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Association of Some Demographic and Personality Factors with Eating Behaviour

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Introduction- We live in a society that is obsessed with food. Most people fall somewhere in between, and we all tend to have different tastes and affinities. However, there has been little research done on finding a link between someone's personality and his or her eating habits, and it looks like there may be certain traits that make us more likely to engage in specific eating behaviors.

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Association of Some Demographic and Personality Factors with Eating Behaviour

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I. INTRODUCTION

We live in a society that is obsessed with food. Most people fall somewhere in between, and we all tend to have different tastes and affinities. However, there has been little research done on finding a link between someone's personality and his or her eating habits, and it looks like there may be certain traits that make us more likely to engage in specific eating behaviors.

Eating behavior is a broad term that encompasses food choice and motives, feeding practices, dieting, and eating-related problems such as obesity, eating disorders, and feeding disorders. Within the context of behavioral medicine, eating behavior research focuses on the etiology, prevention, and treatment of obesity and eating disorders, as well as the promotion of healthy eating patterns that help manage and prevent medical conditions such as diabetes, hypertension, and certain cancers. Eating behavior is complex; humans make hundreds of food decisions each day that are influenced by a variety of personal, social, cultural, environmental, and economic factors. What people eat and how much they eat has a considerable influence on their health.

The psychology of Eating implies that by making better food choices, one might be able to control compulsive eating behaviors and weight gain. One might also experience feelings of calmness, high energy levels, or alertness from the foods one eats. The key driver for eating is of course hunger but what we choose to eat is not determined solely by physiological or nutritional needs. So the factors that influence food choice include the following:

- *Biological determinants*

Our physiological needs provide the basic determinants of food choice. Humans need energy and nutrients in order to survive and will respond to the feelings of hunger and satiety (satisfaction of appetite or state of no hunger between two eating occasions). The central nervous system is involved in controlling the balance between hunger, appetite stimulation, taste and food intake.

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- *Economic determinants*

Cost, income, availability are important economic factors. There is no doubt that the cost of food is a primary determinant of food choice. Whether cost is prohibitive depends fundamentally on a person's income and socio-economic status. Low-income groups have a greater tendency to consume unbalanced diets and in particular have low intakes of fruit and vegetables (De Irala-Estevez et al. 2000). However, access to more money does not automatically equate to a better quality diet but the range of foods from which one can choose tends to increase.

- *Physical determinants*

Access, education, skills (e.g. cooking) and time determine food choice as well as intake. Accessibility to shops is another important physical factor influencing food choice, which is dependent on resources such as transport and geographical location.

- *Social determinants include culture, family, peers and meal patterns*

What people eat is formed and constrained by circumstances that are essentially social and cultural. Population studies show there are clear differences in social classes with regard to food and nutrient intakes. Cultural influences lead to the difference in the habitual consumption of certain foods and in traditions of preparation, and in certain cases can lead to restrictions such as exclusion of meat and milk from the diet. Cultural influences are however amenable to change: when moving to a new country individuals often adopt particular food habits of the local culture.

Meal patterns vary according to individual as well as occasions. People have many different eating occasions daily, the motivations for which will differ from one occasion to the next. Most studies investigate the factors that influence habitual food choice but it may be useful to investigate what influences food choice at different eating occasions.

- *Psychological determinants such as mood, stress and guilt influence our food choice*

Attitudes, beliefs and knowledge about food are also important. Studies indicate that the level of education can influence dietary behaviour during adulthood (Kearney et al. 2000). In contrast, nutrition knowledge and good dietary habits are not strongly correlated. This is because knowledge about health



does not lead to direct action when individuals are unsure how to apply their knowledge. Psychological factors, such as stress is a common feature of modern life and can modify behaviours that affect health, such as physical activity, smoking or food choice. The influence of stress on food choice is complex not least because of the various types of stress one can experience. The effect of stress on food intake depends on the individual, the stressor and the circumstances. In general, some people eat more and some eat less than normal when experiencing stress (Oliver & Wardle 1999). Moreover there is no doubt that food influences our mood and that mood also has a strong influence over our choice of food. Interestingly, it appears that the influence of food on mood is related in part to attitudes towards particular foods.

Thus the complexity of food choice is obvious from the list above, which is in itself not exhaustive. Food choice factors also vary according to life stage and the power of one factor will vary from one individual or group of people to the next.

Now the question arises that whether personality of an individual is also a factor in determining what we are eating. Some studies have demonstrated the importance of an individual's personality traits in shaping the cognitive, emotional, and conative components of an individual's eating behaviour (Grunert, 1989; Vainik, Dubé, Lu, Fellows, 2015).

