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The Effects of Cellulite on the Psychology of Cypriot Women

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Abstract This research aims to investigate the effects of having cellulite on the psychology of Cypriot women, emphasizing on their self-image and self-esteem. In order to collect data, a quantitative survey was carried out with a questionnaire, that was answered by 107 women in Cyprus, most of them under the age 35. In the present research, participants believed that they had little to moderate cellulite and believed that others had the same image of them. They still found their cellulite mildly to moderately annoying, with abdominal cellulite being the most trouble area. Another important finding of the present research was that cellulite negatively affects women's self-esteem and self-image. Noteworthy, the more embarrassing the participants consider their cellulite, the more difficult it is for them to manage their self-image.

Keywords cellulite, psychology, self-esteem, self-image

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1. Introduction

Unlike the Renaissance era, where female beauty was identified with a body that had visible fat in various areas especially in the abdomen, thighs and buttocks, in the modern age of globalization, external appearance and a well-maintained body seem to be considered important characteristics that a woman must have to be considered attractive (Sarwer & Polonsky, 2016).The intense pressures in recent years on women to meet the modern criteria of beauty, which today equates to a slim and toned body that is fit and free of cellulite, seem to have significantly affected some women in terms of their mental health. So many women today feel anxious and stressed to maintain a body that is close to what is considered to be beauty standards. As a result, they are negatively affected when they notice cellulite appearing on their body, which according to the aforementioned requirements demonstrates a body that is repulsive and ugly (Tylka & Wood-Barcalow, 2015). In this situation, some women experience reduced self-image, self-confidence and self-esteem, as a consequence of their impression that cellulite is a phenomenon that they must fight in every way (Grogan, 2021). Cellulite is a term appeared in the French medical literature around 1816, while the name cellulite implied that it is a disease, today this theory has been disproved (Goldman & Hexsel, 2010). Despite the fact that it is not a disease, cellulite has several negative effects on the psychology of women, as treatments do not always have the results women would like (Murad, 2006). The purpose of this research is to investigate the effects of the existence of cellulite on the psychology of Cypriot women, specifically on their self-image and self-esteem.

2. Literature review

Cellulite is a skin lesion that is often described as having an orange peel appearance due to the uneven surface that the skin acquires when cellulite is present. Cellulite usually appears on the thighs, buttocks and knees, while sometimes it can appear on the calves, abdomen and upper arms. It can also appear in women who may be otherwise healthy and thin (Savvidou, 2014). Cellulite is caused by small protrusions of fat in the dermis called 'papillae adipose'. This structural change of subcutaneous fat that protrudes or herniates into the dermis gives the skin the "abnormal" appearance, which is referred to as cellulite (Plessas & Kintziou, 2007). This theory was confirmed using MRI, ultrasound and skin biopsy (Goldman & Hexsel, 2010). A second, similar theory adds that cellulite is a result of laxity or weakening in the bands of connective tissue in the dermis that allows the protrusions of fat to appear (Emanuele, 2013).

According to Hu et al. (2018), until seven or eight months of embryo development there is no recognizable difference in subcutaneous tissue between the two sexes. However, at the end of the 3rd semester of embryo development, differences in gender structure become apparent and manifest at birth. Variations in hormones between the sexes mainly explain this variation in skin structure, as well as the fact that cellulite is typically a female problem. Therefore, it hasbeen found that men born deficient in male hormones often have an appearance of subcutaneous fat cells similar to women (Rudolph et al., 2019).

Furthermore, older women are more likely to develop cellulite (Arora et al., 2022). Approximately 85% of postmenopausal women have some form of cellulite on their bodies, while in the rare case that it occurs in men, these individuals usually have hormonal dysfunction (Goldman & Hexsel, 2010).

Goldman and Hexsel (2010), consider hormones to play an important predisposing role in the pathophysiology of cellulite after puberty. The authors note that estrogen, the female sex steroid hormones secreted by the ovaries, may exacerbate the physiological changes that cause cellulite. In addition, estrogen helps fat to grow and promotes fluid retention, causing cellulite. Therefore, women who have hormonal disorders, are pregnant, are on the birth control pill, or are undergoing fertility treatments have an increased chance of developing cellulite. Also, cellulite is enhanced by thyroid hormones such as hyaluronidase (Bass & Kaminer, 2020).

