

A Meta-analysis of Psycho-demographic Correlates of Resilience among Cancer Patients

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ABSTRACT

This review focuses on investigating the psychological and demographic correlates of resilience in cancer patients. Cancer diagnosis is challenging. Many patients want to actively participate in their treatment and contribute to therapy, but their coping skills and willingness to participate vary. Individual levels of resilience seem to play an important role. The aim of our study was to learn more about the relationship between resilience and factors such as demographic and psychological factors. A study by Festerling et al. (2023) of 416 cancer patients from different hospitals in Germany found that resilience plays an important role in improving cancer treatment, although nutrition and physical activity were also considered crucial. It is important to identify patients at risk, stabilize or improve their resilience, and strengthen them accordingly. Possible negative factors (e.g. low self-efficacy) should be considered. Factors that impair resilience but are difficult to influence, such as educational level, should be investigated. The combination of low resilience and low income also seems to characterize a vulnerable patient group.

Keywords: Resilience, Psycho-demographic, cancer patients

Cancer affects all aspects of life, not just patients' health, so we considered factors such as daily activity, diet and life satisfaction as equally important for integration and information gathering. A cancer diagnosis is a difficult situation for most people and affects many aspects of their lives and the lives of their close relatives. Although this diagnosis is undoubtedly difficult, some patients cope with it better than others. One factor that plays a decisive role in this ability to cope is the patient's level of resilience. Active involvement of cancer patients in their treatment is not only advisable, but often desirable. Most of these patients are very interested in diet and some in physical activity (Brown et al., 2019). Due to the importance of resilience, identifying patients at lower risk and strengthening resilience should certainly be a priority. The aim is to find out which specific characteristics or criteria can be targeted in cancer patients to improve or maintain their resilience in dealing with their disease and to support patients in actively participating in their treatment. In addition to identification, a primary goal is to give patients tools to stabilize their resilience, ideally strengthen it and prevent it from weakening. Building on this, it would in turn be possible to create a guideline or distribution recommendations for

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doctors and other caregivers involved, evaluate them in different cancer centers in Germany and expand their use accordingly. For this, more information on the relationships of resilience is needed. This study focuses on how resilience is related to various demographic variables, other psychological factors and various aspects of lifestyle.

What is resilience?

Resilience is defined as a person's ability to cope with stress and adapt to difficult events, such as the diagnosis of a life-threatening disease (Davydov et al., 2010). It describes the ability to restore a stable mental and physiological state during or after stressful events, such as the death of a close relative, loss of a job, and others. Resilient individuals appear to be better able to reflect on their positive and negative emotions than less resilient patients, which helps them to rebuild resources and respond more flexibly (Tugade et al. 2004). According to various authors, a person's level of resilience can be trained and learned to a certain extent, and is also determined to a certain extent by factors such as genetics (Davydov et al. 2010; and Zhang, 2006). Reviewing previous research, we find that resilience is often associated with psychological well-being (Farber and Rosendahl 2018). Resilience is closely related to the fact that people are more optimistic, see more things as opportunities to benefit, and have greater emotional awareness (Babic et al. 2020).

Psychological Correlates of Resilience

The psychological factors, that may be associated with resilience, comprise life satisfaction, self-efficacy and sense of coherence.

- **Resilience as a Protective Layer:** Resilience plays a role of shield, which protect the patients from the adverse effect of psychological stress. Resilience is closely related to optimism and therefore works as a protective layer against the adverse psychological factors (Seiler and Jenewein, 2019).
- **Self-efficacy and Resilience:** Research shows that resilience is closely related to the self-efficacy of individual (Schumacher et al. 2014). Self-efficacy plays an important role in one's ability of resilience (Wu et al. 2021). Self-efficacy is considered a mediating factor in resilience and its impact on how people cope with illness (Karademas et al. 2022). Life satisfaction, spirituality, and, as Seiler and Jenewein (2019) showed, a sense of coherence may also be closely related to resilience and are therefore interesting factors to explore.
- **Resilience and Physical Activity:** Cancer affects all aspects of life, not just patients' health, so we considered factors such as daily activity, diet and life satisfaction as equally important for integration and information gathering. Especially since there is limited data on physical activity and resilience, a positive correlation is reported in the study by Schumacher et al. (2014), another study by Eicher et al. (2015). They showed that higher resilience is associated with better physical functioning.
- **Resilience and Life satisfaction:** In studies, it was found that there is moderate to high correlation between resilience and overall life satisfaction ($r = 0.461$, $p = .001$).
- **Resilience and Self-efficacy:** The correlation between resilience and self-efficacy was also reported significant ($r = 0.595$, $p < 0.001$), by the researchers.
- **Resilience and sense of coherence:** The relationship between sense of coherence and resilience also was found significantly moderate ($r = 0.339$, $p < .001$), in the study of Festerling et. al (2023).

Demographic Correlates of Resilience

Age

Regarding the relationship between age and resilience, research indicated the mixed findings. Some studies reveal that people over 65 years of age tend to be more resilient as compared to the younger patients (Bonanno et al., 2007). Contrary to these findings, the results of the study of Festerling et al. (2023) disclosed that 41.9 percent of the participants were 65 years or older, suggesting that a significant portion of our population is more resilient by chance. When comparing the average resilience score of patients over 65 years of age with the average resilience score of those under 65 years of age, no significant difference was found. On the other hand, it is interesting that a study that specifically focused on cancer patients found a negative association between age and resilience, showing that patients with higher resilience scores were younger than patients with lower scores (Macia et al. 2020). This means that the cancer diagnosis factor may play a crucial role in the correlation. This explains why the results differ from the literature, which only focuses on the association between resistance and age. However, the fact that resistance may be more closely related to the patient's cancer status could explain our finding of no association between age and resistance. The population is of course composed of quite elderly patients, who according to Bonanno et al. (2007) or Matzke et al. (2016) should be more robust. Considering our results for persistence and time since diagnosis, which show a negative correlation, there is a reason why age appears to be uncorrelated. These two factors may cancel each other out.

