

# The Quality of Life of Students with Disabilities at Sultan Qaboos University

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**ABSTRACT:** This quantitative study aimed to assess the quality of life (QOL) among students with disabilities at Sultan Qaboos University (SQU), Oman. Using the World Health Organization QOL questionnaire (WHOQOL-BREF), data were collected from 35 students with physical, hearing, and visual impairments. Results indicated that participants reported a high level of satisfaction in the social relationships ( $M = 3.90$ ,  $SD = 0.85$ ) and environment ( $M = 3.80$ ,  $SD = 0.72$ ) dimensions, while the physical health dimension showed a moderate level of satisfaction ( $M = 3.27$ ,  $SD = 0.48$ ). Psychological health also received a relatively high score ( $M = 3.73$ ,  $SD = 0.62$ ). Analysis by gender revealed no statistically significant differences in QOL, whereas significant differences were found based on disability type in the physical ( $p = 0.001$ ) and psychological ( $p = 0.026$ ) dimensions, with students with physical disabilities reporting higher scores. The study's small sample size and convenience sampling method limit the generalizability of findings, suggesting a need for further research with larger, more diverse samples to better understand the QOL of students with disabilities. This research provides valuable insights for SQU and similar institutions to enhance support services for students with disabilities. The results indicated that students with disabilities have a high level of QOL. The results also showed that students with physical disabilities have a higher level of QOL than students with visual and hearing impairments. The study recommended conducting research on students with disabilities in Omani universities and evaluating the quality of services provided to them.

**Keywords:** quality of life, students with disabilities, sultan Qaboos university, Oman.

## I. INTRODUCTION

The traditional role of psychology was previously limited to studying the negative aspects of the human personality, while contemporary psychology focuses on the positive aspects of the human personality to reach a high level of happiness, well-being, or the QOL. The QOL has its roots in Aristotle's Theory of the Good Life, which believed that happiness and well-being were the goals of human existence [1]. In the twentieth century, QOL became one of the terms of psychology, and positive psychology in particular [2]. Therefore, positive psychology highlights the positive aspects more than the negative ones in a person's life [3]. The American psychologist Seligman was the founder of positive psychology [4,5]. Seligman believes that positive psychology is based on three principles related to positive emotions, positive traits, and positive institutions [6]. These principles are concerned with positive feelings, personal characteristics, the role of social institutions such as the family, and freedom in promoting positive development [7]. It can be concluded that QOL depends on the quality of services provided to individuals of society and its ability to satisfy their needs. QOL is a realistic expression of a person's mental and physical health and satisfaction with the level of educational and social services [8]. It also expresses the values of social justice, democracy, morale, and belonging to the homeland [9].

The QOL expresses the degree of enjoyment of health, psychological comfort, and involvement in various life events [10, 11]. It is the interaction of personal values and life satisfaction through a person's awareness of his/ her place in this life within the context of his/ her society, culture, and beliefs [12]. In other words, QOL is involved in the psychological, health, physical, and social aspects of life and the person's relationship with their environment [13]. It is a person's beliefs about different life situations according to his/her feeling of psychological happiness and

satisfaction with the health condition [14], and it also includes the person's positive social relationships with his/her family and friends [15].

The QOL has received attention from the World Health Organization (WHO), which considers it a state of complete physical, mental and social well-being in a person [16]. Therefore, WHO has clarified the general framework for the term and indicators of the QOL as the level of a person's sense of continuous improvement in the health, physical, psychological, social and environmental dimensions [17,18]. Physical health indicators include a person's mechanism of dealing with problems of fatigue, pain, sleep, and developing his or her physical energy [19,20]; psychological health indicators include self-confidence, self-esteem, cognitive functions, and the emotional state of the person [21]; social health indicators include interpersonal relationships and participation in social and recreational activities [22]; environmental health indicators include freedom, safety, financial income, and avoidance of noise and pollution [23].

As a result of this debate between theorists about the term, domains, and indicators of QOL, theories and models have emerged to explain it. Schalock and Verdugo's QOL model interpreted the term QOL by including eight subdomains: emotional well-being, interpersonal relations, material well-being, personal development, physical well-being, self-determination, social inclusion, and rights [24]. Each of these sub-domains reflects three indicators related to the individual, organizational, and societal levels that affect people's QOL [25]. It's worth noting that the current study adopted this model because it is compatible with the objectives and sample of this study. In this regard, previous studies agreed on the positive impact of this model on persons with disabilities (PWDs) by presenting a modern approach that includes standards and indicators of QOL and evaluation of support, services, and policies related to them [24-29]. Therefore, the literary review stressed the significance of measuring QOL for PWDs and without disabilities through performance standards and indicators. As a result, the QOL of university students with disabilities will be highlighted below.

Schalock and Verdugo's Quality of Life (QOL) model is particularly well-suited for this study because it provides a comprehensive, multi-dimensional framework for understanding quality of life that is applicable to individuals with disabilities. This model emphasizes both objective and subjective factors, capturing not only the external conditions that affect individuals' lives but also their internal perceptions and experiences. The model includes several key domains that are relevant to this study:

**Emotional Well-being:** This domain focuses on the psychological state of individuals, including their sense of happiness, self-esteem, and mental health, which is critical for students with disabilities navigating academic and social environments in a university setting.

**Physical Well-being:** This dimension considers the physical health and well-being of individuals, which is essential for students with physical disabilities who may face mobility challenges or other health-related concerns in the university environment.

**Material Well-being:** This area addresses economic factors and access to resources, including whether students have access to accommodations and services necessary to support their academic and personal lives.

**Social Well-being:** This domain looks at the quality of relationships and social inclusion, which is particularly relevant for students with disabilities who may experience social isolation or discrimination on campus.

**Personal Development:** This dimension involves the ability of individuals to achieve personal goals, enhance skills, and grow in their personal and academic lives. It highlights the importance of support systems that can foster the academic success of students with disabilities.

**Interpersonal Relations:** Schalock and Verdugo also emphasize the importance of meaningful social connections and community integration, which is critical for university students, especially those with disabilities who may experience barriers to social participation.

**Relevance to the Study:** Schalock and Verdugo's model aligns well with the objectives of this study, which aims to assess the quality of life of university students with disabilities in Oman. The model's multi-dimensional approach allows for a nuanced understanding of how various aspects of life—emotional, physical, social, and personal—affect students' overall well-being. Given the diverse nature of disabilities (physical, sensory, intellectual, and mental health) represented in this study, the model's holistic framework ensures that the complex, intersecting factors influencing students' experiences are fully captured. Moreover, the focus on both external conditions (e.g., access to resources) and subjective experiences (e.g., personal satisfaction) makes it particularly relevant for understanding the lived experiences of students with disabilities in a university setting.

In addition, the model's focus on social inclusion and personal development is highly relevant in the context of Oman, where cultural and institutional factors can have a significant impact on students' social integration and opportunities for academic achievement. This model provides a solid theoretical foundation for examining these issues and is thus an appropriate tool for assessing the quality of life of university students with disabilities in Oman.

Youth are among the components and growth factors of societies, with their motivations, ambitions, talents, energies, and abilities. Universities seek to organize students' lives by refining behaviors and meeting ambitions, in addition to providing them with knowledge, skills, values, and positive attitudes that meet their health, psychological, social, and intellectual needs [30]. The university stage is one of the educational phases that contributes to enhancing the QOL for students and qualifies them to enter the labor market, marriage, and family stability [31]. Therefore, university students are the focus of the educational process that seeks to increase their academic level and personal growth [32]. The university stage is subject to the students' personal perceptions and convictions and their evaluation of the services provided by the university, which as a whole represents the quality of their university life [33].

