A STUDY ON THE RISK FACTORS INFLUENCING DIABETES AS A LIFESTYLE DISEASE IN INDIA AMONG MALE POPULATION

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Abstract: *Introduction:* The term diabetes mellitus describes a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia. With disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion. The focal theme of the study is – how the lifestyle effects or aggravates diabetes in male segment particularly in India. There is an inseparable association between this duo diabetes and lifestyle. India particularly liberates male segment from inhibitions prejudice and insist on insobriety consequently the male segment is badly vulnerable to diabetes.
Objective:

- To examine the prevalence of diabetes by socio-demographic characteristics in India among the male.
- To conduct a comparative study of the effects of the concerned factors between sub-populations and groups (based on several variables) within segments.

Data and Methods: The data used for analysis is National Family Health Survey (NFHS-4) 2015-2016. Methods used are Cross Tabulation Table, Chi Square Test, Phi-Cramer's V, Odds Ratio, Relative Risk. 54 segments based on place of residence, religion, economic class, age group has been used.
Findings: Smoking has its effects mostly on poor group, the Hindu, the people from age group (28-40). Drinking alcohol has its effects mostly on rural group, middle class people, the Hindu, the people from age group (41-54). Chewing tobacco has its effect mostly on two economic classes middle class and rich; also, on the Hindu community. Current working status mostly affects the age group (28-40). The proportion of diabetics is remarkably higher among non-working people than working people. Those who drink alcohol everyday- among them the proportion of diabetics is higher. Among people involved in- clerical, professional, technical, managerial, sales related jobs the proportion of diabetics is higher than agricultural workers or skilled and unskilled Manuel laborers.

Introduction: The reign of deadly diabetes is a nightmare of this planet and a severe threat to human civilization. India -- one of the thickly populated countries --is infested with innumerous diabetic people and the number of invaded knows no bound.

The term diabetes mellitus describes a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia. With disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the nerves and blood vessels.

In a study by Nikhil Tandon NishantRaizada the overall prevalence and incidence of diabetes in India has been analyzed. The factors affecting people and inducing diabetes is also discussed here. As per the International Diabetes Federation (2013), approximately 50% of all people with diabetes live in just three countries: China (98.4 million), India (65.1 million) and the USA (24.4 million). There is clear evidence

to show that diabetes prevalence is rapidly increasing, in 2014, 8.5% of adults aged 18 years and older had diabetes. In 2015, diabetes was the direct cause of 1.6 million deaths and in 2012 high blood glucose was the cause of another 2.2 million deaths. Over time, diabetes can damage the heart, blood vessels, eyes, kidneys, and nerves.

Treatment of diabetes involves diet and physical activity along with lowering blood glucose and the levels of other known risk factors that damage blood vessels. Tobacco use cessation is also important to avoid complications regarding blood glucose control, particularly in type 1 diabetes. People with type 1 diabetes require insulin, people with type 2 diabetes can be treated with oral medication but may also require insulin; blood pressure control. Other cost saving interventions include: screening and treatment for retinopathy (which causes blindness) blood lipid control (to regulate cholesterol levels) screening for early signs of diabetes-related kidney disease and treatment. In the present scenario of physical ailments diabetes is playing a pivotal role and a horrible threat to human race. The focal theme of the study how the lifestyle effects or aggravates diabetes in male segment particularly in India.

Everybody knows there is an inseparable relationship between this duo Diabetes and Lifestyle. Lifestyle effects male segment drastically because of their gender hegemony in India. Our country particularly liberates male segment from inhibitions prejudices and insist on insobriety consequently the male segment is badly vulnerable to diabetes. This study strives to acquire detailed information (data inclusive) about this main culprit -- Lifestyle. This can bring up diabetes in male segment affectionately. Each and every sub population has its own physical, stature, religious cult, pattern of life, food habits, customs, creeds and taboos; moreover, age group, wealth index, immunity from diseases are strongly associated with each subpopulation.

What factor, how, where is proactive in promoting or submissive in abating diabetes or how a particular factor plays different roles in other subpopulation is utmost necessary to notice. These findings would make aware targeted people and certainly would help to take remedial measures.

Objectives:

1. To examine the prevalence of diabetes by socio-demographic characteristics in India among the male.
2. To determine the perceived prognostic factors and study their association with diabetes.
3. To conduct a comparative study of the effects of the concerned factors between subpopulations.
4. Comparative studies of groups (based on several variables) within segments.

Data Source: This study is going to utilize the secondary data collected in fourth round of National Family Health Survey (NFHS-4), which was conducted in 2015-2016 respectively under the guidance of the Ministry of Health and Family Welfare, Government of India and coordinated by the International Institute of Population Sciences (IIPS), Mumbai to achieve objectives of this study. In addition to the 29 states NFHS-4 included all six union territories for the first time and also provided the estimates of most indicators at district level for all 640 districts in the country as per 2011 census. NFHS-4 fieldwork for India was conducted from 20 January 2015 to 4th December 2016 by 14 field agencies and gathered information from 601509 household, 699686 women and 103525 men.

