

The Moderating Role of Hopefulness in the Relationship Between Resilience and Well-Being Among Mizo Cancer Patients

Malsawmtluangi Chuauhang*

H.K. Laldinpuii Fente**

Abstract:

This study first attempts to determine the level of hopefulness, resilience, and psychological well-being among male and female cancer patients in Mizoram, and further examine the moderating role of hopefulness in the relationship between resilience and psychological well-being among three groups of cancer patients groups according to the stages of cancer illness. While cancer is conventionally classified into stages 0–IV, this study grouped stages into three broader categories for the analysis of psychological impact: Group 1 are in Stage 0–I, Group 2 are in Stage II–III, and Group 3 are Stage IV of cancer illness. The sample comprised 104 Mizo cancer patients. Psychological factors—hopefulness, resilience and psychological well-being—were studied. The findings indicated that there were not significant gender or cancer groups differences in the psychological variables of hopefulness, resilience, and psychological well-being. Hopefulness was found to moderate the relationship between resilience and psychological well-being among cancer patients in Mizoram.

Key words: cancer stages, resilience, well-being, hopefulness, Moderation effect.

Introduction

Cancer is a non-communicable disease that affects populations globally. It is characterised by the rapid proliferation of abnormal cells, which invade adjacent tissues and metastasise to distant organs (World Health Organisation, 2017). Cancer diagnosis profoundly affects both physical and mental health, creating a need for comprehensive attention to both throughout the treatment continuum. This dual focus is especially important, as receiving a potentially life-threatening diagnosis, enduring intensive therapies, managing adverse effects, and adapting to new functional limitations can all lead to significant mental health challenges, such as anxiety, depression, self grief, and stress-related coping difficulties (Akechi, et al. 2004; Sirois, 2012). Historically, healthcare providers usually prioritize physical symptoms, often placing less emphasis on mental health (Nadler & Page, 2008). However, addressing mental health is as crucial as managing physical symptoms. Multiple studies demonstrate the strong link between physical and mental health (Wise et al. 2010).

As reported in recent years, Mizoram has had the highest cancer incidence for men and women in India (Bhonde, 2016; Population-Based Cancer Registry, Mizoram, 2016). In males, the most prevalent cancer sites are the stomach, oesophagus, and lungs. In females, the lungs, cervix, stomach, and breast are most frequently affected. Recent studies (Monitoring Survey

*Research Scholar, Department of Psychology, Mizoram University

** Professor, Department of Psychology, Mizoram University

of Cancer Risk Factors and Health System Response in North East Indian Region, 2022) link the increasing cancer burden to delayed diagnosis and low treatment-seeking. These problems mainly arise from limited healthcare access, infrequent check-ups, and significant financial burdens. As a result, late diagnoses and missed treatments are common (Mahal et al., 2013).

Empirical studies indicate that resilience can reduce treatment-related fatigue and mitigate harm to bodily functions, thereby accelerating recovery (Strauss et al., 2007). Additional research demonstrates that patients with greater resilience are more likely to maintain stable psychological states, which contributes to improved quality of life (Wenzel et al., 2002). Factors such as hope, social support, and spirituality have been shown to strengthen resilience. Psychological well-being is also influenced by resilience. Furthermore, optimism can promote psychological well-being regardless of an individual's resilience level (Souri & Hasanirad, 2011).

While numerous studies report a positive association between resilience and well-being, some research suggests that this relationship is not universally positive (Mguni et al., 2011). Therefore, the present study will investigate the impact of hopefulness on resilience and examine how this factor contributes to well-being among cancer patients in the Mizo population. This relationship has not been previously explored. The primary objective then is to determine whether increased hopefulness enhances resilience and, in turn, improves patient well-being.

