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Research Article

A Comprehensive Analysis of Character Strengths in Cancer Recovery

Ms. Yogita Shrivastava^{1*}, Prof. (Dr.) Anviti Gupta²

¹*PhD Student of Sharda University, Department of Psychology, Sharda School of Humanities and Social Science

²Professor at Sharda University, Department of Psychology, Sharda School of Humanities and Social Science

***Corresponding Author:** Ms. Yogita Shrivastava

*Omega 1, Greater Noida, Uttar Pradesh, India 201310, Phone no. +91 8329212310, Orcid ID. 0009-0002-5508-6860

Abstract

Character strengths have great relevance in positive psychology as these are helpful in enhancing well-being, fostering resilience and apply for strength base intervention to help individual to recognize apply their character strengths to boost well-being, increase engagement and enhancing overall life satisfaction. In this context this paper tried to understand how character strengths influence cancer recovery by analysing published autobiographies, personal narratives of cancer patients, personal blogs, online forums, and social media posts where individuals discuss their experiences and reflections and examined the role of specific character strengths (e.g., hope, resilience, gratitude, courage) in cancer recovery. It was observed that character strengths are associated with recovery outcomes as well emotional well-being, quality of life, and treatment adherence. A study has provided a holistic view of the role of character strengths in cancer recovery, offering insights into effective intervention strategies and their practical applications.

Keywords: holistic approach; strengths of character; quality of life; social intelligence

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Introduction

"The cure of a part should not be attempted without treatment of the whole. No attempt should be made to cure the body without the soul and therefore head and body are to be healthy you must begin by curing mind"
Plato (Cited by Pearce I., 1983)

Though this was written thousands of years ago it was far ahead of the time and indicates the holistic approach to treatment and recovery of any disease and so for the cancer. A holistic approach to medicine, rather than seeing human beings as a collection of bodily components, organs, and systems separate from one another, sees as a whole- body and mind. Organisms are

self-regulating, self-differentiating, open, and dynamic systems. (Balenci, M. 2019). Cancer is a fatal disease accompanied shadow of death, fear, and hopelessness and has become one of the great health concerns in the Indian continent, not limited to the particular socio-economic and geographical area of the country and rising rapidly (ICMR, NCDIR 2024). So in this field, the holistic approach to treatment and recovery is most important. However, in many clinical settings main focus of health care professionals is usually on symptoms, diagnoses, and biological treatments of the patients and they ignore topics like their strengths and resources that play important roles in helping in the

lifestyle changes which are also important to cope-up ongoing long term illness (Mirkovic et al. 2016). Research has shown that support is required for the patient to learn about the symptoms and side effects and manage them and also initiate their resources and find new ways to successfully manage chronic illness and possible ways to live the best life with it (Mc Corkle et al. 2011, Grady & Gough 2014, Howell et al. 2021). New approaches are needed to support patients, so it will help them not only discuss their symptoms and issues but also their resources and strengths, enabling them to develop and embrace new individualised and purposeful self-management plans and approaches.

Cancer Recovery and associated issues

Though after completing the treatment many cancer survivors, manage to live quite symptom-free lives and return to normal functioning, numerous physical, emotional and psychological issues appear during cancer and its treatment does not go away, and continues for a long time. The problems include lethargy or lack of vigour, musculoskeletal issues, decreased active participation in daily tasks, and impairment in sexual functioning. Depending upon disease and treatment sometimes long-term physical and functional effects do not get resolved and impair the long-term health of the person, deficits in age and income are also the clear risks. It is observed that the decline of physical functions over time is more rapid in survival than in the non-cancer population and is observed in the form of an accelerated ageing process (Stein et.al., 2008).

Depression and anxiety are the psychological effects that come under the term distress and the experience of distress after a cancer diagnosis and during its treatment is obvious (Wang & Feng, 2022, Michel et.al., 2019, Stein et.al., 2008). Distress represents a long-term or late effect of cancer diagnosis and treatment. The fear of recurrence and feeling that, one's future may be cut short is basic in cancer survivors. Extreme and constant fear can have a significant effect on Quality Of Life and decline in everyday normal functioning and it is also one of the symptoms of central PTSD (Stein et.al., 2008). Though many face problems, many face it with strengths like bravery, hope, faith etc.

