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The Great Transition: Exploring the Prevalence and Psychosocial Risk Factors of the Shift from Combustible Tobacco to Vaping among University Students

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Abstract

Traditional cigarette usage has seen an increase in usage being replaced by ENDS (Electronic Nicotine Delivery Systems) with the changing culture of smoking away from cigarettes to an electronic device as a result of the change in culture surrounding cigarette use through the "Great Transition" (Harm Reduction Narrative for ENDS). The usage change from Cigarette to ENDS has not been well studied or documented with university students from Developing Nations. The purpose of this Research Study was to determine if/how much the usage change from Cigarettes to ENDS was prevalent among University Students attending the University of Gujrat and how much their views regarding "reduced harm" impacted their decision to use ENDS versus Cigarettes, as well as the psychosocial factors associated with their initiation to use ENDS. An Explanatory Design of Research was used to collect data from 1,200 University Students attending the University of Gujrat using a Multistage Stratified Random Sample Method. SCID-D (DSM-5 TR), DAST, and AUDIT Research Instruments were used to collect the data. The statistical analyses were performed using SPSS-24 (Descriptive statistics).Participants in this study were primarily (53.3%) aged (20 to 22 years), enrolled in BS (93.3%) and comprised a high proportion of (78.1%) male users, with the majority (30.6%) of users in their 7th semester of study. It was also confirmed that students who perceived themselves to be academically under pressure (i.e. attempting to graduate in a shorter timeframe), perceived the perceived harm of using ENDS to be "lower" than traditional cigarettes, were the primary factors attributed to the increasing popularity of ENDS amongst university students.

Key Words

Vaping, Nicotine Transition, University Students, Harm Reduction, Psychosocial Factors.

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Introduction

For many years traditional cigarette smoking was the number one cause of preventable death across the globe. However, over the last few years we have started to see an extreme shift in the way nicotine is consumed. Many smokers have now begun using electronic nicotine delivery systems (ENDS), also known as "vaping" (Samet, 2013). This shift in consumer behaviour has been driven by the large amount of research conducted by organizations such

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as the Cochrane Library (2025) and Public Health England which have shown that vaping is considerably less dangerous than smoking tobacco. The rationale for vaping is to reduce harm; by eliminating combustion (the burning of tobacco), users do not inhale the literally thousands of chemicals contained in cigarette smoke. But as we move further into 2025, the landscape of smoking and vaping is evolving quickly and the story is becoming much more complex. The latest research from both the Indian Council of Medical Research (ICMR) and other international organizations has found that while vapes may contain fewer carcinogens than cigarettes, they may also pose unique risks to the cardiovascular and pulmonary systems, and the extent to which we currently understand these dangers is ongoing. This article will look at the relative advantages and disadvantages of the vaping trend for smokers, as well as whether vaping is in fact an exit route for smokers, or a way of trading one set of health risks for another (Petrella et al., 2025).

Comparative Analysis: *Smoking vs. Vaping*

The main difference between standard cigarettes and electronic nicotine delivery systems (ENDS) is how they deliver the nicotine. Smoking uses combustion to deliver nicotine, while vaping uses an aerosol (Benowitz et al., 2021; Office for Health Improvement and Disparities, 2022). As a result, vaping has been shown to be at least 95% less harmful than smoking because it does not contain the combustion byproducts responsible for most of the illnesses associated with smoking. Vaping has more effective at helping users quit than traditional nicotine replacement therapy (NRTs). High-moderate certainty research by Hartmann-Boyce et al., (2012) found nicotine e-cigarettes to be better than nicotine patches or gum in helping people to quit smoking. That said, the World Health Organisation (2020) notes that while e-cigarettes can assist with cessation, they also risk producing a second wave of nicotine dependence among youth. Vaping has been shown to reduce carcinogen exposure; however, it is not without risks. Fine particles and heavy metals are present in aerosol during inhalation (Sahu et al., 2023).