Hopefulness refers to a multidimensional dynamic life force characterized by positive expectations toward the future and confidence in achieving personally meaningful goals despite illness (Dufault and Martocchio, 1985). As an underlying human strength, hope has served as a driving force for progress throughout the history of Western civilization. This quality is deeply embedded in cultural norms and often goes unnoticed, similar to yeast in bread. The belief in a better future is also reflected in common concepts and language; for example, the use of terms such as “plan” and “trust” implies an underlying assumption that the future is significant and that present actions can influence outcomes (Snyder & Lopez, 2007).

While many cancer patients encounter traumatic experiences, many demonstrate considerable strength. These differences highlight the importance of resilience. Resilience has been defined as “a personality characteristic that moderates the negative effects of stress and promotes adaptation” (Wagnild & Young, 1993), and as “the ability to restore or maintain internal or external equilibrium under significant threat by means of human activities, including thought and action” (Smith & Carlson, 1997). Many people develop mental health issues when they encounter adversity, which has led researchers to believe that only a few people are resilient. But, they have come to realize that many people manage to endure the temporary upheaval of loss or potentially traumatic events with no significant disruption in their ability to function at work or in their close relationships, and they seem to move on to new challenges with ease (Bonanno, 2004; Masten, 2001; Ryff & Singer, 2003). Psychological resources that support resilience include a flexible self-concept, autonomy, self-direction, and environmental mastery. Social resources, including high-quality relationships that provide intimacy and support, also play a significant role (Baumgardner & Crothers, 2014).

Psychological well-being is the presence of positive emotional states and effective psychological functioning, including feelings of happiness, life satisfaction, emotional ties and positive affect along with the absence of significant psychological distress” (Veit & Ware, 1983). It is a state of mind where an individual is able to develop their potential, work productively, and cope with normal stresses of life (WHO, 2021). Ryff (Ryff, Keyes & Schmotkin, 2002) conceptualized psychological well-being (PWB) as a set of psychological characteristics essential for pos-

itive human functioning. These characteristics encompass resilience-related aspects, including maturity (Allport, 1961), purpose in life (Crumbaugh & Maholick, 1969), and self-efficacy (Schwarzer & Warner, 2013). Psychological well-being has also been examined in relation to resilience and hardiness and was found that individuals showing higher psychological hardiness demonstrated a reduced association between stress and subsequent illness (Kobasa, Maddi & Kahn, 1982; Masten et al., 1999).

Objectives

1. To examine the moderating role of hopefulness in the relationship between resilience and psychological well-being among cancer patients of three stages of illness (Stage 0-I; stage II- III; and stage IV)

Hypotheses

1. It is expected that hopefulness will play a moderating role in the relationship between resilience and well-being among cancer patients of three stages of illness.

Methodology

Sample : The sample comprised 104 Mizo cancer patients: 13 males and 9 females in Stages 0 and I, 30 males and 30 females in Stage II, and 8 males and 14 females in Stage IV. Participants were randomly selected from two cancer hospitals in Aizawl (Nazareth Hospital and Mizoram State Cancer Institute) and from two guest houses for cancer patients operated by the Cancer Care Foundations and the Cancer Society of Mizoram. Consenting individuals completed forms collecting socio-demographic information and the following standardized instruments: i) the Herth Hope Scale (HHS; Herth, 1991), a 30-item 4-point scale Likert type instrument designed to capture the multidimensional aspects of hope. Higher scores indicate greater hope. The HHS has 3 subscales: Temporality and Future, Positive Readiness, and Interconnectedness; ii) the Resilience Scale (RS; Wagnild, G.M. and Young, H.M., 1993), consisting of 25 statements, rated on a Likert type scale of 1 – 7 ranging from 1 (strongly agree), 4 (neutral) to 7 (strongly disagree); and iii) Psychological Well-being Scale (PWS; Veit and Ware, 1983), a 20-item 6-point Likert scale measuring overall mental health by assessing, anxiety, depression, behavioural control, positive affect and emotional ties reflecting Psychological distress (10 items) and Psychological

