

Adolescents' perceptions of roll-your-own tobacco: a focus group study in Argentina

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Abstract

Introduction: Roll-your-own (RYO) tobacco sales are increasing in Latin America, with the product widely available in Argentina. We are not aware of any research in Latin America exploring adolescents' perceptions of RYO tobacco, or any research exploring how adolescents view RYO packaging and accessories.

Methods: We conducted eight focus groups ($n = 51$) in four cities in Argentina (Córdoba, Quilmes, San Salvador de Jujuy, Santa Rosa), with participants stratified by gender, age (13–14, 15–17), and smoking susceptibility (susceptible, non-susceptible). Participants were asked about RYO, RYO packaging, and accessories.

Results: Participants were aware of RYO tobacco. Many had seen hand-rolled cigarettes but often associated them with marijuana joints. RYO pack colors, materials, and descriptors influenced appeal and harm perceptions, as did flavors. Packs with descriptors such as “natural” or “additive-free” were considered more appealing and less harmful. Some believed, based on the packaging and from listening to relatives, that RYO was less harmful than factory-made cigarettes due to the absence of additives. The general view was that the act of rolling may reduce the urge to smoke, as it requires additional effort, but that this effect would likely diminish once people became accustomed to it. Some participants suggested that it would be easier to lose track of the amount smoked when using RYO. Accessories were seen as appealing and compared to candy.

Conclusions: Adolescents are familiar with RYO tobacco, with perceptions of harm and appeal influenced by packaging, flavor, and social narratives. Like many adult RYO smokers, some participants viewed RYO as less harmful than factory-made cigarettes.

Implications: The findings highlight the need to explore how roll-your-own (RYO) tobacco and its packaging are viewed by adolescents. The design of RYO tobacco packaging and accessories helped shape adolescents' perceptions of these products. Pack graphics, including color, imagery and descriptors, as well as flavors (particularly fruit and mint), influenced product appeal and contributed to the erroneous belief that RYO tobacco may be less harmful than cigarettes. Regulations on pack appearance and misleading descriptors may help correct false beliefs and reduce the appeal of RYO tobacco and accessories among adolescents.

Keywords qualitative research, marketing, adolescents, roll-your-own tobacco

Introduction

Although the global smoking prevalence has declined over the past decades, tobacco markets have shifted rather than disappeared, with some products gaining popularity as others lose ground. Roll-your-own (RYO) tobacco is one such product, with sales and use increasing in several countries even as cigarette consumption declines.^{1–5}

In Latin America, cigarette smoking has generally declined over the past two decades.⁶ According to the World Health Organization, the age-standardized prevalence of smoking in the region of the Americas was 13.5% in 2024. The estimate for Argentina

was 23.5%, well above the regional average and second highest in the region.⁶ Population-level data on RYO tobacco use in Latin America are lacking, although research in Argentina suggests that about 1 in 10 adult smokers consume RYO tobacco,⁷ and 1 in 8 adolescents have tried it.⁸ The absence of data on RYO use may relate to the lack of availability in the region, given that one study found that no points-of-sale (POS) in Mexico and Peru displayed RYO tobacco, and only one in Guatemala.⁹

A key reason for RYO use is that it is lower cost than cigarettes. However, other drivers have been identified. Research with adults who smoke RYO has found that, compared to cigarettes, RYO

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is considered to taste better, allow for greater control over the amount consumed, provide the satisfaction of rolling cigarettes, and is seen as less harmful.^{10–13}

Perceptions and use of RYO tobacco have been primarily explored in high-income countries in Europe,^{2,11,14–17} North America,^{18,19} Australia,^{18,20} and New Zealand,^{10,21} with fewer published studies in low- and middle-income countries and little research in Latin America.^{22,23} There is limited research on RYO with adolescents, with most surveys in Europe,^{3,24} North America^{25,26} and New Zealand,²⁷ and several of these studies are dated.

