


Review Article

Psychosocial Adjustments after Advanced Laryngeal Cancer Treatment – A Systematic Review

Dhanshree R. Gunjawate¹ , Rohit Ravi¹

¹Department of Audiology and Speech Language Pathology, Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, Karnataka, India.

ABSTRACT

Psychosocial adjustments are alterations needed by a person after a life-altering event. The present review explored the psychosocial adjustments after advanced laryngeal cancer treatment. Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, PubMed and Scopus were searched. Two hundred and three hits, after the three-stage screening, 13 articles were included. Mixed methods appraisal tool was used to perform the quality appraisal. The findings from 1109 laryngeal cancer survivors and 154 spouses of total laryngectomy patients helped to identify the barriers and coping mechanism toward psychosocial adjustments. The barriers included reactions of spouse or family members, effect of voice, communication and speech intelligibility and work and family relationships. The coping was enhanced with a better awareness, motivation and support system. These findings would help in improving the training programs and enhance the pre- and post-treatment counselling based on the priorities and demands of the patient.

Keywords: Laryngeal cancer, Psychosocial, Psychosocial adjustment, Review

INTRODUCTION

Psychosocial refers to mental and social factors in a person's life, such as age, education, relationships and employment factors related to a person's life. Psychosocial adjustment denotes the psychosocial accommodation that is needed after a life-altering event/transition. In the field of psychology, adjustment is referred to as the relative degree of harmony that exists between the individual's needs and environmental requirements.^[1]

Hancock *et al.*^[2] have explained that while dealing with a chronic situation/condition, prediction of biological factors is possible. The professionals should attempt to assess not only the biological but also the psychosocial factors and their interaction with the individual's life. Psychoeducation interventions assist individuals with positive psychosocial adjustments by increasing awareness levels about the importance of understanding of psychosocial functioning and its measurement. There are two main areas of psychosocial functioning; macrofunctions, which encompass life such as pursuit for truth and fulfilment, and microfunctions, which include everyday life functions such as education and family life.^[3] The terms 'adaptation' and 'adjustment' are often used interchangeably in the

literature. Adjustment specifically refers to the changes that need to be made continuously in one's life due to chronic illness.

Individuals suffering from chronic illness such as cancer, usually chart a course of action to act on and navigate their treatment journey. These individuals need to rely on the healthcare professionals for the required medical support. Ro and Clark^[3] have described this adjustment as multidimensional concept that includes intrapersonal and interpersonal dimensions, which are interrelated. These dimensions are both positive and negative. Caring for patients suffering from cancer includes more than the physical domain. It also includes interpersonal, emotional, cognitive, social as well as behavioural domains. The psychosocial adjustment by the individual and his/her family is a holistic process. In this holistic process, each domain is interdependent. Thus, any change in one domain of life has a direct or indirect effect on the other domains of life.^[4] Each person has a different coping mechanism and how he/she reacts to such chronic illness in his/her life. The individual's determinants and unique factors help an individual adjust to their illness.

*Corresponding author: Rohit Ravi, Department of Audiology and Speech Language Pathology, Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, Karnataka, India. rohitravi94@gmail.com

Received: 12 July 2021 Accepted: 17 September 2021 EPub Ahead of Print: 21 October 2021 Published: 24 November 2021 DOI 10.25259/IJPC_135_21

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Despite all the progress, in the early detection and treatment of cancer, leading to extended life expectancy of the survivors, cancer remains a feared disease. People suffering from cancer often have a substantial permanent disability, impairment in performing activities of daily living, social problems, vocational setbacks as well as psychological distress right from its diagnosis to treatment. A study among 398 cancer survivors reported that cancer survivors exhibit an impairment with respect to mental health, mood and psychological well-being as compared to control group. Further, younger cancer survivors were more likely to have poor mental health and mood as compared to older cancer survivors.^[5] Head-and-neck cancer survivors face several physical symptoms such as issues with diet, swallowing,^[6] communication difficulties,^[7] pain and poor general health.^[8] Several psychological symptoms such as depression, irritability, issues with self-esteem^[7,9] as well as social issues such as relationship issues with spouse, loss of work and financial issues that lead to negative quality of life.^[10]

Treatment in advanced laryngeal cancer has the potential to cause issues in psychosocial functioning. Limited and scattered information is presently available on the psychosocial adaptation in advanced laryngeal cancer survivors and its impact on their overall life. The aim of the present study was to provide a review and methodological evaluation of the current studies on psychosocial adjustments in advanced laryngeal cancer survivors.

