

# A qualitative exploration of cancer survivors' beliefs and attitudes toward physical exercise

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Μια ποιοτική διερεύνηση των πεποιθήσεων και των στάσεων ατόμων που επιβίωσαν από τον καρκίνο ως προς τη σωματική άσκηση

Abstract at the end of the article

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**Introduction:** It is widely accepted that cancer survivors who follow an active lifestyle have a lower risk of recurrence and mortality. However, despite the beneficial effects of exercise, the majority of the patients tend to show insufficient levels of physical activity.

**Purpose:** The purpose of the present study was to explore cancer survivors' beliefs and attitudes toward physical exercise.

**Material and Method:** The selection of the sample was carried out by the method of purposive selection. A total of 7 cancer survivors, men and women, aged 43 to 60 years, who were residents of a rural region of Cyprus, participated. Data collection was carried out through individual semi-structured interviews and participant observation.

**Results:** From the analysis of the qualitative data four major themes were revealed: a) "Exercise is beneficial", b) "Exercise preferences", c) "Barriers to exercise", and d) "Role of health professionals".

**Conclusions:** In conclusion, most of the participants maintained a positive attitude towards exercise, especially regarding their participation in group exercise with other patients. However, to increase patients' motivation to participate in exercise programs, it is necessary for health professionals to advise and inform patients about the benefits of exercise both during and after treatment, as well as to provide them with clear instructions and recommendations, taking into account their physical and mental condition.

**Key-words:** Cancer, oncology, exercise, physical activity

## Introduction

According to international literature, the painful clinical methods of cancer treatment such as surgery, intensive chemotherapy, as well as the hospital environment undermine patients' quality of life.<sup>1</sup> Some of the most common psychosomatic consequences experienced by individuals are depression, anxiety,<sup>2</sup> dissatisfaction with their body image,<sup>3</sup> reduced self-esteem,<sup>4</sup> feeling of loss of control and social isolation.<sup>5</sup> At the same time, there is a deterioration in both patients' physical and functional condition, with the dominant symptoms being fatigue and exhaustion,<sup>6</sup> reduced cardiovascular and respiratory function, cachexia,<sup>7-8</sup> eating disorders,<sup>9</sup> insomnia,<sup>10</sup> nausea, vomiting<sup>11</sup> and pain.<sup>12</sup> What is more, many cancer survivors who have received cancer treatment are at a high risk of developing long-term side effect, which can occur months or years after treatment.

The beneficial effect of physical activity on physiological and psychological parameters in clinical populations has gained the interest of a multitude of researchers. In particular, concerning cancer patients, exercise was first considered as "medicine" in the mid-1980s.<sup>13</sup> To date, research data in this area indicate that patients' participation in exercise programs can improve their quality of life, reduce cancer-related fatigue, and increase muscle strength, bone density and cardiopulmonary capacity, while at the same time, it can relieve stress and tension.<sup>14-17</sup>

However, despite the benefits of exercise, it has been proved that patients tend to show prolonged inactivity and reduced mobility due to the general fatigue that they are experiencing or due to the overprotection that they receive from their family environment.<sup>18-19</sup> Along with the above, patients state that lack of motivation and fear of harmful effects of cancer-related therapy consist some of the barriers to exercise, while on the other side, they consider as perceived motivators, the health benefits, the control of medical conditions, the better self-image and the weight loss.<sup>20</sup>

## Aim

Hence, there is a lack of knowledge regarding cancer survivors' beliefs and attitudes toward exercise. To fill in this gap in the literature and to develop future intervention studies, the purpose of the present study was to explore cancer survivors' beliefs and attitudes toward exercise.

## Material and Method

The selection of the participants in this qualitative study was purposeful.<sup>27</sup> Survivors of cancer who were currently exercising or had never exercised regularly were recruited from a rural area of Cyprus through a posted flyer and social media posts. "Cancer survivors" are defined as those not currently undergoing any active cancer treatment. Inclusion criteria for the participants included being >18 years of age. In total, seven cancer survivors (N=7) who had been diagnosed with different types of cancer, aged from 43 to 60 years old volunteered. Concerning the exclusion criteria we excluded individuals who had cancer developed in childhood.