Table 1

Data Comparison Summary Table

Feature	Combustible Cigarettes	E-Cigarettes (Vaping)
Harmful Chemicals	7,000 chemicals; 70+ carcinogens	Significantly fewer; traces of metals/formaldehyde
Cessation Success	Lower (without assistance)	Higher (compared to patches/gum)
Second-hand Risk	Proven dangerous to bystanders	Lower risk, but aerosol still contains nicotine
Regulated Status	Heavily regulated globally	Varying regulations; legal in some, banned in others

Rationale of Study

The transition to university life represents a critical developmental period marked by newfound autonomy and academic pressure, which significantly increases susceptibility to nicotine use. While traditional cigarette smoking has long been a public health concern, a significant shift is occurring as students increasingly move toward vaping, often perceived as a "safer" or "cleaner" alternative. However, there remains a dearth of context-specific information regarding the prevalence and psychosocial risk factors—such as academic stress, peer influence, and the "harm reduction" narrative—that drive this specific transition among college students, particularly in developing nations (Alqahtani et al., 2023). Understanding these variables is essential for developing health education and university policies that are both effective and culturally appropriate. By examining why students shift from combustible tobacco to electronic nicotine delivery systems (ENDS), this study aims to provide empirical data that can guide student counseling services and public health programs. Ultimately, these results can form the basis for targeted

interventions aimed at reducing nicotine dependency and its long-term health consequences within the educational environment (Alanazi et al., 2025).

Objectives of Research

- What is the prevalence of the transition from traditional smoking to vaping among university students within the study population?
- To what extent does the perception of "reduced harm" influence a student's decision to switch from combustible cigarettes to e-cigarettes?
- What are the primary psychosocial risk factors (e.g., peer pressure, academic stress, or family history) associated with the initiation of vaping among former smokers?

Methodology

Research Design

Explanatory sequential design including cross-sectional survey research design was used to compare the prevalence of substance abuse among university students.

Target Population

The target population was all the enrolled students of University of Gujrat which include both girls/boys and graduate and undergraduate students.

Sampling Frame

For the study, sampling frame was obtained through the list of students provided by the SDMC of university of Gujrat.

Sampling Technique

Multistage stratified random sampling technique was used to select the sample. Multistage sampling involves grouping the population into groups and choosing a subset of these clusters at the beginning. Those chosen clusters are further divided into smaller clusters at each succeeding level, and the procedure is repeated until the final phase. You just choose a small portion of each cluster's members for your sample in the last phase.

Sample size

Sample size was determined by using the Taro Yamane Formula: Formula: n= “N/1+N(e)2” Sample: N= Population: e= margin of error

Inclusion Criteria

- All the graduate and undergraduate students currently enrolled in University of Gujrat Hafiz Hayat campus.
- Participants who were willing to participate in the study.

Exclusion Criteria

- Pass out students was not included in the research.
- Participants who were not willing to participate in the study.

Instruments

Different instruments were used in study-I to find out the prevalence of substance abuse among university students.

Informed Consent

An informed consent was developed by the author to seek permission from the participants to take part in the research that include the basic information of the researcher and participants consent.

Demographic Sheet

Participant was asked to fill the questionnaire including the basic demographic which include age, gender, degree, semester, father, mother education, income, pocket money, living situation.

Screening Questionnaire

Self-developed Screening questionnaire SCID (Structured Clinical Interview for DSM) was extracted from the DSM 5 TR was used to screen out the substance abuse cases.

Dast Tool

Drug Abuse Screening Test (DAST) was used for the diagnosed cases filtered out from the screening tool.

Audit Tool

Alcohol Use Disorders Identification Test (AUDIT) was used for the participants who were engaged in Alcohol consuming activities.

Statistical procedure

Statistical Package for Social Sciences (SPSS-24) was used in order to comprehend data.

