

Reliability of adapted version of Italian Label tobacco Impact Index for the adolescent: ALII

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Abstract

Objectives. The aim of this study is to assess the reliability of the Adolescent Label Impact Index (ALII), it is an adolescent adapted version of Italian LII of the tobacco products warnings.

Material and Methods. A sample including students aged 13-15 years was considered. The ALII is constructed by 4 items: salience, harm, quitting and forgo. The questionnaire was self-administered to study participants twice with 3 days between each administration (T1 and T2) to measure reliability.

The internal consistency using Cronbach's alpha and Corrected Item—Total Correlations (CITC) and the test-retest reliability applying Pearson's correlation were computed.

Results. Cronbach's alpha ranges from 0.625 at T1 to 0.715 at T2. The "salience" resulted the item with the lowest CITC value (=0.281). The Pearson's coefficient was $r=0.909$ ($p<0.001$).

Conclusions. The instrument is low in cost and easy to administer and analyses in a setting people aged 13-15 years. The ALII shown an acceptable consistency and excellent stability over time. However, attention has to be paid when the ALII is administered to the no smoking teens and who has never seen the tobacco product labels to allow an appropriate interpretation of the data collected. *Clin Ter 2017; 168(4):e258-261. doi: 10.7417/CT.2017.2016*

Key words: adolescent, assessment tool, questionnaire, reliability, tobacco, warnings

Introduction

A score was published in 2012 that it measures the effectiveness of the text-only health warnings. This tool is called Labels Impact Index (LII) and it was tested using of the four nationally representative samples of smokers from the International Tobacco Control (ITC) Project Europe Surveys in France, Germany, the Netherlands and the UK. Furthermore, the LII, as referred the authors, was born to understand the possible differential impact of tobacco control policies (1). An Italian version of this tool in order to support future researches on the health warning was published in 2016 (2).

The aim of this study is to assess the reliability of the Adolescent Label Impact Index (ALII), it is an adolescent adapted version of Italian LII of the tobacco products warnings.

Materials and Methods

Setting

An opportunistic sample was invited to answer to the questionnaire and to note possible inconsistent or unclear questions. The sample included students aged 13-15 years.

The Dean of the school involved was contacted preliminarily by phone, mail and e-mail. The mail contained in attachment the protocol of the study and the consensus of the Ethical Committee. In fact before the commencement of this study, approval for the protocol was obtained from the Ethics Committee of the coordinator hospital Umberto I, Teaching Hospital of "Sapienza" University of Rome (Prot. 460/14).

The Dean decided freely to participate or not. The students were invited to complete a questionnaire (see below) supported by teachers involved in the study.

Description of the tool ALII

The Italian version of LII published by Mannocci et al. (2) was adapted for adolescent. The original structure that considering four items were conserved. In fact the questionnaire contains four items concerning: SALIENCE; HARM; QUITTING; FORGO. A multiple-choice answer, to correspond a four/five-point scales, is available for each items (Table 1).

The score of the single items ranges from 0 or 1 to 4 or 5: the higher scores indicate high impacts of the warnings. When the warnings was never seen the ALII score was 1. When the warnings has the minimum impact the final score

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Table 1. Items included in the questionnaire: the Italian version ALII and an English translation.

Field	Italian Items	English answer	score
SALIENCE ^a	Ti è capitato di notare, nell'ultimo mese, le avvertenze sui pacchetti di tabacco o sigarette?	In the last month, how often, have you noticed the warning labels on tobacco/cigarette packages?	
	Mai Raramente Qualche volta Spesso Molto spesso	Never Rarely Sometimes Often Very often	1 2 3 4 5
HARM	Le avvertenze sui pacchetti di tabacco o sigarette ti fanno pensare che il fumo fa male?	To what extent do the warning labels make you think about the health risks of smoking?	
	Non ho mai visto queste avvertenze No Sì, poco Sì, qualche volta Sì, molto	I have never seen the warnings No Yes, a little Yes, enough Yes, a lot	0 1 2 3 4
QUITTING	Per favore rispondi sia che tu fumi o immagina che fumassi. Le avvertenze sui pacchetti di tabacco ti aiuterebbero/aiutano a smettere?	Please answer whether you're smoker or you are not. May the warning labels on tobacco/cigarette packages make you more likely quit smoking?	
	Non ho mai visto queste avvertenze No Sì, poco Sì, qualche volta Sì, molto	I have never seen the warnings No Yes, a little Yes, enough Yes, a lot	0 1 2 3 4
FORGO	Per favore rispondi sia che tu fumi o immagina che fumassi. Ti è successo o pensi che potrebbe capitare di rinunciare ad accendere una sigaretta vedendo le avvertenze sui pacchetti di tabacco?	Please answer whether you are smoker or you are not. May the warnings labels on the tobacco products forgo lighting cigarettes?	
	Non ho mai visto queste avvertenze No Sì, poco Sì, qualche volta Sì, molto	I have never seen the warnings No Yes, a little Yes, enough Yes, a lot	0 1 2 3 4

SILIENCE is the introductive question: if the answer is "Never" the questionnaire ends and the ALII's score isn't applicable (total points ALII=1).

is 8, on the contrary when it is maximum, it is 33. In order to have an coherent ALII, the following check was done: if at least one question between HARM, QUITTING or FORGO has score zero, the remaining questions will be zero too, if not the relative record will delete from the analysis.

In the study only the questionnaires with ALII ranging between 8 and 33 were considered for the evaluation of the reliability.

