

## Effect of Physical Disabilities on Quality of life for Soldiers

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### Abstract

**Background:** Physical disability is defined as a limitation in a functional domain that arises from the interaction between a person's intrinsic capacity, and environmental and personal factors. **Aim:** The aim of this study was to assess the effect of physical disabilities on quality of life for soldiers to assess the effect of physical disabilities on quality of life for soldiers. **Design:** A descriptive design was used to conduct this study. **Setting:** This study was conducted at Outpatient Rehabilitation clinics, in EL Agouza Police Hospital", Egyptian Ministry of Defense & "El Wafaa wa El Amal Hospital." **Sample:** Purposive sample of 200 soldiers with physical disabilities, who attended the previous outpatient clinics over 6 months **Tools:** three tools were used for data collection, *first tool* an interviewing Questionnaire sheet, *second tool* soldiers' activities of daily living (ADL) and *third tool* quality of life questionnaire. **Results:** The mean age of soldiers was  $28.31 \pm 4.23$  years, two third of studied soldiers had unsatisfactory knowledge about physical disability, about half of soldiers had good daily activities, two third of soldiers had average quality of life profile. **Conclusion:** There was a significant relation between physically disabled soldiers' activities of daily living and quality of life. There was a significant relation between physically disabled soldiers' health needs and quality of life. Also there was a significant relation between physically disabled soldiers' knowledge and quality of life. **Recommendations:** Design rehabilitation program for soldiers related to physical disability to enhance their quality of life.

**Keywords;** Soldiers, Physical disability, Activities of daily living, Quality of life.

### Introduction:

Disability has been included in various targets and as a cross-cutting issue in the 2030 Agenda for Sustainable Development. Working in heavily physical demanding occupation such as military has risk on well-being of soldiers. It is difficult to evaluate the overall impact of physically demanding jobs on service related occupational disability. Moderately physically demanding jobs were associated with low risk for back related disability (Dietler et al., 2019).

All occupations are classified according to physical job demands. Physically demanding jobs are assigned to the soldiers having physical risk-taking abilities and capabilities to do the required jobs safely. There is no proper documentation based on overall health risks faced by soldiers. An evaluation of health risks associated with physically demanding jobs is required to prevent the occupational injury (Chopade & Gupta, 2021).

Occupational risks have high impact on disability though it is least recognized in

civilian work settings. Occupational injury, hospitalization and disability related to service on or off the battlefield is one of the reasons for discharge from military services. There are various causes of discharge from military service. These causes are such as physical disability, mental disorder, medical disability, misconduct or other legal problems, unauthorized absence from work, personality disorder behavior, alcohol rehabilitation behavior, etc. (Jester, 2019).

Physical disability is defined as a limitation in a functional domain that arises from the interaction between a person's intrinsic capacity, and environmental and personal factors. From this perspective, functioning occurs at three levels: body function and structures, activities and participation. For example, if an individual cannot move their legs, he/she experiences a limitation in functioning at the body function level (Pullen & Silk, 2020).

Mental and physical health problems may lead to disability. Work contributes broadly

to health and well-being, therefore, an important sub-domain of disability. Some health problems clearly contribute more than others to the overall burden of disability, though their precise contribution to disability soldieries across populations. Physical disability affects the satisfaction with health, the ability of independent functioning, ability to work and earn for a living, the ability to have and raise children, and achieving partnerships (Linett, 2017).

Own body image, self-concept and self-esteem can be significantly altered as a result of a disability. All of these factors may contribute to a lower quality of life for those with disabilities. Some studies have shown poor quality of life for soldier with physical disability (Linett, 2017).

Conceptually, the relationship between health and disability may be more pronounced in workers in mentally and physically demanding professions, such as emergency responders, and soldiers. Disabilities have caused a substantial disease burden and showed an increased trend in developing countries' physically disabled soldier experience more restrictions in social activities than healthy soldiers, which are associated with lower level of well-being and relative poor quality of life (Sheppard et al., 2018).

Quality of life is a complex experience influenced by objective conditions in which a person lives (social indicators), subjective response of the person to their life conditions (psychological indicators), the adjustment of expectations and needs of the person with their lifestyle (social policy) and external influences. World Health Organization defines Quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment (Sosnowski et al., 2017).

Community health nurse take into account all aspects of accessibility for persons

with disabilities, provide training for stakeholders on accessibility issues facing persons with disabilities, provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public (Taylor-Clark & Patrician, 2020).

