

# The Effect of Age, Gender and Socioeconomic Status on Self-esteem, Body Image and Quality of Life of Amputees: An Evaluation Seven Years after the 2008 Sichuan Earthquake

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## ABSTRACT

**Purpose:** *Psychological well-being is a growing concern in society. It is starting to play a pivotal role in the treatment and care of clients. This study aimed to evaluate the effect of age, sex and socioeconomic status on the self-esteem, body image and quality of life of the 2008 Sichuan earthquake amputees. Many of them are at a significant stage in their lives, especially those who are making the transition from childhood and adolescence into adulthood.*

**Methods:** *This cross-sectional study was conducted in October 2015. Forty-five participants were recruited from clinic sessions in Sichuan. The main outcome measures were Rosenberg Self-Esteem Scale (RSE), Chinese Amputee Body Image Scale (CABIS), and WHO Quality of Life-Bref Instrument (WHO-QOL-Bref). Results were analysed using Student's T-test and Chi-square test where appropriate, and ANOVA for multi-group comparisons.*

**Results:** *Participants under 18 years of age scored higher in RSE ( $p=0.05$ ), and lower in CABIS ( $p<0.005$ ). They also scored higher in various QOL domains (D3:  $p<0.08$ , D4:  $p=0.06$ ) and WHOQOL-Bref question 2 ( $p=0.06$ ). Participants of different SES did not show any significant differences in the outcome measures. Female subjects scored higher in WHOQOL-Bref Question 1 ( $p=0.03$ ).*

**Conclusion and Implication:** *Younger amputees have less body image distortion, higher quality of life and self-esteem compared to older amputees. Female amputees also appear to have a higher quality of life compared to male*

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*amputees. Socioeconomic status does not affect rehabilitation outcome and psychological well-being of amputees. However, the main factors affecting psychological well-being appear to be predominantly age and, possibly, gender.*

**Key words:** *Person with amputation, earthquake, self-esteem, body image, quality of life, rehabilitation, psychological well-being.*

## INTRODUCTION

On May 12th, 2008, an earthquake of 7.9 magnitude struck 80 kilometres north-west of Chengdu, the capital city of Sichuan Province, China (Tran and Stewart, 2008; Daniell, 2013). Infrastructure, including schools and hospitals, was not built to withstand such intense shaking (Tran and Stewart, 2008). Buildings were flattened, the death toll was as high as 69,000 people, and official numbers estimated another 7000 people being disabled (Liu, 2009; Zhou and Leng, 2017).

Functional disability is shown to affect many facets of life. It brings about immense, and sometimes overwhelming, changes and stress to an individual's life (Falvo, 2005). Therefore, it is essential for modern-day doctors to recognise the importance of promoting psychological health and well-being during rehabilitation of such individuals.

In recent years, there has been growing awareness and concern over the mental well-being and psychological health within society. Prince et al (2007) attributed 14% of the global disease burden to neuropsychiatric disorders, such as chronic disabling depression. While these numbers and figures have alarmed many healthcare professionals regarding the extent to which the public's mental health and psychological well-being have been affected, the study also showed that the burden of mental disorders was likely to be underestimated because of inadequate appreciation of the connectedness between mental illness and other health conditions (Prince et al, 2007). Society must address the pressing need for holistic care and treatments which address the physical and mental well-being of clients.

Yet, how can an individual's psychological health be truly and accurately measured? Cheng & Furnham (2003) used happiness as a marker for psychological well-being, and found that people with positive and optimistic attribution styles and high self-esteem demonstrated greater happiness, and hence good psychological well-being. Therefore, it seems justified to use self-esteem as one of the measures for psychological well-being. However, this raises another

question - what is self-esteem? Bailey (2003) defined self-esteem as “a simplistic term for varied and complex mental states pertaining to how one views oneself.” Although the definition is simple, the effects of positive or negative self-esteem are much more complex. A study by Mann et al (2004) stated that positive self-esteem is not only seen as a basic feature of mental health, but also as a protective factor that contributes to better health and positive social behaviour through its role as a buffer against the impact of negative influences. There is evidence that positive self-esteem can lead to better mental and physical health, as well as better social behaviours, whereas poor self-esteem is associated with a diverse variety of mental and social problems (Mann et al, 2004).