MATERIALS AND METHODS

The Preferred Reporting Items for Systematic Review and Meta-Analysis guidelines were followed for designing and carrying out the present systematic review.

Eligibility criteria

Studies in individuals being treated or have received treatment for advanced laryngeal cancer and their spouse were included in the study. Individuals who have just received the diagnosis of having laryngeal cancer and not yet initiated treatment were not included. Studies in healthcare providers were not included. Qualitative and quantitative study designs were included in the study. Under quantitative, studies with an observational study design such as case-control, cross-sectional and cohort were included in the study. Experimental studies, review studies, animal studies, case reports and letters to editors were excluded from the study. Only studies published in peer-reviewed indexed journals in English language were included in the study. Outcome measures included psychosocial adjustments, psychological adjustments, social adjustments, issues, barriers and strategies to overcome.

Information sources

An electronic search was carried out for four electronic databases Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, PubMed/Medline and Scopus which were searched without time limit. The reference lists of the included studies were also searched for any additional studies to be included.

Search strategy

The search was carried out in January 2020. The search terms included appropriate subject heading with wildcards combined to develop search strings. Some of the keywords included 'laryngectomy,' 'laryngeal cancer treatment,' 'psychosocial adjustments,' 'social adjustments' and 'psychological adjustment.'

Study selection

The studies from all the databases were compiled together using a reference management software Mendeley desktop. The duplicate studies were eliminated. The study screening, selection and data extraction were carried out in stages. Title and abstract screening were conducted independently by two researchers. The full texts of selected abstracts were screened inclusion. If there were any disagreements, these were resolved through discussion to arrive at a common consensus. The relevant data were extracted from the selected studies using a data extraction form. The data extraction form was designed based on input from both the authors and review outcomes. It included study details, study participant details, study design, methodology, outcome measures used and findings.

Quality appraisal of included studies

The mixed methods appraisal tool (MMAT)^[11] version 2018 was used for carrying out the quality appraisal of the included studies. As per the procedural requirements mentioned, MMAT was independently administered by both the reviewers.

RESULTS

The 203 hits obtained from all the databases were merged, 75 duplicates were removed. Further, 128 titles were screened to shortlist 69 abstracts. After the abstract screening, 15 articles were included for full-text review. On full-text review, 13 articles were found suitable to be included in the final systematic review. The present review included findings of patients treated for advanced laryngeal cancer from across 13 studies. The entire process of study selection is illustrated in [Figure 1].

The present review enabled a collation of several studies on individuals treated for advanced laryngeal cancer in terms of their psychosocial adjustment issues.

SUMMARY OF STUDY FINDINGS

The 13 included studies were carried out in the following countries; Australia (3 studies), two each in Spain, Japan, Sweden and Germany and one each from Italy and Canada. Nine studies used a quantitative analysis using validated and standardised questionnaires while four studies used qualitative study designs using interviews. The 13 studies included 1109 laryngeal cancer survivors, with a majority being males and 154 spouses of total laryngectomy patients as shown in [Table 1]. The nine questionnaire-based studies

used standardised validated questionnaires. Study quality appraisal was performed using the MMAT version 2018 as shown in [Table 2].

