

Research methodology

The research is conducted to understand the perception of nicotine, vaping, and harm reduction approaches in France and Germany.

The combined approach, including a quantitative survey of smokers of traditional cigarettes and in-depth interviews (IDIs) with general practitioners, is used for this study:

- Quantitative online survey:
 - 862 online interviews (448 interviews in France and 414 interviews in Germany);
 - The length of one interview is up to 10 minutes.
 - The survey covered the population of the above-mentioned countries over the age of 18. During the initial selection of respondents, we controlled the following parameters: gender and age (according to the statistical data of a specific country) as well as the region of residence (distribution by region of residence is controlled automatically by the online platform). Only those respondents who noted that they regularly smoke traditional cigarettes answered the full version of the questionnaire.
- Qualitative survey:
 - 30 in-depth interviews with general practitioners in different settlements to represent the country's population (15 interviews in France and 15 interviews in Germany);
 - The length of one interview is up to 30 minutes;
 - General practitioners who have at least one heavy smoking patient were selected for the interviews.

The quantitative survey was held in June of 2022, the qualitative survey took place in June-July of 2022.

During the analysis of the results of the quantitative survey, statistical analysis for subgroups of respondents was carried out when the number of answers in the subgroup was 50 or more.

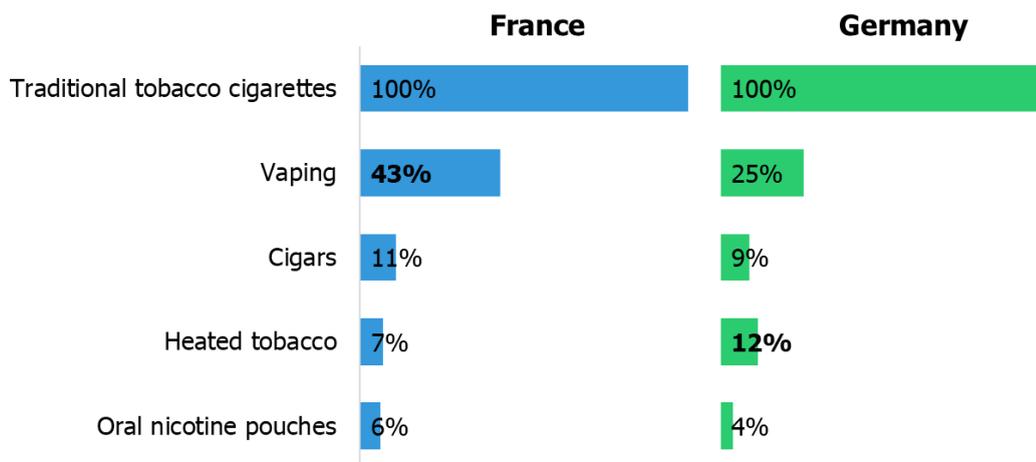
In the text below, we use the term “smokers” for those smokers of traditional cigarettes who participated in the quantitative survey and “doctors” for those general practitioners that participated in IDIs.

Section 1: Results of the quantitative survey of smokers of traditional cigarettes

Smoking habits

43% of smokers of traditional cigarettes in France and 25% of smokers in Germany also regularly vape. Other tobacco products (such as cigars, heated tobacco, or oral nicotine pouches) are used by about 10% of smokers or less.

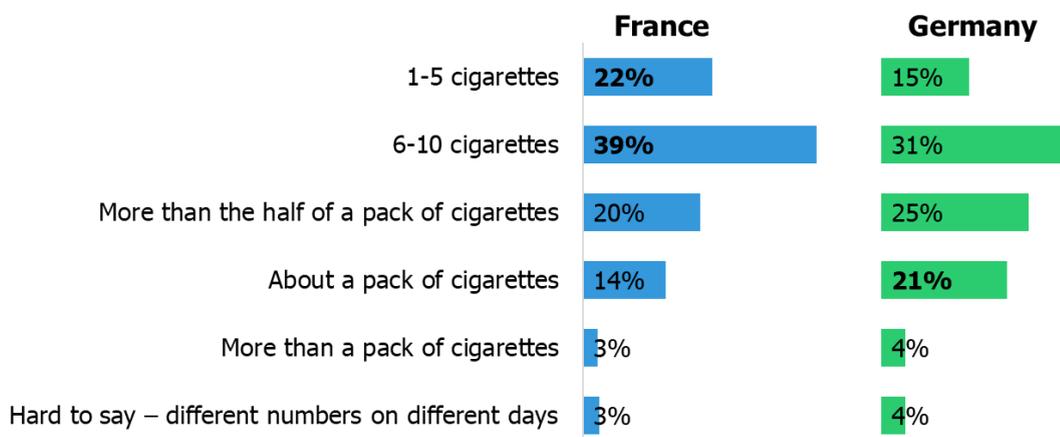
Figure 2.1. Do you regularly smoke/use...? (% of smokers)



There is a higher share of heavy smokers among smokers surveyed in Germany compared to France:

- 21% of smokers in Germany smoke about a pack of cigarettes per day (vs. 14% in France);
- 46% of smokers in Germany smoke up to 10 cigarettes per day (vs. 59% in France).

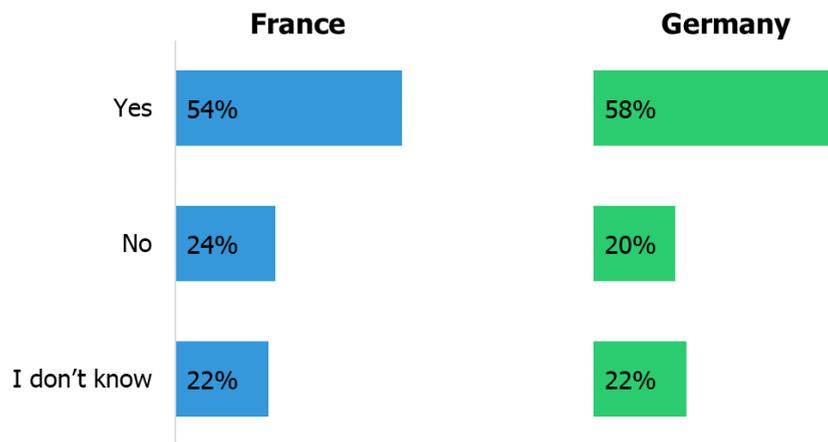
Figure 2.2. Approximately how many traditional cigarettes do you smoke per day? (% of smokers)



Quitting smoking

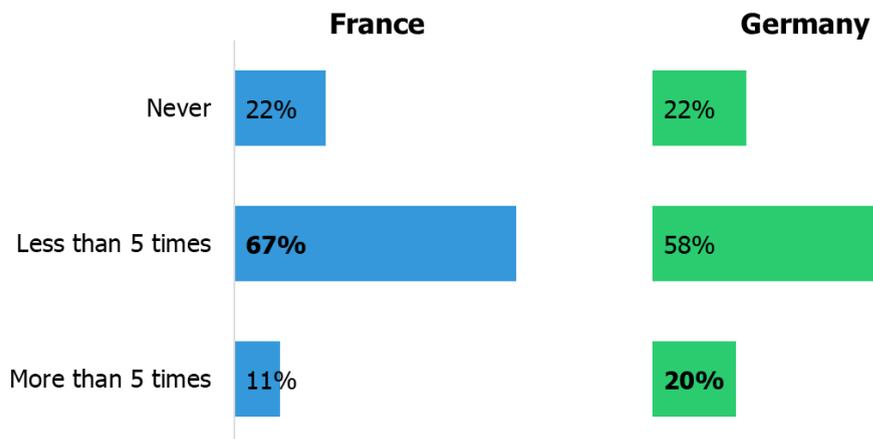
More than half of smokers (54% in France and 58% in Germany) would like to quit smoking, while 22% in both countries are not sure about their wish to quit.

Figure 2.3. Would you like to quit smoking? (% of smokers)



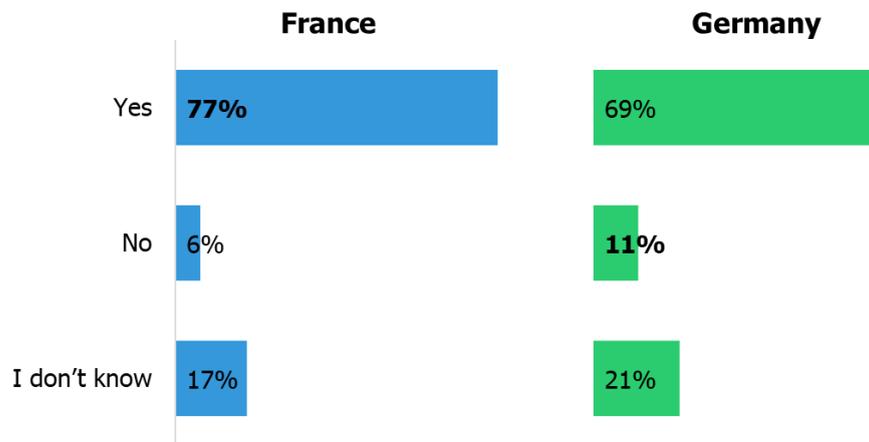
About four-fifths of smokers in both countries have tried to quit smoking. Moreover, 20% of smokers in Germany and 11% of smokers in France have tried to quit more than 5 times.