One part of self-esteem is also associated with self-perception or “how one views oneself” (Bailey, 2003), which is more commonly known as body image. A cross-sectional longitudinal study by Mellor et al (2010) showed that a high self-esteem is correlated to low body dissatisfaction or a low body image distortion. Body image relates to a person’s perceptions, feelings and thoughts about his or her body, and is usually conceptualised as incorporating body size estimation, evaluation of body attractiveness and emotions associated with body shape and size (Grogan, 2006). As self-esteem and body image are not easily distinguishable from one another, body image is another good measurement to use in assessing mental well-being and psychological health. Xu and He (2012) attempted to investigate the psychological health and coping strategies of survivors of the 2008 Sichuan Earthquake, and found evidence to show that four main factors significantly impact the victims’ health. These include older age, lower educational level, lower income and high exposure to the disaster. The participants in this study undoubtedly had high exposure to the disaster. Xu and He (2012) stated that “highly exposed survivors tended to problem-avoidance, fantasy, self-blame and seeking assistance, which was significantly different to those lowly exposed”, showing that psychological well-being was a major concern for this particular study’s client group.

Psychological well-being also plays a major role in assessing an individual’s quality of life. This is seen in the WHO-QOL-Bref questionnaire, where psychological health is allocated its own domain (domain 2). De Godoy et al (2002) showed that “the quality of life was unsatisfactory for the members of this group (amputees) compared to the control group”, in particular, “the physical capacity, physical aspects, emotional aspects and social aspects were all considered extremely significant...” Another study by Asano et al (2008) also revealed “seven significant

factors (depression, perceived prosthetic mobility, social support, co-morbidity, prosthesis problems, age and social activity participation) as predictors of clients' perceived QoL." These studies show that quality of life and their various predictors are important aspects to consider when designing a holistic rehabilitation plan for amputees - one that aims at the improvement and maintenance of life satisfaction and reintegration into society.

## **Objective**

This study is conducted within the Stand TALL programme, a not-for-profit organisation dedicated to working with the amputees of the devastating 2008 Sichuan Earthquake. For 9 years, the Stand TALL team has been working with commitment in Sichuan, providing the survivors with treatment, care and support. While previous cross-sectional studies were conducted on the physical recovery and the functionality of lower limb (Chan et al, 2017), there was no formal evaluation of the clients' psychological health, which is one of the key determinants of overall health and as important as physical health. Therefore, this cross-sectional study aims at evaluating the effect of age, gender and socioeconomic status on the self-esteem, body image and quality of life of amputees, 8 years after the 2008 Sichuan Earthquake. Through this study, the psychological well-being of the Sichuan Earthquake amputees can be evaluated.

## **METHOD**

### **Sample**

A total of 45 clients were recruited via the Stand TALL programme during a regular clinic session in Chengdu, China. All the study participants were amputees from the 2008 Sichuan Earthquake - 13 bilateral or upper limb amputees and 32 unilateral amputees - for whom follow-up is done by the Stand TALL Programme. Data was collected in October 2015.

### **Ethical Considerations**

Ethical approval was obtained for research and education activities undertaken within the Stand TALL programme by the Sichuan Provincial Hospital. The study protocol was explained to the clients and/or their guardians. They gave their signed informed consent for the use of personal information and medical documentation for research purposes, prior to joining the Stand TALL programme.

## Measures

The main independent variables in this study include age, gender, and socioeconomic status of the participants or their families, while the main dependent variables are self-esteem, body image and quality of life. A self-administered 65-item questionnaire was given to each study participant to determine the basic facts (age, gender, date and level of amputation, use of prosthesis), and the individual's socioeconomic status, self-esteem, body image and quality of life. The questionnaire was made up of 5 individual surveys, including Socioeconomic Scale, Rosenberg Self-Esteem Scale, Chinese Amputee Body Image Scale, and WHO Quality of Life-Bref. The average time for completion of the full questionnaire was 20 minutes.

## Socioeconomic Status

Socioeconomic status of the client was assessed using the Socioeconomic Scale (SES), which included questions regarding education, monthly family income and occupation. The SES questionnaire used in this study was adapted from a Taiwanese version (Tseng et al, 2011). All the wording and questions were retained. The only changes to the original were the conversion of the Traditional Chinese characters to Simplified Chinese characters, and the replacement of the average wage of the Taiwan working population with the average wage of the working population in China (China Labour Bulletin, 2015). Scores were set against a total of 15, with a higher score representing a higher socioeconomic status. Thus, a score of 15 denoted upper socioeconomic class, 12-14 was upper-middle socioeconomic class, 9-11 was middle socioeconomic class, 6-8 was middle-lower socioeconomic class, and 3-5 was lower socioeconomic class. Clients were grouped in different socioeconomic classes according to their scores. They were then further grouped into a general upper socioeconomic class, with scores of 9-15, and a general lower socioeconomic class, with scores of 3-8.