DISCUSSION

The present systematic review aimed to explore the psychosocial adjustments in laryngeal cancer survivors. An electronic search was carried out in four electronic databases Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, PubMed/Medline and Scopus in order to overcome publication bias. Two researchers were involved independently reviewing the articles at each stage of the review process to overcome reviewer bias. Thirteen articles were found suitable for inclusion in the review that

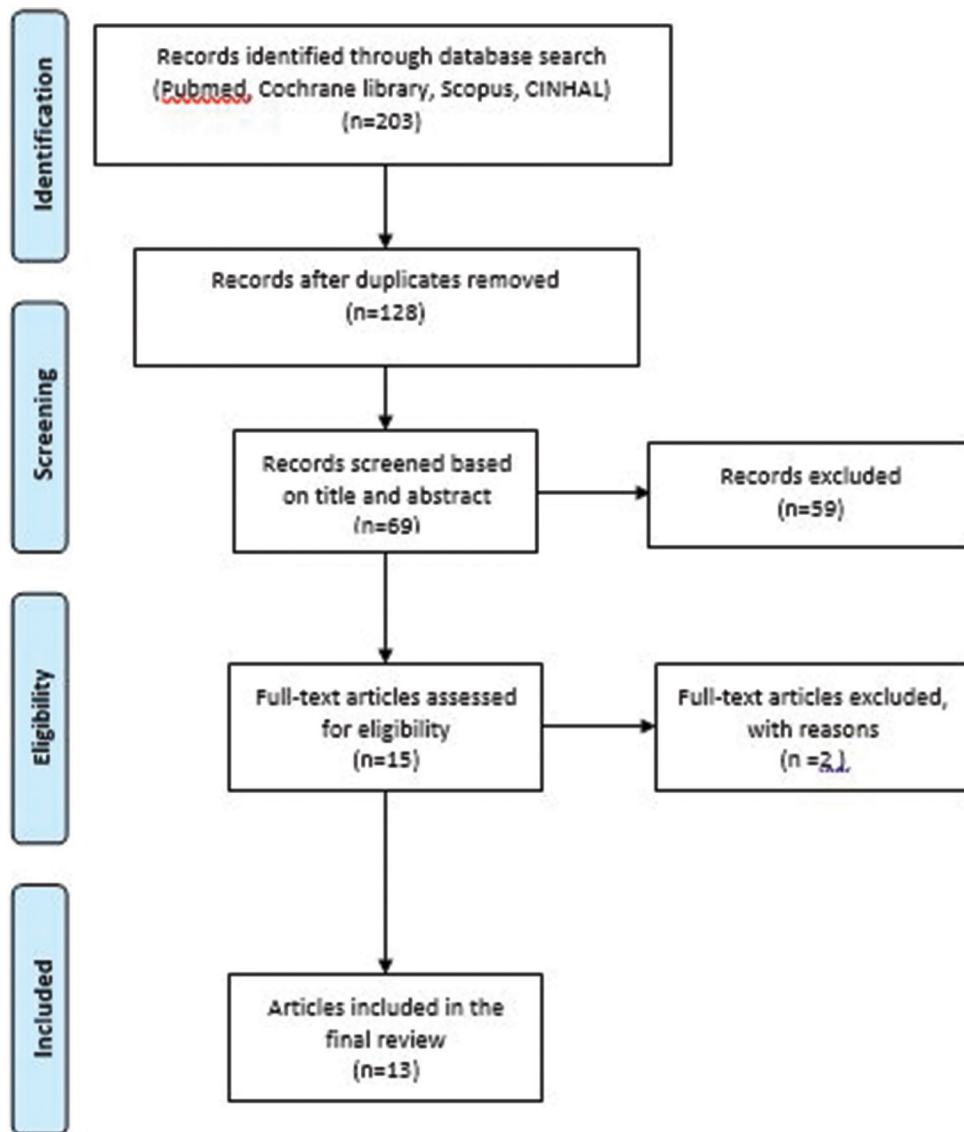


Figure 1: PRISMA Flowchart.

Table 1: The demographic characteristics of the population in the included studies.

