

## Psychological Resilience as a Predictor of Mental Health and Quality of Life among Patients with Cardiovascular Disease

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### Abstract

Resilience is basically the bouncing back power of any individual from any kind of difficulties which can be physical, social, emotional or psychological. Resilience plays a vital role in human lives by determining how they will face the upcoming challenges and how they will cope with them. The study serves as to find the impact of resilience on mental health and quality of life in individuals suffering from cardiac problems and when these variables vary, how can they affect the lives of cardiovascular patients. In this cross-sectional research both convenient and purposive sampling technique was used to collected data from (N = 100) participants who had cardiac problems (Age range: 20-65). Resilience was measured with Brief Resilience Scale; Mental Health Inventory scale was used to gauge mental health and Quality of Life was measured with 16-item Quality of Life Scale. The findings showed that there is a significant positive relation between resilience, mental health and quality of life among individuals with cardiac issues. It was also identified that as compared to females, males have high level of resilience. The mental health of high-class individuals was higher than that of middle- and low-class individuals among cardiovascular patients. These results will be very beneficial in many fields like psychology, cardiology, public health and even in the fields like art therapy that encourage individuals' overall well-being. In conclusion, significantly positive association was found among resilience, quality of life and mental health among cardiovascular patients.

**Key words:** Resilience, Mental health, Cardiovascular Patients, Quality of life, Psychology, Cardiology, Art therapy.

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## INTRODUCTION

Over the past few years, resilience has been defined as the natural ability of a person, group, or community to deal with their own life-tough situations that can affect their lives in different contexts of life (Grotberg, 1995). Bananno examined loss and trauma in adults to elaborate on resilience and define resilience as the capability or ability of an adult to keep both his psychological health and physiological well-being balanced in his daily routine (Bananno, 2004). Resilient material is something that can be bent or stretched but can be or is able to bounce back to its original shape or strength, like a flower pushing through concrete against wind or a bridge enduring wind. According to Pemberton, in human terms, it can be defined as the ability of a person to maintain his feelings, emotions, thoughts, and actions during any consequences in difficult situations and long-time pressures of life and/or to come back stronger, capable, and wiser to manipulate it (Pemberton, 2015).

Inner resilience acts as a crucial asset that holds the secret key to success in the external world and the key to having sound mental health. Resilience is not just the bouncing-back capability of a person. With resilience, a person can deal with the most challenging difficulties in their lives, or even more and more, and face situations they can't even think to do or go through (Neenan, 2017). Resilience is not some quality that suddenly boosts up in a person, but something that is cultivated over time. There are some factors that protect teens from depression, like positive self-assessment, strong interpersonal relations, and family unity, which can also help to increase resilience in early adulthood (Carbonell et al., 2002).

Studies show that students who believe that both social qualities and intellectual capabilities are malleable and capable of improvement increase their resilience, exhibiting reduced stress responses to challenges and enhanced performance (Yeager & Dweck, 2012). A resilient person effectively adapts itself to challenging and difficult life situations by demonstrating emotional, behavioral and mental flexibility and, thereby, can adjust both internal and external demands of life (American Psychological Association, 2007). Resilience is defined by the American Psychological Association (2004) as the process by which a person adapts well to adverse life experiences, threats, traumas, and even significant stressful events.

A resilient person's interaction with the environment and developmental factors can influence his resilience, which indicates that resilience has the potential to change over time in different life experiences. As an illustration, more care from parents and protection may increase the resilience power of children during infancy but can be changed later in teen or young adulthood by experiencing or interacting with environmental and developmental factors (Kim-Cohen & Turkewitz, 2012). In the journey of resilience, a person faces some challenges for a short period of time, but overall, resilience gives good health (Bonanno, 2004; Bonanno et al., 2011). Resilience is an effective and progressive process in an individual that helps him adapt successfully to disruptions that can threaten the function, activity, or progress of that system (Masten, 2014; 2015).

Mental health as not just the absence of mental issues but something more broad (Keyes, 2009). Stability in one's emotions, a lack of anxiety, sound adjustment of behavior, and other signs that can cause impairment. The ability of an individual to handle day-to-day stressors and responsibilities and the capability of a person to build positive connections are all indicators of a mentally healthy person (APA, 2007). A mentally healthy person knows their capabilities, knows how to cope with different life stressful events, and can manage their emotions, explore their interests effectively, and provide back to their community. It is a vital part of our overall health and well-being, supporting our capability as individuals and as a

community to make selections, form bonds with one another, and influence the global community we exist in (World Health Organization, 2022).

