CAMBRIDGE
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Five approaches to improve smoking cessation outcomes and reduce tobacco harms globally

by Ben Kelsey

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Image: Anti-smoking mural in India, taken during initial CDP research

"Reducing the health burden caused by smoking tobacco products reflects a challenge of motivation and behavioral change. To frame the challenge in a way that is empathetic to the difficulties smokers face, we have considered the journey to cessation and the appropriateness of the cessation interventions that are available to support them. Through this lens, we have created five approaches to consider when developing tobacco harm reduction strategies."

Ben Kelsey

Senior Consultant, CDP

Image: Stop smoking poster in Bogor, Indonesia.

Executive summary

Smoking is the leading cause of preventable deaths globally. It is estimated that over **eight million people die from smoking each year.**

Smoking is the leading cause of preventable deaths globally. It is estimated that over eight million people die from smoking each year.

Despite public campaigns and the effort of the World Health Organization (WHO), the prevalence of tobacco use remains high. In 2020, 23% of the world's adult population (~1.3 billion people) used tobacco, of whom around 80% are in Low and Middle-Income countries (LMICs) (1).

When you consider tobacco kills up to half of users who don't quit, it is clear: change is needed quickly (1).

To eliminate or curtail smoking-related deaths and illnesses, tobacco users need to change their behavior. Smokers must either stop using tobacco or, alternatively, use a nicotine product that isn't as harmful.

Unfortunately, humans are complicated beings. Behavioral change is hard, and 1.3 billion people is a lot of people to convince to change. According to US data, between 30% and 50% of smokers attempt to stop smoking at least once a year. However, success rates are low, with only 7.5% of them succeeding (2).

When we also consider that many of the world's smokers – particularly in LMICs - do not have access to affordable, evidence-based, smoking cessation interventions and that their availability differs from country to country, enabling tobacco cessation on a global scale and creating a tobacco-smoke-free world is a huge challenge.

The vision of the Foundation for a Smoke-Free World (FSFW) is to eliminate combustible tobacco, toxic tobacco forms, and smoking-related death and disease globally, with a specific emphasis on LMICs.

Cambridge Design Partnership (CDP), a UK-based independent innovation partner, has been collaborating with FSFW to realize their vision since 2018.

To understand the current landscape of global smoking cessation comprehensively, CDP conducted a dual-focused examination, encompassing both an assessment of the legal status and efficacy of smoking cessation interventions and an exploration of the attitudes and behavioral experiences of the smokers they are designed to benefit.

The assessment involved secondary research, evaluating empirical evidence on the quality and effectiveness of smoking cessation interventions across six LMICs (Brazil, China, Egypt, Indonesia, South Africa, and Turkey). This was complemented by primary research which was conducted through an online survey to gauge attitudes towards smoking cessation and assess the accessibility of cessation interventions in these nations.

The aim of this initiative was to generate evidence that informs and shapes strategies for fostering effective global-scale interventions in smoking cessation and Tobacco Harm Reduction (THR).

Through research activities, CDP has built on its Electronic Nicotine Delivery System (ENDS) adoption model (3) to suggest a behavioral change framework for tobacco cessation.

In addition to this, we have identified five approaches that could positively impact tobacco cessation and suggested a model through which the process of cessation and harm reduction can be established. We hope the learnings of this research will help efforts to reduce the eight million lives lost annually to smoking-related illnesses.

Further research is required to validate these approaches and, if evidenced, implementing changes will be a significant challenge. We encourage the WHO to consider these learnings when assessing the Framework Convention on Tobacco Control (FCTC) (4). Nearly two decades after the inception of the FCTC, an update which is considerate of the needs and experiences of the smokers who are most in need of support could further reduce harms associated with combustible tobacco use globally.

Image: Anti-tobacco messages on advertising for an APCAT (Asia Pacific Cities Alliance for Tobacco Control) summit in Bogor, Indonesia.

Our five approaches

Five approaches to improve tobacco cessation and reduce harms:

I

There is an opportunity to innovate smoking cessation interventions to meet the physiological and psychological needs of smokers in a single product.

No currently available tobacco smoking cessation product or service addresses both physiological and psychological needs of smokers. This could be a space for innovation to better meet the needs of those who wish to stop smoking tobacco products.

Learn more in:

Chapter 1: An overview of smoking cessation interventions

II

Broadening 'stop smoking' messages beyond physiological harms to the smoker would encourage a wider cohort of smokers to consider tobacco cessation.

Despite overwhelming evidence of the dangers of tobacco use, harm to smokers' own health is not the only driver of smoking cessation. There are other factors including finances, hygiene and harm to those around the smoker. Broadening 'stop smoking' messaging could resonate with an additional 30% of smokers. Extrapolating this to the global population could include an additional 390 million people.

Learn more in:

Chapter 2: The cessation journey

Chapter 2A: The relevance of risk perception on cessation motivations

III

Every smoker's needs are unique. Variety in the availability of smoking cessation interventions would increase the likelihood that each smoker can find the right tool to support them in their cessation journey.

Almost all smokers are aware of and have access to at least one smoking cessation option. However, the type of cessation product available varies per country and there is an opportunity to tailor availability of product types according to the regional needs of the smoking population.

Learn more in:

Chapter 2B: The importance of access to smoking cessation interventions

IV

Not all smokers considering cessation take active steps to change. Approaches that disrupt smoking behavior can motivate smokers to change smoking habits.

Smoking results in the development of long-term behaviors and habits. These behaviors can become subconscious, and ones that smokers don't take active steps towards changing. Consideration should be given to how life events may rebalance perceptions of smoking behavior. Maximizing these opportunities to interrupt smoking patterns could motivate smokers to consider cessation.

Learn more in:

Chapter 2C: The gap between motivation and attempts to change behavior

V

Encouraging smokers to reduce tobacco consumption will accelerate the decline of tobacco use in the population.

For many individuals, smoking is a deeply rooted and addictive habit. The process of reducing cigarette use could be a more attainable goal for a proportion of the smoking population. Adopting the concept of reduction of tobacco consumption within the smoking cessation journey may encourage more people to take the first steps to changing their smoking behavior.

Learn more in:

Chapter 2D: The efficaciousness of smoking cessation interventions in THR

Chapter 3: Tobacco cessation: a framework for cessation via harm reduction

Evidence base of this report

Countries featured in this research

A large selection of the academic literature and narrative around smoking cessation has a bias to western and developed markets. This can overlook the needs of ~1.3 billion smokers who reside in LMICs.
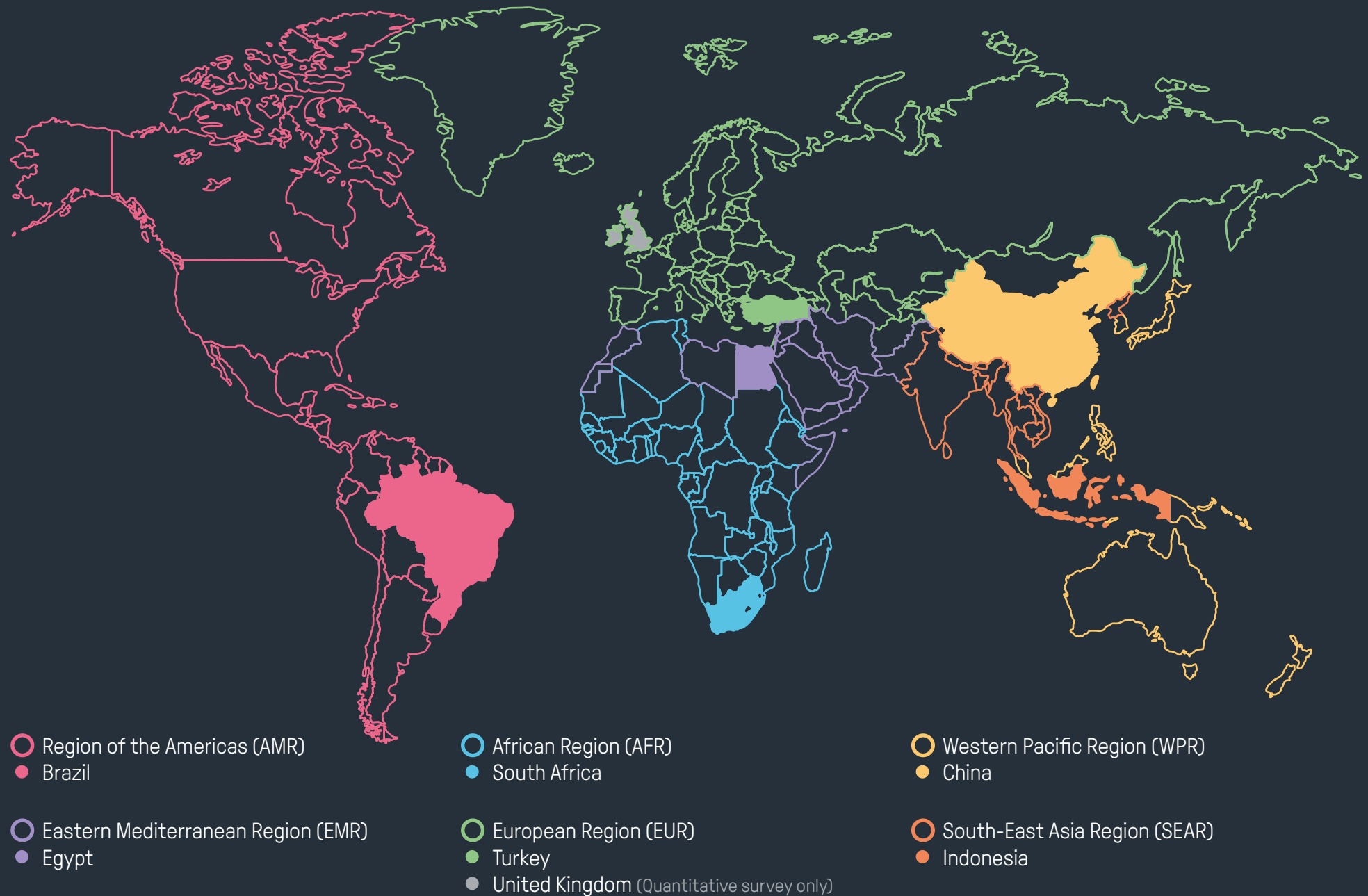
To ensure a global mix of countries within our research, we selected one country within each of the six WHO regions. Countries were prioritized based on having a lower income level economy, high total number of smokers, and good availability of smoking cessation interventions. The countries listed were selected, with the UK included as a reference for a developed country where ENDS are widely available.

- Region of the Americas (AMR) – Brazil
- Western Pacific Region (WPR) - China
- Eastern Mediterranean Region (EMR) – Egypt
- South-East Asia Region (SEAR) – Indonesia
- African Region (AFR) – South Africa
- European Region (EUR) – Turkey
- European Region (EUR) – United Kingdom (Quantitative survey only)

	INCOME LEVEL	COUNTRY POPULATION	PROPORTION OF ADULTS WHO SMOKE IN 2018		
			TOTAL	MALE	FEMALE
Brazil	UPPER-MIDDLE	214 M	16,5%	21,5%	11,5%
China	UPPER-MIDDLE	1412 M	24,7%	47,7%	1,8%
Egypt	LOWER-MIDDLE	109 M	21,4%	42,3%	0,4%
Indonesia	LOWER-MIDDLE	274 M	37,9%	70,5%	5,3%
South Africa	UPPER-MIDDLE	59 M	31,4%	46,8%	16,0%
Turkey	UPPER-MIDDLE	85 M	29,3%	41,5%	17,0%
United Kingdom	HIGH	67 M	19,2%	21,1%	17,3%

The World Health Organization Regions and Research Countries Featured

- ⭕ **Region of the Americas (AMR)**
  - 🔴 Brazil

- ⭕ **Eastern Mediterranean Region (EMR)**
  - 🟣 Egypt

- ⭕ **African Region (AFR)**
  - 🔵 South Africa

- ⭕ **European Region (EUR)**
  - 🟢 Turkey
  - ⚪ United Kingdom (Quantitative survey only)

- ⭕ **Western Pacific Region (WPR)**
  - 🟡 China

- ⭕ **South-East Asia Region (SEAR)**
  - 🟠 Indonesia

Systematic review (Secondary research)

Between April and May 2023, we conducted a systematic review to evaluate the availability, awareness, efficacy, and legal status of smoking cessation therapies in selected countries.

We included searches in PubMed and ScienceDirect. In instances where literature did not include key information on the legal status of products, we included organization, government, and government-related sources.

We developed the search strategy based on a combination of multiple search terms to capture the outcome-related data, including the THR interventions identified in the scoping review.

Articles were included if they provided outcome-related data, fitted the study-type inclusion criterion (literature reviews, surveys, cost-effectiveness analysis, clinical studies, and clinical reports), the full text was available, and they were published between January 1, 2000 and the search date (last performed on May 12, 2023).

Articles were excluded if they did not provide outcome-related data, did not fit the study-type inclusion criterion, were duplicate references, there was no full text available, or they were published before January 1, 2000.

Quantitative survey (Primary research)

We developed a 55-question survey based on a previous research survey conducted by CDP on behalf of the FSFW and refined to build upon learnings from the systematic review to test awareness of, and access to, smoking cessation interventions in each of the markets. The survey covered: (i) screening qualification and demographics, (ii) nicotine products including tobacco products – usage and awareness, (iii) harm beliefs, (iv) smoking cessation motivations and experiences, (v) awareness of, access to, and usage of cessation interventions, and (vi) trusted sources of advice for smoking cessation information. It was then scripted into an online version and translated into the local language for each market.

The survey was completed by **1,750** individuals (**250** per country) who smoked every day, or every day until recently. Quotas were set on age and gender.