Table 1: Descriptive and Reliability Statistics for Psychological Variables

Variables	Gender	Stage of Cancer	N	Mean	SD	Skewness		Kurtosis		Cronbach's Alpha	Number of Items
						Stats.	SE	Stats.	SE		
Hopefulness	Males	0&I	13	2.05	0.11	-0.16	0.62	-0.89	1.19	0.74	30
	Males	II&III	30	2.12	0.24	0.64	0.43	-0.54	0.83	0.86	30
	Males	IV	8	1.99	0.16	0.58	0.75	-0.78	1.48	0.76	30
	Females	0&I	9	2.11	0.19	0.57	0.72	-0.41	1.40	0.77	30
	Females	II&III	30	2.02	0.19	0.13	0.43	-0.63	0.83	0.91	30
	Females	IV	14	1.96	0.14	-0.61	0.60	0.21	1.15	0.93	30
Resilience	Males	0&I	13	5.36	0.39	-0.01	0.62	-1.17	1.19	0.74	25
	Males	II&III	30	5.28	0.47	-0.02	0.43	-0.36	0.83	0.78	25
	Males	IV	8	5.11	0.42	0.59	0.75	-1.25	1.48	0.74	25
	Females	0&I	9	5.52	0.55	-0.01	0.72	-0.97	1.40	0.83	25
	Females	II&III	30	5.49	0.47	-1.00	0.43	-0.14	0.83	0.79	25
	Females	IV	14	5.27	0.50	-0.19	0.60	-1.47	1.15	0.78	25

Psychological Well-Being	Males	0&I	13	4.05	0.59	-0.51	0.62	0.49	1.19	0.73	20
	Males	II&III	30	4.40	0.62	-0.22	0.43	0.16	0.83	0.72	20
	Males	IV	8	4.28	0.35	-0.48	0.75	-1.33	1.48	0.79	20
	Females	0&I	9	4.20	0.74	0.28	0.72	-1.11	1.40	0.60	20
	Females	II&III	30	4.10	1.06	-0.24	0.43	-0.30	0.83	0.85	20
	Females	IV	14	4.10	0.70	0.38	0.60	-0.15	1.15	0.86	20

well-being (10 items).

Results and Discussions

Descriptive and reliability statistics for psychological variables of hopefulness, resilience, and psychological well-being were first analysed as given in Table 1. The item Mean scores on each scale and subscales were interpreted using equal interval classification of the Likert scale rather than relying solely on the descriptive statistics of the overall dataset. The use of item Mean scores standardises the results by reducing each scale to the average response per item, thereby allowing for a more accurate interpretation of the relative levels of hopefulness, resilience, and psychological well-being across the three groups of cancer stages as we determine whether the scores reflect low, average, or high tendencies on a psychological construct. Across all stages (grouped into 3) and genders (male and female), cancer patients exhibited moderately high levels of hopefulness, resilience, and favourable psychological functioning. Although slight reductions in hopefulness and resilience were observed among stage 4 patients, the levels generally remained moderate to moderately high.

Following the preliminary analyses for psychometric adequacy and levels of the groups on the psychological measures, Multivariate and Univariate analyses for gender, cancer stage, and their interaction effects on the psychological variables of hopefulness, resilience and psychological well-being were executed. Levene's test found partial violations of homogeneity, so Pillai's Trace was used instead which is robust to unequal group sizes and violations of homogeneity (Field, 2018; Tabachnick & Fidell, 2019). However, none of the independent and interaction effects of gender and cancer stages on the psychological variables were found to be significant (detailed data and analyses with authors). This may indicate that the impact of the diagnosis of cancer remains the same across the groups regardless of gender and stages of severity of cancer.

The Role of Hopefulness in the Relationship Between Resilience and Psychological Well-Being Among Cancer Patients Across Three Stages of Illness

Preliminary correlation analyses assessed the direction and strength of associations among resilience, psychological well-being, hopefulness,. These analyses also served as an initial step to examine linear relationships among the variables before conducting moderation analyses. The non-significant findings of the effect of gender and stages of cancer justified the pooling of data to a bigger sample size for further moderation analyses.

