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PEST Analysis of the Development and Challenge of Macau's 2015 Tobacco Control Law

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Abstract: The Legislative Assembly of the Macao Special Administrative Region passed the 2015 Tobacco Control Laws on July 10, 2015, stimulating a heated discussion and debate in society. In this study, a content analysis of news coverage appearing in Macao Daily between July 1, 2015 and December 31, 2015 was conducted. It also applied PEST method to carry out detailed analysis of the public's opinions, aiming at gaining a better understanding of the current situation of tobacco control work in Macao and the challenges lay ahead. Moreover, we use KAP (Knowledge-Attitude-Practice) framework to propose further enhancement and improvement of government's tobacco control work.

Key words: Tobacco Control Law, PEST analysis, KAP (Knowledge-Attitude-Practice Model), smoking room.

1. Introduction

Given circumstance of the decreasing overall income in lottery industry (26 consecutive months from 2014 – 2016), certainly, a tight tobacco policy in casino has arouse great attention in this industry. Runners and some employees in casinos have some concern that this tight policy will lead to a further plunge in revenue and the loss of customers since most players in the Lounge are smokers from Mainland China. And this may have an impact on the employment and the possibility of upward mobility in Macau. Meanwhile, casino runners stress that most cities relying on lottery industry have implemented a carpet smoking ban indoor. With this in mind, they all suggest the government should allow casinos to set up indoor smoking room [1]. However, Macau government clearly stated that a carpet smoking ban indoor would be implemented in 2016. Junrong Tan, Secretary for Social and Cultural Affairs noted that, only 10% or so smokers in casinos would

consider not coming back again because of the ban in accordance to related questionnaires. With this in mind, Secretary Tan said the loss of about 10% players could not commensurate with the price Macau paid for healthcare caused by smoking [2]. Furthermore, Mainland China, the largest global tobacco seller is also stepping up efforts to issue laws and regulations of tobacco control recently. And some scholars even noted that the latest regulation on smoking promulgated by Mainland China is the most stringent. Since Mainland China is attaching important to the harm caused by smoking [3], it is estimated that attitudes on carrying out tobacco control policies will become more and more serious in both Mainland China and Macau. So the promulgation of tobacco control policies may not have such a great influence on Macau's lottery industry to the expectation of casino runners, to a large extend, it may possibly elevate its international image as a Health City recognized by WHO [4].

When it comes to heated discussion on the Tobacco Control policy, we can conclude that the society failed

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to understand why Macau government needed to adopt these measures. Despite the new Tobacco Control Law passed by the Legislative Assembly on July 10th, 2015, it is not until the detailed rules and regulations of the new law win the unanimous agreement from the Second Standing Committee of Macau Legislative Assembly that it can become an official one. Therefore, the discussion on the legislative process of Tobacco Control Law (see in Table 1) can be regarded as the orientation of tobacco control in Macau in the near future. And this article will focus on three parts, namely Macau's tobacco control work, arguments on the new Tobacco Control Law and webpages of Macau's tobacco control report browsed a lot in the past. In this way, we can sum up more we need to consider in tobacco control in the near future

2. Literature Review

2.1 Tobacco Control in Mainland China

"The most stringent" Tobacco Control Law implemented in Mainland China may possibly raise the sense of recognition of Macau tourists on tobacco control. In order to promote cultural and ideological progress, Beijing rolled out Anti-smoking Regulations in Beijing on June 1, 2016 [5] and strengthened law enforcement and publicity and education on smoking ban. Besides, China Daily reported that National Health and Family Planning Commission drafted Tobacco Control Regulations in Public Places in 2014 and sent it to State Council for examination and approval. The report pointed out Mainland China was mulling a ban on all forms of tobacco advertising, sponsorship and promotion of tobacco products [6]. In other words, tobacco control has achieved some results or it has been put into the agenda of the government, making the general public achieve a more corresponding consensus on smoking ban. In this way, Macau tourists will support more about a carpet smoking ban in casino. By contrast, if Macau government is pushing for tobacco control falling behind its neighboring regions, that would go against it as a Healthy City recognized by WHO [7]

