

JATC-2 WP7 - Task 7.2c

Heated tobacco product awareness, use, attitudes and perceptions

A comprehensive systematic review

Silvano Gallus, Giulia Dalleria,
Marco Scala, Chiara Stival,
Carlotta M Jarach, Alessandra Lugo

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ISTITUTO DI RICERCHE
FARMACOLOGICHE
MARIO NEGRI · IRCCS

Research Questions

- **How many** people **know** the product? (**awareness**)
- **How many** people **use** the product? At which frequency? (**use**)
- **How** do people use the product?
- Are there specific **factors influencing use**? (e.g. SES, smoking status)
- **How long** the products have been on the market?
- **How** do people **perceive** this product? (e.g. health effects, addictiveness)
- **How** do people **perceive** this product compared with traditional tobacco?
- **Why** do consumers **use** this product? (e.g. quit tobacco/cessation, price)
- Are there specific **factors influencing perception** and/or reasons of use?
- **Attitudes** toward the legal framework of this product?
- What are the **user trajectories** for this product?

METHODS

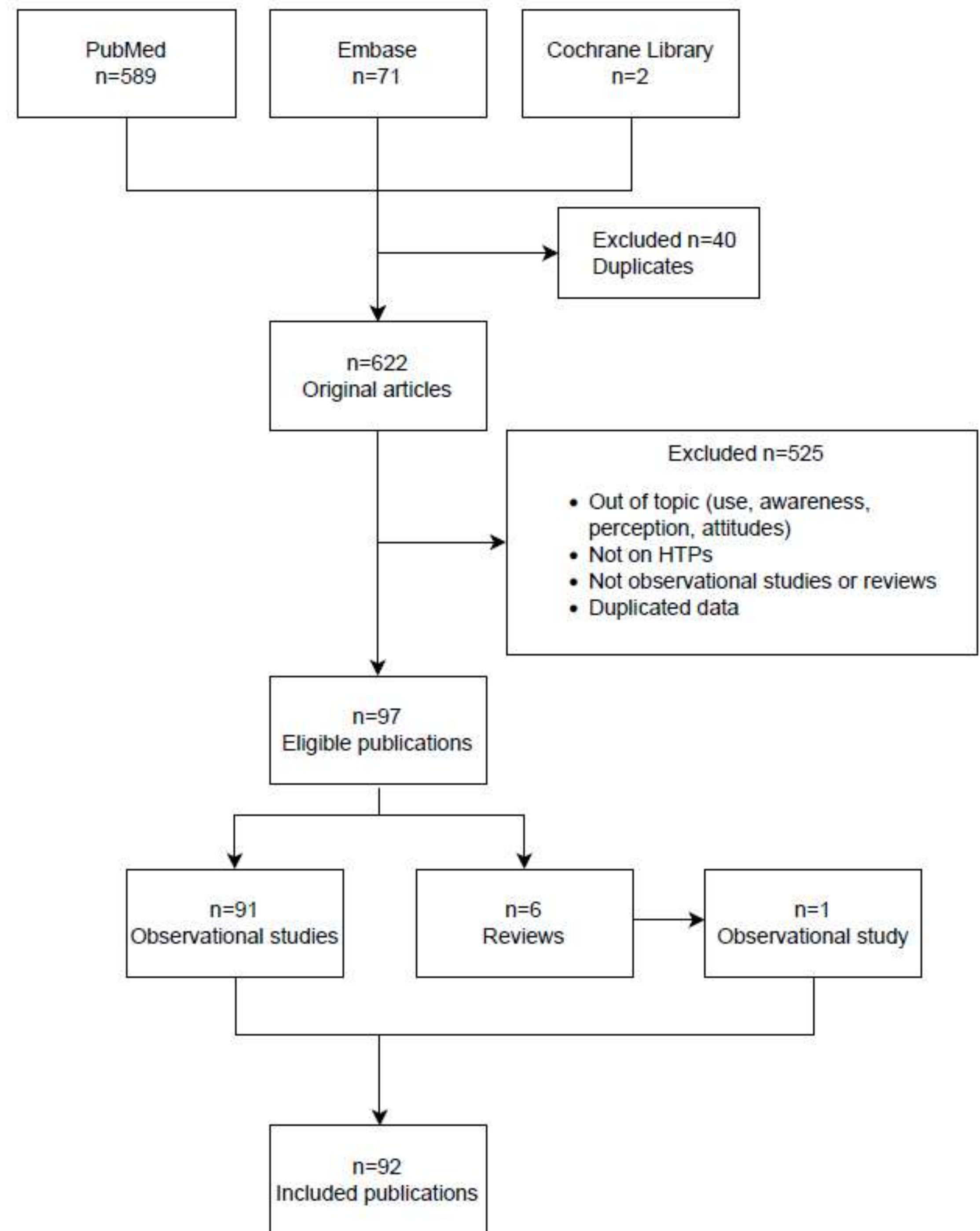
Review on HTP – Methods

The 23rd of Feb 2022, using a comprehensive search strategy based on the following search strings, **we identified 622 papers.**

Source	Date	String used	Filters	N ref
Pubmed	23/2/2022	"heated tobacco" OR "heat-not-burn" OR IQOS OR ploom[tiab] OR "heated cigarette" OR "tobacco heating"	English	589
Embase	23/2/2022	('heated tobacco':ab,ti OR 'heat-not-burn':ab,ti OR iqos:ab,ti OR ploom:ab,ti OR 'heated cigarette':ab,ti OR 'tobacco heating':ab,ti) NOT [medline]/lim AND [english]/lim AND (article:it OR review:it)	Not Pubmed English Article or review	71
Cochrane Library	23/2/2022	"heated tobacco" OR "heat-not-burn" OR IQOS OR ploom OR "heated cigarette" OR "tobacco heating"	Title Abstract Keywords	2
		Duplicates		-40
				622

Flowchart

From 622 original articles, after two screenings (one on title and abstract, and one on the full text), we identified **92 publications** of observational epidemiological studies dealing with **awareness** (based on representative sample), **use** (based on representative sample), **attitudes and perceptions on HTPs**.



DATA EXTRACTION

	A	D	E	F	X	AF	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
1	IDstudy	irst_authc	Year	Journal	COI Yes No	Country	Represen tative	Awarenes s	Use	Perceptio n	Incl/Escl	Note	Reason of exclusion	Sample size	Population	Class of populatio	Year of data	TOT Ever Use	TOT Current	TOT Daily	TOT Occasiona	TOT Past use	SEX
2	382	Berlin	2021	BMJ Open	0	15 countries	0	0	0	1	1	international experts											
3	384	Laverty	2021	Lancet Reg	0	27 European	1	0	1	1	1			27786	15+	A	2020	6.5	1.3 (current)	0.7		5.2	%/OR
4	326	Miller	2022	Tob Control	0	Australia, C	1	1	1	0	1			12987	adults	A	2018	2.4	0.9 (daily + less than daily but on			1.5	OR
5	362	Miller	2021	Nicotine Tr	0	Australia, C	1	0	1	1	1	not percentage		11421	adults	A	2018		3.9 (at least	1.6			% (proportion)
6	393	Li	2021	Nicotine Tr	0	Australia, C	1	0	1	0	1			10296	adults cigarette smokers and ex-smokers	AS	2020		3.5 (last 30 days)				%
7	467	Gallus	2021	J Epidemiol	0	Bulgaria, Fr	1	1	1	0	1			10961	15+	A	2016-2017-	1.8	0.1 (past 30 days)	1.5 (just tri	0.1	%/OR	
8	529	Sutanto	2020	Tob Induc	0	Canada	0	0	0	1	1	individuals aged 20+											
9	386	East	2021	J Adolesc H	0	Canada, UK	1	0	1	0	1			11753/116	16-19 yrs	G	2018/2019		2,5/3,2 (past 30 days use)				
10	27	Atzendorf	2019	Dtsch Arztebl Int		Germany	1	0	1	0	1			9267	adult	A	2018		0.8 (preceding 30 days)				%
11	552	Maria Lot	2020	Eur J Public	0	Germany, C	1	1	1	1	1			6011/6027	adult smokers	AS	2016/2018	1,1/1,9	0,8 (2018, monthly or least than	1,1 (2018)	%/OR		
12	485	Gottschlich	2020	BMJ Open	0	Guatemala	1	1	1	0	1			2870	13-17 yrs students in private schools in Guatemala	CG	2019	11.3	2.9 (last 30 days)		8.4	%/OR	
13	504	Ho	2020	Int J Environ	0	Hong Kong	0	0	NR	1	1			731	young smokers who wants to quit								
14	389	Wang	2021	Sci Rep	0	Hong Kong	1	0	1	0	1			33991	secondary students (mean age=14)	G	2018-2019	2.6	1.6 (at least one day in the past 3		1	%/OR	
15	578	Wu	2020	Tob Control	0	Hong Kong	1	1	1	0	1			5131	chinese individuals aged 15+	A	2017	1					%
16	139	Liu	2019	Tob Control		Italy	1	1	1	0	1			3086	15+	A	2017	1.4					%
17	312	Gallus	2022	Sci Rep	0	Italy	1	0	1	0	1			6003	adults	A	2020 (before and during	4/4,5 (current	1,5/2	2,6/2,4		%/OR (stable)	
18	455	Gallus	2021	Int J Environ	0	Italy	1	0	1	0	1			3120	15+	A	2019	1.6	1.1 (occasionally and regularly)		0.5	%/OR	
19	531	Cerrai	2020	Int J Drug F	0	Italy	1	0	1	0	1			15732	15-19 yrs	G	2018	4.4	1.7 (last 30 days)		2.7		
20	40	La Torre	2019	Clin Ter	0	Italy	0	0	0	1	1	validation of the questionnaire											
21	19	Kinjo	2019	J Epidemiol		Japan	1	0	1	0	1			4628	20+	A	2018	8.7 (age adjusted)	5 (age adjusted)			%	
22	21	Sutanto	2019	Int J Environ Res Publ		Japan	1	0	1	1	1			4684	20+	A	2018		2.7 (daily + 63,4 (of current, monthly	20,5 (of current, monthly		%	
23	33	Kioi	2018	Tob Induc Dis		Japan	1	0	1	0	1			4432	40+	A	2015	0.052	0.018 (past 30 days)		0.034	%	
24	144	Tabuchi	2018	Tob Control		Japan	1	0	1	0	1			8240	15+	A	2015/2016/2017		0,6/0,9/5,6 (previous 30 days)			%/OR	
25	214	Tabuchi	2016	Addiction		Japan	1	0	1	0	1			8240	15+	A	2015	1.1					%
26	349	Hirai	2021	Tob Induc	0	Japan	1	0	1	0	1	switching from cigarette		411	patients with COPD in four prefectures, 40+ years old	AS?	2017-2020		3.9 (currently switched from cigarette to HT			OR	
27	365	Harada	2021	J Epidemiol	0	Japan	1	0	1	0	1			2612	(residential) worksite population from an occupational health check	A	2019		1,4/6,9			%	
28	390	Myagmar	2021	BMJ Open	0	Japan	1	0	1	0	1			7714	working population of Department Store Health Insurance	A	2018		6.4 (sometimes + everyday)			%/OR	
29	448	Odani	2021	Tob Control	0	Japan	1	0	1	0	1			9044	15+	A	2020		10.9 (past 30 days)			%	
30	487	Kinjo	2020	J Epidemiol	0	Japan	1	0	1	0	1			4628	20+	A	2018	7.6	4.3 (past 30 days)		3.3	%	
31	571	Adamson	2020	Harm Redu	1	Japan	1	1	1	1	1			4154	Tokyo, Osaka and Sendai, individuals aged 20+	A	2018	9.6	5 (current, 3,47 (IQOS)		3.5	%	
32	573	Kuwahara	2020	BMC Public	0	Japan	1	0	1	0	1			64152	junior high schools and high school students (mean age=14)	G	2017	1.8	0.76 (at least once a week)	0.001		2.6	%