Tobacco packaging attributes, such as color and descriptors, can influence consumer perceptions and behaviours^{28–31} and be used to target specific populations.³² Tobacco companies use packaging to build and strengthen the perception that some tobacco products or brand variants are less harmful than others.^{33,34} With RYO tobacco, packs often include descriptors such as “natural” or “organic,” which may give the erroneous impression of reduced harm. This may make quitting seem less urgent or important to RYO users.³⁵ The importance of packaging as a marketing tool increases in contexts where other types of promotions have been restricted.²⁹ This is the case of Argentina, where a national law disallows all forms of advertising, except within the interior of POS.³⁶ Some provinces have implemented more stringent regulations, forbidding both advertising and product display at POS.^{37,38} In these environments, the pack itself becomes the primary—and sometimes the only—remaining channel for brand differentiation and marketing communication. We are unaware of any research that has explored adolescents’ perceptions of RYO packaging.

As an unfinished product, RYO tobacco requires accessories such as papers and filters. A panoply of accessories, such as colored rolling papers and flavored filters, is available in Argentina. We identified only one study, with adults who smoke in Scotland, that explored perceptions of RYO accessories.³⁹ In this study, natural rolling papers were viewed very positively, different papers were associated with particular user populations, and flavored papers were seen as targeting young people. Flavor accessories are increasingly marketed in countries with and without flavor restrictions, often to circumvent regulations and sustain product appeal, particularly among youth.^{40,41} With some exceptions, these products are typically not covered by tobacco control laws, as they do not contain tobacco or nicotine. The proliferation of such accessories in Argentina, a country with weak flavor restrictions, underscores the need to examine their role, if any, in shaping adolescents’ perceptions of RYO tobacco. It is important to explore RYO accessories alongside the packaging given that both are needed to consume RYO tobacco, and there is an absence of research on their potential to convey appealing or misleading cues to adolescents.

This study, part of the “REmoving the MARketing Power of cigarettes” project, which focuses on the marketing of tobacco and nicotine products in Latin America,⁹ explored how adolescents in Argentina perceive RYO packaging and accessories.

Methods

Study design

Between May and June 2024, we conducted eight focus groups with 51 adolescents aged 13–17 years across four cities in

Argentina (Cordoba, Quilmes, San Salvador de Jujuy, Santa Rosa). Two groups were conducted in each city. Cities were chosen to capture responses of adolescents across Argentina, with Cordoba and Quilmes large urban settings, San Salvador de Jujuy the capital of a tobacco-producing province, and Santa Rosa the capital of a province with high agricultural activity. According to the last available information from 2014, the percentages of students of middle school who had smoked tobacco in the past month were 15.0% in Cordoba,⁴² 15.1% in Buenos Aires,⁴² 19.2% in Jujuy,⁴³ and 17.4% in La Pampa,⁴⁴ the provinces in which the cities of Cordoba, Quilmes, San Salvador de Jujuy and Santa Rosa are located, respectively.

Recruitment

We contacted two secondary schools in each city, so as to have one focus group in each (a total of eight). In Quilmes, the Ministry of Education suggested schools. In the other three cities, we reached the schools through local contacts, who initiated the approach and connected us with interested school principals. Once permission had been granted by each school’s authorities, we visited classrooms to introduce the REmoving the MARketing Power of cigarettes project (<https://remap.stir.ac.uk/>) and invite students to participate in focus groups. We invited 13–17-year-olds because most people who smoke in Argentina start doing so before 18.⁸ Those interested completed a short questionnaire to collect their age, gender, and smoking susceptibility status, to allow us to stratify groups (Table 1). Susceptibility was assessed using two questions: (1) “If one of your best friends offered you a cigarette, would you smoke it?” and (2) “Do you think you will smoke a cigarette in the next year?”⁴⁵ Response options for both were “Definitely yes,” “Definitely not,” “Probably yes,” and “Probably not.” Those responding “Definitely not” to both questions were considered non-susceptible. We opted to ask about susceptibility instead of current smoking status, not only because of the low prevalence of smokers in the younger group, but also to reduce potential social desirability bias.⁴⁶ Hypothetical questions about future behavior have been shown to elicit more truthful responses from adolescents who might otherwise underreport smoking due to legal restrictions or perceived social disapproval.

