

Quality of Life among Amputees: A Mediating Role of Social Support

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Abstract

Background: Social support for amputee patients can get them out of the atmosphere of illness or disability and inspire them with a great deal of optimism and hope and make them forget the missing part, even if temporarily. **Objectives:** The study aimed to investigate the relationship between social support and quality of life (QoL) among amputees. **Materials and Methods:** The research was carried included 250 clients who undergo lower and upper amputation, using a standardized questionnaire for measuring the social support and QoL (WHOQOL-BREF) of amputees who attended Babylon Rehabilitation Centers, Iraq. Data were collected using interviews on individual bases with the participants and analyzed by descriptive and inferential approaches. **Results:** The results indicate the average age of the women was 50 years (ranged 50–59 years), male (68.8%), married (61.2%), secondary school (38%), employment (34%), insufficient monthly income (41.2%), amputation due to conditions (48.4%), in lower extremities (56.4%) for more than 10 years on amputation (48.8%). The results show that social support is positively significant with physical QoL ($r = 0.153$; $P = 0.000$), psychological QoL ($r = 0.235$; $P = 0.000$), and social QoL ($r = 0.170$; $P = 0.000$). QoL among amputees was significant (positive) and related to social support ($r = 0.250$; $P = 0.000$). **Conclusions:** Amputees who receive social support from others develop self-confidence, can support others socially, are less likely to suffer from mental illnesses, and are better able to deal with frustration. We discover that social support boosts the individual's capacity to withstand frustration and lessens a great deal of psychological anguish since the person can handle his problems in a sensible and good way. Strong social support from family, friends, and community members enables amputees to deal with challenges and live their life more successfully.

Keywords: Amputees, QoL, social support

INTRODUCTION

Amputation, by definition, is the removal of a limb or a portion of it through the sectioning of one or more bones, whereas disarticulation is a procedure through the joint surface.^[1] Health practitioners and patients should recognize this technique, which is typically viewed as mutilating, as a reconstructive one when it is adequately required because it can relieve pain and enhance function in relation to maintaining the impaired limb.^[2] The most frequent amputation-related conditions are those related to diabetes complications and peripheral artery disorders in the lower limbs.^[3] Amputation trauma has the following causes: guns, agricultural equipment, auto or motorbike accidents, or electric shock. Compared to the other causes mentioned, malignant bone tumors, which made up 6% of

all tumors in people under the age of 20, represent a rare causality for cancer.^[4] The majority (82%) of amputations in the United States are related to dysvascular disease, which includes diabetes and peripheral vascular disease (PVD), and the prevalence is predicted to rise with rising PVD and diabetes rates.^[5] According to projections, by the year 2050, there will be 3.6 million people who are living with the loss of a limb, up from 1.6 million in the year 2005.^[6] Major lower extremity amputation causes significant morbidity, including reduced quality of life

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(QoL) and function.^[7] These ultimately result in a rise in resource usage.^[8] The number of cases is rising due to a variety of factors, including the aging population, improvements in medical care, an increase in lifestyle-related illnesses like diabetes and PVD, as well as traffic accidents in major cities, which have an increasing trend when compared to nontraumatic causes.^[9]

Amputation is frequently seen as the cure-all among surgeons. However, these patients' lives do carry on.^[10] Even though there is a lot of research devoted to stopping limb loss, amputations will still happen, and patients will still require care.^[11] As our healthcare system transitions to population management and "pay for performance" systems, increasing outcomes is not only necessary but also required by our ethical duty to care for these individuals. It is possible to risk-adjust patients in order to better match physician compensation with outcomes, and policymakers can more efficiently distribute the limited healthcare resources by being able to quantify the impact of a social support system.^[12]

To find compatibility between human performance and social functions, as well as the environment in which he lives, and to help the amputee person realize that he has enormous capabilities and energies, if he is rehabilitated, directed, and trained, then he will become a pro, social care has emerged as one of the most significant programs that lead for the disabled in both developed and underdeveloped worlds.^[13] His social and psychological compatibility with his family, his job, and society is as a result, and to fully or partially regain his compatibility with society, he needs professional, social, and psychological rehabilitation. In terms of psychological and social rehabilitation, the family is crucial.^[14] "Receiving assistance and support from others, particularly from particular persons, is referred to as social support. According to certain studies, social support may act as a mediator between the effect of adaptation style and other factors. It would be beneficial for everyone if social support could lessen the effects of life's high stress and the incidence of mood disorders."^[15] The problems that persons with amputations encounter also make their lives more challenging. These problems include economic, social, personal, familial, and environmental issues. As a result, patients should use methods to manage their illness. However, studies have demonstrated that social support plays a significant part in disease adaptation and coping, including amputation. Support involves defending against harm and developing a social connection that begins with a conversation and, over time, develops into an empathic relationship and, ultimately, a patient's immune system. In actuality, support is a crucial and multifaceted necessity that patients should constantly benefit from.^[8] Social support can be given in the form of informational, practical, psychological-emotional, and social assistance. However, it's crucial that the patient comprehends the support being offered. More crucial

