

## BODY TYPES, SELF-IMAGE AND ENVIRONMENTAL ADJUSTMENT IN FRESHMAN COLLEGE FEMALES

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### SUMMARY

Procedures employed in the study were the selection of 60 body typed subjects, the construction of a scale to measure self-image acceptance and the use of the College Student Questionnaires to measure environmental adjustment.

As a result of this research study, the following conclusions appear to be warranted.

- 1) Endomorph body type is the least self acceptable body type for freshman women.
- 2) Body types are not related to the perception of the college environment among freshman women.
- 3) Accepting the environment appears to bear a U-shaped relation to accepting one's self-image with medium self acceptance being least satisfied with other things.
- 4) Self-image acceptance is more related to environmental perception than is body types.

### INTRODUCTION

The components of physique, as derived by William H. Sheldon (1940), have made a lasting impression on the thinking of social scientists. Physique would also appear to have a lasting impact on the individual who often "sees himself" differently than he "wants to see himself." Many individuals may fall into this category since, in the western world, the mesomorph body type has gained popularity and desirability, while the ectomorph and endomorph body types have become the least desirable.

For years, styles of dress have been designed to slenderize and reduce the heavy, obese individual and add fullness and muscularity to the linear person in an effort to have the ectomorph and endomorph resemble the athletic mesomorph body type. The use of diets, both medically and nonmedically advised, and the use of diet pills, foods, drinks, etc., has flourished as individuals strive to obtain more and more those physical characteristics of the mesomorph body type. Councils concerned with physical and health fitness have placed added emphasis on the more desirable and more adequately functioning body type, defining this physique to resemble that of the mesomorph.

With these constant reminders that the more desirable body type is the mesomorph, it would certainly be reasonable to hypothesize that persons with ectomorph and endomorph body types have more opportunity to learn self rejecting behavior, and hence, experience more personality adjustment difficulties than persons who are mesomorphic. The difficulties would probably arise in relation to the acceptance of their body image in a world which rewards persons for having a body type different from their own.

The body types most popularly defined, and the ones used in this study, are those derived by William H. Sheldon (1940, p. 374). Sheldon defined a discrete number of physical and temperamental variables which he considered of primary importance in representing human behavior. He also has attempted to identify, and provide suitable measures for, distinguishing physical components of the human body. His goal was to provide a "biological identification tag."

The basic somatotypes are these: (Sheldon, 1940, p. 374)

- 1) Endomorph body type is soft and spherical in shape. Also an underdevelopment and weakness of bones, muscles and connective tissues exists.
- 2) The mesomorph body type is that of a hard, tough, upright, relatively strong and rectangular physique with conspicuous bone and muscle. The body is resistant to injury and generally equipped for strenuous and exacting physical demands.
- 3) The ectomorph body type is characterized by flatness of the chest, fragility, linearity and delicacy of the body. The ectomorph is usually thin with small muscles, especially in the extremities. More surface area relative to the mass exists with the ectomorph than in other types. This physique is poorly equipped for competitive and persistent physical action.

These body types are defined as a result of studying physiques of males. Sheldon stated in 1940 that the evidence then available indicated that the same somatotype seemed to occur among women as had been observed among men. The more extensive findings confirm, though, that female physiques are more endomorph than male physiques. The pelvic area of the mesomorphic female consists of more fatty tissue than is found in the mesomorphic male.

Evidence is available (Wylie, 1961, p. 17) to indicate that the security one has in one's body is related to the security with which one faces one's environment or the world around him. Personality indices and social adjustment factors are correlated with feelings toward the body; thus, one might expect environmental adjustment to be correlated with self-image acceptance.

In this study the following research hypotheses were tested:

1. College freshman females with endomorph and ectomorph body types are less acceptant of self-image than college freshman females with mesomorph body type.
2. College freshman females with mesomorph body type adjust to the college environment better in one semester than do college freshman females with endomorph and ectomorph body types.
3. College freshman females' acceptance of their college environment is related to their acceptance of themselves.

## PROCEDURES

The procedures necessary for this investigation included the construction of a self-image scale, the selection of a standardized instrument for measuring college environmental adjustment, and the selection of 60 body typed subjects.