Students were given an information sheet with further details for themselves and their parents/legal guardians. Participants had to give written assent to take part, as required by Argentine law. Parents/legal guardians provided opt-out (passive) consent. They received an information sheet explaining that they had the option of not granting permission for their child to be involved by signing the opt-out section of the form and returning it to the school, with it also explained that non-response would be considered approval for participation. Participants were randomly selected among all eligible students who provided assent and whose parents did not opt-out. Sample characteristics are shown in Table 1.

Focus groups process

E.E. and M.B.A. moderated each session, conducted in allocated rooms within schools. Groups lasted an average of 90 min. The topic guide was developed by the team and reviewed by a Youth Advisory Panel, a small group composed of three adolescents in Argentina. The panel members voluntarily joined virtual meetings and collaborated by reviewing the materials to ensure their appropriateness and relevance to young people. Based on their

Table 1 Sample characteristics.

| Group | Location | Age group | Gender | Smoking susceptibility | Number in group |
|-------|-----------------------|-----------|--------|------------------------|-----------------|
| G1 | San Salvador de Jujuy | 13–14 | Female | Susceptible | 6 |
| G2 | San Salvador de Jujuy | 15–17 | Male | Susceptible | 5 |
| G3 | Quilmes | 15–17 | Female | Non-susceptible | 6 |
| G4 | Quilmes | 13–14 | Male | Susceptible | 3 |
| G5 | Cordoba | 13–14 | Female | Non-susceptible | 8 |
| G6 | Cordoba | 15–17 | Male | Non-susceptible | 7 |
| G7 | Santa Rosa | 13–14 | Male | Non-susceptible | 8 |
| G8 | Santa Rosa | 15–17 | Female | Susceptible | 8 |

feedback, some wording was revised, and a few questions were removed to shorten the activity. The guide was piloted in two groups; pilot data are not included. The topic guide covered perceptions of cigarettes (packs and single cigarettes) and RYO (packs and accessories), exposure to POS advertising, and views of warnings on cigarette sticks. This article focuses on RYO tobacco, packaging, and accessories.

To facilitate the discussion, we gave participants a selection of RYO packs (see Figure 1) to handle and observe. We then asked them to place the packs on the table, ranking them from least to most attractive, and from least to most harmful in two separate exercises (see Figure SS1 for an example of this ordering exercise). The RYO packs shown were selected to include a diverse sample of flavored and non-flavored packs, differing by color and pack descriptors. Participants were also shown RYO accessories (filters and papers) (see Figure 2). To address potential sensitivities around exposing adolescents to tobacco packaging, each session concluded with a discussion about the harms of smoking and the marketing strategies the tobacco industry uses to target specific audiences.^{47,48}

With participant consent, all sessions were digitally recorded, and photos were taken of the ranking activities. The study was approved by the ethics committees at the Hospital de Clinicas, University of Buenos Aires and at the University of Stirling.

Analysis

Audio recordings were transcribed in Spanish by E.E. and M.B.A. Transcripts were anonymized and imported into NVivo 20 to support the analysis. We conducted a descriptive qualitative analysis, drawing on principles of thematic analysis as outlined by Braun and Clarke, particularly about systematic coding, pattern identification, and reporting of analytic decisions.^{49,50} We read the transcripts repeatedly, generating codes from the data. E.E., M.B.A., R.M., and I.U. met several times and developed a coding framework based on these initial codes (Table SS1). The framework was piloted on two randomly selected transcripts and further refined before being applied to the remaining transcripts. Coding was undertaken in Spanish by E.E. and M.B.A. We then used the framework matrix function in NVivo 20 to summarize coded data and organize patterns. Codes were grouped into themes and sub-themes. Those with relevance to this article (on RYO) were written in longer analytical Word memos in Spanish by E.E. and M.B.A. These memos were later translated to English and formed the basis of the findings presented in this article. Our analysis was

Pack Selection



Figure 1 Packs of roll-your-own tobacco shown to participants.

descriptive in nature,⁵¹ allowing us to remain close to the data when reporting our findings, and to prioritize adolescents' own accounts of their perceptions of RYO products in Argentina. This approach was appropriate given the limited existing research on the topic.