Figure 2.4. How often have you tried to quit smoking? (% of smokers)



Among those who tried to quit smoking, 77% of respondents in France and 69% of respondents in Germany say that they will keep trying to quit smoking. 44% of smokers in France and 22% of smokers in Germany have tried nicotine replacement therapy.

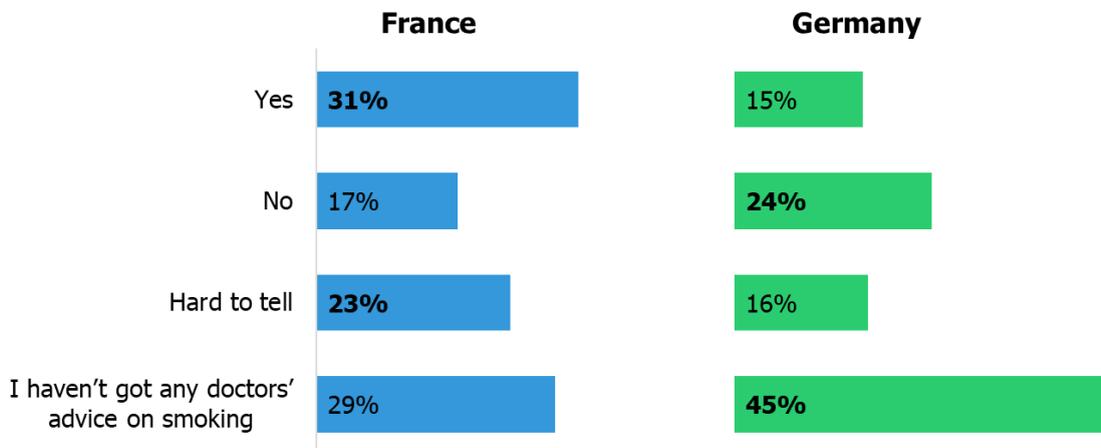
Figure 2.5. Do you think you will keep trying to quit smoking? (% of smokers who tried smoking)



63% of smokers in France and 70% of smokers in Germany think that complete smoking abstinence is achievable, while about one-fifth of respondents in each country are not sure about that.

29% and 45% of smokers in France and Germany respectively haven't got any doctors' advice on smoking. 30% of smokers in France and only 15% of smokers in Germany say that the doctors' advice on smoking has been helpful.

Figure 2.6. Has your doctors' advice on smoking been helpful? (% of smokers)



62% of smokers in France and 53% in Germany believe that anti-smoking policies ignore how difficult it is to stop smoking.

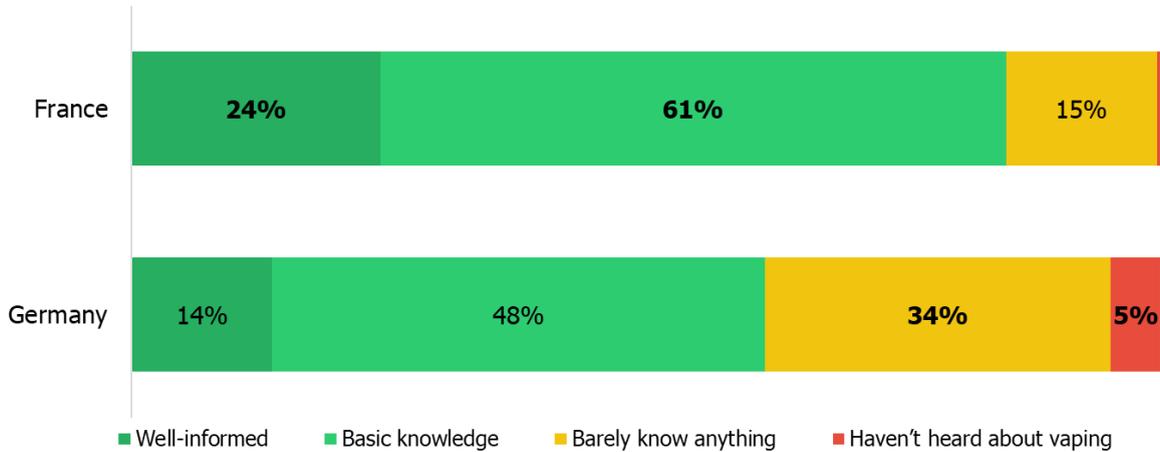
About half of respondents in both countries (54% in France and 51% in Germany) think that the ritual of inhaling is the main reason why they continue to smoke.

Awareness of vaping

94% of smokers in France and 79% of smokers in Germany say they know what vaping is.

85% of smokers in France say they have at least basic knowledge about vaping while this indicator is lower in Germany (62%).

Figure 2.7. In your view, how informed are you about vaping? (% of smokers)

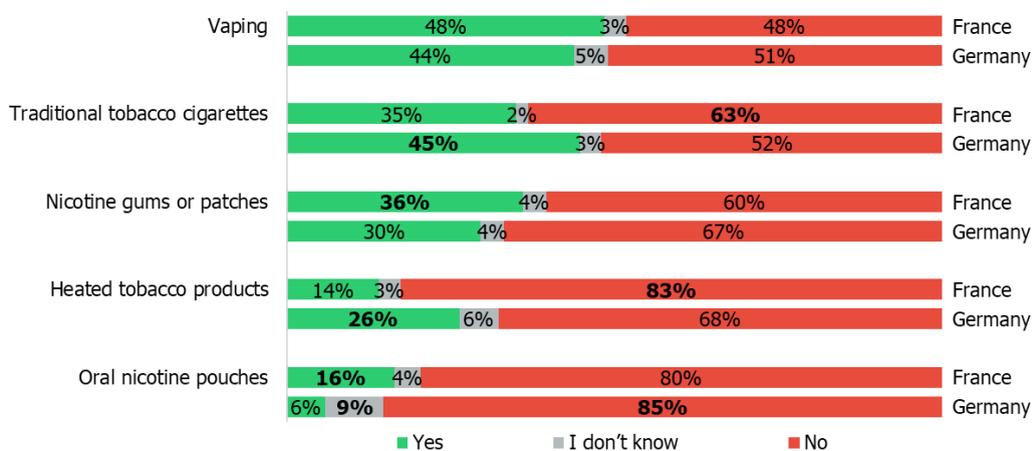


48% of smokers in France and 44% of smokers in Germany say that they have seen advertisements for vaping in the past month. 35% of smokers in France and 45% of smokers in Germany have seen advertisements for traditional tobacco cigarettes, while 36% of smokers in France and 30% of smokers in Germany have seen advertisements for nicotine gums and patches.

Advertisements of heated tobacco products and oral nicotine pouches were recalled by fewer respondents:

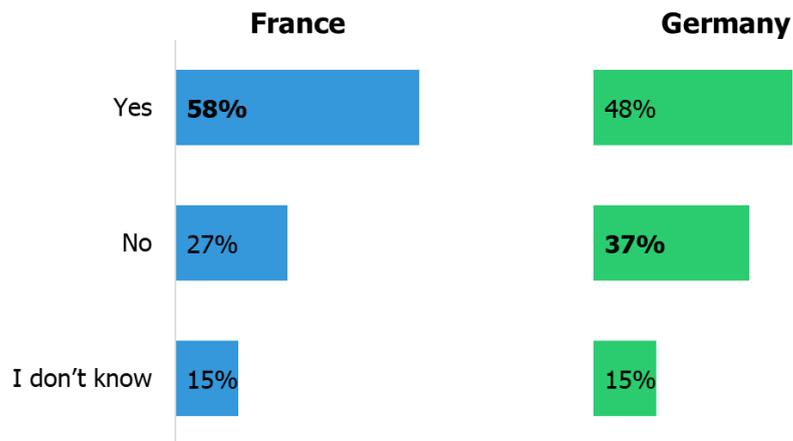
- 14% of smokers in France and 26% of smokers in Germany say that they have seen advertisements for heated tobacco products in the past month.
- 16% of smokers in France and 6% of smokers in Germany report that they have seen advertisements for oral nicotine pouches in the past month.

Figure 2.8. In the past month have you seen any advertisements or promotions for the following products? (% of smokers)



Among those smokers who are not vape users, 58% in France and 48% in Germany would be keen to try vaping if offered.

