



## Experimental Phases and Stages of Tobacco Consumption Acquisition in Spanish Adolescents

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### Abstract

One area which has been largely neglected when studying the acquisition of addiction to smoking with the transtheoretical model is whether the individual had previously experimented with smoking. The importance of including the experimentation variable was supported by this research.

**Keywords:** Stages of change; Prevention; Smoking acquisition; Spanish adolescents

### Introduction

Tobacco consumption remains one of the leading preventable causes of death worldwide, contributing significantly to a variety of chronic diseases, including lung cancer, cardiovascular disease, and respiratory disorders. The initiation of smoking often occurs during adolescence, a critical developmental period when individuals begin to establish lifelong habits and behaviors. In Spain, as in many other countries, tobacco use among adolescents has become a public health concern, with a substantial proportion of teenagers experimenting with and becoming regular users of tobacco products [1]. Understanding the stages of tobacco consumption acquisition among adolescents is vital for developing effective prevention and intervention strategies. Adolescence is characterized by significant physical, emotional, and social changes, making it a particularly vulnerable time for the initiation of health-risk behaviors such as smoking. Previous studies have shown that early exposure to tobacco can significantly increase the likelihood of lifelong smoking habits, with the potential for long-term health consequences [2]. The process of tobacco consumption acquisition is not instantaneous; rather, it unfolds in a series of stages that can vary in terms of initiation, experimentation, and progression toward regular use. Several theories and models have been proposed to understand these stages, including the social learning theory, which emphasizes the role of peer influence and environmental factors, and the Transtheoretical model of behavior change, which identifies different stages of readiness for behavior change [3]. In Spain, tobacco consumption among adolescents has been influenced by a range of factors, including cultural norms, accessibility, and the portrayal of smoking in media. Despite efforts to reduce smoking rates, tobacco use among teenagers remains prevalent. This study aims to explore the stages of tobacco consumption acquisition in Spanish adolescents, focusing on the experimental and behavioral phases leading to regular smoking. By examining these stages, this research seeks to provide valuable insights into the underlying factors that contribute to tobacco initiation and progression, with the ultimate goal of informing more effective tobacco prevention and cessation strategies tailored to the adolescent population. Although the topic of stages of change for smoking cessation has received much evaluation and criticism, the topic of stages of smoking acquisition, in relation to experimentation, has received little attention [4]. Adolescents who have never experimented with smoking do not have the same risk of becoming smokers as those who have tried it. The TMC, as adapted by, takes this variable into account. Surprisingly, however, more recent studies using the TMC have not always differentiated between those who have and those who

have not experimented (Table 1). For example, a previous study used the TMC to study the acquisition of smoking in a sample of American adolescents. In the acquisition stages, these authors included non-smokers who stated they had never smoked regularly (weekly or more often), whether they had ever experimented with smoking or not. In addition, when classifying a sample of adolescents from six European countries [4].

### Methods

#### Participants

In Spain, compulsory schooling extends until the age of 16. The study involved 1,510 secondary school students (50.9% female) aged between 12 and 17 years (mean age = 14.2, SD = 1.3) from all public schools in Girona, Spain. After obtaining permission from the respective school authorities, the students completed the questionnaires. Participants were categorized into stages of change according to standard definitions. Those who reported no intention to try smoking within the next 6 months were classified in the precontemplation stage. Adolescents contemplating smoking in the next 6 months were placed in the contemplation stage. Participants considering starting smoking within the next 30 days were classified in the preparation stage. Those who had smoked regularly (or occasionally) for less than 6 months were categorized in the recent action stage, while those smoking regularly for 6 months or more were placed in the action stage [5,6].

### Results

The data illustrates the distribution of adolescents across the stages of tobacco addiction, categorized by gender and age. 18.7% of participants were classified as smokers (in the recent and action stages), while 5.8% intended to smoke in the near or distant future (in the contemplation and preparation stages). No significant gender differences were found across the stages ( $X^2(4) = 9.2$ ;  $p = 0.06$ ). However, age emerged as a significant factor in predicting the stage of

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**Table 1:** Review of the Various Studies on the Acquisition Stages of Tobacco Consumption in Adolescents, According to the Use of the Experimentation Variable.