Additionally promote other appropriate forms of assistance and support to persons with disabilities to ensure their information access, promote access for persons with disabilities to new information and communications technologies and systems, including the Internet and promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost (Taylor-Clark & Patrician, 2020).

Rehabilitation programs can be designed to improve an individual's Activities of daily living (ADL) and restores functional capacity. Therefore, it would be beneficial to understand which activities have more influence on the health status. Community health nurses should have a good knowledge of the physical abilities, problems and needs of individuals to improve their psychosocial, emotional and physical well-being. Assessment of elderly individuals aims at identifying their activities of daily living, social resources, economic resources and physical and mental health statuses (Rush et al., 2017).

### **Significance of the Study:**

Physical Injuries, one of the top public health problems in the community, which may have elevated in the military population, and affects the operational readiness, raise healthcare costs and result in disabilities and mortalities.

Historical data from the United State (US ARMY) indicate that 10% to 15% of surviving physical disabilities casualties under take disability retirement. Otherwise, Medical and safety data have revealed that across all Services (army, navy, Marine Corps, air force), unintentional (accidental) injuries caused 47%–57% of all deaths; 22%–63% of all disabilities;

and 22%–31% of all hospitalizations (Ruscio et al., 2010).

Statistical data from the patients' documentation records revealed the number of the physically disabled cases over the year as, EL Agouza Police Hospital has about 110 soldiers, El Wafaa wa El Amal Hospital has about 85 soldiers, and El Agouza Physical Therapy and Rehabilitation Center has about 94 soldiers.

Physical disabilities have caused an extensive disease problem, which is showed an increased in developing countries. Physically disabled people are associated with worse level of well-being and poor quality of life (QoL), that mainly related to restrictions in social activities than healthy people. The QoL as a public health, it is a multidimensional concept including physical health, psychological and social well-being features, and beliefs. Thus in physically disabled people, the QoL is subjective and affected by intrinsic and extrinsic issues, that may include depression and anxiety, lower self-efficacy, and poor physical activity (Rajati et al., 2018).

#### **Aim of this study:**

The present study aimed to assess the effect of physical disabilities on quality of life for soldiers through:

1. Assessing soldiers' knowledge regarding their physical disabilities.
2. Assessing soldiers' health needs related to their physical disabilities.
3. Assessing soldiers' health problems related to their physical disabilities.
4. Assessing soldiers' quality of life-related physical disabilities.
5. Assessing soldiers' Activities of Daily Living related physical disabilities.

#### **Research Questions:**

1. Is there a relation between physically disabled soldiers' Activities of Daily Living and quality of life?
2. Is there a relation between physically disabled soldiers' health needs with their quality of life?
3. Is there a relation between physically disabled soldiers' knowledge and their quality of life?

4. Is there a relation between physically disabled soldiers' problems with their Activities of Daily Living?

#### **Research design**

A Descriptive research study design was utilized in conducting the study.

#### **Study Setting**

This study was conducted at Outpatient Rehabilitation clinics, which affiliated to: Ministry of Interior Affairs - Egypt - "EL Agouza Police Hospital", Egyptian Ministry of Defense "El Wafaa wa El Amal Hospital.", and Armed Forces – Egypt- "El Agouza Physical Therapy and Rehabilitation Center".

#### **Sample size:**

Purposive sample of 200 soldiers with physical disabilities, who attended the previous outpatient clinics over 6 months and meet the following criteria

#### **Inclusion Criteria:**

- Soldiers who have physical disabilities since one year.
- Physical disabilities related to work hazards.

#### **Data collection tool:**

The data were collected using interviewing questionnaire form. This was designed by the investigator based on review of related literature. It was written in simple Arabic language and revised by the thesis supervisors. Data was collected using the following tools:

**First tool: An interviewing Questionnaire sheet:** it was designed by investigator after reviewing related literature and translated to Arabic language, it includes the following parts:

**Part I:** Socio-demographic data, such as (age, marital status, level of education, residence) and history of physical disability included; kind of impairment, duration of injury, time of occurring injury.

**Part II:** Soldiers' knowledge regarding physical disabilities as a definition, physical movement disability, multiple physical disability, physical sensory impairment, concept

of mental disability, causes of physical disability, physical effect, psychological effect, effect on social status, effect on physical or economic status, effect of physical disability on daily living activity, concept of rehabilitation and living independence, obstacles faced persons with physical disabilities, health services ,places to receive health services, sources of health information.