Results

We identified five main descriptive themes: (1) Knowledge of, and exposure to, RYO tobacco and accessories, (2) Comparison of RYO to cigarettes, (3) Attractiveness of RYO packs, (4) Perceived harm,

RYO Filters



1) Libella

2) Smoking

3) Stamps

RYO Papers



A) Gizeh

B) Mantra



C) OCB

D) Premier



E) Roots

Figure 2 Filters and rolling papers shown to participants.

and (5) RYO Accessories. Quotes are labeled by age (13–14, 15–17), gender (F for female, M for male), and susceptibility (Susceptible, Non-susceptible).

Knowledge of, and exposure to, RYO tobacco and accessories

All groups were aware of RYO tobacco, although few were aware of flavored RYO. Most groups could describe the process of rolling a cigarette and the accessories (filters and papers) required to do so. A couple of male groups associated hand-rolled cigarettes with marijuana more than tobacco.

My dad and his girlfriend roll, it's a piece of paper, you have to buy a little package with 'yerba' [dried leaves used to prepare a traditional herbal tea-like infusion in Argentina], you put that in, you put the filter in, you close everything, and that's it. (13-14F, Non-susceptible)

[Participant 1] I mean, when they say 'roll-ups' I do not think of tobacco, I think of something else . . . [Participant 2] they are more frequently joints than roll-your-own tobacco cigarettes. (15-17M, Susceptible)

In most groups, knowledge of RYO tobacco came from watching other people rolling or smoking, although some younger (13–14) female groups mentioned having seen promotional videos for RYO on social media (Instagram and YouTube) and TV series. Several older (15–17) groups recalled seeing RYO packs at POS but most

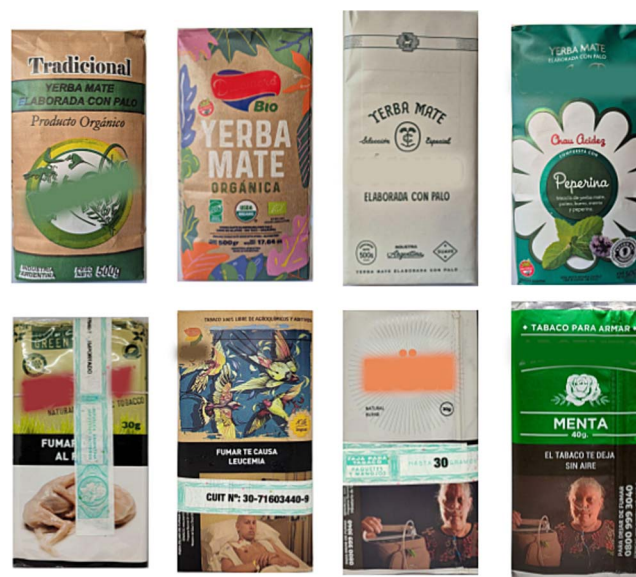


Figure 3 Packs of yerba mate in the top row, packs of RYO in the bottom row. RYO = roll-your-own.

commented that it is more common to see RYO cigarettes already rolled than the tobacco packs themselves.

I do know them, because of my uncle. What's more... I rolled some for my uncle. (15-17 M, Susceptible)

My cousin rolls a lot, he smokes tobacco too, he buys flavoured tobacco. (15-17F, Susceptible)

Most of the time on Instagram, I see images showing how to roll or what to use. (...) Like ads. (...) Not of people actually rolling, but of the different models — the type of 'yerba' they put inside, or the new rolling papers that come out. (13-14F, Non-susceptible)

When shown RYO packs, every group noted their resemblance to packs of *yerba mate*; *yerba* are the leaves used in Argentina to prepare the national beverage *mate*. In the younger groups, participants even referred to tobacco as *yerba*. This could be related to the similar esthetic (colors, textures, descriptors, and overall appearance) that can be observed in yerba and RYO packs, as shown in Figure 3.

Participants also highlighted the similarity with other products, such as packs of coffee or chocolate, with a couple of male groups commenting that they would have trouble identifying the RYO tobacco packs.

