

Development of a Measure on Substance use and Pictorial warnings

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ABSTRACT

Substance use is a pressing problem in any society at large and ways to mitigate substance use among users have been discussed in various forums globally. Review of prior literature indicates that research on substance use has been extensively done. Measures suggested are to imprint pictorial signs that depict the ill effects of tobacco use. Studies on the effect of pictorial warnings on tobacco use have been scarcely done and instruments to measure the use of substance, pictorial warnings and its effects are also scarce in India. This study makes an attempt to develop validate and test for reliability a questionnaire to measure substance use, effects of pictorial warnings on substance use. The data is collected from 53 students.

Introduction

The word substance includes alcohol, tobacco and illicit drug. Substance abuse refers to the improper, excessive, irresponsible, or self damaging use of addictive substances (Reber & Reber, 2001). Substance abuse is an important social and health problem in almost all of the countries in the world including India. It is a complex issue that not only impacts on the lives of those directly involved but also on their families and the communities in which they live. History has shown that, when a country

experiences widespread and dramatic socioeconomic changes, these frequently resound within the sphere of alcohol and drug intake (Rocha Silva, 1998; Simon, 1998; Tucker & Scott, 1992). It has become a global health concern and is fast assuming alarming proportions not only in developed countries but also in developing countries like India. India, a developing country witnesses more substance abuse in the rural than in the urban areas.

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India's tobacco problem is more complex than probably that of any other country in the world, with a large consequential burden of tobacco related disease and deaths. India has the highest number of oral cancer cases in the world and 90 percent of all oral cancers are tobacco related and 40 percent of all cancers in India are due to tobacco. (Citizen News Service May 28th, 2009). CNN – IBN on 31st May, 2009 reported that 2 million cancer patients every year and more and more cases of youngsters with cancer are reported.

There has been a perceptible fall in smoking in the developed countries after realization of harmful effects of tobacco. The tobacco companies are now aggressively targeting their advertising strategies in the developing countries like India. Adolescents often get attracted to tobacco products because of such propaganda. There has been a rapid increase in trade and use of smokeless tobacco products in recent years in the country, which is a matter of serious concern to the health planners. In recognition of the growing health and economic burden of Tobacco use, the World Health Organisation (WHO) adopted the world's first public health treaty Framework Convention on Tobacco Control (FCTC). Article 11 of WHO FCTC mandates all countries that have ratified this international treaty to have large, clear and visible health warnings or messages that include pictures conveying the harmful effects of tobacco use. FCTC directs member countries to implement a range

of tobacco control policies, including provisions for packaging and labeling. As per the treaty obligation, all tobacco products in India should have had package warnings from February 28th, 2008. As of today there are 167 countries in this treaty and are required to implement effective policies on health warnings. India has ratified the Framework convention of Tobacco Control on 5th February, 2004. At last the pictorial warnings have been implemented in India on the World No Tobacco day i.e. on May 31st 2009. According to the study conducted by the Healis Sekhsaria Institute of Public Health states that almost 85% of the people wanted strong warnings on cigarette packs and 97% were of the opinion that pictorial warnings should be displayed on cigarette packs in India and 85% people wanted strong warnings on cigarette packs to be displayed immediately. The present set of notified warnings occupies 40% of the front panel.

Accordingly, the effectiveness of the pictorial warnings on packages has not been studied in India. This study makes an attempt to validate the instrument developed to study the effectiveness of pictorial warnings on intentions to change.

Methods

The methodology adopted in this study is presented in this chapter. The instrument used to collect the data was a questionnaire. The researcher has

presented and interpreted the collected data supported by validity and reliability measures.

Instrumentation

For the purpose of developing an instrument, a questionnaire was designed. The variables chosen for this study are : 1) Role of management 2) Availability of cigarettes 3) Pricing of cigarettes 4) Fear 5) Threat 6) Attitudes towards ad 7) Attitudes towards smoking 8) Opinion of the warning messages 9) Defensive avoidance 10) Perceived manipulation 11) Perceived message derogation 12) Intentions to change 13) Smoking kills 14) Tobacco causes cancer. The items capturing each factor were adopted from standardized questionnaires developed or used by the earlier researchers. However, they were subjected to validity and reliability tests. Hence, the items that constituted adequate coverage of the factors under study were decided and agreed upon by the researcher.