Methodology: The dependent variable that is the main study variable is "CURRENTLY HAS DIABETES" this is categorized in three categories. The labels are-
0 for "no"; that is it suggests those people who currently don't have diabetes.
1 for "yes"; that is it suggests those people who currently have diabetes.

And 8 stand for "don't know". That is their result is not certain they cannot be put into either group.
In this study we will analyze the effects of the independent variables, and will see the presence of the independent variables how deeply and directly denotes the presence of our dependent variable. How strong their association is, that is how strongly they are correlated that will also be analyzed from these statistics.

The dependent variable at first taken was SM622A. Then this variable has been recoded. After recoding the "don't know" part has been filtered out and the rest has been kept. After recoding '0' is recoded as '1' (have) and 1 is recoded as '2' (don't have). The variable is renamed as "diab" and the label is renamed as "new_diab".

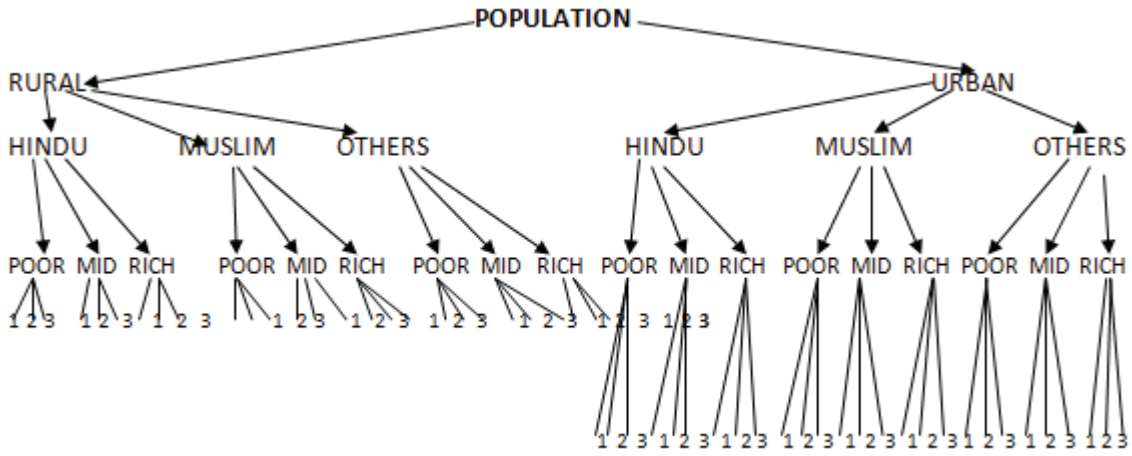
Independent variables include the biological factors, but also the socio-economic factors. The study incorporates several independent variables to understand its linkage with the diabetes. The independent variables taken, are-
smokes cigarettes, uses chewing tobacco, Occupation (grouped), Frequency drinks alcohol.

At first a new variable "wt" is generated to weight the cases by this variable. This variable was generated by dividing the "National men's sample weight (6 decimals)" (MV005) by 1000000. Then the new recoded dependent variable has been created. Some of the independent variable has been recoded. "Smoking cigarette","chewing_tobacco_use", these variables have been created and have been split into two categories; so that the odds ratio and relative risk between exposed and unexposed group can be obtained.

Also "RELIGION" has been created as a recoded variable from the variable MV130. Where "1" is recoded as "Hindu", "2" is recoded as "Muslim", and all other values are recoded as "others".

The variable "WEALTH" have been created as a recoded variable from the variable MV190(Wealth Index), where "1" (Poorest)and "2" (Poorer) have been recoded as "POOR", "3" (Middle) has been recoded as "MID" and "4" (Richer) and "5" (Richest) have been recoded as "RICH".

The variable "R_AGE" has been created as a recoded variable from MV013 (Age in 5-year groups) where age 15 to 27 have been recoded as "1", 28 to 40 have been recoded as "2" and 41 to 54 as "3".
Then with the help of 4 variables – MV025 (Type of place of residence), "RELIGION", "WEALTH", "R_AGE"- the population have been segmented into 54 subpopulations.



The numbers shown in the table are age groups 1 – denotes age group 15-27 , 2 – denotes age group 28-40, 3 – denotes age group 41-54.