Procedure

First of all, the Developmental Review Research Committee (DRRC) of the Department of Psychology, University of Gujrat accepted the study's summary. After receiving approval from university administrators to perform a thesis for research, scales were set up for the gathering of data for the current study by getting permission from authors. In Study-I The research was conducted among the students of university of Gujrat to measure the prevalence of substance abuse. Verbal and written consent was also taken from the participants before their participation in the current study. Multistage stratified random sampling technique was used to select participants. From different faculties of university of Gujrat and according to formula the student ration was determined from each department. They were receiving guarantees that their information was kept private and were used only for research purpose. A questionnaire was distributed to all the population all the ethics were maintained properly male students show willingness and were more interested to participate in the research as compare to the female students as they were avoiding to fill the questionnaire due to cultural biasness and societal pressure due to which problems were faced for equal distribution of form as the topic was sensitive. Following that, a self- developed demographic sheet was administered along with an informed consent form. A screening tool was developed according to DSM 5 TR which was used to separate the drug user from the other individuals. After the screening questionnaire a diagnosed questionnaire (DAST) scale was implemented to the Participants that use any kind of drugs, moreover a (AUDIT) scale was use on the participants that consume alcohol, wine related products. The participants were assured that their answer was kept anonymous and that any questions they had regarding any assertion in the questions were addressed.

Data Analysis

Data was analysed through SPSS and Descriptive statistics was used to measure the percentage to find out the prevalence rate of substance abuse among university students.

Results

This chapter of the current study shows the main statistical findings of the present data. For the data analysis and interpretation, descriptive statistics, Frequency was applied by using statistical package for social science SPSS (24). Demographic variable, frequency, mean, percentage was calculated by using descriptive statistical analysis.

Data Screening

Data screening was implemented to detect non-valid or duplicate numerical values. Data screening took place within the SPSS version 24. A screen of data values was showed by verifying minimum and maximum values, utilizing tables. Data screening methods generated correct data which indorsed for supplementary assessment and data was checked for missing values and wrong entries.

Demographic characteristics

Screening (SCID)

Table 2

Demographic characteristics of the first approach the entire sample (N=1200)

variable	Categories	F	%
Age			
	17-19	223	18.6
	20-22	639	53.3
	23-25	253	21.1
	26-34	85	7.1
Gender			
	Male	613	51.1
	Female	587	48.9
Faculty			
	Science	264	22.0
	Social science	207	17.3
	Engineering & Technology	50	4.2
	Management & Administrative	175	14.6
	Arts & Humanities	269	22.4
	Computing & Info tech	181	15.1
	Arts & Design	54	4.5
Degree			
	BS hon	1120	93.3
	M.phil	52	4.3
	Phd	28	2.3
Semester			
	1.00	262	21.8
	3.00	267	22.3
	5.00	287	23.9
	7.00	367	30.6
	9.00	17	1.4

variable	Categories	F	%
Area			
	Urban	546	45.5
	Rural	654	54.5
Program			
	Morning	910	75.8
	Evening	290	24.2
Number of siblings			
	1.00	47	3.9
	2.00	197	16.4
	3.00	309	25.8
	4.00	287	23.9
	5.00	200	16.7
	Above 5	160	13.3
Marital Status			
	Single	1122	93.5
	Married	67	5.6
	Widow/ Divorced	11	.9
Mother Education			
	5	24	2.0
	8	16	1.3
	10	537	44.8
	12	252	21.0
	14	261	21.8
	16	110	9.2
Father Education			
	5	5	.4
	8	3	.3
	10	409	34.1
	12	392	32.7
	14	271	22.6
	16	120	10.0
Family Income			
	50,000	176	14.7
	60,000	5	.4
	100000	427	35.5
	150000	40	3.3
	200000	287	23.9
	Above 200000	265	22.2
Pocket money			
	5000	351	29.3
	10000	248	20.6
	15000	390	32.5
	Above 15000	211	17.6
Living Situation			
	Day Scholar	708	59.0
	Hostilities	492	41.0

Note: F = Frequency, % = Percentage

The table contains all the demographic characteristic of the sample. The participants from the sample base were mostly distributed among those between 17-34 years old majority of students lay between 20-22 (52.9%). A substantial percentage of students are male (51.1%), and females are (48.9%).

