

## Original Article

## Coping with family function changes: A qualitative study of couples facing advanced lung cancer



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## ABSTRACT

**Objective:** This study aimed to explore the experiences of couples with advanced lung cancer in coping with changes in their family functioning.

**Methods:** This study included patients with advanced lung disease and their spouses who were hospitalized in a tertiary hospital in Shanghai, China. Data were collected through interviews that focused on three key areas: (1) patient coping, (2) spousal coping, and (3) dyadic coping. Semi-structured qualitative interviews were conducted in Chinese and analyzed using Braun-Clarke thematic analysis.

**Results:** A total of 15 couples participated in the study (12 male and 3 female patients). The average age of the patients was 63.73 years, and that of their partners was 63.20 years. Marriage duration ranged from 25 to 53 years. Three distinct themes emerged from the data: individual patient coping was expressed in four areas: struggle, acceptance of reality, cherishing the present and regaining hope, and rebuilding family life; spousal coping was expressed in three areas: acceptance and understanding of the patient, providing active support, and adjusting roles and sharing of family responsibilities; and dyadic coping was expressed in three areas: cognitive consistency of changes in family functioning, stress communication, and family adjustment and adaptation based on shared cognition. A relationship diagram of patients with advanced lung cancer and their spouses in coping with post-cancer changes in family functioning was constructed.

**Conclusions:** Post-cancer coping with changes in family functioning in couples with advanced lung cancer is a continuous developmental and gradual evolutionary process, and there is a close relationship between the two that influences each other. Early assistance for couples to form consistent cognition and communicate effectively with the stress caused by the disease can help improve the family functioning of both partners and, in turn, improve the quality of life of patients. Therefore, it is recommended that clinicians conduct family- or couple-centered intervention studies aimed at improving the post-cancer quality of life of patients with advanced lung cancer.

## Introduction

Lung cancer (LC) is a major global health concern. According to the 2022 Global Cancer Data Report<sup>1</sup>; accessed on March 20 and August 2024, there are approximately 2.48 million new cases of LC and nearly 182 death cases, accounting for 12.4% of the world's new cancer cases and 18.7% of cancer-related deaths. In China, the latest data show that LC has 1.06 million new cases and 733,300 deaths, which is at the top of the morbidity and mortality rates.<sup>2,3</sup> Because of the insidious nature of early-stage symptoms, more than 70% of the patients are diagnosed at an advanced stage, namely, stage III or stage IV.<sup>4</sup>

This is despite the fact that the effectiveness of LC treatment has improved significantly with the spread of awareness regarding early screening and advances in medical technology, resulting in prolonged survival times for patients with advanced LC. However, recent studies<sup>5-7</sup> show that patients with advanced LC and their spouses face challenges, including significant physical and psychological stress, economic hardship, and restricted family and social activities. Many patients with advanced LC are not adequately prepared to adapt to new roles or normal lifestyles. Simultaneously, the stresses and challenges of caring for spouses of such patients should not be overlooked. Studies suggest that up to 50% of spouses of patients with LC report elevated clinical anxiety

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or depressive symptoms and that greater distress among spouses of such patients is associated with increased pressure on their time, energy, finances, and their self-efficacy in helping the patient with symptom management.<sup>5</sup> Advanced LC causes complex, multifaceted, and continuous changes in the family functions of patients and their spouses.<sup>7</sup> This requires spouses of patients with LC to adapt their lives and work to their new needs.<sup>8</sup>

Bodenmann<sup>9</sup> proposed a systemic interaction model based on Lazarus and Folkman's theory of stress coping, which systemically reinterpreted the concept of dyadic coping by placing the process of coping in a broader social and environmental context. According to this model, dyadic coping is defined as all efforts taken by a couple to confront, manage, and resolve stressful events, either jointly or individually, including indirect dyadic stress perceived by one partner (the impact of the other partner's stress on him or her) and direct dyadic stress shared by both partners. This system has become central to subsequent research on marital relationships and continues to be applied in the management of chronic illnesses and cancer.<sup>10</sup> Dyadic coping theory adds to the understanding and perspective of integrated cancer care. It helps reduce stress in couples by "sharing the worry and halving the grief." Researches have shown that dyadic coping can effectively improve the physical and psychological health of patients with cancer, enhance their self-management skills, and positively affect their quality of life by implementing intervention programs for such patients and their spouses. Studies show a close relationship between the dichotomous coping of patients with cancer and their spouses in dealing with stress and their respective psychological resilience, and that patients' communication skills in dealing with stress and their access to supportive coping styles show a positive correlation with their mental health status.<sup>11</sup> Gibbons et al.<sup>12</sup> have found that patients and spouses, with role modification, are able to demonstrate a strong relationship in coping with the challenges of cancer treatment and caregiving, demonstrating strong dichotomous resilience and growth potential. This suggests that, although individuals go through multiple adaptive roles during the cancer journey, good dyadic coping can help patients and spouses reorient and adapt to life changes during the cancer treatment experience by "resetting" relationships and making role adjustments.

In summary, it is important to better understand dyadic coping in couples with advanced LC because it may affect their family functioning. Although studies have explored dichotomous support coping in patients with cancer, they have mainly focused on breast or prostate cancer, emphasizing on marital relationships and emotional communication, there is limited attention on how couples with advanced LC with a poorer prognosis cope with changes in family functioning.<sup>13</sup> This may be because the focus was on the physical symptoms and mental health of patients with advanced LC, neglecting the impact of the disease on daily life and family relationships. Additionally, recent studies on family functioning in patients with LC are mainly quantitative, and coping with changes in family functioning focuses more on patients' inner experiences and feelings which differs across couples. Existing studies have not yet been able to fully understand the current status of dichotomous coping with changes in family functioning in couples with advanced LC and the factors that influence it. However, health-care professionals should understand how couples manage and cope with the changes in family functioning when encountering patients with advanced LC and spouses with poor prognoses. Therefore, by focusing on couples with advanced LC, this study aimed to fill the research gap by applying interpretative phenomenological methods in qualitative research to explore in depth how couples cope with changes in family functioning triggered by the disease and multidimensional changes in psychological regulation, role transformation, communication styles, and affective interactions. In addition, this study focuses on individual differences and the diversity of coping strategies to provide health-care professionals with more in-depth and targeted practical guidance to help patients with advanced LC and their spouses cope with the changes in family functioning and thus improve their quality of life.