Once collected and cleaned, data was weighted to reflect the smoking population per age group and gender within each country. Overall population size per country was obtained from The World Bank 2020 data, with the exception of the UK, where country data on smoking rates was obtained from the WHO's Noncommunicable Disease Surveillance, Monitoring and Reporting online website, which linked to each country's Global Adult Tobacco Survey (GATS) reports (5). The year the GATS data was collected varied by country. Smoking rates for the UK were obtained from the Office for National Statistics (6).

CHAPTER 1

An overview of available cessation interventions

Framing smoking cessation interventions

As part of the systematic review, we identified 45 interventions, designed to support or encourage smoking cessation attempts, across six categories: media; medication or herbal remedies; nicotine replacement therapies (NRTs); recreational nicotine products; psychological interventions; and other interventions.

Before delving into the intricacies of the smoking cessation journey, it is essential to explore the range of interventions that currently exist to assist smokers in their quest to quit.

This exercise is intended to provide a visual indication of how the roster of interventions cater to the diverse needs of those aiming to quit smoking, and if any combination of needs could be better met to improve smoking cessation outcomes in future as technologies develop.

The role of physiological and psychological needs in smoking cessation

Smoking is addictive and harmful. The nature of smoking addiction involves a complex relationship between both pharmacokinetic or physiological, and psychological factors, resulting in a habit that is difficult to stop.

It has been established that nicotine is the primary chemical responsible for smoking addiction. Both its speed of delivery and quantity of absorbed nicotine influence the individual's addiction. Nicotine's physiological effects contribute to the instant gratification associated with smoking, but psychological aspects also influence people's perceptions, motives, and responses to smoking cues.

Understanding this complex action provides insights into the challenges individuals face when attempting to quit smoking and underscores the importance of having comprehensive approaches to harm reduction and, ultimately, smoking cessation.

Complete cessation, or even smoking reduction, is a challenging journey for any smoker, but combining physiological and psychological therapies offers promise as a strategy to boost success.

The importance of the smoking experience in comparing cessation interventions

In addition to physiological and psychological needs, it is important to consider the holistic user experience of smoking a cigarette. This encompasses a multi-faceted interaction involving emotional, functional, and sensorial aspects as well as habitual, ritualistic, and social aspects associated with the behavior.

Habitual: including actions such as opening of the cigarette packet, flicking of the lighter, the process of raising the cigarette to the mouth, pursing the lips around the cigarette, inhaling, exhaling, and lowering the cigarette from the mouth.

Ritualistic: smoking cigarettes at certain times of the day, for example, upon waking up in the morning, with an afternoon coffee, after a meal, or on the commute to/from work.

Social: smoking cigarettes can be a key part of social situations or contexts.

Whilst it might seem counterintuitive to discuss user and use experience in the context of a product and habit that is so harmful, we cannot ignore the fact that smokers are consumers who use experience as a means to assess which products they will adopt or switch to.

Visualizing smoking cessation interventions

To illustrate the range of smoking cessation interventions currently available, we have created a Venn diagram showing which cessation interventions are targeted to address physiological needs and which are targeted to address psychological needs (Figure 1).

To frame existing cessation interventions against the user experience of cigarettes, an axis has been added to the Venn diagram.
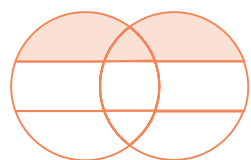
The upper segments of both circles denote interventions that represent a more similar experience to combustible cigarettes.
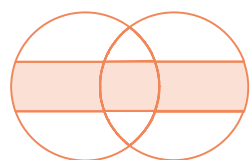
The mid-section of the circles denotes interventions that are less like the experience of using combustible cigarettes.
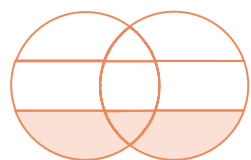
The lower section of both circles represents those interventions that deviate further from the combustible cigarette experience.

Please note, the placing of these strategies and tools is subjective, and our rationale for placement is detailed within this chapter. We do not discuss the merits of any given intervention; rather Figure 1 is intended as a visual representation of how these products meet the cessation needs of smokers.

Categories of available cessation interventions

MEDIA

Audiobooks
Digital storytelling
Motivational text messaging
Social media-based interventions
Video-based interventions
Virtual coach/online mentor

Digital educational games
Mobile phone apps
Web-based programmes
Virtual reality

Books
Educational booklets/leaflets

MEDICATION OR HERBAL REMEDY

Champix®/varenicline
Naltrexone
Tabex®/cytisine
Zyban®/bupropion

Vernonia cinerea

NICOTINE REPLACEMENT THERAPY [NRT]

Nicotine inhalers

Nicotine patches

Nicotine tablets
Nicotine nasal spray
Nicotine gum

RECREATIONAL NICOTINE PRODUCTS

E-cigarette device
• customisable
• pod based
• disposable
• heat-not-burn tobacco

Snus
Nicotine pouches

PSYCHOLOGICAL INTERVENTIONS

Professional healthcare advice
Individual or group behavioral counseling
Counseling classes
Cognitive behavioral therapy [CBT]
Non-cognitive behavioral therapy

Hypnotherapy
Mindfulness

Motivational intervention based on the 5 As model
Motivational intervention based on the 5 Rs model
Community pharmacy program

Quitline/helpline

## OTHER SOLUTIONS

Acupuncture
Exercise

Financial incentives

Own willpower
Transcranial magnetic stimulation treatment [TMS]

Fig. 1 – Categories of 'Smoking Cessation Interventions' Split by Their Degrees of Physiological, and Psychological Impact, and User Experience Compared to Combustible Cigarette Products

MORE

LESS

USER EXPERIENCE CLOSE TO CIGARETTE

PHYSIOLOGICAL

PSYCHOLOGICAL
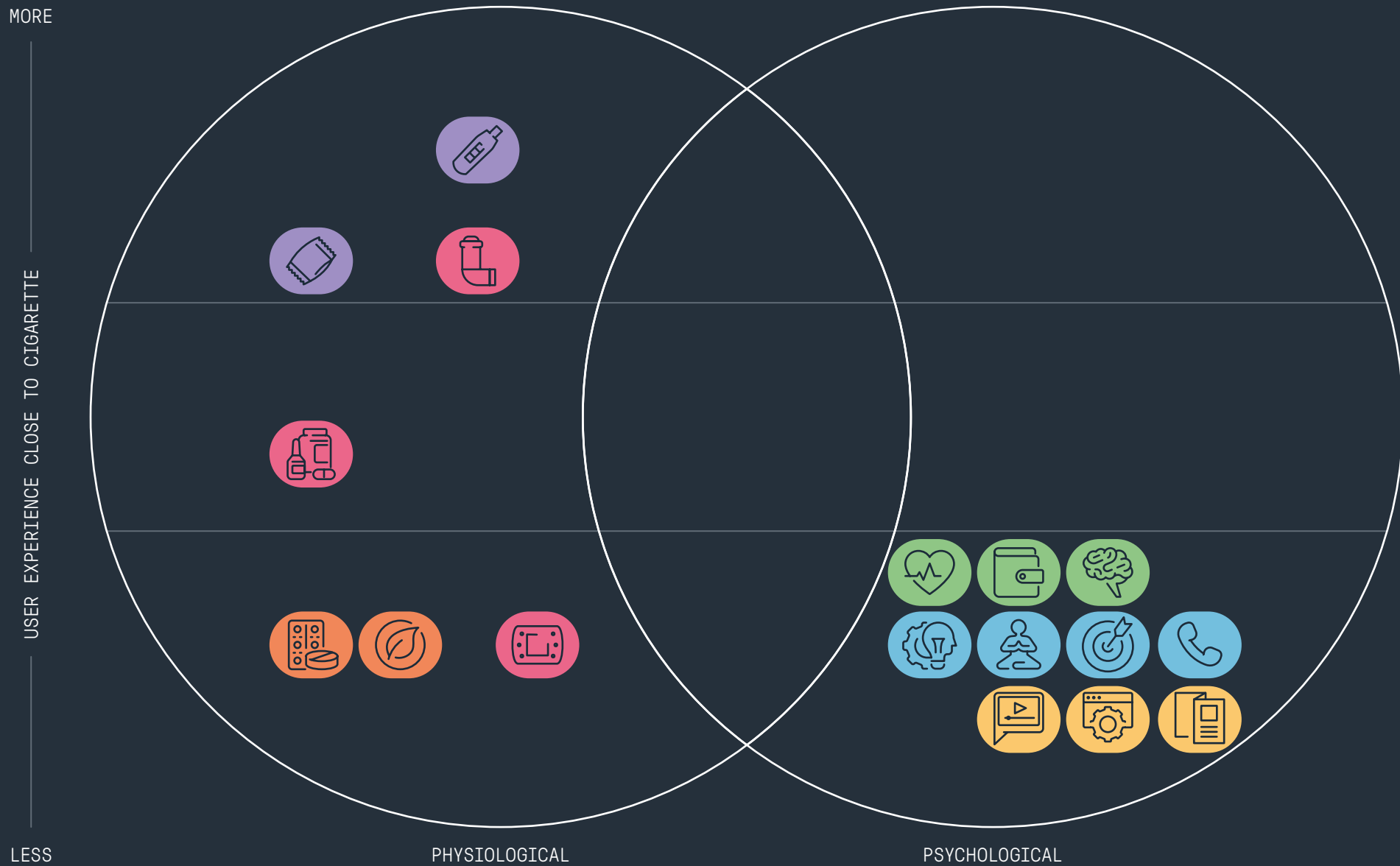
# Cessation interventions targeted toward physiological needs

All of ENDS (e-cigarettes and heat-not-burn products), oral nicotine pouches, NRTs and medical or herbal-based products are classified as physiological interventions as they either deliver nicotine to the user or act to pharmacokinetically inhibit nicotine cravings. However, they deliver a range of user experiences which may make them more or less viable options as smoking cessation tools to individuals.

ENDS, oral nicotine pouches, and nicotine inhalers allow an experience most close to that of smoking combustible products, which we can assess across two criteria; 1. context of use (recreational and social); 2. physical action of use. In theory, transitioning from combustible cigarettes to approaches having a similar user experience to smoking along these criteria will cause less tension for smokers as they seek to quit.
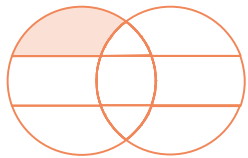

ENDS devices sit highest up the user experience dimension. They are closest at replicating ritualistic and social aspects of cigarette smoking, whilst they play strongly to the physical act of smoking; mimicking the hand-to-mouth action, inhaling, exhaling, and blowing of vapor – as an analog to blowing smoke.

Oral nicotine pouches and nicotine inhalers each over-index on one user experience measure but score lower on the other. In countries where they are legally available, pouches (snus and nicotine) are sold through similar channels to tobacco products and their market positioning is one of recreational use rather than that of smoking cessation, however, while the context of use is similar the physical action of use is very different to smoking a cigarette. On the other hand, nicotine inhalers better replicate the repeated holding and hand-to-mouth action of smoking but are not positioned for recreational use.
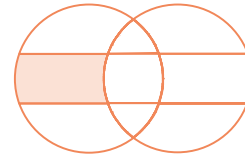

Nicotine lozenges and nasal sprays (both NRTs) sit in the middle range for user experience. They are intended to be used multiple times a day, often to satiate nicotine cravings as and when they occur. However, they are not intended to be used recreationally and the action of use differs from that of a cigarette.
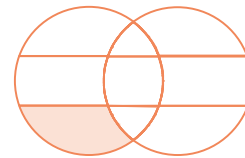
Physiological interventions which deliver a user experience furthest from cigarettes include nicotine patches along with medicinal or plant-based interventions such as cytisine (Tabex), bupropion (Zyban), varenicline (Champix), clonidine, naltrexone, and Vernonia cinerea, which are designed to alleviate nicotine withdrawal symptoms.

With the exception of nicotine patches, these interventions typically take the form of tablets and are intended to be taken at staggered intervals (e.g. once every twelve hours) as pharmaceutical medication. These products neither mimic the experience of smoking nor the frequency of use of cigarettes and are unlikely to be used in the same social environments where smokers tend to have cigarettes. Nicotine patches deviate even further from the combustible cigarette user experience.

Cessation interventions targeted toward psychological needs
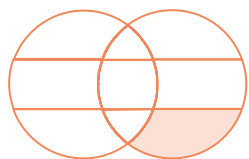
Categories of cessation interventions such as physical or digital media, psychological therapies and techniques, and other interventions – e.g. acupuncture, exercise, financial incentives, willpower, or Transcranial Magnetic Stimulation (TMS) – require more time and intentional effort to be effective.

Notably, some of these interventions can impact the physiology of the individual, for example, exercise may increase endorphin levels, but they do not directly address physiological challenges of nicotine withdrawal, nor do they deliver an experience that compares closely to smoking.

These interventions can be effective in supporting smokers through and toward smoking cessation, however, due to the lack of similarity to a cigarette and the fact they do not deliver nicotine, they feature in the psychological, and less like a cigarette segment of the map.

Cessation interventions targeted toward both physiological and psychological needs

The requirement for both physiological and psychological interventions emphasizes the complexity that exists with smoking addiction. Smoking and nicotine addiction involve a dynamic interaction between physiological processes fueled by nicotine and psychological components associated with routines.
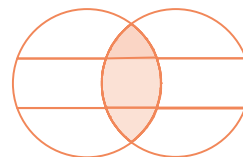
There isn't currently a single smoking cessation intervention that incorporates both aspects, though approaches can be combined, for example, prescribing NRTs and counseling together.

Secondary research suggests this combination is more effective than using these cessation approaches in isolation.

A logical progression would be towards a single cessation intervention which adequately addresses both the physiological and psychological needs of a smoker attempting cessation and which, in turn, better supports them to change their smoking behavior. We believe that the development of novel cessation products that take such an approach should be explored.