Then for all the segments by "crosstab" a table is obtained from where we can get the row percentages and the total percentages. The row percentage helps us to understand the proportion within exposed group or within unexposed group on the other hand the total percentages help us to understand as a whole the distribution of different groups as it considers the whole population as 100. Then by chi square test we can get the P-VALUES(The P value, or calculated probability, is the probability of finding

the observed, or more extreme, results when the null hypothesis (H o) of a study question is true – the definition of 'extreme' depends on how the hypothesis is being tested.), as, at 95% confidence interval Monte-Carlo approach has been used so from this, the result is obtained that whether the concerned variable has any significant association with the dependent variable. If the P-VALUE is less than 0.05 it is considered that the variable has significant association otherwise not. Also, from the table of Phi and Cramer's V it is said – how strong the association is. If the values are close to .10 it is considered to be a weak association, if the value exceeds that value and is close to .3 0 then it has been considered as moderate association. If it exceeds that value and is close to .50 then it is considered to be a very strong association. Also, the value of odds ratio (An odds ratio (OR) is a measure of association between an exposure and an outcome. The OR represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure), And relative risk (relative risk or risk ratio (RR) is the ratio of the probability of an event occurring (for example, developing a disease, being injured) in an exposed group to the probability of the event occurring in a comparison, non-exposed group) have been shown. By which vulnerability between two groups have been compared.

Analysis and Discussion of Findings: In the tables used below - the first four columns indicate what the segments are, and the fifth column indicates the p-values based on which we judge if the mentioned variable has any kind of significant association with Diabetes. Then there are values of phi and cramer's v which indicate how strong the association is and if there is any association. Then comes the columns of odds ratio and relative risk by which we can conclude how much or less vulnerable is one group of people than another group within a subpopulation. Relative risks are used to find out the ratio of exposed and unexposed either in diseased or un-diseased group. The first column of relative risk denotes relative risk among diabetic and the second column means relative risk among non-diabetics. Besides odds ratio are used emphatically to compare vulnerability between groups. Yet relative risks are mentioned for the sake of clarity.

[To specify subpopulations abbreviated forms have been used. Abbreviated forms of subpopulation consist of three letters and one number. The 1st letter denotes the place of residence (where, RURAL= R, URBAN= U), 2ND letter denotes the religion (where, HINDU= H, MUSLIM= M, OTHERS= O), 3RD letter denotes the wealth index accordingly (where, POOR= P. MIDDLECLASS= M, RICH= R), the number denotes the age group (where, 1st age group i.e. 15-27 =1, 2nd age group i.e. 28-40 = 2, 3rd age group i.e. 41-54= 3).]

Smoking:

Table 1.1:

Region	Religion	Wealth Index	Age Group	Sig.	Phi	Cramer's V	O.R (Smoker /Nonsmoker)	R.R	R.R
RURAL	HINDU	POOR	15-27	.000	.054	.054	4.568	4.511	.987
RURAL	HINDU	POOR	28-40	.027	.023	.023	1.687	1.674	.992
RURAL	HINDU	POOR	41-54	.997	.000	.000	1.001	1.001	1.000
RURAL	HINDU	MID	15-27	.258	.015	.015	1.645	1.639	.996
RURAL	HINDU	MID	28-40	.044	.028	.028	1.838	1.822	.991
RURAL	HINDU	MID	41-54	.211	.021	.021	1.307	1.290	.987
RURAL	HINDU	RICH	15-27	.112	.019	.019	2.219	2.211	.996
RURAL	HINDU	RICH	28-40	.003	.041	.041	1.984	1.951	.983
RURAL	HINDU	RICH	41-54	.286	-.017	.017	.806	.817	1.013
RURAL	MUSLIM	POOR	15-27	.275	.028	.028	2.048	2.033	.993
RURAL	MUSLIM	POOR	28-40	.209	.036	.036	2.999	2.276	.990
RURAL	MUSLIM	POOR	41-54	.000	.126	.126	4.889	4.590	.939
RURAL	MUSLIM	MID	15-27	.667	-.015	.015			1.001

