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A Study on the Subjectivity of Nursing Students' Perception of Obesity: Q-Methodology

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ABSTRACT

This research aims to examine subjectivity on obesity perceived by nursing students.

Method: The method to deal with data was Q methodology. This research asked 21 students in the Nursing Department of A College to sort 38 statements. Collected data were analyzed using QUANL PC Program.

Aim and Scope: The analysis found out 2 factors of subjectivity perception of obesity among those survey participants: obesity cause finding factor and obesity result perception factor.

Conclusion: The findings of this research will serve as basic data to understand perceptions of obesity among nursing students and to develop an educational program to teach them.

Key Words: Obesity, Nursing student, Subjectivity, Q-Methodology, Nurses.

INTRODUCTION

BACKGROUND

Obesity is the condition where, since ingested energy exceeds used energy, the remaining energy is accumulated as triglyceride in fat tissue in the body, and body weight exceeds normal weight by 20% or over, which can bring about various health problems.¹ It has been reported that obesity is related to chronic diseases and that it is even related to life quality, self-esteem, depression, and stress.²⁻⁵ Furthermore, those with extreme obesity have difficulty in finding jobs, and experience lack of self-confidence, isolation, and difficulty in social life and human relations.^{3,4}

Plus, excessive consciousness of obesity triggers unreasonable diet, which then causes low body weight, another problem. Rapid change of social standards on beauty lead people to favour lookism and tall and slim body, and young people pay excessive attention to their body shapes. Even those with standard weights try to have slim bodies, putting more emphasis on body shape than on health.^{5,6} Obesity stress is stress one feels from one's obesity. Depending on how much acute one feels about one's body weight, obesity stress varies.

Obesity stress can lead to weight regulating behaviour like irregular eating, overeating, and taking improper drugs.⁷⁻⁹ Obesity stress comes from two kinds of sources: internal stimulus from one's awareness of his or her obesity, and external stimuli such as opinions of his or her neighbours and mass media. Obesity is a disease in itself and can cause various kinds of chronic degenerative diseases. So, prevention and management of obesity are very important to maintain health. In contrast, distorted consciousness of one's body shape due to the favor of thin body shape becomes common among youngsters.

Nursing science is the scholastic field based on a sensitive understanding of oneself and other people,¹⁰ and, so, it is important for nursing students who are future nurses to be equipped with the ability to understand emotions of others and, to regulate the situations with their sensitivities.¹¹ Nurses are core human power in public health and medical places, taking the biggest portion in such places and having the longest contacts with patients. And, they should provide patients with safe and high-quality nursing service to patients within given periods in rapidly changing public health and medical scenes.¹² In nursing places, the subjectivity of perception of nurses has great effects on patients.

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Thus, it is important to figure out the perceptions of nurses and nursing students.

However, there are not sufficient researches on obesity using nursing students as respondents. This research will deal with it using Q methodology. Q methodology allows us to understand the characteristics of different subjectivities. Such subjectivities are not determined by the researcher, but by the respondents themselves.¹³ As the perception of obesity is the unique experience of each person, Q methodology is proper to identify types of perception on it among nursing students.

Because humans are unique and human beings, individual and integrated research of subjectivity is inevitable to understand the perception of medical decisions. This research, using Q methodology, seeks to present basic data to enhance the ability to perform a role as a nurse in clinical sites by identifying the subjective perception types of nursing students in obesity.

Therefore, this research will examine the subjectivity structure of obesity among nursing students before they begin to work in nursing places. This research aims to provide basic data to develop nursing educational programs treating obese patients differently depending on the characteristics of subjectivity types.

Aim and Objective

The purposes of this research are to analyze subjectivity types of nursing students, and examine characteristics of different types, and to provide basic data in developing an educational program to teach nursing students before they begin to work in hospitals. Specific research purposes are as follows.

- 1) Categorize subjective perceptions of obesity among nursing students.
- 2) Analyze and describe the characteristics of different types of subjectivity on obesity among nursing students.

MATERIALS AND METHODS

STUDY DESIGN

To achieve research purposes, this research intended to examine the literature on obesity, and media sources, and discover types of subjectivity on obesity among nursing students.

Q-POPULATION AND Q-SAMPLING SELECTION

To extract statements on the effects of obesity, this research did a review of domestic and foreign literature on obesity, open-ended questionnaire, and individual in-depth interview. In the process, this research created the Q population consisting of over 200 statements. Besides, this research created

another Q population composed of over 100 statements from domestic and foreign literature. From this Q population, it selected Q sample consisting of 38 statements.