CHAPTER 2

The cessation journey

Adapting the ENDS adoption journey for smoking cessation

In 2021, CDP compiled a research report, *Impediments to tobacco harm reduction in LMICs*, within which we detailed a seven-stage ENDS adoption model (3).

This model was based upon the premise that ENDS – or a form of Reduced Risk Product (RRP) – is the solution to the issue that smoking combustible tobacco products is harmful to those who use them. If smokers could switch to a reduced harm alternative, the harms caused from smoking combustible cigarettes could be avoided.

To generalize the challenges of smoking cessation, the model has been broadened to include any smoking cessation product or method.

For the purposes of this research, two additional stages have been added to the original model: an eighth step to cover those who were able to change their smoking behavior (whether that be smoking fewer cigarettes, or, stopping completely), and a final ninth step to include those who have successfully been able to quit smoking before.

Note that the research sample comprised current smokers, or individuals who currently were not smoking, but had smoked regularly for longer than a month and less than one year. Due to the nature of the sample, 'quit' includes smokers who were able to stop before, but may now be smoking again.

The model assumes that to want to change behavior, there must be a motivation to change. It spans from acknowledging that smoking is harmful through to quitting.

The journey steps are as follows.

- **Step 1:** Acknowledge the general risk of smoking
- **Step 2:** Acknowledge the specific risk to self of smoking
- **Step 3:** Want to change smoking behavior
- **Step 4:** Have an awareness of any type of cessation intervention
- **Step 5:** Have access to any cessation intervention
- **Step 6:** Consider attempting cessation
- **Step 7:** Attempt cessation
- **Step 8:** Reduce the number of cigarettes smoked
- **Step 9:** Quit smoking for any period

Demonstrating the journey between acknowledging risk and stopping smoking

To reflect the journey of cessation and where smokers 'drop out' in their steps towards a smoke-free future, data from our primary research has been split across each step of the journey. Figure 2.1 shows an estimate of the proportion of smokers (based on all markets) who transition from acknowledging the risk of smoking, through to stopping smoking.

The established view of 'smoking cessation' is that awareness and understanding of the harms associated with smoking are essential to motivate behavioral change. To align with this and demonstrate regression of the smokers who acknowledge general risk of smoking, through to those who do manage to quit for a period, the data shown assumes that smokers go through each step of the journey. Therefore, if you 'want to change your smoking behavior' you must also acknowledge 'general risks' and 'risk to yourself' of smoking combustible cigarettes.

As seen in Figure 2.1, 25% of respondents make it through the entire cessation journey to quit smoking for a period. While this suggests progress, given the success rate in the US was 7.5% (7), it is important to note that all smokers in the research were regular smokers, or had been within 12 months of completing the survey. The figure of 25% represents those who were able to give up but have returned to smoking regularly, or have not yet given up for longer than a year.

Across this paper the focus lies in cessation and approaches to improve outcomes for smokers who wish to change behavior. We do not discuss reasons smokers started smoking, or why they returned to smoking after giving up.

Barriers to smoking cessation identified across the journey

(A) There is a large drop of **32%** between Step 1 and Step 2 (see Figure 2.1). Not all smokers acknowledge that they smoke enough for it to be harmful to their health.

(B) The overall conversion rate between Steps 3 and 6 is very strong, with only a **2%** drop across these Steps. Smokers who want to change their smoking behavior are aware of – and have access to – cessation tools and would consider using them. However, there is immense variety within these Steps when investigated by country (see Figure 2.2) and by type of intervention. Therefore, while a cessation tool may be available to a smoker, a tool that *better meets their needs* may not be available or accessible to them.

(C) Between Step 6 and Step 7, there is an **11%** drop: the third-worst conversion of the journey. For some there is a barrier between thinking about cessation and actively taking steps towards it.

(D) For the last stages of the journey from Step 7 to Step 9, there is a **19%** drop: the second-worst conversion of the journey. Smokers can make a change to their smoking behavior by reducing the number of cigarettes they smoke, but stopping completely is more difficult.

25% of respondents make it through the entire cessation journey to quit smoking temporarily.

Fig. 2.1 – Smoking Cessation Journey Graph
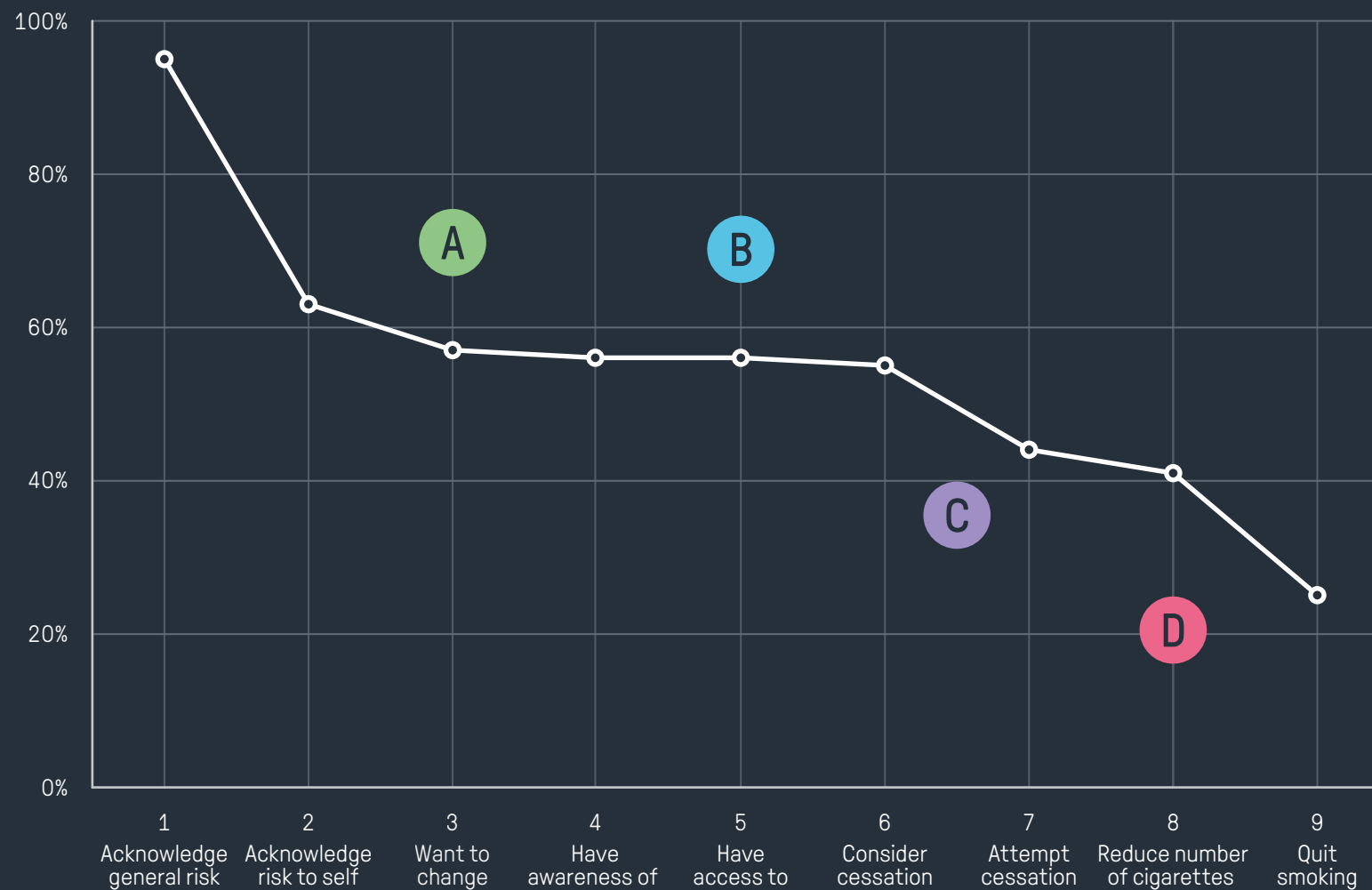
CDP Survey data. Weighted by Market Weight. Total sample size N=1751.

Fig. 2.2 – Smoking Cessation Journey Split by Country

CDP Survey data. Weighted by Market Weight. Total sample size N=1751. Country N= 250 / 250 / 250 / 250 / 250 / 249 / 252

Differences in the cessation journey across research countries

When looking at the entire journey process by country (Figure 2.2), we see that while the relative rates of success at each step may vary widely across countries, the total conversion rates from Step 1 to Step 9 follow a similar trend.

An overview of the cessation journey in Indonesia
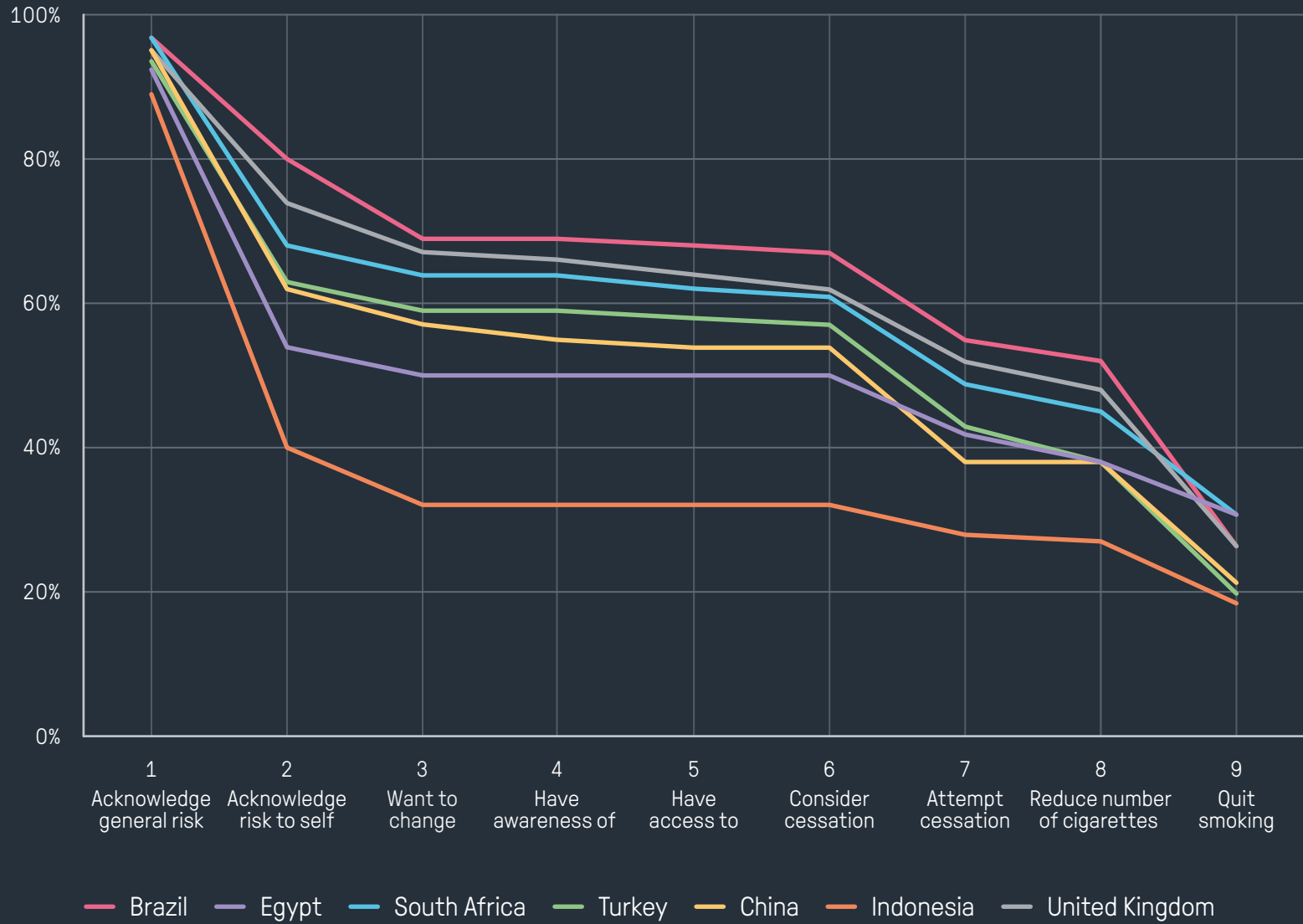
Indonesia has fewer smokers who want to change their smoking behavior. Data from Indonesian smokers shows there is a significant drop between Steps 1 and 3, leveling off for the remainder, indicating that individuals who wish to change generally achieve their goal. However, this group constitutes only 32%.

While the systematic review data doesn't pinpoint why Indonesia has a lower proportion of smokers wanting to change behavior, it is crucial to note that Indonesia hasn't ratified the WHO FCTC, in contrast to the other studied countries (4).

As a result, Indonesia lacks the same requirements for disseminating information about tobacco-related harms to the population. This may hinder smokers in Indonesia from recognizing the substantial health risks posed by cigarettes and, consequently, limit their motivation to change smoking behaviors.

An overview of the cessation journey in Brazil

In contrast, Brazilian smokers are the least likely to stop smoking after attempting cessation. Data for Brazil indicates a less pronounced drop-off in the initial Steps, but then a substantial decline from Step 6 to 9, indicating a notable gap between contemplation and action.

The systematic literature review reveals that certain pharmacotherapy-based cessation tools, such as varenicline, are costly. Unlike other markets, Brazil offers various free smoking cessation methods, including hypnotherapy, mindfulness, acupuncture, cognitive behavioral therapy (CBT), healthcare advice, Quitline, and telephone messaging services. However, the efficacy and frequency of use by smokers seeking to quit remain unclear.

