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Body Image and Its Relationship with Self-Esteem among Adolescents with Physical Disabilities - Case Studies in Tlemcen-

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***Abstract*—**This study aims to measure the relationship between body image disturbance and self-esteem among adolescents with physical disabilities receiving treatment at the university hospital and certain medical centres in Tlemcen. The researchers adopted a descriptive-analytical approach to test the study hypothesis. The study involved identifying the research population and the possibility of interviewing the study participants, as well as verifying the validity of the two instruments, namely the body image and self-esteem scales. The correlation between body image and self-esteem was then measured among 30 male and female adolescents with physical disabilities (mild or moderate), selected purposively; observation and guided interviews were also employed. The resulting data were analysed using Pearson's correlation coefficient, Cronbach's alpha, the arithmetic mean and the standard deviation. The study found a statistically significant correlation (0.68) between body image and self-esteem among adolescents with physical disabilities. It also found that these adolescents had low levels of self-esteem and body image perception.

***Keywords*—**body image; self-esteem; physical disability; adolescence.

Introduction

Human beings pass through several stages over the course of their lives, differing in many characteristics, particularly the physical changes associated with adolescence. During this stage, individuals undergo rapid physical, intellectual, psychological and social changes. Psychologists therefore describe this stage as a storm for which those responsible for children must be prepared (Baghloul and Zerrouki, 2021, p. 219).

People with physical disabilities constitute an important group requiring care and attention from society and all its institutions, bodies and members, including families, relatives, friends, schools, the media, cultural institutions, healthcare providers and other social institutions. These institutions play a major role in improving the lives of people with physical disabilities through the psychological, social, familial or educational support they provide (Ziyada, 2016, p. 462). This study seeks to investigate body image and its relationship with self-esteem among adolescents with physical disabilities, addressing both theoretical and applied aspects. Following the introduction and the research problem, the theoretical component presents the theoretical literature, the elements of body image, self-esteem and relevant previous studies. The applied component presents the field study, the methodological procedures adopted, the findings and their discussion. A conclusion summarises the results.

Research Problem

Physical appearance is one of the principal concerns of many individuals. This is evident in the external perspective, which concerns the social effects of appearance, and the internal perspective, which refers to personal experiences relating to appearance or to how individuals actually look. In its broad sense, this internal perspective is what psychologists call body image (El-Desouki, 2009, p. 15).

Body image reflects functional, neurological and physical-form aspects. It expresses individuals' ideas about themselves and their relationship with their environment, while also regulating their behaviour. As an issue that

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concerns many people, it influences how individuals evaluate themselves and their psychological and social harmony with others (Al-Zayariqa, 2019, p. 1).

Body image may become disturbed when bodily integrity is affected by a congenital condition, an accident or a chronic disease followed by amputation of the affected limb. Such changes alter the bodily image because any change in biological integrity is reflected in that image. Any physical deformity involves a loss of bodily substance and may cause psychological trauma, thereby threatening the patient's body image and potentially disturbing it. This is especially relevant in the presence of a disability, which, whatever its nature, affects both males and females by limiting their ability to use their physical capacities in the same way as individuals without disabilities. The consequences may extend to adverse effects on their lives and interactions with their surroundings, particularly when the situation occurs during adolescence.

Adolescence is one of the most important stages of life, during which perceptions of the body develop and differ from one stage to another. In childhood, body perception tends to be holistic, whereas during adolescence attention turns to individual body parts, which are compared with one another and with those of peers. What, then, happens when an adolescent has a physical disability that may adversely affect their body image and self-esteem? Body image is a vital part of our sense of self: it is associated with self-esteem and influenced by many factors (Daraghmeh, 2018, p. 4). Disturbance of this image may therefore lead to difficulties with adolescent self-esteem, especially as self-awareness, overall self-evaluation and self-esteem become particularly salient during adolescence.

Research Questions

What is the nature of the relationship between body image disturbance and self-esteem among adolescents with physical disabilities?

Do adolescents with physical disabilities experience body image disturbance?

What is the level of self-esteem among adolescents with physical disabilities?

Research Hypotheses

There is a correlation between body image disturbance and self-esteem among adolescents with physical disabilities.

Adolescents with physical disabilities experience body image disturbance.

Adolescents with physical disabilities have a low level of self-esteem.

