ORIGINAL ARTICLE

THE ROLE OF PERSONALITY TRAITS AND MOOD IN TASTE PREFERENCE AMONG UNIVERSITY STUDENTS

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ABSTRACT

OBJECTIVE
To investigate the relationship between personality traits, mood, and taste preference among university students.

STUDY DESIGN
Correlational and Cross-sectional research design was used.

PLACE AND DURATION OF STUDY
The study was conducted at government university of Lahore from January 2019 to December 2020.

SUBJECTS AND METHODS
The sample comprised 170 university students, 83 males and 87 females with age range 18-25 years. The sample size was calculated through G*power. Data were collected online through Google form. The Big Five Inventory-10, Brief Mood Introspection and a self-constructed taste preference scale were used to assess personality traits, mood and taste preference, respectively.

RESULTS
The results suggested that some specific personality traits were correlated with specific taste preferences, such as agreeableness was associated with salty, sour and sweet taste preferences, while negatively associated with bitter taste preference. Extraversion was significantly positively associated with salty taste preference. Pleasant mood was also shown to have a positive correlation with salty, sweet, spicy, and sour taste preference. The finding also showed that women are more likely to prefer salty, spicy, and sour tastes than men.

CONCLUSION
There are some specific mood and personality traits that are related to specific taste preferences. Gender differences showed women are more likely to prefer food based on its taste, while men are more likely to prefer food on the basis of the amount of its calories.

KEY WORDS
Personality Traits, Mood, Taste preference, Extraversion

INTRODUCTION

Developing and maintaining healthy dietary habits is critical to the overall health and quality of life. Obesity and other food related chronic illnesses are among the leading health concerns in this era. Developing and sustaining healthy eating habits are crucial for quality of life and overall health of individuals. People usually eat food for which they have strong preference.[1] Overweight and obesity result from the contribution of extra calories from the food eaten. For devising proper interventions to help individuals to exercise healthy eating practices, it is essential to identify the kinds of food and drinks more likely to be consumed by people.

In recent years, behavioural practices are viewed as an important cause of many chronic illnesses, rather than germs and daemons. Eating practices have been studied for a long time, but no specific psychological factors are studied that influence those dietary patterns in Pakistan. International researches have been highlighting the role of personality traits and mood on eating practices. This research is designed to investigate the role of mood and personality traits on dietary practices in Pakistani society, so that we can predict and hence develop programs to prevent food related illnesses in the future.

Sagioglou and Greitemeyer (2016) conducted a study on bitter taste preference and their association with personality traits. The findings of the study revealed that preference for bitter taste was associated positively with malicious personality traits and they also found a strong relationship of bitter taste preference with psychopathy and every day sadism.[2] In contrast to it, to explore the relationship between preference of sweet taste and experiences with pro-social personality and behaviour, a study reported that people who had pro-social behaviour were considered being sweet (like sweetie), as they were seemed to taste that way. Five studies were conducted to test the hypothesis proposed for this study. Findings from different studies revealed that agreeableness was a trait of people who like sweet meals. Another finding revealed that people who were considered as prosocial (personality, behaviour and intention-wise) had sweet taste preference. Study four and five experimented and found that people who momentarily enjoyed a sweet food reported a more helping behaviour and agreeableness trait.[3]

Similarly, a 2014 research conducted for the exploration of the effects that personality traits have on food intake, revealed that the people who presented having personality trait of openness also reported eating fruits and vegetables, while those who had conscientiousness as their personality trait were found having healthy eating habits. People with prosocial behaviour avoided alcoholic drinks, smoking and unhealthy eating patterns. Lower risk of obesity was also associated with higher conscientiousness in individuals which supports and give evidence for health-promoting behaviours and conscientiousness.[4] Likewise, studying personality traits and taste preferences, Byrnes and Hayes (2013) investigated different personality variables that were the predictor of spicy taste preference. The findings revealed a positive relationship of spicy food preference with sensation seeking and reward sensitivity.[5]

Evers and colleagues (2013) investigated the role that positive emotions play in triggering dietary intake. The study showed that when people experience positive mood; they tend to take food high in calories when other factors were controlled.[6]

Present study aimed to investigate the mood and personality traits and their relevance with food preferences. This research was devised to investigate this role in the Pakistani society.