The students' perceptions of the services provided by the university are an emotional state ranging from the lowest to the highest levels of quality [34]. It is also the summary of the students' assessment of the extent of their ability to satisfy their innate, acquired needs, and their enjoyment of the surrounding conditions, which reflects positively on their academic achievement at the university. Therefore, it is necessary to measure the QOL of university students to include qualitative indicators related to social, academic, health and personal aspects to reveal the level of student satisfaction with the services provided by the university [35]. Therefore, the QOL is for everyone, but it is most important for PWDs. They look at life differently because of disability and the support they receive from their family or community [36]. PWDs need services that help them adapt to life conditions according to disability. In this context, Bekemeier [37] indicated that rehabilitative services based on community inclusion have a positive impact on the QOL of PWDs more than their disabled peers who were not provided with these services. Therefore, PWDs need to be empowered to ensure their adaptation and harmony with university life by facilitating their easy access to environmental and academic resources [38]. Perhaps the trend towards e-learning and the introduction of technology into the educational process has imposed educational challenges on PWDs in universities and schools [39, 40]. In this regard, Lambert and Dryer [41] indicated the negative impact of online education on psychological, personal, academic aspects and the QOL of students with disabilities.

This study aims to explore the quality of life (QOL) among students with disabilities at Sultan Qaboos University (SQU), with particular attention to variations in QOL across gender and different categories of disability. The research addresses the following key questions:

- 1) What is the overall level of quality of life among students with disabilities at SQU?
- 2) Does the level of QOL differ between male and female students with disabilities?
- 3) Are there significant differences in QOL based on the category of disability (physical, hearing, or visual impairments)?

The objectives of this study are:

- 1) To assess the general quality of life among students with disabilities at SQU.
- 2) To determine whether QOL varies significantly by gender.
- 3) To evaluate differences in QOL according to disability type.
- 4) To provide insights and recommendations for enhancing QOL support services for students with disabilities at SQU.

The quality of life (QOL) of university students is a key determinant of their academic success, psychological well-being, and social integration. However, for students with disabilities, there are often additional challenges that can significantly impact their ability to thrive in a university environment. These challenges include physical barriers, limited access to support services, social isolation, and mental health concerns, all of which can adversely affect their overall quality of life. While there has been growing global recognition of the importance of assessing QOL in students with disabilities, much less attention has been paid to the specific context of students with disabilities in the Sultanate of Oman.

This study aims to address several unique gaps in the existing literature, particularly concerning university students with disabilities in Oman. Despite efforts to promote inclusivity and access for students with disabilities in higher education, several issues remain largely unexplored in the Omani context:

- 1) **Limited Context-Specific Research:** There is a scarcity of studies in Oman that systematically assess the quality of life of students with disabilities in universities. Most research on this topic tends to focus on general student populations or is limited to Western countries, overlooking the cultural, social, and institutional differences that may influence the experiences of Omani students with disabilities.
- 2) **Lack of Comprehensive QOL Assessment:** While there are various tools to assess quality of life, few studies have utilized comprehensive, multi-dimensional instruments such as the WHOQOL-BREF to evaluate the physical, psychological, social, and environmental aspects of life for students with disabilities. The absence of

such research prevents a holistic understanding of how these students navigate their academic and personal lives in the university setting.

- 3) **Inadequate Focus on Disability-Specific Needs:** While general accommodations are provided in many Omani universities, there is insufficient focus on the specific needs of students with various types of disabilities (e.g., physical, sensory, intellectual, and mental health). This study aims to fill this gap by examining how different types of disabilities affect the overall quality of life and identifying areas where targeted support is most needed.
- 4) **Cultural and Institutional Barriers:** Cultural norms and societal perceptions of disability in Oman may differ from those in Western contexts, influencing the social integration and well-being of students with disabilities. This study will explore how cultural factors and institutional practices in Omani universities either support or hinder the quality of life for these students, providing crucial insights for future policies and interventions.
- 5) **Assessment of Environmental and Academic Support Systems:** Universities in Oman may not have fully optimized support systems for students with disabilities, such as accessible learning materials, physical campus accessibility, or mental health resources. This study seeks to identify the strengths and weaknesses of the current support systems in Omani universities and propose practical solutions for improving accessibility and inclusion.

By addressing these gaps, this study aims to provide valuable data on the unique challenges and opportunities faced by university students with disabilities in Oman. The findings will help inform policy decisions, improve student support services, and contribute to the broader discourse on inclusivity and quality of life for students with disabilities in higher education.

## 1. *THE RIGHTS OF PWDs*

Societal and international trends toward PWDs have changed through the legislation and international conventions aimed at unifying policies towards them. In this regard, the United Nations issued the Convention on the Rights of PWDs [42]. The Convention seeks to empower PWDs and provide them with the opportunity to actively participate in all aspects of life [43]. Therefore, the Convention included several personal, educational, health, social, cultural, sporting, personal mobility and professional rights for PWDs [44]. Most Arab countries responded to this Convention by issuing laws and legislation related to the rights of PWDs or modifying laws and legislation to be consistent with the contents of this Convention. As a result, the PWDs Law was issued in Egypt, which included the rights of PWDs, respect for their abilities, their right to express their opinions, and their educational rights [45]. In Saudi Arabia, an Organizing Guide for Special Education was issued, which aims to regulate the services provided to PWDs in special education schools and centers [46]. While, Jordan was the first Arab country to sign on the Convention Rights of PWDs. The Higher Council for Affairs of PWDs is the highest authority that is responsible for determining policies for PWDs [43]. In 2017, this council made adjustments to the Rights PWDs Act to comply with the contents of this Convention. At the national level, in 2008 the Sultanate of Oman issued the Disabled Care and Rehabilitation Law, which came in response to the contents of the Convention on the Rights of PWDs [47]. According to this law, the Sultanate of Oman is committed to providing educational services to PWDs up to higher education, in a manner appropriate to their physical, mental, sensory and psychological potential [48].

## 2. *PWDs IN SQU*

Based on international conventions and national laws, Omani higher education institutions have begun accepting PWDs in university programs. In SQU the students with disabilities compete for seats designated for them with the same admission conditions as students without disabilities through the Higher Education Admission Center in Oman. Students with disabilities are admitted into certain programs. Accordingly, the number of seats allocated for students with disabilities at SQU is 29 seats in each academic year [49]. On the other hand, the number of PWDs accepted into higher education institutions is constantly increasing, which is due to international legislation and understanding of their characteristic [50,51]. This increase created challenges for them as a result of their enrollment and low participation in university life, in addition to the low QOL after graduation due to their difficulty in obtaining jobs in the labor market [52]. In contrast, the QOL of PWDs can be improved through their participation in university activities and sectors of society, which reduces the problems they face.



## II. LITERATURE REVIEW

The QOL of PWDs has received the attention of several researchers. Therefore, Al-Zboon et al. [53] indicated that the level of QOL among PWDs in Jordanian universities was on average, and females have a higher level of QOL than males. Al Refaie and Al Mowaizri [54] confirmed that the level of QOL for families of Kuwaiti PWDs ranged from average to high. Al-Attayah and Mahasneh [55] showed average to high levels of QOL among PWDs at Qatar University, and it was higher among male students than female students. Algholeh [52] concluded that the level of QOL for PWDs at the University of Jordan was higher than their peers with disabilities at King Abdulaziz University, and there were differences in favor of males and students with visual impairment.

In China, Qi et al. [56] found that QOL was similar for Chinese students with and without hearing impairment, but it was high for those receiving hearing rehabilitation services. Salameh and Tannos [19] showed a negative correlation between future anxiety and QOL among Jordanian patients with Multiple Sclerosis. The high future anxiety leads to a lower level of QOL among patients. Moreover, Al-Miqdad and Al-Qatawneh [57] showed high satisfaction among Jordanian PWDs regarding the services provided by Mutah University, except for academic services. Al-Wabli [58] agreed with [57] that Saudi universities provide architectural, financial, and educational facilities for PWDs. Dweikat [59] recommended establishing special centers for students with special needs in Palestinian universities, involving them in student activities and councils, and improving the services provided to them. Jaiyeola and Adeyemo [60] concluded that Nigerian students with hearing impairment have a low QOL but their enrollment in special education schools protects them from social stigma and enhances social interactions among them. Dutta et al. [61] emphasized providing transitional services for university PWDs in the United States through empowerment and accessibility, use of assistive technology, and reducing barriers to their employment. Phukubje and Ngoepe [62] showed that PWDs were dissatisfied with library services at the University of Limpopo in South Africa despite the availability of a library services unit designed for these students. In this regard, Karki et al. [63] pointed out that there was a weakness in providing assistive technology services for PWDs in India, Nepal and Bangladesh, and that community awareness and government support may contribute to PWDs accessing these services. On the other hand, the qualitative research conducted by Papadopoulos et al. [64] concluded that assistive technology can enhance the educational, psychological and social benefits for PWDs enrolled in higher education institutions.

