



# Causal relationship between Depression and Health-related quality of life through chain mediation of Chronic Fatigue and Treatment Adherence in women with uterine cancer

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## Abstract

**Aim:** The aim of the present study was to investigate the causal relationship between depression and health-related quality of life through the chain mediation of chronic fatigue and adherence to treatment in women with uterine cancer.

**Method:** In this descriptive correlational study, the statistical population consisted of all women diagnosed with uterine cancer in Mashhad in the year 2021, and 261 people were selected as a sample by purposive sampling. In this study, Health-related quality of life of Weber (1992), Depression of Beck (1996), Chronic fatigue of Chalder et al (1993), Treatment Adherence of Seyyed Fatemi, Rafiei, Hajizadeh & Madanlo (2018) were used for data collection in this study. The data were analyzed using Pearson's correlation coefficient and path analysis model with the help of SPSS-27 and AMOS-25 software.

**Results:** The findings showed the relationship between depression and health-related quality of life; between depression and chronic fatigue; between chronic fatigue and adherence to treatment; There was a significant relationship between adherence to treatment and health-related quality of life ( $p < 0.01$ ); Also, the indirect path of depression with health-related quality of life with the mediating role of chronic fatigue and adherence to treatment were significant ( $p < 0.01$ ).

**Conclusion:** Based on the results of this research, the proposed model had a favorable fit and is considered an important step in the direction of knowing the factors affecting the quality of life related to the health of women with uterine cancer.

**Keywords:** uterine cancer, health-related quality of life, depression, chronic fatigue and adherence to treatment.

## Introduction

The diagnosis of uterine cancer in women poses a problem in their health-related quality of life (Pasek et al., 2021). Health-related quality of life can predict the extent and impact of diseases, injuries, and disabilities and measure mental health in societies (Hordijek et al., 2020). The World Health Organization has defined the quality of life as a person's perception of his place in life, the cultural context, and the value system in which he lives, and this place is related to the goals, aspirations, criteria, and priorities of that person. This definition of quality of life includes three components: objective satisfaction, functional status, and contextual factors, the first two components of which overlap with mental health (Mohammadi et al., 2017).

Studies have shown that the health-related quality of life is directly related to various factors, and the present study aims to investigate the most important predictive and mediating factors related to the health-related quality of life of women with uterine cancer. So, depression can be mentioned as one of the effective factors in this relationship (Delioso et al., 2018). Depression is one of the most common types of mental disorders known at all times, and it shows the natural human response to environmental pressures (Beck & Alford, 2009). Depression in people has symptoms such as low mood with decreased energy and interest, feelings of guilt, problems in concentration, loss of appetite, and thoughts of death and suicide (Daan & Keshavana, 2017).

In the relationship between depression and health-related quality of life in women with uterine cancer, mediating factors should be investigated to improve health-related quality of life. One of these mediating factors is chronic fatigue in women with uterine cancer. Chronic fatigue is a medical condition, the main symptom of which is excessive and chronic fatigue that becomes much more severe when performing any mental or physical activity (Park et al., 2019). With increasing stress in patients, signs of chronic fatigue appear in them. Studies have shown that fatigue, usually described as tiredness, weakness, or lethargy, is seen in many patients during cancer treatment (Clayton, 2015).

This situation differs from other types of chronic and common fatigue, such as fatigue caused by anemia, vitamin D deficiency, depression, etc. The main aspect of this difference is the worsening of symptoms after physical activity or intellectual activity in this disease (Yamano et al., 2016). This fatigue covers the whole body and severely reduces a person's physical and mental activities (Jim et al., 2020).

In addition to chronic fatigue, another variable that plays a mediating role in the relationship between depression and health-related quality of life in women with uterine cancer is treatment adherence. The World Health Organization suggests the term treatment adherence to be used in chronic diseases. According to the World Health Organization, compliance is the extent to which a person performs a behavior, including taking medicine, following a diet, or implementing a change in lifestyle by the recommendations provided by healthcare personnel (World Health Organization, 2016).