## Methods

### Objectives

Data from this qualitative study were part of the study "The impact of dyadic coping on family functioning and meaning in life of couples with advanced LC." The corresponding cross-sectional study examined the baseline characteristics, family functioning, meaning in life, and dyad coping in 300 couples to understand their levels of dyad coping, family functioning, and their relationships. As dyadic coping was a central aspect of the study, additional couple interviews were conducted, which fully engaged the relationship perspective and allowed observation of patient-spouse interactions to gain a deeper understanding of the couple's supervisor's coping experience and its impact on changes in family functioning.

### Research questions

What are the changes and effects of the disease on the lives of patients with LC and their spouses?

How do patients with LC and their spouses perceive these changes? How do they respond?

How do personal and dyadic coping strategies play a role in coping with a new family life and adapting to changes in family functioning?

### Design and setting

This study was conducted in a tertiary hospital in Shanghai, China, by using qualitative semistructured interviews to explore the experiences of couples with advanced LC in coping with changes in family functioning.

### Participants

The study population included couples with advanced LC who were interviewed about changes in family functioning following the illness. Targeted sampling was used to recruit eligible patients who met the following criteria: (1) aged  $\geq 18$  years, (2) diagnosed with non-small cell lung cancer (NSCLC) and definite imaging data for staging, (3) with an expected survival of  $\geq 3$  months (first, all patients included in the study were diagnosed and confirmed by clinical oncologists, and patients met the criteria for all hematological indices within the normal range, no cardiopulmonary function abnormality, cerebral metastasis, superior vena cava syndrome, and bone marrow suppression of grade 3 or above; second, the Karnofsky performance scale [KPS] score of the included patients should be  $\geq 70$ ; the Barthel Index should be  $\geq 80$ ), (4) can speak Chinese and communicate normally, (5) married and living together as a husband and wife, and (6) aware of their condition. The exclusion criteria were as follows: (1) mental illness, disturbance of consciousness, and communication disorder; and (2) complications with more serious diseases. The inclusion criteria for spouses were as follows: consent from the patient, reading and writing abilities, and fluent communication in Mandarin. The exclusion criteria were as follows: (1) patients or spouses with mental disorders, and (2) those who cannot take care of themselves.

The couples who were interviewed were selected from a sample of 300 couples from the previous cross-sectional study who had completed the survey. To maximize information acquisition, purposive sampling was used to select study participants, and dyadic coping scores were stratified based on a cross-sectional study. Using purposive sampling, groups with high, medium, and low scores were selected as study participants. All couples were asked whether they wished to be interviewed after participating in the cross-sectional study, were informed of the study procedures, or were interviewed in an inpatient ward. Twenty couples initially expressed their willingness to be interviewed; however, the remaining four couples declined to participate in this study because of medical reasons. To overcome the difficulty of recruiting couples (who agreed to participate), small gifts were offered to each couple. However, this did not significantly increase the willingness to participate.

### Data acquisition

In the cross-sectional study's baseline assessment, sociodemographic information such as gender, age, employment, education, marital status, cohabitation, relationship duration, and medical information such as diagnosis, disease type, disease status, and time since diagnosis were collected using a pen-and-paper questionnaire.

The corresponding author, with more than 20 years of professional experience in directing qualitative research and was heavily involved in the research process, established the interview framework. To obtain more comprehensive information and ensure that couples' responses did not influence each other, the first author conducted separate semi-structured interviews with patients with advanced LC and their spouses. Before the interview, the researcher explained to each couple the purpose and significance of the study and its specific implementation process in detail. The interview was conducted after obtaining consent from both couples. Interviews were conducted in a quiet conference room within the inpatient unit to ensure that the participants were not disturbed. The first author, who conducted the interview, was a student of Master of Science in Nursing with practicum experience with patients with LC and their spouses. She is lively and conversational and has qualitative research skills. Each interview lasted for approximately 45 minutes, during which each couple was asked to describe their entire experience, both individually and dyadically, of the changes in the patient's family functioning. The final interview included the following questions: (1) Can you tell me about your post-illness thoughts and psychological feelings? (2) How has LC affected or modified your daily life and the life of your spouse? How have your home functions changed? For example, what about illness treatment, work planning, and household sharing? (3) How have you addressed these changes? and (4) Have you discussed how to cope with the disease and treatment, family, and so on? Various techniques, such as repetition, positive feedback, and content summarization, were used in the interviews to maximize the fullness of the interviewees' perspectives while maintaining an objective attitude throughout the interview, paying close attention to and recording the interviewees' emotional fluctuations and linguistic expressions in detail, and adopting synchronized audio recordings to record the contents of the interviews in a timely manner. For interviewees who did not agree to the recording, the researcher advised them to talk slowly to ensure that the researcher had sufficient time to perform the recording work word by word. At the end of the interviews, sincere appreciation was expressed to the interviewees, and data collection continued until theoretical saturation was reached, which was considered to have been reached if no new themes or core concepts and substantive new insights emerged in subsequent interviews.

### Data analysis

In the data analysis process, we adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) to ensure a systematic and transparent approach to the qualitative inquiry. Braun-Clarke theme analysis was used by two writers to evaluate the transcripts.<sup>14</sup> The analysis consisted of six steps: (1) familiarize yourself with the data (read and re-read the transcript to be acquainted with the depth and breadth of the patient and spouse's experience with LC and changes in family functioning), (2) create preliminary code (encoding important elements throughout the collection and sorting data into useful groupings), (3) topic search (organize code into potential subjects and collect all data associated with each potential topic), (4) examine themes for "internal homogeneity and external heterogeneity" and develop thematic map analysis, (5) define and name topics (constant analysis, refining the details of each topic through discussion among members of the research team until consensus is reached), and (6) produce reports (select vivid, compelling excerpts and report complex stories of patients with advanced LC in coping with the disease and changes in family functioning).