"Personality" is a word that originates from the Latin persona, which means "mask". The term personality refers to the pattern of thoughts, feelings, social adjustments, and behaviors consistently exhibited over time that strongly influences one's expectations, self-perceptions, values, and attitudes. Personality also predicts human reactions to other people, problems, and stress.

The study of personality has a broad and varied history in psychology with an abundance of theoretical conceptions. The major theories include dispositional (trait) perspective, psychodynamic, humanistic, biological, behaviorist, evolutionary, and social learning perspective. However, many researchers and psychologists do not explicitly identify themselves with a certain perspective and instead take an eclectic approach. Research in this area is empirically driven, such as dimensional models, based on multivariate statistics, such as factor analysis, or emphasizes theory development, such as that of the psychodynamic theory. The Big Five personality factors are the following:

- Openness to experience (inventive/curious vs. consistent/cautious)
- Conscientiousness (efficient/organized vs. easy-going/careless)
- Extraversion (outgoing/energetic vs. solitary/reserved)

- Agreeableness (friendly/compassionate vs. challenging/detached)
- Neuroticism (sensitive/nervous vs. secure/confident)

Research findings suggest a connection between food choices and certain personality types exists. Way back in the 70's, a researcher at the University of Pennsylvania argued that the reason why people enjoy the burning sensation of spicy food, is the same reason why some people enjoy potentially dangerous activities, i.e. they were thrill seekers. In 2005, a study was conducted using the International Personality Item Pool Big Five short-form questionnaire to determine personality types of the participants and a health assessment questionnaire that examined behaviors including eating habits. It was determined that conscientious people tended to eat more fruits and vegetables, and choose overall healthier meals. Extroverts were shown to be more prone to risky behavior and bad food choices. The interesting thing is that, with the vegan and raw food movements gaining popularity, and crazy crash diets giving way to meal delivery focused on plant-based food, it seems like a large chunk of the population falls into the conscientious category. (Ivan Dimitrijevic).

So the present study has been undertaken to find out the relationship of personality and also some demographic factors with eating behaviour.

Objectives:

- To find out the influence of Education on Eating behaviour.
- To find out the influence of Gender on Eating behaviour.
- To find out the influence of Monthly family income on Eating behaviour.
- To find out the association between Eating behaviour and Personality dimensions.

II. METHOD

a) Sample

In this present investigation purposive sampling technique was chosen to draw the sample. The following are the characteristics:

Area of Sampling: Colleges and universities situated in Kolkata and its adjacent areas

Age Range: 18 to 25 years.

Educational level: Under graduate and Post Graduate

Sex: Male and Female

Religion: Hinduism

b) Description of the Tools

Two standardized tests were used namely:

1. Dimensional Personality Inventory by Mahesh Bhargava (1997)

2. Adult Eating Behaviour Questionnaire by Hunot C, Fildes A, Croker H, Llewellyn CH, Wardle J, Beeken RJ. (2016)

The Personality Inventory consisted of 60 statements in English. It measured six important personality dimensions: a) Activity-Passivity, B)Enthusiastic-Non-Enthusiastic, C) Assertive-Submissive, D) Suspicious-Trusting, E)Depressive-Non-Depressive, F)Emotional Instability-Emotional Stability. Each personality dimension was measured by 10items through three response alternatives –'yes', 'undecided' and 'no' which were scored as '2', '1' and '0' respectively. The total time required for administration was 15minutes.

Adult Eating Behaviour Questionnaire consisted of 35 questions. This questionnaire had 8 components of Eating behaviour - Enjoyment of Food (EF),Emotional Over Eating (EOE),Emotional Under Eating (EUE),Food Fussiness (FF),Food Responsiveness (FR), Slowness In Eating (SE), Hunger (H) and Satiety and Responsiveness (SR). All the questions were close ended having five options 1.Strongly Disagree (SD) 2.Disagree (D) 3.Neither Agree nor Disagree (N) 4.Agree (A) and 5.Strongly Agree (SA).The respondents had to

read the question and select any one option. Scoring was done by assigning 1 for SD, 2 for D, 3 for N, 4 for A and 5 for SA. Scores were reversed for items 12,14,19 and 24. The total score for 8 different components were calculated separately.

Along with the two standardized tests a general information schedule was also given to collect personal information of the respondents.

c) Procedure

The data were collected using the standardized tests and general information schedule. With prior appointments from college authorities data were taken from students in their college premises. Initially rapport was established with the subjects and then the purpose of the investigation was made clear to them. The subjects were requested to go through the instructions and respond accordingly. In case of any doubt on their part while filling up the questionnaires were addressed properly. They were assured that their answers will remain confidential. The data were finally analysed by means of SPSS-16 package. Descriptive statistics, Product moment correlation and One-way ANOVA were computed to verify the objectives of the study.

