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Cigarette Smoking Outcome Expectancies: A Study of University Students in India

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KEYWORDS

Bacterial, infections, bracteosa, Pneumonia, Gram Positive, Rod shape

ABSTRACT:

Globally smoking is increasing among younger age groups and also among women. Younger the person starts smoking, severe are the consequences. Young adults who have high smoking outcome expectancies (SOE) can be potential smokers who need to be identified. The present research attempts to measure SOE in the university students in India and analyse the gender differences. A SOE scale was created with only positive expected outcomes of smoking cigarette and administered to college and university students. The reason to include only positive expected outcomes of smoking was to see the level of inclination towards smoking without being offset by the negative outcomes. The psychometric properties of the SOE scale were studied. Exploratory Factor Analysis was conducted along with correlation analysis. The sample of scholars studied had low SOE score indicating low outcome expectancy from smoking. There was no significant gender difference in SOE score.

Key words: Exploratory Factor Analysis, gender difference, psychometric properties, smoking outcome expectancies, smoking behaviour

Introduction

Despite the awareness that smoking is a major cause of premature deaths and other serious health issues the number of smokers is rising. WHO (2020) reports that "tobacco kills more than 8 million people each year. More than 7 million of those deaths are the result of direct tobacco use while around 1.2 million are the result of non-smokers being exposed to second-hand smoke." These are not mere statistics. It concerns human lives and the quality of life. The significant health damage, even if not life-threatening, may incur huge cost on treatment and rehabilitation. The most notable fact reported by the WHO (2019) is that about 24 million adolescents (13-15 years) are current smokers. Students who begin smoking in young age may become smokers in adulthood (Hassan et al., 2019, Chassin et al., 1990).

Perceptions and expectancies of smoking outcome greatly shape the smoking behaviour. The outcome expectancies may be negative like experiencing doping conditions or positive like weight loss or improved appetite. There is a paucity of literature on the perceptions and expectancies of smoking outcomes that may initiate or motivate a person to smoke but ample studies are available on trends in smoking or socio-economic situations that influence smoking behaviour. The present study attempts to analyse the perceptions and expectancies of smoking in college and university students in India.

Literature Review

The impact of other factors on smoking outcome expectancies is well researched and these include: the outcome expectancies of smoking and other substance use (Allen et al., 2015; Flandorfer et.al., 2010), positive outcome expectancies promote or sustain smoking (Copeland, et al., 1995; Weinberger, Mckee, & George, 2010), negative outcomes may dissuade smoking (Glock,

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Unz, & Kovacs, 2012), stronger intensity to smoke for pleasurable effects (Cox et al., 2001; Brandt et al., 2015), smoking manages negative affects like stress and tension (Barker et al., 2004; Stevens et al., 2005; Schleicher et al., 2009; Urban & Demitrovics, 2010; Heinz et al., 2010), alcohol consumption and increased positive smoking outcome expectancies (Lam et al., 2014; Palfai 2002), cigarette smoking outcome expectancies and negative emotional vulnerability (Johnson et al., 2008), effect on smoking outcome expectancy of dangers of smoking (Zahro 2020), smoking outcome expectancies and individual differences in a genetically-informative sample (Kristjansson et al., 2011), anxiety and smoking outcome expectancies (Johnson et al., 2013), income, education and children negatively affect smoking (Hersch 2000), outcome expectancies are often learned (Bandura, 1997; Jones et al., 2001; Reig-Ferrer & Cepeda-Benito, 2007; Urban & Demitrovics, 2010).

The study of Brandon and Baker (1991) was the first study to measure smoking outcome expectancies using the Smoking Consequences Questionnaire (SCQ) for college students. Copeland et al., 1995 adapted the SCQ for the adult population called SCQ-A, which was translated into Spanish and Persian. Carmody, et al. (2012) used SCQ-A to measure smoking outcome expectancies for military veteran smokers to understand the relationship between post-traumatic stress disorder (PTSD) and cigarette smoking. Lewis-Esquerre et al., (2005) revised the SCQ for adolescents and called the instrument Adolescent Smoking Consequences Questionnaire (ASCQ). A few other studies advanced the SCQ further (Cepeda-Benito & Reig-Ferrer, 2000; Myers et al., 2003; Jeffries et al., 2004; Reig-Ferrer & Cepeda-Benito, 2007; Vidrine et al., 2009; Wang 2022) and investigation of psychometric properties of SCQ (Buckley et al., 2005; Garey 2016; Miguel et al., 2019).