2.2 Tobacco Control in Macau

It is now not an urgent task for Macau since it has implemented Tobacco Control Law for almost 20 years. In 1996 and 1999, Macau formulated two regulations, namely System on Smoking Prevention and Restriction and Regulation on Consumer Tax to specify tobacco control in the economic and social dimensions. In 2012, the government reformulated Tobacco Control Law by adding no smoking site, comprehensive bans on tobacco advertising, promotion and sponsorship as well as strengthening regulations on tobacco products sales, laying a solid foundation for the legislative contents of the Law in the long run. As is seen in Table 2, tobacco control in Macau shifted from the utilization of education and regulation in 2012 to the implementation of a carpet smoking ban in casino in 2015. For almost 20 years, Macao SAR government, to some extent, has helped the general public form a cognitional conception about tobacco control. Based on these efforts, we can negate the opinion which argues a carpet smoking control in casino by implementing the new Tobacco Control Law was a one-size-fits-all solution with undue haste [8].

The Government of China and Macau has already inputted a lot of resources and efforts to minimize the impacts of smoking on public health. The paper adopts PEST analytical framework (PEST is represented for P: Political, E: Economic, S: Social and T: Technological factors) to summarize public opinions on 2015 Tobacco Control Law and briefly evaluate the effectiveness of the law in Macao.

3. Research Method

There are two main parts of the research method. One is data collection and the other one is analysis method.

3.1 Data Collection

It is very common to analyze the strategy or tobacco

Table 1 Legislative process of 2015 Tobacco Control Law.

Time	Event and Social Perception			
July 9-10	2015 Tobacco Control Law has won general adoption			
July 13	 Amendment of the detailed items of 2015 Tobacco Control Law will be reviewed and approved by the Second Standing Committee of Macau Legislative Assembly: Based on the consistency of review and approval of the Law, some worry about members of the Second Standing Committee from commercial community affecting its legislative process Setting up smoking room in casino is quite a heated controversy 			
July 22	 Proposal from the Second Standing Committee made a proposal to 2015 Tobacco Control Law: Online public consultation will be conducted from Aug. 1 to Sep. 30 Make an appointment with typical entities and groups being influenced directly (the first phase); meet representatives from community influenced indirectly (the second phase) It is estimated that the consultancy process would cost a year 			

Table 2 Enforcement Content of Macau Tobacco Control Law (after 2012).

Time	Content
From Jan. 1, 2012	 Increase no smoking site Comprehensive bans on tobacco advertising, promotion and sponsorship Strengthening regulations on tobacco products sales
From Jan. 1, 2013	Half casinos will implement smoking banImplement new standards on tobacco product packaging and volume labeling
From Jan. 1, 2015	 Implement smoking bans in bars, ballrooms, saunas and massage parlors

Macau Health Policy Institute. "The Introduction of Main Points of the New Tobacco Control Law." https://sites.google.com/site/macaohp/home/tobaccofree/introduction.

control work based on news data. Niederdeppe and his research group have already collected relevant content from news reporting issued in Florida, US between April 22, 1994 and December 31, 2001. They stated that it was a very powerful and effective mean to know the implementation and effect of a policy as well as the opinions from all sectors [10]. It was also from journals and other news material, Kenny and Bero [11] found news coverage on passive smoking would mix the voice of tobacco producers. Likewise, Jun Yuan and Le Young [12] made quantitative and qualitative analyses of tobacco control news reported in People Daily from 1996 to 2008, aiming to explore its change and tendency. In this way, researchers found the reporting feature and construction strategy of its agenda setting so the underlying factors causing this phenomenon could be revealed [12]. Thus it can be seen that data collection and integration of news reporting are conducive to tobacco control. Furthermore, that is why news data on 2015 Tobacco Control Law from July 1, 2015 to December 31, 2015 when the Law has been heatedly discussed have been collected. Given circumstance of the representativeness, neutrality and diversity of local newspaper and periodicals in Macau, this article chose Macau Daily as the data source and collected 38 pieces of news ranging from July 1, 2015 to December 31, 2015 as research data.