#### ❖ Scoring system:

A scoring system was followed to assess soldier's knowledge. The right complete answer was scored as two point, one point for incorrect answer. These scores was summed and converted into a percentage scores.

Total scoring (32) was classified as the following:

- Less than 50% unsatisfactory level of knowledge.(less than 16 degree)
- More than or equal 50% satisfactory level of knowledge.(16 degree or more)

**Part III:** Soldiers' health needs include 4 items as physical, social, financial, and psychological needs (Wei, Liu, Chen, Zhou & Hu, 2016).

Physical needs 8 Q, social needs 4 Q, financial needs 3 Q, and psychological needs 5 Q (total 20 questions)

#### ❖ Scoring system:

Each item was scored as the following never (0), sometimes (1) and always (2). These scores were summed and converted into a percentage scores, total score was 40 degree, classified as the following:

- Less than 50% low need (less than 20 degree).
- From 50% to less than 75% moderate need. (20 to less than 30 degree)
- From 75% and more high need. (30and more )

**Part IV:** Soldiers' health problems as Physical problems, social problems, financial problems, and psychological problems (Wei, Liu, Chen, Zhou & Hu, 2016).

#### Scoring system:

Each item was scored as the following never (0), sometimes (1) and always (2). These scores was summed and converted into a

percentage scores, total score was 46 degree, classified as the following:

- Less than 50% low problem (less than 23 degree)
- From 50% to less than 75% moderate problem (23 to less than 34.5 degree)
- From 75% and more high problem ( 34.5 and more)

**Second tool: Soldiers' Activities of Daily Living (ADL),** It was adopted from (Cornelis, Gorus, Beyer, Bautmans, & De Vriendt, 2017) and modified by investigator. It was included the fundamental skills typically needed to assess ADL based on the International Classification of Functioning, Disability, and Health (ICF), it includes two parts:

**Part I:** Basic ADL which included bathing, dressing, Transferring, Toileting , and feeding

#### ❖ Scoring system

Each item was scored as the following completely dependent (0), partially independent (1) and independent (2). These scores was summed and converted into a percentage scores, total score was 46 degree, classified as the following:

- Less than 50% dependent. Less than 23 degree.
- From 50% to less than 75% partially independent. (23 to less than 34.5 degree)
- From 75% and more independent. (33.5 and more).

**Part II:** Instrumental ADL such as phone use, cooking, shopping, using transportation, Housekeeping, doing laundry, responsibility for own medications and handling finance.

#### ❖ Scoring system

Each item was scored as the following completely dependent (0), partially independent (1) and independent (2). These scores was summed and converted into a percentage scores, total score was 46 degree, classified as the following:

- Less than 50% dependent. Less than 23 degree

- From 50% to less than 75% partially independent.. (23 to less than 34.5 degree)
- From 75% and more independent. (33.5 and more)

### Third tool:

This part to assess Quality of life questionnaire, adopted from (WHO) and modified by investigator it includes two parts:

**Part I:** World Health Organization Quality of life (WHOQOL–BREF) (**WHOQoL, 1998**), which will include four domains “physical, psychological, social, environmental”.

**Part II:** this part to assess Quality of life Profile for People with Physical Disabilities (QOLP-PD) questionnaire (**Renwick et al., 2003**), which will include three domains “self-image included, Belonging, and Becoming.

### ❖ Scoring system:

- Less than 50% poor.
- From 50% to less than 75% average.
- From 75% and more good.

**Tool validity and reliability:** Once prepared and revised by the supervisors, the tool was presented to a panel of experts for face and content validation. These consisted of experts from the faculty members of the nursing department, at the Faculty of Nursing, Ain-shams University. They reviewed the tool for relevance, comprehensiveness, accuracy, and clarity of language. The tool was finalized based on their suggestions and recommendations. Cronbach alpha coefficient was calculated to assess the reliability of the coping scale through its internal consistency. The reliability of the coping scale used in the data collection tool was measured through assessing its internal consistency.

## II. Operational Design:

The operational design includes the detailed description of its preparatory phase, pilot study, and fieldwork.

### Preparatory phase:

This phase involved thorough review of the national and international related literature to gain in-depth knowledge about all the aspects of the research topic. This was achieved using

articles in journals and scientific periodicals as well as textbooks and online references. This helped the researcher to develop the data collection tool, and in the preparation of the scientific background and literature review section of the thesis.