This one, if you don't tell me it's tobacco, I see it like this and it looks more like a bag of [Another participant: butter] coffee, or something else that's not tobacco. (M, 15-17, Non-susceptible)

Comparison of RYO and cigarettes

Half the groups, mainly females, believed that both RYO and cigarettes are equally harmful. A couple of groups viewed RYO as less harmful due to it having fewer additives and being *less artificial* and *simpler*, echoing perspectives they recalled from

RYO users, while two other groups perceived RYO to be *stronger* and *more powerful* than cigarettes.

They both seem equally harmful to me... Like I wouldn't say that one is more harmful than the other. I feel like they both do equally bad. (15-17M, Susceptible)

The ones that come pre-made must have more chemicals than anything else. (...) when you make them yourself, they have less... [Participant 2] components. (13-14F, Susceptible)

Half the groups stated that RYO allows users greater control over the contents of their cigarette, increasing the perception of safety, for example, *you know what you are putting into it* (15-17 M, Non-susceptible). One group of older females compared rolling a cigarette with home-cooking instead of buying fast food.

[Participant 1] For me, it's healthier. I mean, not healthier, but less harmful the one you roll yourself than... the normal one, let's say. [Participant 2] You know what's inside. (15-17M, Non-susceptible)

It's like when you cook your own food. Like when you go and buy, I don't know, a burger, versus making your own burger. (15-17F, Susceptible)

Two older groups of susceptible adolescents argued that, despite the perceived control over the content, consumers are still buying RYO tobacco from tobacco companies, so there is no real difference.

They trust more in the fact that they're making it themselves, and not adding anything to it, compared to... to having a company roll it for them, but in the end, they still buy the tobacco from... from somewhere, so umm, it ends up being more or less the same. (15-17M, Susceptible)

The sense of having greater control over the cigarette was not only related to its content, but also to the quantity of tobacco used. A younger male group stated that with RYO tobacco, *one can regulate the amount of substance [tobacco] that you put in it* (13-14 M, Non-susceptible). They added that RYO consumers can decide to smoke less by leaving the cigarette half finished, believing that a cigarette is normally consumed entirely. By contrast, a younger female group mentioned roll-ups to be more dangerous, as they can contain higher amounts of tobacco.

Half the groups suggested that the effort required to roll cigarettes might lead to reduced consumption. A few commented that people they know smoked RYO because, taking time to roll the cigarettes, it made them lose their focus on smoking: *he said that since it took him so long and he was too lazy to roll the cigarettes, he smoked less* (15-17F, Susceptible). However, participants also noted that over time people either quit rolling because they get tired and revert to cigarettes, for example, *At some point I think you get fed up and start smoking again* (13-15F, Susceptible), or they get used to the process of rolling, so the time it takes to do so is no longer a deterrent. A group of older females noted that RYO could also lead to increased smoking due to difficulties tracking the number of cigarettes consumed.

They roll a lot, and they don't realise the amount. (15-17F, Susceptible)

It's like when you have a bag, what do I know, of chips. You are eating, and you don't realise until you have eaten, until you see, eh, like you have little left. So I think it's the same with tobacco. (15-17F, Susceptible)

Attractiveness of RYO packs

Generally liked and rated appealing, RYO packs were seen as more eye-catching than cigarette packs in several groups. Participants noted that the designs were more elaborate, suggesting more effort had been put into them. The exception was the Cerrito pack, which some groups said looked like a traditional cigarette pack and was rated as less attractive for lacking originality and being less colorful (see [Table S2](#) for additional citations).

[Participant 1] It makes me want, even more, to try these than the ones already made... [Participant 2] They kind of draw more attention. (13-14F, Susceptible)

Colors consistently played a role in perceived attractiveness, with three main esthetics identified through the analysis of participants' discussions. Firstly, simpler and less striking packs, like Luckies and Rök, were considered as less attractive by all groups. Some groups perceived them as poorer tasting and associated them with older consumers. Secondly, the consensus view was that colorful packs such as Argento and Van Kiff were more appealing; both of which use a plain, striking color to reflect the flavor. The colors of the Arlequín pack also drew strong responses. Most male groups found this appealing, did not liken it to tobacco, and compared it with a pack of gummies or candy, for example, *Say if you cover this [the warning], it looks like gummies* (15-17 M, Non-susceptible). However, two older groups who also considered it *eye-catching* deemed it less attractive as they felt it was excessive.