The importance of assessing conversion barriers

Assessing barriers in the smoking cessation journey can help frame novel solutions to an established challenge. By looking at the Steps with the worst conversion rates, policy makers can consider unique opportunities in each market to improve the overall rates of cessation.

This report reviews each drop in conversion in detail and considers how changes to regulation and/or public health approaches could support initiatives to deliver a reduction in the harms associated with tobacco smoking.

Identifying the unique barriers smokers have per market can help to determine unique solutions to improve cessation rates.

CHAPTER 2.A

The relevance of risk perception on cessation motivations

Assessing the role of risk acknowledgement in smokers motivations to change smoking behavior

Understanding and acknowledging the health risks is not essential for every smoker who wants to change their behavior.

Figure 2A.1 displays a modified version of the smoking cessation journey. In this instance, the journey starts with a smoker wanting to change their smoking behavior irrespective of awareness and acknowledgement of harm. Comparing the two journeys below highlights a 30% gap at the onset of the modified journey.

Could there be 30% more smokers globally who would like to change their smoking behavior that do not acknowledge that smoking is harmful (at either the general or the personal level)? If so, communicating the harms associated with smoking alone is unlikely to encourage these people to consider stopping.

Fig. 2A.1 – Modified Smoking Cessation Journey Graph beginning at Step 3 vs Step 1

— Want to change regardless of whether or not risk of smoking is acknowledged

— Meet each step of the cessation journey starting with acknowledging risk
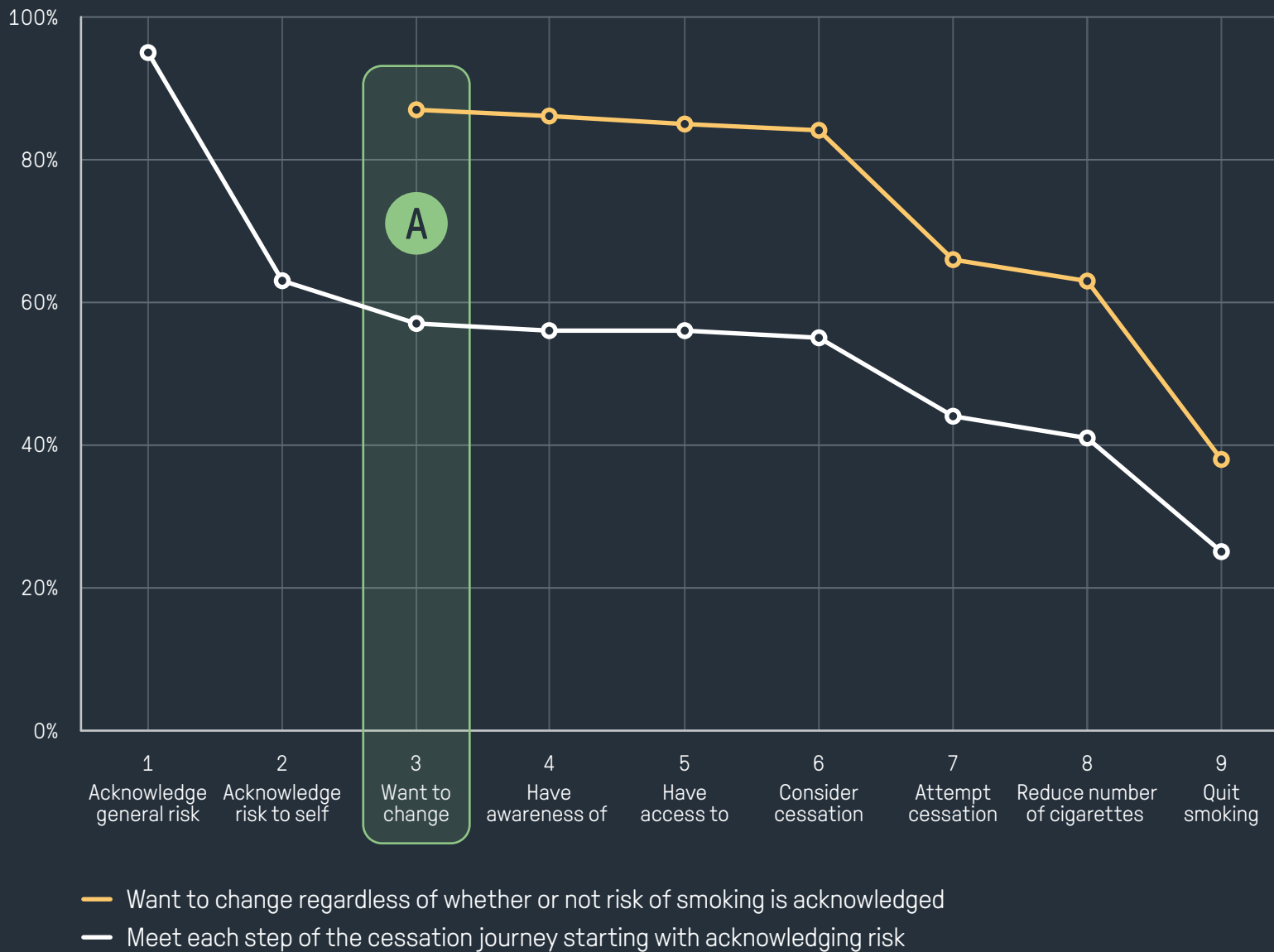
CDP Survey data. Weighted by Market Weight. Total sample size N=1751.

Groups of smokers with differing risk awareness and motivations to change behavior

Investigating this further, we identified four groups of smokers with different risk awareness and change motivations as follows:

Blind Blakes:
Don't acknowledge that smoking poses a risk to their health and don't want to change.

Pensive Peytons:
Don't acknowledge smoking poses a risk to their health but do want to change.

Stuck Sams:
Acknowledge smoking poses a risk to their health, but don't want to change.

Logical Logans:
Acknowledge smoking poses a risk to their health and do want to change.

Collectively, this breakdown of respondents highlights four potential strategic approaches to encourage smokers to continue the journey from wanting to change to making a change based on their risk/change profile.

At a 'global' level, the 30% gap between the traditional journey and the shortened journey comprises the 'Pensive Peyton' respondents who do not see the harm in smoking but want to change their smoking behavior (see Figure 2A.2)

Smokers wish to change their behaviour irrespective of concerns about the health implications.

Assessing these groups by country

Looking at these groups by country shows that different regions need different approaches to smoking cessation (see Figure 2A.3). For example, Indonesian smoking cessation policy/products could focus more on motivating Pensive Peytons to make change. On the other hand, Brazil will need a different approach for their higher percentage of Stuck Sams while still supporting their high percentage of Logical Logans.

Notably, Indonesia is the only country with more smokers who want to change their behavior without acknowledging that smoking poses a risk to their health, than those who do acknowledge health risk and want to change. As the only market which has neither signed, nor ratified the WHO FCTC, perhaps it is not surprising that fewer smokers acknowledge the health risk.

A hypothesis drawn from this data is that more needs to be done in Indonesia to communicate the harms of smoking first and signing up to and implementing the FCTC would be a good first step.

Fig. 2A.2 – Smoker Groups
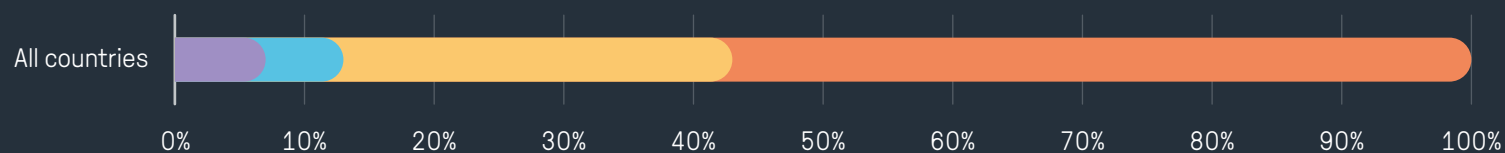
Fig. 2A.3 – Smoker Groups Split by Country
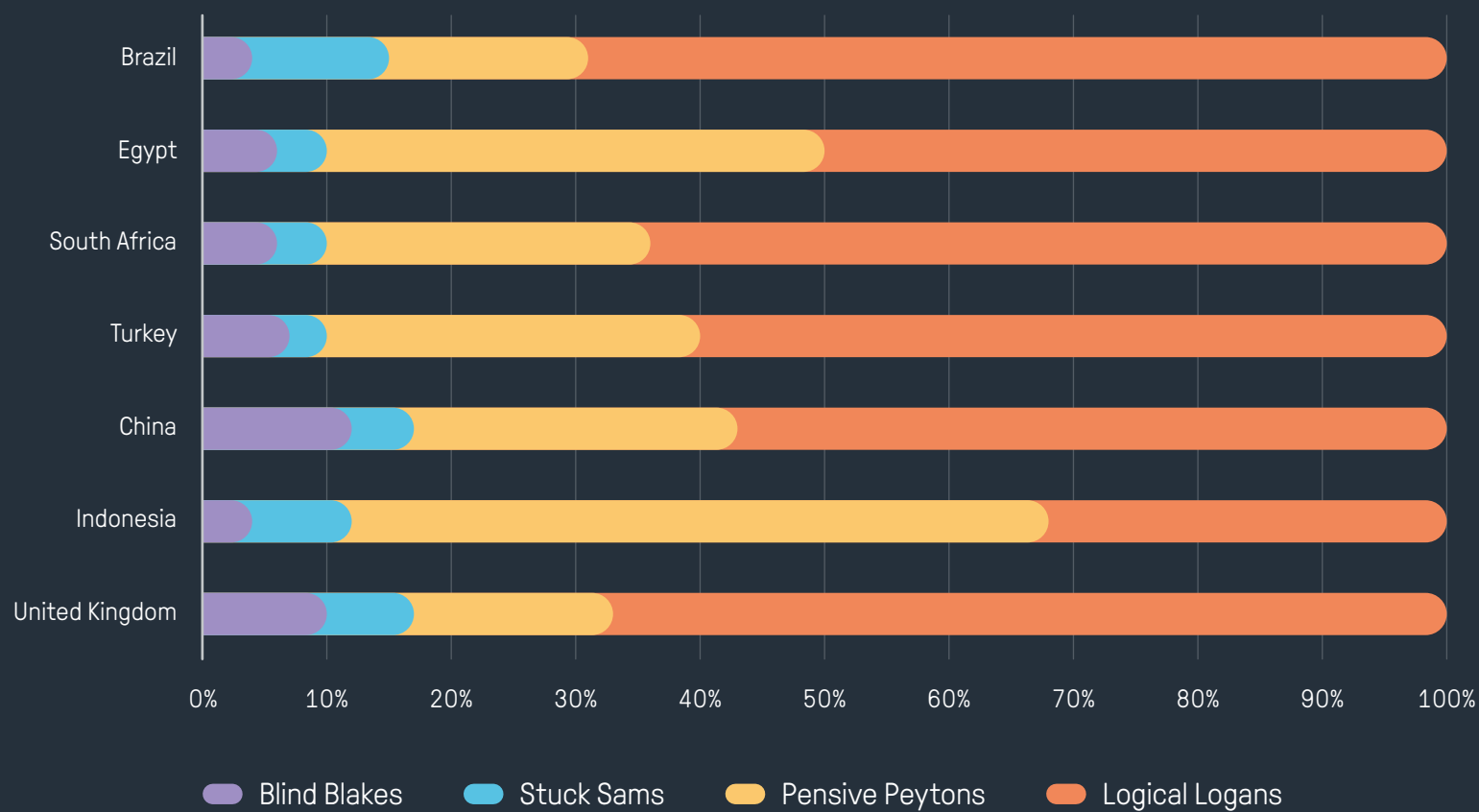
Legend: Blind Blakes · Stuck Sams · Pensive Peytons · Logical Logans

CDP Survey data. Weighted by Market Weight. Total sample size N= 1751. Country N= 250 / 250 / 250 / 250 / 250 / 249 / 252

Motivations to give up smoking beyond the avoidance of harm

While most reasons for quitting provided by smokers were related to general health (34%) or a specific health issue (21%), the next two most common responses were money (13%) and pressure from others (10%). This could help explain why someone would want to quit even if they didn't think it was unhealthy.

With this learning in mind, we ask: are the current harm-focused labels on tobacco products broad enough to encourage those smokers who would like to change behavior, but are not motivated to do so by protecting their physical health?

If the messages were broadened to include some other motivations to smoking cessation, could more smokers globally, be encouraged to change their smoking behavior?

Images: Health warning on a cigarette pack **(top left)**
"Make every day World No Tobacco Day" poster **(bottom left)**
Both images taken in India during initial CDP research.

"I wanted to quit smoking so that I could perform better in gym."

South Africa, male (21)

"Smoking makes my breath smell bad. It's why I wanted to stop."

Egypt, female (34)

"When I smoke I feel like I smell bad."

Brazil, male (21)

"Smoking was a financial burden on me."

