

Body Surveillance, Social Physique Anxiety and Food Habits in Individuals with Adiposity

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Abstract

This research aims to examine the relationship between body surveillance, social physique anxiety and food habits in individuals with adiposity. The correlational research design was used to execute the research. The sample comprises of (N=120), age ranging from 18-45 from different hospitals and from general population of Lahore. The non-probability convenient sampling was used in this study. The measures include the body surveillance subscale of objectified body consciousness scale (McKinley & Hyde, 1996), Social Physique Anxiety scale ((Motl & Conroy, 2000) and Adolescent food habit checklist (Johnson et al., 2002) in addition to demographic and health related information sheet. The analysis was carried out through SPSS version 21.00. The data analytic strategy begins with reliability analysis using Cronbach's alpha. To determine the association between the variables, Pearson product moment correlation was conducted and also the regression was run to find out the prediction. The result of the study indicates that there is no association between body surveillance and food habits but there is association between social physique anxiety and food habits the study also illustrate that body surveillance doesn't predict social physique anxiety and food habits in individuals with adiposity, while social physique anxiety predict food habits in individuals with adiposity. Findings underscore the need for targeted interventions addressing body image concerns, food habits, and obesity prevention and emphasize the importance of considering individuals experiences and perceptions in different approaches.

Key Words: Body Surveillance, Social Physique Anxiety, Food Habits, Adiposity.

Introduction

Eating habits, social anxiety related to physical appearance, and body surveillance are closely related, especially in individuals with adiposity which fosters

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an endless cycle of unhealthy behaviors and poor body image.

The term "fat" can apply to both lipids and the cells and tissues that contain them. Adiposity derived from the word *adipo* which refers to fat. Adipose tissue stores the huge amount of triglyceride, body lipid and free cholesterol (Bays et al., 2013). Adiposity may increase the risk factor for certain cancer such as colorectum cancer and breast cancer, gallbladder and also cause cancer of kidney and thyroid (Tseng & Satia, 2010). When there is increased in adiposity it means accumulation of more body fat than the lean mass. Adiposity is significantly associated with unhealthy diet, such as consumption of fast food, high calorie intake, sugar-sweetened beverages, processed meat, and low consumption of whole grains, fruits, and vegetables (Wadden et al., 2012).

1.1 Body surveillance

Body surveillance refers to the constantly assessing, monitoring and tracking of one's own physical activities, movements, and physiological characteristics and evaluate the degree to which their external appearance conforms to culturally acceptable ideals, through the use of technology and systems (such as biometric sensors, wearable devices, or surveillance cameras) to collect and analyze data about a person's body (Smith & Johnson, 2019). Body surveillance contributes to the several negative outcome including psychological problems like disordered eating and body dissatisfaction. Individual may also have negative emotional experiences such as body shame when individual evaluate themselves on the basis of some internalized and cultural standards (Moradi & Huang, 2008). Prior research indicates that self-objectification is positively linked to eating attitudes, surveillance of body, shame related body, but negatively associated with appearance control views (Isra & Aasma, 2023).

1.2 Social Physique Anxiety

Social anxiety related physique is defined as the negative evaluation of one's own body (Yaman, 2017). Social physique anxiety is strongly associated with low self-esteem and body dissatisfaction (Hagger et al., 2010). Social anxiety related physique anxiety affects the life satisfaction and also has negative effect on self-esteem (Herring et al., 2021). According to Levinson and Rodebaugh, (2012) social appearance anxiety predicted, body image concern, body dissatisfaction, concern related to weight and food, in addition to fear of checkup, social physique anxiety, and unfavorable appraisal. Fear of bad judgment pointed out a specific drive for thinness and restraint.