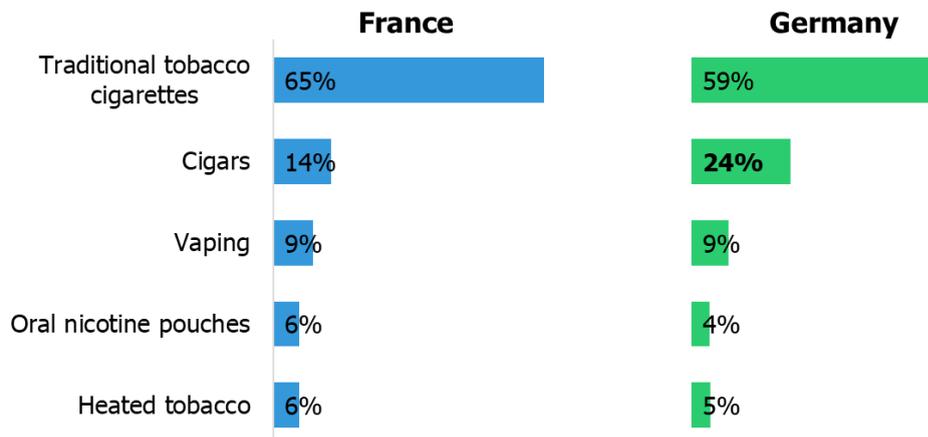
Figure 2.9. Would you be keen to try vaping if offered? (% of smokers who is not vape user)



Perception of the harmfulness of the tobacco products

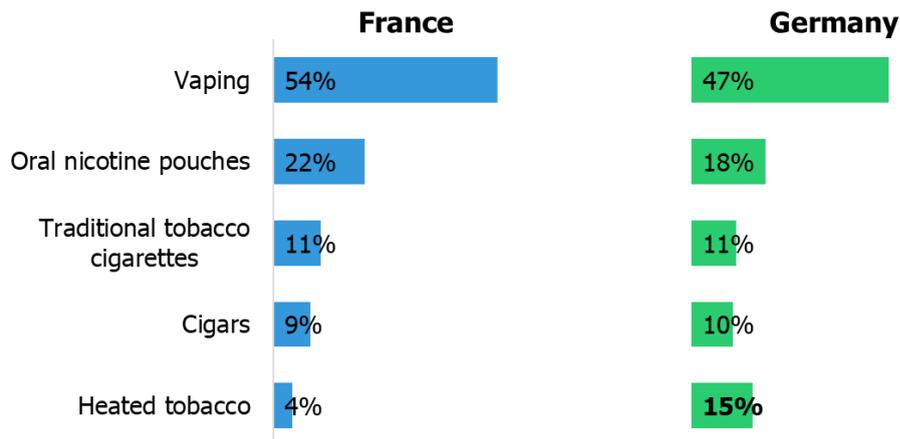
65% of smokers in France and 59% of smokers in Germany consider **traditional cigarettes the most harmful nicotine product**. Cigars take second place in this rating – 14% of smokers in France and 24% of smokers in Germany name them as the most harmful. 9% of smokers in both countries consider vaping the most harmful nicotine product.

Figure 2.10. Which of the following nicotine products is the MOST harmful? (% of smokers)



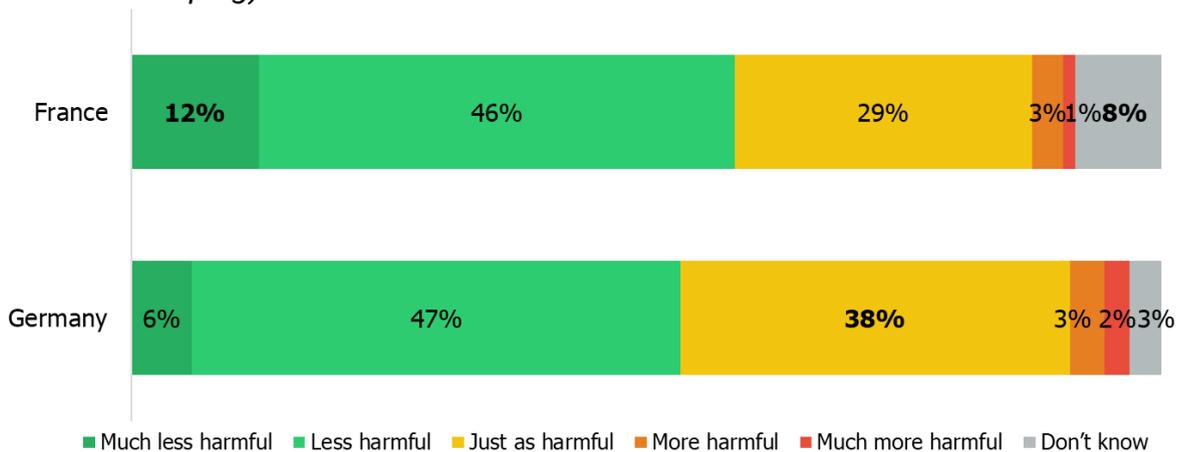
Vaping is considered the least harmful nicotine product by 54% of smokers in France and 47% of smokers in Germany. Vaping is followed by oral nicotine pouches – 22% of smokers in France and 18% of smokers in Germany name them as the least harmful. Other alternatives are named by 15% of smokers and less.

Figure 2.11. Which of the following nicotine products is the LEAST harmful? (% of smokers)



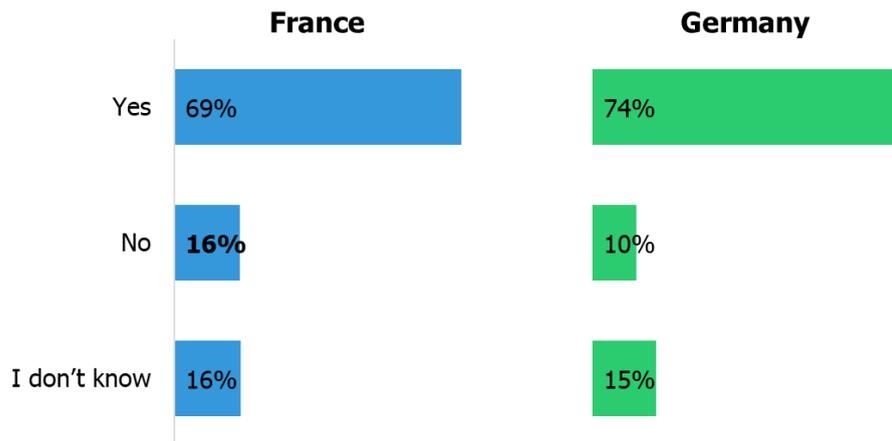
Among those who are aware of vaping, 58% in France and 53% in Germany think that vaping is less harmful than smoking, while 29% and 38% respectively say vaping is just as harmful as smoking.

Figure 2.12. Compared to smoking, would you say that vaping is... (% of smokers who are aware of vaping)



69% of smokers in France and 74% of smokers in Germany think that nicotine causes cancer.

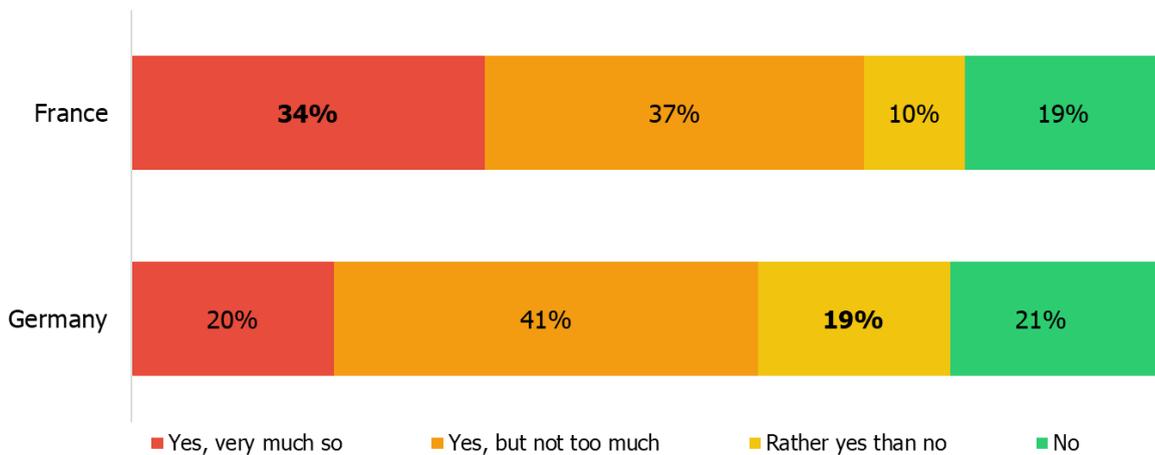
Figure 2.13. Do you think nicotine causes cancer? (% of smokers)



Stigmatization of smokers

Four-fifths of smokers in both countries feel stigmatized to a certain extent. The degree of stigmatization looks heavier in France: 34% of smokers there (vs. 20% in Germany) feel very much stigmatized as a smoker.