P-SAMPLE SELECTION METHOD

Q method is a qualitative survey method focusing on subjectivity within the individual, and emphasizing the consistency of individual, rather than differences between people. It is based on small sample doctrine which assumes that if p-sample becomes large, many people can crowd around a specific component, and its characteristics are not revealed.¹⁴ P-sample in this study is 21 nursing school students who fully understood the purposes of the survey and voluntarily participated in the survey.

Q-CLASSIFICATION AND DATA ANALYSIS METHODS

Q sorting is the process where each of the participants belonging to p-sample makes the voluntary definition of induced abortion by sorting statements in Q-sample with forced normal distribution method.¹⁴ The data were collected from 21 students in the Nursing Department of OO College with cards containing statements. The time spent by one participant in Q sorting was 30-45 minutes on average. The participant responded to each statement of the Q sample by pointing his or her preference on the 12 point scale ranging from strong negative to strong positive. Afterwards, on statements participants chose extremely positive or negative points, they were interviewed again. The data were under principle component factor analysis (varimax). Categorization into factors was done by considering the output from inputting factors with eigenvalue 1.0 or over and total explained variate. Collected data were coded with converted points from 1 to 12 in the forced distributed cards. By coding converted points in the order of Q sample number, and put under principle component factor analysis using the QUANL PC Program.^{15,16,17}

ETHICAL CONSIDERATION FOR RESEARCH SUBJECTS

Before the inception of the research, The participants were instructed that they have an option of discontinuation from the research of their interest and at any stage. Information was recorded for the rights and privacy of attendees which were programmed and stored.

The method of research and the recording of the interview contents were explained first before the meeting to ensure the autonomy of participants, the purpose of the research.

Then, the ethical aspects of the box were considered by obtaining verbal consent, receiving consent, and making compensation commensurate with participation in the research. As a measure not to violate the privacy of participants ac-

cording to the principle of bad behaviour, It was informed that the interview would be used only for research purposes, and personal situations were kept secret while ensuring anonymity. Also, It was informed that the research results would be published and the participants could stop participating in the research anytime they want. To avoid revealing the identity of the research participant, the computer file was assigned a unique password for the researcher and all information that could identify the participant was deleted.

RESULTS

STRUCTURE OF Q TYPE

In order to divide the nursing students' perceptions of obesity by type, the answers to Q-samples were first collected and divided into two types. The distribution of 21 participants was 14 for the first type and 7 for the second type. As a result of dividing the group by similar responses to obesity, it was divided into two types.

Participants in this research conveniently were extracted from 21 nursing college students who were found to have experienced more than one clinical practice in the nursing department at H University. The general characteristics of the research subjects are as shown in [Table 1]. The total number of people surveyed total 21 with the average age being 22.19 ± 1.83 , and 4.8% for boys and 95.2 % for girls. Among them, 85.7 % did not have a religion and 14.3 % had a religion, and the number of weeks was 21.14 ± 7.25 weeks.

Table 1: General Characteristics

Type	No	Age	Gender	Grade	Religion	Number of Practices (by the week)	FWS*
Type 1	1	21	F	4	No	26	.5979
	2	23	F	4	No	26	.5839
	3	22	F	4	No	26	.3533
	4	23	F	4	Catholic	24	.6084
	5	21	F	4	Christian	26	.8176
	7	22	F	4	No	26	.3787
	10	21	F	4	No	24	.7559
	11	22	F	4	No	24	.8512
	12	21	F	4	No	24	.3512
	13	22	F	4	No	24	.1214
	16	21	F	4	No	26	.2517
	19	22	F	3	No	6	.6046
	20	25	M	3	No	6	.3153
	21	22	F	4	No	20	.4844

Table 1: (Continued)

Type	No	Age	Gender	Grade	Religion	Number of Practices (by the week)	FWS*
Type 2	6	29	F	4	Catholic	26	.7935
	8	21	F	4	No	24	.3427
	9	21	F	4	No	24	.8747
	14	21	F	3	No	8	.2916
	15	22	F	4	No	20	1.2882
	17	22	F	4	No	26	.2374
	18	22	F	3	No	8	.5447

*FWS: factor weight score

SUBJECTIVITY AND TYPE-SPECIFIC CHARACTERISTICS OF OBESITY

To analyze subjectivities on obesity among nursing students, this research described characteristics of each factor focusing on statements belonging to the factor. Q responses of P sample (participants) were divided into upper questions and lower questions, and 2 factors were extracted. In the Q method, someone who has high factor weight is considered as the typical or ideal person.

