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Relationship of Serum Lipids Levels with Erythrocyte Sedimentation Rate in Female Type 2 Diabetic Mellitus Patients

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ABSTRACT

Aims Amputation has become one of the problems of today's society, whether it is related to lifestyle or due to accident or disease. There are a large number of people who have amputated one or both lower limbs, and this situation is increasing worldwide. This study aimed to assess the self-esteem and its correlation with quality of life in amputees.

Instruments & Methods This descriptive correlational study was conducted in the Babylon Rehabilitation Center from October 1, 2022 to March 10, 2023. The study sample was 200 amputees referred to Babylon Rehabilitation Center, which selected based on nonprobability sampling approach. Research variables were measured by Rosenberg Self-Esteem Scale and Quality of Life Questionnaire. Data were collected through interviews and analyzed using descriptive and inferential statistical analysis.

Findings The mean age of participants was 51.0±14.42 years. 54.0% and 60.5% of amputees had low self-esteem and poor quality of life, respectively. The self-esteem in amputees predicted variables of psychological quality of life (p=0.0001), social quality of life (p=0.001) and overall quality of life (p=0.0001).

Conclusion Amputees who participate in rehabilitation have a very low overall quality of life and self-esteem, and there is a direct correlation between self-esteem and quality of life in amputees.

Keywords Self-esteem; Quality of Life; Amputees

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Introduction

Amputation is the loss of a part of an organ or all parts of an organ which is removed through surgery or occurs due to trauma. The causes of amputation include trauma, infection, diabetes, vascular disease, cancer, and other diseases [1].

Medical amputation is the removal of all or part of a limb from the body due to medical reasons. Amputation is required only when a disease of a limb cannot be cured or when a life-threatening condition is present [2]. Eighty-two percent of all amputations occur due to peripheral vascular disease, diabetes, or trauma [3]. Traumatic amputation is the loss of all or part of an organ as a result of an accident or trauma [4]. In cases such as traffic accidents, amputation can become an urgent need [5, 6]. Today, as a result of increasing vehicle use and technology, post-traumatic amputations are at the top of the list [2]. Lower extremity amputations constitute 76% to 80% of all amputations [3].

Amputation is regarded as a war injury and a disability in which the affected person passes through many stages that alter their sense of security and peace. From a scientific and life perspective, amputation is considered a disability in and of itself [7]. Amputation rates vary from 1.2 to 4.4 per 10,000 people, depending on the nation. The majority (up to 90%) of occurrences involves the lower limbs. Their numbers are anticipated to more than triple by 2050 [8].

One's capacity to partake in social, professional, and recreational activities is significantly limited by amputation [9]. In the latter stages of several diseases, such as Diabetes Mellitus (DM), peripheral artery occlusive disease, cancer disorders, trauma, or infection, amputation is frequently an unavoidable therapy and has a substantial impact on a patient's life [10].

The impact of amputation on psychological situation and social and family relationships is undeniable because physical disability also affects one's social and mental health, in addition to his/her psychological adaptation and compared to the ordinary people, these people are suffering more from social isolation. Therefore, any limb amputation not only is considered as a physical injury but is also followed by psychological- emotional damages [1].

Amputations adversely affect the lives of individuals and cause a decrease in their quality of life. Due to the restriction in physical movement as a result of physical diseases or organ losses, individuals can experience certain differences in their lives [11]. It is also a known fact that the effect on the whole life will have a negative impact on the mental health of the individual. In addition to organ loss, amputation also means loss of function, body image, job, and relationships [5].

After losing the basic physical functions in a short time following the amputation, the individual feels like his/her life goals are under threat and can experience various complex and intense emotions such as anxiety of being dependent on an instrument, fear of death, sadness, anger, helplessness, despair, remorse, and guilt. In addition, such complex intense emotions, with changes in the body image and the damage on body perception and self-esteem, individual's mental health may deteriorate, and the individual can face difficulties in maintaining his/her social relations [12].

Self-esteem and body image are affected by external events, reactions of the society, and diseases. Especially events such as amputation, cancer, chronic diseases, and stroke can cause the individuals to have negative thoughts regarding themselves and thus reduce their self-esteem [13]. In studies with individuals with orthopedic disabilities, it was stated that the negative evaluation of their appearance by other people caused them to feel bad and that they had beliefs that they would approach them with a sense of pity [14, 15]. It was found that almost all of the subjects of the study had decreased self-esteem, disruption of the body image, and faced pity from other people in the society. They stated that they were mostly discomfort able because of their appearance, since they had thoughts of being crippled, disabled, semi-human. Therapeutic interventions should be done by mental health professionals to protect individuals' body image and increase self-esteem. Especially after amputation, providing opportunities them to be productive so as to avoid them feeling inadequate themselves [16].