Validity test

The instrument was subjected to face and content validity whose determination was judgemental. These are two of schools of thought on the distinctiveness of face and content validity. The first one saw face validity as just an indirect approach to the measurement of content validity (carmines, & Zeller, 1979; Nunnally, 1967) whereas

the second one treated them as separate and different tests (devellis, 1991; kerlinger, 1973). In this study, the researcher has subscribed to the second perspective where quantitative assessment of the content validity has been followed.

The face and content validity was conducted in two stages. In the first stage, it was conducted with 4 experts and in the second with 8 experts. The experts scrutinized the items, according to the definition generated against the constructs of Role of management, availability of cigarettes, pricing of cigarettes, fear, threat, attitudes towards the ad, attitudes towards smoking, opinion of the warning messages, defensive avoidance, perceived manipulation, perceived message derogation, intentions to change, smoking kills and tobacco causes cancer.

Table 1 Content validity ratio for the items

Variables	No	Items	CVR
Role of Management	1	Counselling helps to reduce tobacco use	1.00
	2	Councelling helps non tobacco users not to become tobacco users	0.75
	3	Your college facilitates drugs awareness training	1.00
	4	Aware of drugs programmes / courses run in your area	0.75
	5	Drug information leaflets available in your college	1.00
	6	Your college has a drugs policy in place	1.00
	7	Staff / leaders had in-service training	1.00
	8	Structure in place in the event of a drugs incident arising	0.75
	9	Your college have a referral system in place in the event of an incident arising.	1.00
	10	Your college had an experience with drugs misuse over the last two years	1.00
Availability of cigarettes	1	Cigarettes are available within 100 yards of your college	1.00
	2	Easy access cigarettes to cigarettes greatly influences their use	1.00
	3	Laws that make it illegal to sell cigarettes to kids under 18 will stop kids from smoking	0.75
	4	Police should fine people under the age of 18 for smoking cigarettes.	1.00
	5	People under the age of 18 will smoke less if they are fined by police.	0.75
	1	Government should increase the price of cigarettes	1.00
	2	Smokers will reduce or quit smoking if the prices of cigarettes will increase by 10%	1.00
	3	Increase in cigarette and other tobacco product prices will lead to reductions in its use	0.75

Pricing of cigarettes	4	Youth are more responsive to price than older adults	1.00
	5	Cigarette increases are potentially the most effective means of achieving long run reductions in smoking.	1.00
	6	A permanent 10% cigarette price increase is expected to reduce smoking by up to 10% in the long run	0.75
Fear	1	Pictorial warning made me frightened	1.00
	2	Pictorial warning made me tensed	1.00
	3	Pictorial warning made me scared	0.75
	4	Pictorial warning made me nauseous	1.00
	5	Pictorial warning made me nervous	0.75
	6	Pictorial warning made me anxious	1.00
	7	Pictorial warning made me uncomfortable	0.75
Threat	1	Pictorial warning made me feel I am at risk of developing smoking related disease	1.00
	2	Pictorial warning made me feel it is likely that I will develop smoking related disease	1.00
	3	Pictorial warning made me feel it is possible that I will develop smoking related disease	1.00
	4	Pictorial warning made me believe that smoking related disease is a severe health problem	0.75
	5	Pictorial warning made me believe that smoking related disease is a serious threat to my health	1.00
	6	Pictorial warning made me believe that smoking related disease is a significant disease	0.75
Attitudes towards Advertisement	1	Good/Bad	1.00
	2	Undesirable/Desirable	0.75
	3	Favourable/Unfavourable	0.75