III. RESULTS & DISCUSSION

Table 1: Mean and Std. Deviation of different components of Eating behaviour according to Education

Education	EF	EOE	EUE	FF	FR	SE	H	SR
Mean (Graduate)	11.80	10.67	17.14	10.00	11.48	10.00	14.57	11.52
N	21	21	21	21	21	21	21	21
Std. Deviation	1.965	3.526	3.928	3.081	3.516	3.493	4.094	3.010
Mean (Postgraduate)	12.05	10.75	18.40	10.85	11.65	9.05	13.10	12.00
N	20	20	20	20	20	20	20	20
Std. Deviation	1.731	4.216	4.616	3.031	3.048	4.224	3.024	2.753

Table 2: Mean and Std. Deviation of different components of Eating behaviour according to Gender

Gender	EF	EOE	EUE	FF	FR	SE	H	SR
Female	Mean	11.84	10.86	17.26	11.36	12.08	8.46	13.60
	N	50	50	50	50	50	50	50
Male	Std. Deviation	1.845	3.974	4.548	3.306	2.934	3.598	3.258
	Mean	12.60	11.38	17.40	10.18	12.60	10.10	14.60
Total	N	50	50	50	50	50	50	50
	Std. Deviation	1.773	4.005	4.131	3.102	3.162	3.278	3.597
	Mean	12.22	11.12	17.33	10.77	12.34	9.78	14.10
	N	100	100	100	100	100	100	100
	Std. Deviation	1.840	3.978	4.323	3.244	3.046	3.439	3.451
								2.923



Table 3: Mean and Std. Deviation of Eating behaviour according to Monthly Family Income

Monthly Income	EF	EOE	EUE	FF	FR	SE	H	SR
1.15-30k	Mean	12.45	11.45	16.91	11.23	11.98	8.70	14.18
	N	44	44	44	44	44	44	44
	Std. Deviation	1.454	3.782	4.564	3.416	2.913	3.024	3.280
2.31-50k	Mean	12.06	10.78	17.53	10.53	11.92	10.67	14.28
	N	36	36	36	36	36	36	36
	Std. Deviation	2.151	3.735	3.858	3.220	2.989	3.372	3.822
3.51k- 2lacs	Mean	12.00	11.00	17.90	10.20	13.90	11.55	13.60
	N	20	20	20	20	20	20	20
	Std. Deviation	2.026	4.888	4.689	2.895	3.076	3.900	3.235
Total	Mean	12.22	11.12	17.33	10.77	12.34	9.78	14.10
	N	100	100	100	100	100	100	100
	Std. Deviation	1.840	3.978	4.323	3.244	3.046	3.439	3.451

Table 4: Representation of t-values of different components of Eating behaviour according to Education

Eating Behaviour Components	t-values	df	Sig. (2-tailed)
EF	.670	48	.508
EOE	1.313	48	.198
EUE	.457	48	.651
FF	1.103	48	.278
FR	.505	48	.617
SE	.128	48	.899
H	.272	48	.788
SR	.576	48	.568

Table 5: Summary table of One way –ANOVA including Gender as independent variable and different components of Eating behaviour as dependent variables

Eating behaviour components	Sum of Squares	df	Mean Square	F	Sig.	
EF	Between Groups	14.440	1	14.440	4.412	.038
	Within Groups	320.720	98	3.273		
	Total	335.160	99			
EOE	Between Groups	6.760	1	6.760	.425	.516
	Within Groups	1559.800	98	15.916		
	Total	1566.560	99			
EUE	Between Groups	.490	1	.490	.026	.872
	Within Groups	1849.620	98	18.874		
	Total	1850.110	99			
FF	Between Groups	34.810	1	34.810	3.388	.069
	Within Groups	1006.900	98	10.274		
	Total	1041.710	99			
FR	Between Groups	6.760	1	6.760	.727	.396
	Within Groups	911.680	98	9.303		
	Total	918.440	99			
SE	Between Groups	10.240	1	10.240	.864	.355
	Within Groups	1160.920	98	11.846		
	Total	1171.160	99			
H	Between Groups	25.000	1	25.000	2.123	.148
	Within Groups	1154.000	98	11.776		
	Total	1179.000	99			
SR	Between Groups	25.000	1	25.000	2.985	.087
	Within Groups	820.640	98	8.374		
	Total	845.640	99			

Table 6: Summary table of One way –ANOVA including Family income as independent variable and different components of Eating behaviour as dependent variables

