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Original Research Paper

## A SURVEY ON SOCIAL MEDIA SITES AND OUTCOMES ANALYSIS PRODUCING VARIOUS STRATEGIC RESULTS TO QUIT SMOKING

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### ABSTRACT

Cigarette smoking is one of the leading causes of preventable illness and death all around the world which causes different types of cancers including cancers of the lung, esophagus, larynx (voice box), mouth, throat, kidney, bladder, pancreas, stomach, and cervix, as well as acute myeloid leukemia. It also causes chronic lung diseases such as COPD and various heart diseases. With this perspective in mind a survey was carried out using social media networking which has become an upcoming and advanced means in the recent times for the exchange of knowledge and communication. This study comprised of various aspects of smoking population executed via survey starting from its gender distribution (Males-74.66% and Females-25.34%), prevalence of smokers on the basis of age groups with 50.23% falling in 16-25 years of age group, number of smoking years. An important aspect of this research is the incorporation of Binary correlation shown between, motivations to smoke (differs with different age groups) and their respective age group distribution. Further, classification of various methods opted to quit smoking with their respective withdrawal symptoms was done and analyzed. The main objective of all the outcomes and correlations was to act as a source of information to ameliorate the conditions of the smokers who are really looking forward to quit smoking.

**Keywords:** Cigarette Smoking, Social media networking, Methods to quit, Withdrawal symptoms.

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### INTRODUCTION

Smoking is an unhealthy addiction which is currently beating up the list of most common and irresistible addictions. None of the age group is left out from the trap of this deadly habit and is seen among all age groups of the population and reluctantly harms nearly every organ of the body. It is one of the leading cause of preventable illness and death all around the world which causes different types of cancers [like acute myeloid leukemia, Cancer of the larynx, Cancer of the esophagus, Cancer of the oral cavity (mouth), Cancer of kidney, Cancer of stomach, Lung cancer], various lung diseases like emphysema, bronchitis, chronic airway obstruction (COPD) by damaging the airways and

alveoli (i.e., small air sacs) of the lungs and various coronary heart diseases as well<sup>1</sup>. According to WHO, Globally, smoking related mortality is set to rise from 3 million annually (1995) to 10 million by 2030, with 70% of these deaths occurring in developing countries.<sup>2,3</sup> On the other side as per NCI (National cancer institute), Cigarette smoking and exposure to tobacco smoke (Tobacco use accounts for at least 30% of all cancer deaths and 87% of lung cancer deaths) cause more than 440,000 premature deaths each year in the United States.<sup>1</sup> Of these premature deaths, about 40 percent are from cancer, 35 percent are from heart disease and stroke, and 25 percent are from lung disease.<sup>1</sup>

Smoking is the leading cause of premature, preventable death in this country. Regardless of their age, smokers can substantially reduce their risk of disease, including cancer, by quitting.<sup>4-6</sup> Forwarded with that concern in mind a survey was conducted on internet with an aid of social media networking sites where accessing information only takes a click. Today internet has become a plethora of social media tools which has totally redefined the definition of communication. The entire paradigm of social media has altered the basic rules of communication which is no longer a one way communication method of the recent past which used to broadcast or somehow sent to a passive audience but now have been replaced by a more robust multidimensional communication model. It is at least a two way conversation, and often a multidimensional conversation which engages everyone involved and also encourages contributions and reactions from anyone who is interested. The information was reckoned from the smokers by the survey on knowledge, behaviour and their habits by making use of social media networking sites<sup>7, 8</sup> and was analysed with the aim of producing various useful strategic results to ameliorate the conditions of the smokers who are really looking forward to quit smoking. The information can be used to aware the population about the most common method opted by smokers to quit smoking along with its common withdrawal effects.

## **METHODOLOGY**

An online validated survey was made in a questionnaire form using Google.docx on internet. It comprised of 16 different types of questions which comprised of multiple choice, Check box and Paragraph text type questions. Various smoking groups and pages around the world were searched on the social media networking sites namely Facebook, twitter and survey form was posted on them. The survey was open till 300 entries were obtained. All the responses and feedbacks of 300 (217 smokers and 83 non-smokers) people for the respective questions were collected directly into Microsoft excel template. The collected data was analyzed and classified as

per the perception of the author on the basis of category of questions asked for producing different kind of outcomes and correlations and all of them were tabulated in different form of worksheets to get the results. The demography's of all the responders on Gender and age group was carried out. Two Binary correlations were made on the basis of responses. Binary correlation technically refers to a comparative relation between two different aspects of study. These correlations were made between motivations to smoke and their respective age group distribution and between methods to quit smoking and their respective withdrawal symptoms.

All the results were expressed either in percentile form or on the basis of number of hits by the individuals (for multiple choice questions).