In the Omani context, Aldhafri and Al-Harrasiya [65] showed the low level of quality of educational services provided to students with hearing impairment that do not comply with quality standards and academic accreditation. Al-Rajhiyah and Aldhafri [66] showed a high level of satisfaction with the quality of services provided to students with visual impairment at SQU. In contrast, Al-Kiyumi et al. [67] indicated an average level of SQU in promoting the culture of entrepreneurship among students with disabilities. Ibrahim et al. [68] concluded that students with disabilities enrolled in Omani higher education institutions were satisfied with family QOL and a family environment characterized by interaction and providing them with all sources of support.

### 1. COMMENTARY ON PREVIOUS STUDIES

Previous studies have examined the QOL of PWDs in multiple categories and countries. These studies included demographic variables. The results of international and Arab studies showed that the level of QOL ranged from average to high, as well as differences according to gender and disability category. At the Omani level, the results of these studies indicated differences in the satisfaction of students with hearing and visual impairments with the services provided to them and the contribution of SQU in enhancing their awareness of entrepreneurship. Therefore, the current study has benefited from previous studies in writing the literature, instrument, statistical treatments, and discussion of the results. On the other hand, the Omani environment lacks studies conducted on the QOL of university students with disabilities.

## III. RESEARCH PROBLEM AND OBJECTIVES

The QOL of students with disabilities need in-depth studies. These studies should focus on academic and service quality. Academic quality focuses on learning outcomes and the acquisition of knowledge and abilities among students with disabilities. While service quality focuses on tangible and abstract services. The weaker understanding of the concept of service delivery in higher education institutions places more emphasis on measurable services such as equipment and the physical environment. Therefore, universities seek to develop the quality of services they provide to students to attract the largest possible number of students, which makes these universities occupy international rankings. The current study is similar to previous studies in terms of the idea and the target group in these studies, but it differs from these studies in that it is the second Omani study that addressed QOL for students with disabilities, and the participants are males and females with hearing and visual

impairments and physical and health disabilities. In other words, this study seeks to identify the QOL of Omani students with disabilities at SQU by answering the following questions:

- 1) What is the level of QOL of Omani students with disabilities?
- 2) Does the level of QOL differ according to gender?
- 3) Does the level of QOL differ according to disability category?

The study seeks to achieve the following objectives:

- 1) To identify the level of QOL of Omani students with disabilities.
- 2) To determine if there is a statistical relationship between QOL, gender and disability category.
- 3) Providing recommendations to decision makers at SQU to improve QOL of students with disabilities.

## IV. MATERIAL AND METHOD

### 1. RESEARCH DESIGN

This study used the descriptive quantitative approach to collect data, by translating and standardizing WHOQOL-BREF questionnaire in the Omani environment. The questionnaire was designed by Google Forms and the link was distributed in September 2023 to all students with disabilities enrolled at SQU. This study employs a descriptive quantitative design, using the WHOQOL-BREF questionnaire to assess the quality of life (QOL) among students with disabilities at Sultan Qaboos University (SQU). The following sections detail the sampling approach, potential biases, and limitations of this methodology.

### 2. PARTICIPANTS

A total of 35 out of 76 students with physical disabilities, and visual and hearing impairments responded to WHOQOL-BREF questionnaire. The participants enrolled in undergraduate programs in the humanities and science colleges for the academic year 2023/2024. Therefore, these participants were selected according to convenience sampling method. Convenience sampling is a non-probability sampling. This method is often used in social science research due to its practicality and time efficiency [69].

### 3. SAMPLING APPROACH

The sample for this study includes 35 students with disabilities out of a total eligible population of 76 students enrolled at SQU. Participants were selected using a convenience sampling method, where the study was advertised through the university's Disabled Students Unit and participation was voluntary. This sampling method was chosen for its practicality, given the limited population size and time constraints associated with reaching students with disabilities. Convenience sampling is often used in social science research when targeting specific groups with unique characteristics, such as students with disabilities, which can be challenging to recruit through random sampling techniques.

### 4. POTENTIAL BIASES

While convenience sampling provides a feasible way to gather data, it also introduces certain biases that may impact the results. Firstly, self-selection bias may be present, as students who chose to participate might have differing experiences or perceptions of their QOL compared to those who did not participate. Additionally, this method may lead to over- or under-representation of specific types of disabilities, as some students may have greater accessibility to or comfort with completing online questionnaires, potentially skewing the data toward those with certain disability types. Furthermore, given that the sampling relied on the Disabled Students Unit to reach participants, it may inadvertently exclude students who, for various reasons, are less engaged with the support services available at the university.

### 5. METHODOLOGY'S ABILITY TO CAPTURE DIVERSE EXPERIENCES

The study employs a quantitative, descriptive methodology using the WHOQOL-BREF questionnaire to assess the quality of life (QOL) among students with disabilities at Sultan Qaboos University (SQU). This approach offers a structured way to measure QOL across key dimensions (Physical, Psychological, Social Relationships, and Environment), providing valuable, generalizable insights into the overall well-being of this student population. The WHOQOL-BREF, as a standardized tool, enables objective comparisons and statistical analyses that highlight variations in QOL based on demographic factors such as gender and disability type.

However, while the quantitative approach is valuable for generating data-driven insights, it has limitations in fully capturing the complex, individualized experiences of students with disabilities. A structured questionnaire

like the WHOQOL-BREF may not account for the nuanced challenges that these students face within their academic and social environments. For example, the unique barriers encountered by students with different types of disabilities, such as accessibility issues, social inclusion, and academic support needs, may not be fully expressed through predefined questions. As a result, this methodology may overlook subtleties in the day-to-day experiences, coping mechanisms, and support needs of students with disabilities at SQU.

#### 6. LIMITATION OF THE CURRENT METHODOLOGY

- 1) **Limited Depth in Responses:** The quantitative approach restricts participants to selecting answers within a set framework, which may limit their ability to share personal or context-specific insights. Students might have diverse coping strategies or face unique challenges that the survey format does not allow them to elaborate on.
- 2) **Inability to Capture Contextual Factors:** The survey does not delve into environmental or social contexts that could influence QOL, such as campus inclusivity, faculty attitudes, or the role of peer support. These factors can vary widely based on individual backgrounds and are difficult to assess through a standard questionnaire alone.
- 3) **Potential for Response Bias:** Participants may respond based on perceived expectations or social desirability, which can skew results. Without an opportunity for open-ended responses, students might feel constrained in expressing their true experiences, leading to a limited view of their well-being.

#### 7. SUGGESTIONS FOR FUTURE RESEARCH: INCORPORATION MIXED METHODS

To better capture the diversity of experiences among students with disabilities, future research could utilize a mixed-methods approach. Combining quantitative surveys with qualitative methods, such as interviews or focus groups, would provide a more holistic view of QOL among students with disabilities. This approach would allow researchers to gather quantitative data to identify general trends, while also exploring the personal experiences and challenges of students through qualitative inquiry.

- 1) **In-depth Interviews:** Conducting interviews with a subset of participants could provide detailed insights into how individual students perceive and navigate their academic and social environments. These interviews could uncover specific barriers to inclusion, coping strategies, and personal perspectives on well-being that standardized questionnaires might miss.
- 2) **Focus Groups:** Organizing focus groups with students across different disability types would enable group discussions on shared and unique experiences. Focus groups could highlight common challenges, such as accessibility issues or social support, and offer a richer understanding of how students perceive their university environment.
- 3) **Case Studies:** Developing case studies for individual students or small groups within each disability category would allow an in-depth examination of their experiences and QOL, considering personal, social, and academic factors. This approach would be especially useful for highlighting the varied impacts of specific disabilities on QOL.