## Self-esteem

Self-esteem of the clients was measured using the Chinese version of the Rosenberg Self-Esteem (RSE) Scale (Leung and Wong, 2008). This questionnaire uses a four-point Likert scale for each question, and the total score of the questionnaire ranges from 0-30. Yeung (1998) showed that the mean RSE score in the region (Hong Kong) is 22.2, with a standard deviation of 4.3. A higher score indicates higher self-esteem, whereas a lower RSE score indicates the opposite. A Chinese version

of the questionnaire was used, but interpretations of the scores were conducted in English (Corcoran and Fischer, 2013).

### **Body Image**

Body image of the clients was measured using the Chinese Amputee Body Image Scale (CABIS) (Lai et al, 2005). The questionnaire consisted of 20 items, each rated by the individual using a five-point Likert scale, ranging from 1 to 5. A total score of 20 - 100 is possible, with a higher score indicating a higher level of body image or self-perception distortion, and a low score indicating the relative absence of body image disturbance.

### **Quality of Life**

To assess the quality of life of the study participants, the simplified Chinese version of the World Health Organisation Quality of Life-Bref instrument (WHOQOL-BREF) was used (World Health Organisation, 2004a). The questionnaire has a total of 26 questions, and each question is rated on a five-point Likert scale, ranging from 1 to 5. With the exception of Questions 1 (Q1) and 2 (Q2), which are assessed individually, other questions are grouped into four different domains. They include Physical health (domain 1), Psychological (domain 2), Social Relationship (domain 3), and Environment (domain 4). The instrument generates a life profile which assesses the participant's quality of life in each domain. Each domain generates its own score, and the higher the score, the greater is the quality of life of the individual. These scores are all transformed, as per the instructions from the WHOQOL-BREF administration and scoring guide, to range from 0-100 for easy analysis and comparison (World Health Organisation, 1996). Q1 and Q2 of the WHOQOL-BREF briefly measure the participants' general satisfaction with their quality of life and health respectively, using a five-point Likert scale. Likewise, a higher score will indicate greater satisfaction of the participant with his/her quality of life and health. The scores of the four domains and Questions 1 and 2, along with the RSE and CABIS scores mentioned above, will be analysed against the factors age, gender and socioeconomic status.

### **Statistical Analysis**

All the results were analysed using Student's T-test and Chi-square test where appropriate. ANOVA was used for comparing more than 2 groups. All data was analysed using IBM SPSS version 24 (Armonk, New York). A two-sided p value

$\leq 0.05$  was considered statistically significant. Also,  $p \leq 0.1$  was considered to be statistically significant due to the relatively small sample size.

## RESULTS

The mean age of the study participants was 21.7 years, ranging from 13 to 40 years old. There were 12 (26.7%) clients who were younger than 18 years, and 33 (73.3%) who were 18 years or older. There were 14 (31.1%) male participants and 31 (68.9%) were female. While 17 (37.8%) clients belonged to the upper socioeconomic class, 28 (62.2%) were from the lower socioeconomic class. Among the participants who were recruited, 32 (71.1%) were unilateral lower limb amputees, while 13 (28.9%) were bilateral lower limb or upper limb amputees. The summary of the participants' demographics are shown in Table 1.

The mean scores of the outcome measures are as follow: RSE=19.71 $\pm$ 4.09; CABIS=50.38 $\pm$ 11.03; WHOQOL-BREF domain 1 (Physical Health) =68.00 $\pm$ 14.07; WHOQOL-BREF domain 2 (Psychological)=69.40 $\pm$ 14.14; WHOQOL-BREF domain 3(Social Relationship)=70.30 $\pm$ 15.77; and, WHOQOL-BREF domain 4 (Environmental)=63.16 $\pm$ 14.11. The summary of outcome results can be seen in Table 1.