Significance of the Study

The theoretical significance of this study lies in its focus on several fundamental concepts in human mental health. Body image and self-esteem are indicators of positive mental health or, conversely, of a tendency towards disturbance.

Its significance also stems from its focus on adolescents with physical disabilities, a group of people with special needs. The study examines the meaning and conception of body image formed by a person with a disability and the effect of that conception on their self-esteem.

In addition, this study may contribute to future scientific research.

Study Objectives

The present study aims to:

Identify the correlation between body image and self-esteem among adolescents with physical disabilities.

Determine whether adolescents with physical disabilities experience body image disturbance.

Establish the level of self-esteem among adolescents with physical disabilities.

Definition of Study Concepts

Concept of Body Image

According to Chouqair (2009), body image is the mental and cognitive representation that an individual forms of their body, whether in terms of external appearance, internal components and organs, and the individual's ability to use those organs and demonstrate competence, together with the positive or negative feelings and attitudes associated with that mental image.

Operationally, it is defined as the score obtained by an adolescent with a physical disability on the body image scale.

Concept of Self-Esteem: Pattan et al. (2006, p. 31) indicate that self-esteem reflects an individual's sense of worth or self-respect. It is an evaluative component of self-concept and refers to an overall sense of self-respect.

Operationally, it is defined as the score obtained by an adolescent with a physical disability on the Coopersmith Self-Esteem Inventory.

Adolescent with a Physical Disability: A member of society in the stage of adolescence who has a motor impairment affecting the body, ranging from a mild impairment to paralysis.

Methodological Procedures

Research Method

The researcher adopted the descriptive-analytical method, defined as a systematic scientific approach to describing a phenomenon by collecting, classifying, organising, presenting, analysing, interpreting, explaining and synthesising theoretical material and field data in order to obtain scientific findings (Majdoub, 2021, p. 9).

First: Pilot Study

The pilot study aimed to verify the psychometric properties of the two scales (body image and self-esteem) and their suitability for the present study.

Study Population and Sample

The pilot sample comprised 10 adolescents with physical disabilities, selected using simple random sampling.

Scope of the Pilot Study

Participants: 10 adolescents.

Period: 4 February 2024 to 6 February 2024.

Location: Tlemcen.

Research Instruments

Two instruments were used in this study:

Body Image Scale

The body image scale developed by Khouja (2011), designed for people with special needs, was used. The scale consists of 36 items distributed across three dimensions, as follows:

Perceptual component: Refers to the accuracy with which a person with a physical disability perceives their body size and comprises 16 statements.

Subjective component: Refers to aspects such as satisfaction, preoccupation or interest, and anxiety concerning body image, and comprises 16 statements.

Behavioural component: Focuses on avoiding situations that cause a person with a physical disability discomfort, fatigue or distress associated with physical appearance, and comprises 20 statements.

In constructing the statements expressing the attributes and characteristics included in each dimension, Khouja applied the following considerations:

The number of statements indicating positive behaviours should be close to the number indicating negative behaviours in each dimension.

The statements should comprehensively cover each dimension.

The wording should be sound and appropriate to the ability of people with physical disabilities to understand their body image.

Repetition should be avoided as far as possible.

The scale instructions should be simple and comprehensible, require no clarification, and allow each statement to be answered using the specified response options (Khouja, 2011, p. 1302).

The following table shows the distribution of scale items across dimensions:

Table 1. Distribution of Body Image Scale Items by Dimension

Dimension	Items
Perceptual	1–2–3–4–5–6–7–8–9–10
Subjective	11–12–13–14–15–16–17–18–19–20–21–22–23
Behavioural	24–25–26–27–28–29–30–31–32–33–34–35–36

Psychometric Properties of the Body Image Scale

Construct Validity: Construct validity was calculated by determining correlations between the score for each dimension and the total scale score using the Statistical Package for the Social Sciences (SPSS).

Table 2. Correlations between Dimension Scores and the Total Scale Score

Dimension	Participants	Correlation coefficient	Sig.	Significance level	Decision
Perceptual	10	0,765	0.001	0,01	Significant
Subjective	10	0,675	0,003	0,01	Significant
Behavioural	10	0,798	0,000	0,01	Significant

As shown in the table, all dimensions have statistically significant correlations with the total scale score at the 0.01 significance level. This confirms, according to the study, that the scale has a high degree of validity and is valid for its intended purpose.