PRELIMINARY RESULTS

RESULTS: EUROPE

available estimates from the literature

Country	Adults			Young people		
	Awareness	Ever use	Current use	Awareness	Ever use	Current use
UK	2	4	5	1	1	4
Italy	2	4	5	1	2	2
Poland	2	3	4	1	1	2
Netherlands	1	2	2	1	1	1
Germany	1	2	3			
Bulgaria	1	2	2			
France	1	2	2			
Greece	1	2	2			
Latvia	1	2	2			
Portugal	1	2	2			
Romania	1	2	2			
Spain	1	2	2			
Other countries		14	14			
Total (26 countries)	15	45	49	4	5	9

RESULTS: OTHER CONTINENTS

available estimates from the literature

Country	Adults			Young people		
	Awareness	Ever use	Current use	Awareness	Ever use	Current use
USA	5	5	3	9	10	9
Canada						2
Guatemala				1	1	1
Mexico					1	1
Japan	1	5	11		3	8
Korea		3	5		9	7
Hong Kong	1	1		1	2	1
Turkey	1	1	1			
Taiwan					1	1
Qatar			1			
Total	8	15	21	11	27	30

AWARENESS OF HTP USE AMONG ADULTS

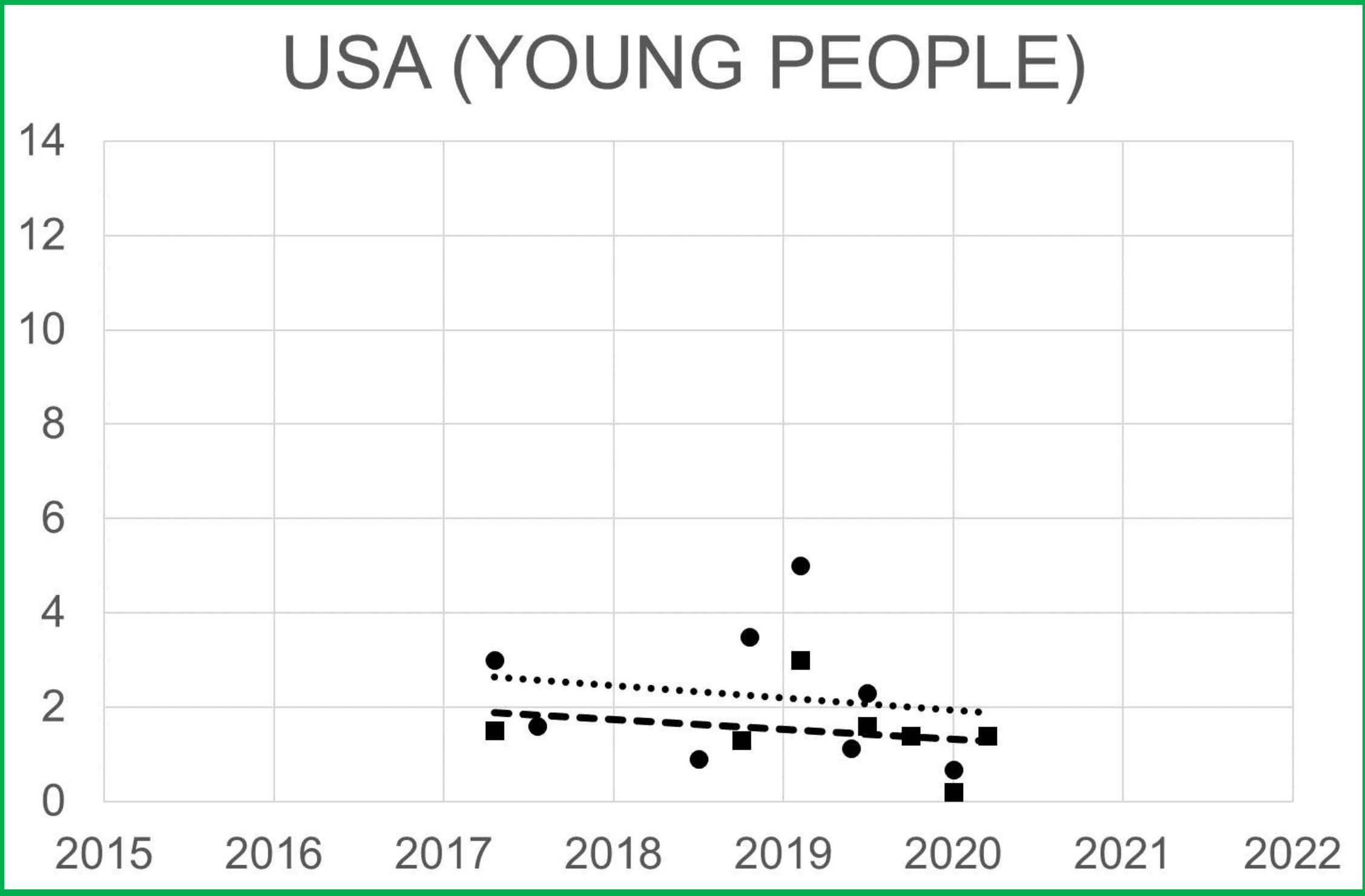
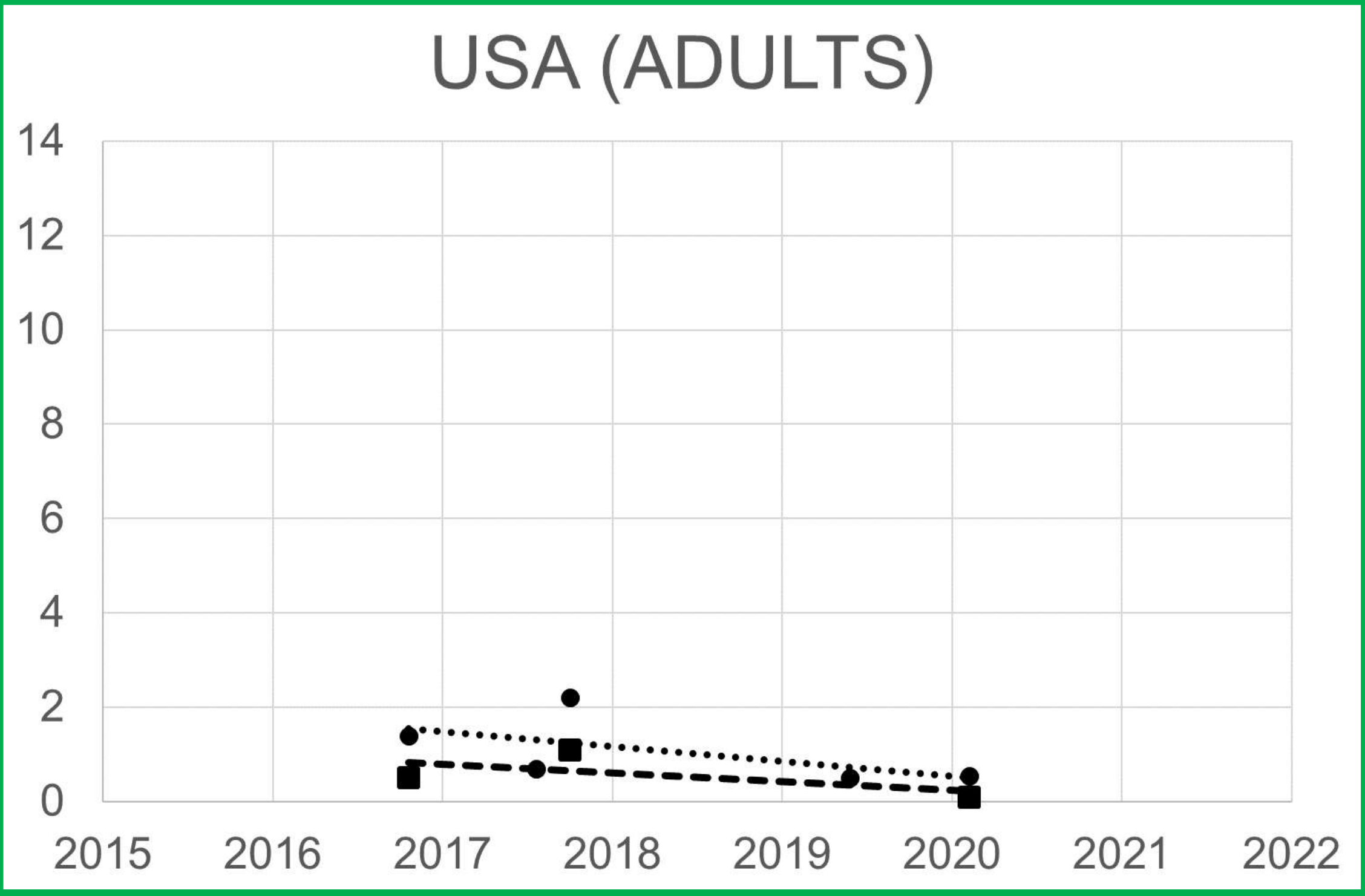
EUROPE