**Table 1. Summary of demographics and measurement results**

Variable	N (%)	Variables	Mean $\pm$ SD (range)
Age at the time of assessment		Age at the time of interview	21.69 $\pm$ 7.05 (13,40)
< 18	12 (26.7)	Socioeconomic status (SES)	8.02 $\pm$ 2.05 (4,14)
$\geq$ 18	33 (73.3)	Rosenberg Self-Esteem Scale (RSE)	19.71 $\pm$ 4.09 (12,30)
Sex		Chinese Amputee Body Image Scale (CABIS)	50.38 $\pm$ 1.03 (34,81)
Male	14 (31.1)	WHOQOL-BREF Domain 1	67.98 $\pm$ 14.08 (36,96)
Female	31 (68.9)	WHOQOL-BREF Domain 2	69.33 $\pm$ 14.15 (42,100)
Socioeconomic Status (SES)		WHOQOL-BREF Domain 3	70.25 $\pm$ 15.77 (38,100)

Upper class	17 (37.8)	WHOQOL-BREF Domain 4	63.04 ± 14.06 (38,97)
Lower class	28 (62.2)	WHOQOL-BREF Question 1	3.49 ± 0.59 (3,5)
Type of amputation		WHOQOL-BREF Question 2	3.69 ± 0.67 (2,5)
Unilateral lower limb	32 (71.1)		
Bilateral lower limb/Upper limb	13 (28.9)		

<sup>1</sup> WHOQOL-BREF, World Health Organization Quality of Life-Bref Instrument

Study participants with different types of amputations did not show any significant difference in their RSE scores, CABIS total and factors scores, or WHOQOL-BREF domains and questions scores. Similarly, subjects belonging to different genders and socioeconomic classes did not show any difference in their RSE scores, CABIS total and factors scores and WHOQOL-BREF domain scores. Female clients, however, scored significantly higher WHOQOL-BREF Question 1 scores compared to male clients (3.61 vs. 3.21,  $p < 0.01$ ). Participants under 18 years of age scored significantly higher RSE scores (21.67 vs. 19,  $p = 0.05$ ) and significantly lower total CABIS scores (42.92 vs. 53.19,  $p < 0.01$ ) and lower CABIS factors scores (F1: 18.92 vs. 22.19,  $p = 0.03$ ; F2: 14.92 vs. 19.43,  $p = 0.02$ ; F3: 9.08 vs. 11.57,  $p = 0.01$ ), compared to those in the 18 years or above amputee group. The under-18 amputee group also scored significantly higher scores in WHOQOL-BREF domain 3 (77 vs. 68,  $p = 0.08$ ), domain 4 (70 vs. 61,  $p = 0.06$ ) and WHOQOL-BREF Q2 (4 vs. 3.58,  $p = 0.06$ ) scores, than participants aged 18 years or more. The summary of results of outcome measures when comparing different factors can be seen in Table 2.

**Table 2. Summary results of outcome measures when comparing with different factors**

	Age		Sex		SES		Type of Amputation			
	< 18	≥ 18	Male	Female	Upper SES	Lower SES	ULL	BLL/UL	p	
RSE Scale	21.67 ± 5.09	19.00 ± 3.32	18.86 ± 2.17	20.10 ± 4.60	20.00 ± 3.59	19.54 ± 4.43	19.81 ± 4.18	19.46 ± 4.03	0.717	0.798
CABIS	42.92 ± 6.81	53.19 ± 10.94	52.66 ± 8.05	49.45 ± 11.95	49.65 ± 12.16	50.28 ± 10.50	49.13 ± 9.68	53.46 ± 13.78	0.733	0.236
WHOQOL-BREF										
Domain 1	72.92 ± 15.65	66.18 ± 12.77	64.46 ± 11.93	69.56 ± 14.46	68.85 ± 16.59	67.45 ± 12.61	69.10 ± 13.48	65.21 ± 15.67	0.749	0.407
Domain 2	73.67 ± 16.79	67.75 ± 12.45	65.09 ± 11.70	71.24 ± 14.51	68.88 ± 16.96	69.60 ± 12.46	69.30 ± 14.67	69.40 ± 13.33	0.871	0.982
Domain 3	77.17 ± 18.09	67.73 ± 13.74	65.75 ± 10.57	72.28 ± 17.01	69.25 ± 17.28	70.86 ± 15.08	69.30 ± 16.05	72.60 ± 15.42	0.744	0.531
Domain 4	69.54 ± 14.59	60.67 ± 12.85	59.95 ± 9.81	64.44 ± 15.19	63.51 ± 16.55	62.75 ± 12.62	63.05 ± 14.70	63.02 ± 12.87	0.862	0.995
Question 1	3.58 ± 0.64	3.45 ± 0.56	3.21 ± 0.41	3.61 ± 0.61	3.47 ± 0.62	3.50 ± 0.58	3.47 ± 0.62	3.54 ± 0.52	0.873	0.723
Question 2	4.00 ± 0.41	3.58 ± 0.70	3.57 ± 0.49	3.74 ± 0.72	3.65 ± 0.70	3.71 ± 0.66	3.69 ± 0.69	3.69 ± 0.63	0.748	0.983