Gender remained an important factor in studies on smoking outcome expectancies: gender differences in smoking behaviour (Bauer et al, 2006), gender difference in smoking behaviour and quitting smoking (Chinwong et al., 2018)), gender differences in the perception of smoking (Abu Hassan et al., 2019), gender differences in smoking behaviour and smoking dependence (Allen et al., 2015)), gender role modernisation and smoking behaviour (Waldron 1991; Flandorfer et al. 2010)), gender and racial differences and changes in cigarette prices and tobacco control policies (Chaloupka & Pacula, 1999), gender differences in cigarette consumption (Yen, 2005; Peters, et al., 2014), gender difference in outcome expectancy (Rash & Copeland 2008), gender difference, socio-cultural perspectives and smoking behaviour (Tsai et al., 2008).

The studies conducted in India are rudimentary as far as perceptions and expectancies of smoking are concerned. Demography and socio-economic status related trends and patterns of the smoking behaviour or analysing health effects of smoking have been primarily discussed. Study of Singh & Ladusingh (2014) analyse "the regional variations, and socioeconomic, demographic and other correlates of smoking, smokeless tobacco and dual use of tobacco in India." Rani et al., (2003) used the data of the National Family Health Survey to estimate the percentage of 15 years and above using tobacco in India. Jha et al. (2008) attempted to study the age-group most affected by smoking. Gajalakshmi & Kanimozhi (2010) conducted Global Youth Tobacco Survey in 2006 and 2009 in India on the use of different forms of tobacco among 13–15 years. Study of Chhabra et al., (2001) identified the patterns of smoking in Delhi in the first community-based study of the urban areas of Delhi on the people above 18 years and who were permanent residents. Mishra et al., (2016) study estimated the prevalence of smoking. Mohan et al., (2018) examined the impact of tobacco control policy in India on tobacco consumption. Singh, et al., (2015) explored socioeconomic differences in tobacco use in India and also difference according to gender and residential area. Kahar et al., (2016) examined the differences in pattern of both smoking and smokeless tobacco use according to gender, occupation and education. Singh (2020) analysed the determinants of dual tobacco use.

Studies on smoking have been generally conducted as a part of health surveys. These studies informed the policy-makers to frame policies with a precautionary approach and to warn people of the injurious nature of smoking. The impact of these policies has been significant. The proportion of people smoking has reduced but the number of smokers has not. Exposure to the inescapable pro-tobacco images make smoking appear a social norm. These imageries motivate a person to smoke and form perceptions and outcome expectancies from smoking. Outcome expectancies being primarily cognitive processes, therefore, are critical determinants of substance use behaviour" (Heinz et al., 2010).

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To analyze smoking outcome expectancies the Smoking Consequences Questionnaire (SCQ) developed by Brandon & Baker (1991) is the most commonly used tool. Brandon & Baker SCQ (1991) was thoroughly examined. Its almost thirty years of its construction. Some items have become redundant and several overlapping questions included. The questions related to the health risk of smoking seemed avoidable as the scholars with whom informal discussions were held were adequately informed due to wider awareness and ample knowledge dissemination. Such questions will be answered in the same way and may not add much value to the study. The questionnaire inspired by the Brandon & Baker SCQ was constructed after the exhaustive review of the related literature. The redundant and overlapping items were omitted for brevity and focus. The questionnaire constructed included only positive expected outcomes. The reason being to see the level of inclination to smoke if only positive expected outcomes of cigarette smoking are included without being offset by the negative outcomes. Gender differences were also analysed.