Theoretical framework

Character strengths are the personality traits that are good in moral and ethical aspects. Though we admire people who are outgoing and have positive attitudes towards life, on a deeper level we also admire people who show kindness, compassion and curiosity. In a nutshell, character strengths come under the list of positive human traits (Baumgardner & Crothers 2022, p. 211).

From the positive psychology perspective, Park and Peterson were involved in a project that could address major strengths of character and the way to measure them (Park & Peterson, 2006b; Peterson & Seligman, 2004) and started the project VIA- Classification of Strengths, which emphasises the positive aspects of individuals, particularly their character traits that

support healthy growth throughout life. Through this project, they recognised 24 universally-valued character strengths, under six comprehensive virtues.

Although each strength is valuable on its own, research suggests that particular character strengths may be certainly beneficial during the cancer recovery process. For example, hope and optimism lead to more desirable physical health outcomes, while better social intelligence and kindness lead to better social support networks. The evidence indicated that character strengths are a personal resource helpful for recovery but ignored by the medical fraternity (Yan et.al, 2022). In this study, we examined the impact of character strengths on cancer recovery, explored the mechanisms through which they exert their effects, and reviewed intervention strategies that enhance these strengths and support the psychological and physical recovery process in cancer patients.

Research Questions:

Which Character Strengths help cancer patients from recovering, and leading quality life?

How different character strengths can influence the recovery process?

Methodology

The study analysed and summarised studies, blogs from YouTube videos, published autobiographies or personal narratives of cancer patients (<https://www.zenonco.io>, <https://youtu.be/cnJYi1q3O8o>) where individuals discussed their experiences and reflections, from which we examined the role of specific character strengths (e.g., hope, resilience, gratitude, courage) in cancer recovery. 'Because these data come in varied formats and are primarily unstructured, content analysis becomes the most appropriate method to analyse such data. Therefore, instead of spending time and effort on a more conventional data collection method, a researcher can now download data from the Internet without interacting with users. (Kim & Kuljis, 2010; Wilson et al., 2014). The paper also examined the relationship between character strengths and recovery outcomes, including emotional well-being, quality of life, and treatment adherence.

Research Design

Content analysis is a research method that implies reading and analysing recorded information, such as texts, images, or other symbolic matter systematically (Luo 2023). For content analysis, one can systematically collect data from a set of texts: written, oral or visual (Luo 2023). We adopted the relational content analysis approach so that we could find out the implicit meaning.

Result and Discussion

The existing database was read and reread by both authors, quotes were recognized and coding was done. On the basis of quotes, coding and literature following themes were prepared (Figure 1).

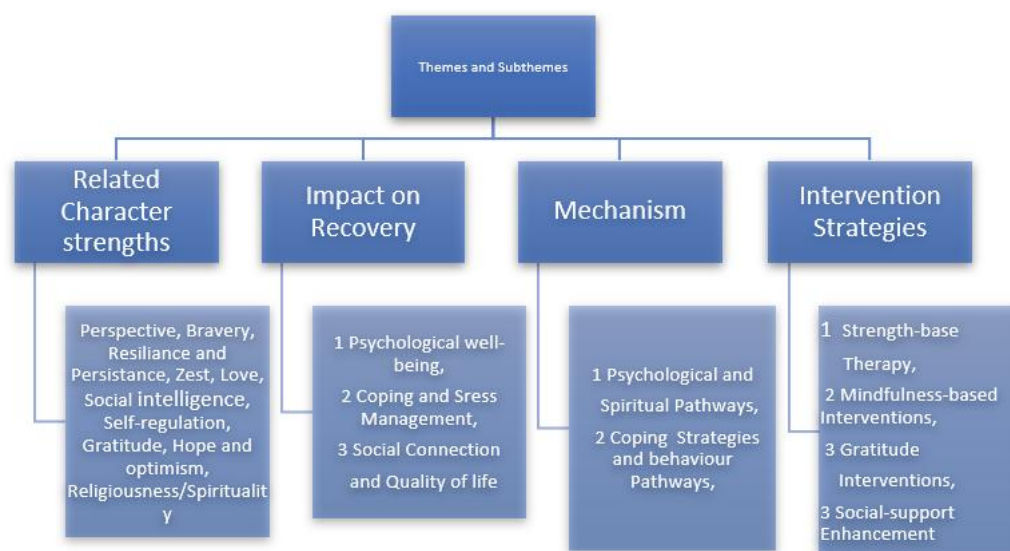


Figure1: Themes And Subthemes

Source: Author's own work

Note: The data has been collected and mapping of themes and subthemes based on the data analysis by the researchers.

