1)

Total	5014 (100.0)	2478 (49.4)	2443 (48.7)	93 (1.9)
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Table 4: Gender Differences in Risk Perception of Occasional Use of E-Cigarettes

Figure 2: Risk Perception of Occasional or Regular Smoking or E-Cigarette Use

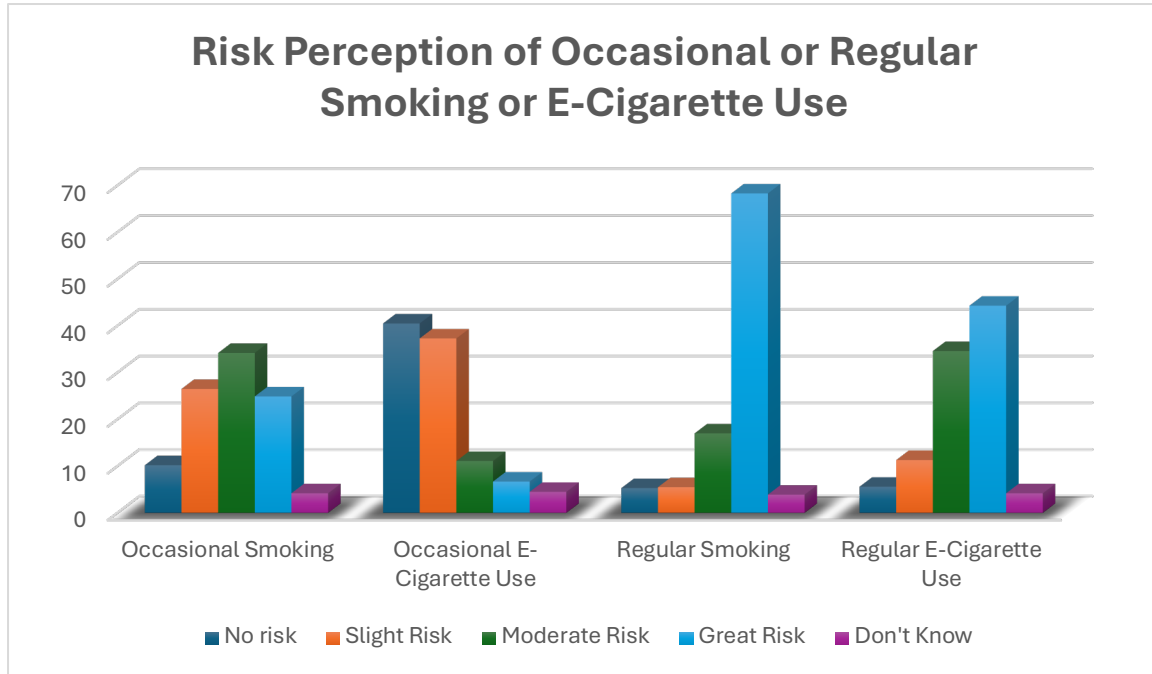


Figure 3: Perception of "Great Risk" from Occasional or Regular Smoking or E-Cigarette Use