RURAL	MUSLIM	MID	28-40	.154	-.062	.062			1.017
RURAL	MUSLIM	MID	41-54	.659	-.024	.024	.756	.768	1.017
RURAL	MUSLIM	RICH	15-27	.257	.039	.039	3.675	3.649	.993
RURAL	MUSLIM	RICH	28-40	.190	-.053	.053	.280	.286	1.022
RURAL	MUSLIM	RICH	41-54	.382	-.042	.042	.702	.729	1.039
RURAL	OTHERS	POOR	15-27	.687	-.018	.018			1.002
RURAL	OTHERS	POOR	28-40	.247	-.061	.061			1.024
RURAL	OTHERS	POOR	41-54	.377	-.053	.053			1.020
RURAL	OTHERS	MID	15-27	.242	-.064	.064			1.026
RURAL	OTHERS	MID	28-40	.517	.041	.041	1.565	1.531	.978
RURAL	OTHERS	MID	41-54	.082	-.122	.122			1.013
RURAL	OTHERS	RICH	15-27	.568	-.023	.023			1.007
RURAL	OTHERS	RICH	28-40	.020	.100	.100	3.340	3.158	.943
RURAL	OTHERS	RICH	41-54	.010	.117	.117	2.665	2.318	.870
URBAN	HINDU	POOR	15-27	.677	.011	.011	1.588	1.585	.998
URBAN	HINDU	POOR	28-40	.027	.023	.023	1.687	1.674	.992
URBAN	HINDU	POOR	41-54	.000	.143	.143	4.136	3.798	.917
URBAN	HINDU	MID	15-27	.324	-.021	.021			1.004
URBAN	HINDU	MID	28-40	.873	.004	.004	1.085	1.083	.999
URBAN	HINDU	MID	41-54	.044	.063	.063	1.834	1.761	.960
URBAN	HINDU	RICH	15-27	.088	.018	.018	1.884	1.878	.996
URBAN	HINDU	RICH	28-40	.000	.050	.050	2.072	2.034	.982
URBAN	HINDU	RICH	41-54	.000	.048	.048	1.516	1.457	.962
URBAN	MUSLIM	POOR	15-27	.469	-.042	.042			1.009
URBAN	MUSLIM	POOR	28-40	1.000	.000	.000			1.000
URBAN	MUSLIM	POOR	41-54	.135	-.121	.121			1.071
URBAN	MUSLIM	MID	15-27	.494	-.026	.026			1.005
URBAN	MUSLIM	MID	28-40	.056	.094	.094	7.425	7.281	.981
URBAN	MUSLIM	MID	41-54	.524	.037	.037	1.660	1.623	.978
URBAN	MUSLIM	RICH	15-27	.493	.014	.014	1.724	1.719	.998
URBAN	MUSLIM	RICH	28-40	.731	-.008	.008	.843	.845	1.003
URBAN	MUSLIM	RICH	41-54	.224	.035	.035	1.337	1.303	.974
URBAN	OTHERS	POOR	15-27	1.000	.000	.000			1.000
URBAN	OTHERS	POOR	28-40	.022	.366	.366	12.400	9.143	.737
URBAN	OTHERS	POOR	41-54	NA	NA	NA	NA	NA	NA
URBAN	OTHERS	MID	15-27	1.000	.000	.000			1.000
URBAN	OTHERS	MID	28-40	.429	-.082	.082			1.029
URBAN	OTHERS	MID	41-54	.665	.056	.056	1.850	1.810	.978
URBAN	OTHERS	RICH	15-27	.345	-.036	.036			1.009
URBAN	OTHERS	RICH	28-40	.018	.094	.094	3.552	3.408	.960
URBAN	OTHERS	RICH	41-54	.811	.010	.010	1.107	1.098	.992

From this table we can get an overall snap of all the segments and how smoking as a factor has its effects in a particular segment of population.

Crosstabs are used to get the clear distribution of population among exposed, unexposed, diseased and un-diseased groups. Because the values of odds ratio, relative risk, p-value, phi, cramer's v keenly depends on that. In some cases, despite dearth of cases and feeble margin in between certain groups, they show remarkable results. Whether those results are accountable or not, how those could be analyzed – to resolve those problems befitting crosstabs are used. Smokers are very much prone to acquire type 2 diabetes and show too many insulin resistance syndromes. "Cigarette smoking increases

this risk for diabeticnephropathy, retinopathy, and neuropathy, probably via its metabolic effects in combination with increased inflammation and endothelial dysfunction. The increased risk for macrovascular complications, coronary heart disease (CHD), stroke, and peripheral vascular disease, is most pronounced in type 2 diabetic patients. The development of type 2 diabetes is another possible consequence of cigarette smoking, besides the better-known increased risk for cardiovascular disease. In diabetes care, smoking cessation is of utmost importance to facilitate glycemic control and limit the development of diabetic complications." At the same time smoking plays an effective catalytic role to deepen the impact of drinking, consumption of unhealthy food etc. which also can induce diabetes. From the table 1.1 we can surely see that 15 groups are showing significant relationships between smoking and diabetes. Those groups are RHP1, RHP2, RHM2, RHR2, RMP3, ROR2, ROR3, UHP2, UHP3, UHM3, UHR2, UHR3, UMM2, UOP2, UOR2. And from this table we can also see that the poor group shows more significant association between smoking and diabetes. And if we go religion wise then we can see that Hindu get more affected by smoking and develop diabetes. For other religions the significance between smoking and diabetes is somehow not found in a large scale. There are some segments those possess some odds ratios which can attract our attention like for RHP1- 4.568, RHP3- 4.136, RHM2- 1.838, ROR2- 3.340, ROR3- 2.665, UHP3- 4.136, UHR2- 2.072, UMM2- 7.425, UOP2- 12.400, UOR2- 3.552. Those can indicate that how much more vulnerable are smokers to diabetes than nonsmokers in the previous-mentioned cases the values are alarming. If we analyze the values of phi and cramer's v we can see that there are some segments which shows moderate or strong associations like- RHP3-. 143, RMP3- .126, ROR2- .100, ROR3- .117, UHP3- .143, UOP2- .366. There is also one noticeable fact that among the Muslim the effect of cigarette smoking and its association with diabetes is lesser than other segments of population. The effect is higher in middle aged people according to this table that is in the age group 28-40. The effect and its significant association with diabetes is not that much seen among the people of the age group 15 - 27.