Gender

Literature regarding the research on gender difference in resilience also provides the mixed picture in favor of both male and female. Festerling et al. (2023) found no significant difference between male and female patients with regard to resilience. Several other authors have reported that male people tend to show higher resilience to traumatic events, other chronic diseases, or acute events (Bonanno et al., 2007; Masood et al., 2016; Portnoy et al., 2018). Hodes and Epperson (2019) note that hormonal changes, especially in women during life stages such as puberty, pregnancy, and perimenopause, reduce their resilience, which is true for a large portion of our cohort who receive treatments that affect their hormonal status, for example breast cancer. In contrast, conscientiousness has been reported to be higher in women (Limura and Taku, 2018), which may increase resilience through better emotion regulation (Vaughan et al., 2019). In this way, female patients can increase their ability of resilience.

Marital Status

Based on the research findings, it can be said that marital status is not associated with resilience. But it is often considered that the marital status and religion are the part of the social network/social support, which makes it all the more interesting that no significant association seems to be confirmed. Bonanno et al. (2007) revealed a positive relationship between social support and resilience, which means that higher the social support more will be the resilience. In the same way, Zhang et al. (2017) also proposed that the well-developed social support leads to higher levels of resilience. Schultz and Schwarzer (2004) reported that social support can be divided into many types and spousal support is just one of them. The spousal support does not provide information on legal marital status and emphasizes that status itself is not a factor that should be considered useful in screening at-risk patients. Festerling et al. (2023) reported that there is no significant association of resilience with some demographic variables such as age, gender, marital status, or between resilience and religion. With respect to education and income of participants, a low correlation with resilience has been reported.

Socio-economic status

A positive association between sustainability and financial performance was found as the literature was reviewed. This is consistent with the findings of Friberg et al. (2005), who showed that lower income is associated with poorer mental health. Moreover, health problems caused by serious illnesses impose a financial burden on patients even in a country with high healthcare standards. Accordingly, Portnoy et al. (2018) reported that higher persistence was observed in patients with higher income. We were able to demonstrate a weak association between resilience and education. According to a study by Fahey et al. (2016) among Indian women, higher education indicates better coping, stress management, and problem-solving skills, which is consistent with our findings in our study. For example, Bonanno et al. (2006) showed that higher education is associated with higher resilience.

Lifestyle

Lifestyle can be described in relation of eating habit, sleeping habits etc. By using eating habits checklist, Festerling et al. (2023) found in their study that there is significantly positive relationship between eating habits and resilience ($r = 0.117$, $p = 0.05$). The results of the same study showed that daily activity of the patients also correlated positively with their resilience score significantly ($r = 0.142$, $p = 0.01$). It was found that the mean value of daily activity before diagnosis ($M = 2.63$), was slightly decrease was decreased after diagnosis ($M = 2.02$).

Religion

Reguera-Garcia et al. (2020) reported that religious differences make no significant difference in the resilience of followers. However, religion may be an important factor in overall mental health (Weber and Pargament, 2014). This does not necessarily imply a specific religious affiliation, but rather implies that other factors such as self-confidence, e.g. self-efficacy and a sense of coherence serve as substitute factors to help patients cope psychologically.

DISCUSSION, CONCLUSION AND IMPLICATIONS

After analyzing the literature related to the studies on resilience, it can be stated that resilience is an important factor in cancer treatment. For physicians and nursing staff, two aspects are important. Therefore, the first important task for doctors, is to identify the resilience level of patients. Low resilience may be due to factors such as an unstable financial situation, poor eating habits or a combination of the above. Then second task will be increasing the level of resilience, as much as possible. This includes aspects such as psychological support in developing self-confidence, practicing positive thoughts and coping with failures, as well as setting achievable goals to maintain motivation, as well as influencing, for example, the perceived sense of consistency. To identify patients with different risk factors, an effective method is screening high-risk patients before starting therapy. Based on individual risk factors, additional therapy concepts can be considered, such as psychological therapy, psycho-education, nutritional advice and encouraging exercise and an active lifestyle. Our study shows that patients are already sensitive, especially when it comes to nutrition and exercise, and this can be an effective starting point for directly or indirectly increasing resilience. Since adjustments to diet or activity levels are not new to most patients, they are easier to incorporate into daily life. Progress is also quicker and the patient is encouraged. To increase or stabilize resilience, it seems reasonable to introduce a basic program that can be individually adapted to the patient's condition and needs. Based on our data, it can actually be discussed that a positive communication program for a healthy lifestyle can promote resilience during and after cancer treatment. To

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provide further evidence on this topic, resilience could be selected as an endpoint in studies that include lifestyle elements. In addition, it would be useful to further investigate the relationship between adherence to a healthy lifestyle and quality of life. To develop recommendations for the treatment and activation of cancer patients, it would be useful to consider the individual educational level of the patient and to look for cancer patients who may not have this level due to a less favorable educational background. It seems sensible to strengthen patients' resilience, slow down the decline in resilience that seems to occur long after diagnosis, and support them in improving their resilience during and after treatment.

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Conflict of Interest

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