Character Strengths: Relevance to Cancer Recovery
From the analyses of relevant blogs and videos, it was apparent that in the context of cancer recovery, certain character strengths were particularly observed.

1. Perspective: Perspective denotes the ability to see the broader picture in life and advise others accordingly. In our observation of texts, we can understand that the people who had successfully navigated through the journey of illness and recovery got life lessons that made them wiser, they feel happy to pass on these to people like them and bring satisfaction in their own lives.

2. Bravery: This word denotes not giving up even on the verge of challenges, difficulty or menaces. (Baumgardner & Crothers, 2022).

3. Resilience and Perseverance: Perseverance comes under the category of courage, one of the virtues. It involves continuous effort for task completion despite obstacles and is most associated with a life of engagement (VIA). The capacity to persist through misery and bounce back from mishaps is crucial for coping with the physical and emotional challenges of cancer treatment. Perseverance is also important as it gives the courage to stick to medication despite adverse effects.

4. Zest: Zest is a trait that denotes embracing life fully with excitement and energy (Niemic & McGrath, 2019). After analysis of the texts, it was reflected that after going through diagnosis and treatment, many patients realized the meaning and importance of life and started embracing life fully, which made them involved in the recovery process enthusiastically.

5. Love: The Concept of love denotes “valuing close relationships with others” (Baumgardner & Crothers, 2022). In our study, it was observed that love for the husband, child and other close ones gives courage to the patients and motivates them to follow a regimen of medication and other health-pro activities.

6. Social Intelligence and Social Support: Having strong social relationships and the ability to handle social situations are important for gaining emotional and practical support during recovery, and from the available texts, we understood that support from family members played a great role in the recovery process. Even during this process, they gain insights into the sufferings of caregiver and their way of seeing relationships changed.

7. Self-regulation: Self-regulation involves controlling one's feelings and actions (Baumgardner & Crothers, 2022). All the data sources clearly showed that it plays a vital role in how individuals respond to their diagnoses, therapies and recovery process.

8. Gratitude: Practicing gratitude helps patients focus on the positives in their lives, promoting emotional well-being and reducing distress. One of the longitudinal studies showed that gratitude remained one of the significant and unique predictors of lower depression (Sirois and Wood, 2017). The same is revealed after analysis of different blogs, patients who said that it was not worth not blaming God as we also get good things in life that time we feel grateful.

9. Hope and Optimism: optimism is a cognitive ability to exhibit one's positive attitude about the future (Carver and Scheier, 2019). In the same way, the character strength of hope is to exhibit optimistic future expectations and involve positive thinking and expecting all will be well in the future (VIA Institute on character strengths). Future expectations can affect people's experience of daily lives, their health, and dealing with emotions and distress. While going through databases it was apparent that patients were hopeful and that made them invest in their treatment and recovered.

10. Religiousness/Spirituality: When a person has a clear belief about a higher purpose and higher being and understands the meaning of life that means they are on the path of Religiousness/Spirituality (Baumgardner & Crothers, 2022). From our analyses, it was clear that

these strengths gave patients hope and courage to face the disease.

These strengths not only support emotional and psychological healing but also influence physical recovery by encouraging behaviours such as adherence to treatment, health-promoting lifestyle choices, and proactive coping strategies. Through the databases, it was apparent that patients were hopeful and that made them invest in their treatment and recovered. **Table-1** is showing quotes relevant with the themes (refer endnotes).

Impacts of Character Strengths on Cancer Recovery

1. Psychological Well-Being

Psychological well-being is one of the important recovery outcomes in cancer patients. Studies consistently show that higher character strengths, such as hope, optimism, and gratitude, are linked to improved mental health. Hope and optimism can become latent mediums towards achieving effective mental health (Gallagher and Lopez, 2009, 2018). For instance, cancer patients who exhibit greater hope and optimism report lower levels of anxiety, depression, and distress during and after treatment (Carver et al., 2010). Similarly, gratitude has a buffer against negative emotional states, fostering greater emotional resilience (Emmons & McCullough, 2003).