If you see the one over there [Arlequín], you might say that that one is really good, because of the colour. (13-14 M, Susceptible)

One thing is that they have eye-catching colours, and when they go overboard, it makes you think that they are trying to sell the pack through marketing because it grabs your attention, not because of what's inside. (15-17F, Susceptible)

The third main esthetic was related to packs that appeared to be *more natural* due to colors, drawings, and descriptors such as "organic." Half the groups commented these were more attractive, especially for a never smoker, for example, *It feels more natural to me because of the grass and the colours* (15-17F, Susceptible). This was the case with Raw, Sayri, and Argento. In a few older groups, these packs were thought to resemble *yerba*, which made them particularly appealing given their association with a commonly consumed and familiar product. The mate infusion, prepared with yerba leaves, is central to daily life and has an important social role because it is usually shared by drinking together from the same mug. Given its cultural significance, designs evoking yerba mate generally enhanced perceptions of appeal.

Because it's greener, I don't know, it reminds me more of a pack of 'yerba' for 'mate'. (15-17 M, Susceptible)

Flavors enhanced attractiveness, with most groups noting that fruit flavors made the packs more enticing, for example, *Because there you see the fruit and I feel that it is going to be tastier* (13-14F, Susceptible). A group of older males felt that pack material and texture also played a role in appeal, with packs (such as Sayri) perceived as higher quality and particularly attractive because of these factors. For one group of older females, brand familiarity further increased pack appeal.

Perceived harm

Packs with a simpler design (fewer colors and decorative elements) were typically perceived as more harmful. However, for the colorful Arlequin pack comments were mixed, with some groups saying that it looked less harmful, for example, *makes it look like something very happy... [Participant 2] like a rainbow* (15-17F, Susceptible), and others arguing the opposite: *I feel like it is not very safe... maybe it is the most harmful of all* (15-17F, Susceptible).

Packs with descriptors received mixed reactions. While the term “pure” made a younger female group perceive tobacco as less harmful, terms like “ripe and spicy” and “100% tobacco” made participants feel *scared*, being described as *really strong* or *deadly* in most male groups.

[Participant 1]: 'Hard blend, ripe and spicy'. That already scares me. More harmful. [Participant 2]: 'ripe and spicy' are two things that make me suspicious. (15-17 M, Non-susceptible)

That yellowish one [Puro Argentino] looks like it's gonna knock you off your feet. Seriously, you fall into the coffin, it puts you into the sarcophagus. (13-14 M, Non-susceptible)

Packs resembling yerba packs (Argento, Raw, Sayri, Rök) were often ranked as less harmful. Packs containing natural colors, elements, or descriptors (“natural, without additives,” “100% free of agrochemicals,” “regenerative cultivation,” “certified green”) were also generally perceived to cause reduced harm. The Sayri pack was described as *innocent* by a group of older females.

[Participant 1] It also seems less harmful because of the colour of innocence. Not the colour, but the little birds, like . . . let's say innocence, I don't know. [Participant 2] Like it seems more... organic. (15-17F, Susceptible)

Flavors generated some discussion. A few groups believed that having fruit or mint would imply less harm due to what they presumed would be lower tobacco content, while a couple of younger groups argued *the more flavour, the worse*. The “Café Mocha” descriptor on the Cerrito pack was considered misleading for being more salient than the label indicating that it is a tobacco product. Pack structure was also considered. The compact shape of the Cerrito pack made several participants feel it was more concentrated and, therefore, more harmful. Some groups perceived it to be more dangerous as it resembles a regular cigarette pack.

RYO accessories

At least one participant in each group was familiar with RYO accessories. Generally, older adolescents had a better understanding of what these products were. One group of susceptible younger males reported seeing them daily, although primarily for marijuana use. Some groups reported having seen accessories from their parents, and a few in online videos and on TV. Rolling papers were generally considered appealing.