To analyze the characteristics of each factor, this research gave meanings to statements whose z-scores are ± 1.00 or over and explained them among all the classified statements. The number of participants whose factor weights are 1.0 or over and who belonged to factor 1 was 14, and 7 in factor 2.

The analysis of subjectivities on obesity of participants using QUANL pc program revealed 2 factors, which explained 46.25% of the total variance. factor 1 explained 38.26% of total variance; factor 2 did 7.99%. As the explanatory power of factor 1 is 38.26%, the factor can be said to be able to explain subjectivity on obesity the best [Table 2]. Participants belonging to a specific factor responded similarly to the statement on obesity.

Table 2: Eigen Value, Variance, and Cumulative Percentage

Hospitals	Type I	Type II
Eigen Value	8.0341	1.6784
Variance(%)	.3826	.0799
Cumulative(%)	.3826	.4625

The correlation coefficients between the three factors are shown in [Table 3]. This shows the degree of similarity between the Type I and Type II. The correlation coefficient between type 1 and type 2 is 0.8101. However, the correlation

between factors in the Q method is different from the factor analysis method in the quantitative research, and since it focuses on finding the factors without presupposing the complete independence between the factors, there is no controversy over the method of factor extraction based on the high and low correlation.

Table 3: Correlations Between Factor Scores

Hospitals	Type I	Type II
Type I	1.000	.8010
Type II	-	1.000

ANALYSIS OF SUBJECTIVITY PER FACTOR

Subjectivity factors on obesity revealed by using the above method are as follows.

Obesity cause finding factor: 7 participants belonged to factor 1. The statements to which those belonging to factor 1 expressed strong positive attitude were 'Obesity can cause diseases like high blood pressure, and diabetes, etc.' ($Z=2.14$); 'Overeating by stress can cause obesity' ($Z=2.01$); 'Obesity occurs by wrong eating habits and intake of too much nutrition' ($Z=1.27$) [Table 4]. The participant whose factor weight was the highest (0.8512) in factor 1 was participant No. 1, and the statements to which the participant agreed the most were No. 10, No. 33, and No. 6.

The statements to which participants of factor 1 expressed the most negative responses were 'I think that my friends despise me because I am fat' ($Z=-1.70$); 'Obesity makes me difficult to have a smooth relationship with colleagues, seniors and juniors' ($Z=-1.61$). 'Obesity makes it difficult to form self-identity' ($Z=-1.48$) [Table 4]. The participant in factor 1 whose factor weight was the lowest (0.1214) was participant No. 13. The statements to which the participant agreed the most were No. 5, No. 1 and No. 7.

The characteristics of factor 1 are concern about the causes of obesity. Those people who belonged to factor 1 focused on causes of obesity such as stress, wrong eating habits, and frequency of eating out, and viewed that improvement of such things could reduce obesity. They viewed that obesity did not

bring about social discrimination or other negative effects. Plus, they did not think that low self-esteem or self-management could generate obesity. Consequently, this research named factor 1 as 'obesity cause-finding factor'.

Obesity result perception factor: 7 participants belonged to factor 2. The statements to which those belonging to factor 2 expressed strong positive attitude were 'Obesity can cause diseases like high blood pressure, and diabetes, etc.' ($Z=2.46$); 'Obesity occurs by wrong eating habits and intake of too much nutrition' ($Z=1.78$); 'Obesity makes it impossible to wear clothes I want to' ($Z=1.52$) [Table 4]. The participant whose factor weight was the highest (1.2882) in factor 2 was participant No. 15, and the statements to which the participant agreed the most were No. 10, No. 6, and No. 9.

The statements to which participants of factor 2 expressed the most negative responses were 'Obese person is considered as having a weak will and being low in scholastic scores' ($Z=-1.94$); 'Obesity makes me difficult to have a smooth relationship with colleagues, seniors and juniors' ($Z=-1.91$) [Table 4]. The participant in factor 2 whose factor weight was the lowest (0.2374) was participant No. 17. The statements to which the participant agreed the most were No. 21, No. 1, and No. 27.

The characteristics of factor 2 are concern about the results of obesity. Those people belonged to factor 2 assumed that obesity was the results of bad eating habits and life attitudes, and would cause chronic diseases like high blood pressure and diabetes, etc. Plus, they assumed that obesity would cause the person to have inferiority complex on one's appearance, prevent him or her from wearing clothes as he or she wanted. They thought that the perception of obesity would differ depending on social cultures. However, they denied that obese people were weak in their wills, low in school grades, or would have difficulty in socializing with people around them. They also did not agree with the assumption that fat people tended to depend on other people around them or they could not receive love from their parents. They focused on the results of obesity, and they thought that if fat people recognized such results, and changed their habits, obesity rates would decline. Accordingly, this research named factor 2 as 'obesity result perception factor'.