Methodology:

A questionnaire was developed keeping in mind the importance of learned behaviour, imagination and perceptions of smoking consequences in determining the desirability to smoke. Smoking expectancies may be learned and may not always have to be experienced to be known. The items included in the questionnaire are those that can be responded without requiring actual smoking experience. The questionnaire has two parts (Appendix 1). Part A consists of demographic data and some basic information; and Part B has questions related to the smoking experience. To understand the intensity of SOE, Likert scale with 39 five-level Likert items/Questions (strongly disagree-1, disagree-2, neutral-3, agree-4. Strongly agree-5) was created. The questionnaire required the participant to rate each consequence according to the intensity of their expectancies on the Likert scale. A pilot study was conducted on 5 scholars to check any deficiency.

The study was conducted on the students of various universities of India above the age of 18 years. Due to unprecedented COVID-19 pandemic the respondents selected could not be according to the original research design. Instead of stratified random sample as initially decided, it became a convenience sampling. The restricted mobility compelled questionnaire to be converted to a google form. Link of the google form was shared through WhatsApp groups, through e-mails and leveraging the social network. The size of the sample recommended is item/variable to respondent ratio of 1:5 (Floyd & Widaman, 1995). For the present study there are 39 item/variables, therefore, minimum recommended sample size should be one hundred and ninety five. Two hundred and nine completed responses received satisfied the criterion.

Data analysis

The questionnaire (google form) constructed was self-administered. The information provided by the respondents in the google form was collected, tabulated, coded and analysed using EXCEL and techniques of the Standard Package for Statistical Sciences (SPSS). Descriptive statistics, factor analysis, chi-square test and correlation analysis were determined to draw inferences. The composite score of each respondent was the average of all the items. The range of response for each respondent was 1-5. The maximum possible score for each respondent could be 195 (39*5) and the average score indicated the smoking outcome expectancy (SOE) score of the respondent. These scores provided a meaningful insight into the smoking behaviour. Higher the average score more favorably inclined respondent is towards smoking and lower score indicates less desirability to smoke.

Table 1: Demographics of the respondents:

Age Group	17-19	20-22	23-25	29-31	32-34	Grand Total
Female	84	30	0	2		116
Male	49	41	1	0	1	92
Prefer Not to Say	1	0	0	0	0	1
Grand Total	134	71	1	2	1	209

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Out of 209 respondents, 116 were female scholars, 92 males and 1 scholar marked 'preferred not to say'. 134 (64%) scholars are in the age group 17-19 years (Table 1). About 98% were registered for under-graduate courses in various universities of India. In the present sample there are majority unmarried scholars, about 98.6%. 179 (85.6%) of the respondents have never smoked a cigarette, not even few puffs. Thus, majority of the respondents have never tasted cigarette nor experienced smoking. Only 3.35 % of the respondents are currently smoking. 95.2% currently do not smoke.

To make the data obtained more interpretable and to reduce the dimension of the data to few factors, factor analysis was conducted using SPSS. Before conducting factor analysis, it was tested whether the variables were adequately intercorrelated and the correlation matrix so obtained is not random. From the Model Summary Table 2, the multiple correlation (R^2) between the variables is 1 indicating that all the variables are perfectly correlated. From Anova Table3, p-Value is 0, therefore, all the variables are jointly significant.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	1.000	1.000	1.000	.00000	1.000	.	39	169	.	2.005

Table 3: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	69.053	39	1.771	.	.000
Residual	.000	169	.000		
Total	69.053	208			

The data set was tested for factorability using the Bartlett's test of Sphericity and supplemented with the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The Bartlett's test of Sphericity is significant with Approximate Chi-Square of 12080 when $p < .001$. It is a test for homogeneity of variance. Here value of Approximate Chi-Square is very high so the null hypothesis that variances are all equal is accepted. Also, it indicates that items correlate sufficiently. The KMO measure of sampling adequacy is .921 (Table 4). KMO should lie between 0-1 and more it is closer to 1, better is the sample. The KMO of .921 indicates that there is sufficient common variance in the data and the data set is factorable. Bartlett's test, KMO values and Anova values determine that the data set is factorable.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.921
Bartlett's Test of Sphericity	Approx. Chi-Square	1.208E4
	df	741
	Sig.	.000

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FACTOR ANALYSIS

It is the latent construct being measured; therefore, factor analysis is conducted to group items having common underlying construct under one factor or component. Exploratory Factor Analysis (EFA) is preferred instead of Principal Component Analysis (PCA) as EFA brings out the variation in the variables that are to be measured. When developing a measurement scale that should reflect a common underlying construct then Common Factor Analysis (EFA) is preferred (Fabrigar & Wegener, 2012). EFA was conducted using Principal Axis Factoring with Promax rotation. To make factors better interpretable Promax oblique rotation was preferred for extracting factors since items/variables were correlated. Also, it produces a correlation matrix of factors and provides better interpretability of the factors which orthogonal rotation does not produce (Gorsuch, 1983). Psychometric properties of reliability and validity of the scale developed were verified.