1.3 Food Habits

The word "food habit" refers to why and how people eat, what type of food they consume, with whom they eat, and how they obtain, use, and store food. Various factors influence people's eating habit including social, cultural, religious, economic,

environmental, and political. Individual, social, cultural and religious belief affects the food habits of individual. In terms of eating habits, it must be highlighted that limiting the frequency of meals takeaway and avoiding meals in restaurants may have favorable effects on dietary practices for both adults and children. Environmental and behavioral factor can contribute to the lower physical activity, and then inadequate or unhealthy food habits can cause increase of weight and then lead to the obesity and adiposity (Novaes et al., 2007). In addition, studies have found that social physique anxiety is associated with disordered eating attitude (Kalra & Lokesh, 2023).

Objectification theory posits that individuals internalize societal objectification and expectation and adopt an external perspective in evaluating their own bodies. This leads to self-surveillance and self-evaluation based on appearance rather than personal values and internal experiences. In the context of adiposity, individuals may experience heightened body surveillance and negative self-evaluation due to societal pressures and stigma surrounding body weight and shape (Calogero, 2012).

1.4 Objectives

- To examine the relationship between body surveillance, social physique anxiety and food habits in individual with adiposity.

1.5 Hypotheses

- There is likely to be a significant positive relationship between body surveillance and social physique anxiety in individuals with adiposity
- Body surveillance and social physique anxiety predict the food habits in individuals with adiposity.
- Social physique anxiety mediates the relationship between body surveillance and food habits in individuals with adiposity.
- Socio-demographic factors likely to predict body surveillance, social physique anxiety and food habits in individuals with adiposity

Method

2.1 Research Design

In this research, a correlational (cross-sectional) research design was employed to assess the association between body surveillance, social physique anxiety and food habits in individuals with adiposity.

2.2 Sample and Sampling Strategy

The data was collected by using the non-probability convenient sampling strategy through different questionnaire. The sample includes (N=120) individuals with adiposity. The sample size was calculated using G power test. The sample was recruited

from different hospitals and from general population with adiposity. Their ages varied between 18- 45 years and also belong to different BMI categories.

2.2.1 Inclusion Criteria

- Individuals experiencing negative health outcomes associated with adiposity such polycystic ovary syndrome (PCOS), hypertension were included.
- Individuals who can read and write were included.

2.2.2 Exclusion Criteria

- Women with post and pre-menopausal state were excluded.
- Women who were pregnant or within a certain timeframe (e.g., 6 months) postpartum experience changes in adiposity were excluded.
- Individuals who were facing severe health issue such as cancer were excluded.

2.3 Assessment Measures

2.3.1 Demographic Information Sheet

Data was collected from the representative sample using a self-made Demographic Information Sheet. Age, gender, siblings, family members, birth order, level of education, marital status, predicted family income, family structure, father and mother's ages, educational attainment, occupations, and level of religiosity were all included.

2.3.2 General Health Information Sheet

General health related information were collected from individuals with overweight and normal weight individuals with adiposity and the basic information about body weight, body height, hip circumference, exercise, physical activity and liquid intake related information were asked

2.3.3 Body Surveillance Scale

The Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) assessed body surveillance. The Surveillance subscale assesses how frequently individuals consider their physical appearance. The measure consists of 8- items that participants rate on a 7-point scale from strongly disagree to strongly agree. Total scores on this subscale range between 8 to 56, higher scores suggesting greater levels of body monitoring. Cronbach's alpha in this sample was .67.

2.3.4 Social Physique Anxiety Scale

A 7-item scale used to determine the extent to which individual experience anxiety when others notice or judge their physical appearance. It also connected well with concerns about others' perceptions and thoughts about one's body. Validity data revealed that women's with high SPAS scores were overweight and had a high body fat than individuals who scored lower. Additionally, high scores reported substantially greater anxiety during a true test of their physical abilities, providing additional support for the scale's validity. The scale has shown the reliability of .77 in this study (Motl & Conroy, 2000).