### Rigor

This study ensured rigor through various strategies, including credibility, reliability, verifiability, and transferability.<sup>15,16</sup> All interviews conducted using semi-structured interview guides to ensure rigorous data collection, were completed by the first author, and were of a long duration to ensure authenticity and theoretical saturation. Participants' statements were clarified during the interviews, and data were recorded, transcribed in verbatim, cross-checked, and returned to the research participants for correction. Data were analyzed by two researchers after cross-checking and coding independently; the two codes were combined to determine the final transcript code, which was grouped according to similarities and differences, and the semantic content of the codes was verified. The first and corresponding authors jointly adapted the themes to address the entire dataset. Frequent coding team meetings were held to discuss code use, coding, and refinement of definitions; and all disagreements were resolved by the entire team. All investigators on the research team have expertise and experience in qualitative and advanced LC-related studies. This study focused on the coping experiences of the couples, comparing overlaps and contrasts to enhance our understanding of the couples' coping experiences to ensure that the interpretations and hypotheses derived from the analyses were reasonable. Finally, this study determined portability through purposive sampling, selecting groups with high, medium, and low scores to describe couples' dyadic coping, data collection, and analysis processes in detail.

### Results

Fifteen couples participated in the current study, including 12 (80.0%) male and three (20.0%) female patients. Because no substantial new information was obtained after 15 interviews, it was reasonable to assume theoretical saturation and no re-recruitment. The mean age of the patients was 63.73 years (SD = 9.42, range = 50–79 years), and the mean age of the partners was 63.20 years (SD = 8.71, range = 48–77 years). The duration of marital relationship ranged from 25 to 53 years. Ten (66.7%) of the 15 couples had one child, and five (33.3%) had more than two children. [Table 1](#) shows the fundamental demographic features of the couples with advanced LC who participated in the trial. See [Supplementary Table S1](#).

### Thematic analysis

After coding and summarizing the interview results, 3 themes and 10 subthemes were extracted: (1) patient coping, which included struggling, acceptance of reality, cherishing the present and regaining hope, and rebuilding family life; (2) spousal coping, which included acceptance and understanding the patient, providing positive support, and adjusting roles and sharing of family responsibilities; and (3) dyadic coping, which included cognitive consistency of changes in family function, stress communication, and family adjustment and adaptation based on shared cognitions. Based on the extracted data, a relational map of patients with advanced LC and their spouses' coping with changes in family functioning was formed, including the couples' individual and joint coping with intersections. See [Supplementary File 1](#) for further details on the relationship diagram for patients with advanced LC and their spouses in coping with changes in family functioning. [Table 2](#) shows the main themes of the interviews.

#### Theme 1: patient coping

Patient coping refers to the positive psychological and behavioral measures taken by patients with advanced LC to improve their coping ability, alleviate the symptoms and pain of the disease, and improve their quality of life. Adaptation to disease and its treatment is a gradual and interconnected process (Robinson, 2017). In the interview, the patients mentioned their struggles and resistance at the beginning of the diagnosis, including emotional shock, anger, anxiety, fear, cognitive disbelief and

**Table 1**  
Participants' characteristics (N = 30).

Patients					Spouses					
Num	Age (years)	Gender	Education level	Lung cancer in month	No. of children	Marriage (years)	Num	Age (years)	Gender	Education level
P1	55	M	H	7	1	30	S1	52	F	M
P2	64	F	M	4	1	40	S2	68	M	M
P3	69	F	M	4	2	42	S3	72	M	M
P4	65	M	M	19	1	41	S4	63	F	M
P5	60	M	M	6	1	35	S5	63	F	M
P6	61	M	M	2	1	31	S6	60	F	H
P7	78	M	P	3	2	50	S7	70	F	M
P8	51	F	M	72	1	25	S8	55	M	M
P9	79	M	M	36	1	28	S9	77	F	M
P10	71	M	C	96	2	28	S10	73	F	M
P11	60	M	M	3	1	25	S11	58	F	M
P12	55	M	M	3	2	30	S12	55	F	M
P13	77	M	M	3	2	53	S13	73	F	M
P14	61	M	U	6	1	33	S14	61	F	C
P15	50	M	M	1	1	26	S15	48	F	H

Gender: M: male; F: female. Education: P, primary school; M, middle school; H, high school; C, college; U, university.

uncertainty, and behavioral crying and silence. However, over time, they realized that struggling only increased the difficulties in life and began to accept the disease. In the process of acceptance, patients actively choose treatment and life instead of waiting for remission of the disease and support their identity as a family member and person by adapting to current roles and lives and refocusing on the value and meaning of personal existence in the family. Simultaneously, they accepted to live in the moment and cherish their precious time with their family.

**Struggling.** The struggle with illness begins when a patient faces his or her diagnosis, usually intertwined with death and guilt over family members, creating an emotional response of shock, guilt, and fear. P8: "I was scared and couldn't stop the tears. No one could persuade me." The persistent denial and difficulty in accepting the diagnosis in some patients during the course of treatment reflects the difficult psychological process of accepting the reality of the disease. P13: "I just went for a medical checkup. When the test results came out, I felt misdiagnosed. I still feel misdiagnosed even after a year of treatment until now. (Patient laughs.) I don't even feel any symptoms. I just feel retired." This leads to severe distress, pessimism, and the significant impact of the disease on daily activities. Family functioning is also often challenged in the short or medium to long term. For example, strong mood swings may lead to emotional tensions among family members, allowing normal family communication to suffer. P15: "If you don't work, how will you have money to support your family?" Patients may struggle to properly fulfill the responsibilities assigned to their family roles, and this dilemma may lead to a less efficient execution of daily family activities, which in turn disrupts the normal order of family life. The duration and intensity of the patients' struggles vary and are influenced by their previous life experiences and psychological tolerance. However, over time, patients realize that persevering in this struggle will only exacerbate the futile challenges of life; therefore, it is important to give up the struggle and adapt and accept the gradual reality of the situation.

**Acceptance of reality.** Acceptance of reality is a key turning point in the process of reconfiguration and adaptation of family functioning, a process that not only helps provide a basis for couples to cope with their challenges together, which in turn not only enhances the adaptive capacity of the entire family system, but also contributes to the stabilizing effects of family functioning in a new equilibrium. Acceptance of reality, as seen by the patient's acknowledgment of the existence of advanced LC as well as his or her psychological readiness to face the range of problems and life changes it causes, helps the patient become emotionally stable and no longer overly immersed in denial, fear, or struggle. This shift in mindset allows for more open and effective communication among family members, thus facilitating emotional exchange and support. During the interviews, the patients shared how they emerged from their

struggles and gradually accepted the reality of their illness. Many patients expressed that they benefited from the support of their family members, which enhanced their confidence and sense of meaning in life in overcoming their illnesses. P3: "I'm getting old, and some parts of my body are not good. This is normal. I used to take care of my family, and now my family takes care of me. Thank to them." Some patients reported that having faith helped them find the strength to maintain a positive mindset to accept and face their illnesses. P13: "I sometimes want to give up, but when I think that this is a test from the bodhisattva. I believe in Buddhism. I think that this might be a test from the bodhisattva. He is testing me. I have to get through it. I can't give up." Some patients viewed the disease with an open-minded outlook on life, seeing it as part of the natural course of life and accepting it as an inevitable choice. P6: "The ancients said that at sixty, you know the destiny of heaven, and at my age, it is just letting nature take its course."