Reliability

Table 5: Reliability Statistics

	Cronbach's Alpha	No of Items
All	.978	39
Male	.983	39
Female	.966	39

The reliability and the internal consistency of the data set was determined through the Cronbach Alpha measure using SPSS. The range of Cronbach Alpha is from 0-1. The value of Cronbach Alpha of the present data is 0.978. It is very high (Table 5) indicating that the items that form the scale correlate and measure the same underlying construct. Hence, there is internal consistency and the scale is reliable. Cronbach Alpha for male and female data taken separately are 0.983 and 0.966 indicating a very good internal consistency in each group. It is concluded that the instrument constructed is reliable and internally consistent.

Validity

Content validity was ensured from the initial stages of construction of questionnaire by intensively reviewing the literature followed by a pilot study. Correlation matrix was obtained to determine whether the items in the questionnaire are valid or not. Pearson correlation two-tail test was conducted to find item-total correlation of all the responses. All the items had significant values less than .05 and hence all were valid. All the item-total correlation coefficients for the complete sample were more than .544 except one item 'advertisement makes smoking very attractive'. The Pearson correlation value of the item-total score for each factor ranged between .709 and .909. All the values were more than the critical Pearson correlation value of 0.114 at 1 % level of significance (the value of $\alpha = .01$ level of significance in the table of Product Moment correlation). All the items except item 39, clustered on different factors with loading of minimum of .4 (Table 11) indicating convergent validity (Anderson & Gerbing, 1988) and items/variables included in each factor are valid. The factor loadings for each construct is higher than the cross loadings, therefore it has good discriminant validity.

To determine the number of factors to be retained, three different methods were used. First was the Kaiser's criterion where the items having eigenvalues greater than one are retained (Gorsuch, 1983). This is a 'default' procedure in SPSS. Eigenvalues indicate the amount of variation that each factor explains independent of other factors. The first factor extracts the highest eigen value and maximum common variance and each succeeding factor extracts lesser variance. EFA with Promax rotation was performed. Five factors having eigenvalue greater than 1 were extracted (Table 6). In the Factor Matrix, five factors were obtained but no item loaded on factor 5 (Table 7). None of the items could be included in factor 5 as they cross loaded on the other factors with higher loadings. Neither item 39 loaded on any factor. Thus, factor 5 was a nonessential factor.

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Table 6: Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	23.543	60.366	60.366	23.325	59.808	59.808	16.520
2	2.976	7.632	67.998	2.767	7.096	66.903	20.036
3	1.782	4.570	72.568	1.544	3.958	70.861	19.268
4	1.342	3.440	76.008	1.101	2.823	73.684	10.375
5	1.076	2.758	78.766	.702	1.801	75.485	7.694
6	.892	2.288	81.054				
7	.836	2.143	83.197				
Extraction Method: Principal Axis Factoring.							

Table 7: Factor Matrix

	Factor				
	1	2	3	4	5
VAR33	.916				
VAR34	.897				
VAR15	.893				
VAR13	.893				
VAR18	.890				
VAR27	.881	-.333			
VAR19	.874				
VAR22	.871				
VAR26	.868				
VAR14	.861				
VAR16	.861				
VAR25	.858				
VAR1	.857				
VAR32	.840				
VAR31	.838				
VAR24	.835	-.329			
VAR17	.831				
VAR30	.824				
VAR23	.811				
VAR20	.799			.352	
VAR21	.787	-.393			
VAR9	.779				
VAR2	.774				
VAR28	.750				
VAR36	.742				
VAR29	.741				

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VAR12	.737				
VAR3	.704				
VAR38	.681	-.362			
VAR8	.670	.494	.321		
VAR4	.663			-.385	
VAR35	.657		.337		
VAR10	.652	.341			
VAR11	.637		-.309		
VAR7	.610	.594	.397		
VAR5	.584	.568	.315		
VAR37	.560	-.427	.464		
VAR6	.543	.539	.409		
VAR39					
Extraction Method: Principal Axis Factoring.					
a. 5 factors extracted.					

