







ORIGINAL ARTICLE

# Body image and its relationship with exercise and sports in Turkish lower-limb amputees who use prosthesis

Image du corps et ses relations avec l'exercice et le sport chez des amputés du membre inférieur d'origine turque

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#### **KEYWORDS**

ABIS; Amputation psychology; Limb loss

#### **MOTS CLÉS**

ABIS; Psychologie des amputés; Perte de membre

#### Summary

*Purpose.* — In this study, we investigated whether Turkish lower-limb amputees (LLA) using prosthesis, who participate in sports and exercise activities, have a different body image from those who do not participate in such physical activities.

*Method.* – For this evaluation, we used the Amputee Body Image Scale (ABIS); in addition, a questionnaire for assessment of demographic characteristics of the subjects and issues regarding use of the prosthesis was applied. The study was conducted on 17 Turkish LLA participating in sports and exercise, and on 20 Turkish LLA not participating in sports and exercise activities. *Results.* – The mean ABIS score of LLA participating in sports and exercise was  $25,5\pm7,33$ ; mean ABIS score of LLA not participating in sports and exercise was  $35,94\pm12,24$ ; this difference was statistically significant (Mann-Whitney U, p < 0.05). ABIS scores for men and women were similar, regardless of participation in exercise and sports.

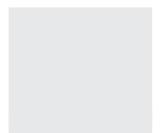
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#### Résumé

Objectif. — Dans cette étude, nous avons évalué si les amputés du membre inférieurs (lower-limb amputees [LLA]), d'origine turque, qui participent aux sports et aux activités d'exercice grâce à une prothèse, ont une image du corps différente de ceux qui ne participent pas à de telles activités physiques.

Méthode. — Pour cette évaluation, nous avons employé l'échelle d'image de corps d'amputé (Amputee Body Image Scale [ABIS]). De plus, on utilisait un questionnaire pour l'évaluation des caractéristiques démographiques des sujets et des résultats concernant l'utilisation de la

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prothèse. L'étude a été entreprise sur 17 amputés du membre inférieur participant aux sports et à l'exercice et sur 20 autres amputés de même nature ne participant pas à aucun sport. Résultats. —La moyenne du score d'ABIS des LLA participant aux sports et à l'exercice était de  $25,5\pm7,33$  et celle du ABIS des LLA ne participant pas aux sports et à l'exercice était de  $35,94\pm12,24$ . Cette différence était statistiquement significative (Mann-Whitney U, p < 0,05). Les valeurs d'ABIS pour les hommes et des femmes étaient semblables, indépendamment de la participation à l'exercice et aux sports.

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#### 1. Introduction

Body image refers to the mental picture that a person forms of his or her body and its appearance [4]. Body image transcends the present physical properties of the body and reflects the subjective perception of them. Thus, as a mental concept, body image is strongly influenced by prior experiences. This idealized image of the body is organized on kinaesthetic perceptions, subjective evaluation processes, psychosocial and emotional factors [36–42]. Therefore, an alteration in an individual's body image will set up a series of emotional, perceptual, physiological and psychological reactions [3,6,35].

Normally, body image relies on having four healthy limbs. As an internal concept, many factors may influence body image bearing the possibility for false or illusive constructs. External factors even like clothing may contribute to this process. Body image is never a static concept. Various factors like age, gender, fashion, self-awareness, health conditions, attitudes of the family and all social interactions will lead to transformations of body image [23].

The loss of a limb by amputation may alter body image substantially. The psychological impact of the amputation depends on the physical aspects of the lost limb [19,38]. Amputation of a limb not only results in a loss of function and sensation but also requires a revision of body image [19,26,35,38]. Both due to functional and social adjustment problems, it is difficult to accept the fact of amputation and the new way of living with prosthesis. Amputees may have a tendency to focus too much on the altered anatomy and to concentrate on their disability in an unrealistic way. The acceptance of the revision of body image is also related to social receptiveness and care [38].

Henker [13,38] summarizes the problems regarding body image in the following way: anxiety, conflict between former body image and actual physical condition and depression. Changes in body image not fitting with prior perceptions will provide anxiety and hinder the acceptance of the limb loss [35].

Some authors found a significant correlation between body image and psychosocial well-being in lower-limb amputees (LLA); the more positive an amputee felt about his or her body image, the more satisfying his or her life was perceived [4,6,29,33].

According to Rybarczyk et al. [29], negative body image is associated with psychological mal-adjustment. Amputation is not solely a limb loss; the person's self-image, job relations and social functioning will change, too. Difficulties in the acceptance of the new acquired body image or refusal of use of prosthesis will inevitably lead to problems in social and functional adaptation [26].

Some of the psychological reactions resulting from the amputation may be tolerated or are prone to rehabilitation [38].

Comfortable, cosmetically adequate, in professional and recreational activities and well-functioning prosthesis will be accepted easier [17]. Enhancement of satisfaction from prosthesis (weight, function, cosmetics) results in lesser disturbance of body image [21]. Fitting of prosthetic limbs and adequate prosthetic-assisted mobility will ameliorate problems encountered in the restoration of body image [9].

Participation in physical activities and sports will contribute positively to the psychology of the disabled person and provide a great opportunity for socialization [9,14,17,18,20,34,41–43]. Sports will positively influence physical health, increase self-confidence and help to develop friendship with others [33,37].

There exists also a positive correlation between mobility and body image of disabled persons [9,42]. For a positive perception of the physical self, the person must understand his body and the boundaries of its mobility and accept them. If restrictions put on the body will not change, one should try to achieve the best result. In this context exercise and sports is related to self-perception [31].

The fact of being handicapped may lead to stigmatization. Sports is a vehicle to overcome such prejudice and foster acceptance [12,30]. Anxiety, depression and social isolation resulting from the amputation may be positively influenced by participation in social and recreational activities [12,39].

In this study, we investigated whether Turkish LLA using prosthesis who participate in sports and exercise activities have a different body image from those who do not participate in such physical activities.

#### 2. Methods

In this study, 37 Turkish LLA with at least three years of use of prosthesis were included. One group participated in exercise and sport activities (basketball [n: 3], swimming [n: 5], table tennis [n: 4], fitness [n: 5]), whereas the other group didn't take part in exercise and sports (20 subjects).

The subjects participating in the study were collected from the Centre of Rehabilitation and Orthotics-Prosthetics at Marmara University and from different clubs/sport clubs for disabled persons in Istanbul. All subjects were informed about the purpose of the study and asked for consent.

All subjects were using prosthesis. Only subjects who participated regularly in exercise and sports activities for the last year were included in the study. Unfortunately, this restriction caused a decrease in the number of subjects in this group.

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