than receiving support is understanding it. In other words, it appears that patients' attitudes and understanding of the care they get are more critical than the intensity of that support. Living with a condition actually requires overcoming the negative emotions and labels that are frequently associated with chronic illnesses; people who have greater social support are better able to navigate this period than others.^[16] The significance of providing social support to amputees, particularly given that the speed of their adaptation depends on the acceptance and cooperation of their families, friends, and neighbors and that their condition necessitates outside assistance and support.^[8]

As a result, the researcher thinks that the community, in particular, can do a lot for this group of disadvantaged people. Either this function plays a constructive role by offering the required social services such as home visits, social and recreational activities, etc., as well as psychological support through programs, sessions, and ongoing and regular follow-up. Along with assistance in every other area, such as the economic, medical, and professional, all of which, if offered, will foster the development of self-assurance, adaptability, and self-esteem as well as social integration and interaction with this community despite the presence of a disability. To the emotion of joy, contentment, well-being, and desire for life.

MATERIALS AND METHODS

In this study, a correlational type of design was employed. Data were gathered between August and November of 2022. In total, 2507 participants in the study reviewed Babylon Rehabilitation Center on a monthly basis. 10% of the entire sample that fits the study criteria was used for the study's sample. They were chosen based on the following inclusion requirements: who met the following criteria: (1) volunteered to take part in the study, (2) were at least 20 years old, and (3) had limbs amputated for at least 6 months.

For this study's data gathering, three instruments were used: (1) The sociodemographic details of the amputees were gathered using a demographic data questionnaire that researchers devised for this study. (2) The WHOQOL-BREF is a 26-item questionnaire that includes questions on general health and QoL in addition to four domains: physical health (seven items), psychological health (six items), social connections (three items), and environmental health (eight items). Mobility, everyday activities, functional ability, energy, pain, and sleep topics are all part of the physical health domain. Self-image, unfavorable ideas, favorable attitudes, self-esteem, mentality, learning capacity, memory focus, religion, and mental status are among the psychological domain measures. Personal relationships, social support, and sexual life are all

included in the social relationships domain of the test. Aspects of the living physical environment, safety, health, and social services, learning opportunities, possibilities to pick up new skills and information, recreation, the general environment (noise, air pollution, etc.), and transportation are all included in the environmental health domain. The Multidimensional Scale of Perceived Social Support (MSPSS) was adopted and developed by Zimet *et al.*^[17], as the development of a self-report measure of subjectively assessed social support. In this study, Cronbach- α was found as 0.87.

In the study, who underwent an amputation were identified among those on the patient list identified by examining the archives of institutions. The phone numbers and home addresses of the amputees on the list who met the search and contact criteria were obtained. The purpose of the research was announced during the interviews, and a date was set for the amputees who agreed to participate in the study. At the time of the appointment, questionnaires were administered to them while they were present for the purpose of treatment. Researchers filled out data collection forms during personal interviews with the amputees. Each interview lasted about 20–25 min.

It was determined that the data were uniformly distributed using Statistical Package for the Social Sciences (SPSS) 20.0 program (IBM, Armonk, NY, USA). Spearman's and Person's correlation and one-way analysis of variance variations in coefficients and correlations between study variables based on sociodemographic traits, QoL, and body image. The cutoff point for statistical significance was 0.05.

Ethical consideration

The study was carried out in conformity with the ethical standards set forth in the Helsinki Declaration. Before the sample was taken, it was done with the amputees' verbal and analytical consent. According to document number 88, a local ethics committee evaluated and approved the study protocol, subject information, and permission form (dated August 18, 2022).