Participants before the interviewing were informed about the aim and the design of the study and they signed written informed consent. Participants took part in face-to-face, individual interviews for a total of 60 minutes. In each interview, the 1st researcher was the primary interviewer and the 2nd researcher managed the recording equipment and took field notes on the process and content. A semi-structured interview guide of open-ended questions, based on the Health Belief Model was developed. Initially, the interviews began with warm-up questions and general questions regarding the participant's exercise experience and cancer. Afterward, as the interviews proceed, attention was given to questions that focused on cancer survivors' beliefs and attitudes toward exercise.

## Qualitative analysis

For the assessment of the qualitative data, interviews were transcribed verbatim and analyzed using thematic analysis.<sup>21</sup> In the beginning, all researchers read the transcripts and the text of observations to get an overall impression. In the second phase, they identified and coded units of meaning representing participants' beliefs and attitudes toward exercise. Then, they grouped all the coded data under greater categories and compared them with the original. After this, they summarized the contents of each group to generalize the descriptions regarding the participants' statements. Finally, all authors discussed the coded data and agreed on the themes.<sup>21</sup>

## Results

From the qualitative data analysis, four major themes were conducted by the two first authors of the present study: a) "Exercise is beneficial", b) "Exercise preferences", c) "Barriers to exercise", and d) "Role of health

professionals". The following is an analytical description of the themes identified:

a) *Exercise is beneficial*

All the participants referred that exercise is beneficial both for their physical and psychological health. Regarding their physical health, they stated that exercise has the potential to minimize cancer-related fatigue, increase cardiovascular fitness and muscle strength and help with the control of body weight. Moreover, the majority of them stated that exercise reduces stress, as well as improves the ability to cope with stress, increases self-esteem, satisfaction with body image and feelings of perceived energy – vitality and improves confidence in their physical abilities (Figure 1.).

Respondent’s statements: *“Exercise makes you feel*

would like to participate in group exercises with other patients; under the supervision of a personal trainer and that they are interested to participate in the exercise in the morning (Figure 2).

Respondent’s statements: *“The most 60 minutes per training session”, “For me is better to exercise with others”, “I would be nice to find an exercise group only for cancer patients and survivors”, “I prefer to exercise in the morning, at the evening there is no energy left”.*

c) *Barriers to exercise*

Regarding “Barriers to exercise” it was observed that the participants highlight as barriers to their participation to exercise the following: lack of knowledge on how to exercise, lack of energy, fear of injury, feelings of self-conscious about their body and appearance, lack of

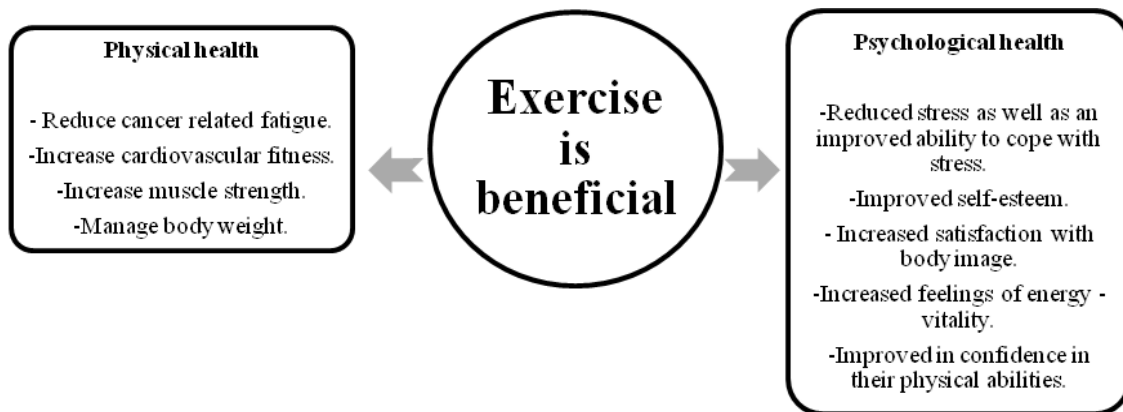


Figure 1. Exercise is beneficial.