### Pilot Study:

A pilot study was carried out on 10% of the total sample size. It was conducted to test the clarity and applicability of the study tool and the time required for the interview. Pilot study included in study sample.

### Fieldwork:

An approval was obtained from scientific research ethical Committee Faculty of Nursing - Ain Shams University After securing all necessary permissions, the investigator visited the study settings and met with the director of each study setting to schedule the proper time for data collection. Then, she met with the soldiers individually, introduced herself, gave a brief explanation of the nature and aim of the study, and obtained an oral informed consent for participation.

It was started from 9/ 2021 to 4/ 2022. The researcher was available in the study settings 2 days/week. The interview for each soldier took 30-45 minutes. The fieldwork lasted over a period of 8 months.

## III. Administrative Design:

An official permission was sent to the Director of “EL Agouza Police Hospital”, El Wafaa wa El Amal Hospital, and El Agouza Physical Therapy and Rehabilitation Center”, to conduct the study, then was submitted for administrators of previously mentioned setting, concerned the title objective, study technique and tools seeking for their co-operation total confidentiality of any obtained information was ensured.

Official permission to conduct the study were obtained from Director of “EL Agouza Police Hospital”, El Wafaa wa El Amal Hospital, and El Agouza Physical Therapy and Rehabilitation Center”. These were obtained based on letters issued from the Dean of the Faculty of Nursing, Ain-Shams University, explaining the aim of the study, and with a copy

of the interview form enclosed. Based on this, official approvals were sent to the director of each setting.

#### **Ethical considerations:**

The study was approved by the Research Ethics Committee at the Faculty of Nursing, Ain-shams University. An oral informed consent to participate was obtained from each soldier before inclusion in the study after clear and simple explanation of the study aim and procedures, and after being informed about the right to refuse or withdraw at any time without giving any reason. They were assured that all the gathered data would be treated confidentially and used for research purpose. The interviews were done individually and with privacy.

#### **IV. Statistical Design:**

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians for quantitative variables. Qualitative categorical variables were compared using chi-square test.

#### **Level of significance was accepted at P value:**

- Significant difference  $P < 0.05^*$
- Non significant difference  $p > 0.05$

#### **Results:**

**Table (1):** shows that 45% of studied soldiers were in the age group 20-<25 years and 52% in the age group 25-<30 years with mean age 28 years. As regarding marital status, 55% were married, while regarding education, 55% had Intermediate Education and 34.5% had

university education. As regarding to place of residence, 63% lives in urban places.

**Table (2):** As regarding health related information, shows that 62% had Physical impairment and 17% had auditory impairment. Regarding injury time, 51.0% of the sample had injury time 1<2 years while 43.5% had <1 year.

**Figure (1):** shows that 61% of studied soldiers were unsatisfactory knowledge about physical disability while 39% were satisfactory knowledge.

**Figure (2):** shows that 66% of studied soldiers had moderate total health needs while 25.5% had low health needs.

**Figure (3):** shows that 68% of studied soldiers had moderate health problems while 24.5% had low health problems.

**Figure (4) :** shows that the highest percent of studied soldiers (49%) had good daily activities while 41.5% had average daily activities.

**Table (3):** shows that there is a significant relation between physically disabled soldiers' Activities of Daily Living and quality of life.

**Table (4):** shows that there is a significant relation between physically disabled soldiers' health needs and quality of life.

**Table (5):** shows that there is a significant direct strong relation between physically disabled soldiers' knowledge and quality of life.

**Table( 6) :** shows that there is a significant relation between physically disabled soldiers' Health problems and their Activity of daily Living.