Study	Definition and Classification by Stages*	Experimentation
Pallonen et al. (1998)	n = 490 Age range = 15-17 years	<b>Precontemplation</b> (Not thinking about trying smoking in the next 6 months) <b>Contemplation</b> (Thinking about trying smoking in the next 6 months) <b>Preparation</b> (Thinking about starting smoking in the next 30 days)
Kremers et al. (2001)	n = 21,535 Mean age = 13.3 years	<b>Precontemplation</b> a) Progressives (Intending to start smoking within the next 5 years) b) Immotives (Not intending to start within the next 5 years but lacking a strong decision never to start smoking) c) Committers (Sure to never start smoking and not intending to smoke in the next year or in the future) <b>Contemplation</b> <b>Preparation</b>
Plummer et al. (2001)	n = 2,010 Mean age = 15.2 years	<b>Precontemplation</b> <b>Contemplation</b> <b>Preparation</b>
Velicer et al. (2007)	n = 3,201 Range age = 14-15 years	<b>Precontemplation</b> <b>Contemplation</b> <b>Preparation</b>

**Table 2:** The table shows the percentage distribution of participants in different stages of behavior change, categorized by gender and age group.

Acquisition Stage	Males (n=741)	Females (n=769)	Total Sample (n=1510)	12-13 Years (n=471)	14-15 Years (n=797)	16+ Years (n=242)
Precontemplation	77.5	73.5	75.4	91.7	69.8	62.0
Contemplation	4.0	4.2	4.1	1.3	4.9	7.0
Preparation	2.2	1.3	1.7	1.5	2.4	-
Recent Action	9.0	9.8	9.4	4.0	11.9	11.6
Action	7.3	11.3	9.3	1.5	11.0	19.4

tobacco acquisition: older adolescents were more likely to be at a higher stage of addiction ( $X^2(8) = 128.1; p < 0.001$ ) (Table 2).

## Discussion

The present study provides important insights into the stages of tobacco consumption acquisition among Spanish adolescents. Our findings demonstrate that a significant proportion of adolescents are already in the early stages of smoking or planning to start smoking. Specifically, 18.7% of participants were classified as smokers (in the recent and action stages), while an additional 5.8% were in the contemplation and preparation stages, indicating a substantial intention to initiate smoking in the near future. These results are consistent with previous studies showing a high prevalence of smoking experimentation and the intention to smoke among adolescents in various countries, emphasizing the importance of early intervention in preventing tobacco use. The gender analysis revealed no significant differences between males and females in terms of their stage of tobacco consumption [7]. This finding suggests that both genders are equally at risk of progressing through the stages of tobacco addiction, contrary to some prior studies that have suggested differences in smoking initiation and progression between genders. This lack of gender disparity could reflect changing social dynamics, where smoking behaviors are becoming more similar across sexes. One of the most striking findings of this study was the role of age as a significant predictor of tobacco consumption stages. As adolescents age, there is a notable increase in the proportion of individuals advancing to higher stages of tobacco addiction. This suggests that tobacco consumption initiation is more likely as adolescents grow older, with those in the later years of secondary school being at a higher risk for progressing to regular smoking. Previous research has highlighted that the transition from experimentation to regular use often occurs during adolescence,

and our study supports the need for targeted prevention efforts at key developmental stages, particularly among older adolescents. Our results also indicate that a large portion of adolescents in the contemplation and preparation stages (5.8%) are considering smoking in the future, underscoring the need for interventions that not only target current smokers but also prevent the onset of smoking among at-risk youth. It is crucial to understand that the earlier adolescents can be reached through educational campaigns, the more effective these efforts may be in altering their attitudes and behaviors toward tobacco consumption [8-10].

## Conclusion

In conclusion, this study provides a comprehensive understanding of the phases and stages of tobacco consumption acquisition in Spanish adolescents. A significant proportion of adolescents are already engaging with tobacco or considering it, with age emerging as a critical factor in the progression of tobacco consumption. The absence of gender differences in the stages of tobacco use suggests that smoking behaviors may be increasingly similar across sexes in this age group. Based on these findings, we recommend that tobacco prevention programs be implemented early in adolescence and tailored to the specific needs of different age groups. Public health interventions should focus not only on current smokers but also on those in the contemplation and preparation stages to prevent the initiation of smoking.

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## Conflict of Interest

None

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