Table 4: Q-statements on obesity and Z-scores per factor (N=21)

Factor	Type	No	Representative items of type		
			Representative items	Mean(SD)	Z-score
Factor1 (N=14)	Type1	10	Obesity can cause diseases like high blood pressure, and diabetes, etc.	8.79(0.975)	2.14
		33	Overeating by stress can cause obesity.	8.43(1.342)	2.01
		6	Obesity occurs by wrong eating habits and intake of too much nutrition,	7.29(2.234)	1.27

Table 4: (Continued)

Factor	Type	No	Representative items of type		
			Representative items	Mean(SD)	Z-score
Factor2 (N=7)	Type2	35	The increasing frequency of eating out and dining together raises the probability to become obese.	7.21(1.718)	1.18
		14	Obesity stress can lead to overeating.	7.07(1.542)	1.10
		5	I think that my friends despise me because I am fat.	3.29(1.437)	-1.70
		1	Obesity makes me difficult to have a smooth relationship with colleagues, seniors and juniors.	3.50(1.557)	-1.61
		7	Obesity makes it difficult to form self-identity.	3.71(1.437)	-1.48
	Type3	15	Obesity negatively affects sociality.	3.43(1.604)	-1.42
		3	An obese person is regarded as an unattractive and ugly glutton.	3.86(2.316)	-1.27
		10	Obesity causes various diseases like high blood pressure and diabetes, etc.	9.43(0.787)	2.46
		6	Obesity occurs by wrong eating habits and intake of too much nutrition,	8.29(0.488)	1.78
		9	Obesity makes it impossible to wear clothes I want to.	8.00(2.236)	1.52
	Type4	4	Obesity makes one have an inferiority complex about one's appearance.	7.43(0.976)	1.29
		24	Views on obesity care different in different cultures.	7.29(0.756)	1.13
		21	An obese person is considered as having a weak will and being low in scholastic scores.	2.43(0.787)	-1.94
		1	Obesity makes me difficult to have a smooth relationship with colleagues, seniors and juniors.	2.57(1.134)	-1.91
		27	I feel that my parents do not love me because I am fat.	2.71(1.113)	-1.63
		3	An obese person is regarded as an unattractive and ugly glutton.	3.29(2.138)	-1.48
		18	Obesity makes me depend more on my friends.	3.16(1.773)	-1.45

DISCUSSION

The analysis found that there are two factors in subjectivity perceived by nursing students: factor 1 is 'obesity cause finding factor'; factor 2 is 'obesity result perception factor'. The characteristics of each factor are as follows.

Those belonging to factor 1 focus on the causes of obesity. They assume that if one knows what causes obesity, one can prevent it. As obesity occurs by long-time living habits and eating life, it is not easy to escape from it. Thus, it is important to have the education to teach people how to prevent obesity.

Major obesity treatment and prevention methods are diet, exercise, behaviour change, medicine, and surgery, etc. Behaviour change which has frequently been adopted up to now is based on the assumption that wrong eating habits and lack of activity cause obesity. It is the treatment method to change one's problem by analyzing one's behaviour through self-observation method. However, as behaviour change is not enough to lose weight, it is more effective when diet regulation is accompanied.¹⁸ Therefore, to prevent or control obesity, in particular, of middle-aged women, it is necessary to improve living habits and eating habits which are cheap and few side effects and increase energy spending with aerobic

exercises.¹⁹ However, while most people know that exercise is important, it is difficult to keep exercising schedules for a long time. 50% of people who started exercises stop in 3-6 months.²⁰ Thus, it is necessary to develop an obesity management program, considering the merits and demerits of various exercises, which can guide obese people to voluntarily participate in.

Recently, with the improvement of income level, and the development of food industry caused by active trade with foreign countries, Korean eating life has become westernized. Along with it, increasingly more people consume processed food and instant food, leading to a rapid increase in the ration of the obese population. In particular, there is a social trend among young generations favouring thin body shape, and some of the young women who have normal body weight in body mass index (BMI) perceive themselves as being overweight compared with women appearing in mass media, and lose self-confidence or have psychological anxiety.²¹

The mass media, which strongly influences the people, should represent the correct image of the bodily beauty of human beings with social responsibilities. Newspapers, magazines, internet portals and TVs should provide correct information on the diet with social responsibilities. Diet information should be continuously monitored and regulatory authority should oversee and restrain excessively commercial and unhealthy advertisements and information according to relevant laws and regulations with enactment whenever necessary. Also, our schools should educate students so that they can discern helpful information by themselves. Lastly, a specific strategy for improvement of health should be established by experts to implement a diet that can improve our health.