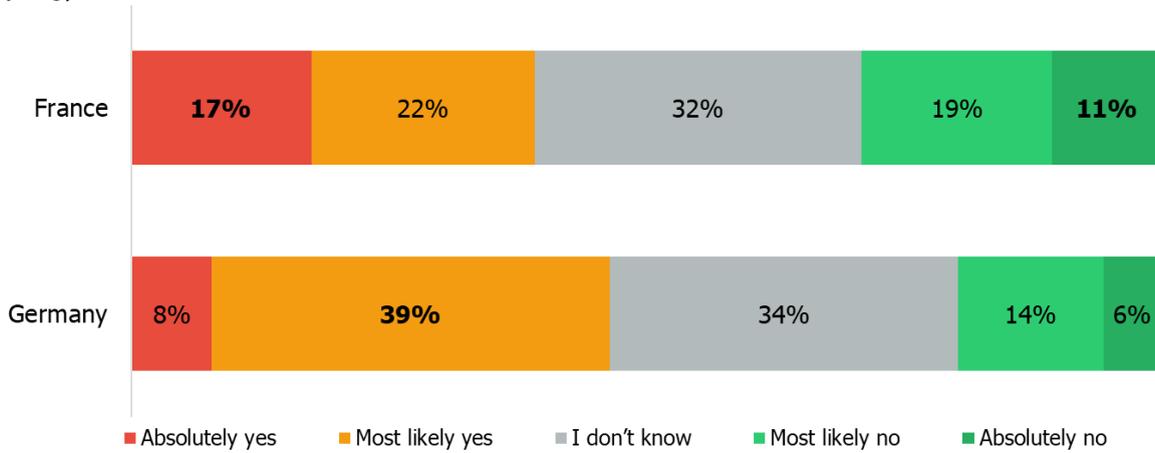
Figure 2.14. Do you feel stigmatized as a smoker?



Regulations on vaping

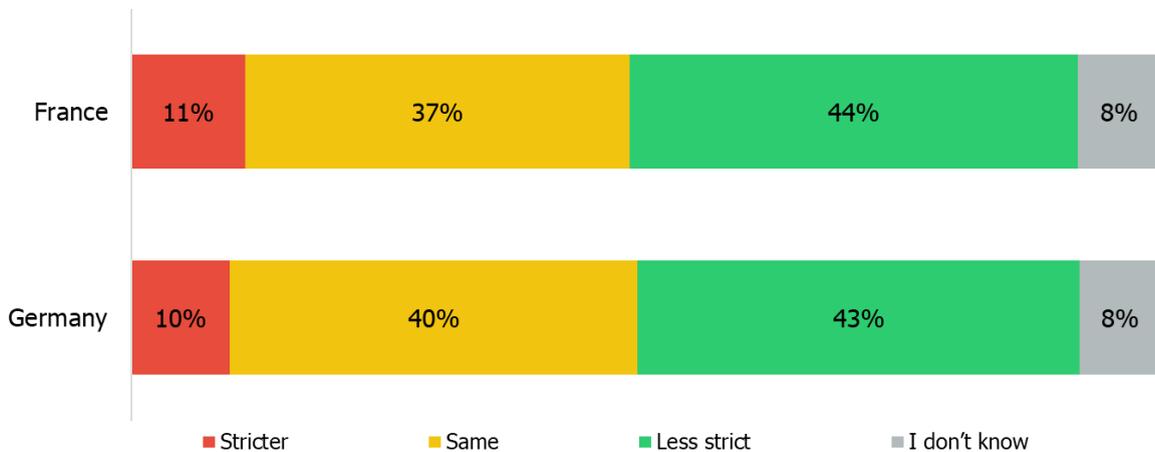
Among those smokers who are aware of vaping, 39% and 47% respectively would support restricting vaping in France and Germany, while one-third of them do not have a specific position on this issue.

Figure 2.15. Would you support restricting vaping? (% of smokers who is aware of vaping)



In both countries, respondents think about regulations on vaping in a very similar manner. Among those smokers who are aware of vaping, 43-44% think that vaping should be regulated less strict compared to traditional cigarettes, 37-40% – that it should be regulated in the same way as traditional cigarettes, 10-11% – that it should be regulated stricter compared to traditional cigarettes.

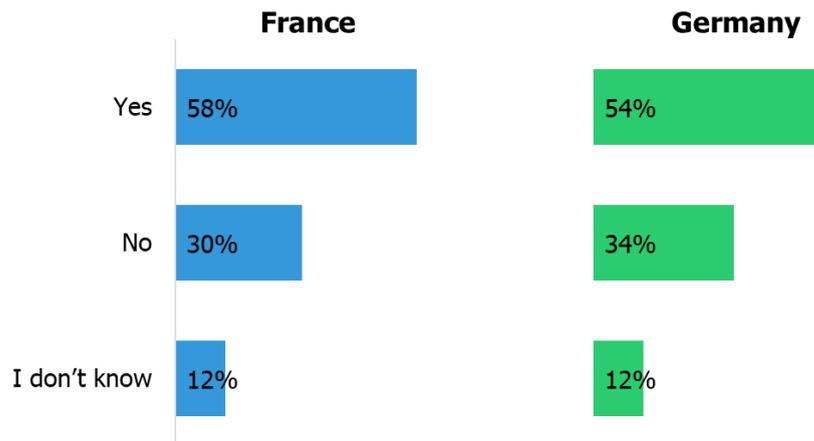
Figure 2.16. In your view, how should vaping be regulated compared to traditional cigarettes? (% of smokers who is aware of vaping)



Socio-demographic characteristics of smokers of traditional cigarettes depending by the willingness to learn more about vaping

More than half of respondents in both countries (58% in France and 54% in Germany) would like to learn more about vaping, while about one-third would not.

Figure 2.17. Would you like to learn more about vaping? (% of smokers)



Among those who want to learn more about vaping, there is a higher share of younger respondents and urban residents in both countries. In France, there is also a higher share of males among those smokers who would like to know more.

Figure 2.18. Age (% of smokers who would like to learn more about vaping and those who would not)

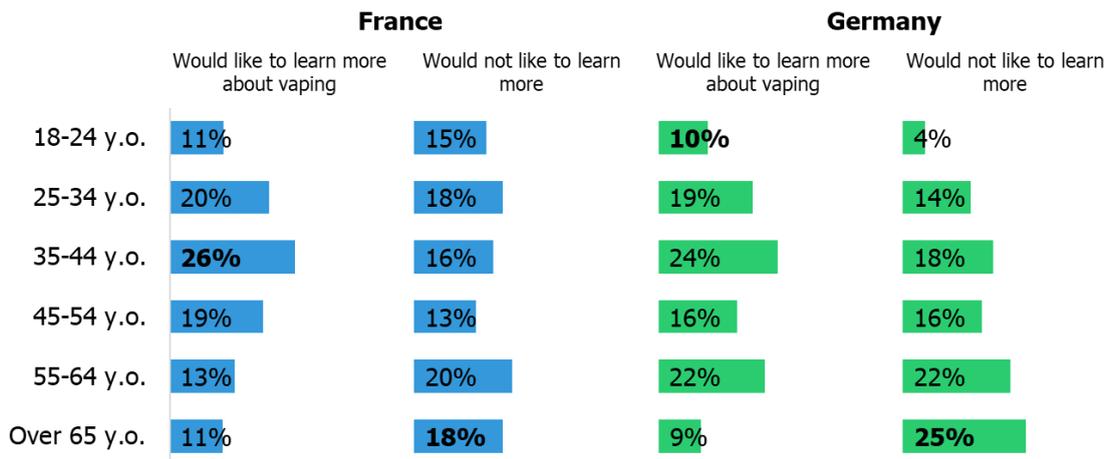
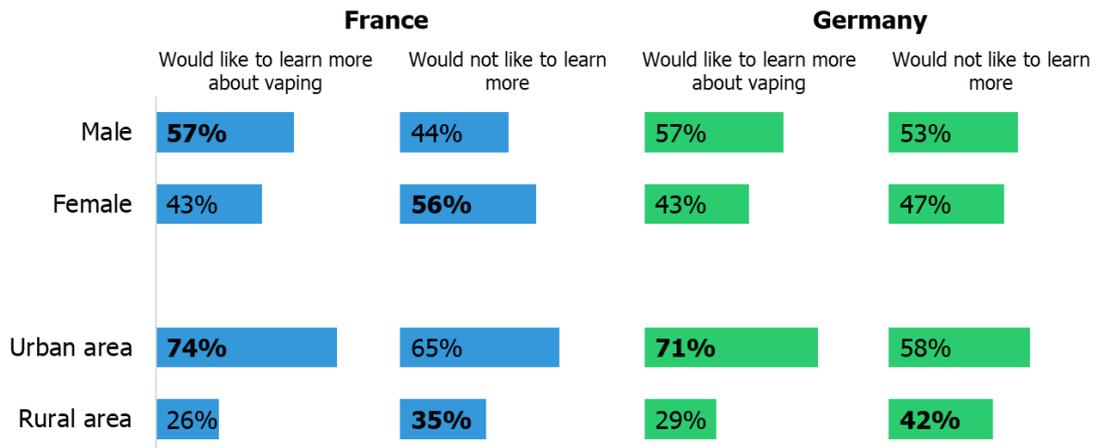