Country (year of launch of IQOS)	Citation	Awareness (year)
Italy (2015)	Gallus et al. 2021	25.3% (2017)
	Liu et al. 2019	19.5% (2017)
Poland (2017)	Gallus et al. 2021	36.3% (2019)
	Jankowski et al. 2019	42.6%(2019)
UK (2016)	Gallus et al. 2021	30.9% (2017)
	Brose et al. 2018	9.3% (2017)
Bulgaria (2017)	Gallus et al. 2021	21.3% (2018)
France (2017)	Gallus et al. 2021	20.9% (2018)
Germany (2016)	Gallus et al. 2021	35.8% (2018)
Greece (2016)	Gallus et al. 2021	47.0% (2018)
Latvia (2018)	Gallus et al. 2021	33.6% (2019)
Netherlands (2016)	Havermans et al. 2021	23.1% (2021)
Portugal (2015)	Gallus et al. 2021	35.5% (2018)
Romania (2015)	Gallus et al. 2021	16.4% (2018)
Spain (2016)	Gallus et al. 2021	15.4% (2018)

OTHER CONTINENTS

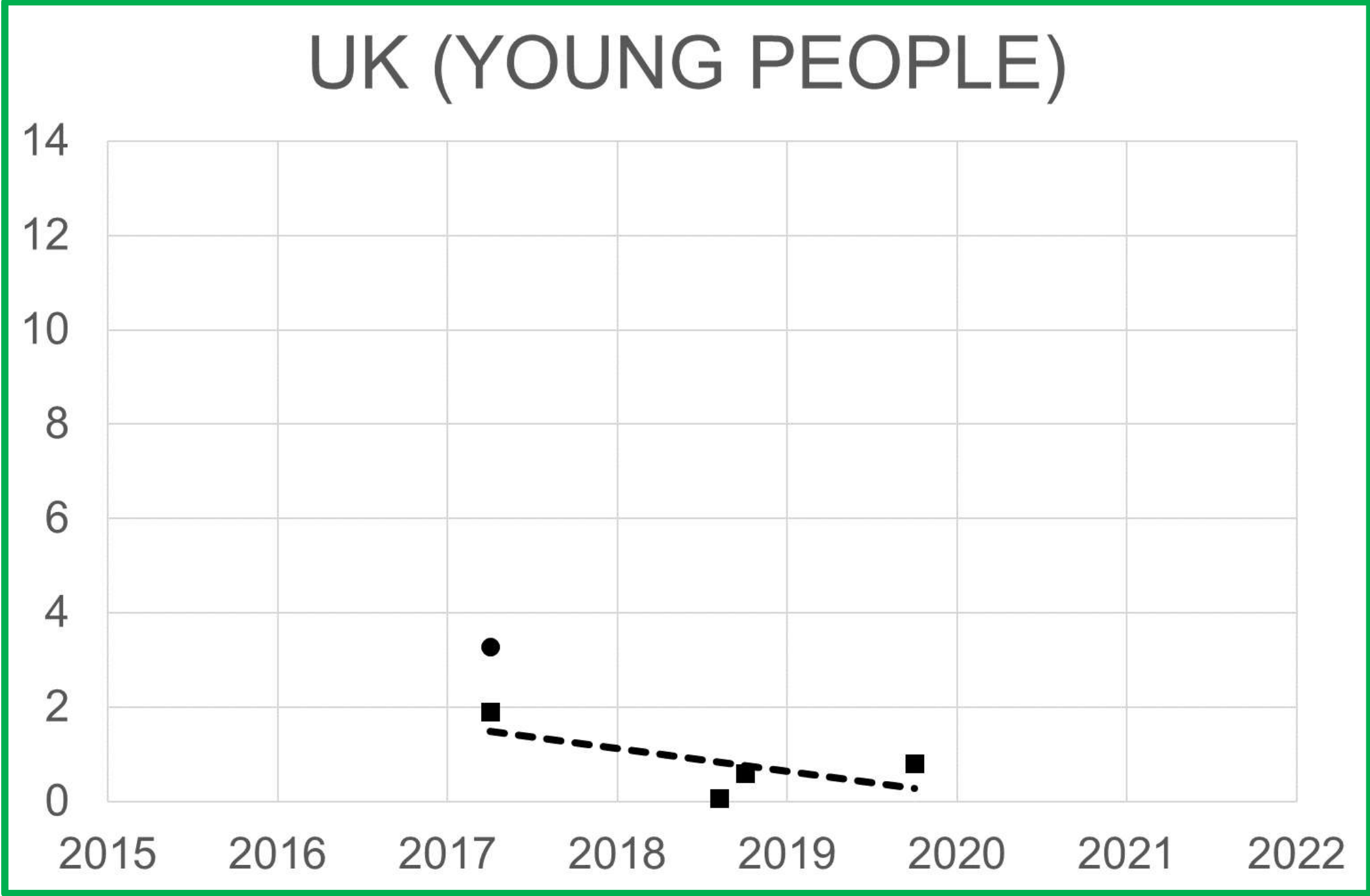
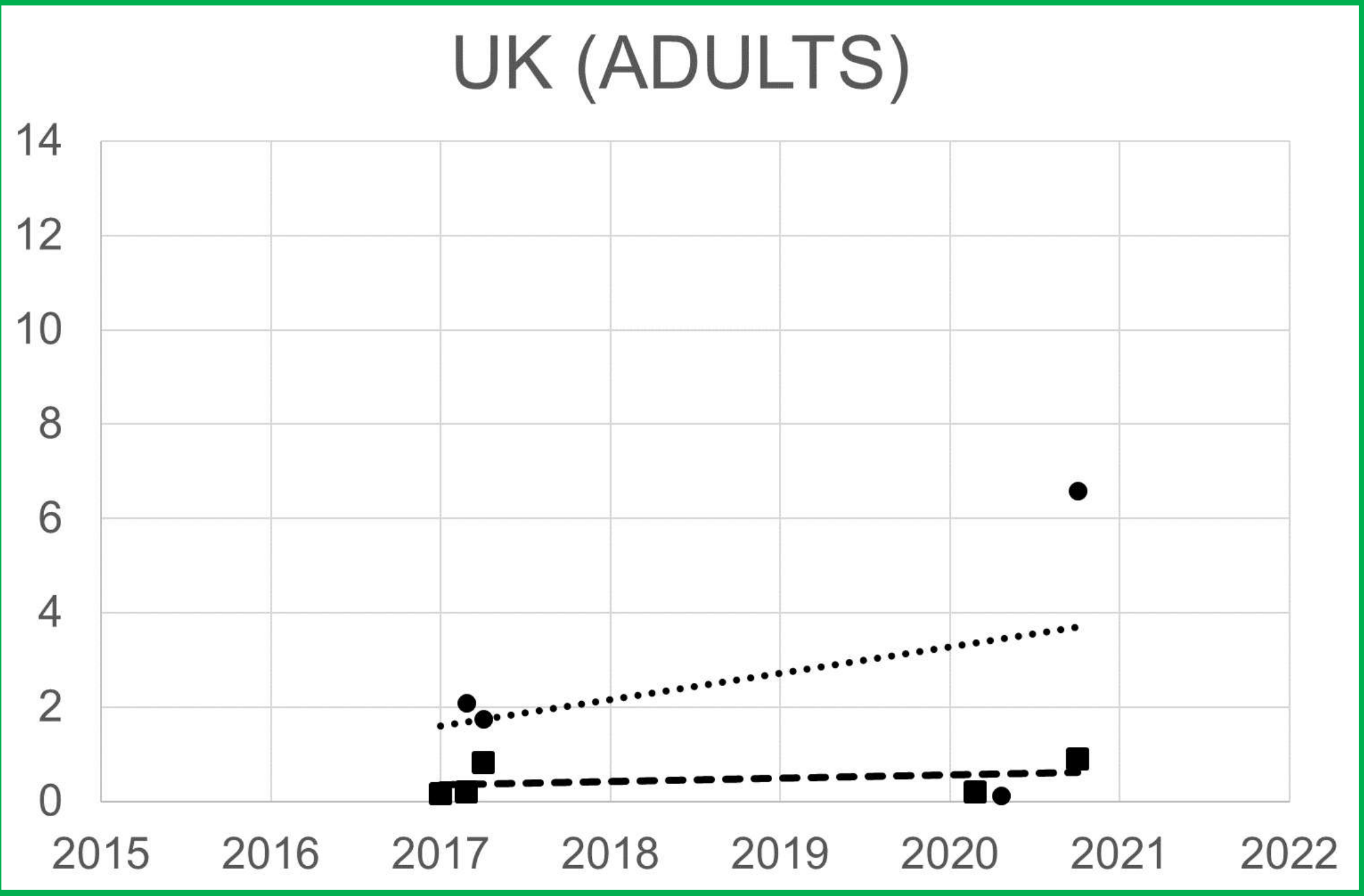
Country (year of launch of IQOS)	Citation	Awareness (year)
USA (2019)	Nyman et al. 2018	9.3% (2017)
		12.4% (2018)
	Marynak et al. 2018	5.2% (2017)
	Azagba et al. 2019	8.8% (2019)
	Zhu et al. 2019	8.1% (2020)
Hong Kong (not yet)	Wu et al. 2020	12.3% (2017)
Japan (2015)	Adamson et al. 2020	15.2% (2018)
Turkey (not yet)	Arslan et al. 2020	9.0% (2019)