The frequent faculties are Arts and Humanities (22.4%) while Sciences are (22.0%), and Computing and Information Technology (15.1%). The most students (93.3%) are currently enrolled in BS Honors degree while in M.Phil. (4.3%) are enrolled and for PhD (2.3%) students are enrolled. The student body is scattered transversely into different departments, with the largest representations in BBA (8.6%), English (7.6%), and Software Engineering (6.4%). Regarding semester distribution, (30.6%) of students are in their 7th semester, (23.9%) in the 5th, and (22.3%) in the 3rd semester.

Most of the students came from rural areas (54.5%), and most of them are enrolled in the morning program (75.8%). Family size varies, with the highest percentage of students having three (25.8%) or four (23.9%) siblings. The majority (93.5%) are single, (5.6%) are married. The parental education, (44.8%) of mothers and (34.1%) of fathers have completed 10 years of education.

Income levels vary, with (77.8%) of families earning 200000, while (22.2%) earn above 200,000. Students receive varying pocket money, with (17.6%) receiving above 15,000 and (82.7%) receiving below 15,000. A majority of students (59.0%) are day scholars, while (41.0%) reside in hostels.

Table 3

Demographic characteristic of the entire sample is (N= 700)

Variables	Categories	F	%
Age			
	17-19	91	13.0
	20-22	340	48.6
	23-25	194	27.7
	26-34	75	10.7
Gender			
	Male	547	78.1
	Female	153	21.9
Faculty			
	Science	156	22.3
	Social Science	107	15.3
	Engineering & Technology	34	4.9
	Management & Administrative	106	15.1
	Arts & Humanities	137	19.6
	Computing & Info tech	117	16.7
	Arts & Design	43	6.1
Degree			
	BS hon	631	90.1
	M.phil	46	6.6
	Phd	23	3.3
Semester			
	1.00	108	15.4
	3.00	172	24.6
	5.00	164	23.4
	7.00	234	33.4

Variables	Categories	F	%
	9.00	22	3.1
Area			
	Urban	315	45.0
	Rural	385	55.0
Program			
	Morning	505	72.1
	Evening	195	27.9
Number of siblings			
	1	26	3.7
	2	131	18.7
	3	193	27.6
	4	150	21.4
	5	111	15.9
	Above 5	89	12.7
Marital Status			
	Single	639	91.3
	Married	52	7.4
	Widow/Divorced	9	1.3
Mother Education			
	5	16	2.3
	8	11	1.6
	10	281	40.1
	12	160	22.9
	14	166	23.7
	16	66	9.4
Father Education			
	5	2	.3
	8	2	.3
	10	203	29.0
	12	262	37.4
	14	158	22.6
	16	73	10.4
Family Income			
	50000	166	23.7
	60000	7	1.0
	100000	198	28.3
	120000	4	.6
	150000	22	3.1
	Above 200000	303	43.3
Pocket Money			
	5000	130	18.6
	10000	140	20.0
	15000	257	36.7
	Above 15000	173	24.7
Living Situation			
	Day Scholar	342	48.9
	Hostilities	358	51.1