<sup>1</sup> RSE, Rosenberg Self-Esteem Scale; CABIS, Chinese Amputee Body Image Scale; WHOQOL-BREF, World Health Organization Quality of Life – Bref Instrument; SES, Socioeconomic Status; ULL, Unilateral Lower Limb; BLL, Bilateral Lower Limb; UL, Upper Limb.

## DISCUSSION

### **Self-esteem and Body Image**

As seen from the results, only the comparison between participants under 18 years of age and those 18 years or older showed a significant difference in the RSE and CABIS scores. Those under 18 years of age scored significantly lower CABIS scores and RSE scores, than participants aged 18 or above, indicating that younger amputees may have better mental well-being than their older counterparts. A reason for this may be the increased social exposure that adults have, compared to children. With increased social exposure, the adult amputees may start to compare themselves to “normal” people they meet day-to-day, and hence feel inferior or less confident in themselves, leading to lower mental and psychological health.

Yet, Frank et al (1984) showed an opposite result from this study, indicating that younger amputees were more prone to suffer from depression and psychological symptoms than older amputees who exhibited less depression and psychological symptoms. This is in contrast to the study by Holzer et al (2014) which found similar data to the current study, demonstrating that the younger age group of unilateral lower limb amputees had a better body image perception as well as a higher quality of life. However, it must be noted that the younger group of participants in the study by Holzer et al (2014) were below 50 years of age, whereas in this study the cut-off age for the “younger” group of clients was 18 years. It is most relevant that Xu and He (2012) showed very similar results to this study as they identified that “middle-age” (clients between 35 and 44 years) is a risk factor for poorer mental health, compared to younger clients (between 18 and 24 years). This is in line with the results of the current study, where the younger sample group exhibited better psychological health compared to the older sample group.

The analysis of the effect of gender, socioeconomic status and level of amputation on self-esteem and body image of the amputees did not reveal any significant difference.

### **Quality of Life**

The statistical analysis results showed that there were no significant differences in quality of life among amputees with different socioeconomic status and types

of amputation. Other studies have also found that socioeconomic status does not correlate significantly with quality of life (Poljak-Guberina et al, 2005; Davie-Smith, 2017). However, female participants and participants below 18 years of age seem to have a better quality of life, as indicated by higher QOL-Q1 scores and QOL domains 3 and 4 scores respectively.

Female participants showed significantly higher QOL-Q1 scores, which indicated that they were in general more satisfied with their quality of life. This may be explained by the higher opportunity for social exposure of male amputees compared to their female counterparts as, in most Chinese families, the patriarch is still the bread-winner. Therefore, as the male amputees interact and work with "normal" people, they may start to feel inferior with regard to functional ability and productivity, thereby making them dissatisfied with themselves and their quality of life. Male amputees may also be required to venture outside the home more often and spend more time in public areas, such as malls, parks, restaurants, et cetera, which may not be well-catered and well-designed for the convenience of people with disabilities. This will again reduce their satisfaction with the general quality of life. Furthermore, traditional Chinese culture stereotypes males to be strong and independent, creating a phenomenon where males tend to hide their feelings and stress. This leads to poorer emotional and social support, as well as poorer psychological health. These aspects make up important domains in the assessment and perception of quality of life, leading to lower quality of life satisfaction in males compared to females. However, Holzer et al (2014) again contrastingly stated that female amputees had a significantly lower appearance orientation, health orientation and social functioning in the Multidimensional Body-Self Relations Questionnaire (MBSRQ) than male clients. These results imply that female amputees have poorer body image perception and mental well-being, which is not in line with the results of the current study, which shows female clients to have better psychological health. There can be many reasons for the difference in results. One reason could be the differences in the background and demographics of the participants in this study and those in the study by Holzer et al (2014). However, the study conducted by Peirano & Franz (2012) uncovered results similar to this study, where "existential spirituality, female gender, and age above 50 years related to higher QOL in clients with a history of limb amputation". They found that male amputees were comparable to female amputees, indicating that they had poorer quality of life in terms of physical and health aspects. Furthermore, they found lower satisfaction with life scores

among male participants compared to females, which is similar to the results of the current study.