A person's psychological, biological, and social aspects, which influence their state of mind and capacity to function in the world around them, can all be included in the umbrella of mental health. It can also be described as having no symptoms of mental illness (Carter et al., 1959). Mental health is the overall positive view an individual has of themselves, including self-esteem, recognizing one's own value and significance, and a sense of being physically healthy (Bhugra et al., 2013). Mental health refers to individual intrapersonal harmony that includes unity and balance within the person's own values, thoughts, and emotions and a positive relationship with oneself (Alonso, 1960).

The term "quality of life" describes how a person or a population is doing in terms of both the negative and positive consequences of their life collectively at a certain moment in time (Teoli & Bhardwaj, 2023). Both objective measures like access to health care, income, and education and objective measures such as how joyful and satisfied you feel about your life must be used to determine an individual's quality of life (Karimi & Brazier, 2016). Quality of life (QOL) is a person's perceived level of delight and satisfaction with their relationships, work, and health (Sperber, 2023).

QOL refers to a diverse and independent or subjective perception of overall wellness that is culturally formed as people look for security and comfort, morality and direction in life, and a sense of belonging throughout their social circle (Kagawa-Singer et al., 2010). Referencing Feinstein (1987), Moons et al. (2006) assert that the word quality of life frequently seems to be all-encompassing, covering a wide range of ideas, including perception, functionality, health status, life circumstances, the way of living, happiness, behavior, etc. Today, heart problems or cardiovascular vascular disorders are the main cause of death around the world, with an estimate of about 17.9 million deaths each and every year (World Health Organization, 2024). Every day, more than 2150 individuals are dying from heart problems in America, which is like one person dying every 40 seconds based on a date from 2011. Around 155,000 Americans under the age of 60 died because of heart disorders in that year. In 2011, under the age of 75, 34% of individuals died from CVD, which is less than the current average life expectancy of 78.9 years (Mozaffarian et al., 2015).

Cardiovascular disease is a broader term for conditions that affect blood vessels and heart. It can occur when there is a clot of blood in the vessel (thrombosis) or the buildup of fatty deposits inside the blood vessels that cause them to get narrow and harden (atherosclerosis).

CVD comes in four main types:

- Coronary heart disease
- Stroke
- Peripheral arterial disease
- Aortic disease (NHS, 2023).

Coronary heart disease happens when there is an obstruction or decrease in the blood supply of oxygen to the heart muscle. Sudden blockage of blood to the muscle of the heart (heart attacks): due to restriction of blood flow to the heart muscle, the individual feels pain in the chest, known as angina, and difficulty pumping blood throughout the whole body properly, known as heart failure. In Asia and western countries, smoking, high blood pressure, and diabetes are the primary risk factors for stroke (Ueshima, 2007). CVD factors of risk fall into two categories: things that can't be changed or non-modifiable (age, sex, race, and family history) and things that can vary or be modifiable (such as diabetes, hypertension,

alcohol use, lipid profile, lack of physical activity, smoking, obesity, and poor diet) (Rezaei et al., 2017; Rezaei et al., 2022). While high blood pressure or hypertension is not a heart disease, it can lead to CVD problems and weaken or harm your heart (Bsn, 2021).

A study was conducted in 2023, in which a total of 1048 participants initiated the online survey using social media platforms like Instagram, Facebook, X, Reddit and LinkedIn. The total number of participants who finished the online survey was 446, out of which 332 had CHD and 134 were without CHD, aged 10-25 years. Results revealed that young people with CHD had a greater degree of resilience in contrast to healthy participants without CHD of the same age and found a number of variables, both modifiable and non-modifiable, that are correlated with high resilience. By understanding resilience and its determinants in the CHD population, the medical teams tried to enhance the psychological and physical well-being of patients. However, among participants with CHD, decreased resilience is correlated with the existence of a mental health diagnosis, a lack of exercise, more hospital admissions, and no engagement in support groups (Glenn et al., 2023).

## Rationale

Resilience has been increasingly recognized as a significant factor that enhances health outcomes and quality of life, particularly in the context of chronic illnesses such as cardiovascular disease (Malik & Afzal, 2015). Without resilience, cardiac patients have a worsened overall quality of life, and a greater degree of resilience is positively linked with an improved and enhanced quality of life. Emotional resilience can also have an enhanced effect on modulating the risk of psychopathological burden (Grotberg, 1995). Literature says that if a person is resilient, it can have a positive impact on his mental health, quality of life, enhanced treatment, bearing pain, managing stressors, personal control, and knowledge (Arrebola et al., 2014). The aim of this research is to investigate the impact of resilience on the mental health and quality of life of cardiovascular patients in District Swabi, Khyber Pakhtunkhwa (KPK) province of Pakistan. Through a comprehensive examination of these variables, the study seeks to contribute to a deeper understanding of the psychological well-being and overall quality of life of cardiovascular patients in the region. This research addresses a critical gap in the literature by focusing specifically on the province of KPK in Pakistan. Existing research on the impact of resilience on mental health and quality of life among cardiovascular patients is limited, especially within the context of KPK. By narrowing the scope to this region, the study can provide insights into the unique challenges and dynamics that influence the psychological well-being of cardiovascular patients in this area.