#### 8. BENEFITS OF A MIXED METHODS APPROACH

A mixed-methods design would better reflect the diversity of experiences among students with disabilities by integrating statistical analyses with personal narratives. This approach could provide a nuanced understanding of how QOL dimensions interact with specific disability types, backgrounds, and support systems. By including qualitative insights, future studies could offer recommendations tailored to individual needs, enhancing institutional policies and practices to improve QOL for all students with disabilities.

In summary, while the current methodology provides a structured foundation for assessing QOL, its limitations in capturing the depth and diversity of experiences suggest that future research could benefit from a mixed-methods approach. Integrating qualitative data would enrich the findings, providing a fuller picture of the factors that shape QOL and supporting more inclusive and targeted strategies to enhance well-being among students with disabilities.

The quality of life (QOL) of university students is a critical factor influencing their academic success, psychological well-being, and social integration. However, students with disabilities face additional challenges that can significantly affect their ability to thrive in a university setting. These challenges include physical barriers, limited access to support services, social isolation, and mental health issues, all of which can negatively impact their overall quality of life. While there has been growing global recognition of the importance of assessing QOL

in students with disabilities, there is a significant lack of research focused specifically on university students with disabilities in Oman.

This study aims to address several unique gaps in the existing literature, particularly in the context of students with disabilities in SQU. Despite efforts to promote inclusivity and accessibility for students with disabilities in higher education, several issues remain underexplored in the Omani context:

- 1) **Lack of Context-Specific Research:** There is a scarcity of studies systematically assessing the quality of life of students with disabilities in Omani universities. Most research on this topic tends to focus on general student populations or is limited to Western countries, overlooking cultural, social, and institutional differences that may influence the experiences of Omani students with disabilities.
- 2) **Lack of Comprehensive QOL Assessment:** While there are various tools for assessing quality of life, few studies have utilized comprehensive, multi-dimensional instruments like the WHOQOL-BREF to evaluate the physical, psychological, social, and environmental aspects of life for students with disabilities. The absence of such research prevents a holistic understanding of how these students navigate their academic and personal lives within the university environment.
- 3) **Inadequate Focus on Disability-Specific Needs:** While general accommodations are available in many Omani universities, there is insufficient focus on the specific needs of students with different types of disabilities (e.g., physical, sensory, intellectual, and mental health). This study seeks to fill this gap by exploring how different types of disabilities impact overall quality of life and identifying areas where targeted support is most needed.
- 4) **Cultural and Institutional Barriers:** Cultural norms and societal perceptions of disability in Oman may differ from those in Western contexts, affecting the social integration and well-being of students with disabilities. This study will explore how cultural factors and institutional practices in Omani universities either support or hinder the quality of life for these students, providing valuable insights for future policies and interventions.
- 5) **Assessment of Environmental and Academic Support Systems:** Omani universities may not have fully optimized support systems for students with disabilities, such as accessible learning materials, physical campus accessibility, or mental health resources. This study seeks to identify the strengths and weaknesses of current support systems in Omani universities and propose practical solutions for improving accessibility and inclusion.

#### *9. DETAILED DEMOGRAPHIC INFORMATION OF PARTICIPANTS*

This study seeks to provide a precise evaluation of the quality of life for university students with disabilities in Oman. The data were collected from a diverse sample of participants representing a wide range of ages and specific disabilities. The age range of the participants varied from 18 to 23 years, which reflects a broad spectrum of university students in Oman. The disabilities represented in this study include:

- 1) Physical Disabilities (e.g., mobility impairments or muscular disorders).
- 2) Sensory Disabilities (e.g., hearing or visual impairments).

#### *10. PARTICIPANT RECRUITMENT*

Participants were recruited through voluntary response and via disability services within Omani universities. Collaboration with university disability support services enabled the distribution of the WHOQOL-BREF questionnaires to students who were officially recognized as having a disability. The recruitment process was designed to be voluntary, ensuring that participation was based on the students' willingness to contribute to the study. This approach helped ensure that the findings accurately represent the experiences of students with disabilities who are already engaged with university support services.

The recruitment also focused on obtaining a diverse sample that includes students with various types of disabilities, ensuring that the study reflects the varied challenges and needs of different student populations.

#### *11. ENHANCING TRANSPARENCY AND CONTEXTUALIZING THE FINDINGS*

This study was designed to ensure full transparency in the recruitment process and to contextualize the findings appropriately within the Omani cultural and institutional framework. Given the unique challenges faced by students with disabilities in Oman, such as cultural perceptions and the availability of support services, the results will be framed within the specific context of Omani higher education. This approach helps to ensure that the findings are relevant and actionable within the local context, providing valuable insights into how universities in Oman can better support students with disabilities and improve their overall quality of life.

By addressing these gaps, this study aims to provide valuable data on the unique challenges and opportunities faced by university students with disabilities in Oman. The findings will inform policy decisions, improve student



support services, and contribute to the broader discourse on inclusivity and quality of life for students with disabilities in higher education.

### 10.1 Data Analysis Plan

Statistical Tests Used:

- 1) Descriptive Statistics: mean (M) and standard deviation (SD) were calculated for each sub-dimension of the WHOQOL-BREF questionnaire (Physical, Psychological, Social Relationships, and Environmental domains).
- 2) T-Test: applied to compare quality of life (QOL) differences between male and female students with disabilities.
- 3) One-Way ANOVA: used to analyze differences in QOL based on disability categories (physical, hearing, and visual impairments).
- 4) Post-Hoc Test (LSD): conducted following significant ANOVA results to determine specific group differences in the physical and psychological domains.

### 10.2 Visual Representation of the Research Design and Methodology

A flowchart outlining the research process:

- 1) Study Design: descriptive quantitative approach using WHOQOL-BREF questionnaire.
- 2) Participants: convenience sampling of 35 students with disabilities from SQU.
- 3) Data Collection:  
Distribution of the WHOQOL-BREF questionnaire via Google Forms. Participants responded in September 2023.
- 4) Data Analysis:
  - a. Descriptive statistics for general trends.
  - b. T-test for gender-based comparisons.
  - c. ANOVA for differences by disability type.
  - d. LSD test for detailed group differences.

## 12. DATA COLLECTION

This study used WHOQOL-BREF questionnaire that designed by WHO [70]. The WHOQOL-BREF is a reliable questionnaire for assessing the QOL of PWDs. The questionnaire has been validated across multiple cultures [71]. This makes it suitable for global use. The questionnaire is able to measure multiple aspects of QOL, such as physical, psychological, social and environmental health, and providing a comprehensive view of individuals' experiences [72]. Furthermore, the WHOQOL-BREF can help identify the specific needs of PWDs and promote awareness of QOL as a key factor in health care and community well-being. The WHOQOL-BREF questionnaire includes four domains as follows [70]:

- 1) Physical: Pain and discomfort, energy and fatigue, sleep and rest, mobility, activities, medication and work
- 2) Psychological: Positive feelings, thinking, learning, memory and concentration, self-esteem, body image and appearance, negative feelings and spirituality.
- 3) Social relationships: Personal relationships, social support and sexual activity.
- 4) Environment: Physical safety and security, home environment, financial resources, services, information, leisure, environment and transport.

The WHOQOL-BREF questionnaire was translated into Arabic and then a reverse into English to ensure the translation was correct. To ensure the suitability of this questionnaire for students with disabilities, Omani culture and reliability, the Arabic version was reviewed by 5 experts in education and psychology at SQU. The final version of the questionnaire was consisted of 26 items distributed over 4 domains: psychological, physical, social relationships and environment. To verify validity, the questionnaire was administered to a group of students with disabilities enrolled in other Omani universities. The results showed that WHOQOL-BREF questionnaire has high validity.