Author	Participant details	Location	Study design and data collection	Brief outcome
Armstrong <i>et al.</i> ^[12]	34 laryngeal cancer survivors, pre- and post-surgical laryngectomy (31 M, 3 F); age range 47–86 years	Sydney, Australia	Longitudinal study, RPAH profile patient questionnaire, SF Health Survey SF-36, outcome measures questionnaire	Swallowing and communication difficulties persist till 6 months after surgery and there is a need for long-term support.
De Maddalena ^[13]	43 laryngeal cancer survivors, pre- and post-surgical laryngectomy (all males); age range 32–74 years	Tubingen, Germany	Short version coping questionnaire (36 items), adjective list assessing emotional state (60 items), post-laryngectomy telephone test (20 one-syllable words and five sentences), subjective psychological distress after the operation (9), anticipated stigmatisation based on changed voice (5)	Loss of voice was not distressing. Early speech rehabilitation and use of voice prosthesis led to positive impact on emotional state.
Carrasco-Llatas <i>et al.</i> ^[14]	62 laryngectomy (61 M, 1 F); age range 41–85 years	Valencia, Spain	Spanish version of psychosocial adjustment to illness scale self-report (PAIS-SR) questionnaire 45-item scale	Poor adjustment in work and family relationships. Presence of permanent stoma and loss of voice was not a critical factor.
Ramírez <i>et al.</i> ^[15]	62 laryngectomy (61 M, 1 F); age range 41–85 years	Valencia, Spain	Mail questionnaires Spanish version psychosocial adjustment to illness scale self-report (PAIS-SR) 45-item scale, seven dimensions (adjustment to illness: health beliefs and patient satisfaction, work, domestic relationship, social functioning, sexual relationship, extended family relationship and psychological distress)	Poor adjustment in work and family relationships. Presence of permanent stoma and loss of voice was not a critical factor.
Giordano <i>et al.</i> ^[16]	42 total laryngectomy (39 M, 3 F); age range 46–78 years	Italy	Prospective study Short Form 36-item Health Survey (SF-36), questionnaire on use of voice prosthesis	Positive impact of voice prosthesis implantation
Johansson <i>et al.</i> ^[17]	100 laryngeal cancer survivors, pre- and post-surgical laryngectomy (83 M, 17 F), mean age 67 years	Sweden	Longitudinal mini-mental adjustment to cancer scale (29 items), hospital anxiety and depression (HAD) scale (14 items); European Organisation for Research and Treatment of Cancer Study Group on quality of life (EORTC QLQ-C30) (30 items) with 35-item module QLQ-H&N3; Karnofsky performance scale (11 items)	Assessment of mental adjustments needs to be included in routine assessment
Meyer <i>et al.</i> ^[18]	154 spouses of total laryngectomy patients	Leipzig, Germany	Prospective multicentre cohort Hospital anxiety and depression scale (14 items), Hornheide questionnaire short form	Spouses reported of high level of stress, expressed desire to learn relaxation methods and have professional support.

(Contd...)

Table 1: The demographic characteristics of the population in the included studies. (*Continued*)

Author	Participant details	Location	Study design and data collection	Brief outcome
Kotake <i>et al.</i> ^[19]	679 laryngectomy (604 M, 66 F, 9 unknown); age range 40–94 years	Japan	Mail survey Japanese version of Nottingham Adjustment Scale, laryngectomy 7 subscales and 26 items, 20 items of Medical Outcomes Study Social Support Questionnaire – four subscales of emotional/informational, tangible, affectionate, positive social interaction	Presence of social support and acquiring an alternative voice helped in promoting good psychosocial adjustments.
Kotake <i>et al.</i> ^[20]	27 laryngeal cancer survivors, pre- and post-surgical (23 M, 4 F); age range 48–76 years	Japan	SF-36V2 Japanese version	Older laryngeal cancer survivors had better social adjustment and those living alone had better mental health.
Qualitative study design				
Author	Participants	Country	Study design and data collection	Brief outcome
Dooks <i>et al.</i> ^[21]	9 laryngectomy (8 M, 1 F); age range 60–75 years	Canada	Qualitative interpretative descriptive using interview method	Support from family, healthcare professionals and friends is very important.
Johansson <i>et al.</i> ^[22]	18 laryngeal cancer survivors, pre- and post-surgical (16 M, 2 F); age range 50–78 years	Sweden	Qualitative method using the constant comparison technique consistent with grounded theory using semi-structured face-to-face interviews	‘Setting boundaries,’ patient’s attitude toward information and thoughts about cancer important.
Bickford <i>et al.</i> ^[23]	12 (7 M, 6 F) laryngectomy; age range 57–75 years	Australia	In-depth semi-structured interviews, field notes, journals Exploratory, using a constructivist grounded theory approach	Identifying with altered self with the help of multilevel changes and intrinsic and extrinsic interpersonal factors.
Bickford <i>et al.</i> ^[24]	21 laryngectomy (9 M, 12 F), age range 36–77 years	Australia	Semi-structured interviews, constructivist grounded theory approach and symbolic interactionism using semi-structured interviews	Changes in self-identity along with short- and long-term support.