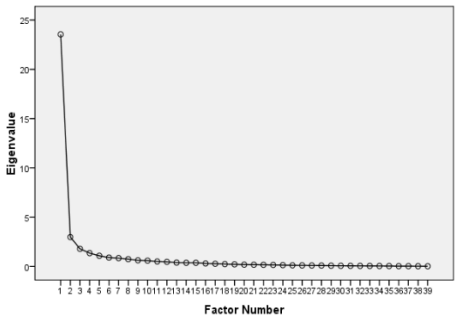

Figure1: Scree Plot

The second method to determine the number of factors is the Scree test (Cattell 1966). The number of factors to be considered are the ones before the elbow of the Scree plot and after which the graph flattens. They are the factors that contribute the highest variance and the points after which the graph becomes flat contribute almost insignificant variance. In the present Scree plot (Fig. 1), there are four points before the graph flattens but only two before the elbow of the graph. The Scree plot only gives a crude idea of number of factors but does not extract factors. Also, it's a subjective method of extracting factors (Gorsuch 1983) and disagreement on the number of the factors to be extracted arise (Norman & Streiner, 2014). The third method of factor determination is the Parallel Analysis (PA) developed by Horn (1965). It is said to be the most objective and automated factor extraction method. The number of eigen values of the real data set that exceeded the eigen values of the random data determined the number of factors to be considered. Ruscio & Roche (2012) found that in only about $3/4^{th}$ cases automated Parallel Analysis (PA) determined the correct number of factors. Here the number of factors through this criterion is more than 13 factors which can lead to over-factorisation (Table 8).

Table 8: Eigen Values generated through Parallel Analysis and Total Variance Explained

Component or Factor	Parallel Analysis	Total Variance Explained (refer Table 6)
1	1.141602	23.54292
2	1.018531	2.976336
3	0.929755	1.782418
4	0.844691	1.34154

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5	0.779613	1.075512
6	0.719895	0.892156
7	0.660213	0.835932
8	0.608624	0.728244
9	0.559546	0.615303
10	0.510393	0.582078
11	0.465461	0.492933
12	0.424482	0.456039
13	0.381008	0.383661
14	0.339273	0.363669

There is no method that is said to be correct for all data sets (Pett et al., 2003). For the present data, different factor determination methods predicted different number of factors to be extracted, therefore, employing the theoretical understanding and the results of the Scree plot and the Kaiser's criterion, a four-factor model was explored. EFA was again carried out using Principal Axis Factoring. Instead of fixing the eigen value, factors were fixed to four factors and Promax rotation with Kappa = 4 was selected to get simple structure of factors after rotation. Promax rotation was selected as it is an oblique rotation that assumes factor intercorrelation (Brown, 2015; Price, 2017) and hence recommended (Norman & Streiner, 2014; Loehlin & Beaujean, 2017). Thus, factor 5 was a nonessential factor.

Results

Table 9: Total Variance Explained (Relevant portions displayed from the complete table)

Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
23.543	60.366	60.366	23.306	59.758	59.758	18.358
2.976	7.632	67.998	2.755	7.064	66.822	20.134
1.782	4.570	72.568	1.526	3.914	70.736	19.178
1.342	3.440	76.008	1.081	2.771	73.507	10.247
1.076	2.758	78.766				
.892	2.288	81.054				

Extraction Method: Principal Axis Factoring.