Figure 2.19. Gender and place of living (% of smokers who would like to learn more about vaping and those who would not)



Section 2: Results of in-depth interviews with general practitioners

Results of the qualitative survey of doctors

	France	Germany
<i>Cessation tools that are usually proposed (named without prompt)</i>	<p>The doctors say they consult smokers about the ways to quit and usually recommend a mix of cessation tools, among which there could be the following:</p> <ul style="list-style-type: none"> ● Frequently: nicotine patches; ● Rather frequently: <ul style="list-style-type: none"> ● Nicotine gums; ● Champix, antidepressants, and other drugs; ● Nicotine sweets or pastilles. ● Rarely: <ul style="list-style-type: none"> ● Vaping; ● Acupuncture; ● Hypnosis; ● Psychotherapy; ● Consultations of doctors who are specialized in addiction. 	<ul style="list-style-type: none"> ● Frequently: chewing gums; ● Rather frequently: <ul style="list-style-type: none"> ● Nicotine patches and/or pouches; ● Acupuncture and/or hypnosis; ● Psychotherapy, lifestyle changes; ● Champix or other drugs. ● Rarely: <ul style="list-style-type: none"> ● Vaping; ● Specific literature.

	<p>According to the doctors, they do not recommend pouches because smokers in France are not aware of this tool.</p>	
<p><i>Awareness of the harm reduction and nicotine products</i></p>	<p>The majority of the surveyed doctors say that they know the harm reduction term. Speaking about harm reduction approaches, those doctors mention the following:</p> <ul style="list-style-type: none"> ● Usage of nicotine substitutes and drugs to decrease/stop nicotine consumption and dependency. ● Behavioural approaches/psychological follow-up that aim to make patients aware of their habits and allow for a change. ● Acupuncture. 	<p>Three out of 15 surveyed doctors say they know the harm reduction term. Speaking about harm reduction approaches, those doctors mention the following:</p> <ul style="list-style-type: none"> ● Limiting the consequences of nicotine abuse; ● Providing information about diseases through doctors and advertising; ● Useful digital apps.
<p><i>Harm reduction approaches that are considered the most effective</i></p>	<ul style="list-style-type: none"> ● Frequently: nicotine patches, gums, and pastilles; ● Rarely: drugs; sports as a complementary tool <p>A few doctors also say tell that the effectiveness very much depends on the patient's will and motivation, not on the approaches used.</p>	-
<p><i>Ranking four nicotine products from 1 (the most harmful category) to 4 (the least harmful one)</i></p>	<p>Traditional cigarettes are ranked as the most harmful (average rank of 1.1), followed by heated tobacco devices (1.5) and vaping (2.3). Nicotine pouches are considered the least harmful (3.6).</p>	<p>Traditional cigarettes are ranked as the most harmful (average rank of 1.0), followed by heated tobacco devices and vaping having almost the same average rank (2.5 and 2.6 respectively). Oral nicotine pouches are considered the least harmful among the four nicotine products on the list (3.3).</p>
	<p>For some doctors, it was hard to give rank to nicotine products and justify it because of a lack of knowledge.</p>	

<p><i>Awareness of vaping products</i></p>	<ul style="list-style-type: none"> • Vaping makes less harm than traditional cigarettes, but it is still harmful to health; • Vaping allows smokers to gradually reduce their nicotine consumption but keep the feeling/gesture of smoking. • There is not enough information about vaping: no long-term research about the effects of vaping; no exact information about the content (some doctors consider the additional substances in vaping products as harmful). 	
<p><i>Perception of vaping products as a harm reduction tool</i></p>	<ul style="list-style-type: none"> • There is no norm/no regulation for vaping devices; there are quality differences in vaping products. • Nicotine patches and drugs are reimbursed by Social Security while vaping is not. 	<p>-</p>
	<p>Some doctors do not perceive vaping products as a harm-reduction tool, because:</p> <ul style="list-style-type: none"> • Vaping does not break the addiction to smoking gesture; • There are no norms/regulations concerning vaping; • There is no information about the content, no official studies are available on the harmlessness of such devices; • Nicotine patches and oral products are reimbursed by Social Security while vaping is not. 	<p>The majority of doctors do not perceive vaping products as a harm-reduction tool, because:</p> <ul style="list-style-type: none"> • Vaping does not break the habit of smoking; • Vaping is just a reduction of the problem, not a solution to the problem; • Official sources say nothing about the effect of vaping.
	<p>Some doctors perceive vaping products as a harm-reduction tool but only under some conditions:</p> <ul style="list-style-type: none"> • For a certain category of patients; • As a starting point before using more serious tools. 	<p>Only a few doctors perceive vaping as a harm reduction tool because:</p> <ul style="list-style-type: none"> • It has less harmful substances; • It gives those patients who need to preserve a ritual of smoking an opportunity to smoke

		something other than cigarettes.
<i>Recommending vaping</i>	The majority of doctors do not recommend vaping products spontaneously to a patient who is asking for advice on how to quit smoking. Doctors say that vaping does not change the habit and the side effects of vaping are unknown.	
	<p>Only some doctors recommend vaping and they do so only for particular patients/cases (patients who are not ready to quit completely, etc.).</p> <p>They mostly consider vaping as a starting point or transitory phase to decrease dependency and start the more serious therapy.</p>	<p>Among those who recommend vaping products, about half of the doctors mention that they do so only under certain conditions (i.e. if a patient asks about vaping).</p> <p>The majority of doctors say they would recommend vaping products only if a patient has tried everything else and vaping is the last hope to quit smoking.</p>
	It is difficult for doctors to evaluate the effectiveness of vaping because it is often used together with other tools. Some doctors say vaping is an effective tool, and some say it is not.	
<i>Recommending oral nicotine pouches and gums</i>	<p>Almost all the doctors recommend nicotine gums and/or patches and/or pastilles because these tools have been in use for many years and help to lose the "gesture" of smoking (which is also addictive).</p> <p>Doctors do not recommend pouches because patients in France are not aware of them.</p>	<p>Almost all the doctors recommend nicotine gums and/or plasters and/or pouches.</p> <p>Some doctors do not recommend pouches because are not aware of them or think one cannot control the amount of nicotine intake while using them.</p>
	There is no consolidated opinion about the effectiveness of these tools. Some doctors say they are effective, some doctors say they are not, and some doctors could not evaluate the effectiveness because it depends on the patient's motivation, heaviness of smoking, other tools used, etc. There is no unanimous opinion about the effectiveness of these tools.	

<p><i>Opinion about nicotine and its effects</i></p>	<p>The majority of doctors have a negative attitude towards nicotine because they consider it addictive and harmful to health.</p> <p>The minority of doctors have a neutral or positive attitude to nicotine and say it is harmless (although it is addictive if it is overused) and/or mention the positive effects such as:</p> <ul style="list-style-type: none"> ● It has an invigorating or relaxing effect/it stimulates the brain and digestion; ● It is used in pain treatment. 	
<p><i>References and attitude to the studies on nicotine</i></p>	<p>Only a few doctors have referenced any recent studies on nicotine or its benefits but almost all doctors are interested in such studies. In particular, they would like to know:</p> <ul style="list-style-type: none"> ● What are the benefits of nicotine and how can it be used in everyday therapy? How can it be used in pharmacology? Could it be used in pain management and cancer treatment? ● What is nicotine's medium- and long-term effect? ● What are the findings regarding addiction? ● Are vaping devices harmless? <p>The influence of such studies on doctors would depend on the findings themselves, the methodology, the sample, and who does the study (a tobacco/vaping industry or an independent organization).</p>	
<p><i>The best ways to share such new studies</i></p>	<ul style="list-style-type: none"> ● Professional media: <ul style="list-style-type: none"> ● newsletters (for example, Le Quotidien du Médecin, Le Concours Médical, Deutsches Ärzteblatt, Rheinische Ärzteblatt, The Medical Tribune) ● journals (for example, Der Hausarzt, Deutsche Medizinische Wochenschrift, Allgemeinmedizin up2date, arznei-telegramm) ● websites (for example, AMBOSS, Deximed, DocCheck, The Internist) ● Professional meetings and conferences 	<ul style="list-style-type: none"> ● Through reliable pharmaceutical representatives

Per quarter, the part of the surveyed doctors has 30-60 patients who are heavy or mid-heavy smokers, some doctors have 20-30 such patients, and some doctors have 10-15 such patients.