RESULTS

Findings on participant ages show that the mean age is 50 (or 13.47), with the age group of 50–59 years old accounting for the biggest number (34%) [Table 1]. Male participants made up 68.8% of the total population, while female amputees made up 31.2%. According to data on marital status, the majority of the sample under study (61.2%) was married, while just 6.4% of participants were widowed. In terms of educational level, secondary school graduates scored the highest (38%) compared to the lowest percentage of middle school graduates (6.8%). Occupation-related findings, employment consisted of the highest (34%) and retirees the lowest (10.8%).

Table 1: Sociodemographic characteristics

SDVs	Classification	Number	Percentage
Age/years ($M \pm SD = 50.38 \pm 13.47$)	<30 years	31	12.4
	30–39 years	25	10.0
	40–49 years	33	13.2
	50–59 years	85	34.0
	60–69 years	66	26.4
	70 years and older	10	4.0
Gender	Male	172	68.8
	Female	78	31.2
Marital status	Single	53	21.2
	Married	153	61.2
	Divorced	28	11.2
	Widower	16	6.4
Education level	Illiterate	20	8.0
	Read and write	76	30.4
	Primary school	19	7.6
	Middle school	17	6.8
	Secondary school	95	38.0
	Collage	23	9.2
Occupation	Employee	85	34.0
	Self-employ	83	33.2
	Retired	27	10.8
	Unemployment	55	22.0
Income/month	Sufficient	51	20.4
	To a certain limit, enough	96	38.4
	Insufficient	103	41.2
Have sons	Yes	182	72.8
	No	68	27.2
Amputation reason	Condition	121	48.4
	War	88	35.2
	Accident	41	16.4
Amputation site	Lower extremities	141	56.4
	Upper extremities	109	43.6
Amputation duration	<5 years	63	25.2
	5–10 years	65	26.0
	>10 years	122	48.8

Regarding income, most of the amputees expressed insufficient monthly income (41.2%) compared with those with adequate income (20.4%). In terms of son's status, more than a third of the studied sample have sons (72.8%) as compared with those who are not (27.2%). In terms of amputation reason, most of the amputations were due to conditions (diseases) (48.4%), and the least causes were accidents (16.4%). Site of amputation-related findings, most of the amputation sites were in the lower extremities (56.4%) compared to the upper extremities (43.6%). Concerning the duration of amputation, most of the study participants expressed more than 10 years of amputation (48.8%) as compared with less duration (25.2%).

The results showed that (54.8%) of the amputees exhibited good social support and (61.6%) a poor QoL [Figure 1].

The findings demonstrate a favorable relationship between social support and physical, psychological, and social QoL ($r = 0.153$, $P = 0.000$), as well as social QoL ($r = 0.170$, $P = 0.000$). Social support was significantly (in a positive way) correlated with amputees' QoL ($r = 0.250$; $P = 0.000$) [Tables 2 and 3].

DISCUSSION

Whether it be because of a person's lifestyle, an accident, or an illness, amputation has emerged as one of the difficulties facing modern civilization. There are a lot of people who have had one or both lower limbs amputated, and this problem tends to get worse all around the world. The importance of QoL as a result of rehabilitation programs for amputees is frequently emphasized. Despite the significance of the topic, there are still few studies that specifically address the variety of factors that influence this issue.

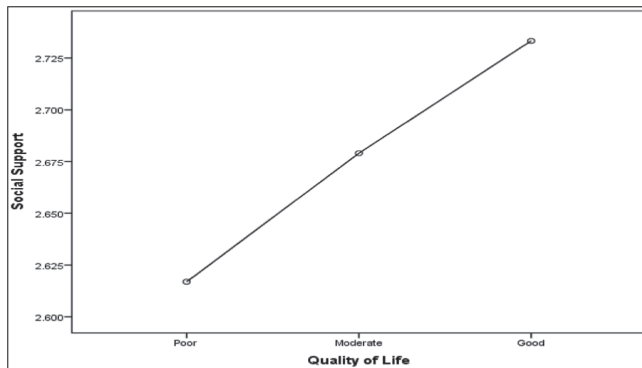


Figure 1: Quality of life according to social support

Table 2: Overall assessment of social support and QoL for amputation cases

Variables	Rating	Number	Percentage
MSPSS	Poor	16	6.4
	Moderate	97	38.8
	Good	137	54.8
	Total	250	100.0
WHOQOL-BREF	Poor	154	61.6
	Moderate	81	32.4
	Good	15	6.0
	Total	250	100.0