*better”, “I think (exercise) gives me the energy to continue”, “(Exercise) makes me feel alive, like in the past”, and “(Exercise) relaxes me”.*

b) *Exercise preferences*

Overall, patients stated that they prefer to perform different activities at moderate intensity, 3 to 5 times per week and 40 to 60 minutes duration per training session. What is more, the majority of them referred that they

convenient exercise facilities for cancer patients, as well as overprotection from the family environment.

Respondent’s statements: *“I don’t know which exercise program is good for me, I don’t know”, “Most time of the day I feel exhausted”, and “My wife insists that is better to rest during my leisure time”.*

d) *Role of health professionals*

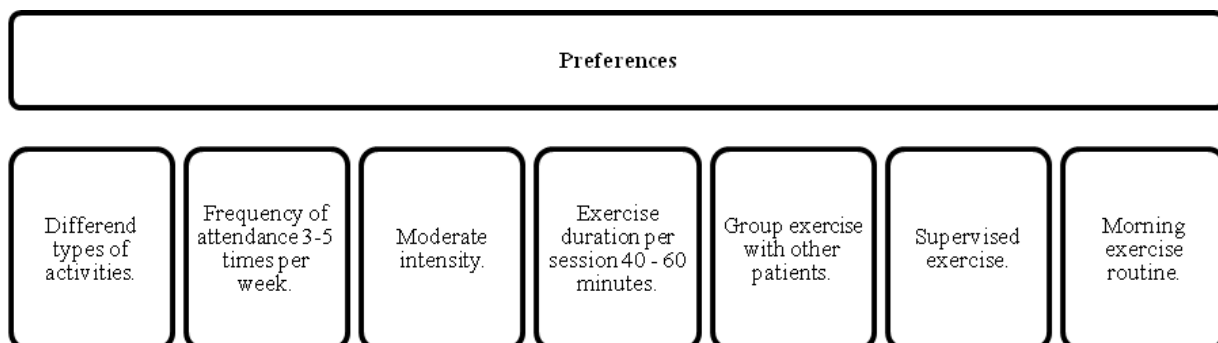
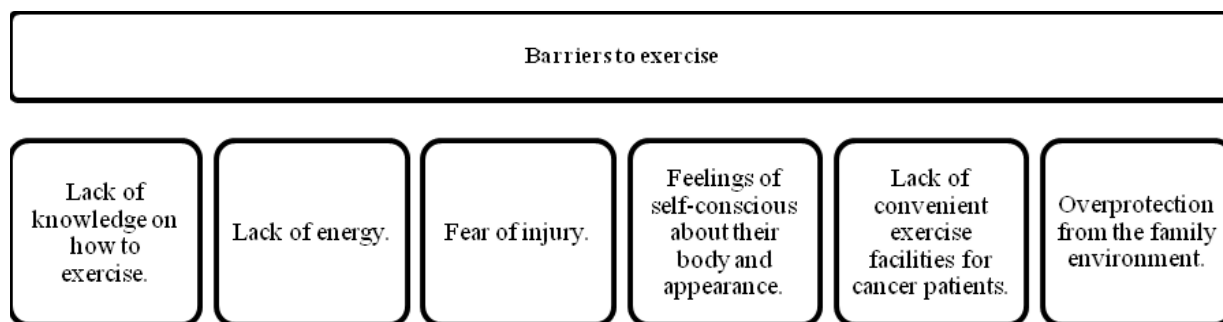


Figure 2. Exercise preferences.

