

# Coping Strategies among Students with Chronic Medical Illnesses in Comparison to Healthy Students: A Comparative Cross-sectional Study from Sultan Qaboos University, Oman

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## ABSTRACT

**Objectives:** This study aimed to compare coping strategies among students with chronic medical illnesses in contrast to healthy students to understand their behaviours in response to stressful situations.

**Methods:** This comparative cross-sectional study was conducted between September and December 2019 and included students attending nine colleges at Sultan Qaboos University (SQU), Muscat, Oman. Data were collected and compared between students with chronic medical illnesses and those who were healthy. A validated Arabic version of the self-reported Brief-COPE Inventory was used to determine mean scores for 14 designated coping strategies.

**Results:** A total of 405 students participated in the study; of these, 229 (56.5%) were male and 176 (43.5%) were female. Overall, 113 students (28%) had a chronic medical illness. Positive coping strategies named religion, acceptance planning, and active coping were the most frequently reported coping strategies among all students regardless of their health status, while substance use was the least common. There were statistical differences between the two groups in using certain coping strategies. The students with chronic medical illnesses tend to use acceptance and emotional support more than healthy students (p-value of 0.001 and 0.008 respectively). However, the healthy students use self-blames and denial as a coping strategy more than chronically ill students (p-value of 0.008 and 0.029 respectively).

**Conclusion:** In addition to the current resources available at SQU, encouraging healthy coping mechanisms and provide support to students with chronic medical illnesses are required to alleviate their stresses, especially for students with chronic medical illnesses.

**Keywords:** Coping behaviours, psychological stress, students, chronic illnesses, student health services, Oman.

## INTRODUCTION

Psychological stress can result from a myriad of significant life events, whether positive (*i.e.* getting married, having a child or starting a new job) or negative (*i.e.* getting a divorce, the death of a loved one or suffering from a miscarriage), and often depends on the individual's perception of the event in question. The stress results when the demands overcome one's capacity to respond to an event which in consequence leads to negative physical and psychological consequences [1]. For many college students, the experience of attending a college or university can be particularly stressful, especially for those aged 18-25 years old who have never before been independent or lived outside of the protection of a family-centred environment [2]. Also termed emerging adulthood, this period usually involves a delay in the typical transition into adulthood, with the individual often feeling like neither an adolescent nor an adult [3].

Chronic medical illness-defined as a health condition lasting or likely to last  $\geq 12$  months from the time of diagnosis-also increases stress [4]. Approximately 30%

of college students have chronic diseases and/or special care needs, although such students are still able to reach their maximum potential if their environment is supportive [5, 6]. However, the provision of support can be challenging as many college students choose not to disclose chronic medical diagnoses to their advisors to appear 'normal' [7]. Universities often formulate guidelines for assessing disabled students to provide reasonable adjustments in terms of assessment practices, venues, and auxiliary aids during examinations [8]. In light of the growing number of students with chronic illnesses, Houman *et al.* highlighted the need to increase the number of advisors assigned to provide support to this group [9].

Coping strategies emphasize a range of emotional regulation strategies, thought process, and behaviours. So, it is founded in an individual's psychological response to stress, their perception to events, their attention and their goals or outcomes they desire which is highly affected by social context and interpersonal relationships [10]. Coping mechanisms maintain mental health and emotional wellbeing by helping individuals adapt to stressful events or negative emotions [11]. These are classified as active, in which the individual is aware of the stressor and makes conscious attempts to reduce stress, or avoidant, in which they ignore or avoid

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the problem entirely. Coping styles are typically either problem-focused (*i.e.* designed to deal with the problem), emotion-focused (*i.e.* designed to handle any feelings of distress arising from the problem) or evasion/avoidance-focused (*i.e.* designed to distract from or ignore those feelings of distress) [12, 13]. Adaptive coping mechanisms like external support, relaxation, humour and physical activity can help to reduce stress in a healthy way [11]. In contrast, maladaptive coping mechanisms involve unhealthy self-soothing activities such as overeating, binge drinking or excessively watching television or using the Internet.

Previous studies have evaluated coping strategies among individuals with various chronic illnesses, including diabetes, chronic pain and cancer [14, 15]. Wodka *et al.* reported greater rates of anxiety and depression among students with chronic illnesses compared to healthy students, with these conditions linked to specific coping strategies. The researchers recommended that academic programmes focus on adaptive coping strategies to support students with chronic illnesses during their transition to college [16]. Similarly, Compas *et al.* found that accommodative coping was more successful in helping children and adolescents adjust to their illness compared with disengagement coping [17]. A recently published study reported use of plan-full problem solving as a coping strategy among students with intellectual disability in specific stressful situations like romantic and friendships [18]. This study aimed to compare coping strategies used by students with chronic medical illnesses with those of healthy students.