This research places resilience at the forefront, recognizing its potential to act as a protective factor against the adverse psychological effects of cardiovascular illness. By exploring the relationship between resilience and mental health outcomes, the study aims to highlight the importance of resilience-building interventions in improving the overall well-being of cardiovascular patients. By collecting detailed demographic and clinical information from participants, including gender, age, marital status, socioeconomic status, family system, education, type of disease, chronic disease status, physical activity levels, and medical treatment history, this research can provide a nuanced understanding of how these factors interact with resilience to influence mental health and quality of life outcomes among cardiovascular patients. This comprehensive approach allows for a more holistic assessment of the complex interplay between individual characteristics, illness factors, and psychosocial outcomes.

With a sample size of 100 cardiovascular patients, this study offers a robust dataset for analysis, enhancing the reliability and generalizability of the findings. Furthermore, the

absence of prior research on this topic in KPK adds novelty to the study, making it a pioneering endeavor in addressing an important yet overlooked aspect of cardiovascular care in the region.

In summary, this research aims to fill a significant gap in the literature by examining the impact of resilience on mental health and quality of life among cardiovascular patients in the KPK province of Pakistan. Through its focus on resilience as a protective factor and its comprehensive approach to data collection, the study seeks to generate valuable insights that can inform the development of targeted interventions to enhance the well-being of cardiovascular patients in the region.

### **Objectives**

- To evaluate the relationship between resilience and mental health among cardiovascular disease patients.
- To explore the role of resilience on quality of life among cardiovascular disease patients.
- To explore gender differences, socio economic system and area of residence among study variables.

### **Hypotheses**

- Resilience will positively associate with mental health among cardiovascular disease patients.
- Higher level of resilience will positively associate with Quality of life among cardiovascular disease patients.
- Male cardiovascular disease patients will have higher resilience as compare to female cardiovascular disease patients.
- Higher class cardiovascular disease patients will have higher mental health as compared to middle and lower class cardiovascular disease patients.

### **Method**

#### **Research Design**

This study followed correlational research design and data was collected through a survey method to investigate the relationship between resilience, mental health and quality of life among cardiovascular disease patients.

#### **Sample**

The sample taken using purposive sampling technique from three hospitals of district Swabi, Khyber Pakhtunkhwa, Pakistan: Bacha khan Medical Complex Shahmansoor, Sardar Medical Center Swabi, and District Head Quarter Hospital, Swabi. 100 cardiovascular disease patients had participated in this study. The age range of the participants was between 20-65 years. Participants were approached in their hospitals, with the permission of the concerned authority.

#### **Operational Definitions**

##### **Resilience**

Resilience was operationally defined in terms of bouncing back or recovering after hard times, managing stressful situations, taking little time to get over setbacks, and having little trouble, based on the score of the Brief Resilience Scale (Smith et al., 2008).

##### **Mental Health**

Mental health was operationally defined in terms of psychological distress such as anxiety, depression, and emotional control and psychological well-being such as positive effects and emotional ties, based on the score of the Mental Health Scale (Veit & Ware, 1983).

##### **Quality of life**



Quality of life was operationally defined in terms of having material comfort, food, financial security, being physically fit, relations with family members, satisfaction from work or at home, helping and encouraging others, learning about life and yourself, entertainment, and doing for yourself based on the Quality of Life Scale (Flanagan, 1978; 1982).

**Data Collection Procedure**

Ethical approval was obtained from the authorized ethics committee review board before proceeding with data collection. Participants that fulfilled the inclusion criteria and were willing to take part in the in-person data collection were recruited. Questionnaires with the inform consent were given to the patients and a private and quiet space was provided for them to complete questionnaires. Trained research assistants were available to answer any questions and assist with data collection. The questionnaires were mobile-friendly and accessible to participants with disabilities. Clear instructions on how to complete the questionnaires and how to submit them were included. Because of the language barrier in the instruments, only people who could communicate in English to some degree were approached for the study.

**Results**

The purpose of the study was to examine how resilience impact of quality of life and mental health with cardiovascular disease. Statistical methods used for the analysis of study variables include alpha reliability, Pearson correlation, independent sample t test performed to check gender differences and ANOVA to checked the difference on socio-economic status.