2.3.5 Adolescent Food Habit checklist

The 23-item checklist was verified by measuring dietary habits such as fat and fiber intake, fruit and vegetable consumption, dietary constraint, nutrition awareness, and house-hold income. The teenage Food Habits Checklist (AFHC) is designed to offer a measure of teenage healthy eating behavior in contexts where young people are expected to have some degree of personal control. The applied AFHC comprises of questions covering difficulties related to shopping, preparing, and consuming specific types of food, both healthy and un-healthy. The scale has shown the reliability of .81 in this study (Johnson et al., 2002).

2.4 Procedure

Prior to collecting data, permission was taken from the author to use scales and concerned authorities of Institute of Applied Psychology. The participants for the research were chosen on the base of inclusion exclusion criteria as explained above. The participants were briefed regarding the purpose of the research and that their confidentiality is protected. A consent form was signed by each participant. The participants were thanks for their time and participation. Later, the results were drawn out and discussions were done.

Results

This chapter presents the findings from a comprehensive statistical analysis aimed at understanding the relationships among body surveillance, social physique anxiety and food habits in individuals with adiposity.

3.1 Descriptive and Psychometric Properties of the Scales

This table presents the descriptive and psychometric properties of the body surveillance; social physique anxiety and the food habits scale used in the study.

Table 1

Descriptive and Psychometric Properties of Body Surveillance, Social Physique Anxiety and Food Habits Scales (N=120)

Scales	Range					
	<i>M</i>	<i>SD</i>	Potential	Actual	<i>a</i>	Skewness
Body Surveillance Scale	34.27	6.95	8-56	17-52	.67	0.19
Social Physique Anxiety Scale	21.49	5.53	7-35	8-31	.77	-0.46
Adolescents Food Habit Checklist	10.66	4.97	23-69	1-23	.81	-0.04

Note: M=Mean, SD=Standard Deviation, a = alpha

Table 1 presents the internal consistency levels of the scales. The Body Surveillance Scale consist of 8 item with 7 point likert scale shows moderate reliability with Cronbach's $\alpha = .67$, Social Physique Anxiety consist of 7 item with 5 point Likert scale with show the internal consistency values or Cronbach's α value of .77.

Finally, the Food Habit Scale, consist of 23 items on a 3-point Likert scale, achieved Cronbach's $\alpha = .808$, indicating acceptable internal consistency for research use, though further refinement may enhance its psychometric strength.

3.2 Preliminary Analysis

Preliminary analysis were run to identify the impact of socio-demographic factors on body surveillance, social physique anxiety and food habits and to identify the significant socio-demographics factors to be used in the hierarchical regression, in order to control for their affect when examining the predictor of the dependent variable.

3.2.1 Comparison of Two Groups Means

An independent samples t-test was conducted to compare scores between men and women and also to compare scores of exercise and cholesterol level on Body Surveillance, Social Physique Anxiety, and Food Habits.

Table 2

Independent Samples t-Test for Body Surveillance, Social Physique Anxiety and Food habits in Individual with Adiposity by Gender (N = 120)

Variables	Men		Women		<i>t</i> (118)	<i>p</i>	<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1. Body Surveillance	36.40	7.59	32.58	5.93	3.0	.003	0.56
2.Social Physique Anxiety	21.45	5.97	21.52	5.18	-.06	.946	0.01
3. Food Habits	9.94	5.17	12.71	4.48	-3.14	.002	0.57

*Note: M = Mean, SD = Standard deviation, * $p \leq .05$ level; ** $p \leq .01$ level; *** $p \leq .001$ level*

An independent samples t-test result for Body Surveillance indicates a significant difference between men and women. Men reported significantly higher body surveillance than women. For social physique anxiety, the t-test showed no significant difference between men and women. This suggests similar levels of social physique anxiety across both genders. For Food Habits result indicates significant difference between men and women. Women scored significantly higher on food habits than men's.

In summary, significant gender differences were observed in body surveillance and healthy food habits, but not in social physique anxiety.