Note: F = Frequency, % = Percentage

The table contains all the demographic distinctive of the sample. The demographic outline of the defendants reveals a diverse structure in terms of age, gender, academic background, and socioeconomic factors. From all the population approximately (58.3%) students were engaged in substance abuse. The majority of respondents (48.6%) drop within the 20-22 age group, followed by 23-25 years (27.7%), while only a minor percentage (10.7%) are aged above 26. In terms of gender, (78.1%) of the respondents are male, whereas (21.9%) are female. Concerning faculty distribution, the uppermost proportion fits to the Science faculty (22.3%), surveyed by Arts & Humanities (19.6%) and Computing & Information Technology (16.7%), while the least depiction is from Engineering & Technology (4.9%). An immense majority (90.1%) of students are registered in the BS Honors program, while (6.6%) are chasing M.Phil., and (3.3%) are in Ph.D. studies. The most communal departments include Software Engineering (8.6%), Business Administration (8.3%), and Law (6.9%), among others. Semester-wise circulation indicates that (33.4%) of students are in their 7th semester, (24.6%) in the 3rd, and (23.4%) in the 5th, with a slighter percentage (3.1%) in the 9th semester. In relations of geographical background, (55%) of students come from rural areas, while (45%) are from urban settings. The mainstream (72.1%) is enrolled in morning programs, while (27.9%) appear in evening classes. Concerning family size, (27.6%) of defendants have three siblings, shadowed by (21.4%) with four siblings, while a small percentage (1.0%) have ten siblings. Marital status data demonstrations that (91.3%) of students are single, (7.4%) are married, and (1.3%) are widowed. Parental education levels designate that (40.1%) of mothers and (29%) of fathers have accomplished ten years of education, while (37.4%) of fathers have finished twelve years. Income distribution discloses that (57%) have income ranging from 50000 to 150000 while (43.3%) are above 200000. Pocket money differs among students, with (75.3%) receiving 15,000 while (24.7%) receiving above 15000. Lastly, concerning living arrangements, (51.1%) of students exist in in hostels, while (48.9%) are day scholars.

Table 4

Demographic characteristic of the entire sample (N= 30)

Variables	Categories	*F*	%
Age			
	20-22	6.7	6.7
	23-25	26.7	26.7
	26-28	66.7	66.7
Gender			
	Male	30	100.0
Faculty			
	Science	2	6.7
	Engineering & technology	1	3.3
	Management & administrative	5	16.7
	Arts & humanities	18	60.0
	Computing & info tech	3	10.0
	Arts & design	1	3.3
Degree			
	BS hon	29	96.7
	M.phil	1	3.3
Semester			
	1.00	1	3.3
	3.00	1	3.3
	5.00	1	3.3
	7.00	17	56.7
	9.00	10	33.3

Variables	Categories	*F*	%
Area			
	Urban	10	33.3
	Rural	20	66.7
Program			
	Morning	24	80.0
	Evening	6	20.0
Number of siblings			
	1.00	1	3.3
	2.00	7	23.3
	3.00	11	36.7
	4.00	6	20.0
	5.00	4	13.3
	6.00	1	3.3
Marital Status			
	Single	30	100.0
Mother Education			
	10	12	40.0
	12	12	40.0
	14	4	13.3
	16	2	6.7
Father Education			
	10	10	33.3
	12	12	40.0
	14	8	26.7
Income			
	100000	3	10.0
	200000	11	36.7
	300000	11	36.7
	400000	1	3.3
	500000	4	13.3
Pocket Money			
	10000	1	3.3
	15000	5	16.7
	20000	13	43.3
	25000	11	36.7
Living Situation			
	Day Scholar	6	20.0
	Hostilities	24	80.0

Note: F = Frequency, % = Percentage

The table comprises all the demographic representative of the sample. The demographic shape of the respondents exposes diverse characteristics. In relations of age, the majority (66.7%) are between 26-28 years, tracked by 23-25 years (26.7%) and 20-22 years (6.7%). All respondents are male. Concerning faculty distribution, utmost belongs to Arts & Humanities (60.0%), surveyed by Management & Administrative Sciences (16.7%), Computing & Information Technology (10.0%), Science (6.7%), Arts & Design (3.3%), and Engineering & Technology (3.3%). Educational qualifications expression that (96.7%) are following a BS Honors degree, while (3.3%) are enrolled in an M.Phil. program. The distribution by department designates that a significant proportion (43.3%) are in the Law

department, with slighter representations in Commerce (6.7%), Physical Sciences (6.7%), and numerous other departments such as Chemical Engineering, Computer Science, Design, English, Islamic Studies, IT, Management Sciences, Mathematics, M. Com, Software Engineering, and Statistics (each at 3.3%). Semester-wise, the uppermost percentage (56.7%) are in their 7th semester, followed by the 9th semester (33.3%), while a rare are in the 1st, 3rd, or 5th semesters (each 3.3%).