PREVALENCE OF HTP USE: USA



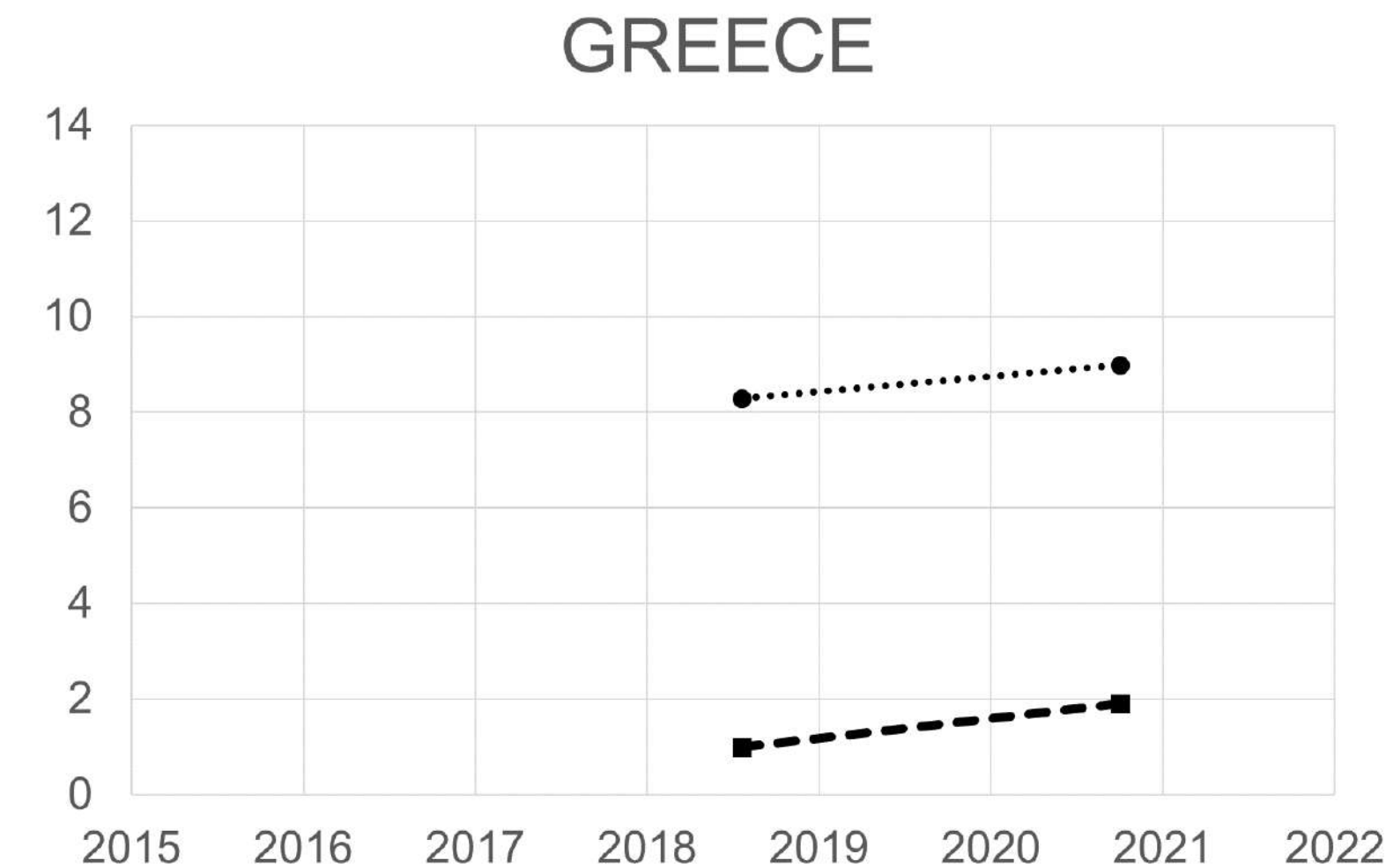
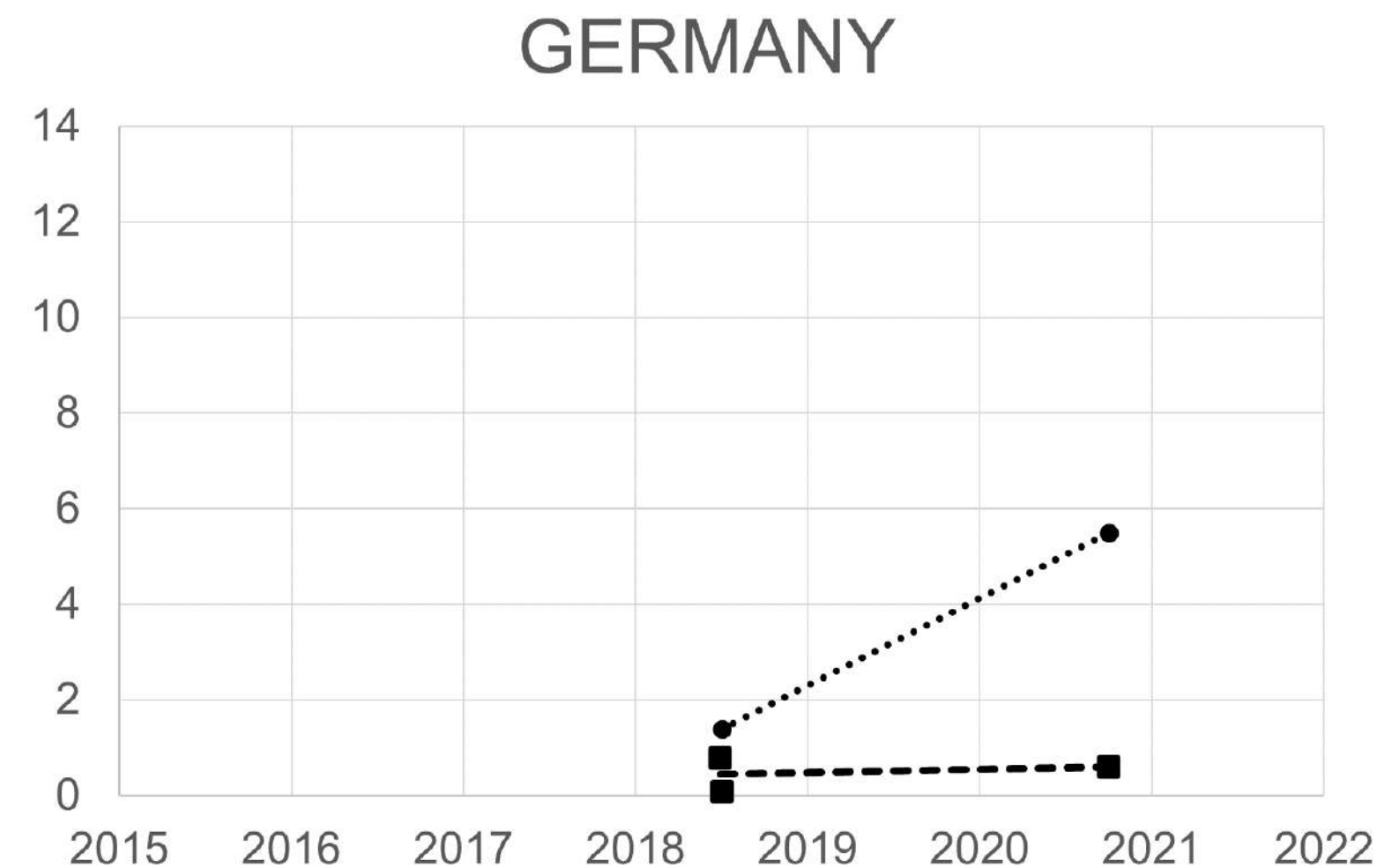
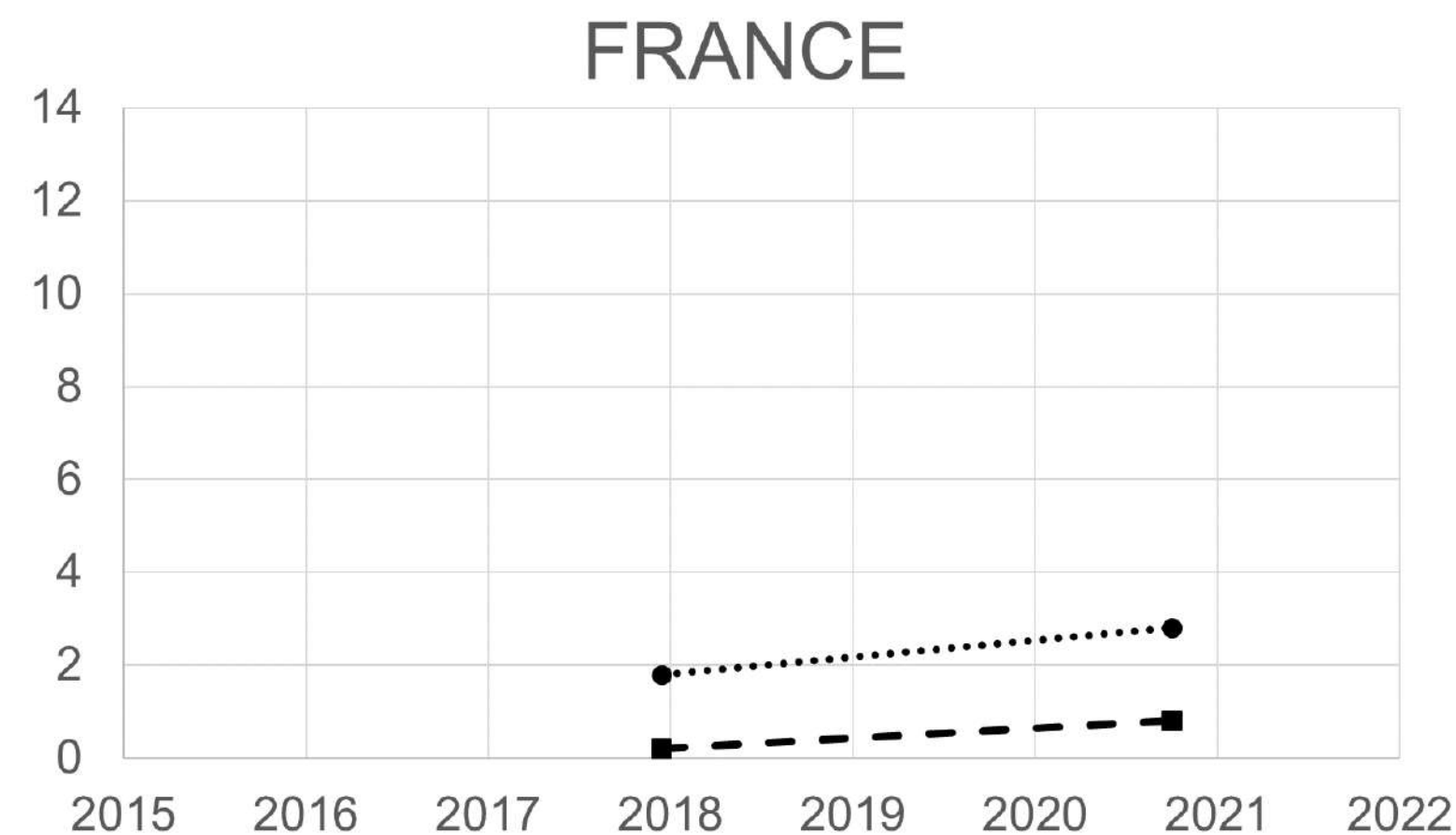
● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE: UK