SUBJECT AND METHOD
Research Design
The present study comprised correlational and cross-sectional research design to explore the association between personality traits, mood and taste preference among university students.

Sample
The sample consisted of 170 participants, (83 males) and (87 females), university students whose age ranged between 18 to 24 years, and who responded to the online survey. Convenience sampling strategy was used for data collection. Sample size was calculated through G* power.

Assessment Measures
Demographic Information Sheet. A self-constructed demographic Information Questionnaire was used to gather personal information from the participants. Demographic questionnaire included age, gender, family system, birth order and number of siblings.

Big Five Inventory-10 (BFI-10)[7]
It is a shorter version of a well-recognised Big Five Inventory which has 44 items.[8] A 5-point Likert scale was used to rate the items of BFI-10 ranging from 'strongly disagree' (1) to 'strongly agree' (5). It has five subscales; Extraversion, agreeableness, neuroticism, conscientiousness, and openness. Each subscale comprises 2 items.

Brief Mood Introspection Scale (BMIS)[9]
BMIS was developed by Mayers and Gaschke in 1988. It is an open-source mood scale consisting of 16 mood-adjectives to

which a person responds (e.g., Are you "happy"?). The scale produces measures of complete pleasant-unpleasant mood as well as yields scores on two subscales of pleasant mood and unpleasant mood. Each subscale contains 8 items. A 4-point Likert scale was used to rate the items: (definitely do not feel = 1) (do not feel = 2) (slightly feel = 3) (definitely feel = 4). An additional item involves rating of mood on a scale from very unpleasant (-10) to very pleasant (10).

Taste Preference Scale
A self-constructed scale was used to assess the taste preference of the Pakistani sample. It was a 25-items scale composed of 5 subscales that independently assess the preferences for sweet, salt, sour, bitter, and spicy taste. A 5-point Likert scale was used to rate the liking of each food item based on its taste i.e. (dislike a lot = 1) (dislike a little = 2) (neither like nor dislike = 3) (like a little = 4) (like a lot = 5).The taste preference scale initially had a pool of 40 items, from which 25 were selected for further pilot study. These 25 items were grouped into 5 subscales. After completing the pilot study, some of demonstrated lesser reliability than others. After critically analysing the items and their descriptive values, some of them were replaced with other items from the initial item pool. Again, the tool was administered on a pilot sample. This time, its reliability was adequate, so it was finalised for data collection.

Reliability of the scale was analysed during the current research study. Inter-item reliability was satisfactory for all the subscales, which was α > .80 for two subscales and α > .65 for other three subscales. Overall scale reliability was above .70.

RESULTS
170 university students with age range between 18-24 years (M = 21.39, SD = 1.60) took part in the study. 48.8% were male and 52.1% were female. The siblings of 79% participants were one to two, and 21% participants had three or more siblings. 36% participants were first born, 42% middle born, 21% last born and 1% were an only child. Demographics also revealed that 72% of the participants belonged to a nuclear family system, while 28% of them belonged to a joint family system.

Table 1
Reliability Coefficients and Descriptive Statistics of Study Variables (N=170)

Variables	K	M	SD	a	Ranges Actual	Potential
Extraversion	2	7.66	2.22	.77.	2-10	2-10
Agreeableness	2	8.47	1.94	89	2-10	2-10
Conscientiousness	2	6.66	2.14	.64	2-10	2-10
Neuroticism	2	5.61	2.71	.96	2-10	2-10
Openness	2	7.19	2.34	.84	2-10	2-10
Pleasant mood	8	25.25	4.47	.79	10-32	8-32
Unpleasant mood	8	18.95	5.18	.79	8-32	8-32
Bitter	5	11.41	4.82	.88	5-24	5-25
Salt	5	20.75	3.77	.82	5-25	5-25
Spicy	5	17.43	4.58	.72	5-25	5-25
Sweet	5	17.88	4.34	.69	5-25	5-25
Sour	5	18.65	3.99	.68	5-25	5-25

Note: K=Number of items; M=Mean; SD=Standard Deviation; α= Cronbach's Alpha

Mean, standard deviation and Cronbach's Alpha of personality traits, mood and taste preference were also calculated. Table 1 depicts the internal consistency index (alpha coefficient) for all scales used in this study. The results show that all scales of the present study are internally consistent, as alpha coefficients of all scales are above .60.