## METHODS

**Design and Participants:** This comparative cross-sectional study was conducted between September 2019 to December 2019 and included students attending nine colleges at Sultan Qaboos University (SQU), Muscat, Oman. Students attending treatment at SQU student clinic due to chronic medical illness were considered to have a chronic medical illness. Students were recruited into the study after taking their written consent. Questionnaires were distributed randomly in different colleges tackling hostels, and libraries to capture students' responses. Ethical permission for this study was granted by the Medical Research Ethics Committee of the College of Medicine & Health Sciences, SQU. All students provided written informed consent prior to completing the self-administered questionnaire as required by the Helsinki Declaration.

The necessary sample size was calculated to be 375 students, based on the assumption that the entire population of SQU students was 15,000, with a 95%

confidence interval and a margin of error of 5% (using [http://www.raosoft.com/sample\\_size.html](http://www.raosoft.com/sample_size.html) sample size calculator site) [19]. Data collection was carried out at the beginning of the academic year in order to avoid periods of high academic demands (*e.g.*, work overload and preparation for exams) that might add more emotional stress to them and, therefore, influence their responses to the questionnaires.

**Instruments:** A previously validated Arabic version of the Brief-COPE Inventory tool was subsequently used to assess the students' behaviours and coping strategies upon exposure to stressful situations [20]. This self-reported questionnaire consists of a total of 28 questions in 14 domains of two items each (self-distraction, active coping, denial, substance use, emotional support, instrumental support, behavioural disengagement, venting, positive reframing, planning, humour, acceptance, religion and self-blame). The responses were scored on a 4-point Likert scale in terms of frequency of use, with responses ranging from 1 (I haven't been doing this at all) to 4 (I have been doing this a lot) [20]. Overall, the scale has been found to demonstrate good internal inconsistency (Cronbach's alpha values of 0.50–0.90). In addition, the test-retest reliability of the Arabic version is high (intra-class correlation coefficient: 0.85) [21].

**Analysis:** The collected data were analysed using Stata version 16. A frequency distribution and descriptive statistics (mean and standard deviation) were used to summarize the data. As the data were not following the normal distribution based on the Shapiro-wilk test. Mood median test was applied to compare the use of coping different coping strategies between the two study groups. A *p*-value of <0.050 was considered statistically significant.

## RESULTS

A total of 405 students took part in the study and their characteristics are presented in Table 1. 273 (67.4%) of the students were 20–25 years old. More than half of the participants were males (*n*=229, 56.5%). The students were enrolled from nine different colleges, with the majority in the College of Engineering (*n*=86, 21.3%) and College of Medicine & Health Sciences (*n*=77, 19.1%) and very few in the College of Nursing (*n*=14, 3.5%) and College of Law (*n*=13, 3.2%). In terms of year of study, most students were in the 2016 cohort (*n*=106, 26.3%), followed by the 2018 cohort (*n*=77, 19.1%). Majority of students were single (*n*=373, 92%). More than two-thirds lived in university housing, either externally or on-campus (*n*=155, 38.3% and *n*= 135, 33.3%, respectively), while the remaining students lived with their families (*n*=115, 28.4%).

Nearly quarter of the students (28%) had chronic medical illness. The mean age of healthy students and students with chronic medical illness was 21.9 ± 4.6 years and 21.5 ± 4.2 years respectively.

**Table 1:** Demographic data of students participate in Coping strategies study at Sultan Qaboos University (N = 405).

Variables	Frequency (%)
<b>Age groups</b>	
<20 years	94 (23.2)
20-25 years	273 (67.4)
>25 years	38 (9.4)
<b>Gender</b>	
Males	229 (56.5)
Females	176 (43.5)
<b>College</b>	
College of medicine and health sciences.	77 (19.1)
College of engineering	86 (21.3)
College of nursing	14 (3.5)
College of economics and political sciences	46 (11.4)
College of agricultural and marine sciences	22 (5.4)
College of education	65 (16.4)
College of science	51 (12.6)
College of law	13 (3.2)
College of art and social sciences	30 (7.4)
<b>Marital Status</b>	
Single	373 (92.1)
Married	31 (7.7)
Divorced	1 (0.2)

Table 2 is depicting the scores of coping strategies for all students and its comparison between healthy students and students with chronic medical illness. Regardless of health status, the highest median score was observed for religious coping strategy followed by acceptance planning, active coping, positive reframing, instrumental support, self- distraction, self-blame, emotional support, venting, humour, denial, behavioural disengagement and substance use. The significant difference in use of coping strategy used for acceptance (p=0.001), self-blame (p=0.008), emotional support