**Cherishing the present and regaining hope.** While facing their illness and accepting reality, the patients showed a positive mindset of cherishing the present moment. Patients actively cooperated with the disease treatment and were full of hope for the future. P11: "I also read some books about the disease after I got sick. The more specific I know, the less scared I am. Now that medicine is so advanced, I should have confidence in myself and be more positive. One has to have hope to have a future." A positive coping mindset guided them to expand their focus from disease treatment to multiple dimensions such as family planning and good things in daily life. Examples include watching an interesting film, enjoying the scenery outside the window, enjoying family and friendships, and participating in meaningful activities. Through these activities, they can improve their quality of life after cancer and live a full and happy life in the remaining time. P5: "Life is just one stage at a time. Now there is a stage of being sick and getting treatment, so I'll just treat the disease properly. I am now treating my illness well and still can enjoy my life. I do fishing, play mahjong, and spend time with my wife at home." Some patients expressed the profound impact of the disease on their outlook on life, their reverence and appreciation of life, and their attentive perceptions of people and scenes in daily life. P10: "The disease has made me really realize how short and precious life is. I now think that one more day of life is one more day of earning, so every day of life should be lived well. I should appreciate and treat people and scenery well." At the same time, the attitude of "cherishing the present" helps patients value the time they spend with their spouses and family members, deepen their emotional communication, and provide spiritual comfort, thereby strengthening family cohesion. The companionship of family members is a source of strength for patients, helping them cope with cancer and cherish the time they spend with their family members. P3: "Although I am sick, and sometimes I do not feel well. But I have my family who is always there for me, takes care of me, always

**Table 2**  
The main themes of the interviews.

Main themes	Sub-themes	Quotations
Patient coping	Struggling	P1: "I have parents and children to take care of. What should I do if I am really sick?" P2: "When I knew I was sick, I felt sad and scared. Having recently retired, I had hoped to indulge in a fulfilling life. How did this disease suddenly manifest? I was really pessimistic, wondering if I was going to die." P4: "I went to a lot of hospitals and just didn't believe I had it."
	Acceptance of reality	P2: "My husband and my family all enlightened me. My daughter and son-in-law both quit their jobs to accompany me. I just want me to pull myself together and treat me well. I can't help my family like do any housework. But at least I don't want burden them anymore." P13: "I feel like giving up sometimes. I believe in Buddhism. I think this is probably the Bodhisattva's test for me. With the blessings of the Bodhisattva, I will persevere and never give up." P14: "I am currently in a positive state of mind. The inevitability of birth, old age, illness, and death is an inherent part of life that we must always embrace. At first, my wife even told the doctor not to tell me the truth. I am not concerned. I will adapt to the situation and comply with the treatment protocol under the guidance of medical professionals"
	Cherishing the present and regaining hope	P4: "I'm now thinking of treating it well and cooperating with the doctors." P5: "I still hope that the illness will stabilise, and when it does I would like to go and live in the mountains with my family. But I have to wait until the illness is stabilized, I can't think too much about it now. Right now it's all about good treatment." P9: "I have previously undergone treatment in our hometown of Wen Zhou. And I later considered that the hospitals in Shang Hai might offer better medical care. I wanted to cure it, so I came here." P12: "Cherish the time I have now and spend time with my family more than anything else."
	Rebuilding family life	P6: "I'm in a stable condition. On the days when I didn't have chemotherapy, I had a lot to do at home. I got up at 5 o'clock in the morning to buy vegetables. After coming back, I went out fishing with my friends. I play cards with my wife in the afternoon. This way of life is indeed satisfactory; Being able to continue with my daily life fills me with gratitude." P8: "The uncertainty of tomorrow's circumstances prompts me to focus on maintaining a healthy lifestyle by prioritizing proper nutrition, sufficient rest, and adhering to medical advice." P15: "I didn't do housework before I was sick. Now I will not go out. Every day at home, I watch TV, do chores, pick vegetables, hang laundry After experiencing housework, I have come to realize the arduous and laborious nature of it. Therefore, I am immensely grateful to my wife for her years of dedication."
Spouse coping	Accepting and understanding the patient	S4: "He loses his temper sometimes, and he gets a little sick from the chemo, but there's nothing he can do about it, right? I will not be angry with him, and I know he is suffering." S9: "When he first got sick, we really didn't understand anything. I think he's been in good health and how could he get sick? I can do nothing. I have to accept the truth. We cooperate with the doctors and nurses. I will ask them if I have some question, and I also ask for advice from patients in the same ward." S11: "It does have an impact on our lives. But life is not always easy, there will always be adversity, and that's what I told my husband. I told him we had to learn to accept and deal with it." S12: "He is introverted and doesn't talk much. I took the initiative to talk to him more about the people and strange things I met during the day, so that he didn't feel too lonely."
	Providing active support	S6: "I accompany my husband to the hospital every time. I get up early in the morning for fear of traffic jam. I got up at about 4 o'clock and did cooking for him." S8: "When she first knew she had the disease, she was very afraid and cried every day. We've been married for 20 years, and it hurts me to hear that she's sick. I'll do anything as long as she's cured." S11: "I pat him on the back every day and he feels very comfortable. I learned back slapping online. This exercise is very effective. He sometimes low back pain. He cannot sleep well. Then I pat him back from top to bottom. It always takes me over half an hour to fall asleep, while he can doze off in no time." S13: "He loves the temple. When he was young, he liked to go, no matter how busy he was. I always go with him to light incense. His hobby is my hobby and we are together all the time. Although I prefer to chant at home than go to the temple."
	Adjusting roles and sharing of family responsibilities	S2: "My main goal right now is to serve her. Her daughter takes her out to see a doctor, but she relies on me at home." S6: "He used to be all about me. Now our roles are reverse d. I need to have more responsibility since he got sick." S12: "I will be a bit busier than before. I have to take care of his diet and living. Also I have to take care of my grandchildren."
Dyadic coping	Cognitive consistency of changes in family functioning	S9: "After he was sick, I told him to see a doctor well. At home we discuss the most mainly to see a doctor ah, take medicine and so on. We watch short video together to learn some disease knowledge. And now our goal is that the doctor can give us a decent treatment. Of course, it will takes us a lot of money. But, that's ok. Being able to cure him is the most important thing for us." S13: "He used to do all the shopping and cooking. I did all the housework when he was ill. He can't eat meat. Then I don't eat meat with him. I lost 20 pounds by not eating meat. I love spicy food. But he cannot eat spicy food, so I do not eat. He has become fond of mung bean sprouts, and so do I. He is good temper quite understand me. I am really grateful to him."
	Stress communication	S2: "I told her that we can go to Shanghai and found the best hospital to treat her. I encourage her that she just needs to trust me and herself. Everything will be fine." P6: "I sometimes depressed or lose my temper. She will not be angry with me. She always analyze the current situation with me and tell me what I could do next. It gives me peace of mind and calms my emotions." S8: "He hopes to go to work when his condition is stable. I told him not to worry about these, I will support him." S5: "Although life can be a little restless. We are very used to the current family model, including my son."
	Family adjustment and adaptation based on shared cognitions	S10: "I pay more attention to his feelings than before, take care of him a bit more than before, as long as he is relaxed, I am content. I'll still ask him about the family arrangements first. I respect his opinion." P12: "We consult each other about problems. Everything at home is well arranged."