## 13. JUSTIFICATION FOR USING THE WHOQOL-BREF SCALE FOR UNIVERSITY STUDENTS WITH DISABILITIES

The WHOQOL-BREF is an international tool used to assess quality of life across four main dimensions: physical health, psychological health, social relationships, and the surrounding environment. This scale aims to evaluate

individuals' well-being based on health, psychological, and social criteria, providing a comprehensive understanding of their quality of life. For university students with disabilities, the WHOQOL-BREF can serve as a valuable tool to measure and analyze the different aspects of their lives within the university setting. Below are some justifications for using this scale for students with disabilities:

- 1) Comprehensive Assessment of Quality of Life
  - a. Students with disabilities face complex challenges that affect various aspects of their lives, such as physical and psychological health, social relationships, and their ability to adapt to the university environment. The WHOQOL-BREF scale provides a comprehensive assessment across these dimensions, allowing for the identification of strengths and weaknesses in students' daily lives.
  - b. Justification: The scale provides a multi-dimensional evaluation of how disability impacts a student's life, including academic, psychological, and social aspects, offering a well-rounded perspective.
- 2) Identifying Support Needs
  - a. The WHOQOL-BREF questionnaire can help identify the specific support needs of students with disabilities in the university setting. The responses may highlight particular areas in the academic environment that require improvement, such as providing additional academic accommodations, mental health support, or increasing social awareness of disability issues.
  - b. Justification: The scale aids in guiding university policies to improve the learning environment for students with disabilities, ensuring better support and accessibility.
- 3) Improving Academic and Psychological Support Practices
  - a. WHOQOL-BREF helps assess the physical and psychological health of students with disabilities. The results can be used to determine the types of support these students need to succeed academically, thus enabling more tailored academic and psychological services.
  - b. Justification: The scale offers detailed insights into the mental and physical health needs of students with disabilities, enabling universities to provide more targeted and effective support services.
- 4) Tracking Progress and Changes Over Time
  - a. Using the WHOQOL-BREF at multiple time points allows universities to track changes in students' quality of life over time, especially when improvements are made to the environment or new support services are introduced. This can help assess the impact of programs and policies designed to enhance the well-being of students with disabilities.
  - b. Justification: The scale can be used as a tool to monitor progress, allowing for ongoing adjustments to improve the university experience for students with disabilities.
- 5) Comparing Different Student Groups
  - a. The WHOQOL-BREF scale enables comparisons between students with disabilities and their non-disabled peers in various aspects of quality of life. These comparisons can help highlight gaps in well-being between different groups, guiding universities in developing more inclusive and equitable policies.
  - b. Justification: It allows for a comparison between student groups, identifying disparities and suggesting areas where improvements can be made to provide a more inclusive university experience.
- 6) Internationally Recognized Tool
  - a. WHOQOL-BREF is a globally recognized tool used extensively in research related to quality of life. Using this scale ensures that the data collected is comparable to other international studies and benchmarks, providing a wider context for understanding the well-being of students with disabilities.
  - b. Justification: Using a globally recognized tool ensures that the assessment of students' quality of life is standardized, enabling comparisons across different settings and studies worldwide.
- 7) Raising Awareness of Disability Issues within the University Community
  - a. By using the WHOQOL-BREF scale to assess the quality of life of students with disabilities, universities can increase awareness of the challenges these students face. This process encourages the creation of more inclusive and flexible educational environments, benefiting all students, not just those with disabilities.

- b. Justification: The use of this scale helps raise awareness within the academic community about the importance of supporting students with disabilities, promoting a more inclusive and respectful environment.
- 8) Data-Driven Decision-Making
- a. The data obtained from the WHOQOL-BREF can inform evidence-based decision-making. By collecting and analyzing this information, university officials can make informed decisions regarding resource allocation, designing services and policies that address the specific needs of students with disabilities.
  - b. Justification: The scale provides reliable data that supports informed, data-driven decisions about how best to support students with disabilities in university settings.

The WHOQOL-BREF scale is a crucial tool for understanding and assessing the quality of life of university students with disabilities. By using this scale, universities can improve their educational policies, create more supportive environments, and ensure that students with disabilities have access to the resources they need to succeed both academically and personally. It provides valuable insights that can lead to enhanced well-being for all students, with particular emphasis on those with disabilities.

#### 14. LIMITATIONS OF THE WHOQOL-BREF SCALE

Despite its strengths, the WHOQOL-BREF scale has some limitations when applied to students with disabilities, as it may not fully capture the unique challenges they face:

- 1) Lack of Disability-Specific Items: The WHOQOL-BREF is a generic tool that lacks specific questions related to accessibility, inclusion, or support services, which are critical aspects of quality of life for students with disabilities. As a result, it may not address particular barriers that impact their well-being in educational settings.
- 2) Limited Contextual Sensitivity: The scale does not consider the academic or social environment unique to university life, which can significantly influence the experiences of students with disabilities. For instance, factors such as accessible campus facilities, peer interactions, and academic accommodations are not explicitly addressed.
- 3) Restricted Depth of Response: The WHOQOL-BREF's structured, quantitative format may limit students' ability to express complex, individualized experiences. This can result in a narrower view of their quality of life, as students may face specific challenges that the standardized questions do not capture.

While the WHOQOL-BREF provides a solid foundation for assessing QOL, its limitations suggest that supplemental tools or qualitative methods may be needed to gain a deeper understanding of the unique challenges faced by students with disabilities. Future studies might consider incorporating disability-specific measures or mixed methods to provide a more comprehensive picture of their well-being.

## V. RESULTS

Results of the first question: What is the level of QOL of Omani students with disabilities? Table 1 and Figure 1 include the means (M), standard deviations (S.D) of students with disabilities according to sub-dimensions of WHOQOL-BREF questionnaire. Table 1 and figure1 indicate that the psychological, social relationships and environmental aspects achieved a high level of QOL. While, the physical aspect achieved an average level according to the perspective of students with disabilities.

**Table 1.** Means and standard deviations according to sub-dimensions of questionnaire.

Sub-dimensions	M	S. D
Physical	3.27	0.48
Psychological	3.73	0.62
Social relationships	3.90	0.85
Environment	3.80	0.72

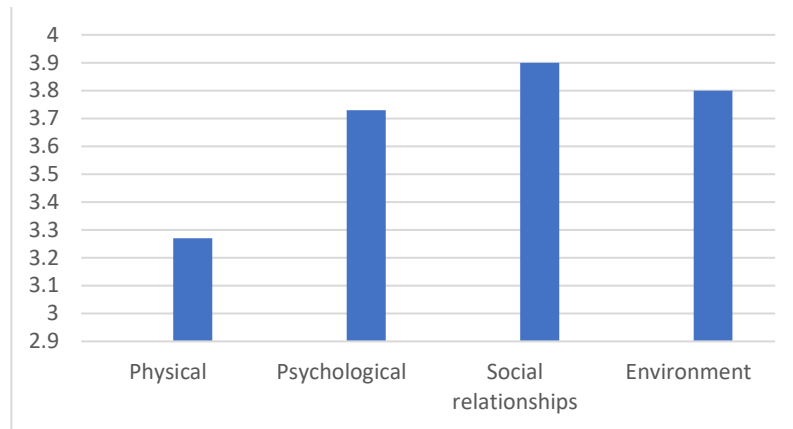


FIGURE 1. Sub-dimensions of WHOQOL-BREF questionnaire.

Results of the second question: Does the level of QOL differ according to gender? and Figure 2 shows means and standard deviations according gender.

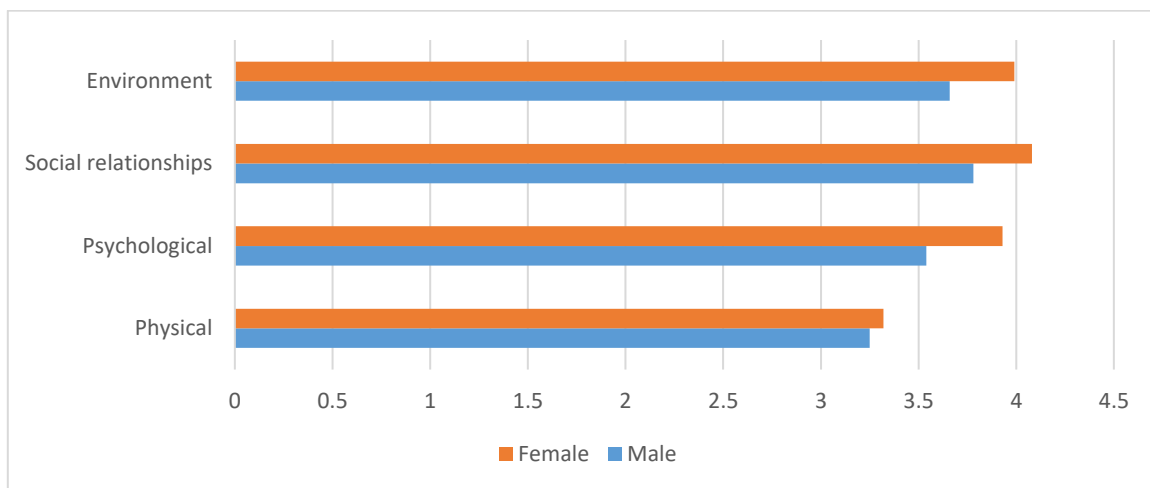


FIGURE 2. Sub-dimensions of WHOQOL-BREF questionnaire according to gender.