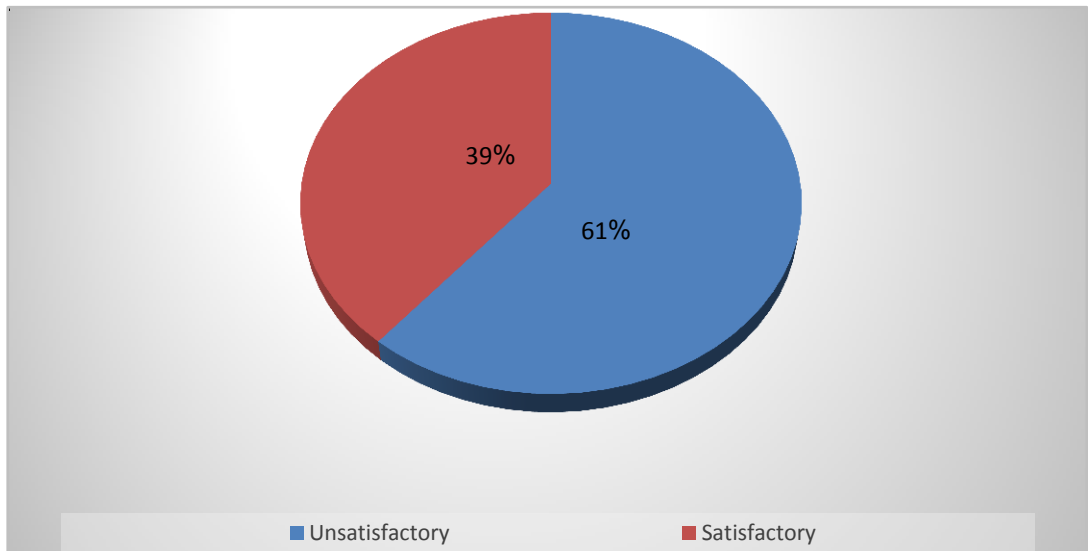
**Table (1):** Percentage distribution of Studied Soldiers Regarding Their Demographic characteristics (N=200).

Demographic characteristics	No	%
<b>Age</b>		
20 <25 years	90	45.0
25<30 years	104	52.0
≥30years	6	3.0
<b>Mean and SD of age</b>	<b>28.31±4.23</b>	
<b>Marital status</b>		
Single	90	45.0
Married	110	55.0
<b>Educational level</b>		
Not reads or writes	1	.5
reads and writes	20	10.0
Intermediate Education	110	55.0
University Education	69	34.5
<b>Place of residence</b>		
Rural	74	37.0
Urban	126	63.0

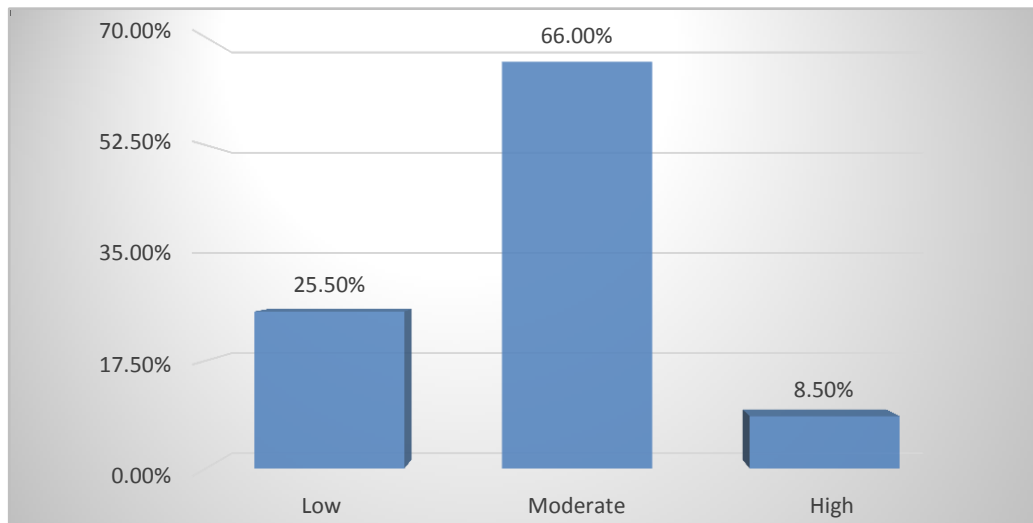
**Table (2):** Percentage distribution of Studied Soldiers Regarding history of physical disability (N=200).

Items	No	%
<b>Kind of impairment</b>		
Physical impairment	124	62.0
Physical deformity	18	9.0
Visual impairment	24	12.0
Auditory impairment	34	17.0
<b>Injury time</b>		
< one year	87	43.5
1<2 years	102	51.0
2<3 years	7	3.5
3<4 years	3	1.5
≥4 years	1	0.5

**Figure (1):** Percentage Distribution of Studied Soldiers Regarding their total Knowledge Score about Physical Disabilities (N=200).