prepares good food for me, and gives me confidence. I am grateful to have them with me, so I will treat myself well." The patient's positive mindset helps family members readjust their respective roles and division of responsibilities and reorganize them as important so that family operations can gradually return to an orderly state.

**Rebuilding family life.** When patients reach this stage, it indicates significant progress in psychological adjustment, physical rehabilitation, and social functioning, a process that has positive implications for maintaining and enhancing family functioning. Patients indicate that they participate in the functioning of the family when their condition permits, and they may reassess their roles in the family and seek new ways to contribute to the family, thereby improving family functioning. P3: "I am fine now, with regular follow-ups. I can play tai chi with my friends now. I also do some small crafts which can subsidize the family." In the process of experiencing their new roles, their new understanding and perception of illness, attitude toward life, and the resultant change in their mode of living with their family highlighted the value of family time. P7: "Being sick has given us a deeper understanding of the importance of health that we were previously unfamiliar with. In the past, I was too busy to spend time with my family; but now, I am able to cherish and make more time for them." Some patients also expressed their appreciation for their spouses, sublimating the bond between husband and wife. P13: "Since getting sick, she has been there for me when I'm sick. Thanks to her so much. (Patient's eyes were moist)." Therefore, professional health-care guidance and social support are important in this process. In the future, health-care professionals can develop personalized and relevant care plans according to patients' needs and preferences; encourage patients and family members to openly discuss their feelings, needs, and expectations; and listen, encourage, and provide emotional support to help them cope with the stress brought about by the disease, thereby improving their quality of life and facilitate the recovery of family functioning.

#### Theme 2: spouse coping

In this study, spousal coping refers to the support given to a patient by his or her spouse to help the patient cope with the difficulties and challenges of advanced LC, adjust to changes in each other's family roles, and strive to maintain and stabilize healthy family relationships.

**Accepting and understanding the patient.** For patients with advanced LC, spousal understanding and acceptance are important cornerstones in maintaining and enhancing family functioning, which not only helps meet the patient's needs at the individual level but also contributes significantly to the family's ability to effectively cope with major changes as a whole. During the course of the patient's illness, understanding and accepting the patient's emotional fluctuations because of the illness and treatment demonstrated empathetic care for the patient's suffering. S2: "I saw that she was not feeling well during chemotherapy, and it was hard for me too. Retirement should be enjoying happiness and how to suffer this." The psychological process of facing a patient's sudden illness, from initial confusion and acceptance to positive adjustment to family life, reflects the open acceptance of the patient's condition and proper response to living arrangements. S8: "I also got used to it slowly. Life was disrupted in the beginning, but luckily, I had the support of my family." Spouses conveyed love and support by providing a listening ear, words of encouragement, hugs, or other means. Spouses were able to recognize the importance of difficulties needing to be accepted and coped with together and demonstrated their role as moral support for the patient. S4: "I told him I was with him. Tell him not to worry."

**Providing active support.** Given the multiple physical and psychological stressors faced by patients with advanced cancer, having a sense of being loved and accompanied is crucial. Positive support from a spouse not only helps the family function under the stress of the disease but also helps them become more resilient and united through challenges and maintains an atmosphere of harmony and stability within the

family. The support provided by the spouses was immense. There are daily living arrangements such as dietary care and accompanying to medical appointments. S12: "Yesterday, my doctor informed us to come for a chemotherapy. I helped him pack and prepare the food quickly. Always afraid, I'll forget something." Learning professional knowledge related to the treatment of the disease and care also alleviates the patient's physical discomfort. S5: "When he had his first chemo treatment, he was very uncomfortable. It freaked me out. I read many books and consulted with other patients. I hope I can take better care of him." Moreover, there were consolations, companionship, and tolerances that included spirituality. S13: "Children now have their families. We only have each other, so, of course, we should support and take care of each other." These seemingly unusual and insignificant details soothe the patient's heart and encourage the couple to become stronger and more stable after the challenge.

**Adjusting roles and sharing of family responsibilities.** Patients with LC are unable to work or find it difficult to take care of household chores because of their physical condition, all of which cause the original family order to be interrupted. A new family norm needs to be reconstructed, and spouses need to change their family roles and take responsibility for caring for the patient (e.g., cooking for the patient, cleaning the house, and helping the patient perform activities of daily living). S3: "It's basically I who do the whole household chores now. She used to do all the shopping and cooking at home. I only helped wash the dishes and mop the floor. Now we have switched. I do most of the work, and she helps me sometimes. I need to learn a lot of new life skills." Other responsibilities include sharing financial stress, establishing a good family atmosphere, and participating in family decision-making to minimize the impact of illness on the family. The spouses expressed that it is natural for couples to share their experiences when they encounter difficulties. S15: "Our family is a very traditional family, where the man is in charge of the outside and the woman is in charge of the inside. Now he is sick, so we discuss a lot of things. Before, we probably listened to him more." Spouses' timely adjustment of roles and active sharing of family responsibilities not only ensures normal day-to-day functioning of the family but also promotes emotional connection, psychological adjustment, and overall adaptability among family members, further strengthening the functioning of the family as the basic unit of society.