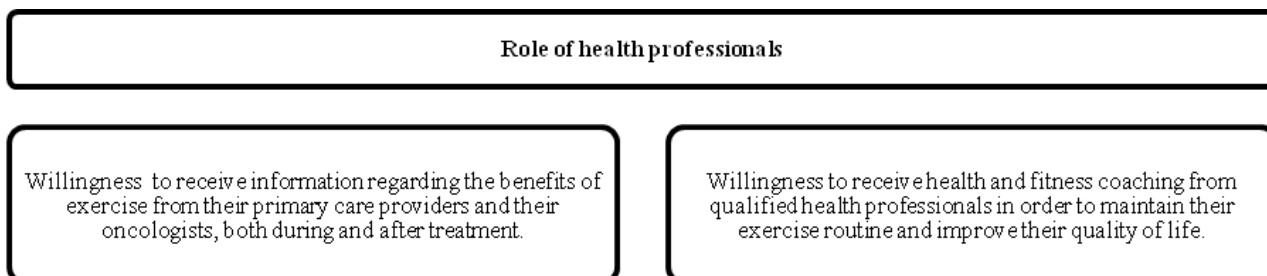


**Figure 3.** Barriers to exercise.

Survivors indicated that they would like to receive information regarding the benefits of exercise from their primary care providers and their oncologists, both during and after treatment. What is more, they consider that it is necessary to receive health and fitness coaching from qualified health professionals to maintain their exercise routines and improve their quality of life.

Respondent’s statements: “Everything starts from the hospital, there is no information given about the benefits of exercise. Not even after the end of the therapy. We are used to resting”, “There is a lack of qualified health professionals to support and evaluate us, in case that we would like to enter an exercise program”.

statements, it was found that exercise relieves stress, enhances the ability to cope with stress, increases self-esteem, satisfaction with body image and feelings of perceived energy – vitality and increases confidence in their physical abilities. In line with the above results, other researchers also supported that cancer patients consider as perceived benefits of exercise the feeling of enjoyment, the improved feelings of well-being, and the decreased feelings of stress and tension.<sup>22</sup> However, even though cancer survivors support that exercise is beneficial for both their physical and psychological health and although evidence proves its effects, the majority of cancer survivors continue to show low levels of physical activity.<sup>23</sup>



**Figure 4.** Role of health professionals.

**Discussion**

In the present study, individual interviews and observations were conducted to explore cancer survivors’ beliefs and attitudes toward exercise. From the analysis of the qualitative data four major themes were revealed: a) “Exercise is beneficial”, b) “Exercise preferences”, c) “Barriers to exercise”, and d) “Role of health professionals”.

Regarding 1st theme “Exercise is beneficial” it was revealed that exercise is beneficial for reducing cancer-related fatigue, the increase of cardiovascular fitness and muscle strength, as well as for the control of body weight. Furthermore, according to the participant’s

Concerning the 2nd theme “Exercise preferences”, from the respondent’s answers was found that they prefer to perform a different type of exercise at moderate intensity, 3 to 5 times per week and 40 to 60 minutes duration per training session. What is more, most of them stated that they would like to participate in group exercise with other patients; under the supervision of a personal trainer and that they are interested to participate in the exercise in the morning. Similarly to our results, other authors have found that cancer patients prefer to exercise with other patients, at moderate intensity and in different activities with a fixed schedule, under supervision, and finally they prefer to participate in group activities.<sup>24</sup>

Take into consideration the 3rd

theme “Barriers to exercise”, from the respondent’s answers found that participants highlight as barriers to their participation to exercise the lack of knowledge on how to exercise, the lack of energy, the fear of injury, the feelings of self-conscious about their body and appearance, the lack of convenient exercise, as well as overprotection from the family environment. Similar results were also revealed in the research of Courneya and her colleagues,<sup>25</sup> in which was found that a plethora of factors significantly affect the participation of cancer patients in exercise programs, with some of them being cancer-related fatigue, muscle weakness, nausea, and sleep disorders. What is more, other researchers have found that issues of motivation, including lack of interest and self-discipline and symptoms of pain and fatigue are some of the main reported barriers to exercise.<sup>26</sup>

Finally, regarding the 4th theme “Role of health professionals,” it was observed that the patients would like to receive information regarding the benefits of exercise from their primary care providers and their oncologists, both during and after treatment. What is more, they support that they must receive health and fitness coaching from qualified health professionals to maintain their exercise routine and improve their quality

of life. The same results were also conducted by other researchers, arguing that, despite the well-documented benefits of exercise programs on cancer patients’ overall health, oncology care providers have low knowledge regarding exercise counseling, and as a result, they don’t promote exercise and also they don’t discuss in a daily basis with their patients about it.<sup>27</sup>

### Limitations

It is necessary to note that our small sample and the existing small number of qualitative studies on this topic could be the limitations of the present study.