The image of the body is a mental representation that an individual has of their body, including how it looks from the outside, what's inside, what organs are there, how well they work, and whether they feel good or bad about those mental representations of their bodies [17].

Body image and self-esteem have long been known to be linked and are salient issues for people. These issues affect people throughout the life span, from childhood to old age. Past research has focused predominantly on body image and self-esteem in children and adolescents. More recently, research in this area has begun to focus on older people. Self-esteem plays a central role in the mental health of people. Body image, dissatisfaction, and self-esteem are not only issues for young people during puberty and adolescence, but are also significant issues for people throughout the life span, although the nature of the concerns may change over time. People with lower self-esteem are increasingly likely to report discontent with their body size or shape, regardless of age or gender. Since body image represents a large part of a person's self-concept, it is unsurprising that self-esteem and body dissatisfaction are related [18].

Self-esteem is a simplistic term for varied and complex mental states pertaining to how one views oneself [19]. Self-esteem is defined as an individual's

sense of self-worth and acceptance.

An individual with high self-esteem evaluates him/herself positively and communicates efficiently with other people. Self-esteem is composed of two related parts; the first is the feeling of self-assurance in handling life challenges and believing in one's ability, and the second part includes believing to be deserving of success and happiness and having self-respect [20].

Patients with low self-esteem usually focus on their negative points and spend less time thinking of their positive aspects. However, it is necessary to identify both strengths and weaknesses. Since self-esteem has a unique role in the QOL of chronic patients and controlling disease complications, studying it is very crucial [21].

Quality of life is itself a complex construct made of multiple dimensions, which encompass physical and emotional well-being, social functioning and relationships, resilience, autonomy, and self-esteem [22]. Crucially, these dimensions interact with each other [23].

The World Health Organization (WHO) defines quality of life as "the individual's appraisal of their position within the framework of the culture and values in which they live, as well as in relation to their goals, aspirations, principles, and interests". Self-esteem is a general assessment of one's own worth or value, whether it be positive or negative. Self-esteem comprises notions and feelings that have a detrimental effect on one's quality of life, such as triumph, suffering, pride, and shame [24].

The present study aimed to investigate the self-esteem and its correlation with quality of life among amputee patients.

Instrument and Methods

Study design

This descriptive correlational study was carried out in the Babylon Rehabilitation Center from October 1, 2022 to March 10, 2023.

Study sample

The study sample was 200 amputees referred to Babylon Rehabilitation Center, which selected according to nonprobability sampling approach. Therefore, amputees with different educational levels and different age groups participated in the study voluntarily and with their consent.

Study instrument

The research tool included a two-part questionnaire:

Part I: The first part was related to the demographic characteristics of the patients, including age, gender, monthly income, marital status, education level, occupation, reason for amputation, and place and duration of amputation.

Part II: The second part was Rosenberg Self-Esteem Scale (RSE), which was used after reviewing the psychological literature and previous studies in self-esteem. This questionnaire has been adopted and developed by Rosenberg [25].

The Rosenberg Scale of Self-Esteem is a 10-item self-report questionnaire that assesses overall subjective self-esteem. Each item is rated on a four-point Likert scale from 1 (strongly agree) to 4 (strongly disagree), resulting in a cumulative score of 0 to 30, with high mean scores (calculated) indicating high self-esteem. Cronbach's Alpha was 0.92, which indicate a higher reliability [25].

Part III: The third part was Quality of Life Questionnaire (QoL). This tool has been adopted and developed by Murad and Al-Jawary [26]. In order to accomplish the QoL assessment of amputee patients, a special instrument has been prepared by the investigators, which is mainly based on the extensive literature review, the opinion of experts dealing with amputee patients, and a preliminary study on a sample of 20 by asking them open-ended questions. Cronbach's alpha was 0.85, indicating higher reliability [26].

Data collection

The researcher interviewed the participants, explained the instructions, answered their questions about the form, invited them to participate, and thanked them for their cooperation. The interview technique was individual, and each interview lasted 15 to 20 minutes.

Statistical analysis

SPSS 20.0 software was used for all analyses. Numbers and percentages were used to categorize the qualitative variables, while the mean and Standard Deviation (SD) were used to characterize the quantitative variables. Pearson correlation test and Simple Liner Regression test was used to predict study variables. Statistical significance was defined as a two-tailed $p<0.05$.