The doctors say they consult smokers about the ways to quit and usually recommend a mix of cessation tools, among which there could be the following:

- Very frequently: nicotine patches;
- Rather frequently:
 - Nicotine gums;
 - Champix, antidepressants, and other drugs;
 - Nicotine sweets or pastilles;
- Rarely:
 - Vaping;
 - Acupuncture;
 - Hypnosis;
 - Psychotherapy;
 - Consultations of doctors who are specialized in addiction.

"I explain to them the different solutions, patches, drugs... and ask them what they prefer, whether they want hypnotherapy concurrently"

"I ask them what they prefer. They want something practical and easy to handle. The drug is practical, you just swallow it and that's it"

"The patch is the basic and sometimes you need to add something that helps to resist when the desire for smoking gets too strong"

Some doctors justify their choice of cessation tools (in particular, nicotine patches and drugs) by the availability of reimbursement by Social Security, noting that their patients do not always have good financial standing.

According to the doctors, they do not prescribe nicotine pouches as they are not known in France.

Awareness of the harm reduction and nicotine products

The majority of the surveyed doctors say that they know the harm reduction term. Speaking about harm reduction approaches, those doctors mention the following:

- Usage of nicotine substitutes and drugs to decrease/stop nicotine consumption and dependency.
- Behavioural approaches/psychological follow-up that aim to make patients aware of their habits and allow for a change.

"There should be a better follow-up (like the "Anonymous alcoholics"). The problem is not to quit smoking but not to go back after a while"

- One doctor: acupuncture.

Harm reduction approaches that are considered the most effective are:

- Frequently: nicotine patches, gums, and pastilles;

- Rarely: drugs; sports as a complementary tool (to disconnect the patient from his unhealthy habits and context).

A few doctors also say that the effectiveness very much depends on the patient's will and motivation, not on the approaches used.

During the interviews, the doctors ranked four nicotine products from 1 (the most harmful category) to 4 (the least harmful one). As a result, traditional cigarettes are ranked as the most harmful, followed by heated tobacco devices. Vaping is in the third place by harmfulness while oral nicotine pouches are considered the least harmful among the four nicotine products on the list (see Table below).

It is worth noting that some doctors are not aware of heated tobacco devices and perceive them the same as vaping devices or the same as traditional cigarettes in the context of harmfulness. One doctor is not aware of nicotine pouches.

Table 1.1. The average rank of nicotine products from 1 (the most harmful category) to 4 (the least harmful one) and doctors' reasoning and perceptions in France

Nicotine product	Average rank	Reasoning
Cigarettes	1.1	<ul style="list-style-type: none"> - The most harmful product because of combustion, tar, and a lot of cancerogenic ingredients. - Provoke high blood pressure, vascular problems, and cancer. <p><i>"More than 100 carcinogenic ingredients, tar... The nicotine is not the problem"</i></p>
Heated Tobacco Devices	1.5	<ul style="list-style-type: none"> + Less harmful than traditional cigarettes. - Extreme heat liberates toxic substances. - Combustion, tar, hydrocarbons (like the cigarette). - Penetrate the body even deeper and the blood even quicker than traditional cigarettes.
Vaping Devices	2.3	<ul style="list-style-type: none"> + Less harmful than cigarettes; do not contain as many toxic/carcinogenic ingredients as cigarettes; no tar. <p><i>"Normally, vaping devices should only contain steam, water, no additives"</i></p> <ul style="list-style-type: none"> + Lower concentration of nicotine. - There is no norm/no regulation for vaping devices and the composition is not known.

		<ul style="list-style-type: none"> - Contain a lot of unknown/toxic additives, colorants, adjuvants, aromas, and carcinogenic substances. - No information about the long-term effects
Oral Nicotine Pouches	3.6	<ul style="list-style-type: none"> + Nicotine is the only substance absorbed (or: pouches contain fewer additives). + No smoke, no inhalation, therefore less harmful. + Are supervised/regulated by the legal institutions, therefore reassuring for doctors and patients. + Allow reducing the dependency progressively. - Have side effects, though reversible ones.

Awareness of vaping products

The majority of doctors have a positive or ambiguous opinion about vaping as a harm reduction tool that can be summarized as follows:

- It is less harmful than cigarettes (contains fewer toxic substances), but still harmful and does not allow to break the dependency on nicotine/the gesture;
- It allows to reduce nicotine consumption/dependency and/or quit smoking traditional cigarettes;
 - This is especially important for younger/less motivated patients, as it allows them to keep the gesture and the socialization linked to smoking;

"I consider vaping as a real progress because it allows to diminish the number of cigarettes and eventually gain some territory in the war against smoking"

"There are people who use vaping devices with no nicotine inside because they are addicted to the gesture"

- The problem is the uncertain/toxic composition of vaping products/not enough information on the composition of vaping products and no objective studies available on their harmlessness.

"Vaping might be less dangerous than cigarettes, but there's still a lot of crap inside. And people remain dependent on the gesture of putting a device to their mouth and inhaling"

"There is no supervision and there are significant quality differences [across vaping products]. We do not have enough insight for now, there might be a future health scandal with e-cigarettes in some years"

The majority of doctors do not recommend vaping products spontaneously to a patient who is asking for advice because:

- No official studies are available on the harmlessness of such devices;

- Nicotine patches and oral products are reimbursed by Social Security while vaping is not;
- There are quality differences in vaping products and there is neither enough medical information nor supervision.

"I have observed patients who used vaping devices and reduced their nicotine consumption and eventually their dependency on nicotine and stopped vaping. But it's not a therapy that is supervised by the health agency or legal institutions, so I'm sceptical, I don't know what to think about it"

Some doctors perceive vaping products as a harm-reduction tool but only under some conditions, for example:

- Vaping can help and/or suits only a certain category of patients, for example, light smokers, smokers with serious health problems, smokers who are not motivated enough to quit smoking completely, the younger patients who do not want to quit smoking yet but just want to reduce the number of cigarettes.
- Vaping is just a starting point and has to be used in combination with nicotine patches (with diminishing nicotine concentration); vaping devices must not just replace the cigarette and must not preserve the addiction to the "smoking gesture";

"I tell my patients that vaping does not allow them to quit smoking. It can be transitory. In that case, we say we try the vaping device for one month and then go over to nicotine patches and gums and psychological follow-up to get rid of the habit related to the gesture"

"You remain addicted to the smoking gesture and there is a real risk of getting back to smoking"

- Ideally, the patient should detach oneself from active marketing promotions of vaping devices/stores, etc.

"I am very angry with the vaping industry because at first I saw vaping as a way to help lower nicotine levels, but now they offer all the possible flavours, the strategy is to tempt people. People usually come to us after having already bought the device and tried vaping. I warn them against the marketing of these products"

Some doctors do not perceive vaping as a harm reduction tool at all because of the following reasons:

- Vaping does not break the addiction to smoking gesture;
- There are no norms/regulations concerning vaping;
- There is no information about the content, no official studies are available on the harmlessness of such devices;
- Nicotine patches and oral products are reimbursed by Social Security while vaping is not.

Recommending vaping

Only some doctors recommend vaping and they do so only for particular patients/cases, for example:

- if a patient asks about vaping/already has or uses a vaping device;
- if a patient has failed to quit/is not at ease with Champix;
- if the patient is afraid of the feeling of lack of smoking (if he/she completely quits smoking);
- if the patient has serious health problems;
- for younger patients who would like to preserve the habit;
- if the patient is not a heavy smoker.

Only one doctor actively recommends vaping devices along with other solutions. This doctor recalls the case of about eight heavy smokers back in 2011 who gave up smoking traditional cigarettes thanks to vaping devices (without consulting him). That is why he now recommends vaping to motivated patients.

The majority of doctors respond negatively to the question “Would you recommend vaping products if a patient has tried everything and vaping could be their last hope to quit smoking?” The point is that they mostly consider vaping as a starting point or transitory phase to decrease dependency and start the more serious therapy.

"Vaping does not allow for quitting smoking, the addiction to the gesture remains. Vaping devices are also addictive, we do not recommend it"

"Vaping is the first step if a patient thinks about how to stop smoking but is not motivated by "classic" therapies like patches or gums. Also, vaping can be useful for patients who are more autonomous and prefer a less medical treatment"

Some doctors have once recommended vaping. As a rule, it is difficult for doctors to evaluate the effectiveness of vaping in particular because it is often used together with other tools. Those who were able to access the effectiveness and recall the particular cases tell the following examples:

- A doctor evaluates the success rate of around 30% in his practice. There is no particular profile of such patients, if not financial, i.e. people with a regular income;
- Two patients quit smoking and now use vaping devices with zero nicotine.
- A patient has used patches in combination with the vaping device (it was the patient's choice). The nicotine concentration has diminished progressively while the addiction to the gesture remains.