3.2 Analytical Method

PEST analysis focuses on the overall macro environment in terms of political, economic, social and technological factors and assesses the impact of these four factors on strategic goal and formulation of the organizations [13]. Since there is no framework in relation to tobacco control study built, PEST analysis is used as the research framework in this article. Unlike the traditional PEST analysis focusing on the development of enterprises or industries [14], this article mainly analyzes factors affecting macro environment so as to promote the formulation of policies on public health. As an effective tool to

analyze macro environment, PEST model not only focuses on analyzing macro environment, but also enables to distinguish all the forces having an impact on the organizations. Besides, as an effective mean for organizations to analyze external factors, this model has the same effectiveness on analyzing the external factors affecting the formulation and development of social policies [15]. Actually, the overall tobacco control work had been promoted smoothly in Macau although the government encountered quite a few barriers in promoting 2015 Tobacco Control Law. Based on PEST analysis model, this article will review and analyze the promotion process of 2015 Tobacco Control Law, endeavoring to propose relevant strategies and suggestion. With regard to news classification, a team with diversified research background has carried out the research task, whose members are from the area of social policy, public media, public health, psychology and sociology. Members from tobacco control groups in Macau (i.e., Smoking Abstention and Good Health Association) also get involved in the research.

4. Result

Based on PEST analysis framework, the authors will analyze the relations between the new Tobacco Control Law and its different dimensions in society, and discuss the opinions and current situation of the 2015 Tobacco Control Law.

4.1 The Dimension of Politics

Discussions in relation to politics get involved in five subjects, namely Island Community Services Consultative Committee, lottery intermediary community, senators in Legislative Assembly, social news and government. With the analysis of contents in relation to smoking control in news reporting, the authors find that there are two obvious public attitudes towards the dimension of politics. On one hand, five senators (Liqun Zhang, Kaixian Gao, Anting Zheng, Zhiqiang Feng and Meiyi Chan) in Legislative

Assembly from commercial community and lottery intermediary community hold a negative view towards the 2015 Tobacco Control Law, especially the issue of setting up smoking room in casino. They all think the implementation of the ban on indoor smoking will infringe upon the privileges and freedom of smokers. Besides, it will lead to a series of problems in a row such as rampant tobacco smuggling and even severe prison violence [16]. On the other hand, they are all suspicious about this one-size-fits-all policy pertinent to smoking control. While for those who are positive on the Law, they believe the government has given grace period to lottery industry, so they have confidence in effective implementation of relevant laws and regulations by the government. Meanwhile, Macao Customs Service and Correctional Services Bureau have belief in handling the new arrangement made by the government pertinent to the smoking control and ban. Thus, supporters argue that we should implement Tobacco Control Law in real earnest in accordance with the standard set by WHO, strictly limit the smuggling of cigarettes, carry out the ban on indoor smoking, draw on merits of Smoking Ban standard set by WHO and strengthen the law enforcement efforts of Tobacco Control Office. In this way, the overall smoking rate of society could be effectively reduced, which will eventually boost the economic growth [17].

4.2 The Dimension of Economy

Discussions in relation to economy get involved in five subjects, namely commentators, lottery intermediary community, senators in Legislative Assembly, Institute for the Study of Commercial Gaming at the University of Macau and government. Lottery intermediary community and senators who oppose to a carpet smoking ban in casino expressed the same concern. They all worry about a carpet smoking ban will lead to an even worse economic performance in the Lounge and a negative investment in other areas. In the meantime, as the casino revenue has been

decreasing, some senators are concerned that other industries cannot wall themselves implementation of a carpet smoking ban, which will trigger a new round of unemployment [18]. They even quote a case in Las Vegas, a city well-known as gambling industry in America to analyze the pros and cons of the smoking ban. It pointed out that smoking ban had not become the mainstream of gambling industry in US and regions relying quite a lot upon gambling industry may possibly have less support for it. Although there is no direct evidence showing a direct link between the decreasing income in lottery industry and smoking ban, this one-size-fits-all smoking ban conducted by the government is really risky. Related researches done by the third party entrusted by gaming companies show that more than 60% of their staffs are supportive of setting up smoking room and over 60% players argue that at least there should be smoking room in casino. According to a study from Institute for the Study of Commercial Gaming at the University of Macau, if smoking ban is carried out in non-VIP area and smoking room could be set up, about half of staffs are willing to work in the Lounge (smoking area), among whom nearly half are willing to work there without physical subsidies. On the contrary, people with positive attitudes have diversified opinions on the 2015 Tobacco Control Law. With gross income remaining high and high competitiveness in the industry, especially gambling its world-class comprehensive projects, Macau has become a destination of world tourism [19]. Thus its economy will not be easily influenced by the indoor smoking ban. Besides, it is estimated by the government that the influence of a carpet smoking ban in casino will just range from 2.76% to 4.6% in terms of its revenue, which is not quite a loss to Macau. If the estimation is based on data this year, the loss caused by the ban is less than ¥10.2 billion. According to "A Survey on Opinions of Tourists on Tobacco Ban in Macau Casino" done by Macau Health Bureau in December

2015, about 80% visitors are supporters of the ban. And 60% smoking tourists say yes to the ban.