Chewing Tobacco:

Table 1.2:

Region	Religion	Wealth Index	Age Group	Sig.	Phi	Cramer's V	O.R (User /Nonuser)	R.R	R.R
RURAL	HINDU	POOR	15-27	.003	.027	.027	4.189	4.129	.986
RURAL	HINDU	POOR	28-40	.382	-.009	.009	.602	.605	1.005
RURAL	HINDU	POOR	41-54	.351	-.037	.037			1.044
RURAL	HINDU	MID	15-27	.423	-.011	.011			1.007
RURAL	HINDU	MID	28-40	.001	.045	.045	3.744	3.634	.970
RURAL	HINDU	MID	41-54	.885	-.002	.002	.940	.943	1.003
RURAL	HINDU	RICH	15-27	.570	-.007	.007			1.004
RURAL	HINDU	RICH	28-40	.175	.019	.019	1.864	1.834	.984
RURAL	HINDU	RICH	41-54	.005	-.044	.044			1.073
RURAL	MUSLIM	POOR	15-27	.692	-.010	.010			1.008
RURAL	MUSLIM	POOR	28-40	.664	-.013	.013			1.009
RURAL	MUSLIM	POOR	41-54	.548	-.021	.021			1.026
RURAL	MUSLIM	MID	15-27	.945	-.002	.002			1.001
RURAL	MUSLIM	MID	28-40	.746	-.014	.014			1.012
RURAL	MUSLIM	MID	41-54	.082	.093	.093	3.798	3.238	.853
RURAL	MUSLIM	RICH	15-27	.932	-.003	.003			1.004
RURAL	MUSLIM	RICH	28-40	.662	-.018	.018			1.027
RURAL	MUSLIM	RICH	41-54	.274	-.053	.053			1.134
RURAL	OTHERS	POOR	15-27	.910	-.005	.005			1.002
RURAL	OTHERS	POOR	28-40	.517	-.034	.034			1.021
RURAL	OTHERS	POOR	41-54	.588	-.032	.032			1.023

RURAL	OTHERS	MID	15-27	.798	-.014	.014			1.022
RURAL	OTHERS	MID	28-40	.685	.026	.026	1.549	1.516	.979
RURAL	OTHERS	MID	41-54	.343	-.067	.067			1.090
RURAL	OTHERS	RICH	15-27	.856	-.007	.007			1.008
RURAL	OTHERS	RICH	28-40	.634	-.020	.020			1.032
RURAL	OTHERS	RICH	41-54	.649	-.021	.021	.624	.649	1.040
URBAN	HINDU	POOR	15-27	.724	-.010	.010			1.005
URBAN	HINDU	POOR	28-40	.549	-.018	.018			1.009
URBAN	HINDU	POOR	41-54	.351	-.037	.037			1.044
URBAN	HINDU	MID	15-27	.714	-.008	.008			1.003
URBAN	HINDU	MID	28-40	.466	-.018	.018			1.015
URBAN	HINDU	MID	41-54	.236	-.037	.037			1.061
URBAN	HINDU	RICH	15-27	.006	.028	.028	5.889	5.765	.979
URBAN	HINDU	RICH	28-40	.046	-.021	.021			1.022
URBAN	HINDU	RICH	41-54	.001	.041	.041	2.183	1.990	.912
URBAN	MUSLIM	POOR	15-27	.886	-.008	.008			1.007
URBAN	MUSLIM	POOR	28-40	1.000	.000	.000			1.000
URBAN	MUSLIM	POOR	41-54	.738	-.027	.027			1.056
URBAN	MUSLIM	MID	15-27	.873	-.006	.006			1.004
URBAN	MUSLIM	MID	28-40	.695	-.019	.019			1.008
URBAN	MUSLIM	MID	41-54	.031	.125	.125	8.667	6.750	.779
URBAN	MUSLIM	RICH	15-27	.776	-.006	.006			1.003
URBAN	MUSLIM	RICH	28-40	.449	-.018	.018			1.016
URBAN	MUSLIM	RICH	41-54	.808	-.007	.007	.777	.792	1.019
URBAN	OTHERS	POOR	15-27	1.000	.000	.000			1.000
URBAN	OTHERS	POOR	28-40	.624	-.079	.079			1.061
URBAN	OTHERS	POOR	41-54	N.A	N.A	N.A	N.A	N.A	N.A
URBAN	OTHERS	MID	15-27	1.000	.000	.000			1.000
URBAN	OTHERS	MID	28-40	.709	-.038	.038			1.023
URBAN	OTHERS	MID	41-54	.739	-.043	.043			1.037
URBAN	OTHERS	RICH	15-27	.881	-.006	.006			1.007
URBAN	OTHERS	RICH	28-40	.690	-.016	.016			1.023
URBAN	OTHERS	RICH	41-54	.722	-.014	.014	.692	.709	1.025