Second: Reliability — Cronbach's Alpha: Cronbach's alpha is one of the principal coefficients used to measure scale reliability. After calculating Cronbach's alpha for body image, a value of 0.893 was obtained. This was considered a high value, indicating a high degree of reliability and suggesting that the scale's results can be used.

Self-Esteem Scale

To measure overall self-esteem among adolescents with physical disabilities, the Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used. This instrument provides an assessment of how individuals evaluate themselves generally. It consists of 10 statements, each rated using four response categories: strongly agree, agree, disagree and strongly disagree. Each item is scored from one to four points, giving a total score ranging from 10 to 40. Five statements are positively worded and the other five negatively worded. For items 1, 2, 4, 6 and 7, respondents receive four points for strongly agree, three for agree, two for disagree and one for strongly disagree. Scoring is reversed for items 3, 5, 8, 10 and 9: one point for strongly agree, two for agree, three for disagree and four for strongly disagree. The total score is obtained by adding the scores on all scale items. A higher total indicates higher self-esteem, and vice versa (Khouja, 2011, p. 1304).

Psychometric Properties of the Scale

Discriminant Validity: Also known as extreme-groups validity, this assesses the difference between scores at the two ends of the scale. Scores are ranked in descending order, the highest 27% and lowest 27% are selected, and their difference is calculated using a t-test. The findings were as follows:

Table 3. Extreme-Groups Validity

Group	N	Mean	Standard deviation	Standard error	df	Sig.	Significance level	Decision
Lower scores	03	21,43	1,23	0,65	04	0,015	0,05	Significant
Upper scores	03	22,66	1,44	1,12	04	0,015	0,05	Significant

The table indicates a statistically significant difference between the two extreme groups at the 0.05 level, which, according to the study, establishes extreme-groups validity and indicates that the scale is valid for its intended measurement.

Reliability — Cronbach's Alpha: Cronbach's alpha is one of the main coefficients for assessing scale reliability. Following the calculation of Cronbach's alpha for body image, a value of 0.678 was obtained. This was regarded

as above average and as indicating a degree of reliability sufficient for using the results in the main study.

Second: Main Study

The main study involved processing the information using statistical software and addressing the following elements:

Study Sample

The main study sample consisted of 30 male and female adolescents.

Scope of the Main Study

Participants: Male and female adolescents with physical disabilities.

Period: 14 April 2024 to 30 April 2024.

Location: Tlemcen.

Research Instruments

Following verification of the psychometric properties of the body image scale and the Coopersmith Self-Esteem Inventory, both instruments were used to test the hypotheses.

Statistical Methods Used

The study used the Statistical Package for the Social Sciences (SPSS) to calculate:

Cronbach's alpha.

The t-test statistic.

Pearson's correlation coefficient.

The arithmetic mean.

The standard deviation.

Section Two: Presentation and Discussion of the Findings

Findings for the General Hypothesis

The general hypothesis states that a correlation exists between body image and self-esteem among adolescents.

Table 4. Correlation between Body Image and Self-Esteem in the Study Sample

Variable	Sample size	Correlation	df	Sig.	Significance level	Decision
Body image / self-esteem	30.	0.684	28	0.031	0.05	Statistically significant

Source: Prepared by the researchers using SPSS output.

The table indicates that the correlation between scores on the body image and self-esteem scales was estimated at 0.68, a statistically significant value at the 0.05 level. The hypothesis was therefore supported, indicating a statistically significant correlation between body image and self-esteem among adolescents with physical disabilities.

Discussion of the General Hypothesis

After confirming the hypothesis, the researcher attributed this finding to the effect of physical appearance on the self, to the extent that it influences feedback from others by affecting first impressions. Physical growth during adolescence brings changes in body shape and size. These changes occur dramatically and affect both the individual and those around them. Ismail Mohamed (2013) found a moderate level and a positive relationship between self-esteem and body image, with adolescents assessing themselves through their bodies and the extent to which others are satisfied with their outward appearance. Fawqiya Radi (2008) likewise confirmed that a positive evaluation of the body gives individuals a sense of personal competence and elevates their view of themselves. This contrasts with Adel Khouja (2011), who reported no relationship between body image and self-esteem. That study attributed the finding to a mismatch between how adolescents with physical disabilities perceive their bodies and their desired (ideal) body image, which may become a risk factor for body image disturbance.

These findings suggest that body image is a decisive factor in determining patterns of balance and interaction, particularly among adolescents with physical disabilities. It is one of the essential elements of individual identity and contributes to enhancing self-esteem.