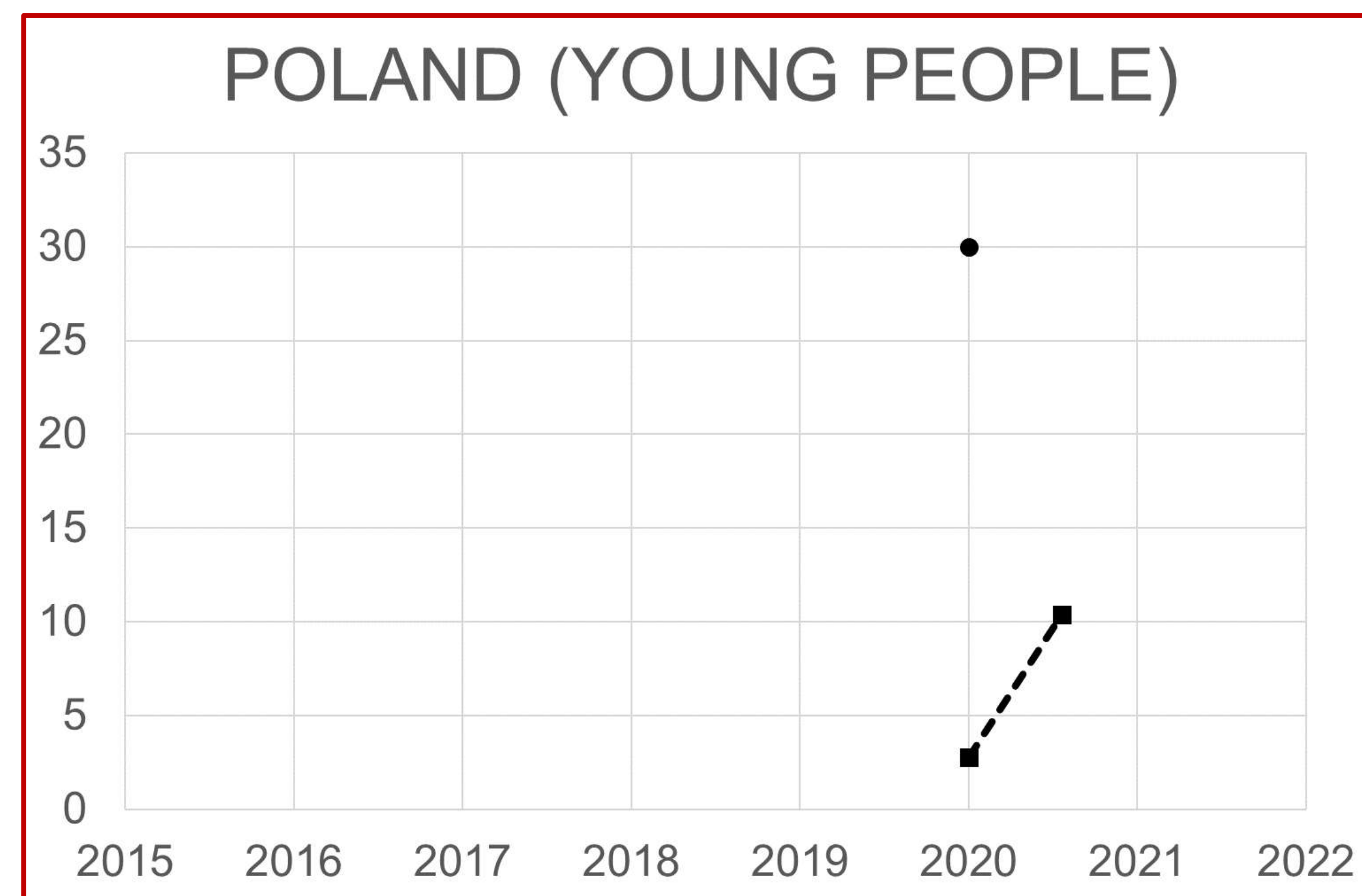
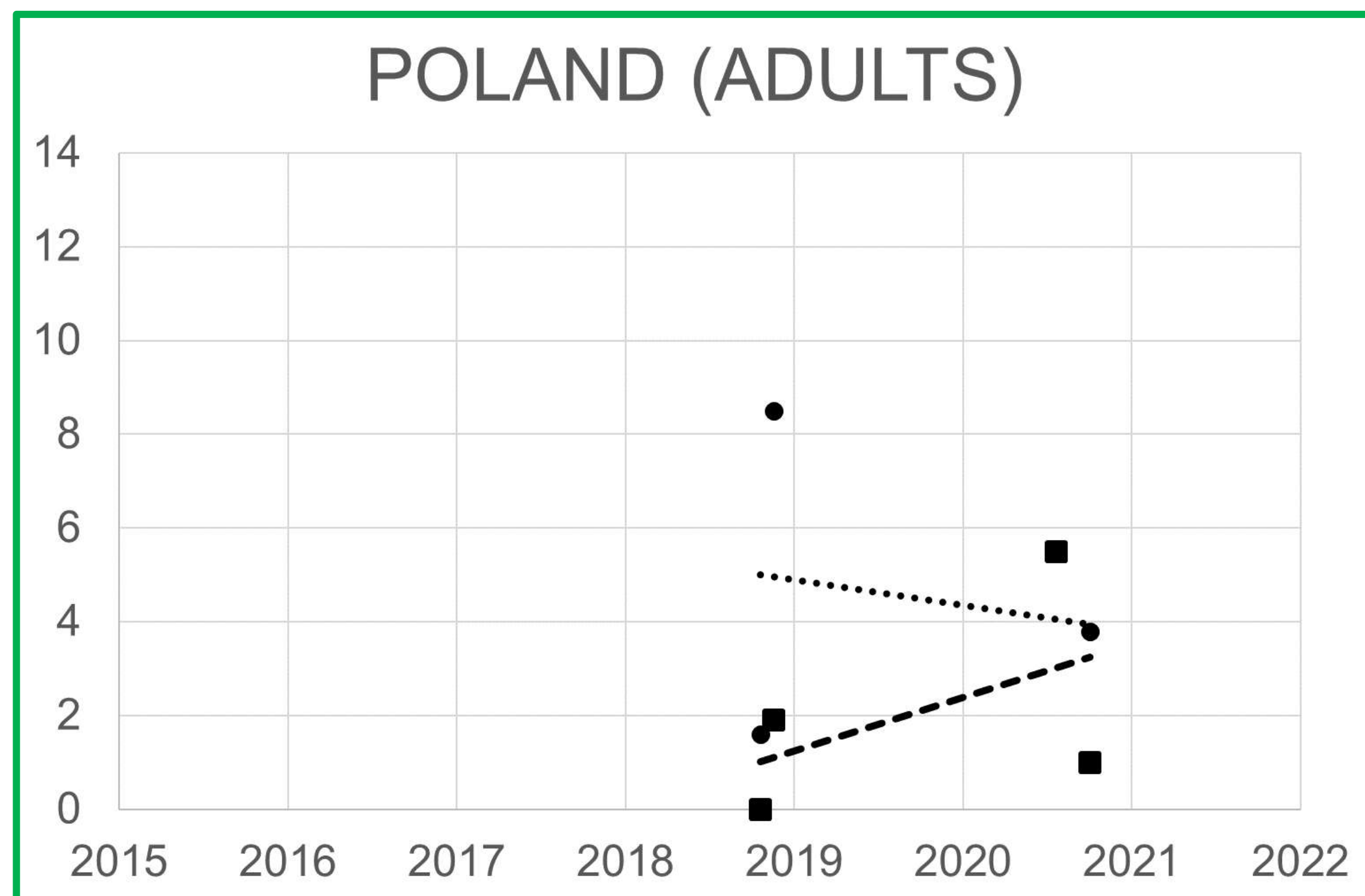
● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE AMONG ADULTS: FRANCE, GERMANY AND GREECE