4.3 The Dimension of Society

The Government has to play an important role in tobacco cessation policy. Most senior officials have already pointed out that one fifth of total deaths are caused by smoking and the total estimated smoking related health care costs was a couple of billions Macau pataca. In addition, the Government follows WHO smoking cessation guideline to deliver smoking cessation step by step, so as to accommodate some special needs of some industries. Besides, the increasing query on smokers in smoking cessation clinic, especially teenagers easily influenced by the money spent on cigarette has shown that raising tobacco taxes did make a difference in smoking control. And the adoption of a carpet smoking ban in casino could also in real earnest safeguard the health of gaming industry workers (passive smokers) and their families (third-hand smokers). However, those opposing 2015 Tobacco Control Law argue that a smoking ban in casino would bring an eyesore to the civilized streets since smokers will be driven to smoke on the road. What is worse, the decline of revenue in gaming industry will make a difference to the salary increase of civil servant and cash sharing of citizens and so forth.

4.4 The Dimension of Technology

Compared with the other three dimensions, less discussion on technology was initiated and it is mainly about the feasibility of setting up smoking room. People with negative attitude towards 2015 Tobacco Control Law suggest setting up some smoking areas and effective monitoring facilities [20], while those with positive view quote the advice from WHO, that is, smoking room is unable to insulate human from large amounts of indoor smoke toxin. Hereby, the government opposed to setting up indoor smoking room [21] and it also highlighted the regulatory issues of e-cigarette.

Table 3 An analysis of Macau's new Tobacco Control Law in the Dimension of Politics.

Attitude	Opinion
Positive	 Government: draw on merits of the standard set by WHO; the customs crack down on cigarette smuggling; the general public have privileges to smoke outside the casino; Tobacco Control Office strengthens the law enforcement efforts; implements the strictest Tobacco Control Law; determines to implement Tobacco Control Law Senators in Legislative Assembly: casino is always an exception without smoking control; Casino takes advantages of loopholes in the Tobacco Control Law; Beijing Capital International Airport closed smoking room Customs: strengthen the search of cigarette smuggling, promote the new rules and set up "trash area" Representatives of workers: already set grace period for the establishment of smoking room Prison: have confidence in tobacco control
Negative	 Island District Social Consultancy Committee: criticize the inadequate enforcement of Tobacco Control Law Lottery Intermediary Community: oppose the one-size-fits-all policy pertinent to a carpet smoking ban indoor Senators in Legislative Assembly: cigarette smuggling became more rampant, referendum in cigarette industry, infringement upon human rights of smokers, violence in prisons News reporting: an irritable man who humiliated and threatened law enforcers got punishment and made compensation; someone was injured and sent to hospital for discouraging diners from smoking Lottery industry community: the appropriateness of the one-size-fits-all policy has caused suspicion Commentator: a prudent attitude should be held towards the implementation of the Law

Table 4 An analysis of Macau's new Tobacco Control Law in the Dimension of Economy.

Attitude	Opinion			
Positive	 Government: tobacco consumption generated huge fiscal pressure, especially the medical health expenditure; smoking ban in casino led to the loss of 4.6% tourists at most; gambling stocks were or rise after three trading days of the general adoption of Tobacco Control Law in Legislative Assembl Groups: economic means is conducive to tobacco control 			
Negative	 Senators in Legislative Assembly: concern for the unemployment; the one-size-fits-all smoking ban too risky; a negative investment Lottery intermediary community and economic scholars: against the backdrop of a sluggish economy, a carpet smoking ban will make the performance of lottery industry even worse Commentator: casinos in Las Vegas did not carry out smoking ban Institute for the Study of Commercial Gaming at the University of Macau: half of staffs are willing to work in smoking area and a quarter are even willing to work there without physical subsidies Gaming companies: non-VIP area in casino set up smoking room and 60% staffs and visitor support this room Tobacco community: a sharp increase of taxes on tobacco unable to reduce the number of smokers while it will lead to more rampant cigarette smuggling 			

Table 5 An analysis of Macau's new Tobacco Control Law in the Dimension of Society.