Correlation Among the Psychological Variables (N=104)

Pearson's product-moment correlation analysis was conducted to assess the relationships among hopefulness, spiritual coping, perceived social support, resilience, and psychological well-being. This method was selected to determine both the direction and magnitude of associations among the psychological variables under investigation. The results of the correlation analysis are summarised in Table 2. Hopefulness showed a significant positive correlation with psychological well-being ($r = .322, p < .01$), but not with resilience (r

= .094, $p = .343$). Resilience was also significantly positively correlated with psychological well-being ($r = .204$, $p < .05$). Overall, the findings indicated significant positive linear relationships among several psychological variables, supporting the assumption of linear association required for subsequent moderation analyses.

Variables	1	2	3
1. Herth Hope Scale	—		
2. Resilience	.094	—	
3. Psychological Well-Being	.322**	.204*	—

Note: * $p < .05$, ** $p < .01$ ($N = 104$)

Moderating Effect of Hopefulness on the Relationship Between Resilience and Psychological Well-Being

The Moderation analysis used PROCESS Macro Version 4.1 (Hayes, 2022). Model 1 of the PROCESS Macro tested if hopefulness, spiritual coping, and perceived social support significantly moderated the relationship between resilience and psychological well-being. In these analyses, resilience was the predictor variable and psychological well-being was the outcome variable, with opefulness as the moderator variable. Predictor and moderator variables were mean-centred prior to analysis to reduce potential multicollinearity from interaction terms. Interaction effect was interpreted based on the significance of the interaction term and changes in explained variance (ΔR^2). Conditional effects analyses and Johnson–Neyman significance regions were examined.

Results of the moderation analysis are presented in Table 3. The overall regression model was statistically significant, $F(3, 100) = 6.7869$, $p = .0003$. The multiple correlation coefficient reached $R = .4113$, and the coefficient of determination was $R^2 = .1692$. These results show that the model explained 16.92% of the variance in psychological well-being among the cancer patients in the study.

The main effect of resilience on psychological well-being was statistically significant, $B = 0.3329$, $SE = 0.1515$, $t = 2.1967$, $p = .0304$, 95% CI $[0.0322, 0.6335]$. These findings indicate that greater resilience is associated with higher psychological well-being. Hopefulness also exerted a statistically significant main effect on psychological well-being, $B = 1.1660$, $SE = 0.3652$, $t = 3.1928$, $p = .0019$, 95% CI $[0.4414, 1.8905]$. These results show that higher levels of hopefulness are associated with higher psychological well-being among cancer patients.

The interaction effect between resilience and hopefulness was statistically significant, $B = 1.7370$, $SE = 0.8462$, $t = 2.0527$, $p = .0427$, 95% CI $[0.0582, 3.4159]$. The interaction term accounted for an additional 3.5% of the variance in psychological well-being, $\Delta R^2 = .0350$, $F(1, 100) = 4.2136$, $p = .0427$. These results indicate that hopefulness significantly moderated the relationship between resilience and psychological well-being. Analysis further demonstrated the nature of the moderation effect. At low levels of hopefulness (-1 SD), the relationship between resilience and psychological well-being was not significant, $B = -0.0047$, $SE = 0.2064$, $t = -0.0230$, $p = .9817$, 95% CI $[-0.4143, 0.4048]$. The findings suggested that resilience was virtually unassociated with psychological well-being at lower levels of hopefulness.

At mean levels of hopefulness, resilience significantly predicted psychological well-being, $B = 0.3329$, $SE = 0.1515$, $t = 2.1967$, $p = .0304$, 95% CI $[0.0322, 0.6335]$. At high levels of hopefulness ($+1$ SD), resilience also significantly predicted psychological well-being, $B = 0.6705$,

SE = 0.2396, $t = 2.7983$, $p = .0062$, 95% CI [0.1951, 1.1459].

These findings show that the positive association between resilience and psychological well-being increased as hopefulness increased. Resilience demonstrated a stronger positive relationship with psychological well-being among individuals with higher hopefulness. Overall, hopefulness served as a significant moderator in the relationship between resilience and psychological well-being. Specifically, higher levels of hopefulness strengthened the positive relationship between resilience and psychological well-being among cancer patients in the study.