**Table 1**

*Psychometric characteristics of study variables among cardiovascular disease patients (N = 100)*

Variables	N	M	SD	A	Range		Skewness	Kurtosis
					Potential	Actual		
R	100	15.6	6.01	.99	6-30	6-24	.447	-.97
MH	100	59.4	7.7	.87	18-108	46-76	-.026	-.78
QOL	100	74.7	7.6	.84	16-112	57-93	-.109	-.49

Note. R = Resilience, MH = Mental Health, QOL = Quality of Life

Table 1 displays the studying variables’ psychometric characteristics. According to reliability analysis, alpha coefficients for resilience, mental health and quality of life scales employed in the current study varied between cardiovascular patients, ranging from .84 to .99. This exhibits adequate internal consistency. The skewness and kurtosis readings are both less than one which is acceptable. Kurtosis values are between -1 and less than +1. The data’s normality is not problematic, as indicated by the values of skewness and kurtosis.



**Table 2**

*Pearson correlation of study variables among cardiovascular disease patients (N = 100)*

Variables	1	2	3
R	-	.680**	.503**
MH	-	-	.636**
QOL			

Note. \*\*p < .01, R = Resilience, MH = Mental Health, QOL = Quality of Life

Table 2 displays Pearson correlation of study variables among cardiovascular patients. Results indicate that resilience has significant optimistic correlation with mental health (r = .680, p < .01), and quality of life (r = .503, p < .01) among cardiovascular patients. Also mental health has significant optimistic connection with quality of life (r = .636, p < .01).

**Table 3**

*Mean, standard deviation and t-values for male and female cardiovascular patients on resilience, mental health and quality of life (N = 100)*

Variables	Male(n=62)		Female(n=38)		t(298)	P	95% CI		Cohen's d
	MD	SD	MD	SD			LL	UL	
R	17.1	6.12	13.2	5.00	3.34	.001	1.59	6.28	.69
MH	58.2	7.83	61.3	7.35	-1.96	.05	-6.22	.03	.40
QOL	75.9	7.84	72.8	7.07	1.98	.05	1.51	6.11	.41

Note. R = Resilience, MH = Mental Health, QOL = Quality of Life

According to resilience, mental health, and quality of life, Table 3 displays the mean, standard deviation and t-values for patients who are female and male. With t (298) = 3.34, p < .05. The results shows significant mean differences. It shows that female patients significantly scored low on resilience (M = 13.2, p < .05) as compared to male patients (M = 17.1, p < .05). It also shows significant mean differences on quality of life with t (298) = 1.98, p < .05 and mental health with t (298) = -1.96, p < .05. It shows that female patients significantly scored low on quality of life (M = 72.8, p < .05) as compared to male patients (M = 75.9, p < .05) and female patients significantly scored high on mental health (M = 61.3, p < .05) as compared to male patients (M = 58.2, p < .05).

**Table 4**

*Mean, standard deviation and t-values for joint and nuclear cardiovascular disease patients on resilience, mental health and quality of life (N = 100)*

Variables	Joint(n=47)		Nuclear(n=52)		t(298)	P	95% CI		Cohen's d
	MD	SD	MD	SD			LL	UL	
R	16.3	6.05	14.8	5.89	1.24	.21	-.88	3.88	.69
MH	58.5	7.96	60.2	7.64	-1.12	.26	-4.87	1.35	.40
QOL	77.0	7.46	72.8	7.40	2.80	.006	1.22	7.16	.41

Note. R = Resilience, MH = Mental Health, QOL = Quality of Life



For nuclear and joint patients, table 4 displays t-values, mean and standard deviation for resilience, mental health and quality of life. The resilience mean differences are non-significant with  $t(298) = 1.24, p > .05$ . The finding indicates that nuclear family patients non-significantly scored low on resilience ( $M = 14.8, p > .05$ ) as compared to joint family patients ( $M = 16.3, p > .05$ ). The mental health mean differences are non-significant with  $t(298) = -1.12, p > .05$  and the quality of life mean differences are significant with  $t(298) = 2.80, p < .05$ . The findings indicate that joint family scored high significantly on quality of life ( $M = 77.0, p < .05$ ) in contrast with nuclear family system ( $M = 72.8, p < .05$ ).