The average age of amputation in this study was 50 (13.47), with the highest percentage of patients falling into the 50–59 age group and the lowest percentage falling into the 70+ age group. The findings are in line with those of other studies, which revealed that the majority of patients were male and that their ages ranged from 45 to 65 (mean: 49.29), indicating that the reproductive age group was most frequently affected.^[18] According to Desmond,^[19] the average age of the patients was 51 years old. Additionally, Marzen-Groller and Bartman's findings^[20] showed that adults over the age of 50 make up the majority (75%) of amputation victims. The demographic group investigated, primarily in relation to the reason for the amputation, generally determines the average age of samples from other research. The average age at the time of amputation, according to data in the literature, ranges from 25 to 89 years.^[21,22] There is a propensity among the papers under investigation to look for comparable etiological groupings, such as vascular, traumatic, or tumor. Accordingly, Mohammed and Shebl^[1] observed that the study group's average age was 48 years old and that 81% of the sample's amputations were caused by vascular problems and diabetes combined. Age is a significant factor in amputation cases, as Pasquina *et al.*^[11] discovered that most advanced ages experience amputations as a result of a condition such as diabetes or vascular disease. According to Fralick *et al.*,^[23] the majority of people who lose limbs in catastrophic incidents are young people and adults.

According to the results of our study, men were more likely to be amputees than women. Studies claim that the frequency of amputations varies by region, but overall data show that men are more likely to have amputations than women.^[1,24] Male family members are more likely to travel or go on business trips than female family members, which may account for the higher number of male amputees than female amputees. Consequently, there is a higher chance of workplace and traffic accidents. Additionally, the majority of men are employed in the military, where women are not permitted. This could be an additional explanation for why males in our study cohort had more amputations than females on average. This supports research that shows males experience amputations more frequently than females.^[25,26] Additionally, according to The Global Lower Extremity Study,^[27] while the overall incidence is higher in men than women, the incidence of amputation

Table 3: Correlation coefficient between social support and quality of life among amputation cases

Spearman's correlation	1	2	3	4	5
1. Social Support	–	0.153**	0.235**	0.170**	0.250**
2. Physical QoL	0.153**	–	0.115	0.116	0.421**
3. Psychological QoL	0.235**	0.115	–	0.311**	0.734**
4. Social/environment QoL	0.170**	0.116	0.311**	–	0.455**
5. QoL	0.250**	0.421**	0.734**	0.455**	–

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

varies by region, being higher in women in some and lower in men in others.^[28] Men are more likely than women to need an amputation because they experience accidents more frequently. This was supported in a research by Shruthi *et al.*,^[29] which found that men were more likely than women to be involved in accidents. In a research by Sinha *et al.*^[30] at a limb-fitting and rehabilitation facility in Mumbai, India, it was similarly discovered that 88% of respondents were men, while only 12% were women.

Many of the study's participants were unemployed, and their socioeconomic circumstances ranged from poor to mediocre. The sickness had caused the adult population (aged 40–59) to lose their jobs. As a result, amputation significantly affects one's capacity to find employment; as such, vocational rehabilitation and other strategies should be used to address this. However, despite having many amputations, no patients in the study by Labroca *et al.*^[31] on patients with symmetrical peripheral gangrene and major limb amputations were reported to be long-term bedridden. This study identified diabetes mellitus as the primary cause of amputation, with war being regarded as a secondary cause and accident ranking third among the sample. This finding is consistent with earlier research by Johannesson *et al.*,^[32] which found that people with diabetes have a considerably higher rate of amputation than people without the disease. Diabetes patients' inadequate knowledge of their condition and how to properly care for their feet has been linked to rising amputation rates among diabetics. This has caused the average age at which amputation happens to rise.

The percentage of gangrene-related amputations was 45.6%, according to Grudziak.^[33] Amputations brought on by illnesses are anticipated to be the most frequent procedure reported by specialized trauma hospitals.^[3] The most frequent amputation-related conditions are those related to diabetes complications and peripheral artery disorders in the lower limbs.^[16] Traumatic causes of amputation include motor vehicle or motorbike accidents, agricultural equipment, electric shock, and guns. Compared to the other causes indicated, malignant bone tumors, which made up 6% of all tumors in those under the age of 20, constitute a rare etiology for cancer.^[20] In contrast, a research by Kareem *et al.*^[34] indicated that only 13.9% of surgeries were performed as a result of trauma or injury and that 39% of patients who received major amputations within a five-year period in England had diabetes as their primary diagnosis, and 43% had a diagnosis of cardiovascular disease. These findings corroborate the observation that vascular disease, in which diabetes is a concomitant diagnosis in 2/3 of instances, is the primary cause of 54% of all occurrences of limb loss now occurring in the USA.^[24] Amputations result from violent acts or other sources, in addition to the present literature.^[17]