Turkey, male (33)

Fig. 2A.4 – Motivations for Smoking Cessation

2%
To be able to exercise/fitness

10%
Other

5%
To prove I could/ prevent addiction

5%
Not enjoying it anymore

10%
Pressure
family/friends/ kids/stigma

13%
Money

34%
General health

21%
Specific health issue
including pregnancy
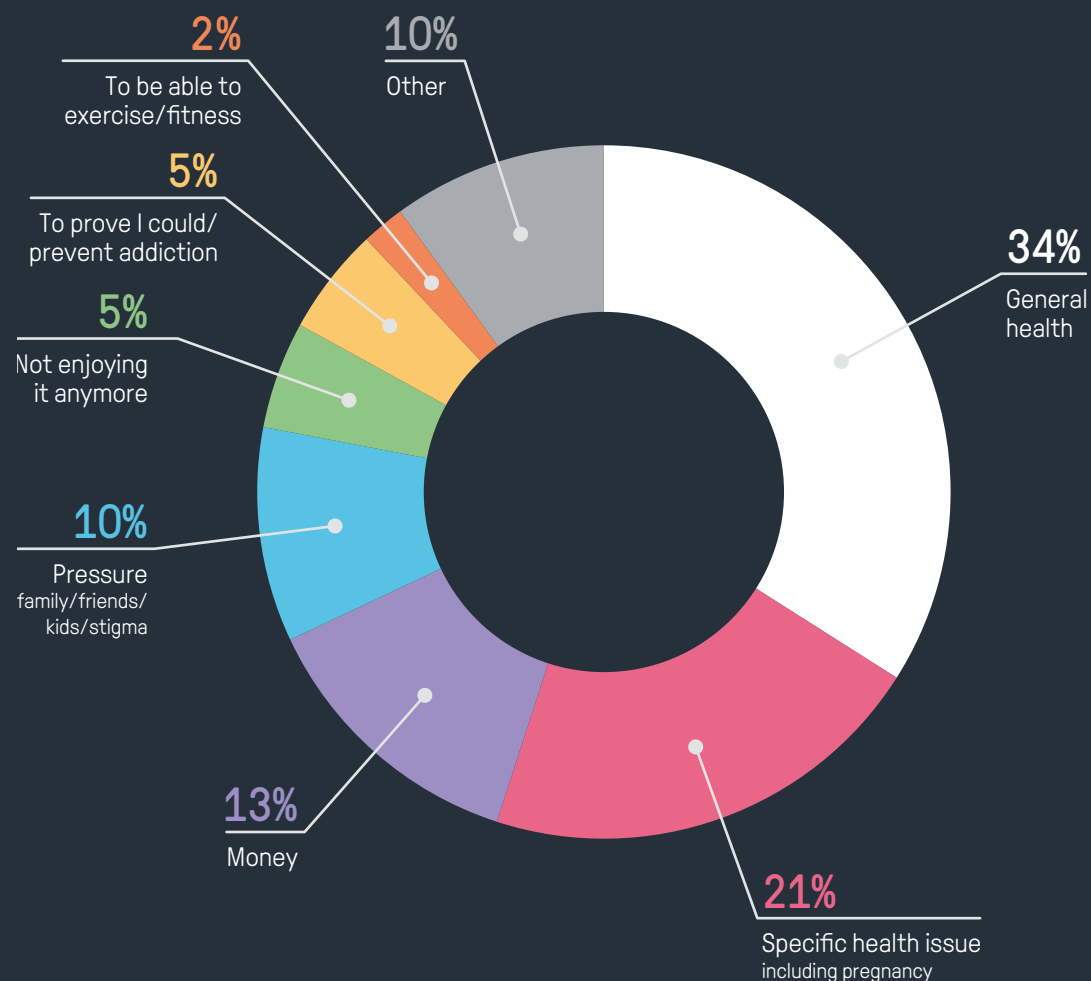
CDP Survey data. Unweighted. Sample base N=1,293
[former smokers, and current smokers who have ever tried to quit smoking].
Total 2,547 comments from 1,293 respondents. Chart shows percent of responses.

The importance of access to smoking cessation interventions

Awareness of, access to, and consideration of any cessation intervention

Nearly all smokers who wish to change their smoking behavior are aware, have access to, and have considered using any cessation intervention. As seen in Figure 2B.1, when considering all countries, there is near universal awareness, access, and consideration of *any* intervention with a high conversion rate between these steps in all markets.

For smokers who want to change their smoking behavior, all are aware of, can access, and have considered using *a single* intervention to support them in their cessation goals. However, this cessation intervention may not be the best suited to their individual needs.

Fig. 2B.1 – Smoking Cessation Journey Graph: Steps 4, 5 & 6
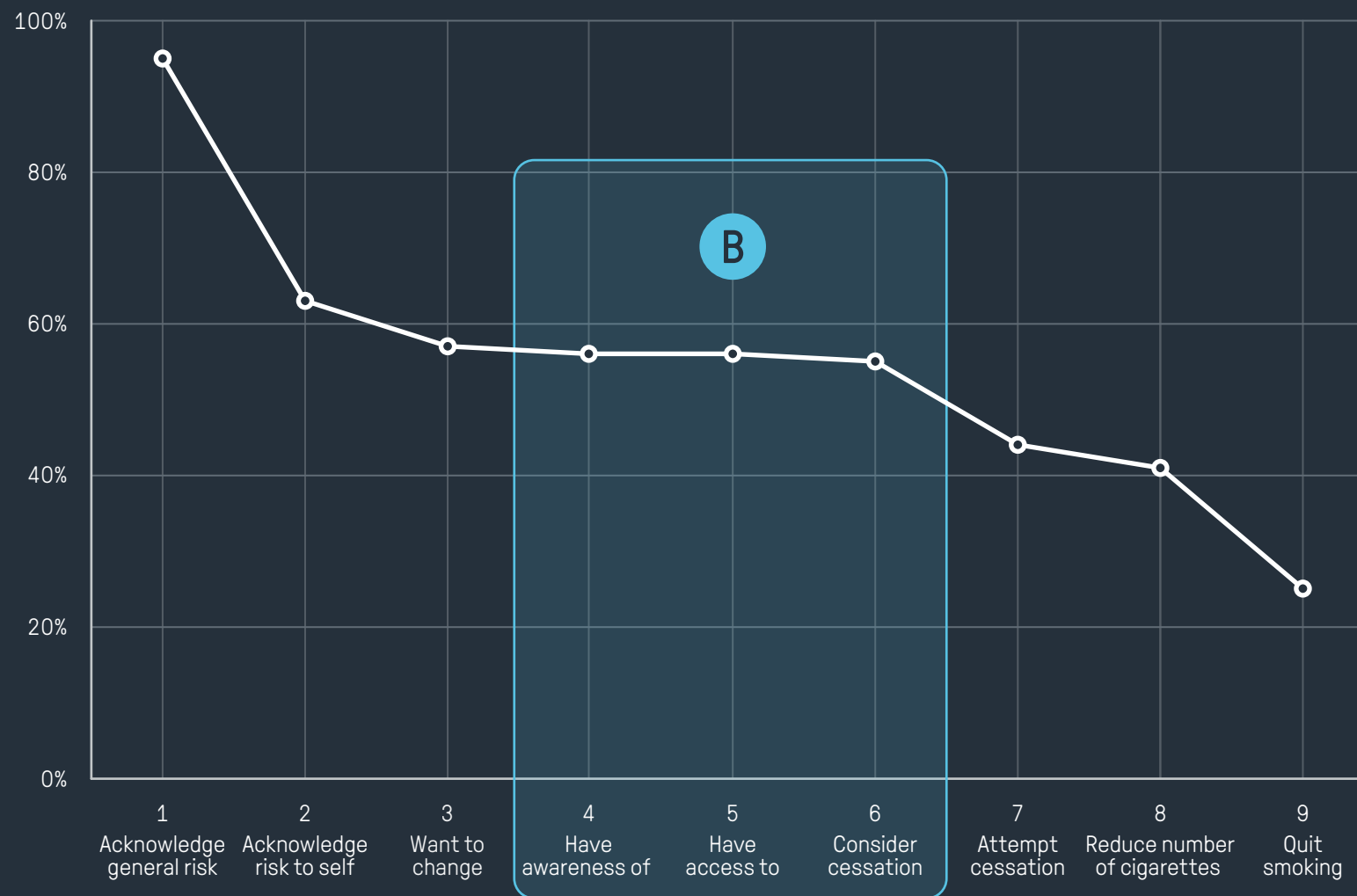
CDP Survey data. Weighted by Market Weight. Total sample size N=1751.

Table 2B.1 – Legal Status of Smoking Cessation Interventions by Country

Legend: ● Legal and registered medications ✕ Illegal and not registered medications ○ No Data Available ◆ Not Applicable

Category	Intervention	Brazil	China	Egypt	Indonesia	South Africa	Turkey
MEDIA	Audiobooks	○	○	○	○	○	○
	Digital storytelling	○	○	○	○	○	○
	Motivational text messaging	○	●	●	●	○	●
	Social media-based interventions	○	○	●	●	○	○
	Video-based interventions	○	●	○	○	○	○
	Virtual coach/online mentor	○	○	○	○	○	○
	Digital educational games	○	○	○	○	○	○
	Mobile phone apps	○	●	○	○	○	○
	Web-based programmes	○	●	○	●	●	○
	Books	●	○	●	●	○	○
	Educational booklets/leaflets	●	●	●	●	●	○
MEDICATION OR HERBAL REMEDY	Champix®/varenicline	●	●	●	✕	●	●
	Naltrexone	●	●	●	○	●	●
	Tabex®/cytisine	○	●	●	○	●	○
	Zyban®/bupropion	●	○	○	✕	●	●
	Vernonia cinerea	○	○	○	○	○	○
NICOTINE REPLACEMENT THERAPY [NRT]	Nicotine inhaler	○	○	●	●	●	◆
	Nicotine patches	●	●	○	○	●	●
	Nicotine tablets	●	●	●	○	●	◆
	Nicotine nasal spray	○	○	●	○	●	○
	Nicotine gum	●	●	●	●	●	●

Category	Intervention	Brazil	China	Egypt	Indonesia	South Africa	Turkey
RECREATIONAL NICOTINE PRODUCTS	E-cigarette device	✕	●	●	●	●	✕ IMPORTED / ● DOMESTIC
	Heated tobacco	✕	●	●	●	●	✕ IMPORTED / ● DOMESTIC
	Snus	●	●	●	●	●	✕
	Nicotine pouches	●	○	●	●	●	○
PSYCHOLOGICAL INTERVENTIONS	Professional healthcare advice	●	●	●	●	●	●
	Individual or group counseling	●	●	●	○	●	●
	Cognitive behavioral therapy	●	○	●	●	●	●
	Hypnotherapy	●	○	○	○	●	○
	Mindfulness	●	○	○	●	○	○
	5 As model	●	●	●	●	●	○
	5 Rs model	○	○	○	○	●	○
	Community pharmacy	●	●	○	●	●	●
	Quitline/helpline	●	●	●	●	●	●
OTHER SOLUTIONS	Acupuncture	●	●	●	●	○	○
	Exercise	●	●	●	●	●	●
	Financial incentives	○	○	○	○	○	○
	Own willpower	●	●	●	●	●	○
	Transcranial magnetic stimulation treatment [TMS]	○	○	○	○	○	○

The legal availability of smoking cessation interventions across the countries featured in the systematic review

Smoking cessation interventions are not ubiquitous. Our systematic review identified 45 different interventions, across across six categories, and with variable availability. As part of the review, the legal status of each cessation intervention was also investigated. As shown in Table 2B.1, not all interventions are legally available in all markets.

Variance in the availability of ENDS across the research countries featured in the systematic review

In China, Egypt, Indonesia, and South Africa ENDS, in the form of e-cigarettes and heated tobacco products, are available for purchase.

In Brazil, the import, sale, and advertising of ENDS products are strictly prohibited, unless specifically authorized by the Brazilian National Health Surveillance Agency. This stringent regulation aims to ensure the safety and well-being of the public. Despite the regulation, there is evidence that smokers in Brazil can still access these products (8).

Similarly, in Turkey, the legality of ENDS is contingent on specific circumstances. Importation of ENDS is generally illegal, but there are exceptions for passengers entering the customs territory of Turkey (9). Interestingly, the domestic production of ENDS products is not forbidden in Turkey if the necessary authorization from the Ministry is obtained (10).

This nuanced approach reflects a balance between regulatory control and accommodating certain circumstances in the realm of tobacco product consumption within these two nations

Availability of WHO essential medicines across research countries featured in the systematic review

The WHO declared that bupropion and varenicline were to be added to the list of essential medications in 2021 (11). Both have been shown to be safe and effective and their addition to the essential medicines list is a signal to the public, medical professionals, public health experts, and authorities that they are available for people who want to quit smoking. These medicines are available in all research countries except Indonesia, which is also the only researched country that has not accepted the WHO FCTC (4).

Promotion of a broad range of interventions will signal these are safe and effective options for smoking cessation.

Additional barriers to accessing a smoking cessation intervention

Once an intervention is legally available for use in a particular territory, it is important that smokers can access these interventions to support them with cessation. As with legal availability, how different countries and governments manage access differs from country to country.

Access to smoking cessation treatments faces diverse barriers globally. In Brazil, China, and South Africa, the requirement for a prescription to obtain varenicline and bupropion potentially limits accessibility, adding an additional layer of complexity to access. Consider that in some countries, access to a healthcare provider may be expensive. Additionally, the prescriber would need to believe this solution can help their patient.

Interestingly, in Turkey, pharmacotherapies are available from pharmacies without prescription, but with a charge (12,13). As an alternative, varenicline and bupropion can be obtained, without cost, from smoking cessation outpatient clinics, following mandatory consultation with a physician (14). NRT products are available over the counter at pharmacies, and there is an indication that the cost of NRT is much higher than that of bupropion-containing medications (15). The financial aspect of obtaining these crucial smoking cessation aids poses a substantial challenge; hindering access to treatment.

Moreover, medical expertise and support, or the lack thereof, adds another dimension to the hurdles faced in promoting smoking cessation. This is especially prominent in Indonesia, where insufficiently trained physicians lack the confidence to advise their patients on the available smoking cessation treatment options, posing an additional challenge to smoking cessation treatment (16). Similarly, in Egypt, physicians demonstrated inadequate smoking cessation support, either due to their own smoking habit, or their lack of knowledge on smoking cessation counseling (17).

Unsurprisingly, given the high proportion of smokers in LMICs, financial factors often present a barrier to access. In Brazil, the expense associated with varenicline creates a notable cost barrier. However, Brazil's approach to funding combination NRT helps alleviate financial constraints for the population. In China and South Africa, although NRT products are available over the counter, they are not without cost implications.