**Table 5**

*Mean, f values and standard deviation for low, middle and high class cardiovascular patients on resilience, mental health, quality of life (N = 100)*

Variables	Low (n = 38)		Middle (n = 46)		High (n = 16)		F	P
	M	SD	M	SD	M	SD		
R	16.0	5.91	15.6	6.11	14.7	6.23	.27	.76
MH	56.9	6.60	58.3	7.65	61.6	9.37	3.58	.03
QOL	72.4	6.92	75.5	7.59	77.8	8.45	3.47	.03

Note. R = Resilience, MH = Mental health, QOL = Quality of Life

Table 5 mean, f- values and standard deviation for low, middle, and high class cardiovascular patients on resilience, mental health and quality of life. Result indicates non-significant mean differences on resilience with  $f = .27, p > .05$ . The finding indicates that low class patients non significantly scored high on resilience ( $M = 16.0, p > .05$ ) in contrast with middle class patients ( $M = 15.6, p > .05$ ) and high-class patients ( $M = 14.7, p > .05$ ). The results show non-significant mean differences on mental health with ( $f = 3.58, p > .05$ ), and quality of life ( $f = 3.47, p > .05$ ).

**Discussion**

The present study was designed to assess the impact of resilience on mental health and quality of life among cardiovascular patients. The study data was collected through survey questionnaires from cardiovascular patients admitted in Swabi hospitals. The data was collected from 119 individuals with cardiovascular disease, of which 100 individuals comprising 62 males and 38 females with ages ranging from 20 to 65 years gave the data and 19 do withdrew during the study. By conducting Pearson correlation analysis in current study, results revealed that resilience is correlated positively with mental health ( $r = .680, p < .01$ ) among cardiovascular patients. When a person has the capability to bounce back from any kind of adversity which may be physical, social, psychological or emotional, will have a good mental health even if they have heart problems. A previous study with 208 participants having congenital heart disease with comparison of 104 participants with no heart problems. Results indicated that high level of resilience is correlated positively with better mental health among participants with statistical significance of ( $p < .001$ ) (Chow, 2021). In current study the relationship between resilience and quality of life ( $r = .503, p < .01$ ) was founded to be positive among cardiovascular patients as if the patient has better resilience or bouncing back power from adversities the person will have better quality of life. A research on Cardiological Outcome, Resilience, and their association With Anxious-Depressive Symptoms and Quality of Life with an embedded Cardioverter Device with a total of 80

participants results revealed that there is a highly significant linear association between resilience and a better perception of quality of life among the individuals in the study having heart problems (Isella et al., 2021).

The Pearson correlation analysis also shows that mental health and quality of life correlated positively among each other among cardiovascular patients as there is significant positive correlation between mental health and quality of life ( $r = .636, p < .01$ ) which reveal that if any of the variable changes the other will also in same direction and magnitude, if mental health increases then quality of life will also increases and vice versa among cardiovascular patients. As cardiovascular patients with mental health issues like depression, anxiety, mood swings, low spirits etc. can affect their quality of life in terms of low self-esteem, relations with other, individual health and their level of being independent. A research conducted by Defar et al., (2023) that patients with mental health issues have low quality of life as compared to individuals with no mental health issues. Higher the mental health level better will be the quality of life as mental health problems makes it difficult for individuals to perform their routine activities, affecting their resilience, self-regulation and their doing for self.

The current study showed that joint family cardiovascular patients have high quality of life than nuclear family patients. As living in joint family makes us to take care of yourself and other relations in the family. A previous study titled “Factors associated with quality of life among joint and nuclear families” also showed that people living in joint family are more satisfied with their life as compared to people living in nuclear families.

## Conclusion

The study conducted on cardiovascular patients sheds light on the significant impact of resilience on mental health and quality of life among cardiovascular patients. The results found that there is a significant positive linkage among resilience, mental health and quality of life. If there are any changes in a variable it must will have some effect on other variables too. The positive association between resilience and mental among cardiovascular patients can be a contributing factor in many fields like health psychology, psychiatry, healthcare and medicine, public health, cardiology and research methodology. Also the correlation between resilience and quality of life can be a contributing factor in many fields. The study also highlights and proofed through statistical mean differences by independent sample T-test that as compared to female’s males have high resilience among cardiovascular patients which can help us to understand the extent of bouncing back power of men and women both in medical and in social fields.

## Limitations and Recommendations

The current research study was carried out with a small sample size of 100 participants in the research. It is vital to acknowledge the sample size limitation. This sample offered insightful data about the impact of resilience on mental health and quality of life among this specific demographic in patients with cardiac issues. But the limited sample size could limit the results generalizability and the capacity to detect deeper implications or variation within the general population. To ensure more diverse study of the studying variables, future research may benefit from more diverse and larger samples that will enhance the generalizability of findings.

The target population for this research study comprised of individuals who were educated and literate in the English language. Uneducated individuals and those who speak languages other than English were not included in the study. To enhance the understanding of the issue, future studies should aim to incorporate a more diverse range of participants. Given

the sensitivity of the issues being studied, it is crucial that the assessments used in research studies are in-depth and accurate. To ensure more representative and inclusive sample, non-English speaking participants should be included by multilingual assessments or incorporate translation services. Also the culture biasness should be kept in consideration as cultural nuances and characteristics might differ across cultures. Also by using cross-sectional research design, it could limit the ability to identify causality between resilience, quality of life and mental health among cardiovascular patients. More reliable data would be provided by using longitudinal research design in the study.