The concept of **post-traumatic growth** (PTG), which refers to the constructive psychological change that can occur after going through adversity, is often observed in cancer survivors who exhibit high levels of particular character strengths (Morris et al. 2012). Strengths such as courage, perseverance, and hope can promote PTG by facilitating a sense of meaning and purpose for the people going through the cancer experience. One of the studies showed that in cancer survivors, the important area of constructive life change was the enhanced appreciation for life, compassion for others and health-related life changes (Morris et al., 2012).

2. Coping and Stress Management

Cancer Diagnosis and treatment could be intense emotions provoking with physical discomforts. So, effective coping strategies are crucial to handle the stressors of diagnosis and treatment (Bergerot et al. 2015; Saboonchi et al. 2014). Character strengths like resilience, perseverance, and self-regulation are important, which help cancer patients manage their stress and patients expressed the same either they had or longed for such strengths (Rotegard et al., 2011). Research indicates that persons with high levels of resilience can adapt to the uncertainty of cancer treatment better and recover more effectively from emotional setbacks (Folkman & Moskowitz, 2000). The use of **active coping** strategies, which involve problem-solving and looking for social support, is associated with better psychological outcomes and improved emotional regulation.

3. Social Connections and Quality Living

According to social support theory, an optimal level of social support is crucial in helping patients against psychological and physical distress (Pasek et al., 2021). The mental status of an individual can be badly affected by lower social support (Zamanian et al., 2020). In the process of formation and maintenance of social networks, social intelligence and kindness have a crucial role. Cancer patients with greater social intelligence are better equipped to communicate their needs and build supportive relationships, which are significant for recovery. Studies have shown that cancer patients with strong social support report a higher quality of life and better mental health (Lewandowska, 2020; Usta, 2012; Lepore, 2001) and better treatment adherence was significantly associated with experienced social support as it helps in enhancing motivation and reduction of isolation feelings. During long-term survivorship when patients may face ongoing challenges related to physical health and emotional adjustment, the role of social support in promoting emotional well-being and coping is significantly important (Pasek, 2017).

Mechanisms: How Character Strengths Facilitate Cancer Recovery

1. Psychological and Physiological Pathways

Character strengths such as hope, resilience, and optimism can influence psychological as well as physiological pathways to recovery.

On a psychological level, these strengths foster positive thinking patterns, increase self-efficacy, and improve emotional regulation. Character strengths like self-regulation and prudence, help in enhancing positive health behaviours (Daugherty & Brase, 2010), like taking a proper and nutritious diet, avoiding unhealthy ones and following the instruction of the professionals. Neuroimaging data also showed activation of the same part of the human brain i.e. the ventromedial prefrontal cortex while the process of moral decision-making and the activation and regulation of emotions related to moral judgments, (Garrigan, Adlam, & Langdon, 2016). An overall healthy lifestyle like being energetic and enthusiastic about life and health (zest), disciplined and resisting self from temptations (self-regulation), having and expressing gratitude for life and other people (gratitude), and having optimism that goals can be achieved (hope) could be considered the main character traits associated with health outcomes and behaviours (Weziak et al. 2022) which could contribute to better coping with the stresses of cancer treatment. On a physiological level, optimism has been shown to improve immune function and reduce the effects of stress on the body (Bower et al., 2005). Furthermore, the practice of gratitude and positive reframing can lower cortisol levels and reduce chronic stress, which has a direct impact on physical health.

2. Coping Strategies and Behavioural Pathways

How cancer patients engage with the treatment and recovery process, mostly depends on character strengths. The chances are high that higher character strengths better and higher problem-solving skills. Self-efficacy and adaptive coping skills affect how a person perceives stressors and distress (Qin et al., 2024; Sivaratnam et al., 2021) i.e. resilience and perseverance lead to active coping behaviours (Chae et al., 2019), such as maintaining a regular exercise routine, adhering to medical regimens, and seeking out emotional and social support. Patients who utilize problem-focused coping are more likely to engage in health-promoting behaviours and be proactive in managing side effects, thus facilitating physical recovery.