Table 2
Inter Co-relation among Personality Traits, Mood and Taste Preference (N=170)

Variables	2	3	4	5	6	7	8	9	10	11	12
1.Extraversion	.20**	.16	.-09	.42***	...34***	-.06	-.01	.20**	.09	.11	..16*
2.Agreeableness	-	.32***	-.21**	.16*	.35***	-.10	-.18*	.38***	.13	.18*	..33***
3.Conscientiousness	-	-	-.21**	.17*	.48***	-.37***	-.06	.17*	.06	.16*	.19*
4.Neuroticism	-	-	-	-.18*	-.41***	.42***	-.06	-.11	-.09	-.08	-.01
5Openness	-	-	-	-	.23**	-.13	-.19*	.25***	.04	.01	.09
6.Pleasant mood	-	-	-	-	-	-.29***	.02	-.30***	.15*	.22**	.23**
7.Unpleasant mood	-	-	-	-	-	-	.01	.06	.15	-.07	.09
8.Bitter	-	-	-	-	-	-	-	-.09	.20**	.08	.05
9.Salt	-	-	-	-	-	-	-	-	.47***	.29***	.51***
10.Spicy	-	-	-	-	-	-	-	-	-	.14	.56***
11.Sweet	-	-	-	-	-	-	-	-	-	-	.28***
12.Sour	-	-	-	-	-	-	-	-	-	-	-

Note: *p<.05, **p<.01, ***p<.001

Table 2 shows that among all personality traits, extraversion has a significant positive relationship with salt and sour taste preference. Agreeableness also has a highly significant positive relationship with salt (r = .38, p < .001) and sour taste preference (r = .33, p < .001), and moderately significant positive relationship with sweet taste preference (r = .18, p < .05). Conscientiousness is also moderately and positively correlated with salt (r = .17, p < .05), sweet (r = .16, p < .05) and sour (r = .19, p < .05) taste preference. Openness to experience has a significant negative relationship with bitter taste preference (r = -.19, p < .05) while a positive relationship with salt taste preference (r = .25, p < .01). Pleasant mood is significantly positively correlated with salt (r = .30, p < .001), sweet (r = .22, p < .01), sour (r = .23, p < .01) and spicy (r = .15, p < .05) taste preference.

Table 3
Gender Differences in Taste Preference (N=170)

	Male (n=83)		Female (n=87)				95 % CI		
Variables	M	SD	M	SD	t	p	LL	UL	Cohen's d
Bitter	11.01	4.79	11.78	4.85	-1.04	.30	-2.21	.68	0.16
Salt	19.78	4.45	21.64	2.76	-3.33	.001	-2.96	-.76	0.50
Spicy	16.53	4.74	18.27	4.29	-2.53	.01	-3.09	-.38	0.38
Sweet	17.54	4.68	18.19	3.99	-.98	.33	-1.95	.66	0.15
Sour	17.72	4.29	19.50	3.49	-3.00	.003	-2.95	-.61	0.46

Note: *p<.05; **p<.01; ***p<.001; M=Mean; SD= Standard Deviation; CI= Confidence Interval; LL= Lower Limit; UL= Upper Limit

Table 3 shows significant differences in the mean scores of males and females for different subscales of taste preference scale. Highly significant differences were found on subscales salt taste and sour taste.

DISCUSSION
It was hypothesised that different personality traits and moods would be correlated with a specific type of taste preference. To test the hypotheses, correlational analysis was done using Pearson product-moment correlation and an independent sample t-test was used to identify the mean differences between male and female respondents among different subscales of taste preference scale. Overall results revealed that there are certain personality traits and mood that were associated with specific taste preferences.