**Table 2:** The median of Coping strategies used by the study group at Sultan Qaboos University (N = 405).

Variables	Total	Healthy Students	Students with Chronic Illness	p-value with Equal Split
Religion	3.5 (3.0-4.0)	3.5 (3.0-4.0)	3.5 (3.0-4.0)	0.107
Acceptance	3.0 (2.5-3.5)	3.0 (2.5-3.5)	3.5 (3.0-4.0)	**0.001
Planning	3.0 (2.5-3.5)	3.0 (2.5-3.5)	3.0 (2.5-3.5)	0.283
Active coping	3.0 (2.5-3.5)	3.0 (2.5-3.5)	3.0 (2.5-3.5)	0.223
Positive reframing	3.0 (2.5-3.5)	3.0 (2.5-3.5)	3 (2.5-3.5)	0.664
Instrumental support	3.0 (2.0-3.5)	2.5 (2.0- 3.0)	3.0 (2.5-3.5)	0.130
Self-distraction	2.5 (2.0-3.0)	2.5 (2.0-3.0)	2.5 (2.0-3.0)	0.428
Self-blame	2.5 (2.0-3.0)	2.5 (2.0-3.5)	2.0 (1.5-3.0)	**0.008
Emotional support	2.5 (2.0-3.0)	2.5 (2.0-3.0)	3 (2.0-3.5)	**0.008
Venting	2.5 (2.0-3.0)	2.5 (2.0-3.0)	2.5 (2.0-3.0)	0.571
Humour	2.0 (1.0- 2.5)	2.0 (1.1-2.5)	2.0 (1.0-2.5)	0.393
Denial	1.5 (1.0-2.5)	2.0 (1.0-2.5)	1.5 (1.0-2.4)	*0.029
Behavioural disengagement	1.5 (1.0-2.0)	1.5 (1.0-2.0)	2.0 (1.0-2.5)	0.494
Substance use	1.0 (1.0-1.0)	1.0 (1.0-1.0)	1.0 (1.0-1.0)	0.752

\*Significant at p<0.05, \*\*significant at p<0.01

**Cohort**

2019	33 (8.2)
2018	77 (19.1)
2017	70 (17.3)
2016	106 (26.2)
2015	71 (17.6)
2014	19 (4.7)
others	28 (6.9)

**Place of Living**

With the family	115 (28.4)
Campus inside SQU	135 (33.2)
Campus outside SQU	155 (38.3)

**Chronic Disease**

Yes	113 (27.9)
No	292 (72.1)

**Details of Chronic Diseases**

Diabetes Mellitus	21 (18.6)
Asthma	16 (14.2)
Thyroid diseases	14 (12.4)
Depression	6 (5.3)
Heart diseases	5 (4.4)
Hypertension	4 (3.5)
Skin allergies	8(6)
Allergic rhinitis	8(6)
Sickle cell disease	7(5.3)
Chronic iron deficiency anemia	8(6)
Pre-diabetes	1(0.8)
Headache	4(3)
Systemic lupus erythematosus	1(0.8)
Osteoporosis	1(0.8)
Irritable bowel syndrome	1(0.8)
Chronic gastritis	2(1.5)
Gastroesophageal reflux	1(0.8)
Obsessive compulsive disorder	2(1.5)
Chronic musculoskeletal problem	2(1.5)
Rheumatoid arthritis	1(0.8)

(p=0.008) and denial strategy (p=0.029). The median for acceptance and emotional support strategy was significantly higher in the chronic illness group as compared to healthy students. On the other hand, the median for self-blame and denial strategy was higher in health students.

## DISCUSSION

In this study groups, acceptance and emotional support coping strategies were utilized frequently by students with chronic medical illnesses. Acceptance can be an adaptive coping strategy used in unchangeable negative events like chronic diseases or incurable cancers by helping to maintain an individual's psychological well-being, capacity to act and moving on in life [22]. In spite of the disagreement of literature about acceptance as an adaptive or maladaptive coping strategy [23], it is found that people diagnosed with incurable cancer use it along with emotional support which leads to a better quality of life and mood [24]. In addition, acceptance and commitment therapy (ATC), a form of counseling that is similar to cognitive-behaviour therapy, is becoming more popular and effective in stress management as reported by many studies [25]. It works by allowing thoughts to come and go without struggling with them, which leads to minimizing the stress dramatically if the person gives up fighting and trust the process of the negative event [25].

Seeking emotional supports especially among students with chronic diseases to alleviate their stress allows them to move on in their academic life. Better mood and quality of life were reported among patients newly diagnosed with incurable cancers when they used emotional support and acceptance, in contrast, to using denial and self-blame as coping strategies [24]. Alesheshtawy *et al.* found that acceptance, religion and emotional support were utilized by a large proportion of Egyptian women diagnosed with breast cancer in relieving their stress [22]. All of the above studies are consisting of the findings in this study.