#### Theme 3: dyadic coping

In the interviews, the couples shared experiences of supporting and coping with each other. They communicated and gained mutual understanding and recognition. They shared a common view of illness and family life and considered LC "our" disease, which meant that they believed in a common destiny in difficult times and the need for joint use in the treatment of the disease.

**Cognitive consistency of changes in family functioning.** Couples with highly congruent perceptions of changes in family functioning were more likely to make consistent decisions and take concerted action to solve problems. S11: "We were high school schoolmates and had always talked about everything. About his illness, we discussed it. We are both older people; what haven't we experienced. We leave the treatment to the doctors, and everything else in our lives goes on as usual." This helps alleviate conflicts arising from differences in viewpoints and enhances the family's problem-solving skills. This not only strengthens the couple's relationship but also contributes to the adaptability and stability of the family as a whole so that it can cope with life changes and challenges more effectively. Shared cognition can help couples better understand each other's feelings and needs and provide more effective psychological support. S15: "There are definitely changes, mainly financial pressures. I have to rely on myself for a lot of things in life. And he knows that, so he always says that when he gets better soon, he can go out and work." Consistent cognition also provides the basis for both parties to work together on psychological adjustment, and when facing illnesses, life stress, and other disturbances, they can work together to overcome difficulties.

**Stress communication.** However, some patients and their spouses reported difficulties with communication. P5: “We don’t talk too much about things in the future. After all, the condition is not yet stabilized.” S9: “He sometimes doesn’t feel very well after chemotherapy and has a bad appetite. But he doesn’t really want to talk about it.” Nevertheless, more patients saw their spouse as the first person to whom they wanted to talk to. They are more likely to talk about daily life chores and financial situations. Open and direct modes of stress communication have positive effects on relieving patients’ emotions and clarifying their coping strategies. P11: “I spent a lot of money after I got sick, and the chemotherapy drugs are all very expensive. She told me not to worry, and we got support from family.” Spouses understood and were willing to listen to the patients’ worries, which they saw as a way to relieve stress. S4: “He used to be a leader. Suddenly he got sick and needed me to look after him. He always felt sorry. I would hug him and tell him I was there for him and not to feel bad.” Stress communication between couples is essential for keeping the family functioning well. It enhances the overall adaptability and stability of the family by increasing understanding, improving mental health, and clarifying the division of roles.

**Family adjustment and adaptation based on shared cognitions.** Couples’ positive adjustment and adaptation based on shared cognition refers to a synchronized understanding of the disease between couples, implying that couples positively adjust their behaviors and attitudes to the new situation based on their shared cognition in the face of difficulties and challenges. Positive adaptation based on shared perceptions contributes to the couple’s optimism in the face of the disease and acceptance of the current situation in the family. S5: “Whether this disease is curable or not, we still can enjoy our life. We just feel that if he can live one more month, we can win one more month. That’s what we all think.” Shared perceptions also help assist patients in effective family regulation with their spouses. P14: “We talk things out when we have difficulties, and we ask for help from other family members and friends when we have difficulties at home. We don’t carry on hard; there is no need.” Shared perceptions imply that couples flexibly adjust the division of roles and share responsibilities in accordance with each other’s situations, needs, and dynamic changes in the family environment to ensure that all family affairs run in an orderly manner; avoid excessive stress on individual

members; and maintain good family functioning. Couples hold a consensus view that such consensus helps them establish common goals and work together to achieve them. When faced with major life stressors, a couple’s ability to regulate the family based on shared perceptions can help the family system quickly adapt to and overcome difficulties and enhance the stress resistance and resilience of the family as a whole.

**Discussion**

This study explored the internal experiential processes of patients with advanced LC and their spouses in coping with changes in family functioning caused by the disease. Fig. 1 shows that patients with LC and their spouses exhibit an evolving and interacting coping process in response to changes in family functioning. This study revealed that family functioning in patients with advanced LC may be affected to a more significant degree and at a faster rate than in patients with other cancers such as breast and gastric cancers, which is related to the rapid progression and poor prognosis of advanced LC. This finding is consistent with the results of other studies conducted from a dichotomous perspective,<sup>17-19</sup> which showed that the advanced stage of LC had a significant impact on the lifestyle, interactions, and family structure of the patients.

In terms of coping strategies, the patients and their spouses adopted complementary approaches. Patients focus on how to come to terms with a sense of “illness and uncertainty about the future” and rebuild confidence in “returning to a normal family life.”<sup>20</sup> qualitative study suggests that struggling with and accepting “awareness of illness and death” can help patients adjust to the illness and its problems in their daily lives, and that patients are able to move on and focus on their lives. However, spouses cope indirectly with the shock of illness, mainly by understanding and supporting the patient and adjusting their roles within the family.<sup>21</sup> noted that caregivers of patients with cancer were more attentive to patients’ needs and tried to balance them with family life, such as paid work and child-rearing. Similarly, Bodschwinna et al.<sup>22</sup> reported that patients were more focused on strategies directly associated with the diagnosis, while spouses were more focused on peripheral tasks