Moreover, genetics have an important role is cellulite, women with mothers who had cellulite have an increased chance of developing cellulite as well (Bass & Kaminer, 2020).

Lifestyle is important, as sedentary life and lack of exercise favor the appearance of cellulite (Sadick, 2019). Poor nutrition with consumption of unhealthy foods such as sugar and fried foods favors the appearance of obesity and cellulite (Murad, 2006). Also, smoking is associated with the development of free radicals and poor blood circulation, which favors the appearance of cellulite. Also, while drinking a small amount of alcohol can improve blood circulation, alcohol and caffeine abuse helps to accumulate fat and cause fluid retention (Bass & Kaminer, 2020). Poor blood circulation can worsen cellulite, due to swelling of fat cells, changes are caused in the structure of the skin and

the vessels are compressed, which leads to dysfunction of the circulatory and lymphatic system. As a result, the fat is not rebuilt, but is stored in the fat cells causing them to swell and cellulite appears (Sadick, 2019).

Moreover, positive self-image and self-esteem are important elements for maintaining a person's mental health, while at the same time affecting their quality of life and their desire for social relationships. In addition, it has been found that people who have low self-image and low self-esteem avoid social contacts, feel shame and sadness if they have to show their body, while they often close in on themselves and experience depression and other mental disorders. Conversely, people who feel good about themselves are characterized by good mental health, healthy social relationships and a higher quality of life (Trindade, Ferreira & Pinto-Gouveia, 2018).

Furthermore, in a study by Tiggemann et al (2020), which was conducted with 384 women aged 18–30, it was found that women gave positive comments to images of thin and fit bodies on Instagram, while in contrast they commented negatively on photographs of women who did not meet the criteria to be considered conforming to usual beauty standards. Also, the participants in this research associated women who were not thin and had cellulite with reduced self-image and self-esteem. The researchers conclude that the mass media plays an important role in perpetuating beauty standards today.

Another study by Fardouly and Rapee (2019) examined whether women upload photos unedited and without photoshop on social media. As a result, 175 female students participated in the research and were presented with photographs of women in their natural appearance and in a made-up appearance. The survey participants said they would correct the appearance of women who had photographs that were not made up, focusing on the face and body, so that there were no wrinkles and cellulite. The participants attributed this desire to their attempt to create a more positive self-image for women.

The close relationship between negative body self-image and depression was confirmed in the research of Cordero et al. (2015), in which 120 women participated. In this study, it was found that women's disturbed self-image due to physical disfigurement was associated with increased odds of depression.

Cellulite is undoubtedly an important issue that concern women and needs to be investigated more, in order to understand the effects of cellulite on the psychology of women.

3. Methodology

The purpose of this research was to investigate the effects of the existence of cellulite on the psychology of Cypriot women, specifically on their self-image and self-esteem. The research approach followed in the present study was quantitative and purposive sampling was used to select the sample. In order to collect the necessary data in order to fulfil the objectives of the study and to answer the research questions, a questionnaire was used as a method (Robson & McCartan, 2016). The first part of the questionnaire asked for information on the demographic characteristics of the participants, such as age, marital status, educational level and employment status. In the second part, questions were asked regarding cellulite with an emphasis on the image women have of their bodies and the connection with the image others have of them.

In the third part, the self-esteem scale Rosenberg Self-Esteem Scale (RSE) of Rosenberg (1965) was used, which the self-esteem felt by individuals is rated, using 10 statements with a score from 1-4, where 1=strongly agree (SA), 2=agree (A), 3=disagree (D), 4=strongly disagree (SD). In the fourth part there was also a ready-made scale, which was the Body Image - Acceptance and Action Questionnaire (BI-AAQ) scale of Sandoz and Wilson (2006), which measures the self-image of the individual, with 20 statements, a score of 1-4, where 1=strongly agree (SA), 2=agree (A), 3=disagree (D), 4=strongly disagree (SD).

The questionnaire was given to 107 women in Cyprus and data collected from the questionnaires were statistically processed using the SPSS program.