Younger amputees under the age of 18 years also revealed a significantly better quality of life as shown by the higher WHOQOL-BREF score in domains 3 and 4, as well as on Question 2, when compared to amputees who were 18 years or older. This indicates that the younger amputees have better social relationships and higher satisfaction with their environment compared to the older amputees. Younger amputees also have comparatively higher satisfaction with their general health condition. These significant results may be related to the higher functionality and easier adaptation to prostheses by younger amputees (Chan et al, 2017), which may permit reduced restrictions in daily and social activities, and allow them to maintain a more positive relationship with their environment. Younger age is shown to be associated with a successful prosthetic ambulatory outcome (Munin et al, 2001); this can lead to better functionality and reduced disability, and subsequently to a better perceived quality of life compared to older amputees.

As far as the authors of this study are aware, this is the first study utilising RSE, CABIS and WHOQOL-BREF in assessing mental well-being and psychological health and their correlation to the Sichuan amputees' age, gender and socioeconomic status. This makes it difficult to draw comparisons in the literature.

### **Limitations**

This is a cross-sectional study, so it may not be as enlightening as a longitudinal study which can continuously assess the clients' psychological health and monitor their psychological recovery in the post-amputation period. This can be improved by organising multiple visits through the years, and assessing the clients' psychological well-being and quality of life at each visit. Furthermore, this is a self-administered and self-reporting questionnaire, therefore clients may over/under report, leading to recall and reporting bias.

There may also be a selection bias, as the study participants were recruited from a single clinic session and not via random selection. Also, the Stand TALL team provides regular follow-up and will ensure that the clients are well, both physically and psychologically. This could lead to overestimation of the mental well-being of amputees, particularly post-disaster victims who may have poorer psychological health. Since another selection bias is that all the study participants

are disaster-caused amputees, it may lead to an underestimation of psychological well-being, as disaster victims tend to have poorer psychological health (Xu and He, 2012). One method to improve this selection bias is to recruit amputees not only from disasters, but also as a result of medical problems such as diabetes mellitus, peripheral arterial diseases and osteosarcoma. By doing so, it may be possible to observe and assess the difference between the psychological health and quality of life of disaster amputees and non-disaster amputees. Moreover, the study had no control group, so it has not been possible to appreciate the difference in self-esteem, body image and quality of life among amputees as compared to “normal people”. This can be improved by recruiting a control group that has similar demographics to the participants of this study, and assessing these aspects using the same/similar questionnaires.

Phantom pain and level of prosthetics usage are some of the aspects that have not been considered in this study. Many studies show that phantom pain or residual limb pain and prosthetic usage are significantly correlated with functionality, quality of life and general psychological well-being (Munin et al, 2001; van der Schans et al, 2002; Akyol et al, 2013; Chan et al, 2017). This should be considered in further studies. It must also be recognised that self-esteem, body image and quality of life are not the only factors accounting for mental well-being, and therefore cannot fully reflect the complete psychological well-being of the clients. Yet, due to various constraints, such as time and resource limitations, only these factors were chosen for analysis and discussion.

## CONCLUSION

In conclusion, this study shows that younger amputees and female amputees possess significantly higher self-esteem, body image perception and quality of life, indicating that they may have better psychological health and mental well-being than the older and male counterparts. Therefore, awareness and vigilance must increase with regard to mental health issues or psychological symptoms that may arise in the latter group of clients.

However, no significant differences were observed in respect of self-esteem, body image distortion and quality of life between the different socioeconomic classes and the different types of amputations. The main factors affecting the outcome measures are age and gender. It is also observed that there are relatively high self-esteem (RSE=19.7), low body image distortion (CABIS=50.38), and high quality of life scoring (D1=68.00; D2=69.40; D3=70.30; D4=63.16) among all clients treated by

the Stand TALL programme, which may imply that it is an effective and holistic rehabilitation programme.

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