## **MEASURES**

Different countries and eligibility to fill the questionnaire. Most parts of the world including the developing and non-developing parts were involved to bring out the relevant data of which: Different ethnic groups based all over the world would respond and bring out the relevant data on their various methods to quit smoking and their main motivations to smoke.<sup>9</sup>

In our survey both the sexes were involved, having most of the responses from the male smokers (74.66%) and the female smokers (25.34%) as per the collected data as well, according to the world health organization it states that global prevalence is 48% for adult males and 12% for adult females, about 1/3 of the adults worldwide, making about 2.0 billion smokers around the world including child smokers. Age, as most adults are smokers that has got a tremendous influence on the youth as well as the young, youth tobacco survey show that worldwide smoking rates among boys and girls resemble each other more than smoking rates among adult women and men, with boys between the ages of 13 and 15 years smoking only 2 to 3 times more than girls According to other surveys. Teenagers' are known to constitute the largest smoking population.<sup>10-12</sup> Hence, the questionnaire involves all the age groups, out which the lowest

response was got from the age group of 1-15 years and 45 and above, as according to centre of disease control most smokers belongs to the middle school age group. Smoking years. This measure was got to correlate the readiness and ability to quit smoking, it also shows that cigarette smoking causes premature death as per data on average, an adult who smoke cigarettes die 14 years earlier than non-smokers. According to Centres for Disease Control and Prevention. Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses-United States, 2000-2004. Morbidity and Mortality Weekly Report 2008, Amount of cigarette smoked. The correlation of the number of cigarettes smoked with the smokers belief to quit smoking through the questionnaire shows, people that smoke less than a packet have a high withdrawing power then the other smokers, as in the Oslo study shows that in both sexes smoking 1-4 cigarettes per day are associated with a higher risk of ischemic heart diseases and lung cancer.<sup>13,14</sup> Motivations to smoke. This took into consideration the various age groups with their influence to smoke, it included: Peer pressure, an influence an individual usually observes, as it depends on whether your friends smoke? Are you forced to smoke? This mainly has an impact during adolescence. Desire to look cool and being around people who smoke, this goes hand in hand with peer pressure and the connection made by members of the same age-group it is usually related to adolescence.<sup>10, 15</sup> This is also related to parental smoking. To relieve stressed out conditions, as the world is changing with an unbelievable pace, people can hardly cope up and this brings in stress as nicotine would give a sensation of peace this makes it a prestige mark on the working age group. Relaxation and pleasure, as when nicotine is taken, within 10 seconds it is known to relieve the symptoms of stress leading to 'self-medication' giving a person a phase of pleasure and relaxation.

Different smokers tried to quit smoking with various methods that lead to the withdrawal symptoms and left smokers un-benefited, these methods include: Nicotine replacement therapy,

continuous intake of nicotine leads to nicotine dependence that when withdrawn it causes a lot withdrawal symptoms, such as headache (14.71%) according to the data collected, due to down regulation of the production of dopamine. Taper method, this helps a smoker to reduce the number of cigarettes smoked per day gradually as a pharmacist may call them each day n make sure they get rid of one cigarette. Slight withdrawal symptoms are faced, such as irritability (12.40%) according to the data collected through the questionnaire. Quitting 'cold turkey' once and for all it lasts for a few days to a few weeks then it's over. This method of tobacco cessation, it all comes down to the mental will power and self-discipline to fight the cravings and withdrawal symptoms, such as headache (16.59%) having the highest percentage according to the data collected as per the questionnaire. Reading self-help books and booklets, this helps to divert the mind and can be accompanied by listening to music, dancing, cooking and many other activities that interest the smoker. Though the side effects are minimal the commonly seen through the data collected is headache (17.82%). Counselling, individual therapy sessions help smokers who are trying to quit and is also effective in curbing withdrawal symptoms. Such as headache (14.53%). Prescription medication such as Varenicline, Chantix, and these help with other support and is usually used for smokers above 18 years of age. It has much important safety information as some people have had changes in behaviour, hostility, agitation, depression and mood swings. According to the questionnaire the most common side effect noticed was irritability (14.54%). Hypnosis, in the person is usually in trance or a sense of unawareness. Such as seen in Spiegel's method which a popular smoking cessation hypnosis technique that focuses on three main ideas that are; smoking poisons your body, you need your body to live and you should respect your body and respect it. Acupuncture, has been considered for a role in smoking cessation because of its effects in releasing neurotransmitters, and it has been estimated that

up to 16% of residents in the United Kingdom have used acupuncture at some time.<sup>8, 15,17,18</sup>

## RESULTS AND DISCUSSIONS

From the total population who took the survey (300): 72.33% were Smokers (Table 1). Out of which the males dominated (Table 2).