In addition to other strengths, hope and optimism help improve flexibility which in turn helps cancer patients to adapt coping strategies as needed throughout their treatment (Laranjeira, C., & Querido, A., 2022; Gallagher et al., 2017). This adaptability is crucial for handling the unpredictability of cancer recovery.

Intervention Strategies to Foster Character Strengths in Cancer Recovery

Based on previous literature and patients' experiences, a positive impact of character strengths on cancer recovery can be observed, so interventions aimed at enhancing these strengths can be helpful in patients' chances of recovery and improving quality of life (Yan et al., 2022). Below are several evidence-based intervention strategies.

1. Strengths-Based Therapy

Strength-based therapy (Chae et al., 2019) like positive psychotherapy (Seligman et al. 2006) can help cancer patients recognize and foster their character strengths. The VIA survey (Peterson and Seligman, 2009) can be used as a tool to help a person realise their strengths and apply these strengths in daily life. Evidence also showed the effectiveness of a multimodal approach such as strengths-based CBT than only CBT (Zhou et al., 2024) on the reduction of distress in cancer patients.

2. Mindfulness-Based Interventions

Mindfulness-based interventions (MBIs), including Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-based cancer recovery (Carlson, 2016) have been shown to improve emotional regulation, reduce anxiety, and foster resilience in cancer patients. MBIs are helpful to patients in developing greater awareness of their thoughts and feelings allowing them to respond in a more flexible way to stress and adversity. These interventions are particularly effective for enhancing resilience and spirituality and reducing rumination, which is common during cancer treatment. Mindfulness can help a patient recognise their strengths of character.

3. Gratitude Interventions

Gratitude interventions, such as keeping a **gratitude journal/diary** (Sztachńska & Nežlek, 2019; Emmons, 2004) or Jar, engaging in **gratitude letter-writing**, can

bring significant improvement in the psychological well-being of cancer patients. Gratitude interventions can help patients focus on the small positive aspects of their lives while reducing negative emotions and promoting a sense of meaning and purpose (Kalamatianos et al. 2023). These interventions can help cancer patients feel less negative and more positive emotions (Diniz et al., 2023) and useful coping methods and feelings of being supported (Sztachńska et al., 2019).

4. Social Support Enhancement

Building and maintaining strong social networks is essential for cancer recovery (Corovik et al. 2023). **social intelligence** plays an important role in this pursuit. So interventions aimed at enhancing **social intelligence**, like communication training, group therapy or peer support programs and empathy building are likely to help patients build stronger relationships with family, friends, and healthcare providers, enhancing their recovery experience. Support groups, in particular, can provide the patients an opportunity to share their experiences, receive emotional support, and cultivate feelings of connectedness.

Conclusion

Character strengths play an important role in cancer recovery, influencing both psychological and physical outcomes which is mostly neglected by the medical fraternity. Though having these character strengths does not always assure successful recovery, it can help patients navigate distress and irritation and help medication adherence. Understanding and supporting cancer patients using their health assets or personal strengths are important to help them manage their illness, engage in positive health behaviour, and live well even after recovery. In India where cancer patients are increasing day by day, understanding and implementing intervention strategies based on character strength has been of great importance. Hope, perseverance, resilience, gratitude, and social intelligence are few examples of strengths that can contribute to better psycho-social-emotional well-being and coping. Understanding the mechanisms by which these strengths operate will help healthcare providers in designing interventions and fostering these traits to improve cancer patients' recovery experiences in the Indian context. The focus should be on enhancing the holistic recovery process for cancer patients by exploring how specific strengths impact long-term survivorship and how interventions can be modified according to individual needs.

This paper would be valuable for researchers, clinicians, and practitioners interested in the application of positive psychology principles to improve cancer recovery outcomes.

DECLARATION

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Conflict of Interest

There is no conflict of interest

Author's Contribution

All the authors were equally involved in

conceptualization, methodology, investigation, analysis, review & editing of the research.

All authors have read and approved the final manuscript.

Ethical Approval

Research has been conducted according to research ethics.