4. Results

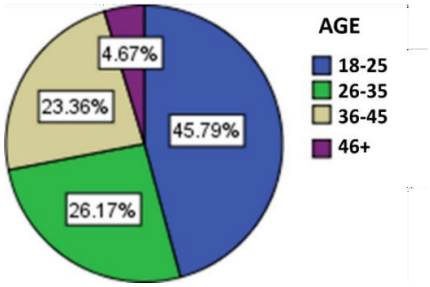
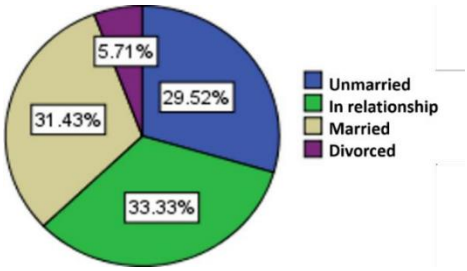


FIGURE I: Age

107 women participated in this research, of which almost half were under the age of 25 (45.79%). The rest were between ages 26-35 (26.17%), following by ages 36-45 (23.36%) and over 46 years old was the smallest percentage (4.67%).



FIGYRE II: Marital status

About a third of the participants were in a relationship (33.33%), while another third was married (31.43%) and also a third were single (29.52%). Few participants were divorced (5.71%).

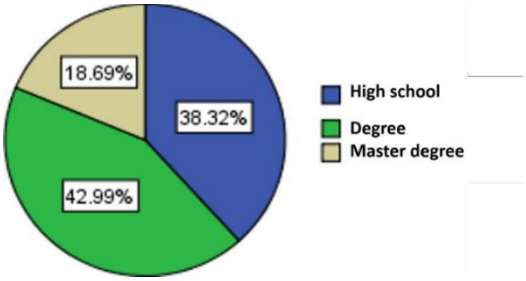


FIGURE III: Education

About two-fifths of the participants had a bachelor's degree (42.99%), while another two-fifths were high school graduates (38.32%). Much fewer had a master's degree (18.69%).

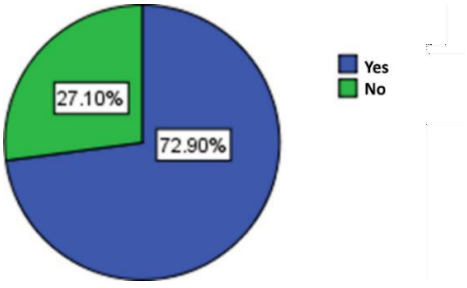


FIGURE IV: Working state

Most of the participants were working (72.90%) while the rest were not working (27.10%).

TABLE I: Opinions on cellulite

AREA	Degree (%)					M.O.
	Not any	Little	Moderate	Much	Very much	
	Cellulite according to women's opinion					
Buttocks	15.9	31.8	24.3	26.2	1.9	1.66
Thighs	19.6	28.4	23.5	25.5	2.9	1.64
Abdomen	52.0	31.6	8.2	6.1	2.0	.74
Arms	54.1	29.6	9.2	5.1	2.0	.71
	Cellulite according to others opinion					
Buttocks	27.6	27.6	21.0	21.0	2.9	1.44
Thighs	28.4	26.5	20.6	21.6	2.9	.77
Abdomen	56.7	19.6	15.5	6.2	2.1	.68
Arms	58.8	22.7	12.4	4.1	2.1	2.19
	Cellulite Irritating Degree					
Buttocks	12.5	22.1	20.2	24.0	21.2	1.35
Thighs	13.3	19.4	23.5	20.4	23.5	1.33
Abdomen	35.1	28.9	14.4	9.3	12.4	1.66
Arms	37.5	24.0	17.7	9.4	11.5	1.64

The research question explored how cellulite affects women's self-image and self-esteem. First, women's views on their cellulite were examined. It was found that on average, women had moderate cellulite on the buttocks, thighs and little cellulite on the abdomen and arms. Also, on average women think that others believe they have moderate cellulite on their arms and a little on their buttocks, thighs and stomach. Also, on average they find cellulite on the abdomen and arms to be moderately annoying and cellulite on the buttocks and thighs to be a little annoying.