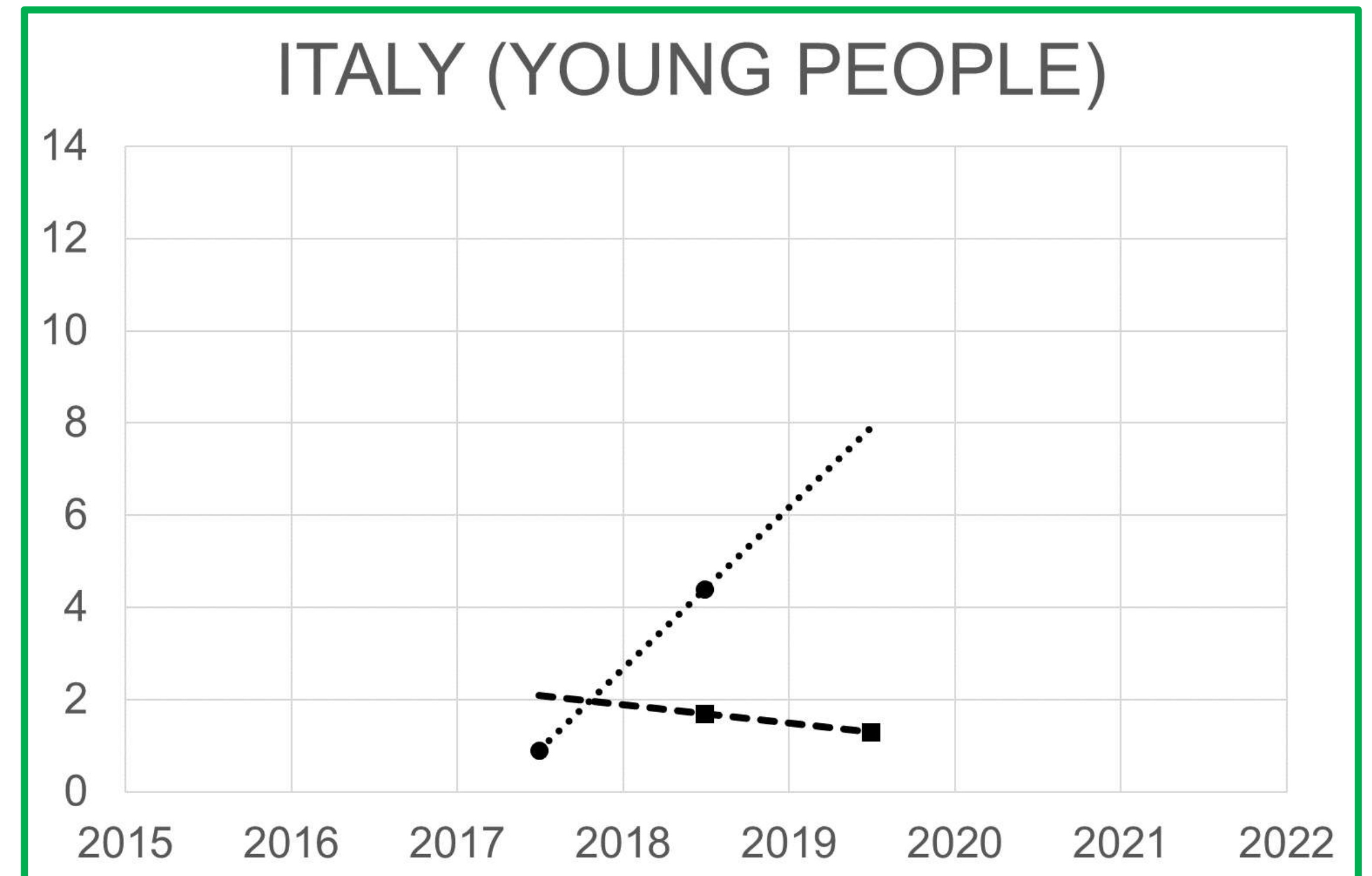
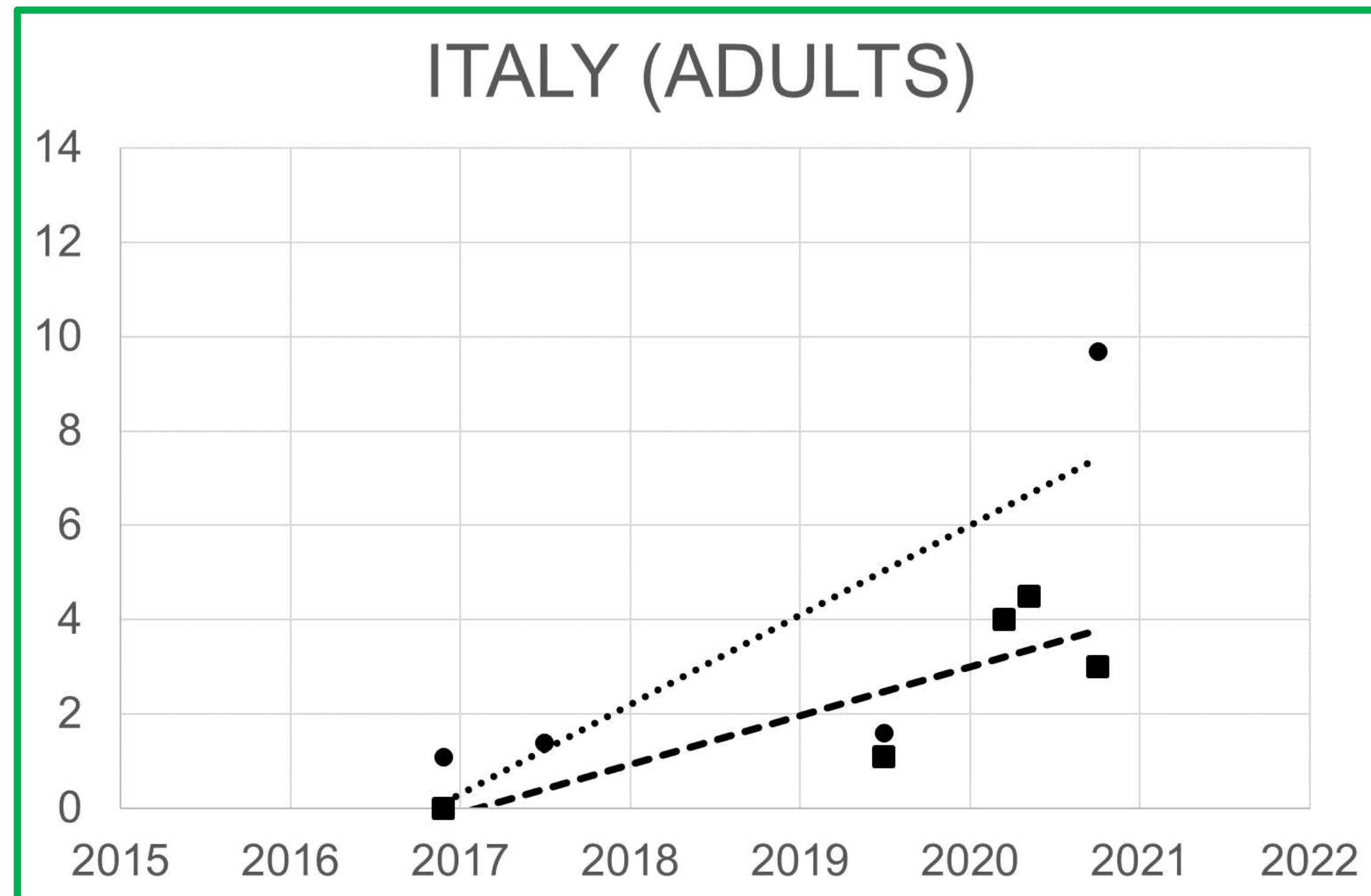
● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE: POLAND