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Table 1 Example of Character strengths and related quotes observed in database with initials and type of cancer

Sources: (<https://www.zenonco.io>; *Cancer Warrior Vikrant Vij - Zindagi With Richa* <https://youtu.be/cnJYi1q3O8o>)

Character strengths	Relevant quotes
Perspective (Wisdom and Knowledge)	<p>“No one must give up! Being hopeful is a personal choice, and I understand that it is easier said than done. Even if I succumbed to my fate, Jesus would be the Glorious One because He does not” (SR-Blood cancer)</p> <p>“Fighters have negative thoughts about whether their survival is challenged and so on. But I fought those thoughts because I understood that only I could help myself mentally. The others are here to support me” (NS oral Cancer).</p>
Bravery (Courage)	<p>“I had to take a huge risk when I decided to stop my chemo and start with my alternative therapy.” (SC-Colon cancer)</p> <p>“fighters have negative thoughts about whether their survival is challenged and so on. But I fought those thoughts because I understood that only I could help myself mentally. The others are here to support me.” (NS oral Cancer).</p>
Perseverance (Courage)	<p>We went to the Chandigarh hospital, and the Doctors told me that I only had one and a half months left to live. I didn't tell my husband about the news. Also, I started with my Chemotherapy again, and after 6 cycles, I did my scan again. The tumour had shrunk (Sc- Colon Cancer).</p>
Zest (Courage)	<p>My friend had said me “live life like it is last day of your life” and I follow the same. I feel energies when I saw people happy and seek my advice (VV-Hodgkin Lymphoma)</p> <p>Before, I used to take a shower, cook, and leave for work. Now, I wake up early in the morning and meditate. I also do the asanas and Pranayama for an hour or so. I feel very relaxed. Now, I try to live in the present moment and spend as much time as possible with my baby and family.(CS- colon cancer)</p>
Love (Humanity)	<p>My son gave me the desire and courage to live.</p>
Social intelligence (Humanity)	<p>My husband kept on saying that I am his pillar of strength and I kept on telling him that he is my pillar of strength.</p> <p>However, you must support your caregivers. You are going through the journey because you have cancer cells, but your caregivers are going through this journey even without having cancer NH- oral)</p> <p>Through his experiences, he aims to encourage others facing similar situations to maintain hope, seek support, and educate themselves about lung cancer symptoms for early detection. (Story of RV-lung cancer)</p>
Gratitude (Transcendence)	<p>I had not questioned God when the good things had happened to me, so I wouldn't ask God now.</p> <p>My journey is not just mine, but also my caregivers' (NS-Oral).</p>

Self-regulation (Temperance)	I have learned a lot of things from the disease. For example, I don't eat a lot of food from outside now. I am very health conscious after my diagnosis. Now, I try to live in the present moment and spend as much time as possible with my baby and family. I started surrounding myself with positivity and positive people. Time has taught me a lot of things.
Hope and Optimism	<p><i>I had not questioned God when the good things had happened to me, so I wouldn't ask God now. It is a test, and I will come through with flying colors. I motivated myself daily by telling myself that today was better than yesterday, and tomorrow would be even better. I took each day at a time and reminded myself that this phase would end soon (NH-oral cancer)</i></p> <p><i>Her <u>Chemotherapy</u> began on 8th March, and she even started consoling me. I believe it's important not to lose hope; we decided to start the treatment and proceed from there.(Caregiver- blood cancer)</i></p>
Religiousness/Spirituality	<p><i>After some nights into the treatment, I heard a voice speak softly into my ears. It said, You are on a protected path. Initially, I felt it must be my subconscious speaking to me. But then I heard it again. And again. And again. It repeated several times, and I realized it was not me but someone else. The night soon passed, and I woke up the next morning to read the Bible. When I opened the Holy Book, I landed on a page that had a verse. I realized that the Almighty had spoken to me. I was inspired to live and not die. Jesus Christ is marvellous, and His voice is beautiful (SR- Blood cancer).</i></p> <p><i>I firmly believe that situations may be difficult, but life is good. Listening to the Quran and music has helped me in my healing process (NH-oral)</i></p> <p><i>I feel that the best way to get rid of any problem is by believing in God.(SR- blood cancer)</i></p>