Figure 2 shows that there are differences in the means according to gender. To identify these differences, the t-test was used. Table 2 shows that there were no statistically significant differences between males and females in all sub-dimensions of WHOQOL-BREF questionnaire.

Table 2. T-test results according to gender.

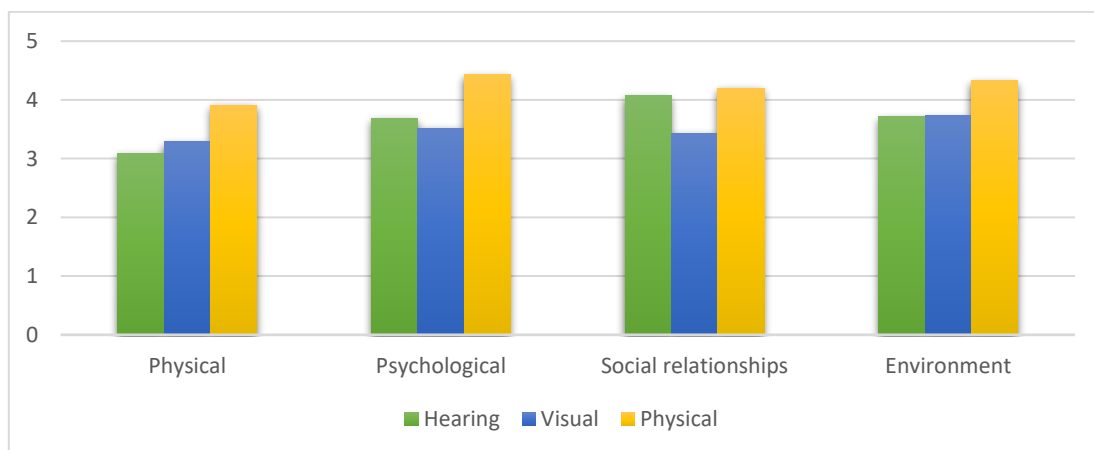
Sub-dimensions	Gender	M	S. D	t	Sig.
Physical	Male	3.25	.45	-.411	.684
	Female	3.32	.50		
Psychological	Male	3.54	.74	-1.86	.072
	Female	3.93	.43		
Social relationships	Male	3.78	.82	-1.007	.322
	Female	4.08	.88		
Environment	Male	3.66	.71	-1.379	.178
	Female	3.99	.69		

Results of the third question: Does the level of QOL differ according to disability category? Table 3 illustrates the Means and standard deviations according to disability category.



**Table 3.** Means and standard deviations according to disability category.

Sub-dimensions	Category	N	Mean	S. D
Physical	Hearing	20	3.09	.44
	Visual	10	3.29	.32
	Physical	5	3.91	.36
	Total	35	3.27	.48
Psychological	Hearing	20	3.69	.65
	Visual	10	3.52	.61
	Physical	5	4.43	.28
	Total	35	3.75	.65
Social relationships	Hearing	20	4.07	.86
	Visual	10	3.43	.85
	Physical	5	4.20	.51
	Total	35	3.90	.85
Environment	Hearing	20	3.71	.80
	Visual	10	3.73	.54
	Physical	5	4.33	.50
	Total	35	3.80	.72



**FIGURE 3.** Sub-dimensions of WHOQOL-BREF questionnaire according to disability category.

Table 3 and figure 3 indicate that there are statistically significant differences according to disability category. To calculate these differences; One-way analysis of variance (ANOVA) was used. Table 4 shows these results.

**Table 4.** One-way ANOVA results according to disability category.

Sub-dimensions	Variance	Sum of Squares	df	Mean Square	F	Sig.
Physical	Between Groups	2.705	2	1.352	8.491	.001
	Within Groups	5.097	32	.159		
	Total	7.802	34			
Psychological	Between Groups	2.675	2	1.337	4.124	.026
	Within Groups	10.378	32	.324		
	Total	13.053	34			
Social relationships	Between Groups	3.183	2	1.591	2.356	.111
	Within Groups	21.611	32	.675		
	Total	24.794	34			
Environment	Between Groups	1.610	2	.805	1.624	.213
	Within Groups	15.865	32	.496		

Total 17.475 34

Table 4 indicates that there are statistically significant differences on the physical and psychological domains. To determine these differences; The least significant difference (LSD) test was used. Table 5 shows the results.

**Table 5.** LSD results according to disability category.

Variable	Disability type (I)	Disability type (J)	Mean Difference (I-J)	Sig.
Physical	Hearing	Physical	-.82	.000
	Visual	Physical	-.63	.007
Psychological	Hearing	Physical	-.64	.030
	Visual	Physical	-.89	.007

Table (5) shows that students with physical disabilities have a better QOL than students with hearing and visual impairments in the physical and psychological aspects.

## VI. DISCUSSION

This study aimed to identify the level of QOL among students with disabilities at SQU from their perspective. The results of the first question indicated that students with disabilities have a high level of QOL in the psychological, environmental and social relationships aspects, and an average level in the physical aspect. In other words, students with disabilities have a high level of QOL in psychological, environmental and social aspects. These results can be justified by the interest of SQU in providing all educational, psychological and social services for students with disabilities. Accordingly, SQU makes efforts to provide such services in response to Omani, Arab and international laws and legislations. Consequently, the availability of educational, psychological and social services has positively reflected on the mental health of students with disabilities. In other word, The QOL is an umbrella term that covers several aspects that affect the well-being of students with disabilities, including psychological, social, environmental and physical aspects [73]. Below, the results of the first question will be discussed according to the sub-dimensions of the WHOQOL-BREF questionnaire.

### 1. QOL IN PSYCHOLOGICAL ASPECT

The results of this study indicated that students with disabilities have high levels of QOL in psychological aspect. This can be explained by the fact that psychological well-being is one of the essential elements of QOL. University students with disabilities may have lower levels of anxiety and depression than their peers, due to the psychological support they receive from the Student Counseling Center and the services provided by the Disabled Students Affairs Unit at SQU. SQU activities that promote social interaction contribute to improving mental health, as belonging to supportive social networks such as student groups is a positive factor that enhances feelings of satisfaction, happiness and psychological well-being. Omodaka and Sato [74] demonstrated that the availability of psychological, social, academic and financial support services contributes to improving QOL for university students with disabilities.

### 2. QOL IN THE SOCIAL RELATIONSHIP ASPECT

The results of the current study indicated that students with disabilities have high levels of QOL in the social relationship aspect. This can be explained by the fact that students with disabilities have strong social networks among themselves and with their peers without disabilities, which helps them overcome the challenges they may face at SQU. The social support that students with disabilities receive from friends and family may be a pivotal element in enhancing QOL. In this regard, Ahmed et al. [75] pointed out that university students with disabilities receive social, informational, emotional support and social integration from their friends at the university. Therefore, social support enhances the ability of these students to adapt to the stresses of university life. In addition, the social programs and activities organized by SQU also contribute to enhancing social interaction between students with and without disabilities, which reduces the feeling of isolation and social exclusion for them. In this regard, an Omani recent study indicated that students with disabilities enrolled in higher education institutions enjoy a family atmosphere based on social interaction and appropriate physical and material support

[68]. While at the university level, Alqaryouti [76] showed that students with visual impairment had problems in the social interaction compared to the students with physical disabilities. This result may lead to their inability to interact with others, neglect, or the lack of activities that help the students with visual impairments interact with their peers within the university, which increases the distance between them.