The factor structure obtained is displayed in the Pattern Matrix output (Table 10). The four factors extracted explained 73.507 % of the total variance (Table 9) and eigen value ranged from 1.342 to 23.543. The four factors obtained had item loadings greater than .3, each factor had more than three constituent items and the internal consistency or Cronbach alpha was greater than ≥ .945 (Table 3). The factors obtained converged theoretically. All four factors were retained and no item was excluded. These four factors were interpretable and conceptually fitting. Each factor was named by ascertaining the fundamental commonality of all the items forming the factors. The four factors obtained were named as Factor 1- Perceived

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Table 10: Pattern Matrix

	Factors			
	1	2	3	4
VAR37	1.131		-0.469	
VAR38	0.906			
VAR35	0.846		-0.4	
VAR36	0.738			
VAR21	0.71		0.364	
VAR23	0.696			
VAR27	0.65		0.343	
VAR24	0.571		0.54	
VAR26	0.552			
VAR22	0.524		0.411	
VAR28	0.477		0.457	
VAR32	0.437		0.353	
VAR31	0.4	0.363		
VAR39	0.326			
VAR1		0.951		
VAR4		0.948		
VAR13		0.919		
VAR2		0.776		
VAR3		0.753		
VAR14		0.678		
VAR10		0.663		
VAR16		0.653	0.314	
VAR33	0.348	0.593		
VAR34		0.59		
VAR15		0.526	0.345	
VAR30		0.511	0.307	
VAR12		0.474		
VAR20			1.007	
VAR11			0.806	
VAR9			0.724	
VAR17		0.46	0.596	
VAR25	0.462		0.586	
VAR29			0.583	
VAR18	0.303		0.453	

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VAR19	0.357		0.434	
VAR6				0.952
VAR7				0.922
VAR8				0.864
VAR5		0.327		0.739
Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.				

social advantage and social influence, Factor 2 - Pleasure-seeking, Factor 3 - Psychosomatic elevation and Factor 4 - Coping mechanism.

Table 11: Reliability Statistics for each of the 4 Factors

Factors	No. of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items
1	14	.945	.958
2	13	.968	.969
3	8	.947	.947
4	4	.948	.948

FACTOR 1: Perceived Social Advantage and Social Influence

This factor has fourteen items (Table 10) loaded on it with all the factor loadings greater than .3and explains the 59.758% of total variance (Table 10). The factor loadings ranged between .326 and 1.131 (Table 10). The Cronbach Alpha of this factor is a high of .945 (Table 11) indicating high internal consistency or reliability. A common theme of perceived social advantage and social influence underlays all the items of this factor. Only item 39, if when deleted marginally increases Cronbach Alpha, rest all the items decrease Alpha if deleted. Therefore, all the items were retained.

FACTOR 2: Pleasure Seeking

Factor 2 explains 7.064% of total variance (Table 10). Thirteen items loaded on Factor 2 and the factor loadings ranged between .474 and .951 (Table 1o). The Cronbach Alpha of this factor is a high of .968 (Table 11) indicating high internal consistency or reliability. There is a common construct of pleasure-seeking that underlays all the items of this factor. If any variable is deleted then the Cronbach Alpha decreases. Therefore, all the items were retained.

FACTOR 3: Psychosomatic Upliftment

Factor 3 has 8 items and explains 3.914 % of total variance (Table 10). The factor loadings ranged between .434 and 1.007 (Table 10). The Cronbach Alpha of this factor is a high of .947 (Table 11) indicating high internal consistency or reliability. This factor has items that have a common theme of Psychosomatic Upliftment after smoking. Its only Variable 11, if when deleted marginally increases Cronbach Alpha, rest all decrease Alpha if deleted. Therefore, all the items were retained.

FACTOR 4: Coping Mechanism

Factor 4 has 4 items and explains the 2.771 % of total variance (Table 10). The factor loadings ranged between .739 and .952 (Table 10). The Cronbach Alpha of this factor is a high of .948 (Table 11) indicating high internal consistency or reliability with a common construct. This factor includes items that suggest that smoking helps to manage stress or tension, therefore, it is termed as Coping Mechanism. If any variable is deleted then the Cronbach Alpha decreases. Therefore, all the items were retained.

From summary Item Statistics Table it can be seen that overall mean score of all the respondents is 1.267 and for the males it is 1.371 and for the females it is 1.187 (Table

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12). The smoking outcome expectancies (SOE) for both males and females are nearly same. The range of average for the entire sample is 1.091- 1.560, for females its 1.060 – 1.578 and for males its 1.120 – 1.717; and the span of the averages is very narrow for each category (.469, .598 and .517). since the range of each category is low implying that the variation in the data is small. Variance for each category is near zero indicating that variation in the data is less, therefore, data is homogenous.