In addition to resilience, several other factors could significantly impact quality of life and mental health outcomes in the population. Some crucial aspect to consider is the role of coping strategies including emotion regulation, adaptive coping mechanisms and problem-solving skills that could help individuals to manage stress and the challenges associated with cardiac conditions. Also, social support's function system and considering factors like culture beliefs and access to health care services should be include in studying the interplay between resilience, quality of life and mental health.

### Implications and Suggestions

Resilience, mental health and quality of life among cardiovascular patients are crucial topics that have not been studied thoroughly in Pakistan. The relationship between resilience, mental health and quality of life among individuals with cardiac problems is not widely understood, which highlights the importance of this research study. The study examined the impact of resilience on mental health and quality of life among cardiovascular patients. It can serve as a starting point to understand how these factors contribute in different fields of psychology, health and medical fields. This study helps in highlighting the significance of resilience building interventions to enhance mental health and overall quality of life in patients with cardiac problems. The current study can encourage people toward the awareness and importance of resilience building strategies and mental health care. Awareness toward the factors that can play a vital role to cause heart problems like low physical activity, less care in hypertension and diabetes. It will help to educate cardiac patients about the vital role of resilience in managing their conditions and improving their overall health and to participate in the activities that help to build resilience such as stress management techniques and practicing mindfulness. The current study would also support psychosocial support services in cardiovascular care settings like resilience building or training programs and counseling that can help cardiac patients to cope with the difficulties that are linked with their conditions. The current research can encourage further research to find long term effects of interventions that can promote resilience and gives valuable insights on studying the resilience and its impact on quality of life and mental health among individuals with cardiac problems in different populations.

### References

- Alonso, A. M. (1960). What Is Mental Health? Who Are Mentally Healthy? *International Journal of Social Psychiatry*, 6(3-4), 302-305.  
<https://doi.org/10.1177/002076406000600318>
- American Psychological Association, (2004). The road to resilience. <http://helping.apa.org/resilience/>.[https://scholar.google.com/scholar\\_lookup?title=The+road+to+resilience&publication\\_year=2014&\[Google+Scholar\]](https://scholar.google.com/scholar_lookup?title=The+road+to+resilience&publication_year=2014&[Google+Scholar]).
- American Psychological Association. (2007). *APA Dictionary of Psychology*. American Psychological Association