### 3. QOL IN THE ENVIRONMENTAL ASPECT

The results of the current study showed that students with disabilities have high levels of QOL in the environment aspect. The university environment is significant element in improving QOL. Accordingly, SQU provides accessible facilities for students with disabilities, which contributes to improving their access to educational and recreational resources. Providing such facilities and equipment enhances the feeling of safety and comfort among students with disabilities. In other words, accessible environments contribute to enhancing QOL by increasing the opportunities for these students to participate actively in academic and social activities at the university [77].

SQU seeks to provide an inclusive educational environment that meets the needs of students with visual and hearing impairments, and students with physical and health disabilities. These facilities are necessary to ensure the right to education for all students, as well as with human rights, Convention on the Rights of PWDs, and Omani legislation for PWDs. SQU provides visually impaired students with educational materials in Braille or electronic format, computers, tablets and mobile APPS enabling them to access information easily [66]. It also uses screen readers (Text-to-speech technology) that converts written texts into audible audio that facilitates the learning process. In contrast, facilities provided to hearing impaired students at SQU include hearing assistive technology and audio systems such as frequency-modulated (FM) devices to improve sound quality. The availability of these hearing aids ensures that educational content is delivered to students effectively. In this regard, Jiménez-Arberas and Díez [78] confirmed that hearing aids and hearing assistive technologies have benefits for persons with hearing disabilities. In other hand, SQU provides students with physical disabilities with wheelchairs, buses to transport them to the various colleges of the university, and internal accommodation. SQU also provides corridors and entrances that facilitate their movement, elevators, health facilities and parking at the university campus. Therefore, these efforts are part of SQU's commitment to providing an equal learning environment for all students, which improves the academic and social participation of students with disabilities. Providing these facilities and services reflects the university's commitment to promoting the values of inclusive education for students with disabilities.

### 4. QOL IN THE PHYSICAL ASPECT

The results showed that the quality in the physical aspect was average according to the estimates of students with disabilities. The results indicated a high QOL in the psychological, social and environmental domains, while it was average in the physical domain. This can be justified by the fact that students with disabilities have physical and environmental challenges, such as difficulty in accessing sports facilities or lack of opportunities for them to practice physical activities and social and cultural events due to the type and severity of the disability or because the university neglects these events and activities. These are considered hindering factors that contribute to not achieving a high level of physical QOL. Therefore, enhancing sports programs, physical interaction and integrating students with disabilities into university life is necessary to improve QOL in the physical aspect [79]. In this regard, Diz et al. [80] confirmed that practicing and participating in physical activities contributes to improving QOL, social inclusion, personal relationships, and emotional and physical well-being for PWDs. Therefore, SQU needs to facilitate the practice of students with disabilities for sports activities by promoting awareness of adapted physical education and helping them join the games and sports affiliated with the Oman Paralympic Committee, and the Deaf Oman Sports Committee [47].

### 5. QOL AND DISABILITY CATEGORY

The results showed that students with physical disabilities have a better QOL than students with hearing and visual impairments in the physical and psychological aspects. Justifying and explaining the better QOL in physical and psychological aspects for students with physical disabilities over those with hearing and visual impairments or with other disabilities is a complex issue and can depend on a variety of factors, including the specific context of SQU and this is what was proven by Alqaryouti [76]. It is important to remember that each individual's experience can be very different, and this explanation does not represent the experiences of all students with disabilities. Moreover, if there are any differences or problems that students with disabilities may face, this may be due to cultural reasons or resulting from the style of family upbringing and economic factors. These matters are not due to negligence on the part of government agencies or SQU. Most of the problems faced by students with

disabilities at SQU are related to academic matters. These problems may be reflected on the social and psychological aspects. If the academic aspect is adapted, it will reflect positively on other aspects of the student's life. This is what SQU seeks to improve in academic, social, psychological and environmental services to develop to serve all students, not just students with disabilities.

The improved QOL for university students with physical disabilities in psychological and physical aspects can be attributed to the role of SQU in facilitating these students' access to university facilities easily. SQU has adapted buildings, lecture halls, roads, elevators, accommodations, transportation and other transitional services to suit the needs of these students. Providing these services has had a positive impact on their physical health and given for these students a sense of independence [81]. On the other hand, physical aspects play a role in improving the mental health of university students with physical disabilities. The relationship between physical health and mental health is complementary and each affects the other [82]. Therefore, the provision of facilities and equipment at SQU enhanced the sense of independence and self-confidence of students with physical disabilities as a result of moving freely. In addition, providing these services reduced the frustrations and anxiety resulting from spatial obstacles and accessibility to university facilities. In other words, this openness to the university environment facilitates communication with colleagues and participation in social activities, which enhanced the sense of belonging and psychological state. Consequently, the provision of these facilities and ease of movement made students with physical disabilities respond more positively on of WHOQOL-BREF questionnaire than those with hearing and visual disabilities.

## 6. QOL AND GENDER

The results indicated that there were no statistically significant differences in QOL of students with disabilities according to gender. This result can be justified by the fact that QOL is related to the ability to adapt to life stresses. Males and females deal with stress in different ways, but this does not generally affect the psychological, physical, emotional and personal QOL. This can also be attributed to the policies adopted at SQU to support gender rights and gender equality, which improves the QOL and reduces the differences between males and females. It can be argued that the psychological and social pressures faced by male and female students may lead to similar outcomes in QOL, which means that cultural orientations and social expectations may play a greater role than gender. Therefore, the lack of significant differences between males and females in the level of QOL calls for a reconsideration of how this term is understood. In other word, the focus should be on the environmental, social and cultural factors that affect QOL, rather than being preoccupied with biological differences. This comprehensive perspective can contribute to the development of effective strategies to enhance the QOL for students with disabilities, regardless of their gender. A review of literature by Syifa and Hadi [83] showed that PWDs face health and social challenges. These challenges lead to a decrease their QOL, which is affected by gender, severity of disability, age, stigma, and psychological factors.

Overall, the absence of differences in QOL of students with disabilities according to gender can be attributed to the policies followed at SQU and the results of previous research as follows:

- 1) Inclusive policies and equal opportunities: SQU implements inclusive policies that aim to provide equal opportunities for all students, regardless of gender. These policies ensure that both male and female students with disabilities have access to the same resources, support services, and accommodations [84]. Some studies have shown that inclusive educational environments tend to mitigate gender disparities by focusing on individual needs rather than gender-based differences [85].
- 2) Universal design for learning and Accessibility: The university's commitment to universal design and accessibility ensures that all students, regardless of gender, benefit equally from the physical infrastructure and technological support [86]. Research indicated that when educational institutions prioritize universal design for learning (UDL), it minimizes differences in experiences and outcomes between male and female students with disabilities [87].
- 3) Supportive learning environment: The supportive learning environment at SQU, characterized by assistive technologies, tailored academic support, and social integration initiatives, is designed to cater to the diverse needs of students with disabilities [86]. Such environments promote equal participation and success for all students, reducing potential gender-based disparities [67, 88].
- 4) Empirical evidence and research results: Studies have found that gender does not significantly influence QOL for students with disabilities when the educational institution provides comprehensive support systems. For instance, a study by [89] found that with adequate support and resources, both male and female students with disabilities reported similar levels of academic satisfaction and social inclusion.
- 5) Cultural and societal factors: In some cultural contexts, including Oman, there may be a strong emphasis on community and collective well-being, which can influence the implementation of equitable educational



practices [90]. This cultural approach helps ensure that both male and female students with disabilities receive the necessary support to thrive academically and socially, thereby reducing gender disparities [91].

As a result, it may be that the challenges faced by Omani students with disabilities of both genders are similar. In other words, the identity associated with disability may override gender identity, leading students with disabilities to focus more on their experience as PWDs rather than on their gender differences. In any case, QOL is the state of well-being experienced by students with disabilities when their health, psychological and social needs are met and the values of equality and social integration are promoted [92]. Therefore, the availability of standards and indicators may help improve the quality of special education programs and services in Oman [93], which will positively reflect on improving QOL for Omani university students with disabilities.

This section presents the findings for each research question. The data is summarized in tables and figures to provide a clearer view of the quality of life (QOL) among students with disabilities, with analysis by gender and disability type.