Attitude	Opinion
Positive	 Government: tobacco hazard, tobacco control not total smoking ban, diseases caused by smoking not the profession Safeguard the health of gaming industry workers (passive smokers) and their families (third-hand smokers) Labor community: in line with the expectation of citizens and staffs working in lottery industry Senators in Legislative Assembly: most smokers in Mainland China quit smoking for economic reason Civil society: rising cigarette tax led to increasing query in smoking cessation clinic
Negative	 Senators in Legislative Assembly: infringe upon the privilege of smokers; smoking room gives one more choice for its workers and players; the decline of revenue in casino influences salary increase of civil servant and cash sharing and so on; a carpet smoking ban will bring an eyesore to the civilized street since smokers will be driven to smoke on the road; lottery industry got a chance of referendum; prisons may have violence Community leaders: concern about the domino effect

5. Discussion

With four setting-up variables in PEST analysis model, 38 pieces of news have been chosen for the research (see in Table 6), among which 16, 23, 23 and 8 respectively in the dimension of politics, economy, society and technology. It can be summed up as follows:

- (1) Most positive comments on Tobacco Control Law were presented from the perspective of public health as well as the feasibility of policy implementation while the negative ones highlighted its effect on economy.
- (2) Most positive comments were spread by the government or traditional folks associations while the negative ones were clarified by people from commercial community or entities.
- (3) People with positive and negative attitudes have done relevant researches and studies. For the former, they would choose a perspective of the macro

environment with the society as the research object while the latter would choose a micro perspective by studying the lottery industry, both chose Macau tourists as the research object.

By utilizing PEST analysis, the authors concluded that three areas seemed not to occur to the people. I mentioned above with two obvious attitudes, namely tobacco control in Mainland China, tobacco control in Macau and cooperation between the government and the public.

According to Table 8, the impact of 2015 Tobacco Control Law is significant to lower the prevalence rates from 15.0% (overall), 26.8% (male) and 3.7% (female) to 12.2% (overall), 23.2% (male) and 2.7% (female), nonetheless, the prevalence rates were more or less similar from 2011 to 2015. Apart from heated argument over setting up smoking room in casino, the Government still delivered various measures in accordance with Macao's 2015 Tobacco Control Law,

Table 6 An analysis of Macau's new Tobacco Control Law in the Dimension of Technology.

Attitude	Opinion
Positive	 Government: WHO recommended no smoking room Civil society: e-cigarette issue
Negative	 Lottery companies: strengthen the ventilation system in smoking room Senator in Legislative Assembly: introduce the "Six Star" smoking room

Table 7 Statistics and Classification of news reporting on Tobacco Control (n = 38).

Attitude	Politics	Economy	Society	Technology
Positive	13	8	20	6
Negative	3	15	3	2
Total	16	23	23	8

Table 8 Smoking Prevalence Rates and Smoking-Quitting Rate (2011–2017).

	2011	2013	2015	2017	
Smoking Prevalence Rate (%)					
All	16.9	16.4	15.0	12.2	
Male	31.4	30.3	26.8	23.2	
Female	3.8	3.8	3.7	2.7	
Smoking-Quitting Rate (%)					
Overall	26.8	23.7	27.7	22.7	
Daily	26.2	22.7	26.3	22.0	
Sometimes	37.2	41.7	40.0	34.1	

Health Bureau, Macao SAR Government. (2018). *The System of Tobacco Smoking Prevention and Control-Follow-up and Assessment Report* (2015-2017). Macao: Health Bureau, Macao SAR Government.

including raising cigarette tax, enlarging non-smoking area, promoting public education, enforcing bans on tobacco advertising, and offering help to quit tobacco use, to minimize Macau's smoking prevalence rates effectively [22]. On the other hand, smoking-quitting rates are dropping from 27.7% (Overall), 26.3% (Daily) and 40.0% (Sometimes) to 22.7% (Overall), 22.0% (Daily) and 34.1% (Sometimes). Compared with the studies of smoking prevalence rates, there are a few studies concerning smoking-quitting rates, especially in Macao. It is comparatively difficult for the Government to deliver any measures to promote smoking-quitting rates.