Description of the administration

The questionnaire was administered in an anonymous way. With the permission of the dean of the schools, two researcher with a teacher have administered the questionnaire at the students during the school time and they have supported them to understand the questions. It noted down items which were incomprehensible or unclear. Data were collected during the March 2017.

In order to assess the reliability the questionnaires were self-administered twice with a three days between the first (T1) and second compilation (T2). Through a nickname, known only by the student, it is been possible to pair the

questionnaires. In the second administration the students were asked to answer thinking to the same period of time of the previous administration. The total of the students and the number of absents was registered in both two administrations.

Statistical analysis of reliability and internal consistency

The statistical analysis to evaluate reliability was performed using different statistical methods.

The test-retest reliability between ALII T1 and ALII T2 was computed using Spearman or Pearson's correlation coefficient according to the normality of the variables. The normality of the ALII score was checked using an graphical approach (histogram) and Kolmogorov-Smirnov's Test.

Cronbach's alpha was used as a measure of the internal consistency for the questionnaire.

The variability of the alpha between items, adding and eliminating items one at a time, was performed. The higher the score, the more reliable the generated scale is. Bland et al. and De Vellis et al. have indicated 0.7 to be an good reliability level (3-4).

In addition for checking whether any item did not correlate strongly with the rest of the scale, and could thus be eliminated, a Corrected Item—Total Correlations (CITC) was performed. Various cut-off points for CITC are purposed in literature in order to maintain or not an item of questionnaire (5), and the minimum value considered was 0.3 (6).

The significance of the results was set $p < 0.05$. The software used for the analyses was SPSS 20 for Windows.

Results

Eighty-one questionnaires were collected at T1 (100% of the students involved). The ALII score was between 8 and 33 in 76 questionnaires, equal to 1 in 4 and with missing data in one. In the second administration (T2) a total of 78 questionnaires were collected (3 students were absent). The ALII score ranged from 8 to 33 in 73 questionnaires and was equal to 1 in 5.

In order to assess the internal consistency the study had considered only students that had no missing values and ALII score > 1 in both administrations ($N=71$): response rate 88%.

The ALII distribution at T1 and T2 was Normal: Kolmogorov-Smirnov $Z=0.777$ with $p=0.590$ at T1; Kolmogorov-Smirnov $Z=0.623$ with $p=0.833$ at T2.

The Pearson's correlation between ALII at T1 and T2 was 0.909 with $p < 0.001$, and that means an excellent level of stability.

The t-student's test for paired samples indicated that there isn't difference to the mean values: $p=0.324$ with mean ALII T1=20.5 SD=6.1 and mean ALII T2=20.2 SD=6.2.

The value of Cronbach's alpha in both administrations is shown in Table 2. At T1 the alpha indicated sufficient internal consistency ($\alpha=0.625$) and at T2 it was adequate ($\alpha=0.715$).

The item 1 (SALIENCE) was the item with lowest CITC: T1 =0.117 and T2 =0.281. That indicates that maybe this item was not consistent with the rest of the scale in the adolescents. It is according to the values of Cronbach's alpha if an item was deleted: when SALIENCE was removed the value shall be increased, 0.786.

Discussion

The test retest reliability shown an excellent reliability of the ALII over time (7). The overall alpha at T2 indicated an adequate internal consistency of the items to measure the impact of the labels of tobacco products. The CITC serves as a criterion for initial assessment and purification of scales. In the ALII the SALIENCE resulted to have an inadequate CITC (< 0.3), this is probably due to the fact that it is an introductory question that asking if the adolescents have noticed the warnings. Unlike in the LII, the original tool dedicated to adults smokers where the SALIENCE works well, because the smokers have high probability to put attention or to see the warnings on your tobacco's package, the teens (smokers or not) don't have the same probability to note them and sometimes they have never seen them.

A recommendation underlying from the analysis is: in order to apply the ALII to the all adolescents, smokers and not, it is appropriate to consider the SALIENCE as an introductory question; the answer to the SALIENCE items determines the continuation of the questionnaire: in fact HARM, QUIT and FORGO items work just "if you have seen/noticed the warnings".

Easy-to-administer and usability of the questionnaire is confirmed during both administrations: they took only a few minutes; doubts haven't been emerging on the comprehension of applications; only four easy items are used to compute ALII, the synthetic quantitative score.

The utilization of questionnaire doesn't seem to be influenced by time of administration: in terms of correlation and paired analysis it appears to don't have different performance.

A limitation in this study is the sample selection. The sample was based on convenience. Furthermore the missing values and the presence of students that have never seen the warnings could be introduce the bias in the results. Additional investigation is necessary to understand the characteristics of the no-responders and who has never seen the advertisements.

In conclusion, the ALII is a tool that permitted to measure an impact of an health advertisements of tobacco products in the adolescent with an acceptable consistency and feasible

Table 2. Cronbach's alpha for ALII items in both administration.

Items of ALII	T 1		T 2	
	CITC	Cronbach's Alpha if Item Deleted	CITC	Cronbach's Alpha if Item Deleted
SALIENCE	0.117	0.785	0.281	0.786
HARM	0.506	0.480	0.590	0.598
QUITTING	0.560	0.462	0.653	0.573
FORGO	0.553	0.446	0.536	0.632
Overall Cronbach's Alpha		0.625		0.715

CITC: Corrected Item-Total Correlation

and quick administration. Care must be taken to the no smoking teens and who has never seen the tobacco product labels to allow a meaningful interpretation of the data.

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