### Conclusions–Suggestions

In conclusion, most of the participants maintained a positive attitude towards exercise, especially regarding their participation in group exercise with other patients. However, to increase patients’ motivation to participate in exercise programs, it is necessary for health professionals to advise and inform patients about the benefits of exercise both during and after treatment, as well as to provide them with clear instructions and recommendations, taking into account their physical and mental condition. Therefore, further study is needed to draw definitive conclusions.

## ABSTRACT

**Μια ποιοτική διερεύνηση των πεποιθήσεων και των στάσεων ατόμων που επιβίωσαν από τον καρκίνο ως προς τη σωματική άσκηση**

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**Εισαγωγή:** Είναι ευρέως αποδεκτό ότι οι επιζώντες από τη νόσο του καρκίνου που ακολουθούν έναν δραστήριο τρόπο ζωής παρουσιάζουν χαμηλότερο κίνδυνο υποτροπής και θνησιμότητας. Ωστόσο, παρά τις ευεργετικές επιδράσεις της άσκησης, η πλειοψηφία των ασθενών τείνουν να εμφανίζουν ανεπαρκή σωματική δραστηριότητα.

**Σκοπός:** Ο σκοπός της παρούσας ποιοτικής μελέτης ήταν να διερευνήσει τις πεποιθήσεις και τις στάσεις ατόμων που επιβίωσαν από τον καρκίνο ως προς τη σωματική άσκηση.

**Υλικό και Μέθοδος:** Η επιλογή του δείγματος πραγματοποιήθηκε με τη μέθοδο της σκόπιμης επιλογής. Συνολικά συμμετείχαν 7 επιζώντες από τη νόσο του καρκίνου, άνδρες και γυναίκες, ηλικίας από 43 έως 60 ετών, οι οποίοι διέμεναν σε επαρχιακή περιοχή της Κύπρου. Η συλλογή των δεδομένων πραγματοποιήθηκε μέσω ατομικών ημιδομημένων συνεντεύξεων και μέσω συμμετοχής παρατήρησης.

**Αποτελέσματα:** Από την ανάλυση των ποιοτικών δεδομένων προέκυψαν τέσσερα βασικά θέματα: α) «Η άσκηση είναι ευεργετική», β) «Προτιμήσεις σχετικά με τη άσκηση», γ) «Εμπόδια για την άσκηση», δ) «Ο ρόλος των επαγγελματιών υγείας».

**Συμπεράσματα:** Συμπερασματικά, οι περισσότεροι από τους συμμετέχοντες διατηρούσαν μία θετική στάση ως προς

την άσκηση, ιδιαίτερα ως προς τη συμμετοχή τους σε ομαδική άσκηση με άλλους ασθενείς. Ωστόσο, προκειμένου να αυξηθεί το κίνητρο των ασθενών για συμμετοχή σε προγράμματα άσκησης, κρίνεται αναγκαίο οι επαγγελματίες υγείας να συμβουλευθούν και να ενημερώνουν τους ασθενείς για τα οφέλη της άσκησης τόσο κατά τη διάρκεια της θεραπείας, όσο και μετά την ολοκλήρωση αυτής, καθώς και να τους παρέχουν σαφείς οδηγίες και συστάσεις, λαμβάνοντας υπόψη τη σωματική και τη ψυχική τους κατάσταση.

**Λέξεις-ευρετηρίου:** Καρκίνος, ογκολογία, άσκηση, φυσική δραστηριότητα

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