The investigator constructed a scale designed to measure self-acceptance of body image. Thirty questions which yielded "yes-no" and "satisfied-dissatisfied" answers were submitted to a panel of judges for validation. The judges rated the 30 items according to the Thurstone (Thurstone and Chave, 1929, p. 54) method of scaling attitude items. The items with the smallest and the largest scale values, and with the smallest interquartile ranges, were retained. In this manner the investigator was able to retain 20 items which seemed to measure self-image acceptance.

These 20 items were scattered among 30 other items concerned with health and physical fitness. The total scale of 50 items was administered to the subjects. This scale also yielded "yes-no" and "satisfied-dissatisfied" answers. These points were totaled for each subject and arranged in groups according to body type for purposes of relating self-image acceptance and body type. These total scores were chronologically arranged and divided into three groups of 20 each and entitled "Lo" "Med" and "Hi" for purposes of relating self-image acceptance and environmental perception.

To establish reliability, the odd-even split-half technique was used, and the Spearman-Brown formula was applied to the data. The resulting reliability coefficient was .71.

The College Student Questionnaires consists of two parts. Part 1 is intended for administration to entering students prior to the beginning of the academic year and was not used. Part 2 is intended for administration to students after the students have been enrolled for one or more semesters. The latter, used in this study, has 11 scales: satisfaction with the faculty, satisfaction with the administration, satisfaction with the students, study habits, satisfaction with major, extracurricular involvement, family independence, peer independence, liberalism, social conscience, and cultural sophistication. High scores represent satisfaction and positive attitudes.

Sixty college freshman females enrolled in physical education activity courses were selected as subjects for this research. Four instructors in physical education served as judges for the selection of these 60 females. The selection procedure was designed to identify 20 endomorphs, 20 mesomorphs and 20 ectomorphs. The panel of judges was given written definitions of the body type classification by Sheldon (1940, p. 374). After observing subject prospects clad in gym costumes, the judges marked a rating sheet as to the classification of the subjects. In order for a subject to be ranked in one of three groups, three of the four judges had to agree on the classification of the student. Borderline body subjects were eliminated. Only persons with extreme body types were retained. Each subject was asked individually to participate in a "health and physical fitness" research project with no comment made concerning her body type. For purposes of this study the endomorphs will be referred to as Group A. The mesomorphs will be referred to as Group B and the ectomorphs will be referred to as Group C.

## RESULTS

Following the administration of the self-image scale and the standardized instrument, the data were analyzed in the order of the previously stated hypotheses. These hypotheses were concerned with self-image acceptance, environmental adjustment and perception of the environment.

The first hypothesis is concerned with the relationship of body types of freshman college women to their acceptance of self-image, implying that a significant difference exists between body types and self-image acceptance.

The second hypothesis is concerned with the relationship of the same body type of the subjects to their college environmental adjustment. The third hypothesis relates acceptance of the self-image of the body typed subjects to the college environmental adjustment.

Self-image acceptance. Hypothesis 1, postulating a difference among endomorphs, mesomorphs and ectomorphs in their acceptance of their self-image, was first analyzed by means of a one-way analysis of variance. A significant difference was found at the .01 level among the body types in terms of self-image acceptance (Table 1).

An F ratio of 10.02 is necessary for the .01 level of acceptance for comparisons in Table 2. The data revealed significant differences between body types groups A and B and between A and C. Group B (mesomorphs) and Group C (ectomorphs) were not significantly different. The mean self acceptance for mesomorphs was 30.00 as compared with ectomorphs (28.40) and endomorphs (19.00)

TABLE 1  
Analysis of Variance of Three Groups of  
Body Types and Self-Image Acceptance

Source of Variation	Sum of Squares	df	Mean Square	F
Between Groups	1419	2	709.5	17.5
Within Groups	2309	57	40.5	
Total	3728	59		

TABLE 2  
Scheffe's Treatment of Totals for Self-Image  
Acceptance and Body Type

Comparisons	DO	AI	FI
A vs. B	-220	1210	29.9*
A vs. C	-188	883.6	21.8*
B vs. C	-32	25.6	.6

\*Denotes significant differences at the .01 level  
(Edwards, 1954, p. 439).