Eating behaviour components	Sum of Squares	df	Mean Square	F	Sig.
EF	Between Groups	4.362	2	2.181	.640
	Within Groups	330.798	97	3.410	
	Total	335.160	99		
EOE	Between Groups	9.429	2	4.714	.294
	Within Groups	1557.131	97	16.053	
	Total	1566.560	99		
EUE	Between Groups	15.701	2	7.851	.415
	Within Groups	1834.409	97	18.911	
	Total	1850.110	99		
FF	Between Groups	17.811	2	8.905	.844
	Within Groups	1023.899	97	10.556	
	Total	1041.710	99		
FR	Between Groups	60.913	2	30.456	3.445
	Within Groups	857.527	97	8.840	
	Total	918.440	99		
SE	Between Groups	91.051	2	45.525	4.088
	Within Groups	1080.109	97	11.135	
	Total	1171.160	99		
H	Between Groups	6.432	2	3.216	.266
	Within Groups	1172.568	97	12.088	
	Total	1179.000	99		
SR	Between Groups	26.842	2	13.421	1.590
	Within Groups	818.798	97	8.441	
	Total	845.640	99		

Table 7: Correlations between Eating behaviour components and different Personality dimensions

Personality Dimensions	EF	EOE	EUE	FF	FR	SE	H	SR
1	.033	.109	-.150	-.112	.058	.105	.052	-.154
2	.045	-.040	-.003	-.136	.196	-.150	.243*	.006
3	.149	.100	-.077	-.007	.156	-.010	.137	.089
4	.023	.187	-.139	.207*	.068	-.128	.108	.080
5	-.030	.169	-.160	.077	-.046	.055	-.176	.092
6	.013	-.029	.042	-.163	-.058	.051	-.133	-.037
N	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

The mean values of most of the components of eating behaviour are higher for post-graduates than the under-graduate students, except for Slowness in eating and Hunger. The t-values in table 4 indicate no significant differences exist in the different components of eating behaviour between the under-graduate and post-graduate students.

The mean values of eating behaviour of Food fussiness and Satiety and responsiveness are greater for females than males. On the other hand mean values of enjoyment of food, slowness in eating and hunger are greater for males. For the Emotional under eating and Food responsiveness the mean values are almost same. From table 5, the one-way ANOVA indicates that among the different components of eating behaviour, gender has significant influence only on Enjoyment of Food, males enjoy food more than females.

In case of monthly family income, the mean values of some components of eating behaviour show more variations than the other components. The one-way ANOVA table 6 shows that monthly family income has significant influence on Food Responsiveness and Slowness in Eating components of eating behaviour.

Table 7 represents the product-moment correlations between the personality dimensions and different components of eating behaviour. Most of the correlations are not statistically significant. Significant positive correlations have been found between Suspicious-Trusting personality and Food Fussiness, and between Enthusiastic—Non-enthusiastic personality and Hunger at .05 level of confidence.

The overall findings reflect some aspects of eating behaviour of our college and university students. Although the relationship of personality dimension tends

to be insignificant for most of the components of eating behaviour, the demographic variables of gender and family income seems to be important in determining some types of eating behaviour. Significant positive correlations have been found between food fussiness and suspicious personality, and hunger and enthusiastic personality. To some extent the findings are consistent with results of previous researches. For instance, *Goldberg and Strycker (2000)* have reported that although self-reported eating practices are not related to educational level, intelligence, they are related to demographic variables of gender and age. They have also found an association of dietary habits with personality attributes.

A recent study on Ghanaian University students reports that except for neuroticism, all the personality traits have a significant association with at least one of the dietary habits that have been explored. Extraversion is positively associated with neophagia ($p = 0.028$) and food interest ($p = 0.008$), conscientiousness is associated with variety ($p = 0.045$) and sugar moderation ($p = 0.006$), agreeableness is associated with neophagia ($p = 0.005$), skipping of meals ($p = 0.007$) and variety ($p = 0.005$) and openness is associated with food interest ($p = 0.009$) (*Freida Dzifalntiful, Emefa Gifty Oddam, Irene Kretchy & Joana Quampah, 2019*). *Darja Kobal Grum (2017)* has also found association between the factors of eating behaviour and psychological dimensions such as coping with stress and extraversion.

This present study is not free from some limitations. The assessment of personality and eating behaviour among the students are based on the individual's own assessment of his/her self and therefore responses can be biased. The sample size is also considerably small and not truly representative.

IV. CONCLUSION

With the increase in the prevalence of obesity and chronic diseases due to dietary habits, it is necessary to investigate the personality and demographic factors associated with eating behaviours. This study is therefore relevant in spite of some limitations. Further studies are required in this area to obtain more information for the development of appropriate eating behaviours with due consideration of personality dimensions.

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