Self-blame and denial are considered as negative coping strategies and correlated with worse quality of life and mood. In spite of that, they still reported 37.9% and 28.2% of patients diagnosed with incurable cancer respectively. In addition, self-blame was reported highly by young patients with lung cancer and a history of smoking [24]. Although there was a significant difference in using these negative strategies, it was utilized more by healthy students compare to students with chronic medical diseases and was among coping strategies used least by students in general. This will give an overview of commonly used coping strategies in the study group and that will help to understand their behaviours in order to provide better support to them.

Religion was the most frequently employed coping strategy reported by students in the current study, regardless of health status. This coping strategy has also been reported among breast cancer patients in Egypt [22]. Abernethy *et al.* also found that religion reduced the incidence of depression among the spouses of lung cancer patients in the USA, especially if

used alongside other coping strategies; however, if used alone or not in moderation, the authors found that it could leave the person more vulnerable to depression [26]. Additionally, religion has been reported in other chronic health diseases, including depression, nerves, high blood pressure, alcoholism and tobacco addiction [27]. Rodríguez-Galán *et al.* noted also that religion was often perceived to be a significant source of empowerment, with patients crediting faith and prayer as methods of promoting wellbeing and improving one's health [27]. Given that Oman is an Islamic country, it is to be expected that religion would constitute an important coping strategy in the present cohort. Similarly, the least employed coping strategy was substance use, an activity that is strongly prohibited in Islam. Similarly, Alesheshtawy *et al.* finds that substance use and behavioural disengagement were the least reported coping strategies among patients with breast cancer [22]. At SQU, the influence of religion is considered to play a key role in every student's life. Under the umbrella of the Deanship of Student Affairs, the Religious Guidance section promotes religious and moral values through a variety of student activities [28]. It also provides religious counsellors for students of both genders to help guide them in all aspects of psychological, moral, social, educational and professional life, encouraging them to become upstanding and constructive members of the community and live satisfying lives [28]. Students at SQU generally utilized positive coping strategies-the most common of which were religion, acceptance, planning and active coping-regardless of their health status more frequently which impact positively on alleviating their stresses and move on their life.

Non-disclosure of disabilities or chronic medical illnesses by college students is challenging for many universities [7, 29]. The appointment of special advisors or the formation of clubs for students with chronic conditions can help to improve their mental state and encourage the development of peer relationships [9]. Moreover, providing additional resources for students unable to attend college on daily basis, such as specialised training to use distance learning technology, can help facilitate the learning process and reduce academic stress. Beyond this, other university services that can aid students with chronic illnesses include free online consultations with healthcare professionals for advice on topics related to mental health, asthma, diabetes and other chronic diseases, as well as vaccinations and travel medication [9]. Furthermore, as most students tend to be physically inactive and have poor diets-known causes of chronic illnesses like heart disease, stroke, anaemia, diabetes and depression-healthy nutritional and physical habits can be encouraged *via* targeted campus activities [30].

Like many universities, SQU is committed to caring for and providing students with chronic diseases with the resources and services, they need to reach their full potential. Under the Deanship of Student Affairs, the Special Needs section was established in July 2009 [31]. This section deals with students with various disabilities, including those with chronic medical diseases and communication and learning difficulties as well as physical, visual and hearing impairments. It aims to meet the needs and requirements of such students, develop their interests and strengthen their academic skills [31]. In addition to academic, career-oriented, social, technological and logistical guidance, health services are also provided through periodic health examinations either in the Student Clinic or in the SQU Hospital according to the student's specific condition and type of disease.

Although the present study did not aim to measure the prevalence of chronic medical diseases among SQU students, the findings indicate that approximately 28% of the study population suffered from a chronic illness. As such, additional social, psychological, and academic support should be provided to this group of students upon admission to the university. Students should be encouraged to declare any chronic medical diseases in their admission applications in order to more easily and enable the university administration to allocate and provide such services.

### CONCLUSION

Acceptance and emotional support are utilized frequently by students with chronic medical diseases in contrast to healthy students who used self-blame and denial as coping strategies to alleviate their stresses. Students at SQU generally utilized healthy coping mechanisms—the most common of which were religion, acceptance, planning and active coping—regardless of whether they were chronically ill or healthy. As students with chronic illnesses constituted almost one-third of the student population at SQU, further support services should be allocated to this group to help alleviate stress, encourage healthy coping mechanisms and provide them with the necessary resources to achieve their full potential.

### LIMITATIONS

There are several limitations to the current study. It is a descriptive study, described the stress coping strategies among college students without examining or controlling the factors that could affect the results. In addition, the outcome or impact on student performance was not examined in correlation with coping strategies used, which can add more value to the study. This study will be more yielded if conducted with different study methods like cohort study and use of a non-self-reported questionnaire. Social desirability bias and lack of

conscientious response in represents are common limitations for all survey studies that may limit the accuracy of the present findings.

### CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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