comprises of 1109 laryngeal cancer survivors, with a majority being males and 154 spouses of total laryngectomy patients. Two studies additionally explored the reasons for high loss to follow-up among these patients. These included being unwell, refusal to participate, loss of data in mail, transfer,^[12] uncertainty of outcomes and long waiting periods for treatment.^[13]

Reactions of spouse or family members

The diagnosis and treatment of advanced laryngeal cancer has a strong impact on the life of the patient as well their spouse and family members. During this course of assessment and treatment as well as even after, the support of spouse and family members is an important factor. Some might cope up well with the cancer and its consequences

while others might have several adjustment issues. In the present review, two studies explored psychosocial adjustment issues in primary supporters and spouse. Bickford *et al.*^[24] surveyed primary supporters, who expressed concern due to inconsistent care and services from healthcare staffs as laryngectomy is comparatively rare condition. The surgery led to disruptions in their life leading to increasing adjustment issues. Meyer *et al.*^[18] reported that 57% of spouses were psychologically distressed, 33% experienced tension and restlessness, 29% had frequent worrying thoughts while 14% had cancer related fear. Further, 66% needed psychiatric medication, 21% required relaxation training, 17% needed conversation psychiatrics while 15% expressed needed information booklets for better understanding.

Table 2: Quality appraisal of included studies.

Study ID	4.1 Is the sampling strategy relevant to address the research question?	4.2 Is the sample representative of the target population?	4.3 Are the measurements appropriate?	4.4 Is the risk of nonresponse bias low?	4.5 Is the statistical analysis appropriate to answer the research question?
Armstrong <i>et al.</i> ^[12]	Yes	Yes	Yes	Yes	Yes
De Maddalena ^[13]	No	No	Yes	Can't say	Yes
Carrasco-Llatas <i>et al.</i> ^[14]	No	No	Yes	Can't say	Yes
Ramírez <i>et al.</i> ^[15]	No	No	Yes	Can't say	Yes
Giordano <i>et al.</i> ^[16]	No	Yes	Yes	Can't say	Yes
Johansson <i>et al.</i> ^[17]	Yes	Yes	Yes	Yes	Yes
Meyer <i>et al.</i> ^[18]					
Kotake <i>et al.</i> ^[19]	Yes	Yes	Yes	Can't say	Yes
Kotake <i>et al.</i> ^[20]	No	Can't say	Yes	Can't say	Yes
Study ID	1.1 Is the qualitative approach appropriate to answer the research question?	1.2 Are the qualitative data collection methods adequate to address the research question?	1.3 Are the findings adequately derived from the data?	1.4 Is the interpretation of results sufficiently substantiated by data?	1.5 Is there coherence between qualitative data sources, collection, analysis and interpretation?
Dooks <i>et al.</i> ^[21]	Yes	Yes	Yes	Yes	Yes
Johansson <i>et al.</i> ^[22]	Yes	Yes	Yes	Yes	Can't say
Bickford <i>et al.</i> ^[23]	Yes	Yes	Yes	Yes	Yes
Bickford <i>et al.</i> ^[24]	Yes	Yes	Yes	Yes	Can't say

Responses on short form 36-item health survey (SF-36)

SF-36 is a 36-item questionnaire that comprises of eight scales, namely physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional and mental health. Three studies in the present review used SF-36 to assess the impact on the quality of life. The scores on mental health were found to be higher in all the studies.^[12,16,20] Armstrong *et al.*^[12] reported of higher scores on body pain, general health, social and role emotional. Giordano *et al.*^[16] found higher scores for physical functioning, bodily pain, vitality, social functioning, emotional and mental health.