Geographically, most students originate from rural areas (66.7%), while (33.3%) are from urban areas. An important majority (80.0%) are enrolled in the morning program, whereas (20.0%) appear in the evening program. Concerning family size, (36.7%) of students have three siblings, shadowed by two siblings (23.3%), four siblings (20.0%), five siblings (13.3%), and a minor proportion with one or six siblings (3.3%). All respondents are single. Parental education levels differ, with (40.0%) of mothers having accomplished 10 or 12 years of education, while (13.3%) have 14 years and (6.7%) have 16 years of education. For fathers, (40.0%) have 12 years of education, (33.3%) have 10 years, and (26.7%) have 14 years.

Economically, students come from households with fluctuating income levels. The major proportion (36.7%) belong to families receiving either 200,000 or 300,000 per month, while (13.3%) have a family income of 500,000, (10.0%) earn 100,000, and (3.3%) earn 400,000. In relations of pocket money, most students obtain 20,000 (43.3%) or 25,000 (36.7%) per month, while others get 15,000 (16.7%) or 10,000 (3.3%). Lastly, the majority (80.0%) exist in hostels, while (20.0%) are day scholars. This demographic impression provides understandings into the characteristics of the respondents, highlighting disparities in age, education, financial background, and living situations.

Table 5

The percentage breakdown of each drug across the data

Drug	Percentage (%)
Cigarette (cig)	48.92
No usage (NO)	40.33
Vape	29.08

- The most frequently used substance is cigarettes (47.92%), followed by vape (29.08%).
- A significant portion (40.33%) reported No substance use.

Discussion

This study found a high rate of nicotine consumption amongst college students and noted that there is now an increased use of vaping devices instead of cigarettes. In fact, as of now, cigarettes have maintained the largest user percentage at 48.92 percent, with a very strong possibility that they will continue to do so as the vaping trend gains momentum (29.08 percent) on college campuses. This indicates that vapes are now a mainstay amongst those who use them, and a substantial number of students have transitioned from cigarette smoking to vaping for perceived benefit (less hazardous) through the harm reduction narrative. The data also show that a high number of students continue to smoke cigarettes as indicated by the DAST questionnaire in which 78.1 percent of those who answered were male. These findings suggest that there is still a strong student culture around the use of cigarettes, particularly among the male population. This is consistent with previous research conducted by Silveira et al., (2019) and Yücel Özden et al., (2025) indicating that alcohol continues to be the primary intoxicant but that tobacco and other substances are continuing to be used by young adults in combination with alcohol (Khan et al., 2025; Brener et al., 2022). A further striking piece of data is the gender imbalance in both the DAST and AUDIT samples. In the AUDIT

sample, 100 percent of the participants were male while in the DAST sample, 78.1 percent of the participants were male. This age group (20-22) had a high concentration of substance mis-users (48.6%) which further suggests that university is a "transitional phase" where students take risks and experiment the most (Burrow-Sanchez, 2006). Hostel residents (80% of the AUDIT sample) and students from rural areas were over-represented (66.7%) in alcohol and substance use screening, indicating that having no direct parental supervision and being part of a "hostel culture" are two major environmental risk factors for this age group. Higher disposable income levels of students (pocket money greater than 20,000) were correlated with a higher level of substance usage, suggesting that economic freedom has strong correlations with the accessibility of substances at university (Chen et al., 2023). The high proportion of students in their 7th semester (33.4-56.7%) participating in substance use screening suggests that this population of students may be experiencing "academic burnout" or "final stress" due to increased academic performance pressure and uncertain career/graduate future (Gasa et al. 2022; Bugbee et al., 2019).

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