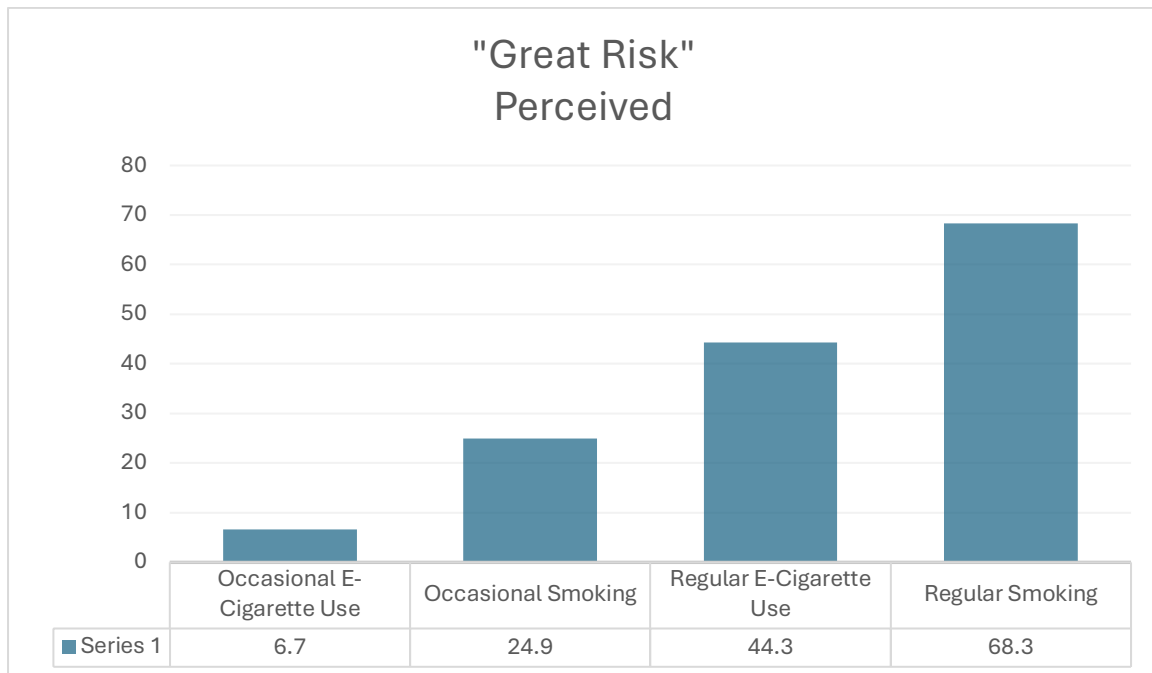
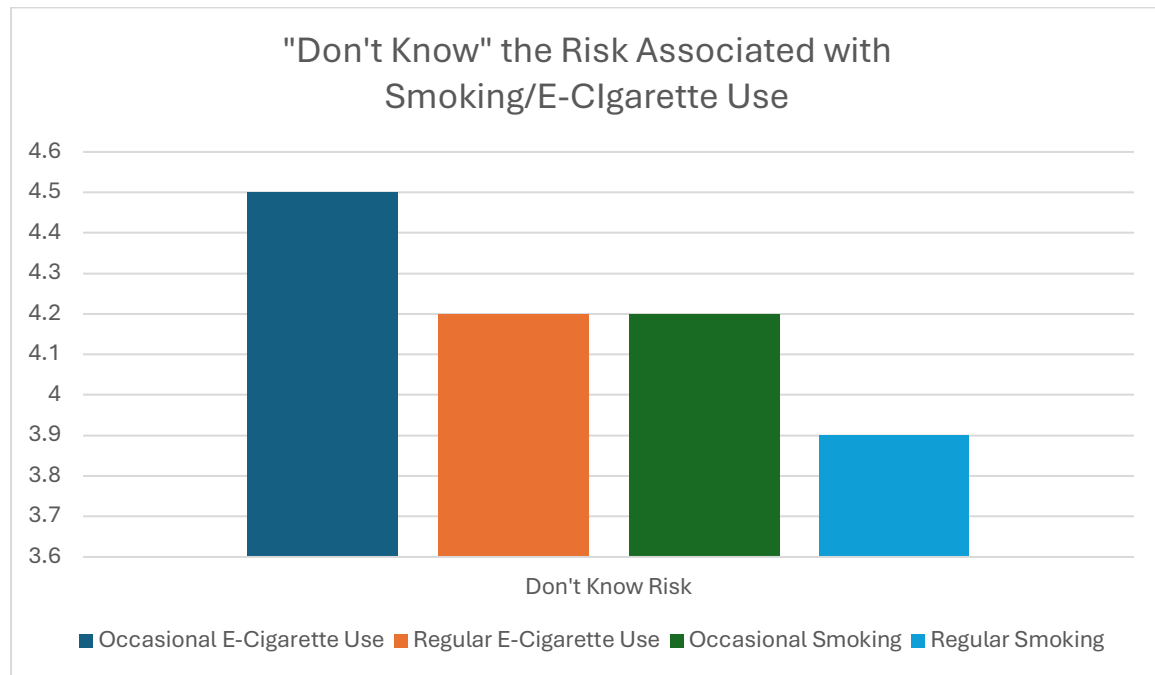


Figure 4: Report of not knowing the risk from Occasional or Regular Smoking or E-Cigarette Use



Perceived Risk of Regular Smoking

Risk Perception of Regular Cigarette Use, p<0.001	Total N (%)	Male N (%)	Female N (%)	Rather not say N (%)
No risk	268 (5.3)	152 (56.7)	100 (37.3)	16 (6.0)
Slight risk	274 (5.5)	133 (48.5)	138 (50.4)	3 (1.1)
Moderate risk	851 (17.0)	409 (48.1)	427 (50.2)	15 (1.8)
Great risk	3421 (68.3)	1671 (48.8)	1696 (49.6)	54 (1.6)
Don't know	196 (3.9)	110 (56.1)	81 (41.3)	5 (2.6)
Total	5010 (100.0)	2475 (49.4)	2442 (48.7)	93 (1.9)

Table 5: Gender Differences in Risk Perception of Regular Use of Combustible Cigarettes

Perceived Risk of Regular E-Cigarette Use

Risk Perception of Regular E-Cigarette Use p<0.001	Total N (%)	Male N (%)	Female N (%)	Rather not say N (%)
No risk	283 (5.6)	162 (57.2)	107 (37.8)	14 (4.9)
Slight risk	567 (11.3)	289 (51.0)	270 (47.6)	8 (1.4)
Moderate risk	1735 (34.6)	854 (49.2)	853 (49.2)	28 (1.6)
Great risk	2218 (44.3)	1050 (47.3)	1132 (51.0)	36 (1.6)

Don't know	209 (4.2)	120 (57.4)	82 (39.2)	7 (3.3)
Total	5012 (100.0)	2475 (49.4)	2444 (48.8)	93 (1.9)

Table 6: Gender Differences in Risk Perception of Regular Use of E-Cigarettes