In general, it can be said that the diagnosis of uterine cancer causes many psychological, physical, family, social and economic damages so that it can make the involved person suffer a serious decline in individual-social actions. Therefore, properly understanding the psycho-social factors that underlie decision-making and behavior (health-related quality of life) will be effective in designing special methods to solve this crisis. Therefore, based on what was said, this research aims to investigate the causal relationship between depression and health-related quality of

life with the chain mediation of chronic fatigue and adherence to treatment in women with uterine cancer in Mashhad. Therefore, the current research question is as follows: Is the model of the causal relationship between depression and health-related quality of life with chain mediation of chronic fatigue and adherence to treatment in women with uterine cancer suitable?

### **Method**

In this descriptive correlational study, the statistical population consisted of all women diagnosed with uterine cancer in Mashhad in the year 2021, and 261 people were selected as a sample by purposive sampling. In this study, Health-related quality of life of Weber (1992), Depression of Beck (1996), Chronic fatigue of Chalder et al (1993), Treatment Adherence of Seyyed Fatemi, Rafiei, Hajizadeh & Madanlo (2018) were used for data collection in this study. The data were analyzed using Pearson's correlation coefficient and path analysis model with the help of SPSS-27 and AMOS-25 software.

### **Results**

In the first path ( $\beta = -0.399$ ), which was statistically significant at the  $p < 0.01$  level, and this path was confirmed. The second path ( $\beta = 0.502$ ), which was statistically significant at the  $p < 0.01$  level, and this path was confirmed. In the third path ( $\beta = -0.236$ ), which was statistically significant at the  $p < 0.01$  level, and this path was confirmed. In the fourth path ( $\beta = 0.155$ ), which was statistically significant at the  $p < 0.01$  level, and this path was confirmed. To determine the significance of the mediation relationship, the bootstrap method was used. Confidence levels indicate the significance of the indirect path of depression to health-related quality of life through the chain mediation of chronic fatigue and adherence to treatment ( $\beta = -0.013$ ). It was statistically significant at the  $p < 0.01$  level and this path was confirmed.

### **Conclusion**

This study aimed to investigate the causal relationship between depression and health-related quality of life through the chain mediation of chronic fatigue and adherence to treatment in women with uterine cancer. In general, the results showed that all direct paths were significant. Indirect paths were also significant through the chain mediation of chronic fatigue and treatment adherence with health-related quality of life. Based on the results of this research, the proposed model has a favorable fit and is considered an important step in knowing the effective factors in the quality of life related to the health of women with uterine cancer. It can be useful as a suitable model for developing and designing programs to improve the quality of life-related to their health.

Depression affects how you think, feel, energy level, concentration, sleep, and even sexual interests. Lack of success in education or work, loss of loved ones, or knowing that the disease is depleting one's strength are among the situations that often cause depression. In the disease process, in addition to the involvement of the body and the analysis of the physical strength and ability of the person, the patient also becomes mentally and socially vulnerable, and to put it better, the level of quality of life related to the patient's health decreases due to the disease and its continuation. As a result of such changes, the patient experiences depression (Mirzaei & Nik-Amal, 2020).

The presence of chronic diseases in people, including cancer, will cause them to undergo various chemotherapy sessions and take multiple drugs. Therefore, these patients will experience some kind of fatigue caused by the disease and the duration of the treatment. Patients with higher chronic fatigue will be unstable in the face of disease problems and issues, psychological stress, threats and natural disasters, and

mental illnesses, leading to a decrease in health-related quality of life (Moghadam Tabrizi, 2016).

Depression can reduce health-related quality of life in patients through the chain of mediators of chronic fatigue and treatment adherence. This finding correctly shows the mediating role of chronic fatigue and adherence to treatment in the relationship between depression and health-related quality of life. In general, the quality of life is a concept of interest in various sciences. The importance of this concept is determined by taking a deep look at the influence of the quality of life on various factors. Therefore, researches in line with this finding should be in the focus of researchers. Considering that the proposed conceptual model had a good fit in this research, it can be considered an innovation and scientific finding that will be effective in improving the quality of life related to patients' health. The limitation of this research is the use of the self-report tool, which may have affected the accuracy of their reports due to the bias of social desirability in the subjects. Also, the limitation of the statistical population to women with uterine cancer in Mashhad generalizes the results to other patients and in other cities cautious. To solve this problem, similar research should be done in other cities and other patients with chronic diseases, and the results should be compared. The therapists are suggested to improve the quality of life related to health by conducting new treatments to improve chronic fatigue, treatment adherence, and depression in patients with chronic diseases.

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