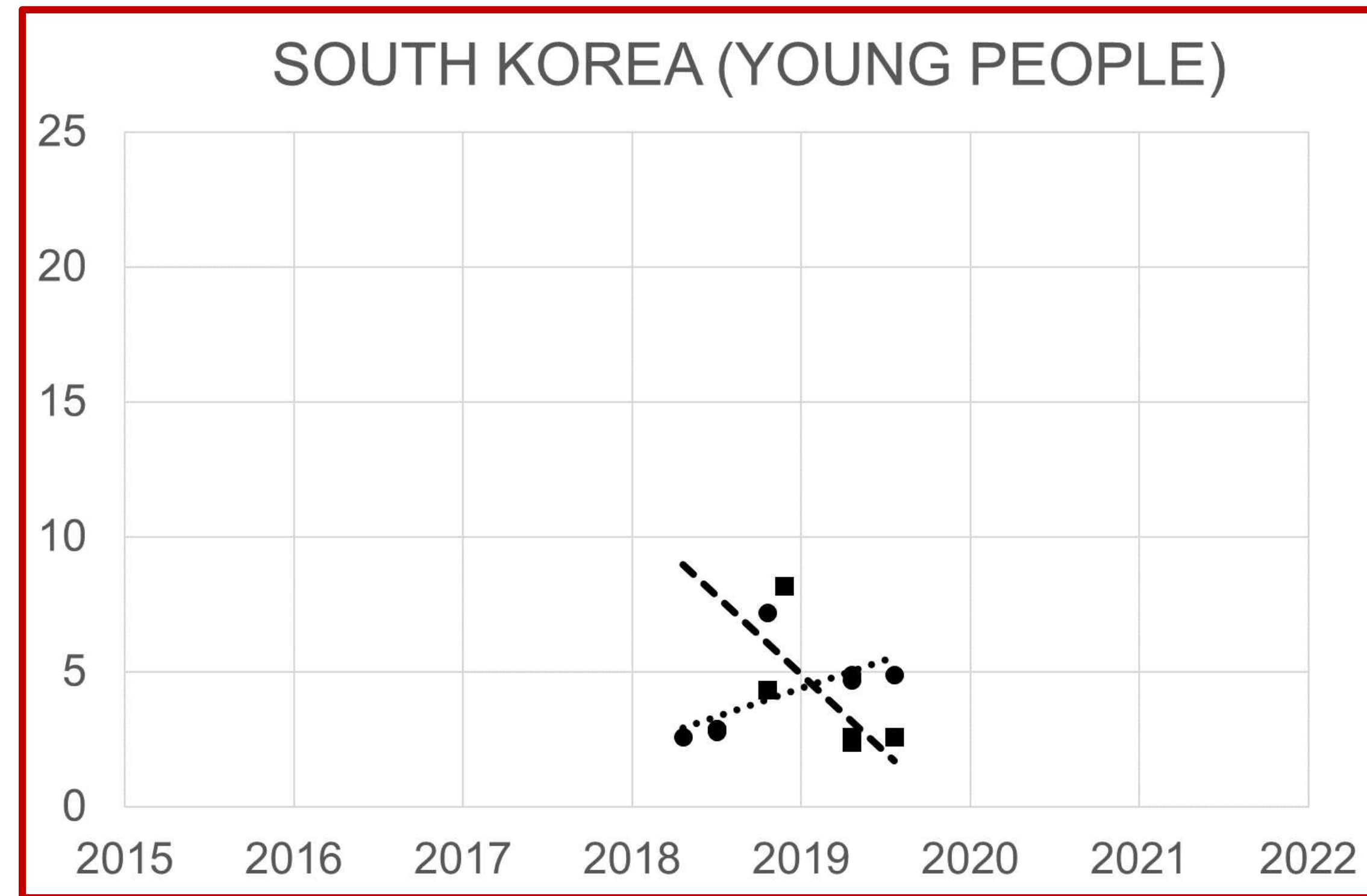
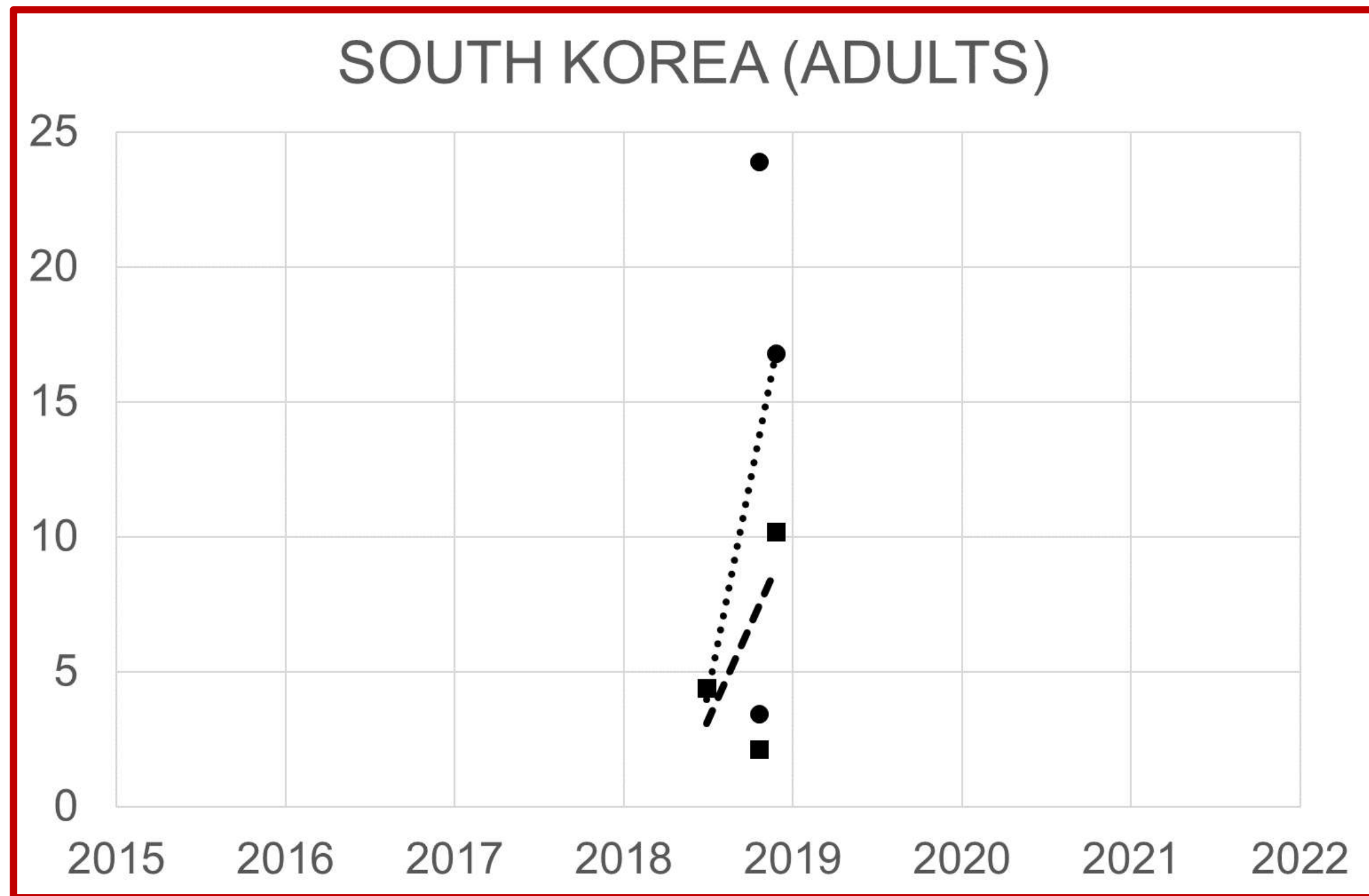
● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE: ITALY