Table 3

Independent Samples t-Test for Body Surveillance, Social Physique Anxiety and Food habits in Individual with Adiposity by Exercise (N = 120)

Variables	Yes		No		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1. Body Surveillance	35.58	7.18	33.66	6.80	1.41	.160	0.27
2.Social Physique Anxiety	19.73	5.87	22.30	5.19	-2.41	.017	0.46
3. Food Habits	13.65	3.80	10.48	5.15	3.77	<.001	0.70

Note: *M* = Mean, *SD* = Standard deviation, **p* ≤ .05 level; ***p* ≤ .01 level; ****p* ≤ .001 level

An independent samples *t*-test was conducted to examine the differences between participants who do exercise and who don't with the body surveillance, social physique anxiety, and food habits. For body surveillance, the difference between the two groups was not statistically significant, and a Cohen's *d* value report small effect size. However, a significant difference was found in social physique anxiety with the exercise as individual who don't exercise reporting higher social physique anxiety than the individual who do. The effect size was medium. Additionally, a significant difference was also observed for food habits, where the individuals who do exercise reported healthier food habits than those who don't. The effect size was large.

Table 4

Independent Samples t-Test for Body Surveillance, Social Physique Anxiety and Food habits in Individual with Adiposity by Cholesterol Level (N = 120)

Variables	Normal		High		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1. Body Surveillance	34.14	7.82	34.31	6.69	-.11	.909	0.02
2.Social Physique Anxiety	18.96	6.17	22.29	5.07	-2.91	.004	0.59
3. Food Habits	13.29	5.03	10.91	4.84	2.27	.025	0.48

Note: *M* = Mean, *SD* = Standard deviation, **p* ≤ .05 level; ***p* ≤ .01 level; ****p* ≤ .001 level

An independent samples *t*-test was done to investigate variations in body surveillance, social physique anxiety, and eating behaviors between individuals with

normal and high cholesterol level. There was no significant difference in body surveillance between the normal cholesterol level group and the high cholesterol level group. However, there was a significant difference in social physique anxiety scores. The high cholesterol level group reported significantly greater social physique anxiety than the normal cholesterol level group. The results also indicate a significant difference was found in food habits, with the normal group scoring higher than the high.

Table 5

Independent Samples t-Test for Body Surveillance, Social Physique Anxiety and Food habits in Individual with Adiposity by Residence (Urban, Rural) (N = 120)

Variables	Urban		Rural		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1. Body Surveillance	33.78	7.08	36.21	6.12	-1.54	.127	0.37
2. Social Physique Anxiety	21.55	5.23	21.25	6.68	.24	.812	0.05
3. Food Habits	11.36	5.02	12.01	4.85	-.57	.568	0.13

Note: *M* = Mean, *SD* = Standard deviation, **p* ≤ .05 level; ***p* ≤ .01 level; ****p* ≤ .001 level

An independent samples *t*-test was run to compare the scores between urban and rural participants across body surveillance, social physique anxiety, and food habits. The findings indicate that there was no significant difference in body surveillance scores between urban and rural. For social physique anxiety, the difference between urban and rural resident was also not statistically significant. Similarly, the result also indicates that there was also no significant difference in food habits between urban and rural resident. Overall, these results suggest that there were no statistically significant differences between urban and rural participants on these variables.

3.2.2 Group Differences

A one-way ANOVA was run to examine differences in body surveillance, social physique anxiety and food habits based on participants' sleep quality and BMI groups.

Table 6

One-way ANOVA by Sleep Quality (Poor, Good, Excellent)

Variable	Poor		Good		Excellent		<i>F</i>	η^2	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			

Body Surveillance	35.00	5.91	33.59	7.50	35.52	6.32	.838	0.014	.435
Social Physique Anxiety	22.75	5.87	20.98	5.19	21.42	6.08	1.058	0.017	.350
Food Habits	9.11	4.01	12.67	5.01	10.81	4.94	5.958	0.092	.003

Note: *M* = Mean, *SD* = Standard deviation, **p* ≤ .05 level; ***p* ≤ .01 level; ****p* ≤ .001 level

The results of a one-way ANOVA indicated no significant differences among Sleep quality groups on Body surveillance and social physique anxiety. However, significant differences were found across sleep quality groups for food habits. The post hoc comparison indicated significant mean group differences of each group with food habits, Participants with poor sleep quality reported unhealthy food habits in comparison to those who had good quality sleep, and this difference was significant. Those in the excellent sleep group also reported a mean value of which was not significantly different from either the poor or good sleep groups.