Findings

The mean age of participants was 51.0±14.42 years. One third of participants were male (69.5%). Most of the studied sample were married (63.5%). Secondary school graduates scored the highest (40.0%). Employees were the highest, with 35.0%, and retired people had the lowest percentage (14.5%).

Most amputees expressed 300-600 Thousand dinars as their monthly income (36.5%). Most of Amputations were due to war (43.5%), in the lower extremities (53.0%), and for less than 5 years (43.0%; Table 1).

54.0% and 60.5% of amputees had low self-esteem and poor quality of life, respectively (Table 2).

The self-esteem in amputees predicted variables of psychological quality of life (p=0.0001), social quality of life (p=0.001) and overall quality of life (p=0.0001; Table 3).

Table 1) Socio-demographic characteristics of participants (n=200)

Socio-demographic characteristics	No.	%
Age group (years)		
<30	14	7.0
30-39	23	11.5
40-49	29	14.5
50-59	73	36.5
60-69	55	27.5
70 years and older	6	3.0
Gender		
Male	139	69.5
Female	61	30.5
Marital status		
Single	33	16.5
Married	127	63.5
Divorced	28	14.0
Widower	12	6.0
Education level		
Illiterate	20	10.0
Read and write	53	26.5
Primary school	12	6.0
Middle school	17	8.5
Secondary school	80	40.0
College	18	9.0
Occupation		
Employee	70	35.0
Self-employed	54	27.0
Retired	29	14.5
Unemployment	47	23.5
Monthly income		
<300 Thousand dinars	22	11.0
300-600 Thousand dinars	73	36.5
601-900 Thousand dinars	67	33.5
>900 Thousand dinars	38	19.0
Amputation reason		
Condition	83	41.5
War	87	43.5
Accident	30	15.0
Amputation site		
Lower extremities	106	53.0
Upper extremities	94	47.0
Amputation duration		
<5 years	86	43.0
5-10 years	44	22.0
>10 years	70	35.0

Table 2) Mean scores and frequency of levels of self-esteem and quality of life in amputees (n=200)

Variable	No.	%	Mean±SD
Self-esteem			
Low	108	54.0	
Moderate	84	42.0	19.85±6.86
High	8	4.0	
Quality of life			
Poor	121	60.5	
Moderate	59	29.5	106.71±27.65
Good	20	10.0	

Table 3) The results of linear regression analysis to investigate the role of self-esteem in predicting the quality of life of amputees

Variables	Unstandardized coefficients		Standardized coefficients	t	p
	B	Std. Error	Beta		
Physical quality of life	0.029	0.053	0.028	0.540	0.590
Psychological quality of life	0.674	0.093	0.459	7.277	0.0001
Social quality of life	0.250	0.076	0.229	3.306	0.001
Overall quality of life	0.568	0.072	0.487	7.837	0.0001

Discussion

Amputation, whether due to lifestyle, an accident or disease, has emerged as one of the difficulties facing modern civilization. There are many people who have one or both lower limbs amputated, and this problem tends to get worse all over the world. Quality of life is frequently recognized as a key result of rehabilitation programs for those who have had amputations.

Considering the significance of the topic, there are relatively few studies that specifically address the variety of elements that influence this issue.

According to the results of the present study, the mean age of amputees was 51.00±14.42 years, the highest percentage of participants in the 50s and 60s (36.0%) and the lowest percentage in the 70s and above (30.0%). Previous research has shown that demographic characteristics, especially the cause of amputation, often influence the mean age of samples. According to the data available in the literature, the average age at the time of amputation varies from 25 to 89 years [25, 27, 28]. Age is a significant factor in amputation. It has been shown that the majority of amputees in old age have lost their limbs due to diseases, such as diabetes or vascular diseases, while the young and middle-aged amputees have experienced traumatic injuries more [25].

The findings of our study showed that the number of male amputees was higher than that of female amputees. According to studies, the frequency of amputations by gender may vary depending on the regions examined, but overall data reveals that the probability of amputation is higher in men than in women [25]. Men are more likely than women to leave home for work or travel, making them more vulnerable to traffic and workplace accidents. This may explain why there are more male amputees than females. Also, women are not permitted to work in the military, where the majority of men do. This could be another explanation for why men in our study had, on average, more amputations than women. Due to frequent accidents, men are more prone to amputation than women [24]. In terms of marital status, the majority of the studied population (63.5%) were married, and only a small percentage (6.0%) were widows. These results are consistent with the results obtained from Baquba City, Iraq [29]. In another study, most of the participants were married, which is to be expected given the older and average age of the participants [30].