Classification of the Smoking population on the basis of different age groups (Table 3) in which they fall with respect to various motivations (Table 4) to smoke were analyzed: 1-15 years: 4.6% having the highest motivation as the desire to look cool, 16-45years: highest motivation was for combating the Stress, whereas for the age group 45 and above it was mainly for relaxation. Smokers were classified on the basis of Time period they have been smoking for (Table 5): Results were found to be as: For less than 5 years: 59.45 being the highest.

Various methods opted by the smokers who tried to quit smoking in relation with their withdrawal symptoms was classified in terms of percentage (Table 6 and Table 7). The percentage was calculated on the basis of the number of hits by the population (multiple choice questions) and was found to be as:

### *Method 1*

Nicotine Replacement Therapy (NRT) like Patches, gums, lozenges, nasal sprays: Withdrawal symptoms included: Headache (14.71%), being the highest and Insomnia (4.76%) the lowest.

### *Method 2*

Taper Method (Cutting down gradually): Withdrawal symptoms included: Headache (12.40%) and Irritability (12.40%) being the most common.

### *Method 3*

Quitting 'Cold Turkey' (Stopping completely, once and for all): Withdrawal symptoms included: Headache (16.59%) followed by Irritability (15.12%) and the least being night time awakenings (3.90%).

### *Method 4*

Reading self-help books and booklets: Withdrawal symptoms included: Headache

(17.82%), Irritability (12.64%), Sweating (10.92%) and Anger and mood swings (10.92%) being the most common.

### *Method 5*

Counseling or Smoking Programs: Withdrawal symptoms included: Headache (14.53%) followed by Irritability (13.71%) and Sweating (10.48%).

### *Method 6*

Prescription Medication (Varenicline, Chantix or Champix): Withdrawal symptoms included: Irritability (14.54%) being the highest and Lack of concentration (2.73%) the lowest.

### *Method 7*

Hypnosis: Withdrawal symptoms included: Irritability (27.28%) followed by Depression (18.18%) and Anger and mood swings (18.18%).

### *Method 8*

Acupuncture: Withdrawal symptoms included: Headache (21.74%) being the most common followed by Irritability (17.39%), Depression (13.04%), Anger and mood swings (13.04%) and Night time awakenings (13.04%).

The amount of cigarettes smoked per day by the smoking population, shown below (Table 8), having the most smokers smoking less than half a packet (42.40%) and the least is one or more than one packet (11.06%) from the total smoking population (72.33%).

The last analysis was done on the basis of percentage of population who got benefited in quitting smoking by opting at least one of the quitting methods mentioned. The results were found to be: 47.01% - Yes, 21.66% - No, 17.51% - May be and remaining 13.82% - Can't say.

## DISCUSSIONS

This survey was done with the aim, that is, to identify the major smoking population, gender distribution, as well as their motivations to smoke, their interest to quit smoking with the methods preferred correlated with their withdrawal symptoms, There have been other surveys that have done the same study such as 'using twitter to examine smoking behaviour' which corresponds to our study as we have used social media network for smoking cessation,

another survey includes 'Teen smoking survey 2011' in which 78 teenagers (92% was age group 16-19 years) took part of which most cited their main motivation to smoke was peer pressure, and for stress relief. According to our data between the age group 16-25 years ( $N = 109$  (50.23%)) where most of our smoking population lies has their main motivation is to relieve from stressed out conditions and being around people who smoke, this correlation is also seen in the above survey in which 47% of the teens choose a particular brand to smoke due to their friends opinion, which is well supported by our survey too. Also according 'Teen smoking survey 2011' 56% of the teenagers smoke up to 5 cigarettes per day, as seen in our survey the majority of the smoking population smokes less than half a packet. Another survey 'Tobacco cessation interventions for young people' considered the psycho-social interventions and pharmacotherapy's for smoking cessation concluding that NRT did not show any significant effects, whereas pharmacotherapy showed some adverse effects, according to our survey 47.01% did get the benefit in smoking cessation using the methods accessed above having NRT and Prescription medication as one of the methods. The other study was carried out showed varenicline induced psychotic depression, which correlates with our study as prescription medication showed the side-effect of depression.

## CONCLUSIONS

The data collected through the questionnaire using the fastest means of communication at present that is the internet, the survey consisted of 300 people who took the survey out of which smokers included 72.33% and the remaining 27.67% were non-smokers. The survey aimed the smoking community from all parts of the world including both sexes' males that explains that the ratio of male to female is 1:3. Different age

groups were taken into consideration out of which the age group 16-25 years prevails the most followed by 26-35 years Motivations of various age groups differ in respect to their psychology and ways of influence, from the data collected age group 0-15 years have their possible influence to smoke is the desire to look cool, age group 16-25 years explain their motivation as stress and the least being family life where as for the age group of 36-45 years is seven fold more towards family than the age group 16-25 years. Age group 26-35 years have stronger associations with stress which is shared as the top motivations with the age groups 16-25, as well as age group 36-45 years. Smokers opted different methods to quit smoking which was correlated with their probable and most common withdrawal symptoms, which resisted smokers to fulfill their goal "quit smoking". The most common method used was the Nicotine replacement therapy which was found to give rise to headaches, the second most preferred method includes taper method cutting down gradually, in which the highest withdrawal symptoms irritability and headache. From the top three methods preferred worldwide the 3<sup>rd</sup> is cold turkey method which usually results into headache.