This study also shows that lower limb amputations were the most common among the individuals. The majority of operations carried out globally involve below-knee amputations. The level of amputation in modern times has decreased as a result of the growing acceptance of limb-preserving procedures.^[19] This finding, which is consistent with earlier research, showed that lower limb amputations occur much more frequently than upper limb amputations.^[8] It also showed that lower limb amputations occur significantly more frequently than upper limb amputations. Pasquina *et al.*^[11] lend additional support to this finding.

The findings demonstrate a favorable correlation between social support and physical, psychological, and social QoL ($r = 0.153$, $P = 0.000$), as well as social QoL ($r = 0.170$, $P = 0.000$). Because cooperation and solidarity are the foundations of life, especially through hardships and crises, the person who has had an amputation needs the support of others. According to these findings, respondents' average social support was 108.41, which is within an acceptable range, and their average life quality was 39.82, which is below average. Social support and QoL were shown to be significantly correlated ($r = 0.250$; $P = 0.000$). This decade revealed that providing the necessary family, community, and institutional support is essential to guaranteeing an amputee's successful adjustment process.

These results are consistent with those of Juma Elywy *et al.*,^[35] who looked at the social support and general QoL for amputees in Kut City. Due to the dependence of amputated cases' QoL on their social support, there is a substantial significant and positive association between social support and QoL. Strong social support from family, friends, and neighbors enables amputees to deal with challenges and crises and live more successfully.

Participants in another survey who reported receiving adequate social support stated being extremely happy with their lives.^[9] At 12 months, the link between baseline daily functioning and depression symptoms was reduced by perceived social support.^[33] Depression and engagement in daily activities are two aspects of QoL that might be changed following lower limb amputation. This finding indicates the significance of managing people's affective status in order to improve or maintain QoL.^[15]

This finding makes sense given the significance of the social assistance that amputees receive, the degree of their satisfaction with it, and how both quantitatively and qualitatively it is perceived. The value of support extends to assisting people in problem-solving and wise decision-making, which enhances their capacity to deal with life's obstacles. Support can also take the form of giving someone the tangible items and in-kind services they require to meet their basic needs.

Additionally, it is emphasized the significance of social support in aiding the individual in mobilizing his psychological resources to address his issues. Social support helps an individual complete the activities demanded of them and gives them access to material resources, a variety of abilities, and the ingredients for assistance and counseling while dealing with difficult life circumstances. Social support provides the individual with social skills suited for the environment to which they are exposed and shields them from negative psychological impacts.^[26]

The process for giving social support for amputees, which is based on comprehending the psychological traits of this population and treating them with adaptability, compassion, generosity, and understanding of their circumstances rather than pity and kindness, may be related to this. Social assistance focuses on the abilities that are available and the capability to guide people to better cohabit with the reality imposed on them and attain a sufficient quantity of mental health.^[34,36]

This, according to the study, is due to the necessity and viability of social assistance for people who have had body parts amputated due to the situation. Their sense of inferiority, social exclusion, lack of interaction and social integration, and loss of employment are all caused by this syndrome. However, when the components of social support are simply realized and available in their many forms. When people perceive that others are willing to assist and care for them, it automatically relieves their suffering and pressure. 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 Juma Elywy *et al.*,^[35] who found that people who receive social support from others grow in self-assurance and are able to offer social support to others. They are also less likely to suffer from psychological diseases and are better equipped to deal with frustration. We discover that the capacity of an individual to withstand dissatisfaction and lessen a great deal of psychological anguish results in an increase in social support.

CONCLUSION

Amputees who receive social support from others develop self-confidence, can support others socially, are less likely to suffer from mental illnesses, and are better able to deal with frustration. We discover that social support boosts the individual's capacity to withstand frustration and lessens a great deal of psychological anguish since the person can handle his problems in a sensible and good way. Strong social support from family, friends, and community

members enables amputees to deal with challenges and live their life more successfully.

There are some limitations to the current research that should be taken into consideration. First, only amputees' self-report measures and only their samples were used to collect data.

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Conflicts of interest

There are no conflicts of interest.

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