Recommending nicotine gums

Almost all the doctors recommend nicotine gums and/or patches and/or pastilles because these tools have been in use for many years now and help to lose the "gesture" of smoking (which is also addictive).

"It allows them to have something in their mouth and eventually not think about cigarettes"

"If the level of addiction is high, we use a strong patch in combination with gums to increase the chances for success. Patches alone are more suitable for light smokers"

Usually, doctors recommend gums/patches/pastilles when they describe all possible ways to reduce/quit smoking.

Speaking about the effectiveness of the nicotine gums, doctors say it depends much on the patient's motivation. Also, the heavier a patient smokes, the lower the effectiveness is. Only one doctor named the exact figure for the effectiveness – 50%. Doctors tell about such cases:

- Patients at first use vaping devices and then use gums to stop smoking.
- The positive experience of heavy smokers who were motivated to quit by social pressure/family/children.
- A patient had heart disease and had to stop smoking. The doctor did not want to prescribe patches as he was afraid that the patient would continue to smoke secretly which would have been dangerous. So, he only prescribed nicotine pastilles and the patient quit smoking after several years with the pastilles.
- Not all heavy smokers who had an urgent need to stop smoking because of serious health issues managed to do so.

Awareness of innovative solutions

Half of the doctors say they know or have faced some innovative solutions that can drive down the smoking rates. In particular, they mention the following:

- More often:
 - Acupuncture/auriculotherapy;
 - Hypnosis;
- Rarely:
 - Nicotine spray;
 - Yoga;
 - Apps.

While speaking about the effectiveness of different innovative tools, doctors say that innovative solutions are efficient only if the patient is motivated by this specific approach. One doctor says he treats such tools as a "gimmick".

As for achieving complete nicotine abstinence, the doctors' opinions are divided into two roughly equal groups:

- those who believe that it is realistic but depends on the motivation of the patient;
- those who think that achieving complete nicotine abstinence is not always possible or takes time/needs more than one attempt.

"It works if patients are motivated; when you have one foot in the grave"

"I have one patient, it worked after some 20 attempts. She is completely abstinent now. Her husband succeeded on the first attempt but it took several years for her. It's often a long process"

Opinion about nicotine and its effects

The majority of doctors have a negative attitude towards nicotine. The main reason is that it is addictive; also some doctors add that it has a negative effect on health including the following:

- it is bad for the heart, liver, and skin;
- it provokes tachycardia, cardio-vascular problems, chronic bronchitis, and cancer.

The minority of doctors have a neutral or positive attitude to nicotine and say it is harmless (although it is addictive if it is overused). Some of them also mention the positive effects of nicotine such as:

- it stimulates the brain and digestion;
- it is used in pain treatment.

"I have never heard or seen any negative effects of nicotine on health. The problem with smoking is the combustion, the smoke"

References and attitude to the studies on nicotine

Almost none of the doctors have referenced any recent studies on nicotine. One doctor has considered several studies on the harmlessness of vaping devices in several countries (such as Poland, the USA, UK) but he does not consider them reliable because they were conducted by producers. Another doctor has read something but is not able to recall details.

Similarly, almost nobody has ever faced the studies that discuss the benefits of nicotine. One doctor vaguely recalls that nicotine can have positive effects at very small doses, the other one has heard that nicotine is also used to fight cholesterol.

Some doctors think it would be more helpful for the doctors if the studies that discuss the benefits of nicotine were more readily available.

"Nicotine has a certain toxic effect but everything depends on the dosage. Chemotherapy is also toxic, but you don't have the choice if you need to fight cancer. It's the same with nicotine"

New evidence would change the view on nicotine harm at least for the part of doctors that took part in the study. However, doctors note that it would depend on the results, facts, and figures themselves, and who does the study (tobacco/vaping producer or an international health institution). The new findings that would be of the most interest to the doctors are:

- Harmlessness/benefits of nicotine;
- Usage of nicotine in therapy (for example, a new drug for cholesterol issues);
- The harmlessness of vaping devices.

According to the respondents, the best ways to share such new studies with doctors are as follows:

- Often:
 - Specialized (medical) media including publications and newsletters (for example, *Le Quotidien du Médecin*, *Le Concours Médical*);

- Professional meetings and visits (including meetings with practitioners and laboratories);
- Rarely: through the legal/health institutions.

Germany

Per quarter, the part of the surveyed doctors has 30-70 patients who are heavy smokers, while the other part of the surveyed doctors has 100-125 such patients. Only a few surveyed doctors have a lower number of heavy-smoking patients. According to the doctors, 10-50% of those patients would like to quit.

The doctors say they consult smokers about the ways to quit but mention that not all patients want to hear this advice. The willpower of the patient/willingness to quit smoking is often considered very important for a successful quitting process. Doctors usually recommend a mix of cessation tools, among which there could be the following:

- Frequently: chewing gums;
- Rather frequently:
 - Nicotine patches and/or pouches;
 - Acupuncture and/or hypnosis;
 - Psychotherapy, lifestyle changes;
 - Champix or other similar medicine. At the same time, two doctors say they stopped to recommend Champix because of the strong side effects and low effectiveness in the long term.
- Rarely:
 - Literature (*The Easy Way to Stop Smoking* by Allen Carr) or some websites.
 - Vaping (only one doctor without prompt says that he recommends vaping as a cessation tool).

“Sometimes I speak with smokers about vaping as a stepping stone to kicking smoking. Then smokers can keep the important ritual. Vaping has fewer additional harmful substances; I recommend it for smokers who hesitate whether they can or want to quit.”

Awareness of the harm reduction and nicotine products

Three out of 15 surveyed doctors know the harm reduction term. Speaking about harm reduction approaches, those doctors mention the following:

- Limiting the consequences of nicotine abuse;
- Providing information about diseases through doctors and advertising;
- Useful applications.

During the interviews, the doctors ranked four nicotine products from 1 (the most harmful category) to 4 (the least harmful one). As a result, traditional cigarettes are ranked as the most harmful, followed by heated tobacco devices and vaping having

almost the same average rank. Oral nicotine pouches are considered the least harmful among the four nicotine products on the list.

It is worth noting that some doctors cannot justify their choice while giving ranks to the nicotine products (in particular, some of them admit that they rely more on intuition rather than specific knowledge/research; two doctors admit they cannot evaluate heated tobacco products).

Table 1.2. The average rank of nicotine products from 1 (the most harmful category) to 4 (the least harmful one) and doctors' reasoning and perceptions in Germany

Nicotine product	Average rank	Reasoning
Cigarettes	1.0	<ul style="list-style-type: none"> - Cigarette burning produces the biggest amount of harmful substances that go into the lungs and body (not only nicotine but also tar and others) - Harmful for heart and blood circulation; leads to COPD, etc.
Heated Tobacco Devices	2.5	<ul style="list-style-type: none"> + Less harmful substances than in traditional cigarettes. - No information about the additional substances inhaled, whether they are carcinogenic or not. - Long-term effects are doubtful; long-term studies about the effects are missing. - Tobacco heating is more harmful than vaping.
Vaping Devices	2.6	<ul style="list-style-type: none"> + Synthetical mixture instead of heating, less harmful materials. + Lead to COPD and alike diseases less as compared to cigarettes. - No information about the additional substances that are inhaled; whether they are carcinogenic or not. - No long-term studies about the effects <p><i>"I am sceptical about: a) the long-term impact of vaping on health; b) your lungs/alveoli are not designed for the substances that are breathed in; c) the fact that smokers transfer their addiction only to another product upon which they will be the same way dependent as upon cigarettes"</i></p> <p><i>"It's as harmful as tobacco, it also does damage through synthetic substances that we're not all familiar with, we don't know how they affect our bodies"</i></p>

Oral Nicotine Pouches	3.3	<ul style="list-style-type: none"> + Nicotine is the only substance absorbed (or: pouches contain fewer additional substances apart from nicotine). + Less nicotine intake than via lungs. + No combustion. + Can be used to control nicotine levels. + Almost no negative effects. - Pouches trigger mouth carcinoma.
-----------------------------	-----	--

Awareness of vaping products

The doctors say the following about vaping as harm reduction tool:

- Vaping makes less harm, but it is still harmful;
- Vaping allows smokers to gradually reduce their nicotine consumption but keep the feeling of smoking.

"This is the substitution of one product for another but not the method of quitting. It's an opportunity to reduce nicotine harm because tar and other harmful substances are also inhaled by smokers. Harm is reduced when smokers use vaping"

- Some doctors admit that they do not have enough information about vaping; some doctors say that long-term research about the effects of vaping is missing.
- Some doctors say there is no exact information about other substances except tobacco. Some doctors consider these other substances harmful.

The majority of doctors do not recommend vaping products to a patient who is approaching/asking for advice on how to quit smoking. They say that vaping does not change the habit and the side effects of vaping are unknown.