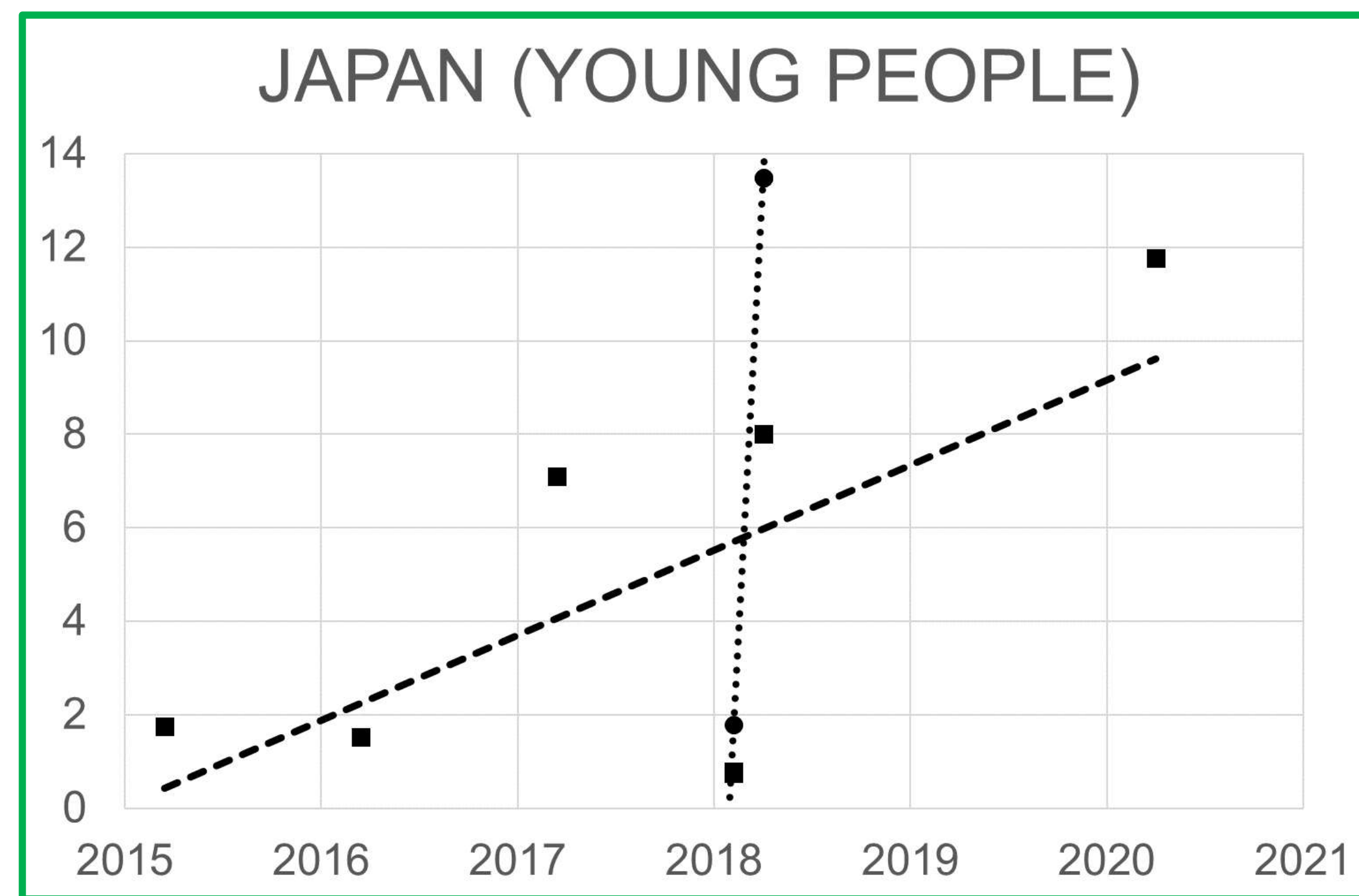
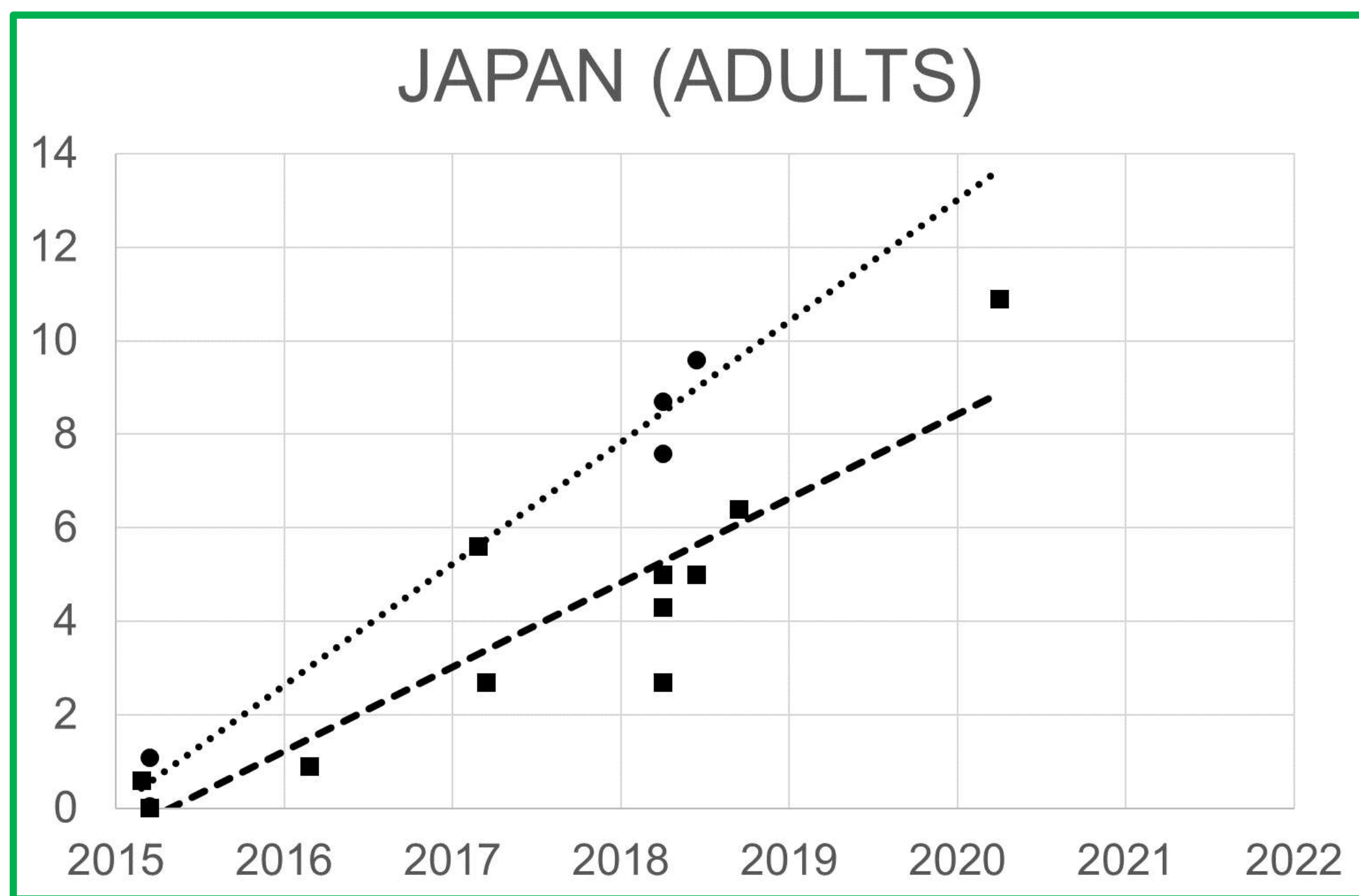
● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE: SOUTH KOREA



● Ever HTP use ■ Current HTP use

PREVALENCE OF HTP USE: JAPAN



● Ever HTP use ■ Current HTP use

CONCLUSIONS

CONCLUSIONS

- These preliminary results show that the estimates on HTP awareness and use are **still limited in many countries**.
- **In some countries**, particularly those with an early launch in the market of IQOS (e.g., Italy and Japan), **an increasing trend is evident**, whereas in other countries (e.g., the USA and the UK) HTP use is still limited.
- Only a few studies provided data on **patterns of use and determinants**.
- We found **34 papers dealing with perceptions and attitudes** towards HTP use.

THANK YOU!