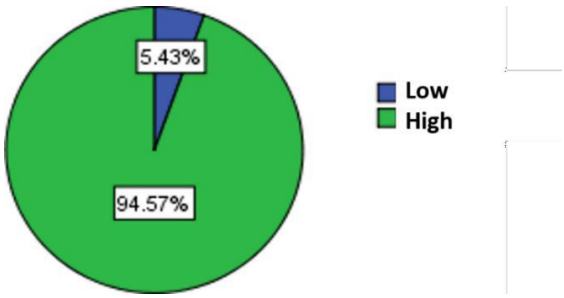


FIGURE V: Self-esteem levels

Then the degree of self-esteem felt by the participants was examined. First, statements 1, 3, 4, 7 and 10 were reversed and then added to obtain the participants' total score. A score of up to20 meant low self-esteem and above 20 high. It was found that most of the participants had high self-esteem (94.57%), while a few had low (5.43%) (Figure V). Based on the Independent samples t-test analysis, a statistically significant difference was found depending on the work status, with working women having lower self-esteem than those who were not working ($t=-2.002$, $p<.05$). Based on the One-way ANOVA analysis, statistically significant differences were found regarding marital status with married women having lower self-esteem than those in a relationship ($F=3.250$, $p<0.05$).

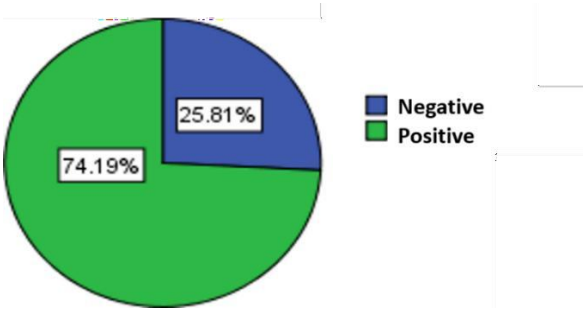


FIGURE VI: Type of self-image

Next, the self-image of the participants was examined. To calculate their total score, statements 2, 3, 4, 8, 10, 13, 16, 17, 18, 19 and 20 were added. A score up to 22 meant negative self-image and a score above 23 meant positive. It was found that most of the participants had a positive self-image (74.19%) and the rest a negative one (25.81%) (Figure VI). Based on the Pearson correlation analysis, a positive correlation was found between the age of the participants and their self-image ($r=.284$, $p<.01$), which means that the older the participants are, the more positive self-image they have. Based on the Independent samples t-test analysis, a statistically significant difference was found depending on the work status, with working women having a lower self-image than those who were not working ($t=-2.335$, $p<.05$). Based on the One-way ANOVA analysis, statistically significant differences were found regarding marital status with married women having a more negative self-image than those who were single or in a relationship ($F=7.193$, $p<0.01$).

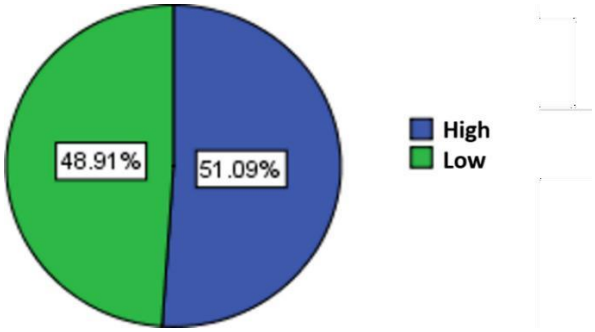


FIGURE VII: Ability to manage self-image

Participants' ability to manage their negative self-image was then assessed. Statements 1, 5, 6, 7, 9, 11, 12, 14 and 15 were added to calculate their total score. A score of up to 18 meant high ability and a score above 19 meant low ability. It was found that a little more than half of the participants had a high ability to manage their self-image (51.09%), while almost half had a low one (48.91%) (Figure VII). No statistically significant differences or correlations were found regarding the demographic characteristics of the participants in the present study.