"It's about receptors that should be as free as possible, so I wouldn't recommend vaping"

Among those who recommend vaping products, about half of the doctors mention that they do so only under certain conditions, for example:

- If a patient asks about vaping or does not want to break a smoking ritual;
- If a patient has failed to quit/as the last remedy after using acupuncture, hypnosis, and other methods.

"I think e-cigarettes may be a good way to bridge the gap in certain circumstances, but not as a cure or substitute for harm reduction"

The majority of doctors do not perceive vaping products as a harm-reduction tool for nicotine addiction. In particular, they think that:

- Vaping doesn't break the habit of smoking;
- Vaping is just a reduction of the problem, not a solution to the problem;

- Official sources say nothing about the effect of vaping.

Some doctors say they do not recommend vaping proactively, but use it as a last resort for smoking cessation or as a bridge to quitting or when patients ask about vaping explicitly.

Only a few doctors say they perceive vaping as a harm reduction tool, because:

- It has less harmful substances;
- It gives those patients who need to preserve a ritual of smoking an opportunity to smoke something other than cigarettes.

Recommending vaping

The majority of doctors say they would recommend vaping products only if a patient has tried everything else and vaping is the last hope to quit smoking. Most doctors have once done such a recommendation, but such recommendations happen rarely. Those doctors who managed to recall specific numbers say they have ever recommended vaping to 2-5 patients in total. The thoughts about the effectiveness of vaping split into two approximately equal groups:

- Some doctors say vaping is an effective tool, especially in combination with the proactive position of patients who want to switch to a less harmful product. Some examples are as follows:
 - Two patients were in danger caused by cigarette addiction and had serious health problems (not a very old woman in danger of her leg amputation; an old man with recommended heart surgery);
 - A doctor has had patients who have successfully switched from cigarettes to vaping/other nicotine replacement products and have not started smoking again.
- Some doctors say vaping is not effective. Examples include the following:
 - Patients do not want to quit smoking/do not care about their health. Thus, vaping does not help either.
 - A patient returned to smoking because vaping had not given him enough satisfaction.

Recommending oral nicotine pouches and gums

Almost all the doctors recommend nicotine gums and/or plasters and/or pouches to help to quit/reduce smoking or as short-term smoking substitution, e.g. during long flights. At the same time, some doctors say they do not recommend pouches because are not aware of them, or think one cannot control the amount of nicotine intake while using them.

"We have an option of either reducing the number of cigarettes, or option of saying we'll put cigarettes away altogether, but you get a little nicotine for it"

Doctors recommend oral nicotine pouches and gums during consultations more often than vaping. Usually, they recommend pouches/gums when they describe all

possible ways to reduce/quit smoking, but it is hard for them to recall the exact number of such consultations.

“Oral nicotine pouches and gums are more effective than vaping because if rituals are deliberately interrupted, it’s a more sustainable result. It’s easier to return to traditional cigarettes after vaping”

The opinions about the effectiveness of the oral nicotine pouches and gums split into three approximately equal groups:

- Some doctors say oral nicotine pouches and gums are an effective tool, for example, when a smoker feels a strong need for nicotine while quitting (but sometimes that is true only for the short term).
- For some doctors it is hard to judge the effectiveness because they think that: 1) oral nicotine pouches and gums are not the main factors for success, but an auxiliary one; 2) the heavier a patient smokes, the lower the effectiveness of these tools.
- Some doctors say oral nicotine pouches and gums are not effective. The examples of ineffectiveness are below:
 - Patients began to use chewing gum regularly, and the amount of nicotine intake is correlated to the previous intake of smoking cigarettes.
 - Gums have a bad taste which is why some patients resumed smoking.

Awareness of innovative solutions

The majority of doctors say they know or have faced some innovative solutions that can drive down the smoking rates. In particular, they mention the following:

- More often:
 - The information policy and smoking restrictions (for example, pictures on cigarette boxes, information policy to prevent youth from even getting started smoking);
 - Acupuncture;
“I have a positive experience, among acquaintances too. I have friends who have quit using acupuncture... It is really important for acupuncture and hypnosis that a patient has a wish and will to quit. Otherwise, it will fail”
 - Hypnosis;
 - Homeopathic therapy.
- Rarely:
 - Champix (*“We had a 30% success rate when we used Champix, but it has side effects”*);
 - Digital health apps;
 - Behavior therapists practice kicking smoking as part of a broader therapy;
 - The smoking cessation course by a lung specialist.

While speaking about the effectiveness of different innovative tools, there is no prevailing opinion. A few doctors say that the most “effective solution” is a fear caused by a sudden and/or serious health problem (a heart attack, for example) that changes the attitude of the patient toward smoking and create an inner motivation for change. Two doctors claim that Champix works the best way. One doctor thinks that the informational policy and smoking restrictions are most effective because they prevent young people from starting to smoke. One doctor mentions acupuncture and the other one mentions hypnosis.

The majority of doctors think that achieving complete nicotine abstinence is realistic but depends on the willingness of the patient and other factors. A minority of doctors point out that it is hard to achieve.

Opinion about nicotine and its effects

The majority of doctors have a negative attitude towards nicotine and say it is harmful and leads to addiction (nicotine is a neurotoxin). In particular, they mention the following negative effects of nicotine:

- It accelerates heart rate, constricts blood vessels, and increases blood pressure.
- It leads to COPD, chronic bronchitis, lung deceases, laryngitis, tumour, and problems with the legs (in particular, there was an example about patients who can take a walking distance of 300 meters only).
- It increases the risk of heart attacks, strokes, and carcinoma;
- It leads to aesthetic problems, i.e. skin problems for women, not looking good teeth, and yellow fingers.
- It has an appetite-suppressing effect.
- It is carcinogenic and pathogenic.

A minority of doctors say the following about the nicotine:

- Nicotine is not harmful itself, the problem is in the consequences of smoking, tar, and other substances;
- It has a subjectively invigorating or relaxing effect.

Not all doctors can name the myths and stereotypes about the harm of nicotine. Those doctors who responded to that question mentioned the following myths:

- Nicotine causes lung damage.
- Nicotine is stimulating and in particular, has a positive influence on sexual potency.
- While smoking, one can breathe better and not have a cough.
- While smoking, one has a better bowel movement.
- Smokers defend themselves using such myths: "It's good for my nerves; I have a better start to my day; It's good for my mental stability; I can't quit, otherwise I'll become fat".

References and attitude to the studies on nicotine

None of the doctors has referenced any detailed recent studies on nicotine. Two minor mentions include some researches that say that:

- There were deaths in the USA caused by vaping, but they were proved to be due to the additional substances, and vaping was not the reason.
- In the context of the negative consequences of smoking, the difference between German women and men is not so big now.

Only a few doctors have ever faced some studies that discuss the benefits of nicotine, for example, discussing nicotine in the context of help for overweight people and other therapy. One doctor says that she knows that smokers do not get Parkinson's and ulcerative colitis (but she has not recalled the specific studies). One doctor mentions that if there were studies that prove the benefit of nicotine, doctors would know about it.

Almost all doctors think it would be more helpful for the doctors if the studies that discuss the benefits of nicotine were more readily available. In particular, they would like to find out the advantages of nicotine to be able to decide about the therapy for a particular patient bearing this knowledge in mind. Some doctors also mention that it is important that such studies should be easily accessible to doctors but not to the common people (otherwise a smoker would have a scientific justification for smoking).

The majority of doctors think they would change their view on nicotine harm if new evidence was provided. However, they often note that it depends on the findings themselves, the methodology, the sample, and who does the study (a tobacco industry or a neutral organisation). The new findings that would be of the most interest to the doctors include:

- What are the benefits of nicotine and how it can be used in everyday therapy?
- What medium- and long-term effects does it have on the brain? Could it be used in pain management and cancer treatment?
- How can it be used in pharmacology?
- What are the findings regarding addiction?

"I can imagine that it has a relaxing effect on the brain like cannabis. I would like to know what medium and long-term effects it has on the brain and whether it could be used in pain management like cannabis. But then it should be taken in a form of chewing gum or something else, not a cigarette"

"There must be some benefit, otherwise why would people smoke? But first I would like to know who is behind a study and what is the aim of a study? Also, methodically, who are the participants, the sample, which cohort they were drawn from, etc. In terms of content, I want to know what the benefits are"

According to the respondents, the best ways to share such new studies with doctors are as follows:

- Professional newsletters (for example, Deutsches Ärzteblatt, Rheinische Ärzteblatt, The Medical Tribune) and professional journals (for example, Der Hausarzt, Deutsche Medizinische Wochenschrift, Allgemeinmedizin up2date, arznei-telegramm)
- Specialised websites (for example, AMBOSS, Deximed, DocCheck, The Internist).
- At congresses/in communication with colleagues during congresses.
- Through reliable pharmaceutical representatives.
 - However, some doctors say that the best way is to read about the new findings in specialised sources first and then to hear about the same from pharmaceutical representatives.