Effects of voice, communication and speech intelligibility

The patients reported post-operative stress and the anticipation of stigmatisation for changed voice quality was higher in patients with good speech intelligibility as compared to those with poor speech intelligibility. Patients who received early speech rehabilitation with voice prosthesis reported of a better emotional state than those who did not.^[13] The loss of voice and presence of permanent stoma have no effect on the quality of life of individuals treated for laryngeal cancer.^[14]

Work and family relationships

The individuals treated for advanced laryngeal cancer had poorest adjustments with respect to their work and family

relationships. These relationships suffered because of reduced support from the family. Work and psychosocial distress reduced in those who could join back work as compared to those who could not.^[14,15] The changes to communication pattern and participation, style, food choices and preferences as well as altered social roles could lead to a loss of self-expression among individuals treated for advanced laryngeal cancer.^[24]

Coping mechanism and strategies

Meyer *et al.*^[18] emphasised on the need to develop and evaluate new treatment strategies, which will help spouses to cope with the psychological distress. Dooks *et al.*^[21] emphasised on the importance of support received from family, friends and other healthcare providers, which will ensure a smooth and successful transition in the stressful period. The use of messaging, emails, internet-based support groups and video messages would help to improve the communication between these populations. Johansson *et al.*^[17] reported that the most common adjustment needed for laryngectomies is the 'fighting spirit' as these individuals commonly face anxiety and depression. In a later study, Johansson *et al.*^[22] identified two other categories apart from 'fighting spirit,' which were cognitive avoidance and anxious preoccupation. The need to have information adapted to suit each individual and have customised rehabilitation options was also emphasised. Bickford *et al.*^[23,24] highlighted on the need to have adequate

resources, education and training to improve more holistic care. Kotake *et al.*^[19] emphasised that the key to psychosocial adjustment was crossing the first step of recognising oneself as voluntary agent who is responsible toward it.

A multidisciplinary team (MDT) approach^[25,26] that includes head-neck surgical oncology, radiation oncology, medical oncology, plastic and reconstructive surgery, speech and language therapy, physiotherapy, clinical psychologist and medical social worker is essential to successfully manage patients undergoing treatment for advanced laryngeal cancer. Evidence suggests the inclusion of team of specialists helps in improving health-related quality of life, mood, decision-making for treatment, patient satisfaction, planning and care, especially in adult oncology.^[27,28] However, the challenge remains that very few oncology centres, especially in developing nations, follow the MDT approach as compared to developed nations. In future, every specialised oncology centres/hospitals in developing should also focus on using the MDT approach in managing advanced laryngeal cancer successfully.

Clinical implications and limitations

The findings of the review highlight the key factors that could lead to distress for an advanced laryngeal cancer survivor during psychosocial adjustments. It also brings forth several strategies and coping mechanisms that would help in handling these issues. These would help in better planning of therapeutic services for these individuals. It is also important to include the spouse and other family members in this therapeutic process as it aids in bridging the family bonds. The review findings are useful for planning of better services as well as counselling strategies. Most of the studies were conducted in developed countries, and if similar studies are attempted in developing countries might yield variable findings. There is a need for more detailed studies to explore the effect of advanced laryngeal cancer treatment on issues related to communication, quality of life, emotional and social adjustment issues.

CONCLUSION

The findings of the present review helped to identify barriers and coping mechanism towards psychosocial adjustments among individuals treated for advanced cancer treatments.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Gunjawate DR, Ravi R. Psychosocial adjustments after advanced laryngeal cancer treatment – A systematic review. *Indian J Palliat Care* 2021;27:431-8.