TABLE II: Correlation of areas with cellulite and self-esteem

Areasyouhavecellulite	CORRELATIONWITHSELF-ESTEEM(r)
Buttocks	-.364**
Thighs	-.427**
Abdomen	-.324**
Arms	-.450**

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Then it was examined with the Pearson correlation analysis, whether there was a correlation between the degree of self-esteem, self-image and self-image management felt by the participants and the points they considered to have

cellulite. A statistically significant negative correlation of self-esteem with all areas that the participants consider to have cellulite was found ($p<0.01$) (Table II). This means that the more cellulite women perceive they have on their buttocks, thighs, abdomen and arms, the less self-esteem they have.

TABLE III: Correlation of areas others consider with cellulite and self-esteem

Area's others think have cellulite	CORRELATIONWITHSELF-IMAGE(r)
Buttocks	-.236**
Thighs	-.364**
Abdomen	-.269**
Arms	-.312**

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

The same analysis then examined whether there was a correlation between the degree of self- esteem, self-image and self-image management that the participants felt and the areas they thought others thought they had cellulite. A statistically significant negative correlation of self- image was found with all areas that the participants think others think they have cellulite ($p<0.01$) (Table III). This means that the more cellulite women think others think they have on their buttocks, thighs, abdomen and arms, the lower their self-esteem.

TABLE IV: Relationship between cellulite bother and self-image management

Areas were cellulite consider annoying	SELF-IMAGEMANAGEMENT
Buttocks	.214*
Thighs	.236*
Abdomen	.295**

It was then examined with the same analysis whether there was a correlation between the degree of self-esteem, self-image and self-image management felt by the participants and the degree to which they considered cellulite annoying. A statistically significant positive correlation of self-image management was found with almost all the areas that participants consider cellulite annoying, namely the buttocks ($p<0.05$), thighs ($p<0.05$) and abdomen ($p<0.01$) (Table 4). This means that the less able the participants are to manage their self-image, the more disturbing they find cellulite on the buttocks, thighs and abdomen.

5. Discussion

In general, it was found that most of the participants had high self-esteem and a positive self- image. However, only young women had sufficient ability to manage their self-image. It was also found that the more cellulite women perceived they had on their buttocks, thighs, abdomen and arms, the lower their self-esteem. Working women and married women have lower self- esteem. It was also found that the more cellulite women think others think they have on their buttocks, thighs, abdomen and arms, the lower their self-esteem. Working women and married women have a lower self-esteem. It was also found that the less able the participants are to manage their self-image, the more disturbing they find cellulite on the buttocks, thighs and abdomen.

As found in the present study, participants believed that they had little to moderate cellulite and believed that others had the same image of them. This shows that the image they have of themselves is also the one they think others have for them. This belief is of course likely due to actual comments received from others on the subject of cellulite. They still found their cellulite mildly to moderately annoying, with abdominal cellulite being the most annoying. This finding agrees with the findings of other researchers (Murad, 2006), that demonstrate the negative feelings that accompany some women when they have an appearance problem that is considered by their culture as negative. Thus, while in earlier times cellulite was considered a sign of health and beauty, in modern times it is considered unsightly, with the result that some women are negatively affected when they have cellulite (Sarwer & Polonsky, 2016).

This was also confirmed in the present study, where it was found that women's belief that they have cellulite negatively affects their self-esteem. At the same time, women's belief about the cellulite that they think others see in them negatively affects their self-image. These findings are explained by the great influence of mass media on the views and standards of beauty, since the ideal body today is considered to be extremely thin, fit and without cellulite (Tylka & Wood- Barcalow, 2015). Although these stereotypes do not apply to all cultures, in the European area women seem to be emotionally pressured to keep up with the above standard, while if they deviate significantly from what is considered as an ideal body, they are often rejected by the opposite sex, or become the object of criticism and mockery (Grogan, 2021). For this reason, the finding of the present study is not surprising that the more annoying the participants consider their cellulite, the more difficult it is for them to manage their self-image.

6. Conclusion

In conclusion, cellulite seems to be a significant problem that concerns quite a few women, while it seems to be related to reduced self-esteem and self-image, combined with the view that women think others have about their appearance. At the same time, it is important for women to develop self-image management skills, so that they can feel comfortable with their bodies.

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Ethical Approval: Not applicable.

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