They are all striking and attractive. Like there aren't any ugly ones. (15-17 M, Non-susceptible)

It was frequently commented that packs of rolling papers resembled chewing gum, with a couple of groups indicating that the Gizeh pack would taste like bubble-gum because of the similarity in appearance: *They look like chewing gum, literally. Like, it's like... Ah, it made me want to eat some gum. (15-17 M, Non-susceptible)*. It was described as *super cute* and similar to make-up in two female groups. Some groups highlighted the appeal of the pink color, as well as the magnetic opening: *[Participant 1] This one is very striking [Participant 2: too striking] because of the little magnet and the visual texture* (13-14F, Non-susceptible). The strawberry illustrations on the flavored Mantra rolling papers appealed to many groups, with most female groups describing its scent as *delicious*. However, one younger female participant found the design *trashy*. A female group noted that Premier papers had a *plant-like design and the colour of organic [paper]*. *Of those notebooks that are made with cane* (15-17F, Susceptible), while another one commented that the *iridescence* (13-14F, Susceptible) of the OCB paper was appealing.

Because of their visual resemblance (color, shape and size), filters were compared to *little pills* and *gummies* (in both cases referring to candies), and to *chalk* (ie, the ones used to write on blackboards). While one older male participant believed flavored accessories can increase the harmfulness of smoking, a younger female expressed an opposing view: *I don't think any of them are bad because, I mean, they are little things* (13-15F, Susceptible). An older group observed that some packs have an organic or natural design, but ultimately believed filters are all the same. Most female groups, in contrast, pointed out that Libella filters are biodegradable, making them less harmful to the environment:

The good thing about these is that, well, at least they take care of the environment, they are biodegradable. (13-14F, Susceptible)

They do not harm the environment as much, but they do your health. (13-14F, Non-susceptible)

These [Libella] are more like... it says here, like paper. And these [Stamps, Smoking] are more like plastic (...) As it is 100% paper, it's probably less harmful to the environment too. (15-17F, Susceptible)

Discussion

This is the first qualitative study to explore adolescents' perceptions of RYO tobacco, packaging, and accessories. We found that adolescents were familiar with RYO tobacco and accessories. Some associated RYO with greater control over what is included

in a roll-up and the amount smoked, which contributed to the perception that it is less harmful than cigarettes. Although packs were not familiar to participants, they were generally seen as more visually appealing than cigarette packs, especially those with bright colors, nature-inspired imagery and descriptors, and fruit or mint flavors. These elements were frequently interpreted as signs of reduced harm. The findings add to and complement studies which have documented how the packaging of other tobacco products shapes adolescents' perceptions and attitudes toward tobacco.^{47,48,52} Accessories, not previously explored with adolescents, were also viewed as attractive.

Our findings align with multiple studies from high-income countries showing that RYO tobacco is often considered less harmful due to the belief that it is more natural and has fewer additives,^{10,11,53-56} and extend these studies by focusing exclusively on adolescents and how the packaging may play a role in cultivating these views. Consistent with our findings, perceptions of control over the contents and the belief that it reduces consumption have been found among 16-30-year-olds,^{10,11} reinforcing a false sense of safety. In our groups, participants felt that this sense of less harm was strengthened by colors, descriptors, and natural imagery. These features may be used by tobacco companies to convey reduced harm through sensation transference, where consumers transfer feelings evoked by a pack to the product itself.⁵⁷

Internal tobacco industry documents show that companies have invested in consumer research to identify and reinforce motivations for using RYO tobacco.⁵⁸ These strategies may be part of a broader marketing segmentation approach,³¹ targeting RYO products to more environmentally and health-conscious individuals. Through natural-themed packaging, companies may also be attempting to enhance their public image by portraying themselves as responsible corporate citizens concerned about the environment.^{29,59}

We found that adolescents frequently noted similarities between RYO packs and other products, especially "yerba" packs. Since tobacco packs can be seen as part of the identity of users, companies consciously design packs to allow individuals to feel more comfortable carrying them.³¹ This may motivate tobacco companies to make tobacco products that resemble common consumer goods, thus increasing familiarity and potentially reducing risk perceptions. The "yerba," mentioned in most groups, is an everyday item in Argentina, deeply embedded in the national identity. The tobacco industry has previously designed products that mimic non-tobacco products to appeal to specific populations. For instance, lipstick-shaped cigarette packs have been marketed to women to associate smoking with femininity and fashion.^{60,61} The resemblance between tobacco and "yerba" packs could also be interpreted as a form of cultural appropriation, in which global corporations strategically incorporate symbols of national identity to leverage the positive cultural association and increase sales.^{62,63}