From this table we can get an overall snap of all the segments and how chewing tobacco as a factor has its effects in a segment of population.

Crosstabs are used to get the clear distribution of population among exposed, unexposed, diseased and un-diseased groups. Because the values of odds ratio, relative risk, p-value, phi, cramer's v keenly depends on that. Some cases, despite dearth of samples and feeble margin in between certain groups show remarkable results. Whether those results are accountable or not, how those could be analyzed – to resolve those problems befitting crosstabs are used. There is not much association between this variable and diabetes. Though there are some segments where effect of this variable is also noticeable. There are 7 such segments whose p-value indicates that there is some association between chewing tobacco and diabetes. Those groups are- RHP1, RHM2, RHR3, UHR1, UHR2, UHR3, UMM3. We can see that there is just one group from poor class which shows some association with diabetes, all other groups are from either middle class or from rich class. Though it is believed that among poor people the uses of chewing tobacco are greater still according to this data with diabetes we cannot find much association from that economic class. The poor population is more involved in physical works than middleclass or rich population, so it may also happen that those physical works nullify the effect of chewing tobacco on the other hand less physical activities make other segments of population more

vulnerable to diabetes by enhancing the harmful effects of chewing tobacco. Most of the cases are also from the Hindu community, there are not many cases from other (except Hindu, Muslim) religions. There is no group from other religions where we found significant association between this variable and diabetes. For some segments the odds ratios are very high. Like - RHP1: 4.189, RHM2: 3.744, RMM3: 3.798, UHR1: 5.889, UHR3: 2.183, UMM3: 8.667. So, from the aforesaid odds ratios we get that in some case users of chewing tobacco are remarkably more vulnerable than non-users. Though the results here may not be indicating us totally independent association between chewing tobacco and diabetes. There may be some other underlying causes.

Frequency of Alcohol Consumption:

Table 1.3

Region	Religion	Wealth Index	Age Group	Sig.	Phi	Cramer's V	O.R	R.R	R.R
RURAL	HINDU	POOR	15-27	.000	.106	.106			
RURAL	HINDU	POOR	28-40	.485	.019	.019			
RURAL	HINDU	POOR	41-54	.037	.146	.146			
RURAL	HINDU	MID	15-27	.000	.200	.200			
RURAL	HINDU	MID	28-40	.088	.050	.050			
RURAL	HINDU	MID	41-54	.107	.059	.059			
RURAL	HINDU	RICH	15-27	.181	.059	.059			
RURAL	HINDU	RICH	28-40	.006	.077	.077			
RURAL	HINDU	RICH	41-54	.885	.014	.014			
RURAL	MUSLIM	POOR	15-27	.348	.127	.127			
RURAL	MUSLIM	POOR	28-40	.474	.114	.114			
RURAL	MUSLIM	POOR	41-54	.045	.307	.307			
RURAL	MUSLIM	MID	15-27	NA	NA	NA			
RURAL	MUSLIM	MID	28-40	NA	NA	NA			
RURAL	MUSLIM	MID	41-54	.215	.277	.277			
RURAL	MUSLIM	RICH	15-27	NA	NA	NA			
RURAL	MUSLIM	RICH	28-40	.228	.206	.206			
RURAL	MUSLIM	RICH	41-54	.029	.377	.377			
RURAL	OTHERS	POOR	15-27	.546	.089	.089			
RURAL	OTHERS	POOR	28-40	.146	.145	.145			
RURAL	OTHERS	POOR	41-54	.504	.089	.089			
RURAL	OTHERS	MID	15-27	1.000	.000	.000			
RURAL	OTHERS	MID	28-40	.286	.143	.143			
RURAL	OTHERS	MID	41-54	.401	.131	.131			
RURAL	OTHERS	RICH	15-27	1.000	.000	.000			
RURAL	OTHERS	RICH	28-40	.261	.109	.109			
RURAL	OTHERS	RICH	41-54	.067	.158	.158			
URBAN	HINDU	POOR	15-27	.886	.027	.027			
URBAN	HINDU	POOR	28-40	.212	.073	.073			
URBAN	HINDU	POOR	41-54	.037	.146	.146			
URBAN	HINDU	MID	15-27	1.000	.000	.000			
URBAN	HINDU	MID	28-40	.002	.124	.124			
URBAN	HINDU	MID	41-54	.000	.209	.209			
URBAN	HINDU	RICH	15-27	.242	.038	.038			
URBAN	HINDU	RICH	28-40	.000	.082	.082			
URBAN	HINDU	RICH	41-54	.002	.073	.073			
URBAN	MUSLIM	POOR	15-27	1.000	.000	.000			
URBAN	MUSLIM	POOR	28-40	NA	NA	NA			