Table 7

One-way ANOVA by BMI groups (Normal, Overweight, Obese)

	Normal		Over-weight		Obese				
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	η^2	<i>P</i>
Body Surveillance	34.30	7.27	33.31	6.51	35.36	7.26	1.048	0.017	.354
Social Physique Anxiety	20.95	6.56	20.61	5.42	22.77	4.91	2.014	0.033	.138
Food Habits	11.27	5.28	12.45	4.77	10.49	4.94	1.935	0.032	.149

Note: *M* = Mean, *SD* = Standard deviation, **p* ≤ .05 level; ***p* ≤ .01 level; ****p* ≤ .001 level

According to the findings, no major differences existed in body surveillance within the three weight classifications. Some difference was seen in social physique anxiety, though, where those classified as obese reported greater anxiety compared to participants from both normal and overweight groups. In a similar way, some differences were recorded in food habits where participants who were classified as overweight exhibited more positive eating habits than those categorized as normal or obese.

Despite the non-significant ANOVA, further analysis was warranted to examine within-group patterns. Correlation and regression analyses were conducted separately within each BMI category.

Relationship of demographic variable with Study Variable in Normal BMI Group

A Pearson product moment correlation analysis was conducted to investigate the relationships between demographic variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body surveillance, social physique anxiety, and food habits in normal BMI group as shown in table 8.

Table 8

Correlation Matrix to Assess the Relationship of Demographics among Body Surveillance, Social Physique Anxiety and Food Habits in Normal Weight Individual (N=23)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Age	.33	-.23	.17
3.No.of dependent	-.11	-.14	.11
4.Sleep Schedule	-.07	-.20	.18
5. No. of earning member	.31	-.41	.25
6. Family Income	-.16	-.15	.45*

Note:*p< .05; **p< .01; ***p<.001; 1 =Body Surveillance, 2 = Social Physique Anxiety, 3=Food Habits

A Pearson correlation analysis was conducted to examine the relationships between demographic variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body surveillance, social physique anxiety, and food habits in normal weight individuals. Age was not significantly associated with body surveillance, social physique anxiety and food habits. Numbers of dependent and numbers of earning members also don't have any significant association with the study variable. Sleep scheduled doesn't have any significant association with body surveillance and social physique anxiety but have significant positive association with the food habits. The result also indicate that family income have significant positive association with the food habits.

3.2.3 Relationship of Demographic Variable with the Study Variable in Over-weight Individual

A Pearson Product Moment correlation analysis was conducted to examine the relationships between demographic variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body

surveillance, social physique anxiety, and food habits in over-weight individual with Adiposity.

Table 9

Correlation Matrix to Assess the Relationship of Demographics among Body Surveillance, Social Physique Anxiety and Food Habits in Over-weight Individual with Adiposity (N=52)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Age	-.09	-.06	.20
2.No. of dependent	-.21	.18	-.05
3.Sleep Schedule	-.06	.19	.16
4. No. of earning member	.00	.18	-.16
5. Family Income	-.02	-.20	.29*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

A Pearson correlation analysis was conducted to examine the relationships between demographic variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body surveillance, social physique anxiety, and food habits in Over-weight individuals with adiposity. Age was not significantly associated with body surveillance, social physique anxiety and food habits. Numbers of dependent and numbers of earning members don't have any significant association with the study variable. Sleep scheduled doesn't have any significant association with body surveillance, social physique anxiety and food habits. The result also indicate that family income have significant positive association with the food habits.