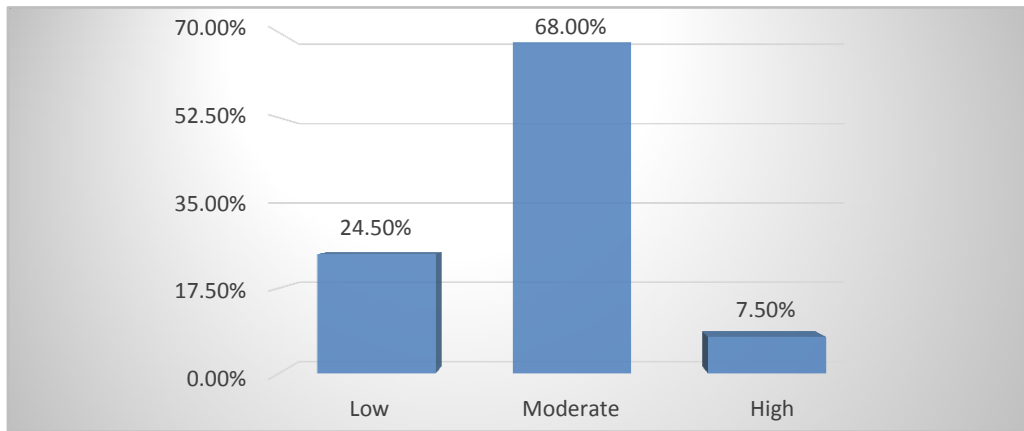


**Figure (2):** Percentage Distribution of Studied Soldiers Regarding their total Health Needs (N=200).

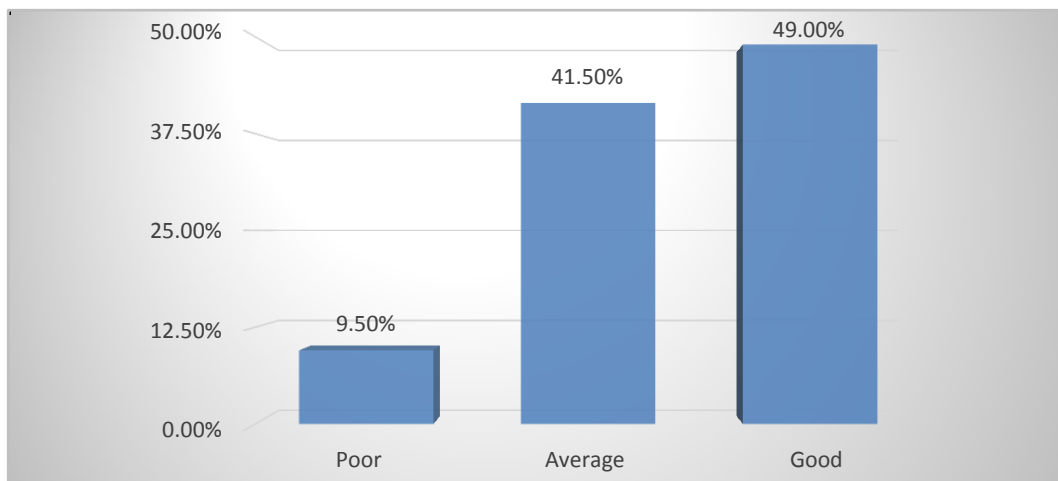




**Figure (3):** Percentage Distribution of Studied Soldiers Regarding their total Health problems (N=200).



**Figure (4):** Percentage Distribution of Studied Soldiers Regarding their total Score Activities of Daily Living (Basic ADL) (N=200).



**Table (3):** Relation between physically disabled soldiers’ Activities of Daily Living and quality of life (N=200).

Items	Poor		Average		Good		x <sup>2</sup>	P value	Sig
	No	%	No	%	No	%			
Total Activity of Daily living	22	11	83	41.5	95	47.5	21.821	0.000	HS
Total Quality of life	21	10.5	127	63.5	52	26			

**Table (4):** Relation between physically disabled soldiers' health needs and their quality of life (N=200).

Items	Poor		Average		Good		$\chi^2$	P value	Sig
	No	%	No	%	No	%			
Total Health Needs	51	25.5	132	66	17	8.5	30.351	0.000	HS
Total Quality of life	21	10.5	127	63.5	52	26			

**Table (5):** Relation between physically disabled soldiers' knowledge and their quality of life (N=200).

Items	Total Quality of life	
	R	P value
Knowledge	.408**	0.000 HS

**Table (6):** Relation between physically disabled soldiers' problems and their Activity of daily Living (N=200).

Items	Poor		Average		Good		$\chi^2$	P value	Sig
	No	%	No	%	No	%			
Total health problems	49	24.5	136	68	15	7.5	81.276	0.000	HS
Total Activity of Daily Living	22	11	83	41.5	95	47.5			

### Discussion:

Physical disability is an issue that is gaining more and more importance for the functioning of modern societies. The spectrum of effects of physical disability is extremely broad. They concern not only the physical domain, but also the mental and social dimension and can significantly affect the quality of life (Kubicki, 2019). WHO defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (WHO,2023).