From the above data it can be explained that headache is seen as the highest withdrawal symptom and the least varies within the rest of the symptoms. From the total number of smokers and their readiness to quit smoking, gives an explanation on whether they benefited from the methods opted to quit smoking or not, the results concluded as 47.01% of smokers did get the benefit and 21.66% of smokers did not benefit at all, whereas the remaining 17.51% opt for maybe and 13.82% can't say. Thus, as the number of smokers that benefited are above the mean (25%) therefore, the methods chosen to help smokers quit smoking are found to be beneficial.

**Table1:** The total population based on number of smokers and non-smokers

	Total Population n (%)
Smokers	217 (72.333)
Non-smokers	83 (27.667)

**Table 2:** The total number of smokers based on gender distribution

Gender	Number of smokers n (%)
Male	162 (74.66)
Female	55 (25.34)

**Table 3:** Smoking population with their corresponding age groups

Smoking population of different age groups	N (%)
1-15 years	10 (4.60)
16-25 years	109 (50.23)
26-35 years	62 (28.57)
36-45 years	19 (8.76)
45 years and above	17 (7.83)

**Table 4:** Various methods opted to quit smoking correlated with different age groups

Motivation to smoke	Age group 1-15 years	Age group 16-25 years	Age group 26-35 years	Age group 36-45 years	Age group 45 years and above
	Percentage (%)				
Being around people who smoke	5.56	16.97	12.82	3.33	8.33
Family life	0	1.84	6.84	13.33	5.56
Peer pressure	33.33	10.09	7.7	6.68	8.33
Pleasure	5.56	12.38	12.82	10	11.11
Relaxation	0	19.27	21.37	30	38.89
The desire to look cool	50	17.43	9.4	3.33	0
To relieve from stressed out conditions	5.56	22.02	29.06	33.33	27.78

**Table 5:** The number of years the total population has been smoking

Years of smoking	Total population n (%)
Less than 5 years	129 (59.45)
More than 5 years	57 (26.27)
More than 10 years	15 (6.91)
More than 15 years	3 (7.37)

**Table 6:** Various methods used to quit smoking (Quitting 'cold turkey', Nicotine replacement therapy, Prescription medication, Taper method) correlated with their major withdrawal symptoms

Withdrawal Symptoms	Method opted to quit smoking (%)			
	Quitting 'Cold turkey'	Nicotine replacement therapy (NRT)	Prescription medication	Taper method
Anger and mood swings	12.20	8.23	9.09	10.47
Depression	6.34	9.09	9.09	7.75
Headache	16.59	14.71	12.73	12.40
Insomnia	4.39	4.76	7.27	5.81
Irritability	15.12	12.12	14.54	12.40
Lack of concentration	6.83	7.36	2.73	8.92
Mental confusion	4.39	6.06	6.36	5.81
Night time awakenings	3.90	6.49	7.27	4.65
Restlessness	8.78	8.23	6.36	10.08
Sweating	8.29	9.96	13.64	8.14
Temper tantrums	7.32	7.36	5.46	8.14
Tingling in hands and feet	5.85	5.63	5.46	5.43

**Table 7:** Various methods used to quit smoking (Counselling, Reading self-help books and booklets, Hypnosis, Acupuncture) correlated with their major withdrawal symptoms

Withdrawal Symptoms	Method opted to quit smoking (%)			
	Counselling	Reading self-books and booklets	Hypnosis	Acupuncture
Anger and mood swings	8.06	10.92	18.18	13.04
Depression	6.45	7.47	18.18	13.04
Headache	14.53	17.82	9.09	21.74
Insomnia	6.45	8.05	0.00	4.35
Irritability	13.71	12.64	27.28	17.39
Lack of concentration	4.03	7.47	9.09	4.35
Mental confusion	7.26	5.17	0.00	8.70
Night time awakenings	5.65	4.59	0.00	13.04
Restlessness	8.06	8.05	9.09	0.00
Sweating	10.48	10.92	0.00	0.00
Temper tantrums	10.48	5.75	9.09	4.35
Tingling in hands and feet	4.84	1.15	0.00	0.00

**Table 8:** The total number of smokers correlated with the number of cigarettes smoked per day

Cigarettes smoked per day	Population of smokers n
One or more than one packet	24
Half packet	56
Less than half a packet	92
More than half a packet	45

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