Compared to primary school graduates, who constituted the least number of research participants, secondary school graduates were the most frequent. Also, amputees' employment is related to their level of education because it is important for them to do so in order to get employment [27, 30]. Since the majority of the study sample only has primary school graduates, they are not eligible for employment, which is significantly attributable to their education level [31, 32].

In terms of income, the majority of amputees (36.5%) reported having a monthly income of 300–600 thousand dinars compared to those with less than this (11.0%). These findings are in line with a study carried out in Hilla, Iraq, which found that the majority of diabetics did not have an adequate monthly income [33]. This is a negative result because diabetics require a high monthly income in order to spend on self-care [34]. Most amputees due to lower limb war had been amputees for less than 5 years. These findings are in line with the findings of Baghdad Kut City in the center of prostheses [24, 25, 35, 36].

The findings showed that 54.0% of the amputees had a negative sense of self-worth. These results concur with those from Spain [37], Hilla City [38], and Kut City [24]. Many studies have proven that people with deficits in the upper and lower extremities show more severe problems, especially in terms of anxiety, feelings of guilt, and self-concept. These people also have low self-concept. According to the majority of studies, amputees typically have low self-esteem due to their altered body image [39]. Hospitals must include professionals who specialize in psychological treatment and mental health to maximize the likelihood of early intervention to help amputation instances and lessen psychological concerns. Although amputation is a necessary life-support surgical treatment, research shows that it has a detrimental effect on the quality of life of these people in terms of their health. Reintegration into normal life is the main goal of rehabilitation programs. Therefore, programs designed to improve the quality of life of amputees should always consider quality of life assessment and early inclusion.

The findings showed that self-esteem among amputees is predicted by variables of psychological quality of life (p=0.0001), social quality of life (p=0.001), and overall quality of life (p=0.0001). These findings are in line with the findings of Hilla City/Iraq.

In our results, there was a direct correlation between self-esteem and quality of life. The higher the self-esteem, the higher the quality of life (β=0.487; p=0.000). This finding is similar to other studies [37, 39, 40]. In order to increase self-esteem, these amputees should be supported to improve their quality of life. There is a strong, significant, and positive correlation between social support and quality of life due to quality of life among amputated cases is dependent on their social support. Providing strong social support by family, friends, and community members for amputees helps them face adversity and crises and lead their lives more effectively [27].

In another study, participants who expressed higher self-esteem, expressed a greatly satisfied with their life [24]. In a study, perceived social support moderated the relationship between baseline daily activates of living functioning and depressive symptoms at 12 months [41]. Several modifiable characteristics influence quality of life after lower limb amputation, including depression and participation in daily living. This finding suggests the importance of addressing individuals' affective status to regain or maintain quality of life [42].

The results showed that the self-esteem of the respondents was at a low level (19.85), and the quality of life was at a poor level (106.71). A statistically significant correlation was observed

between self-esteem and quality of life (p=0.0001). Based on our findings, based on our findings, the assessment of quality of life and self-esteem in patients after an amputation procedure is very relevant. More studies are needed to explore the needs and problems of self-esteem among amputees to improve their quality of life. The researcher attributes this to the importance and feasibility of self-esteem for cases of amputation, as circumstances impose on them the loss of parts of their bodies. Their sense of inferiority, social exclusion, lack of interaction and social integration, and loss of employment are all caused by this syndrome. However, when social support components are easily realized and available in different forms, and people perceive that others are there to support and care for them, it automatically lessens their suffering and burden. Their ability to play their role in accordance with their abilities and potential, thanks to social support, allows them to experience psychological health and happiness, which enables them to continue on life's path despite its cruelty and to accomplish their goals, giving their lives meaning and value.

This issue is supported by a study done in Kut City, which found that people who receive social support from others respect themselves more, are more capable of supporting others socially, are less likely to develop psychological disorders, and are better able to deal with dissatisfaction. It is discovered that the capacity of an individual to withstand dissatisfaction and lessen a great deal of psychological anguish results in an increase in social support [27]. Amputees suffer severe consequences since they are unable to move and maintain their independence. It has been shown that amputees who participate in rehabilitation have very low overall quality of life. The self-esteem boost and accessibility to rehabilitation centers aid in the adjustment process following amputation.

Social media should pay attention to educating people to raise the level of self-confidence in order to maintain the level of quality of life and promote amputees towards achieving a better quality of life. It is also recommended to highlight the role of ministries and social institutions in creating job opportunities for the disabled in order to provide the most basic necessities of life.

Conclusion

Amputees who participate in rehabilitation have a very low overall quality of life and self-esteem, and there is a direct correlation between self-esteem and quality of life in amputees.

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