TABLE 3  
Means and F-Ratios of Scales of the  
College Student Questionnaires

Scale	Lo	Med	Hi	F
Satisfaction with Faculty	26.5	22.95	25.95	16.6**
Hi vs. Med				20.5**
Hi vs. Lo				.5
Med vs. Lo				31.4**
Satisfaction with Administration	29.95	26.85	28.20	5.9**
Hi vs. Med				2.0
Hi vs. Lo				3.4
Med vs. Lo				10.6**
Satisfaction with Students	26.15	23.15	26.50	4.3*
Hi vs. Med				6.2*
Hi vs. Lo				.1
Med vs. Lo				5.0
Study Habits	27.20	24.40	26.60	1.4
Satisfaction with Major	20.95	18.75	18.60	2.6
Extracurricular Involvement	23.00	20.90	22.90	1.6
Family Independence	20.35	19.45	19.75	.3
Peer Independence	22.05	21.65	21.05	.7
Liberalism	25.60	24.35	24.25	1.3
Social Conscience	31.05	28.80	27.90	6.4**
Hi vs. Med				1.0
Hi vs. Lo				12.1**
Med vs. Lo				6.2*
Cultural Sophistication	24.75	22.35	24.50	.6

\*significant at the .05 level

\*\*significant at the .01 level

Environmental adjustment. The 11 scales of the College Student Questionnaires were individually analyzed by one-way analysis of variance. The scores of each scale were grouped under the body type of endomorphy, mesomorphy and ectomorphy.

The F ratios computed with each of the 11 scales showed that no significant differences existed among body type groups with respect to their adjustment to the college environment.

Environmental perception. The environmental scale scores were examined by levels of self-image acceptance--high, medium and low. Significant differences among self acceptance levels did occur in three scales of the College Student Questionnaires at the .01 level of acceptance, and one scale at the .05 level of acceptance. Seven scales did not show significant differences among self acceptance levels. Table 3 shows overall F-tests and between group comparisons.

1) The scale, "Satisfaction with Faculty," is one of the scales where a significant F ratio occurred. The F ratio exceeds the needed 5.01 at the .01 level of acceptance. Significant differences occur on the .01 level of significance for every comparison except the second--"Hi" vs. "Lo". Level of self-image acceptance appears to bear a U-shaped relationship to the satisfaction a student has for the faculty.

2) The "Satisfaction with Administration" among the self-image acceptance groups yielded a significant F ratio at the .01 level. A significant difference was viewed between the medium group and the low group with the medium group less satisfied with administration.

3) The "Satisfaction with Students" scale scores were found to be significantly different at the .05 level, also with a U-shaped relationship. The multiple comparisons test revealed a significant difference between levels of self-image acceptance ranking "Hi" and "Med" on the .05 level only. No difference of any significance occurred between the levels of "Hi" and "Lo" and "Med" and "Lo".

4) Social Conscience. This scale gave an F ratio which was significant at the .01 level of acceptance. Lower levels of self-image acceptance has stronger attitudes about social injustice and moral concerns. Through the use of the multiple comparisons test, these differences were found to exist between the "Hi" and the "Lo" level at the .01 level and the "Med" and the "Lo" level at the .05 level.

## CONCLUSIONS

As a result of this research study, the following conclusions appear to be warranted:

- 1) Endomorph body type is the least self acceptable body type.
- 2) Body types are not related to the perception of the college environment among freshman women. Reasons other than body types must be sought to explain differences among students in their perception of the college environment.
- 3) Accepting the environment appears to be related curvilinearly to accepting one's self image. Extreme levels of self-image acceptance and rejection significantly relate to satisfaction with individuals in the environment. The "Med" level, or borderline level, reflects dissatisfaction with individuals in the environment.
- 4) The "Lo" level of self-image acceptance appears to be most concerned about morality and social injustice. Society's rejection of "Lo" levels of self-image acceptance could have caused "Lo's" to feel suspicious of, and persecuted by, society.
- 5) Self-image acceptance is more related to environmental perception than is body types.

## REFERENCES

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