URBAN	MUSLIM	POOR	41-54	NA	NA	NA			
URBAN	MUSLIM	MID	15-27	NA	NA	NA			
URBAN	MUSLIM	MID	28-40	NA	NA	NA			
URBAN	MUSLIM	MID	41-54	.120	.326	.326			
URBAN	MUSLIM	RICH	15-27	.130	.131	.131			
URBAN	MUSLIM	RICH	28-40	.107	.124	.124			
URBAN	MUSLIM	RICH	41-54	.000	.289	.289			
URBAN	OTHERS	POOR	15-27	NA	NA	NA			
URBAN	OTHERS	POOR	28-40	.650	.208	.208			
URBAN	OTHERS	POOR	41-54	NA	NA	NA			
URBAN	OTHERS	MID	15-27	NA	NA	NA			
URBAN	OTHERS	MID	28-40	NA	NA	NA			
URBAN	OTHERS	MID	41-54	.678	.167	.167			
URBAN	OTHERS	RICH	15-27	.423	.107	.107			
URBAN	OTHERS	RICH	28-40	.007	.206	.206			
URBAN	OTHERS	RICH	41-54	.000	.342	.342			

From this table we can get an overall snap of all the segments and how frequency of alcohol intake as a factor has its effects in a segment of population.

Crosstabs are used to get the clear distribution of population among several groups. Because the values of p-value, phi, cramer's v keenly depends on that. Some cases, despite dearth of samples and feeble margin in between certain groups show remarkable results. Whether those results are accountable or not, how those could be analyzed – to resolve those problems befitting crosstabs are used. From the table 1.5 we can surely see that 13 groups are showing significant relationships between frequency of alcohol consumption and diabetes. Those groups are RHP1, RHP3, RHM1, RHR2, RMP3, RMR3, UHP3, UHM2, UHM3, UHR2, UMR3, UOP2, UOR3. If we analyze the values of phi and cramer's v we can see that there are some segments which show moderate or strong association like- RHP3, RHM1, RMP3, RMR3, UHP3, UHM3, UMR3, UOR2, UOR3. This variable has more significant associations among the Hindu segment. Among the Muslim and the others not in much segments the significant association is found. Its because of the number of drinkers or number of regular drinkers are less in those segments. Also, from this data we can say that whatever may be the frequency the young age group is not that much affected by that. The effect of this variable is mostly seen among the people from older age group. The immunity the amount of work they do all these things greatly affects the health and in old age the variation of frequency of alcohol can greatly affect once health. Among the Hindu those who drink alcohol everyday among them the proportion of diabetics is higher, as there are a good number of people within segments who drink alcohol on a daily basis. But among the Muslim those who drink alcohol once a week among them the number of diabetics is higher. Consumption of alcohol below threshold could be hygienic. For that people who consume alcohol frequently but moderately are not affected with diabetes. Due to religious taboo alcohol consuming is inhibited in the Muslim community; that's why the number of drinkers is less among them or the fact is suppressed by them. Obviously, it is harder to find diabetics among a small number of people though sporadically the proportion of diabetics witnessed among certain groups is noticeably high among Muslim people; yet that in some cases must be treated as vague. Generally, those who drink alcohol daily they cross the general threshold of alcohol consumption and get affected with diabetes.

Grouped Occupation:

Table 1.4

Region	Religion	Wealth Index	Age Group	Sig.	Phi	Cramer's V	O.R	R.R	R.R
RURAL	HINDU	POOR	15-27	.340	.026	.026			
RURAL	HINDU	POOR	28-40	.000	.081	.081			
RURAL	HINDU	POOR	41-54	.063	.145	.145			