Research Question 1: What is the overall level of quality of life among students with disabilities at SQU?

To assess the overall QOL, mean scores and standard deviations were calculated for each dimension (Physical, Psychological, Social Relationships, and Environment) using the WHOQOL-BREF questionnaire. Table 6 provides a summary of the mean scores for each dimension.

**Table 6.** Mean scores and standard deviations of QOL dimensions.

Dimension	Mean	Standard Deviation
Physical	3.27	0.48
Psychological	3.73	0.62
Social Relationships	3.90	0.85
Environment	3.80	0.72

As shown in Table 6, the social relationships and environmental dimensions received the highest QOL scores, with mean scores of 3.90 and 3.80, respectively, indicating a high level of satisfaction in these areas. The physical dimension had the lowest score ( $M = 3.27$ ), suggesting a moderate level of satisfaction. This overall QOL data suggests that while students are generally satisfied with their social and environmental aspects of life, physical limitations may impact their quality of life.

Research Question 2: Does the level of QOL differ between male and female students with disabilities?

To explore gender differences in QOL, a t-test was conducted for each QOL dimension. Table 7 summarizes the mean scores and standard deviations by gender, along with the significance levels.

**Table 7.** T-test Results for Gender Differences in QOL Dimensions

Dimension	Gender	Mean	Standard Deviation	t-value	p-value
Physical	Male	3.25	0.45	-0.41	0.684
	Female	3.32	0.50	-1.86	0.072
Psychological	Male	3.54	0.74		
	Female	3.93	0.43		
Social Relationships	Male	3.78	0.82	-1.00	0.322
	Female	4.08	0.88		
Environment	Male	3.66	0.71	-1.38	0.178
	Female	3.99	0.69		

The analysis shows no statistically significant differences in QOL between male and female students across all dimensions ( $p > 0.05$ ). This suggests that gender does not play a significant role in influencing QOL for students with disabilities at SQU. These findings are consistent across all four dimensions, indicating that both male and female students report similar levels of satisfaction in physical, psychological, social, and environmental aspects.

Research Question 3: Are there significant differences in QOL based on the category of disability?

To examine differences in QOL based on disability type, a one-way ANOVA was conducted for each dimension, with disability type as the independent variable. Table 3 shows the mean scores by disability category, and Table 8 provides ANOVA results.

**Table 8.** Mean scores by disability category.

Dimension	Disability Category	Mean	Standard Deviation
Physical	Hearing	3.09	0.44
	Visual	3.29	0.32
	Physical	3.91	0.36
Psychological	Hearing	3.69	0.65
	Visual	3.52	0.61
	Physical	4.43	0.28
Social Relationships	Hearing	4.07	0.86
	Visual	3.43	0.85
Environment	Physical	4.20	0.51
	Hearing	3.71	0.80
	Visual	3.73	0.54
	Physical	4.33	0.50

**Table 9.** ANOVA Results by Disability Category

Dimension	F-value	p-value
Physical	8.49	0.001
Psychological	4.12	0.026
Social Relationships	2.36	0.111
Environment	1.62	0.213

The results indicate statistically significant differences in the physical ( $p = 0.001$ ) and psychological ( $p = 0.026$ ) dimensions based on disability category, as shown in Table 9. Specifically, students with physical disabilities reported significantly higher levels of QOL in these dimensions compared to those with hearing or visual impairments. This suggests that students with physical disabilities may experience greater satisfaction in their physical and psychological well-being than their peers with other types of disabilities.

## 7. SUMMARY OF FINDINGS

The results indicate that:

- 1) Overall QOL: Social relationships and environment dimensions received the highest ratings, while the physical dimension was rated lowest.
- 2) Gender Differences: There were no significant differences in QOL between male and female students, suggesting that gender does not strongly impact QOL for students with disabilities at SQU.
- 3) Disability Category Differences: Statistically significant differences were found in the physical and psychological dimensions based on disability type, with students with physical disabilities reporting higher QOL in these areas.

## 8. LIMITATIONS AND IMPACT ON FINDINGS

### 8.1 Limitation of the Study

- 1) Small Sample Size: the study included only 35 participants out of 76 eligible students. This small sample size limits the generalizability of the findings to other populations of students with disabilities both within and beyond (SQU).

- 2) Convenience Sampling: the use of a convenience sampling method introduces potential biases, such as self-selection bias. Participants who opted to take part in the study might have different perspectives or experiences compared to those who did not participate.
- 3) Limited Scope for In-Depth Analysis: the quantitative nature of the study restricted participants from elaborating on personal experiences and unique challenges, which could have provided richer, contextual insights into their quality of life (QOL).
- 4) Lack of Context-Specific Insights: while the WHOQOL-BREF questionnaire is a robust tool, it lacks items tailored specifically to the experiences of students with disabilities, such as accessibility challenges or the quality of support services.
- 5) Potential Response Bias: participants might have been influenced by perceived social desirability, leading to responses that reflect what they believe is expected rather than their true experiences.
- 6) Single Institutional Context: the findings are based solely on data from SQU, limiting the study's applicability to other institutions or educational contexts within Oman or internationally.
- 7) These limitations suggest that future research could benefit from larger, more diverse samples, qualitative methods for deeper insights, and instruments tailored to the specific needs and experiences of students with disabilities.

The sample size and sampling approach limit the generalizability of this study's findings. With only 35 participants, the statistical power is restricted, which may make it difficult to detect nuanced differences in QOL across various demographic or disability-related subgroups. Consequently, while the study provides valuable insights into the QOL of students with disabilities at SQU, these findings should be interpreted with caution when considering broader populations, either at other institutions or in different cultural settings. The limited sample also means that some findings may reflect the specific circumstances and support structures at SQU, rather than being indicative of the experiences of students with disabilities in other educational environments.

To address these limitations, future research could aim to include larger, more diverse samples across multiple institutions to validate and expand upon these findings. This could involve employing stratified sampling techniques to ensure representation across different disability types, genders, and other relevant demographic factors. Until such research is available, the results of this study should primarily be viewed as preliminary insights, highlighting the areas where SQU and similar institutions can enhance support services to improve QOL for students with disabilities.

### *8.2 Justification on Small Sample Size*

The study's sample comprises 35 students with disabilities out of the total population of 76 students with disabilities enrolled at Sultan Qaboos University (SQU). This limited sample size is primarily due to the specific, relatively small population of students with disabilities at SQU. Given the focused nature of this population, it was challenging to obtain a larger sample without over-representing any particular type of disability or demographic subgroup. Additionally, convenience sampling was used due to time and accessibility constraints, which is common in social sciences when studying specific populations like students with disabilities.

### *8.3 Effect on Generalization*

The small sample size limits the ability to generalize the findings beyond the sampled population. As this study is focused on a specific group within a single institution, the results may not be fully representative of the experiences of all students with disabilities across other universities or even other regions in Oman. The limited sample may also reduce the study's power to detect subtle differences across disability types or other demographic factors. As a result, while the study provides valuable insights into the quality of life among students with disabilities at SQU, caution should be taken when applying these findings to broader populations. Future research with larger, more diverse samples and potentially across multiple institutions would help to validate and expand on these findings.

## **VII. CONCLUSION**

The main challenge for contemporary educational systems is not only to provide education but also to study QOL. Therefore, the availability of the educational, psychological and social environment, facilities and equipment have a positive impact on the QOL of students with disabilities. The QOL of students with disabilities at SQU are shaped by continuing to enhance support services, invest in accessibility, and foster an inclusive culture, SQU can ensure that all students have the opportunity to thrive and succeed. The results of this study may contribute to conducting future studies on the QOL of students with disabilities in Omani universities and a bibliometric study of research trends of QOL of students with disabilities in Arab Gulf universities. On the other hand, the

participation of 35 out of 76 students with disabilities and their selection according to non-probability convenience sampling is one of the determinants of generalizing these results to the population of students with disabilities inside and outside SQU. This study recommends organizing workshops for university staff, continuing to provide assistive technology available to students with disabilities, and improving accessibility to infrastructure and facilities.

### Author contributions

All authors made equal contributions to the various stages of preparing the current study.

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### Conflict of Interests

The authors declare no conflict of interest.

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