3.2.4 Relationship of Demographic Variable with Study Variable in Obese Individual

A Pearson correlation analysis was conducted to examine the relationships between demographics variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body surveillance, social physique anxiety, and food habits. A Pearson correlation analysis was conducted to find the relationships between demographic variables (age, number of dependents, sleep schedule, number of earning members, family income) and the study variables of body surveillance, social physique anxiety, and food habits in obese individuals with adiposity.

Table 10

Correlation Matrix to Assess the Relationship of Demographics among Body Surveillance, Social Physique Anxiety and Food Habits in Obese Individuals with Adiposity (N=45)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Age	-.19	-.35*	.24
3.No. of dependent	-.03	.03	-.04
4.Sleep Schedule	-.02	-.10	.31*
5. No. of earning member	-.23	.18	-.12
6. Family Income	.05	.09	.11

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

The findings illustrate that age was significantly negative associated with social physique anxiety. Numbers of dependent and numbers of earning members don't have any significant association with the study variable. Sleep scheduled has significant association with the food habits. The result also indicate that family income don't have significant association with the food habits.

3.3 Main Analyses

After preliminary analysis the main analysis were conducted on different BMI groups. These analysis include Pearson product moment correlation and regression analysis too se the relationship and prediction among the body surveillance, social physique anxiety and food habits in individuals with different BMI with adiposity.

3.3.1 Relationship between Study Variable in Normal weight Individuals

A Pearson correlation analysis was conducted to examine the relationships between body surveillance, social physique anxiety and food in individuals with adiposity.

Table 11

Inter-Correlation of the Study Variables in Normal weight Individual (N=23)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Body Surveillance	-	-.34	.19
2.Social physique Anxiety		-	-.31
3.Food Habits			-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

A Pearson product moment correlation analysis was conducted to study the relationships between the study variables in normal weight individuals. The result

indicates that body surveillance was not associated with social physique anxiety and food habits. The finding also suggests that there is no relationship between social physique anxiety and food habits.

3.3.2 Relationship between Study Variable in Over-Weight Individuals

A Pearson correlation analysis was conducted to examine the relationships between body surveillance, social physique anxiety and food in individuals with adiposity.

Table 12

Inter-Correlation of the Study Variables in Over-Weight Individuals with Adiposity (N=52)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Body Surveillance	-	-.14	-.25
2.Social physique Anxiety		-	-.34*
3.Food Habits			-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

A Pearson product moment correlation analysis was used to explore the relationships between body surveillance, social physique anxiety and food in over-weight individuals with adiposity. The result indicates that body surveillance was not associated with social physique anxiety and food habits. The finding also suggests that social physique anxiety was significantly negatively related with food habits.

3.3.3 Relationship between Study Variable in Obese Individuals

A Pearson Product Moment Correlation analysis was conducted to examine the relationships between body surveillance, social physique anxiety and food in individuals with adiposity.

Table 13

Inter-Correlation of the Study Variables in Obese Individuals with Adiposity (N= 45)

Variables	Body Surveillance	Social Physique Anxiety	Food Habits
1.Body Surveillance	-	.11	.19
2.Social physique Anxiety		-	-.51**
3.Food Habits			-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$;

A Pearson Product moment correlation analysis was conducted to examine the relationships between body surveillance, social physique anxiety and food in obese individuals with adiposity. The result indicates that body surveillance was not associated with social physique anxiety and food habits. The finding also suggests that social physique anxiety was significantly negatively associated with food habits.

3.3.4 Hierarchical Multiple Regression Predicting Food Habits in Normal Weight Individuals

A hierarchical multiple regression analysis was conducted to examine the body surveillance and social physique anxiety predict food habits in normal weight Individuals with adiposity as shown in table 14.