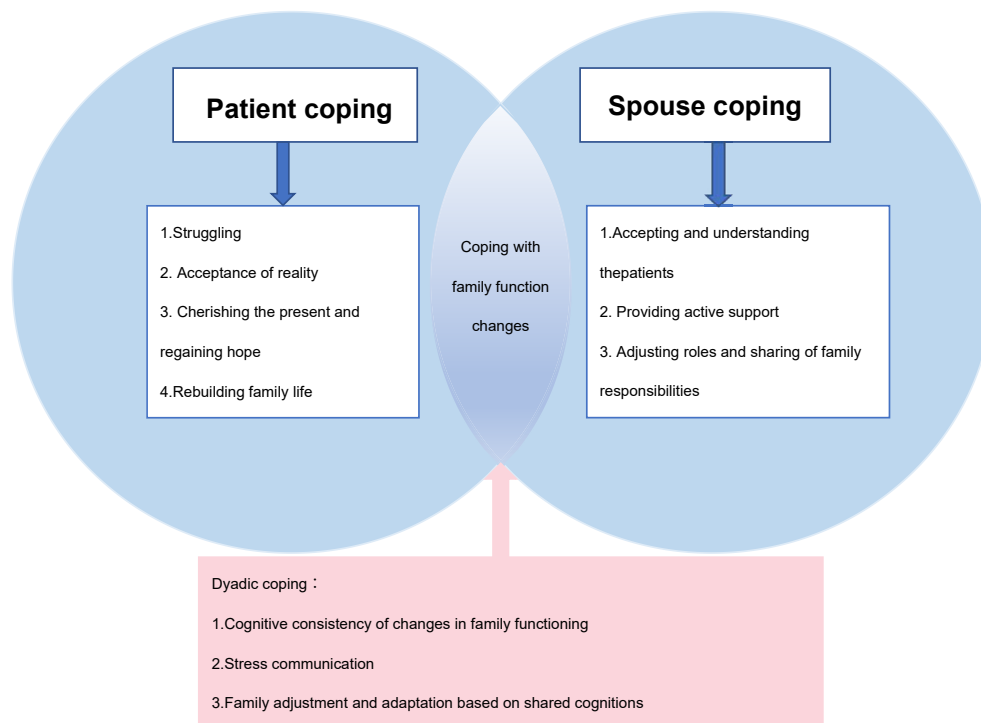


Fig. 1. On the relationship diagram for patients with advanced LC and their spouses in coping with changes in family functioning. LC, lung cancer.

and returning to duties of daily life. In terms of dyadic coping, the present study emphasizes that couples with advanced LC cope with changes in family functioning based on shared perceptions of the disease and changes in daily life, which is the basis of shared coping, in line with the concept of couple congruence in the binary coping theory.<sup>23</sup> Dyadic coping congruence has been shown in multiple studies on cancer to be key to maintaining stability in marital relationship.<sup>24,25</sup> In women with breast cancer,<sup>26</sup> particularly in supportive coping (including emotional support), congruence has a positive effect on patients' emotional adjustment. In patients with colorectal cancer, spousal supportive behaviors have a better effect on the marital relationship than spousal-perceived congruence of emotional adjustment. A study on spousal coping in patients with hematological neoplasms found that communication congruence in couples was dynamic, and that compared with late diagnosis, patients with early diagnosis of cancers had better communication congruence.<sup>27</sup> In this study, cognitive congruence relied on couples with congruent perceptions of family changes because of LC and positive communication. This helps couples adopt supportive coping styles, make appropriate family adjustments to accommodate changes in family roles, and contribute to improving family functioning.

This study further refined the coping strategies of patients with advanced LC and their spouses. Overall, patients with advanced LC and their spouses were dominated by positive coping styles. The most described coping style was facing reality; acceptance and understanding were the most common coping styles for spouses, and the positive coping styles of patients and spouses in coping with family functioning could be observed in the coping styles of cherishing the present moment, regaining hope, positive support, adjusting roles, sharing family responsibilities, and communicating about stress. Traditional Chinese culture, religious beliefs, and the concept of predestination can help patients and their spouses adjust their mindsets to change in a timely manner. This is similar to the results of previous studies.<sup>22</sup> In a qualitative study exploring the use of different strategies by couples of patients with hematological cancer to cope with cancer and the associated burden, the results referred to the positive remodeling of couples, with the majority of patients and spouses engaging in different types of positive attitudes and remodeling. Positive remodeling was expressed in terms of hope and confidence and various plans for the future.<sup>28</sup> explored the successful strategies used by patients with advanced cancer and noted that researching the positive coping strategies of patients and spouses is important to help with the development of a life strategy; although living with cancer can be devastating, by understanding the experience and looking for a way out, it can help patients cope well.<sup>29</sup> pointed out that Chinese patients use philosophical perspectives from traditional cultural thought to help them accept their disease, adjust their mindsets about life changes, and openly face changes from the role of primary caregiver or pillar of the family to the role of needing care. When patients give meaning to their illness on a psychological level, they can stimulate inner strength to cope positively with the shift in family functioning and face the various challenges caused by their illness.<sup>30</sup>

#### *Understanding the impermanence of life and accepting change*

Accepting the uncertainty of life is the key to the psychological construction of patients with cancer, particularly for those with advanced LC and their spouses. They need to recognize the uncontrollability of disease development and face changes hand-in-hand, share emotions and responsibilities, and adapt to the condition with a flexible family functioning. Nursing care provides traditional cultural ideas to guide patients and their spouses, alleviates fear through meditation and group activities, enhances psychological adaptability, and promotes family harmony.

#### *Regaining hope and finding meaning in life*

During interviews, it was found that when patients hoped for their present and future lives, they were able to adopt more positive coping strategies, such as following medical advice, participating in rehabilitation therapy, and maintaining good lifestyle habits. Patients and their spouses

can rekindle their passion for life and maintain and enhance family functions by encouraging them to participate in patient exchange activities; providing guidance on physical and mental health management, such as pain management; nutritional counseling, and rehabilitation exercises; and supplementing them with humane care, such as music therapy.

#### *Positive expression and promotion of understanding*

During interviews, it was found that effective communication between patients and their spouses allowed them to better share their feelings, fears, hopes, and needs, thus enhancing their understanding of each other's inner worlds. Patients with advanced LC experience greater psychological pressure and seek support through effective stress communication. Health-care professionals can provide training on communication skills, guide couples to understand that changes in family functioning are a common experience rather than a personal problem, provide psychological support in the form of case counseling and group activities, and jointly plan family support programs.

#### *Establishing common cognition and strengthening binary coping*

Common cognition and coordinated coping are the basis for couples with advanced LC to cope effectively with changes in family functioning. By providing comprehensive disease education, skills training, and psychological support, couples can help develop a common understanding and improve the efficiency of cooperation in the face of disease challenges. This includes understanding disease progression, mastering proper care methods, receiving psychological counseling, and assisting with role positioning and responsibility sharing. The aim was to improve dichotomous coping ability and maintain stable and cohesive family functioning through a series of care measures.