For smokers to truly benefit from smoking cessation tools, they must be available, easy to access and meet smokers' experience needs. While universal access might not be feasible for every type of cessation aid, it is crucial to minimize access hurdles wherever possible. This ensures that smokers seeking support can readily obtain the product they believe will best help them quit.

Awareness of, access to, and consideration of different categories of cessation intervention split by country

Smokers can access a cessation intervention to help them, but are unlikely to have full awareness of – or access to – all the products and services that could support them. Key differences arise when looking at the specific categories of cessation intervention by country (Figure 2B.2). Unlike at an 'overall' level of any intervention, where awareness, access and consideration have a near 100% conversion, at a specific intervention category level, awareness to consideration drops consistently. To illustrate this, awareness of any smoking intervention in the UK is 64%, but awareness of specific categories of intervention varies from 62% (recreational nicotine products) to 28% (medication or herbal therapies).

Across research countries, the drop from awareness of any intervention, to awareness within a specific category, is most pronounced for the medication or herbal remedies interventions.

This data suggests smokers are not aware of all the different formats of cessation interventions that could support them in their efforts to change their smoking behavior. Furthermore, in most cases, even if they are aware of the category of intervention, they will have difficulties accessing it.

While all smokers who want to change could access *a single* smoking cessation intervention, it is rare that a smoker is aware of and able to access *all* the interventions that could support their attempt to change their behavior.

Fig. 2B.2 – Smoking Cessation Journey According to Cessation Intervention Split by Country: Steps 4, 5 & 6

Nicotine Replacement Therapy

Recreational noncombustible nicotine products

Medication or herbal remedy

Media

Psychological interventions

All solutions

Legend: Brazil — Egypt — South Africa — Turkey — China — Indonesia — United Kingdom — Total

X-axis labels (each chart): 4 Have awareness of | 5 Have access to | 6 Consider cessation

CDP Survey data. Weighted by Market Weight. Total sample size N=1751. Country N= 250 / 250 / 250 / 250 / 250 / 249 / 252

Factors that can influence cessation

There are multiple factors that contribute to consideration and decision making on whether a product is right for a consumer. This is no different for smokers. Unlike awareness and access, consideration is unlikely to increase for all categories of intervention. For example, a smoker may be aware of and have access to NRT, but may not consider using it due to any number of factors, from previous unsuccessful cessation attempts, to dislike of the formats available (poor experience), to social stigmatism around using NRT. Thus, consideration is impacted by whether smokers feel the product is appropriate for their needs, and will help achieve their goal of stopping smoking.

The primary and secondary research has not investigated consideration in detail. However, CDP's previous research white paper (3), evaluated some of the social, functional, emotional, sensorial, and habitual aspects of smoking. These vary from smoker to smoker and provide interesting context to the assertion that different smokers have different requirements from smoking, which, in turn, will impact the cessation intervention that may best fit their lifestyle.

Smoking cessation interventions are not one-size-fits-all. Approaches that better fit the individual needs of a given smoker may increase the likelihood they will consider using a given product.

The importance of having a diverse range of cessation interventions available

Smoking cessation is a difficult challenge to address. There are a diverse range of smoking interventions that can support smokers to stop smoking and/or change their smoking behavior. Different interventions possess different merits.

Few countries' governments, healthcare providers, and communities have the full range of interventions that could support smokers wishing to quit.

An appropriate first step would be to optimize the variety of cessation interventions available in each country globally and, where appropriate, minimize barriers to access.

Governments and public health initiatives can take actions to enhance legal availability and ease access to cessation interventions. While they can't directly control awareness, perceived access routes, and consideration among smokers, ensuring that a diverse range of interventions are accessible can better support those seeking behavior change.

CHAPTER 2.C

The gap between motivation and attempts to change behavior

## The conversion between considering cessation and actively taking steps to change behavior

Primary research data indicates that, while over half of smokers are considering stopping smoking (55%), a portion of these smokers (11%) will not attempt to change their smoking behavior (Figure 2C.1). Proportionally, that means approximately 1 in 5 smokers who think about changing their smoking behavior never take any active step to do so.

When exploring this across different countries, we observe varying degrees of reluctance among smokers to progress from contemplating cessation to taking concrete steps. China (30%) and Turkey (25%), have the greatest proportion of smokers who never proceed to attempting smoking cessation (see Table 2C.1). The countries with the lowest proportions of smokers failing to transition from consideration to attempts are the UK at 16% and Indonesia at 12%. However, it is worth noting that, while Indonesia has the smallest drop between Step 6 and Step 7, it has the lowest percentage of smokers at just (32%) who could consider cessation in the first place.

Table 2C.1 – Proportion of Smokers Who Have Considered or Attempted Smoking Cessation

	Overall	Brazil	Egypt	South Africa	Turkey	China	Indonesia	United Kingdom
6. Consider cessation	55%	67%	50%	61%	57%	54%	32%	62%
7. Attempt cessation	44%	55%	42%	49%	43%	38%	28%	52%
Proportion of individuals who considered cessation, but did not take active steps.	20%	19%	17%	21%	25%	30%	12%	16%

Fig. 2C.1 – Smoking Cessation Journey Graph: Steps 6 and 7
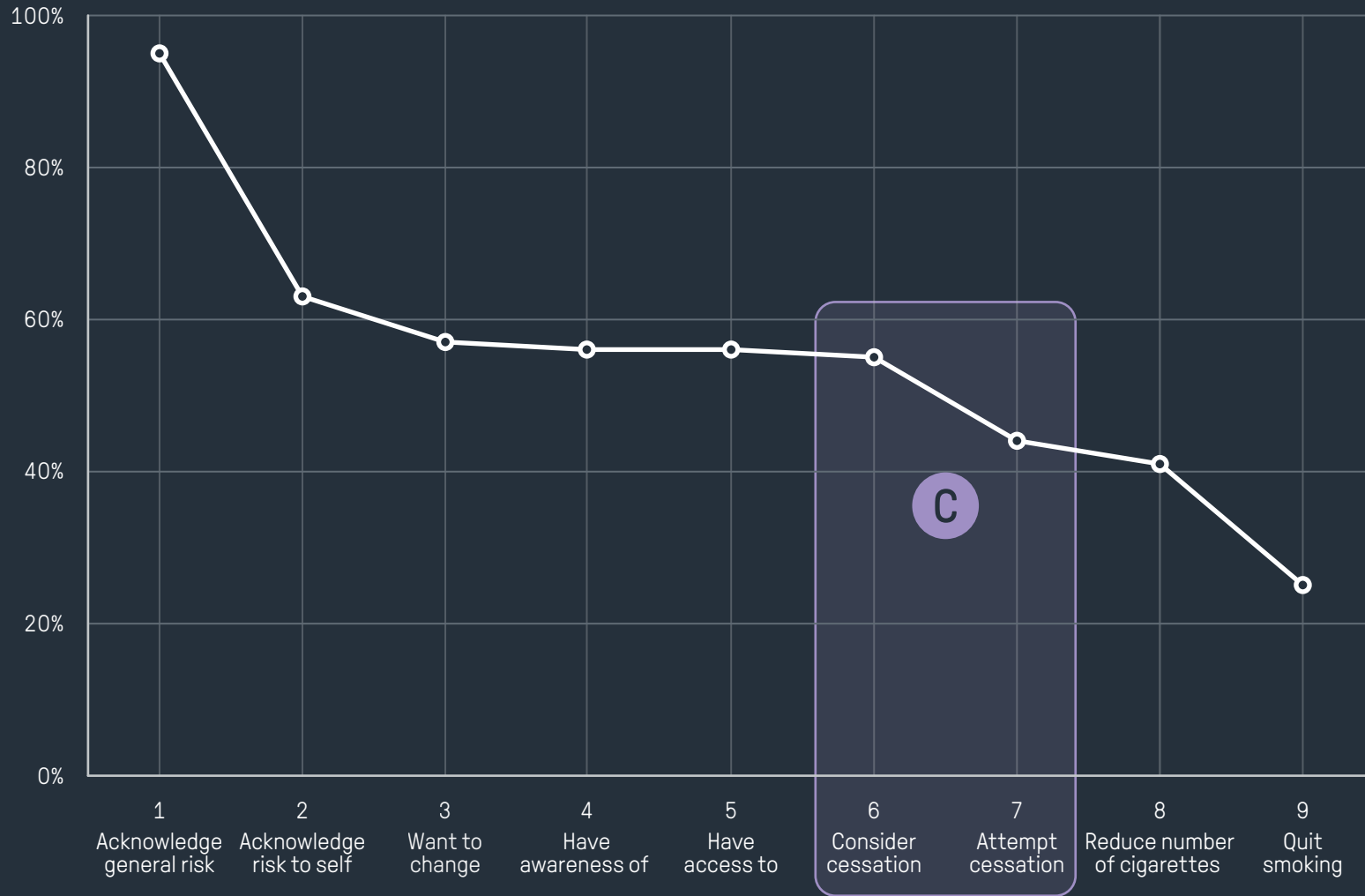
CDP Survey data. Weighted by Market Weight. Total sample size N=1751.

Motivations and barriers to cessation across a smoker's lifetime

Smoking can be a lifetime addiction; a regular tendency or practice that can be ingrained especially in certain situations or times of day. Like any habit, the behavior can slip into the subconscious, and opportunities to challenge smoking behavior day to day can be limited. Thus, though smokers may consider changing behavior, unless they take the active step to attempt to change there and then, they may not re-consider changing without a reason or reminder in their day-to-day lives.

For those smokers who never progress to attempting to give up smoking, what could motivate them to attempt to reduce or quit, and what barriers prevent them from doing so?

Additional research is needed to understand these factors and whether they differ across countries and cultures. While it is not possible to answer this from the primary and secondary research data that underpins this report, based on our previous work in this area (3), we have hypothesized potential motivations to attempt cessation, or barriers which may prevent smokers doing so.

Hypothesized motivations to break the smoking habit

Smokers undergo a range of experiences that may interrupt subconscious habits and encourage them to reconsider their smoking behavior. These include amongst others:

Experiencing the consequences of smoking-related illness

While most smokers (95%) acknowledge the harmful nature of smoking, a smaller proportion (63%) recognize its personal harm or harm to self. Developing illnesses due to smoking, whether in the short or long term, can prompt smokers to reassess their behavior.

During our qualitative research in 2019 (3), smokers often shared stories of attempting to quit or succeeding during recovery from an acute disease. However, in each case, they resumed smoking after recovering.

For long-term smokers dealing with chronic diseases and the physical discomfort from a lifetime of smoking, the urgency to quit may be more pronounced. The heightened awareness of physical symptoms could serve as a compelling motivator, leading smokers to attempt cessation in a bid to alleviate their discomfort.

Change in family circumstance

Internal motivation often stems from a desire to mitigate harm, facilitating recovery from illness or alleviating physical symptoms associated with chronic diseases. External motivations, such as limiting harm to others through second-hand smoke, were also noted.

In our earlier research (3), expectant mothers commonly quit smoking during pregnancy to protect their unborn child, leading their partners to attempt cessation or modify smoking habits to eliminate second-hand smoke risks. Post-birth, the practice of smoking outdoors continued in most cases (the research sample comprised only current smokers, capturing unsuccessful cessation attempts).

The notion that smoking negatively impacts life expectancy is important. A change in circumstance, such as a newborn baby in the family, can interrupt the habit of smoking and force smokers to reconsider the impact of their behavior. A shorter lifespan can become concerning when the context changes to the prospect of missing out on time with a loved one.

Change in family circumstances can interrupt smokers' perception of their behavior and be a key motivator to not only want to change behavior, but actively take steps to do so.

Barriers to attempting smoking cessation

There are several factors that may discourage smokers from attempting smoking cessation. These include:

Fear of failure

For individuals whose smoking behavior is deeply ingrained in their lifestyle, and who are addicted to nicotine, the idea of smoking cessation might not frequently cross their minds. These individuals may perceive complete cessation as an unattainable goal, questioning the value of attempting it in the first place.

The binary, succeed or fail nature of smoking cessation can be prohibitive to some smokers. A more practical approach could involve taking smaller steps, initially reducing cigarette consumption before striving for complete cessation. This strategy empowers individuals by setting smaller, achievable goals, making the initiation of their cessation journey more feasible.

Lack of accountability

Quitting alone poses challenges, with no external oversight. Lack of accountability can lead to unnoticed setbacks and an easy return to smoking.

In goal-setting, being accountable to someone adds commitment and external motivation. Sharing goals with friends, mentors, or coaches creates a sense of responsibility. For some smokers, this might be challenging if many friends and family smoke.

However, sharing goals can serve as a reminder of motivation, allowing individuals to track progress and move beyond contemplating cessation to actively taking the first steps toward quitting.

Considerations for future research initiatives

In conclusion, smokers who have considered but not yet attempted quitting may need an interruption in their day-to-day lives which reframes their smoking behavior.

More in-depth research needs to be conducted to review and test this hypothesis. Identifying the opportunities to motivate behavioral change and barriers for these populations is key in achieving better conversion of smokers from considering a cessation intervention to trying one, progressing them along the cessation journey.

CHAPTER 2.D

The efficaciousness of smoking cessation interventions in THR

Assessing the efficacy of smoking cessation interventions

As part of our secondary research scoping review, a diverse range of smoking cessation strategies were identified (as shown in Chapter 1). Through systematic analysis of the available literature from the six research countries (note: the UK was not included in this), the framework revealed that the use of pharmacotherapy for smoking reduction or abstinence continues to be one of the most effective tools.

Among categories of pharmacotherapy available, NRT had the most widespread availability and affordability. It proved to be a viable choice across research markets due to its ability to alleviate withdrawal symptoms.