Nursing students experience a lot of stress from heavier study burden than other of other majors, insufficient knowledge and experience they recognize in clinical training, insufficient autonomy, difficulty in adjusting themselves in the requirements of observing ethical norms as professional nurses.²² Besides, physically and socially, they, placed in the transition to adulthood, should play the role of health model to their nursing objects. Thus, they need to keep an ideal eating life.

Factor 2 is 'obesity result in perception factor'. Those who belong to factor 1 are concerned about the results of obesity. They assume that as obesity results in health problems that can cause chronic diseases and appearance problems, it should be overcome. However, the view that such results of obesity are viewed differently in different cultures, and that obese men do not have socio-psychological problems.

While obesity is a problem in itself, it causes serious problems physically. So, we need to pay attention to it. Physical problems that can be caused by obesity are high blood pressure, diabetes, hyperlipidemia, metabolic syndrome,

orthopaedic problems, and eating disorders, etc.^{23,24} While there have been not many researches linking obesity to psychological health problems, previous researches have found that it can harm self-esteem, and is related to being stigmatized by those who hear them and melancholy, etc.^{25,26} Thus, it is undeniable that obesity is closely related with physical and mental health. Martin-Lopez et al. (2011) go further and pointed out that obesity is related to life quality and psychological well-being. However, there have not been sufficient empirical studies linking obesity with psychological well-being, more studies are required.²⁷

Obesity generates psychological problems like depression, stress, personality disorder, and dissatisfaction with appearance, which causes avoidance of human relations and lowering of self-esteem, working as a serious threat to life quality.^{28,29} Because of that, obese people try various means to lose weight such as diet, exercise therapy, behaviour change therapy, drug use, and oriental medicine therapy, etc. However, the effects of most of the treatments are not very effective, or just temporary. And, as they repeatedly fail in regulating body weights, their self-esteem declines, and they become passive. In extreme cases, they fall into anorexia or binge-eating disorder. So, it is necessary to develop means of nursing intervention to manage difficulties fat people experience in the process of regulating their weights, and, to do it, it is necessary to examine weight regulating experiences of obese people in advance.

Especially, what has recently become problematic, obesity-related life quality, is the consideration of personal life quality influenced by obesity. It has become an increasingly important concept in obesity-related studies.³⁰ Many female college students tend to regard that they are overweight. In reality, the quality of life of overweight students is lower than that of normal weight students. It is also true for those who are not satisfied with the results of weight regulation.³¹ The higher real obesity level or obesity level as one feels is, the higher obesity stress is.³² Thus, it is necessary to search for various weight management programs to raise obesity-related life quality.

This study examined the subjective perception of obesity of nursing students and classified it into 2 factors. Such research on subjectivity can be used as basic data for developing an educational program on obese people. Besides, it is expected that this study offering subjectivity structure of perception on obesity among nursing students and characteristics of each factor of the structure will be used for basic sources for developing an educational program on it.³³⁻³⁵

However, it has limits in generalizing the findings in the sense that the analysis is based on students in a specific college, and that participants were not selected considering factors affecting perceptions on obesity. It is necessary to explore the Q sample based on various backgrounds.³⁶⁻³⁸

CONCLUSION

This study was performed to examine subjective perceptions on obesity of nursing students and provide basic data needed to explore ways to activate researches on obesity using Q methodology. The analysis extracted 2 factors: obesity cause finding factor and obesity result perception factor.

The above results are thought to be helpful to understand the structure of awareness of how nursing college students perceive obesity. However, this research analyzed 21 nursing college students and it is difficult to generalize the perception of obesity. Therefore, we hope that repetitive research on nursing college students and nurses will be carried out based on the results of this research, and based on a correct perception of obesity, we hope that the development of educational programs will help nursing students adapt well as nurses.^{39, 40}

This study, by categorizing subjectivities on obesity of nursing students, provides basic sources needed in obesity reduction support system. It is expected that this analysis can help policymakers to develop educational programs considering characteristics of each factor of subjectivities. Plus, this study suggests further qualitative researches on obesity to identify various factors which affect the nursing of obese patients by developing Q samples considering various factors.³⁹⁻⁴¹

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