Model Summary

R	R ²	MSE	F	df1	df2	p
.4113	.1692	.5121	6.7869	3	100	.0003

Regression Coefficients

Predictor	B	SE	t	p	LLCI	ULCI
Constant	4.1876	0.0705	59.3644	0	4.0476	4.3275
Resilience (RSTT)	0.3329	0.1515	2.1967	0.0304	0.0322	0.6335
Hopefulness (HHSTT)	1.166	0.3652	3.1928	0.0019	0.4414	1.8905
Resilience × Hopefulness	1.737	0.8462	2.0527	0.0427	0.0582	3.4159
Interaction Term		ΔR ²	F		df2	p
RSTT × HHSTT		0.035	4.2136		100	0.0427

Conditional Effects of Resilience on Psychological Well-Being at Different Levels of Hopefulness

Level of Hopefulness	Effect	SE	t	p	LLCI	ULCI
Low (-1 SD)	-0.0047	0.2064	-0.023	0.9817	-0.4143	0.4048
Mean	0.3329	0.1515	2.1967	0.0304	0.0322	0.6335
High (+1 SD)	0.6705	0.2396	2.7983	0.0062	0.1951	1.1459

Note: Predictor and moderator variables were mean-centered prior to analysis. PROCESS Macro Model 1 (Hayes, 2022) was used for the moderation analysis.

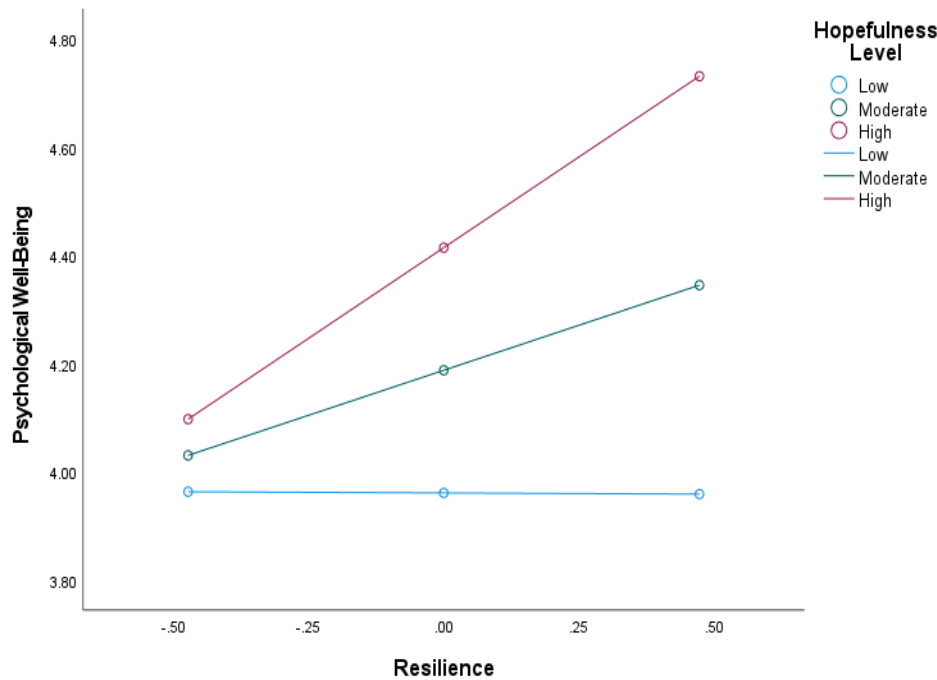


Figure 1: Graph showing significant moderating effect of hopefulness on the relationship between resilience and psychological well-being

Interpretation and Discussion

This study aimed to examine the moderating role of hopefulness in the relationship between resilience and psychological well-being among cancer patients in the three groups of stages of illness. Preliminary analyses did not show any significant difference in gender or stages of cancer illness on the psychological variables of hopefulness, resilience, and psychological well-being. Correlation analyses identified significant positive linear relationships among several psychological variables, thereby supporting the assumption of linear association necessary for subsequent moderation analyses. Moderation analyses were performed using PROCESS Macro Version 4.1, developed by Hayes (2022).