Table 12: Summary Item Statistics

Item Means	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
All	1.267	1.091	1.560	.469	1.430	.012
Male	1.371	1.120	1.717	.598	1.534	.018
Female	1.187	1.060	1.578	.517	1.488	.012

Discussion

All the items/variables in the questionnaire are contributing significantly to the smoking outcome expectancy (SOE) scale and hence all the items/variables in the questionnaire are valid. Cronbach Alpha is high. Therefore, there is a good internal consistency and reliability of the scale constructed. The regression analysis shows that all the items/variables are correlated and are individually as well as jointly significant. KMO and Bartlett's test indicate that factor analysis is useful for the present data set. Four factors were obtained, each of which had excellent internal consistency. The range of mean of all the responses for each variable in the present study is not very large (1.091- 1.560).

Table 13: Mean Score of Males and Females

	FEMALES	MALES
ALL	1.18	1.36
NON-SMOKERS	1.13	1.16
SMOKERS	1.64	2.20

Mean score for both females and males are low but the score for the females (1.18) is even lower than males (1.36) indicating females have marginally lesser expectancy from smoking than males (Table 13). In case of non-smokers, both females and males have similar expectancy scores but male smokers have slightly higher outcome expectancies. Both females and males reported highest outcome expectancy from the factor coping mechanism (Table 14). Non-smokers, both males and females perceived high outcome expectancy from coping mechanism. Females who actually smoke reported higher expectancy from pleasure seeking but for male smokers it is coping mechanism (Table 15). In all the factors, females have lesser SOE than males (Table 14). This supports the findings of earlier studies (Kassel et al., 2003; Wahl et al., 2005; Stevens et al., 2005; Hine et al., 2007; Urban & Demetrovics 2010; Heinz et al., 2010).

Table 14: Mean of All Factors, Genderwise

	Fact1(Social advantage & social influence)	Fact2 (Pleasure Seeking)	Fact3(Psychosomatic upliftment)	Fact4(Coping Mechanism)

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Female	1.17	1.18	1.14	1.39
Male	1.29	1.38	1.37	1.65
Prefer not to say	1	1	1	1

Table 15: Mean of All Factors (Smokers and Non-Smokers), Genderwise

		Fact1(Social advantage & social influence)	Fact2 (Pleasure Seeking)	Fact3(Psychosomatic upliftment)	Fact4(Coping Mechanism)
Females	Non-smokers	1.138049	1.098373	1.082933	1.336538
	Smokers	1.39881	1.897436	1.604167	1.8125
Males	Non-smokers	1.158095	1.12	1.143333	1.386667
	Smokers	1.809524	2.41453	2.277778	2.736111

Limitations

The data was cross-sectional and predictions based on the inferences are limited. It was a self-report questionnaire and majority of the respondents are non-smokers, therefore, their opinion is based on perceptions or learned behaviour. They have low SOE. Hence the results of the study may not be generalisable. Cognitive processes that encourage a person to smoke or refrain cannot be determined as causal relationship between expectancies and consequences have not been established.

Conclusion

Four interpretable factors were obtained from 39 item scale. Each factor expressed a distinct theme. Coping mechanism has been found to be the highest expected smoking outcome for both males and females and for both smokers and non-smokers. The SOE score of the whole sample is very low and there is only a marginal difference between smokers and non-smokers. The low scores show that even the positive SOE do not seem to intensify students' expectancies. Low SOE may be also due to social stigma and Indian cultural values that discourage smoking. The sample did not have appreciable number of smokers to provide a better insight into their expectancies. The responses were predominantly based on the perceptions, imaginations, awareness and learnt behaviour. It can be concluded that respondents do not have very high outcome expectancies from cigarette smoking and there is no significant gender difference in the SOE of the sample under study even when only positive SOE are considered. Probably the sample of students studied will be less inclined to smoke or less desirous of smoking; therefore, the risk of becoming a smoker later is low.

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