In addition to pharmacotherapy-based products – including NRT and varenicline – counseling, behavioral therapy, the 5As model, healthcare advice, ENDS, Quitline, booklets/leaflets, text message support, and willpower were among the more effective independent tools to support smokers in abstaining from smoking or reducing their consumption of combustible products.

Furthermore, supplementing any form of pharmacotherapy with psychological-need-focused assistance, such as CBT, counseling, Quitline, text messages, or mobile apps, is a powerful accelerator for increasing smoking abstinence rates. These combinations recognize the importance of human interaction in facilitating the quitting journey and address both the physiological and psychological elements that are present in nicotine (or smoking) addiction.

It is important to note, however, that while there are smoking cessation interventions which are more effective at supporting smokers to abstain from smoking or quit, they are not particularly effective in absolute terms. Across countries rates of successful quit attempts remain low.

Combining pharmacotherapy and psychological support significantly boosts quit rates.

Fig. 2D.1 – Modified Smoking Cessation Journey Graph: Made change vs Quit
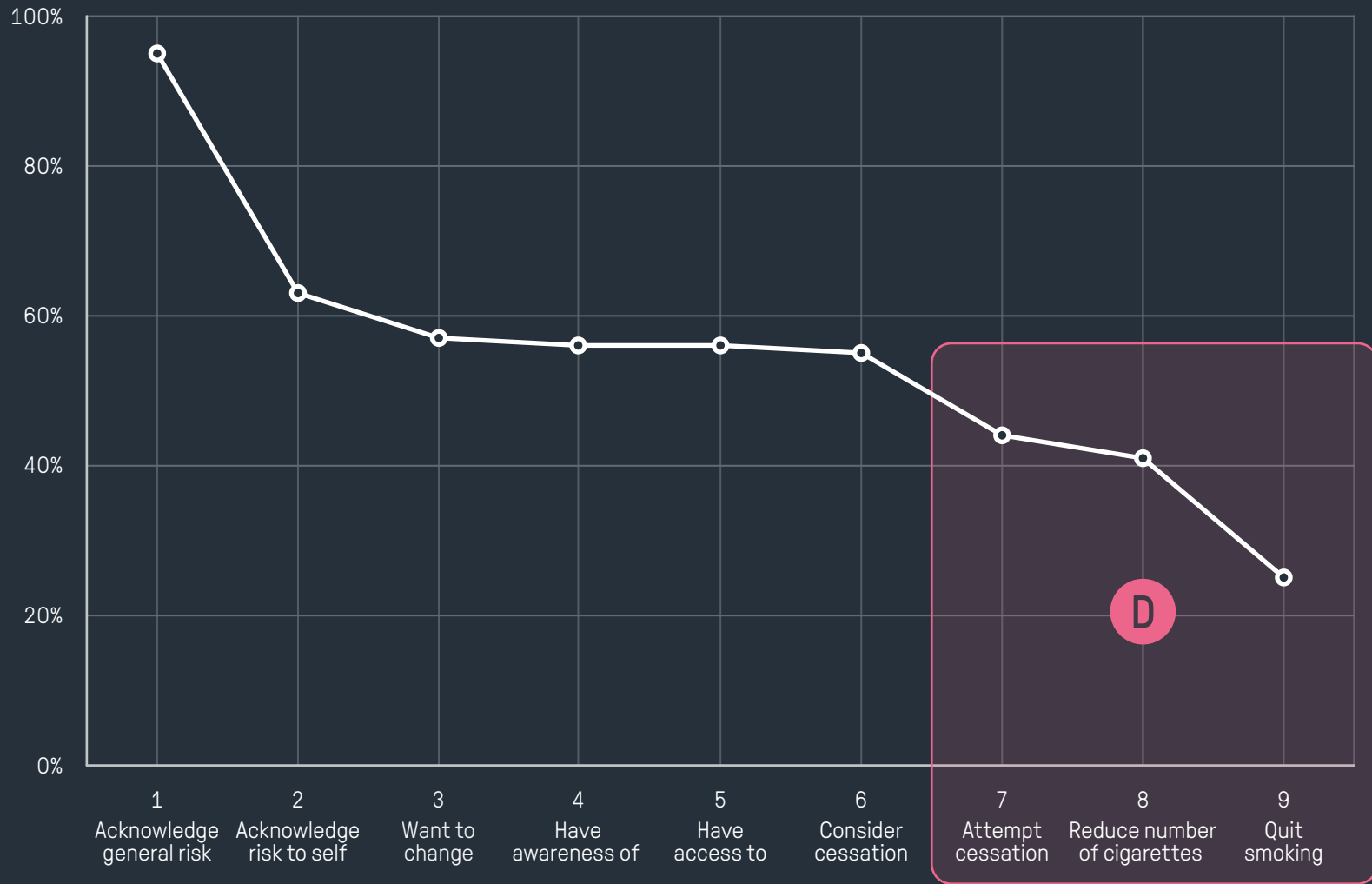
CDP Survey data. Weighted by Market Weight. Total sample size N=1751.

Comparing cessation rates to rates of reduced smoking for any method of cessation

Stopping smoking altogether is difficult, smoking less cigarettes is a more attainable goal.

Figure 2D.1 illustrates the cessation journey route from acknowledging harm through to quitting. In our primary research, 44% of individuals tried a cessation method, and just 25% were successful overall in stopping for a period. However, 41% of individuals were able to make a change and reduce their smoking.

Comparing cessation rates to rates of reduced smoking across categories of cessation intervention

All categories of cessation interventions lead to a positive change in cigarette smoking behavior. Figure 2D.2 outlines categories of smoking cessation interventions broken down by country. This data indicates that across countries, once smokers trial any smoking cessation product or service, these products are effective at changing smoking behavior, resulting in a reduction in the quantity of cigarettes smoked.

For the most part, once a smoker trials any cessation intervention there is a high likelihood that this will result in a reduction of the number of cigarettes smoked.

Cessation interventions appear to be more effective at supporting a reduction in the number of cigarettes smoked than they are at leading to abstinence. Is there merit in promoting the validity of reducing the quantity of cigarettes smoked?

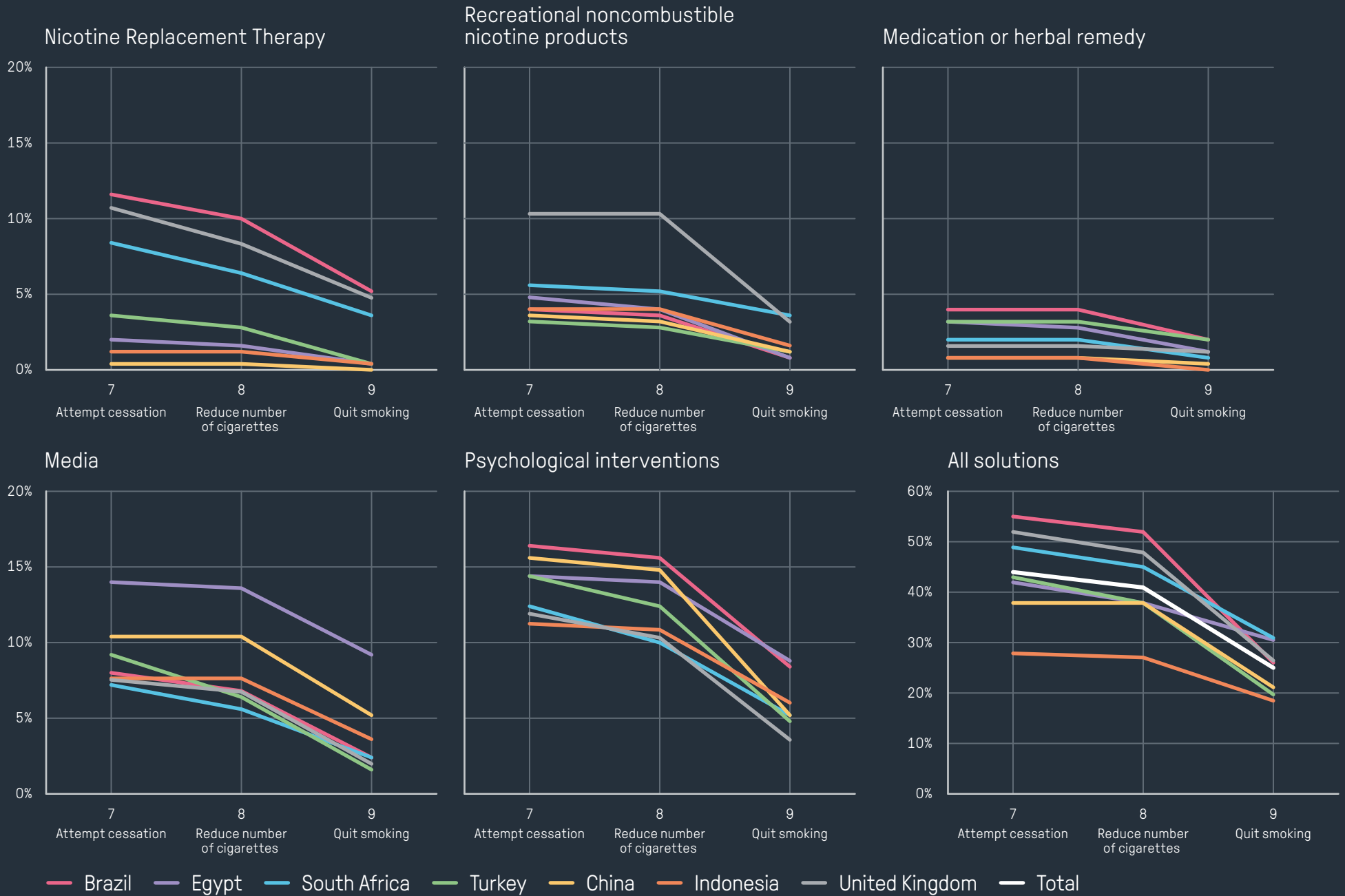## The role of novel nicotine products in tobacco smoking cessation via harm reduction

In theory, novel nicotine products, including ENDS (liquid-based vapes and heated tobacco products) and oral nicotine pouches (snus and nicotine), offer a less harmful nicotine delivery method than traditional smoking. Data from primary research indicates that use of these products resulted in a reduction of the number of cigarettes smoked.

Furthermore, data from the systematic review suggests that liquid-based ENDS may be a suitable aid for smoking cessation and, according to the framework that was applied in the systematic review, it was concluded that liquid-based ENDS may be a suitable tool for smoking cessation, and that use of liquid-based ENDS for quitting smoking is commonly reported among smokers. However, studies with a ten-year or longer follow-up period are required to corroborate sustained smoking abstinence with ENDS usage, whether such use is temporary or permanent, and the long-term implications of ENDS use on health.

There is a need to acknowledge that novel nicotine delivery products have a role to play in both harm reduction and cessation. At the same time, it is important that the regulatory landscape evolves to reflect this.

When considering the global challenge of expecting all smokers to quit, a shift towards smoking reduction becomes a crucial and practical strategy.

Fig. 2D.2 – Smoking Cessation Journey According to Cessation Intervention
Split by Country: Steps 7, 8 & 9

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Nicotine Replacement Therapy
Recreational noncombustible nicotine products
Medication or herbal remedy
Media
Psychological interventions
All solutions

X-axis labels (each chart): 7 Attempt cessation / 8 Reduce number of cigarettes / 9 Quit smoking

Legend: — Brazil — Egypt — South Africa — Turkey — China — Indonesia — United Kingdom — Total

CDP Survey data. Weighted by Market Weight. Total sample size N=1751. Country N= 250 / 250 / 250 / 250 / 250 / 249 / 252

Considering the merit of smoking cessation via a reduction in cigarettes smoked

Cessation from smoking combustible tobacco products should be the ultimate aim. Smoking cessation – as opposed to smoking reduction or harm reduction – dominates the academic literature, and rightly so. A smoker's health will improve more if they stop smoking combustible cigarettes completely, than it would if they are able to reduce the quantity of cigarettes they smoke.

However, considering the global challenge of expecting all smokers to quit, a shift towards smoking reduction becomes a crucial and practical strategy. Additionally, primary data gathered in this report indicates that current cessation interventions are more effective in aiding a reduction in the number of cigarettes smoked than in facilitating complete cessation.

Instead of conveying a message of immediate cessation such as 'stop smoking now,' would a more suitable approach be one of 'if you believe you can quit smoking, do so now; if you find it challenging to quit, aim to smoke less'?

This approach might better align with the current situation of smokers, reducing the barrier of entry to the cessation journey allowing a gradual process that ultimately leads to cessation.

Smoking negatively impacts your quality of life. Smoke less. Live better.

CHAPTER 3

Tobacco cessation: a framework for cessation via harm reduction

Rethinking the challenges and intended outcomes of smoking cessation

Based on research survey data, the global challenge of smoking cessation is significant. Overall, 57% of smokers acknowledge the harm to their health from smoking and want to change their behavior but only 25% have been able to stop smoking for a period.

However, viewed from another perspective, there is a positive angle for tobacco cessation. Significantly, 87% want to change smoking behavior. Additionally, the range of cessation interventions available are effective at reducing the number of cigarettes smoked.

Extrapolating this data to the global smoking population suggests that 1.13 billion of the world's estimated 1.3 billion smokers could want to change behavior. The key challenge is for governments and public health bodies to exploit this motivation and eliminate or reduce smoking harms at scale.

The importance of maintaining smokers' motivations to change smoking behavior

Each smoker will have a slightly different journey to cessation or harm reduction. While one smoker may stop in a week, another may take a year to stop, while another may never be able to stop.

Smoking cessation has a binary measure of success. You either succeed in stopping smoking or you fail, and there is a constant chance of relapse, so success may only be considered temporary. There is a risk that those who attempt to stop smoking and fail, or feel they cannot succeed in the first instance, lose their motivation to stop smoking over time.