First, reliability analysis was done for all the subscales used in the research study. All the scales showed adequate values of reliability coefficients. Significant relationships between personality trait, mood and taste preference were hypothesised. Agreeableness was shown to be highly correlated with salt and sour taste preference and moderately correlated with sweet taste preference.

Also, the personality trait of agreeableness was negatively correlated with bitter taste preference. As it was found in a study[2] on bitter taste preference and their association with personality traits that individual differences in bitter taste preferences were associated with antisocial personality traits. According to big five personality trait theory, people who have antisocial tendencies are lower on the agreeableness scale. So, this research finding supported the hypothesis, as well as results that agreeableness was a negative predictor of bitter taste preference. So people who are more likely to prefer bitter food items are less agreeable and more hostile than others.

Similarly, many other researches have elaborated the link between sweet taste preference and prosocial behaviour. These studies have demonstrated that people who prefer sweet taste tend to be more prosocial than others.[3,10] Prosocial personality trait can be operationalised in the form of score on agreeableness scale. People who are more agreeable are considered to act more prosocially. These researches supported the finding of the study research that there was a positive relationship between agreeableness and sweet taste preference. These researches also supported the hypothesis that agreeableness is likely to predict positively the sweet taste preference.

Another point that was highlighted from the results was that the trait of agreeableness was even more highly correlated with salt taste preference as compared to sweet taste preference. This relationship was not supported by the previous literature findings, but this can be explained in the context of our culture. More salty food items are consumed in Pakistan in comparison to sweet food items. In our homes, routine meals are usually salty and sweet taste is preferred on special occasions. This could be one of the reasons that salt taste preference was more correlated with many personality traits in contrast to any other tastes.

Extraversion was also shown to be positively correlated with salt taste preference, which was supported by research on the relationship between salt and sugar preference and their intake with personality traits. This study showed that people who are extrovert were more likely to prefer salty lemonade than sweet lemonade.[11] It was hypothesised that extraversion is likely to positively predict salt taste preference, which was proved from the results and supported by previous researches in literature.

Some literature described the effect of personality traits on eating behaviour. Most common researches suggested that personality trait of conscientiousness is directly linked to healthy eating habits, like more consumption of fruits and vegetables.[4,12] In the current research, it was found that there is a positive relationship between conscientiousness and sour taste preference. This can be explained by the fact that, in the taste preference scale, most of the items in sour taste subscales were citrus fruits. So, this relationship might be found because the conscientious people preferred more fruits than only sour taste.

There are numerous researches that elaborate on the link between positive emotions and food intake. Most of them suggest that experiencing positive emotions triggers the food intake, which we call emotional eating. These researches depict pleasant mood is more likely to lead to food intake and preference for healthy food.[6,13,14] The results of current research were supported by these findings of literature. Pleasant mood positively correlated with all types of taste preferences except for the bitter taste, as people do not prefer bitter taste when they are in a good mood.

Results showed that there were significant gender differences in the preference for salty, spicy, and sour tastes. According to a survey held in Canada, women 20 years and older eat fruit and vegetables 4.9 times per day, compared with 4.2 times for men in the same age category.[15] The finding of our research also showed that women are more likely to prefer salty, spicy, and sour tastes than men. This may be as women are more likely to prefer food based on its taste, while men are more likely to prefer food on the basis of the amount of its calories.

CONCLUSION

The present study investigated the relationship between personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness), mood (pleasant and unpleasant) and taste (salty, sour, sweet, spicy, and bitter) preferences among university students. The research suggested that there are some specific personality traits that predict specific taste preferences, such as agreeableness positively predicted salty, sour, and sweet taste preferences, while negatively predicted bitter taste preference. Likewise, conscientiousness also predicted sour

taste preference, and extraversion predicted salty taste preference. Pleasant mood was also a positive predictor of salty, sweet, spicy, and sour taste preference. These results are important in guiding new research in this area.

IMPLICATION

The present research would be useful in health settings to design diet plans for obese individuals according to their personality, mood, and related food choices.

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UNDERTAKING FORM

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