The results indicated that hopefulness moderated the association between resilience and psychological well-being among cancer patients. Simple slope analyses indicated that the positive relationship between resilience and psychological well-being intensified as hopefulness increased. These results align with findings reported by Satici (2016) and Kim (2005), who identified positive associations between hope and resilience, as well as the mediating role of hope in the relationship between psychological well-being and resilience. At low hopefulness, resilience was not significantly associated with psychological well-being. In contrast, at moderate and high levels of hopefulness, resilience strongly predicted psychological well-being, with the association increasing as hopefulness increased.

The findings show that hopefulness enhances the positive impact of resilience on psychological well-being in cancer patients. This effect likely occurs because hopefulness drives motivation and looks ahead. Hopefulness includes positive expectations, goal focus, emotional optimism, and the perception of opportunities to adapt or recover despite adversity (Snyder, 20220; Snyder & Lopez, 2007). Cancer patients who are more hopeful can better leverage their resilience to maintain emotional balance and well-being during illness-related stress and

uncertainty (Dufault and Martocchio, 1985; Herth, 1991).

Herth's and Snyder's Hope Theory both show that hopefulness leads to better coping, emotional control, perseverance, and psychological adjustment during challenges. For cancer patients, resilience alone may not keep psychological well-being without a positive outlook and emotional optimism. Hopefulness provides the emotional and motivational support that enables resilience to improve psychological well-being.

Cancer brings uncertainty about prognosis, fear of recurrence, long treatments, physical discomfort, and worries about mortality. In these situations, hopefulness is a key psychological resource that helps people keep meaning, emotional stability, and a sense of self despite distress. Resilience helps individuals get through adversity, but hopefulness provides the emotional strength and future focus needed for resilience to improve psychological well-being.

Hopefulness is shaped by the participants' sociocultural and religious backgrounds. In Mizoram, Christianity dominates. Spiritual faith, prayer, church fellowship, and community religious support often bring emotional reassurance, optimism, and positive expectations during illness. These cultural and religious factors likely increase hopefulness in cancer patients and boost the positive effect of resilience on psychological well-being.