Rather than starting and ending at cessation, a more empathetic goal could be to maintain the motivation to change smoking behavior. This incorporates the essence of harm reduction as well as the important end goal of cessation.

A rhetoric of: *'Well done. Look at the progress you've made and how many fewer cigarettes you smoke now. Keep going.'* could maintain a smoker's motivation for behavioral change longer than *'You should've given up by now. Those cigarettes will kill you'.*

Allowing smokers the timescale and support they need to change behavior may mitigate the pressure of pass/fail attempts and the risk that smokers will lose the motivation to change their behavior.

Framing the challenges of smoking cessation within the Transtheoretical Model of behavioral change

The Transtheoretical Model (TTM) of behavioral change (18,19) provides a framework that outlines the process individuals undergo when making significant behavioral changes.

The model identifies distinct stages and strategies to navigate people, recognizing that a lapse in behavioral change intentions, or a relapse to previous behavior, are common challenges when attempting to change behavior.

Figure 3.1 outlines the stages of the TTM and aligns them with the steps of the cessation journey and the suggested interventions or changes to public policy that may support smokers to act upon motivations to change their smoking behavior.

Applying the TTM to cessation journey and five approaches outlined in this research

Precontemplation: The individual recognizes the general health risks of smoking but does not feel they are at risk and are not considering changing smoking behavior.

Contemplation: The individual recognizes the health risks of smoking and is considering the idea of changing smoking behavior but may still feel ambivalent or unsure.

Preparation: The individual decides to change smoking behavior and starts researching cessation methods.

Action: The individual actively takes steps to change smoking behavior, either by utilizing one or more cessation interventions or strategies, or their own willpower alone.

Maintenance: After successfully changing smoking behavior, either by reducing consumption or quitting, the individual takes steps to avoid a lapse in reduction or a relapse to previous smoking behavior. This may include using other cessation interventions and/or finding alternative activities to replace smoking.

Exit: The individual has successfully quit smoking, and the new nonsmoking behavior is well established.

Considering a message of cessation only versus one of cessation through harm reduction using the TTM

In Figure 3.2 the TTM has been adapted slightly to reflect the challenge of relapse when attempting to change smoking behavior and the impact this may have on motivations to change smoking behavior. In this instance we have added an additional stage; relapse.

Relapse: After reducing the number of cigarettes smoked, the individual either experiences a lapse in their success and starts smoking more cigarettes, or the same numbers of cigarettes as they did prior to contemplating changing their behavior.

There is a risk that any changes to smoking behavior are not maintained, and that smokers progress to the relapse stage rather than 'exit'. A risk here is that smokers lose motivation to change behavior. The aim should be that this individual progresses through relapse, contemplation, and preparation to try again, or seek an alternative path to achieve their goals.

Rather than starting and ending at cessation ('exit'), a more realistic goal could be simply to maintain the motivation to change smoking behavior. This incorporates the essence of harm reduction as well as the important end goal of cessation. In this situation, the smoker can keep reducing the quantity of cigarettes and hopefully one day will stop smoking completely.

THR as a starting point to cessation could resonate with the 87% of smokers who are motivated to change their smoking behavior. It presents a more attainable starting point and can help minimize harms associated with tobacco smoking. After all, *one less cigarette next week is more achievable than no-cigarettes ever again from Monday.*

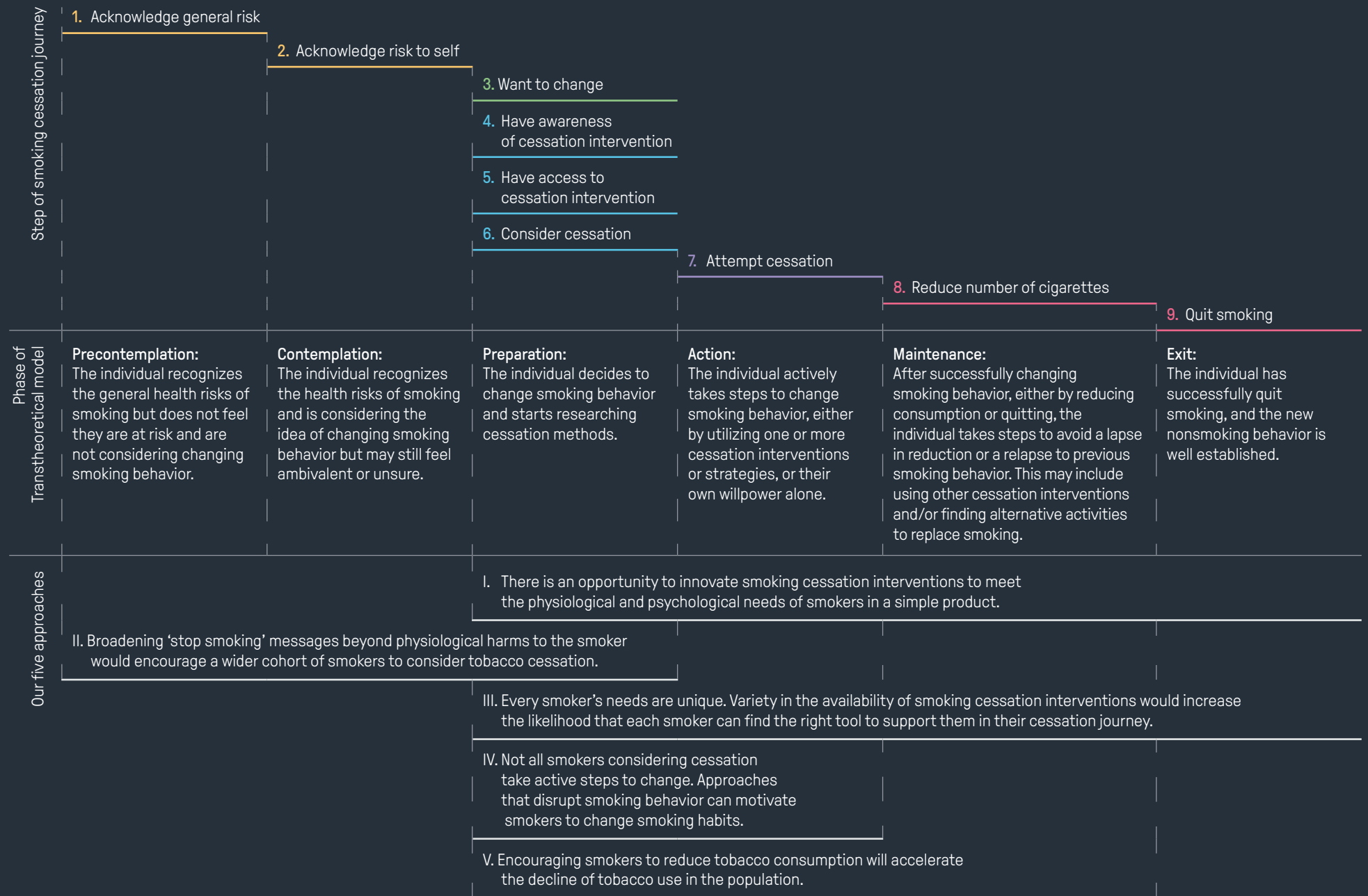# Fig. 3.1 – The TTM of Behavioral Change for Smoking Cessation

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Step of smoking cessation journey

1. Acknowledge general risk
2. Acknowledge risk to self
3. Want to change
4. Have awareness of cessation intervention
5. Have access to cessation intervention
6. Consider cessation
7. Attempt cessation
8. Reduce number of cigarettes
9. Quit smoking

Phase of Transtheoretical model

Precontemplation:
The individual recognizes the general health risks of smoking but does not feel they are at risk and are not considering changing smoking behavior.

Contemplation:
The individual recognizes the health risks of smoking and is considering the idea of changing smoking behavior but may still feel ambivalent or unsure.

Preparation:
The individual decides to change smoking behavior and starts researching cessation methods.

Action:
The individual actively takes steps to change smoking behavior, either by utilizing one or more cessation interventions or strategies, or their own willpower alone.

Maintenance:
After successfully changing smoking behavior, either by reducing consumption or quitting, the individual takes steps to avoid a lapse in reduction or a relapse to previous smoking behavior. This may include using other cessation interventions and/or finding alternative activities to replace smoking.

Exit:
The individual has successfully quit smoking, and the new nonsmoking behavior is well established.

Our five approaches

I. There is an opportunity to innovate smoking cessation interventions to meet the physiological and psychological needs of smokers in a simple product.

II. Broadening 'stop smoking' messages beyond physiological harms to the smoker would encourage a wider cohort of smokers to consider tobacco cessation.

III. Every smoker's needs are unique. Variety in the availability of smoking cessation interventions would increase the likelihood that each smoker can find the right tool to support them in their cessation journey.

IV. Not all smokers considering cessation take active steps to change. Approaches that disrupt smoking behavior can motivate smokers to change smoking habits.

V. Encouraging smokers to reduce tobacco consumption will accelerate the decline of tobacco use in the population.

Fig. 3.2 – Circular Smoking Cessation TTM Including Relapse

We must not give up on smokers who want to give up

At the start of this report, it was noted that behavioral change is hard. Smokers are motivated to change their smoking behavior, but they need more support to do so.

Smoking kills eight million people a year. Half of the smokers that do not quit combustibles will die from health complications associated with smoking (1). It is the number one cause of preventable death globally. The sooner meaningful global change is implemented, the more lives will be saved. Now is the time to reconsider the global approach to smoking cessation.

We encourage public health officials and policymakers to consider effective steps that create a more positive environment to motivate smokers to reduce their current consumption, switch to a non-combustible alternative, or stop smoking altogether. Reviewing the steps of behavioral change in the TTM (Figure 3.1), the merits of THR and some of the five approaches to productively impact tobacco cessation could form a foundation for this.

Industry plays a key role in the ultimate success or failure of reducing the harm caused by smoking. Greater innovation and development, to provide less harmful alternatives while providing a route to ultimate cessation, is essential.

Achieving a tobacco-smoke-free world within the next generation is a significant challenge. Reconsidering the global approach to smoking cessation and acknowledging the benefits of harm reduction will be an important step towards achieving it.

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Further reading and viewing

If you would like to read more about Cambridge Design Partnerships work with the Foundation for a Smoke-Free World; other articles, videos, and reports are available online.

Impediments to tobacco harm reduction in LMICs: The ENDS adoption journey

Whitepaper report

Can the rate of smoking cessation be accelerated?

Video coming soon

Why do people continue to smoke, even when they are aware of the risks?

Video

Could availability of ENDS encourage smokers to consider quitting?

Video

Can tobacco control regulations help reduce smoking prevalence?

Video

Could ENDS replace traditional cigarette use?

Video

Glossary – Abbreviations

ABBREVIATION	WORD
5As	Ask, Advise, Assess, Assist and Arrange
AFR	African Region
AMR	Region of the Americas
CBT	Cognitive Behavioral Therapy
EMR	Eastern Mediterranean Region
ENDS	Electronic Nicotine Delivery System
EUR	European Region
FCTC	Framework Convention on Tobacco Control
FSFW	Foundation for a Smoke-Free World
GATS	Global Adult Tobacco Survey
LMIC	Low and Middle-Income Country
NP	Nicotine Pouch
NRT	Nicotine Replacement Therapy
RRP	Reduced Risk Product
SEAR	Southeast Asia Region
THR	Tobacco Harm Reduction
WHO	World Health Organization
WPR	Western Pacific Region
WPR	Western Pacific Region

Glossary – Key Words

KEY WORD	DEFINITION
Accessibility	Accessibility of smoking cessation interventions in a particular market or country
Awareness	Knowledge of all possible smoking cessation interventions they could consider using
Cessation journey	Process of transitioning from smoking/tobacco consumption to recognizing harms, attempting cessation through to complete abstinence/quitting or reducing their consumption or tobacco or smoking cigarettes
Cognitive behavioral therapy	Talking therapy which focuses on how an individual's thoughts beliefs and attitudes affect their feelings
Combustible tobacco/cigarettes	Tobacco products that require burning for consumption
Consideration	Deliberation and mental acceptance of smoking cessation interventions or services
Counseling	Talking therapy where an individual meets with a trained professional counselor to discuss issues and problems they are facing in their lives
E-cigarettes	Devices that simulate tobacco smoking by heating a liquid that contains nicotine
Efficacy	The ability of the smoking cessation product or service to achieve the desired goal of enabling an individual to reduce or quit consumption of tobacco
Heat-not-burn devices	Devices that heat tobacco at a lower temperature than combustible cigarettes, producing an aerosol or smoke which users inhale.

KEY WORD	DEFINITION
Nicotine cessation	Process of quitting or stopping use of nicotine-based products
Nicotine pouches	White pouches containing nicotine that are designed to be used orally
Nicotine replacement therapy	A medically approved way to treat people with tobacco use disorder by taking nicotine through means other than through tobacco consumption
Non-combustible tobacco products	Tobacco products that do not require burning for consumption
Pharmacotherapy	A drug/pharmaceutical based therapy which is approved by a medical licensing authority
Physiological	Relates to how an individual's bodily parts function and respond to substances or stimuli
Psychological	Relates to how an individual's mind, mental or emotional state responds to substances or stimuli
Quantitative Survey	Objective questions used to gain detailed insights from respondents on a selected research topic
Quitline	Telephone-based resources that provide support to people who want to quit using tobacco
Quitting	Complete abstinence from smoking or tobacco consumption
Smoking cessation	Process of quitting or stopping smoking

Acknowledgments

Disclosure

Ben Kelsey, interviewing a respondent in their home, during initial CDP research.

Nicki Sutton, speaking with the locals in Bogor (Indonesia) during initial CDP research.

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