Attitude towards smoking	1	Good/Bad	1.00
	2	Undesirable/Desirable	0.75
	3	Favourable/Unfavourable	0.75
Opinion of the warning messages	1	Pleasant/Unpleasant	1.00
	2	Bad/Good	0.75
	3	Useful/Useless	1.00
	4	Worthless/Valuable	1.00
	5	Beneficial/Not Beneficial	0.75
Defensive avoidance	1	When I think of using any tobacco product, I tend to avoid thoughts of disease caused by tobacco	1.00
	2	When I think of using any tobacco product, I tend to avoid thinking about disease caused by tobacco	1.00
	3	When I think of using any tobacco product, I try to not think about disease caused by tobacco	0.75
	4	When I was seeing this ad, my instinct was to not want to protect myself from disease caused by tobacco	1.00
	5	When I was seeing this ad, my instinct was not to think about disease caused by tobacco	0.75
Perceived manipulation	1	This ad was manipulative	1.00
	2	This ad was misleading	1.00
	3	This ad tried to manipulate me	0.75
	4	This ad is exploitive	1.00

Perceived message derogation	1	This ad was exaggerated	1.00
	2	This ad is unclear	1.00
	3	This ad is overblown	0.75
	4	This ad is overstated	1.00
Intentions to change	1	I intended to quit using tobacco products to prevent tobacco related diseases in the future	1.00
	2	I intend to reduce using tobacco products to prevent tobacco related disease within the next 2 weeks	0.75
	3	I intend to talk to my friends about quitting using tobacco products to prevent tobacco related diseases in the future	1.00
	4	I intend to talk to my friends about reducing using tobacco products to prevent smoking related disease within next two weeks.	0.75
Smoking kills	1	People would be influenced not to use tobacco by the warning on this package of tobacco products	1.00
	2	It is good to be influenced by the warning on this package of tobacco products	0.75
	3	The message in the warning label on this package of tobacco products is important to me	1.00
	4	The warning label on this package of tobacco products did not have anything to do with me.	0.75
Tobacco causes cancer	1	People would be influenced not to use tobacco by the warning on this package of tobacco products	1.00
	2	It is good to be influenced by the warning on this package of tobacco products	0.75
	3	The message in the warning label on this package of tobacco products is important to me	1.00
	4	The warning label on this package of tobacco products did not have anything to do with me	0.75

All those items which have scored less than 0.50 on the content validity ratio have been removed from the study. Based on the face validity and content validity ratio, the final number of items in each of the factors taking part in this study was decided. Accordingly, the number of items included in each of the factors is as follows.

Role of Management	- 10 items
Availability of cigarettes	- 5 items
Pricing of cigarettes	- 6 items
Fear	- 7 items
Threat	- 6 items
Attitudes towards Ad	- 3 items
Attitude towards smoking	- 3 items
Opinion of the warning messages	- 5 items
Defensive avoidance	- 5 items
Perceived manipulation	- 4 items
Perceived message derogation	- 4 items
Intentions to change	- 4 items
Smoking kills	- 4 items
Tobacco causes cancer	- 4 items

As mentioned earlier, these items were made on a 7 point scale anchored by 1 = strongly disagree; 2= some what disagree; 3= disagree; 4= neither agree nor disagree; 5= agree; 6=some what agree; 7= strongly agree.

The pilot study

After analyzing the number of items in the research instrument using face and content validity tests, a pilot study was undertaken for the following reasons:

- a. To access the reliability of the research instrument constructed.
- b. To ascertain the time taken to complete the questionnaire by the respondents.

To conduct the pilot study, it was decided to select an engineering college. Anonymity of the institution and students was maintained because the respondents (students) expressed that neither the institutes name nor the persons name should be disclosed. Hence, the researcher has not disclosed the institutes name and the respondents name. From the chosen institution, 53 students were taken to conduct the pilot study.

Results of the pilot study

The verbatim record of the transaction that took place while administering the questionnaire was noted. The discussion with the students during the pilot study revealed that the instrument has adequate stimulus value to gather authentic responses from the respondents. The transaction also suggested that the procedures adopted in administering the instruments are practicable. Hence it was concluded that the instrument used

in the study would elicit the necessary data required from the respondents. It has been found that the respondents took invariably between 35 – 40 minutes to completely fill the questionnaire.