- (APA). [http://books.google.ie/books?id=OSoZAQAAIAAJ&dq=APA+Dictionary+of+Psychology&hl=&cd=1&source=gbs\\_api](http://books.google.ie/books?id=OSoZAQAAIAAJ&dq=APA+Dictionary+of+Psychology&hl=&cd=1&source=gbs_api)
- Arrebola-Moreno, A. L., Garcia-Retamero, R., Catena, A., Marfil-Álvarez, R., Melgares-Moreno, R., & Ramírez-Hernández, J. A. (2014). On the protective effect of resilience in patients with acute coronary syndrome. *International Journal of Clinical and Health Psychology, 14*(2), 111–119. [https://doi.org/10.1016/s1697-2600\(14\)70044-4](https://doi.org/10.1016/s1697-2600(14)70044-4)
- Bhugra, D., Till, A., & Sartorius, N. (2013). What is mental health? *International Journal of Social Psychiatry, 59*(1), 3–4. <https://doi.org/10.1177/0020764012463315>
- Bonanno, G. A. (2004). Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive After Extremely Aversive Events? *American Psychologist, 59*(1), 20–28. <https://doi.org/10.1037/0003-066x.59.1.20>
- Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to Loss and Potential Trauma. *Annual Review of Clinical Psychology, 7*(1), 511–535. <https://doi.org/10.1146/annurev-clinpsy-032210-104526>
- Carbonell, D.M., Reinherz, H.Z., Giaconia, R.M. et al. (2002). Adolescent Protective Factors Promoting Resilience in Young Adults at Risk for Depression. *Child and Adolescent Social Work Journal 19*, 393–412. <https://doi.org/10.1023/A:1020274531345>
- Carter, J. W., Hidreth, H. M., & Knutson, A. L. (1959). Mental health and the American Psychological Association. Ad hoc Planning Group on the Role of the APA in Mental Health Programs and Research. *Am Psychol, 14*, 820–5. [https://scholar.google.com/scholar\\_lookup?journal=Am+Psychol&title=Mental+health+and+the+American+Psychological+Association.+Ad+hoc+Planning+Group+on+the+Role+of+the+APA+in+Mental+Health+Programs+and+Research&author=JW+Carter&author=HM+Hidreth&author=AL+Knutson&volume=14&publication\\_year=1959&pages=820-5&doi=10.1037/h0043919&](https://scholar.google.com/scholar_lookup?journal=Am+Psychol&title=Mental+health+and+the+American+Psychological+Association.+Ad+hoc+Planning+Group+on+the+Role+of+the+APA+in+Mental+Health+Programs+and+Research&author=JW+Carter&author=HM+Hidreth&author=AL+Knutson&volume=14&publication_year=1959&pages=820-5&doi=10.1037/h0043919&)
- Chow, P. C. (2021). Quality of life, psychological resilience, personality traits and illness perception in grown-up congenital heart patients in Hong Kong. *International Journal of Cardiology Congenital Heart Disease, 6*, 100279. <https://doi.org/10.1016/j.ijcchd.2021.100279>
- Defar, S., Abraham, Y., Reta, Y., Deribe, B., Jisso, M., Yeheyis, T., Kebede, K. M., Beyene, B., & Ayalew, M. (2023). Health related quality of life among people with mental illness: The role of socio-clinical characteristics and level of functional disability. *Frontiers in Public Health, 11*. <https://doi.org/10.3389/fpubh.2023.1134032>
- Flanagan, J. C. (1978). A research approach to improving our quality of life. *American Psychologist, 33*(2), 138–147. <https://doi.org/10.1037/0003-066X.33.2.138>
- Flanagan JC. (1982). Measurement of quality of life: current state of the art. *Arch Phys Med Rehabil, 63*(2):56–9. PMID: 6460487. <https://pubmed.ncbi.nlm.nih.gov/6460487/>
- Glenn, T., Cousino, M. K., Wernovsky, G., & Schuchardt, E. L. (2023). Resilient Hearts: Measuring Resiliency in Young People With Congenital Heart Disease. *Journal of the American Heart Association, 12*(21). <https://doi.org/10.1161/jaha.123.029847>
- Grotberg, E. (1995). Early Childhood Development: Practice and Reflections. *A guide to promoting resilience in children: Strengthening the human spirit.8*.
- Isella, C., Gasparini, A., Lucca, G., Ielmini, M., Caselli, I., Poloni, N., Ermolli, C. D., Caravati, F., Castiglioni, B., De Ponti, R., & Callegari, C. (2021). Resilience, Cardiological Outcome, and Their Correlations With Anxious-Depressive Symptoms and Quality of