Works Cited

- Akechi, T., Okuyama T., Sugawara, Y., Nakano, T., Shima, Y., Uchitomi, Y. (2004): Major depression, adjustment disorders, and post-traumatic stress disorder in terminally ill cancer patients: associated and predictive factors. *J Clin Oncol* 22 (10): 1957-65, 2004.
- Baumgardner, S. R., & Crothers, M. K. (2014). *Positive psychology* (1st ed.). Pearson.
- Bhonde, P. (2016, December 4). Cancer cases on the rise in Mizoram, state being called 'cancer capital of India'. *Indiatimes*. <https://www.indiatimes.com/news/india/cancer-cases-on-the-rise-in-mizoram-state-being-called-cancer-capital-of-india/articleshow/129311495.html>
- Bonanno G. A. (2004). Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events?. *The American psychologist*, 59(1), 20–28. <https://doi.org/10.1037/0003-066X.59.1.20>
- Bower, J. E. (2014). Cancer-related fatigue—Mechanisms, risk factors, and treatments. *Nature Reviews Clinical Oncology*, 11(10), 596–609. <https://doi.org/10.1038/nrclinonc.2014.127>
- Dufault, K., & Martocchio, B. C. (1985). Hope: Its spheres and dimensions. *Nursing Clinics of North America*, 20(2), 379–391. [https://doi.org/10.1016/S0029-6465\(22\)00328-0](https://doi.org/10.1016/S0029-6465(22)00328-0)
- Herth, Kaye. (1991). Development and refinement of an instrument of hope. *Scholarly inquiry for nursing practice*. 5. 39-51; discussion 53.
- Kim, T. H., Lee, S. M., Yu, K., Lee, S., & Puig, A. (2005). Hope and the meaning of life as influences on Korean adolescents' resilience: Implications for counselors. *Asia Pacific Education Review*, 6(2), 143–152. <https://doi.org/10.1007/BF03026782>
- Kobasa, S. C., Maddi, S. R., and Kahn, S. (1982). Hardiness and health: A prospective study. *J. Person. Soc. Psychol.* 42: 168–177.
- Mahal, A., Karan, A., Fan, V. Y., & Engelgau, M. (2013). The economic burden of cancers on Indian households. *PLOS ONE*, 8(8), Article e71853. <https://doi.org/10.1371/journal.pone.0071853>
- Masten, A. S. (1999). Resilience comes of age: Reflections on the past and outlook for the next generation of research. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 281–296). New York: Kluwer Academic/Plenum Press
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56(3), 227–238. <https://doi.org/10.1037/0003-066X.56.3.227>
- Mguni, N., Bacon, N., & Brown J.F., (2011). The Well being and Resilience Paradox. Retrieved from <http://youngfoundation.org/wsp-content/uploads/2012/10/The-Wellbeing-and-Resilience-Paradox>.
- Nadler, N.E, Page, A.E.K, editors. Institute of Medicine. *Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs*. Washington, DC: National Academies Press; 2008. PubMed Population
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–108
- Ryff, C. D., Singer, B., Love, G. D., & Essex, M. J. (1998). Resilience in adulthood and later life: Defining features and dynamic processes. In J. Lomranz (Ed.), *Handbook of Aging and Mental Health: An Integrative Approach* (pp. 69–96). New York: Plenum Press.
- Ryff, C. D., & Singer, B. (2003). Flourishing under fire: Resilience as a prototype of challenged thriving. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the lifewelllived* (pp.1536). American Psychological Association. <https://doi.org/10.1037/1059>

[4-001](#)

- Satici S. (2016). Psychological vulnerability, resilience, and subjective well-being: The mediating role of hope. *Personality and Individual Differences*, 102, 68-73.
- Sirois, F. Psychiatric aspects of chronic palliative care: waiting for death. *Palliative Support Care*. 2012 Sep; 10:205-11.
- Smith, C., & Carlson, B.E. (1997). Stress, coping, and resilience in children and youth, *Social Service Review*, 71 (2), 231-256.
- Snyder, C.R., & Lopez, S. J. (2002). *Handbook of Positive Psychology*. Oxford Press
- Souri, H., & Hasanirad, T. (2011). Relationship between resilience, optimism and psychological well-being in students of medicine. *Procedia – Social and Behavioral Sciences*, 30, 1541–1544. <https://doi.org/10.1016/j.sbspro.2011.10.299>
- Strauss B, Brix C, Fischer S, Leppert K, Füller J, Roehrig B, Schleussner C, Wendt TG. The influence of resilience on fatigue in cancer patients undergoing radiation therapy (RT) J *Cancer Res Clin Oncol*. 2007;133:511–518. [PubMed]
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1, 165-178
- Wenzel LB, Donnelly JP, Fowler JM, Habbal R, Taylor TH, Aziz N. Resilience, reflection, and residual stress in ovarian cancer survivorship: A gynecologic oncology group study. *Psychooncology*. 2002; 11:142–53.
- Veit, C. T., & Ware, J. E., Jr. (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>
- Wise, B. L., Niu, J., Zhang, Y., Wang, N., Jordan, J. M., Choy, E., & Hunter, D. J. (2010). Psychological factors and their relation to osteoarthritis pain. *Osteoarthritis and Cartilage*, 18(7), 883–887. <https://doi.org/10.1016/j.joca.2009.11.004>
- World Health Organization (WHO), (2017). Cancer Fact Sheet. Retrieved from www.who.int/mediacentre/factsheets/fs297/en/
- World Health Organization. (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report*. World Health Organization.