Activities of daily living are activities related to personal care. They include bathing or showering, dressing, getting in and out of bed or a chair, walking, using the toilet, and eating. If a sample person has difficulty performing an activity by himself/herself and without special equipment, or does not perform the activity at all because of health problems, the person is deemed to have a limitation in that activity. The limitation may be temporary or chronic at the

time of the study (Ankuda et al.,2022). So the current study conducted to assess the effect of physical disabilities on quality of life for soldiers

Regarding demographic characteristics of the studied soldiers the current study result showed that, nearly half of studied soldiers were in the age group 20-<25 years and more than half of them in the age group 25-<30 years with mean age 28 years. As regarding marital status, more than half of them were married, while regarding education, more than half of them had intermediate education and more than one third of them had university education. As regarding to place of residence, less than two thirds of them living in urban places.

The present study result goes in the same line with Woodruff et al., (2018) who conducted study among 3245 participants in United States about " Health-related quality of life among US military personnel injured in combat" and demonstrated that, over half were married. While the present study result disagreement with Kumar & Gupta, (2016)

who applied study in India among 110 patients about "Effect of spinal cord injury on quality of life of affected soldiers in India" and mentioned that, the studied Participants were between the ages of 22 to 71 years with a mean± standard deviation (SD) of 41.3±12.0 years.

Regarding history of physical disability of the studied Soldiers the current study result showed that, less than two thirds of the studied subject had physical impairment and less than one fifth of them had auditory impairment. Regarding injury time, more than half of the sample had injury time 1<2 years while less than half of them had injury time <1 years

The present study result supported with **Bright et al., (2018)** who applied study among 106,462 people with disabilities across 64 countries entitled " A systematic review of access to rehabilitation for people with disabilities in low-and middle-income countries" and found that, less than one fifth of the studied patients had hearing disability, less than one third of them had physical disability while less than one fifth of them had Vision, more than one third of them had multiple disabilities.

The current study result in disagreement with **Islam, (2021)** who applied study in Bangladesh among 296 participants entitled "Awareness Level of Nurses Regarding Management of Stroke Patients in Rajshahi Medical College Hospital" and mentioned that, most of the studied patients their length of injury was ranged from 1- 10 years. Also contrast with **Munthali et al., (2019)** who applied study among 52 participants in Malawi about "This one will delay us": barriers to accessing health care services among persons with disabilities in Malawi" and mentioned that, less than half of the studied patients had physical disability, more than one fifth of them had visual disability, more than one tenth of them had hearing disability, also one tenth of them had mental disability.

Additionally in disagreement with **Hossain et al., (2018)** who conducted study in Bangladesh among 117 sample population about "Pattern of physical disability in Kurigram District, Bangladesh" and reported that, less than two thirds of the studied patients

had injury less than 2 years, less than one fifth of them had injury from 2-4 years, more than one tenth of them had injury from 5-7years, minority of them had injury from 8-10 years and six percentage of them had injury from above 10 years.

As regard total knowledge Score of the studied soldiers about physical disabilities the present study result showed that, less than two thirds of studied soldiers had unsatisfactory knowledge while more than one third of them had satisfactory knowledge about physical disability. From the researcher point of view the study patients' inadequate knowledge could be attributed to a lack of continuous education, and the fact that most health care providers did not routinely counsel patients with disability or provide them with written information about Health services.

Regarding total score of health needs of the studied soldiers the present study result showed that, nearly one quarter of studied soldiers had high psychological needs, less than one quarter of them had high Social needs while more than half of them had moderate psychological needs and the majority of them had moderate financial needs while less than half of them had low social needs. The present study result disagreement with **Chen et al.,(2019)** who applied study in China among 2885 participants about " Long-term unmet needs after stroke" and found that, less than three quarters of had emotional needs, slightly more than half for unmet support needs, more than one third for unmet financial/ benefits needs. From the investigator point of view, this might be due to people with disabilities often experience needs of health than people without disabilities for various reasons.