- Life in Patients With an Implantable Cardioverter Defibrillator. *Frontiers in Psychiatry*. <https://doi.org/10.3389/fpsyt.2021.763726>
- Kagawa-Singer, M., Padilla, G. V., & Ashing-Giwa, K. (2010). Health-Related Quality of Life and Culture. *Seminars in Oncology Nursing*, 26(1), 59–67.  
<https://doi.org/10.1016/j.soncn.2009.11.008>
- Karimi, M., & Brazier, J. (2016). Health, Health-Related Quality of Life, and Quality of Life: What is the Difference? *Pharmaco Economics*, 34(7), 645–649.  
<https://doi.org/10.1007/s40273-016-0389-9>
- Keyes, C. L. M. (2009). The Black–White Paradox in Health: Flourishing in the Face of Social Inequality and Discrimination. *Journal of Personality*, 77(6), 1677–1706.  
<https://doi.org/10.1111/j.1467-6494.2009.00597.x>
- Kim-Cohen, J., & Turkewitz, R. (2012). Resilience and measured gene–environment interactions. *Development and Psychopathology*, 24(4), 1297–1306.  
<https://doi.org/10.1017/s0954579412000715>
- Malik, S., & Afzal, N. (2015). Predictors of quality of life and resilience among outpatients with heart diseases. *Journal of Pakistan Psychiatric Society*, 12(3).
- Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child development*, 85(1), 6–20.  
[https://scholar.google.com/scholar\\_lookup?journal=Child+Development&title=Global+perspectives+on+resilience+in+children+and+youth&author=A.+S.+Masten&volume=85&issue=1&publication\\_year=2014a&pages=6-20&pmid=24341286&doi=10.1111/cdev.12205&](https://scholar.google.com/scholar_lookup?journal=Child+Development&title=Global+perspectives+on+resilience+in+children+and+youth&author=A.+S.+Masten&volume=85&issue=1&publication_year=2014a&pages=6-20&pmid=24341286&doi=10.1111/cdev.12205&)
- Masten, A. S. (2015). *Ordinary magic: Resilience in development*. Guilford Publications.  
[https://scholar.google.com/scholar\\_lookup?title=Ordinary+magic:+Resilience+in+development&author=A.+S.+Masten&publication\\_year=2014b&](https://scholar.google.com/scholar_lookup?title=Ordinary+magic:+Resilience+in+development&author=A.+S.+Masten&publication_year=2014b&)
- Moons, P., Budts, W., & De Geest, S. (2006). Critique on the conceptualisation of quality of life: A review and evaluation of different conceptual approaches. *International Journal of Nursing Studies*, 43(7), 891–901. <https://doi.org/10.1016/j.ijnurstu.2006.03.015>
- Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., de Ferranti, S., Després, J. P., Fullerton, H. J., Howard, V. J., Huffman, M. D., Judd, S. E., Kissela, B. M., Lackland, D. T., Lichtman, J. H., Lisabeth, L. D., Liu, S., Mackey, R. H., Matchar, D. B., . . . Turner, M. B. (2015). Heart Disease and Stroke Statistics—2015 Update. *Circulation*, 131(4).  
<https://doi.org/10.1161/cir.000000000000152>
- Neenan, M. (2017). *Developing Resilience: A Cognitive-Behavioural Approach* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315189178>
- NHS. (2022). Cardiovascular disease. <https://www.nhs.uk/conditions/cardiovascular-disease/>
- Pemberton, C. (2015). *Resilience: A Practical Guide for Coaches*. McGraw-Hill Education (UK).  
[http://books.google.ie/books?id=nskVEAAQBAJ&printsec=frontcover&dq=Resilience:+A+practical+guide+for+coaches&hl=&cd=1&source=gbs\\_api](http://books.google.ie/books?id=nskVEAAQBAJ&printsec=frontcover&dq=Resilience:+A+practical+guide+for+coaches&hl=&cd=1&source=gbs_api)
- Rezaei Hachesu, V., Naderyan Feli, S., & Zare Sakhvidi, M. J. (2017). Prevalence of cardiovascular risk factors among taxi drivers in Yazd, Iran, 2016. *Journal of Community Health Research*, 6(4), 200–206.  
[https://scholar.google.com/scholar\\_lookup?&title=Prevalence%20of%20cardiovascular%20risk%20factors%20among%20taxi%20drivers%20in%20Yazd%2C%20Iran%2C%202016&journal=J%20Community%20Health%20Res&volume=6&issue=4&pages=200-206&publication\\_year=2017&author=Rezaei%20Hachesu%2CV&author=Naderyan%20Feli%2CS&author=Zare%20Sakhvidi%2CMJ](https://scholar.google.com/scholar_lookup?&title=Prevalence%20of%20cardiovascular%20risk%20factors%20among%20taxi%20drivers%20in%20Yazd%2C%20Iran%2C%202016&journal=J%20Community%20Health%20Res&volume=6&issue=4&pages=200-206&publication_year=2017&author=Rezaei%20Hachesu%2CV&author=Naderyan%20Feli%2CS&author=Zare%20Sakhvidi%2CMJ)
- Rezaei, F., Seif, M., Fattahi, M. R., Gandomkar, A., & Hasanzadeh, J. (2022). Estimation of 10-Year Risk of Cardiovascular Diseases Using WHO Risk Prediction Charts: A

- Population-Based Study in Southern Iran. *Iranian Journal of Public Health*.  
<https://doi.org/10.18502/ijph.v51i7.10101>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194–200. <https://doi.org/10.1080/10705500802222972>
- Sperber, S. (2023). Quality of Life: Definition, Measures, and Examples. Berkeley well-being Institute. Reviewed by *Tchiki Davis, MA, PhD*.  
<https://www.berkeleywellbeing.com/quality-of-life.html>
- Teoli D, Bhardwaj A. Quality Of Life. (2023). In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from:  
<https://www.ncbi.nlm.nih.gov/books/NBK536962/>
- Ueshima, H. (2007). Explanation for the Japanese Paradox: Prevention of Increase in Coronary Heart Disease and Reduction in Stroke. *Journal of Atherosclerosis and Thrombosis*, 14(6), 278–286. <https://doi.org/10.5551/jat.e529>
- Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, 51(5), 730–742.  
<https://doi.org/10.1037//0022-006x.51.5.730>
- World Health organization. (2022). Mental Health.  
<http://www.who.int/mediacentre/factsheets/fs220/en/>
- World Health Organization. (2024). Cardiovascular disease. [https://www.who.int/health-topics/cardiovascular-diseases#tab=tab\\_3](https://www.who.int/health-topics/cardiovascular-diseases#tab=tab_3)
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets That Promote Resilience: When Students Believe That Personal Characteristics Can Be Developed. *Educational Psychologist*, 47(4), 302–314. <https://doi.org/10.1080/00461520.2012.722805>