Table 14

Hierarchical Multiple Regression Predicting Food Habits (N=23)

Variables	B	SE	Food Habits		B	R ²	ΔR ²
			LL	UL			
Model 1						.46*	.46*
(Constant)	6.72	7.58	-9.21	22.65	—		
Age	.18	.14	-.12	.48	.26		
Gender	5.96**	1.91	1.95	9.98	.57**		
Cholesterol level	-2.14	2.04	-6.42	2.14	-.21		
Exercise	-3.01	2.63	-8.53	2.51	-.24		
Model 2						.48	.02
(Constant)	4.00	12.44	-22.37	30.388	—		
Age	.17	.15	-.15	.49	.23		
Gender	6.18**	2.02	1.91	10.47	.59**		
Cholesterol level	-2.02	2.58	-7.49	3.45	-.19		
Exercise	-1.69	3.39	-8.87	.46	-.14		
Body Surveillance	.08	.18	-.31	.46	-.10		
Social Physique Anxiety	-.11	.18	-.50	.28	-.14		

Note: CI= confidence interval, ; * $p \leq .05$ level; ** $p \leq .01$ level; *** $p \leq 0.01$

A hierarchical multiple regression analysis was conducted to examine whether body surveillance and social physique anxiety predict food habits in normal weight individual with adiposity. In model 1, Covariates were entered. The model was significant and explained 46% variances in food habits of normal weight individuals. In Model 2, the body surveillance and social physique anxiety were added to the model. This second model was non-significant and explained the 48% of the variance in food habits; overall, the results indicate that body surveillance and social physique anxiety were the poor predictors of food habits in this sample.

3.3.5 Hierarchical Multiple Regression Predicting Food Habits in Over-Weight Individuals

A hierarchical multiple regression analysis was conducted to examine the body surveillance and social physique anxiety predict food habits in over-weight individuals with adiposity as shown in table 15.

Table 15

Hierarchical Multiple Regression Predicting Food Habits (N=52)

			Food Habits				
			95% CI				
Variables	B	SE	LL	UL	B	R ²	ΔR ²
Model 1						.19*	.19*
(Constant)	14.24***	3.95	6.29	22.19	—		
Age	.08	..07	-.07	.23	.15		
Gender	1.86	1.49	-.78	4.49	.19		
Cholesterol level	-2.62	1.49	-5.64	.37	-.25		
Exercise	-1.62	1.39	-4.42	1.18	-.17		
Model 2						.31*	.11*
(Constant)	24.63***	5.92	12.70	36.55	—		
Age	0.07	0.07	-.07	.21	.13		
Gender	1.29	1.34	-1.39	3.98	.13		
Cholesterol level	-2.14	1.45	-5.06	.79	-.20		
Exercise	-1.02	1.34	-3.72	1.68	-.10		
Body Surveillance	-.16	.10	-.37	.04	-.22		
Social Physique Anxiety	-.27*	.12	-.49	-.04	-.30*		

Note: CI= confidence interval, ; * $p \leq .05$ level; ** $p \leq .01$ level; *** $p \leq 0.01$

A hierarchical multiple regression analysis was conducted to examine whether body surveillance and social physique anxiety predict food habits in over-weight individuals with adiposity. In model 1, Covariates were entered. The model was significant and explained 19% variances in food habits of over-weight individuals with adiposity. In Model 2, the body surveillance and social physique anxiety were added to the model. This second model was also significant and explained the 31% of the variance in food habits; overall, the results indicate that demographic covariates, body surveillance and social physique anxiety predict food habits in over-weight individuals with adiposity.

3.3.6 Hierarchical Multiple Regression Predicting Food Habits in Obese Individuals

A hierarchical multiple regression analysis was conducted to examine the body surveillance and social physique anxiety predict food habits in obese Individual with adiposity as shown in table 16.