We are not aware of research that explores adolescents' perceptions of tobacco accessories. Given the favorable opinion adolescents had of these products, accessories may also be used by manufacturers to increase appeal and shape perceptions. Bayly²⁰ suggested that the variety of tobacco papers, available in different sizes, materials, colors and flavors, allied to distinct pack designs, for instance featuring popular rock bands, likely make RYO tobacco more attractive to younger audiences. In our study, accessories were not only described as appealing (particularly due

to colors and flavors), but their resemblance to confectionery may also reduce risk perceptions and increase product normalization by linking them to children's items. Additionally, accessories were associated with the idea that RYO can be customized to reduce the environmental impact. Similar patterns have been documented in the United Kingdom, where accessories were seen as an extension of personal identity, and a way to mitigate harm, both to health and the planet.³⁹

Our findings suggest that stricter regulation on packaging should be considered to address the influence of packaging on adolescents' perceptions of RYO products. Limiting the ability of the pack to influence product appeal and harm perceptions could be achieved through standardized packaging and banning misleading descriptors. Including corrective information about misperceptions of RYO through health warnings^{11,35,64} or inserts¹² are other avenues for addressing the erroneous views about product harm that many RYO smokers and some of our sample hold. Regulation on RYO accessories is also an option. In Israel, for example, rolling papers must be sold in standardized packaging.³⁹ In Argentina, current legislation does not allow the use of descriptors suggesting reduced harm and references to flavors, but enforcement is lacking.⁶⁵ This might be due to an ambiguous assignment of responsibilities: while the Ministry of Health serves as the national enforcement authority, enforcement is also delegated to provincial governments. Despite existing policies, there are process failures related to coordination and oversight.

Argentina has not ratified the World Health Organization Framework Convention on Tobacco Control, mainly due to the influence of the tobacco industry in a country where tobacco production remains economically and politically significant.⁶⁶ The absence of political will and the lack of dedicated resources for tobacco control further hinder effective implementation. In this context, building broader public support for tobacco control by raising awareness of the harms of RYO and the industry's strategies^{31,47} could help generate the social and political pressure to bring the issue back onto the agenda. Educational activities aimed at young people and schoolchildren may help clarify adolescents' misconceptions and denormalize tobacco use.^{11,20}

In terms of limitations, although participants were instructed to disregard on-pack warnings as they are rotated, different warning images on packs may have influenced responses. Secondly, since the groups were conducted within schools, participants might have felt inhibited to express themselves freely. To mitigate this, discussions were held in a private classroom without the presence of school staff, and we reminded participants that only the research team would have access to the audio recordings.

This is the first study to explore how RYO packaging and accessories are perceived by adolescents. Perceptions of greater control and reduced harm were influenced by pack design, while appealing colors and flavors, and the possible normalization of RYO tobacco due to its similarity with other products, may challenge efforts aimed at reducing product appeal to adolescents. Stricter packaging regulations and enforcement may help reduce product appeal and debunk myths about RYO tobacco being less harmful than cigarettes. Strengthening intergovernmental coordination, ensuring resource allocation, and building public support through educational campaigns are essential steps toward closing existing gaps in tobacco control.

Supplementary material

Supplementary material is available at *Nicotine & Tobacco Research* online.

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Declaration of interests

None declared.

Author contributions

María Belén Arnaudo (Conceptualization [equal], Data curation [lead], Formal analysis [lead], Writing—original draft [lead]), Emilia Elicabe (Conceptualization [equal], Data curation [lead], Formal analysis [lead], Writing—review & editing [supporting]), Raúl Mejía (Conceptualization [equal], Supervision [equal], Writing—review & editing [supporting]), Crawford Moodie (Conceptualization [equal], Supervision [equal], Writing—review & editing [supporting]), and Isabelle Uny (Conceptualization [equal], Supervision [equal], Writing—review & editing [supporting])

Data availability

Anonymized transcripts will be available, in Spanish, upon reasonable request from July 2026.

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