Findings for the First Sub-Hypothesis

Adolescents with physical disabilities experience body image disturbance.

To examine this hypothesis, the researcher calculated the arithmetic mean and compared it with the theoretical mean of the body image scale for adolescents with physical disabilities. The results are shown below:

Table 5. Arithmetic Mean and Theoretical Mean of the Body Image Scale

Sample size	Mean	Standard deviation	Theoretical mean	Decision
30	68,494	8,974	90	Low level

Source: Prepared by the researchers using SPSS output.

The table shows that the mean body image score among the 30 participants was 68.49, below the overall theoretical scale mean of 90. This was interpreted as confirming that adolescents with physical disabilities have a low level of body image evaluation and therefore a disturbed body image; accordingly, the hypothesis was considered supported.

Discussion of the First Sub-Hypothesis

Having verified the hypothesis, the researcher attributed the low evaluation of body image among adolescents with physical disabilities to the bodily impairment affecting their overall appearance. This may make them feel inadequate or different from other individuals, including their peers, particularly during adolescence, when both males and females attach considerable importance to their appearance in attracting attention. This is especially true in contemporary society, where outward appearance influences how people interact with others and form friendships. Expressions of pity directed at individuals with disabilities may particularly heighten their sense of inadequacy: the more others look at them as incapable, the more aware they become of their bodily impairment. Thus, the social environment plays a major role in their experience of body image disturbance. Ismail Mohamed (2013) found that people with physical disabilities, compared with people without disabilities, have a negative body image. Individuals with physical disabilities receive negative feedback from their social environment because of physical differences, while society attaches considerable importance to physical attractiveness in both sexes, affecting interactions with them.

Findings for the Second Sub-Hypothesis

Adolescents with physical disabilities have a low level of self-esteem.

To examine this hypothesis, the researcher calculated the arithmetic mean and compared it with the theoretical mean of the self-esteem scale for adolescents with physical disabilities. The findings are shown below:

Table 6. Arithmetic Mean and Theoretical Mean of the Self-Esteem Scale

Sample size	Mean	Standard deviation	Theoretical mean	Decision
30	14,642	3.569	20	Low level

Source: Prepared by the researchers using SPSS output.

The table shows that the mean self-esteem score among the 30 participants was 14.64, below the theoretical mean of 20 for the scale as a whole. This was interpreted as confirming low self-esteem among adolescents with physical disabilities, and the hypothesis was therefore regarded as supported.

Discussion of the Second Sub-Hypothesis

After verifying the hypothesis of low self-esteem among adolescents with physical disabilities, the researcher attributed this finding principally to the feelings of inadequacy experienced by these adolescents. The evident adverse impact of disability was also considered to play a major role in lowering their self-esteem. Continual dependence on others in some aspects of everyday life may likewise cause feelings of weakness, despair and aversion towards their bodies. The author also states that some people with physical disabilities may contemplate suicide because they feel they are a burden on others and may regard it as relief for themselves and those around them. These factors are presented as major reasons for the failure of self-esteem to develop, together with the weak personality traits attributed to adolescents with disabilities, especially during this sensitive period of adolescence.

Conclusion

The human body is the means through which people gauge their internal and external worlds, and the means through which they experience and interpret their surroundings and interact with others. Adolescents therefore often question their physical selves and develop new questions and conceptions about them, such as “How do I look?” Body image undoubtedly plays an important and continuing role in personality development. Individuals begin to perceive and develop concepts about their physical characteristics within the family, implicitly retaining these as a definition of the self and experiencing satisfaction. As they mature, they begin to seek self-satisfaction within wider society (Chibane, 2023, p. 107).

Physical appearance is thus a principal concern for many individuals, through external and internal perceptions and personal experiences relating to appearance. Body image is influenced by biological, cognitive, emotional and personal factors that ultimately contribute to psychological well-being or ill-health (Khalifa and Morsi, 2023, p. 243).

Accordingly, the study’s objective was considered achieved: a correlation was identified between body image and self-esteem among adolescents with disabilities.

On the basis of these findings, the following recommendations are offered:

Raise public awareness of the sensitive circumstances of people with physical disabilities, particularly adolescents.

Develop training programmes to help increase self-esteem among people with physical disabilities.

Investigate other variables among adolescents with physical disabilities.

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