Regarding health problems of the studied soldiers the present study result showed that, more than one tenth of studied soldiers had high psychological problems while most of them had moderate social problems, three quarters of them had moderate psychological problems while less than half of them had low physical problems . As regard **Brongers et al., (2021)** who stated, health problems most frequently occurred together with a mismatch in education, financial problems, or care for family members. This might be due to difference in patients'

physical disability conditions of and patients' disability degree, and social support

Regarding total score Activities of Daily Living (Basic ADL) of the studied soldiers the present study result showed that showed that, less than two thirds of studied soldiers were independent regarding dressing and about half of them were independent regarding feeding while more than half of them were partially independent regarding bathing and less than one quarter of them were completely dependent regarding elimination. This result disagreement with **Hsiao et al., (2022)** who illustrated that, most of the studied patient had completely dependence in daily living activities. Also contrast with **Yarlagadda, (2020)** who mentioned that, traumatic brain injury patients continue to have disability, there were significant improvement occurred in functional status as well as ADL independence. More than one third of the studied patients had mild or partial disability on the DRS score while others had greater disability to varying degrees. Almost half of them were independent or needed minimal/ moderate assistance while less than half of them were continued to be in severely disabled. From the investigator point of view, this might be due to people with physical disabilities have an underlying health condition which causes greater needs or (needs help) with ADL

Regarding total quality of life the studied soldiers the present study result showed that, less than three quarters of studied soldiers had average quality of life while less than one fifth of them had good quality of life. The present study result in disagreement with **Detsyk et al., (2021)** who applied study among 151 individuals in UKRAINE about "Quality of life determinants in persons with disability after musculoskeletal injuries" and mentioned that, one third of people with disabilities after musculoskeletal injuries had low quality of life (QoL). From the investigator point of view, rehabilitation has previously received little attention from governments, which has contributed to poor service availability for physical disability patients and lack of co-ordination between services. Affordable and high-quality services should be available to all those in need.

Regarding relation between physically disabled soldiers' activities of daily living and quality of life the present study result showed that there was a significant relation between physically disabled soldiers' activities of daily living and quality of life. This result answered the first research question. As regard **Nätterlund & Ahlström, (2001)** recommended, activities of daily living (ADL) would not be a good predictor for quality of life. Instead, measurement of rehabilitation outcomes in terms of quality of life should take a multidimensional view of physical status and disability, psychological status and well-being, social interactions and economic status

Regarding relation between physically disabled soldiers' health needs with their quality of life the present study result showed that, there was a significant relation between physically disabled soldiers' health needs and quality of life. This result answered the second research question

According to **Pucci et al., (2012)** who applied study in Brazil among 1,461 adults about "Quality of life and physical activity among adults: population-based study in Brazilian adults" and found that, the positive relationship was seen between physical activity and QoL though this was varied according to the type and severity of the physical activity and QoL domains.

Regarding relation between physically disabled soldiers' knowledge and their quality of life the present study result showed that, there was a significant direct strong relation between physically disabled soldiers' knowledge and quality of life. This result answered the third research question. As respect to **Rajati et al., (2018)** who applied study among 302 physically disabled people in Iran entitled "Quality of life predictors in physically disabled people" and found that, there is little knowledge about the relationship between QoL and its predictors in physically disabled people and also, only a few studies focused on the demographic, sociocognitive, psychological, and other variables that affect the QoL in people with physical disabilities.

Regarding relation between physically disabled soldiers' problems and their Activity of

daily Living the present study result showed that, there was a significant relation between physically disabled soldiers' health problems and their Activity of daily living. From the investigator point of view this may be due to health problems affected Activity of daily living. This result answered the fourth research questions.

### Conclusion:

**In the light of the current study findings, it can be concluded that:**

Less than half of studied soldiers were in the age group 20-<25 years and more than half of them in the age group 25-<30 years with mean age 28 years. Less than two thirds of studied soldiers had unsatisfactory knowledge about physical disability while less than two fifths of them had satisfactory knowledge. Additionally There was a significant relation between physically disabled soldiers' Activities of Daily Living and quality of life. There was a significant relation between physically disabled soldiers' health needs and quality of life. Also there was a significant relation between physically disabled soldiers' knowledge and quality of life. Additionally there was a significant relation between physically disabled soldiers' Health problems and their Activity of daily Living..

### Recommendations:

**Based on the current study finding the following recommendations were proposed:**

- Develop and implement health education program for people with physical disability about physical disability, types, how to deal, how to cope with disability and health needs and problems and social support.
- Design rehabilitation program for soldiers related to physical disability to enhance people knowledge, activity of daily activity and quality of life for people with physical disability.
- Availability of Health care services through community places

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