Reliability Test

The data collected from the pilot study was subjected to reliability test using Cronbach Alpha. The Alpha values for the various dimensions are shown in table 2. From the table it has been found that the reliability coefficients for the variables chosen for this study are more than 0.60, which is an acceptable value (Malhotra, 2004). So, the items constituting each variable under study have reasonable internal consistency. The factor “role of management” entered the reliability model with 10 items yielding a Cronbach Alpha value of 0.71 which is an acceptable value. The final number of items are 10. The factor “availability of Cigarettes” entered with 5 items yielding a Cronbach Alpha value of 0.66. The final number of items are 5. “Pricing of Cigarettes” entered with 6 items resulting a Cronbach Alpha of 0.77. The final number of items are 6. “Fear” entered with 7 items resulting a Cronbach Alpha of 0.89. The final number of items are 7. “Threat” entered with 6 items resulting a Cronbach Alpha of 0.80. The final number of items are 6. “Attitudes towards the ad” entered with 3 items resulting in a Cronbach Alpha value of – 0.0053. The value was improved by deleting one of the items “Undesirable/ desirable” and running once again the reliability test. It resulted in a cronbach value of 0.67. The

final number of items are 2. “Attitude toward smoking” entered with 3 items resulting a Cronbach Alpha of 0.21. The value was improved by deleting one of the items “Undesirable/ desirable” and running once again the reliability test. It resulted Cronbach value of 0.75. The final number of items are 2. “Opinion of the warning messages” entered with 5 items resulting a Cronbach Alpha of – 0.011. The value was improved by deleting two items “Worthless/valuable” and “Bad/good” and running once again the reliability test. It resulted Cronbach value of 0.69. The final number of items are 3. “Defensive avoidance” entered with 5 items resulting a Cronbach Alpha value of 0.76. The final number of items are 5. “Perceived manipulation” entered with 4 items resulting a Cronbach Alpha value of 0.72. The final number of items are 4. “Perceived message derogation” entered with 4 items resulting a Cronbach Alpha value of 0.68. The final number of items are 4. “Intentions to change” entered with 4 items resulting a Cronbach Alpha value of 0.73. The final number of items are 4. “Smoking kills” entered with 4 items resulting a Cronbach Alpha value of 0.71. The final number of items are 4. “Tobacco causes cancer” entered with 4 items resulting a Cronbach Alpha value of 0.51. The reliability was improved by removing the item “The warning label on this package of cigarettes did not have anything to do with me” resulting in a cronbach value of 0.60. The final number of items are 3.

The final reliability coefficients are given in the table below:

Table 2. Reliability coefficients using Cronbach Alpha

SI.No	Dimensions	Reliability Coefficients(N=53)
1	Role of Management	0.71
2	Availability of Cigarettes	0.66
3	Pricing of Cigarettes	0.77
4	Fear	0.89
5	Threat	0.80
6	Attitudes towards Ad	0.67
7	Attitude towards smoking	0.75
8	Opinion of the Warning messages	0.69
9	Defensive avoidance	0.76
10	Perceived manipulation	0.72
11	Perceived message derogation	0.68
12	Intentions to change	0.73
13	Smoking kills	0.71
14	Tobacco causes cancer	0.60

Conclusion

The content validity and reliability measures obtained lend support for the earlier view made in other setting that the factors generated and used could be predominantly generalized universally. It is possible to judge now that the scales used to capture each of the dimensions listed in this study would parsimoniously capture the intended measures and thus meet the objective of the researcher to standardize the scales borrowed from the extant literature. Accordingly, the researchers deem that other validity measures such criterion validity, and discriminant validity are not imperative given the fact that content validity and reliability measures suffice to prove the generalisability of the scales. Moreover, these scales are subjected to such validity measures in other studies and hence, the researchers have not attempted such validity tests. Future researchers may attempt to apply criterion and discriminant validity measures.

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