Table 16

Hierarchical Multiple Regression Predicting Food Habits (N=45)

Variables	B	SE	Food Habits 95% CI		β	R^2	ΔR^2
			LL	UL			
Model 1						.16	.16
(Constant)	7.87	5.00	-2.24	17.97	—		
Age	.12	.09	-.05	.29	.21		
Gender	1.59	1.48	-1.41	4.58	.16		
Cholesterol level	.85	2.49	-4.18	5.87	.05		
Exercise	-2.97	1.66	-6.32	.38	-.28		
Model 2						.39**	.23**
(Constant)	11.89	7.05	-2.37	26.16	—		
Age	.05	.07	-.11	.22	.09		
Gender	1.87	1.32	-.81	4.54	.18		
Cholesterol level	.23	2.18	-4.19	4.65	.02		
Exercise	-1.38	1.53	-4.47	1.71	-.13		
Body Surveillance	.19	.09	-.00	.38	.27		
Social Physique Anxiety	-.47**	.14	-.75	-.19	-.47**		

Note: CI= confidence interval, ; * $p \leq .05$ level; ** $p \leq .01$ level; *** $p \leq 0.01$

A hierarchical multiple regression analysis was conducted to examine whether body surveillance and social physique anxiety predict food habits in normal weight individuals with adiposity. In model 1, Covariates were entered. The model was not significant and explained 16% variances in food habits of obese individuals with adiposity. In Model 2, the body surveillance and social physique anxiety were added to the model. This second model was significant and explained the 39% of the variance in food habits of obese individual; overall, the results indicate that demographic covariates were not the strong predictor of food habits in obese individuals with adiposity while body surveillance and social physique anxiety were the strong predictors of food habits in this sample.

Discussion

This study's primary aim is to find the association between body surveillance, social physique anxiety and food habits in individuals with adiposity. Hypotheses were formulated on the basis of previous literature.

According to first hypothesis, there is likely to be a significant differences between body surveillance, social physique anxiety and food habits in individuals with adiposity. The study's findings demonstrated that body surveillance does not correlate with social physique anxiety and food habits but there was correlation between social physique anxiety and food habits, so this hypothesis was partially accepted. The current study also demonstrated a negative association among social physique anxiety and food habits as also stated by a study that students who stated that they eat a healthy diet had higher Mediterranean Diet Quality Index (KIDMED) scores and lower SPAS scores than those who had an unhealthy diet and negative correlations between KIDMED and SPAS (Muftuoglu & Bayram, 2020).

This study also hypothesized that body surveillance and social physique anxiety significantly predicts food habits in individual with adiposity. The result of the study revealed that body surveillance doesn't predict social physique anxiety and food habits, but social physique anxiety predicts food habits in individual with adiposity, so this hypothesis was also partially accepted. The previous study illustrate that body monitoring behavior did not cause social physique anxiety; rather, it worsened eating behavior concerns in individuals who were already anxious (Rothberger, 2014).

Another hypothesis state that demographic variables significantly predict body surveillance, social physique anxiety and food habits in individuals with adiposity. The findings also revealed that male have more body surveillance than women's and also have unhealthy food habits than women as one of the previous study reported that males favored unhealthy food such as fast food, carbonated drinks and fried items while females chose more brown bread, olive oil, fruits/vegetable (Salameh et al., 2014). There is mediation hypothesis as well but the variable does not qualify for mediation as at first step there is no direct affect, body surveillance does not predict food habits so their exist no mediation.

Limitation and Implication

The participant's responses may be based on social desirability. A correlational design so it can only show relationship not the cause and effect. The bidirectional relationship between the study variable can also be examined. The findings of this study can be used to develop psycho-educational programs aimed at increasing awareness among people regarding body adiposity and healthy food habits. Mental health screening for social physique anxiety should be integrated to helps individual for

body acceptance. Policymakers and healthcare providers can use the results to design culturally sensitive support systems that strengthen coping strategies to deal with the social physique anxiety. The study provides a foundation for mental health professionals to design counseling interventions that address both emotional and psychological consequences related to the physique related anxiety.

Conclusion

The findings of the results revealed that there was no association between body surveillance and food habits but there is relation between social physique anxiety and food habits. The finding also suggest that body surveillance doesn't predict social physique anxiety and food habits but social physique anxiety predicts food habits. Also, results revealed that the gender, residence, sleep quality, cholesterol level and exercise significantly predict social physique anxiety and food habits.

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