6. Recommendations

Based on the impressive results made on tobacco control, the next step is to enforce and strengthen the law. Since the content of the new law is related with economy, politics, society, etc., Macau government could learn from the previous results and neighboring regions and integrate the public and private resources in a bid to encourage more public and private organization to get involved in tobacco control campaign. In July, representatives from lottery industry in Macau Round Table on tobacco control stressed the inadequate law enforcement of smoking ban in casino and wished for a better performance in this regard in the near future. By deepening effective cooperation between the government and the public and enhancing public awareness of tobacco control, it will facilitate the implementation of a carpet smoking ban indoor and the development of a "smoke-free" city [23].

KAP (Knowledge-Attitude-Practice) Model [24, 25] is often used in the tobacco control research so the advice will be presented from the perspective of knowledge, attitude and practice.

6.1 Knowledge

Tobacco control cannot be done overnight for the government. Actually, "Tobacco Control Law" has

been implemented since 2012, when the government gave a grace period for casinos to set up smoking room, in a bid to ensure gaming companies gradually adapting to and optimizing the business environment. Therefore, the argument about Tobacco Control Law as a one-size-fits-all solution that allows no flexibility is not accurate. Why does the public have such a misconception? The underlying reason may possibly lie in the inadequate publicity of relevant policies. Traditional public media like broadcasting and TV may not keep pace with Macanese in their life, work and study. In order to inform more Macanese of the latest policies, the government should make surveys to target at different groups with diversified public media, through which the latest policies will be spread and the misconception will be cleared up.

6.2 Attitude

As its economy is highly dependent on lottery industry, an undetermined cause-effect relation, that is the adoption of a carpet smoking ban in casino affecting the gaming revenue, evoked a controversy in Macau. This should be verified by third party of non-governmental organizations and lottery companies. Fernando Chui, Chief Executive of the Macau Special Administrative Region for the first time noted in the 2016 Policy Address, that Macau would launch a Big Data Research and Development Initiative in line with the development of Smart City. We hope Macau's Big Data Dream with more specific data could facilitate to quantify that undetermined relation in a scientific manner, and help the public to know more about the pros and cons of the ban.

6.3 Practice

Since the implement of Tobacco Control Law in 2012, although the government has given a sufficient grace period for lottery companies to optimize its business environment by setting up smoking room, multiple air tests released that air quality in quite a lot casinos are not up to scratch. This led to suspicion on

the regulation of smoking area in casino, and senators from lottery companies in Legislative Assembly even suggested a carpet smoking ban indoor [26]. As the Second Standing Committee of Macau Legislative Assembly with commercial background dominates tobacco control, the authors hold that there is a great possibility to set up smoking room in casino with the amendment of 2015 Tobacco Control Law. Thus Macau government may take casino instead of smokers as the object of law enforcement when implementing the ban. And due to the work requirement, most parts of the casino are equipped with closed-circuit surveillance system, which means the law enforcers could monitor the law enforcement by random check on the videos.

If they find players smoking in non-smoking area, they can give a direct punishment to the casino. In addition to the fine, the government can adopt other administrative penalties. If the casino cannot set up the real "six star" smoking room or monitor smokers effectively, the government could impose a carpet smoking ban indoor upon it. Besides, the operation licenses of six lottery companies in Macau will fall due in the next few years, among which SJM Holdings and MGM Mirage will expire in 2020 and Melco Crown Entertainment, Entertainment and Sands Casino in 2022. At that time, the government has the authority to impose the regulation and requirement of smoking ban upon extra items when renewing operation license in a bid to implement the ban effectively in casinos.

Furthermore, Macao SAR Government keeps on following WHO's MPOWER framework to deliver smoking cessation programs and focuses on four directions, including public education, enhancing the effectiveness of smoking-quitting services, raising cigarette tax, and enforcing the law on heat-not-burn (HNB) cigarette use [22]. Some local scholars also call for higher level of enforcement on smoking cessation policy to achieve more fruitful achievement in smoking cessation [27].

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