RURAL	HINDU	MID	15-27	.300	.038	.038			
RURAL	HINDU	MID	28-40	.019	.057	.057			
RURAL	HINDU	MID	41-54	.199	.053	.053			
RURAL	HINDU	RICH	15-27	.000	.075	.075			
RURAL	HINDU	RICH	28-40	.806	.027	.027			
RURAL	HINDU	RICH	41-54	.023	.063	.063			
RURAL	MUSLIM	POOR	15-27	.711	.054	.054			
RURAL	MUSLIM	POOR	28-40	.644	.065	.065			
RURAL	MUSLIM	POOR	41-54	.000	.273	.273			
RURAL	MUSLIM	MID	15-27	.984	.035	.035			
RURAL	MUSLIM	MID	28-40	.920	.061	.061			
RURAL	MUSLIM	MID	41-54	.000	.273	.273			
RURAL	MUSLIM	RICH	15-27	.898	.027	.027			
RURAL	MUSLIM	RICH	28-40	.134	.127	.127			
RURAL	MUSLIM	RICH	41-54	.010	.209	.209			
RURAL	OTHERS	POOR	15-27	1.000	.000	.000			
RURAL	OTHERS	POOR	28-40	.000	.480	.480			
RURAL	OTHERS	POOR	41-54	.975	.077	.077			
RURAL	OTHERS	MID	15-27	.092	.893	.893			
RURAL	OTHERS	MID	28-40	.369	.175	.175			
RURAL	OTHERS	MID	41-54	.395	.190	.190			
RURAL	OTHERS	RICH	15-27	.804	.079	.079			
RURAL	OTHERS	RICH	28-40	.002	.204	.204			
RURAL	OTHERS	RICH	41-54	.003	.202	.202			
URBAN	HINDU	POOR	15-27	.536	.067	.067			
URBAN	HINDU	POOR	28-40	.992	.032	.032			
URBAN	HINDU	POOR	41-54	.063	.145	.145			
URBAN	HINDU	MID	15-27	.108	.074	.074			
URBAN	HINDU	MID	28-40	.304	.067	.067			
URBAN	HINDU	MID	41-54	.437	.082	.082			
URBAN	HINDU	RICH	15-27	.206	.032	.032			
URBAN	HINDU	RICH	28-40	.015	.045	.045			
URBAN	HINDU	RICH	41-54	.049	.045	.045			
URBAN	MUSLIM	POOR	15-27	.499	.147	.147			
URBAN	MUSLIM	POOR	28-40	1.000	.000	.000			
URBAN	MUSLIM	POOR	41-54	.014	.339	.339			
URBAN	MUSLIM	MID	15-27	.567	.090	.090			
URBAN	MUSLIM	MID	28-40	.203	.154	.154			
URBAN	MUSLIM	MID	41-54	.002	.273	.273			
URBAN	MUSLIM	RICH	15-27	.000	.342	.342			
URBAN	MUSLIM	RICH	28-40	.026	.095	.095			
URBAN	MUSLIM	RICH	41-54	.062	.106	.106			
URBAN	OTHERS	POOR	15-27	1.000	.000	.000			
URBAN	OTHERS	POOR	28-40	.222	.505	.505			
URBAN	OTHERS	POOR	41-54	NA	NA	NA			
URBAN	OTHERS	MID	15-27	1.000	.000	.000			
URBAN	OTHERS	MID	28-40	.970	.138	.138			
URBAN	OTHERS	MID	41-54	.527	.322	.322			
URBAN	OTHERS	RICH	15-27	.781	.077	.077			
URBAN	OTHERS	RICH	28-40	.000	.259	.259			
URBAN	OTHERS	RICH	41-54	.003	.184	.184			

From this table we can get an overall snap of all the segments and how grouped occupation as a factor has its effects in a particular segment of population.

Crosstabs are used to get the clear distribution of population among several groups. Because the values of p-value, phi, cramer's v keenly depends on that. Some cases, despite dearth of samples and feeble margin in between certain groups show remarkable results. Whether those results are accountable or not, how those could be analyzed – to resolve those problems befitting crosstabs are used. From the table 1.6 we can surely see that 17 groups are showing significant relationships between grouped occupation and diabetes. Those groups are RHP2, RHM2, RHR1, RHR3, RMP3, RMM3, RMR3, ROP2, ROR2, ROR3, UHR2, UHR3, UMP3, UMM3, UMR1, UMR2, UOR2, UOR3. If we analyze the values of phi and cramer's v we can see that there are some segments which show moderate or strong association like- RMP3, RMM3, RMR3, ROP2, ROR2, ROR3, UMP3, UMM3, UMR1, UOR2, UOR3. This variable has its significance more among the 2nd and 3rd age group as the young people not affected of diabetes easily and also the working people mainly belong to these groups. Among poor people the effect of this variable as inducer of diabetes is comparatively lower than other groups. The proportion of diabetics among people who are in clerical, professional/technical/ managerial jobs and in sales is too high in comparison with agricultural laborers skilled and unskilled manuel laborers of various segments. The difference between the physical activities and lifestyle create this demarcation. Sometimes the proportion of diabetics might be high considerably in agricultural labors and service holders. Sometimes for subsistence these people have to do odd jobs that can affect their lifestyle. Besides Indian agricultural segment is thronged with innumerous people, in some segments the number of people from agricultural group is so high that the proportion of diabetics is also significantly higher than other groups.

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