#### *Strengths and limitations of the study*

This study validates and extends established research by highlighting the diverse positive strategies and focus of patients with advanced LC and their spouses in coping with changes in family functioning and highlights the need for personalized support and services in nursing practice to address the different needs of patients and spouses. This study provides important empirical evidence and new perspectives for understanding the dynamics of family functioning in patients with advanced LC and for developing effective interventions. A potential limitation of this study is that our sample consisted mainly of individuals with stable disease and harmonious families; therefore, a positive family environment and reduction in adverse effects (e.g., chemotherapy-related symptoms) may help reduce the negative coping styles adopted by patients. In addition, because this study focused only on patients with advanced LC and their spouses, its applicability to other types of cancer may be limited.

#### **Conclusions**

Interviews with 15 patients with advanced LC and their spouses about the ways of coping with changes in family functioning and the process of debugging after cancer have clarified that couples who are coping with changes in family functioning in patients with advanced LC is a dynamic process, which is influenced by traditional cultural ideas, family concepts, and religious beliefs. Three key themes were derived from the collected data: (1) patients' coping, which included struggling, accepting reality, Cherishing the present and regaining hope, and rebuilding family life; (2) spouse coping, which included accepting and understanding of the patient, providing active support, and adjusting roles and sharing of family responsibilities; and (3) dyadic coping, which included cognitive consistency of changes in family functioning, stress communication, and family adjustment and adaptation based on shared cognitions. Finally, a relationship map was developed between patients with advanced LC and their spouses regarding coping with changes in family functioning. This



provides a theoretical basis for clinical health-care professionals to conduct in-depth family or dichotomous coping-centered research methods and experiences.

### Ethics statement

The study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the ethics committee of the hospital (IRB No. Q23-411). Informed consent was obtained from all participants before the investigation. The rights, secrecy, and anonymity of the participants were guaranteed. The names of the couples were replaced with unique IDs (e.g., P1 and S1).

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### CRedit authorship contribution statement

Yumei Li: Conceptualization, Methodology, Supervision. Xiaoting Pan: Data curation, Writing - Original draft preparation, Formal analysis, Investigation, Writing - review & editing. Yingzi Yang: Software, Writing - review & editing. Xinxin Chen: Data curation, Software. Weichao Huang: Resources. Junyan Ye: Resources. Ying Huang: Resources. All authors had full access to all the data in the study, and the corresponding author had final responsibility for the decision to submit for publication. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

### Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Declaration of generative AI and AI-assisted technologies in the writing process

No AI tools or services were used during the preparation of this work.

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### Appendix A. Supplementary data

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### References

- Global cancer observatory: Cancer today. *International Agency for Research on Cancer*; 2022. [accessed on 20 March and August 2024]. Available from: <https://gco.iarc.fr/today>.
- Zheng RS, Chen R, Han BF, et al. Analysis of the prevalence of malignant tumors in China in 2022. *Zhonghua zhong liu za zhi [Chinese Journal of Oncology]*. 2024;46(3): 221–231. <https://doi.org/10.3760/cma.j.cn112152-20240119-00035>.
- General Office of the National Health Commission. Guideline for diagnosis and treatment of primary lung cancer (2022 edition). *Chinese Journal of Peking Union Medical College*. 2021;13(4):549–570. (in Chinese).
- Wang N, Mengersen K, Tong S, Kimlin M, Zhou M, Hu W. Global, regional, and national burden of lung cancer and its attributable risk factors, 1990 to 2017. *Cancer*. 2020;126(18):4220–4234. <https://doi.org/10.1002/cncr.33078>.
- Huang BS, Lin CY, Hung TM, et al. Factors influencing family function in spousal caregivers of head and neck cancer patients within 6 months post treatment. *Support Care Cancer*. 2022;30(9):7313–7322.
- Kuon J, Vogt J, Mehnert A, et al. Symptoms and needs of patients with advanced lung cancer: early prevalence assessment. *Oncol Res Treat*. 2019;42(12):650–659. <https://doi.org/10.1159/000502751>.
- van de Wiel M, Derijcke S, Galdermans D, et al. Coping strategy influences quality of life in patients with advanced lung cancer by mediating mood. *Clin Lung Cancer*. 2021;22(2):e146–e152. <https://doi.org/10.1016/j.clc.2020.09.010>.
- van Roij J, Rajmakers N, Kloover J, et al. Dyadic coping and its association with emotional functioning in couples confronted with advanced cancer: results of the multicenter observational eQuiPe study. *Psycho-Oncol*. 2022;31(9):1545–1554. <https://doi.org/10.1002/pon.5961>.
- Bodenmann G. Dyadic coping and its significance for marital functioning. In: Revenson TA, Kayser K, Bodenmann G, eds. *Couples Coping with Stress: Emerging Perspectives on Dyadic Coping*. Washington, DC: American Psychological Association; 2005:33–49. <https://doi.org/10.1037/11031-002>.
- Lyons KS, Gorman JR, Larkin BS, Duncan G, Hayes-Lattin B. Active engagement, protective buffering, and depressive symptoms in young-midlife couples surviving cancer: the roles of age and sex. *Front Psychol*. 2022;13:816626. <https://doi.org/10.3389/fpsyg.2022.816626>.
- Ernst J, Mehnert A, Dietz A, Hornemann B, Esser P. Perceived stigmatization and its impact on quality of life – results from a large register-based study including breast, colon, prostate and lung cancer patients. *BMC Cancer*. 2017a;17(1):741. <https://doi.org/10.1186/s12885-017-3742-2>.
- Gibbons SW, Ross A, Wehrlein L, Klageholz S, Bevans M. Enhancing the cancer caregiving experience: building resilience through role adjustment and mutuality. *Eur J Oncol Nurs*. 2019;43:101663.
- Ernst J, Hinz A, Niederwieser D, Döhner H, et al. Dyadic coping of patients with hematologic malignancies and their partners and its relation to quality of life a longitudinal study. *Leuk Lymphoma*. 2017b;58(3):655–665.
- DeSantis L, Ugarriza DN. The concept of theme as used in qualitative nursing research. *West J Nurs Res*. 2000;22(3):351–372. <https://doi.org/10.1177/019394590002200308>.
- Abulaiti B, Zhang X, Guan T, et al. The dyadic care experiences of elderly individuals with disabilities and caregivers in the home setting from the perspective of family resilience: a qualitative study. *Front Psychiatr*. 2022;13:963101. <https://doi.org/10.3389/fpsyg.2022.963101>.
- Guba EG. Criteria for assessing the trustworthiness of naturalistic inquiries. *Educ Commun Technol J*. 1981;29:75–91. <https://doi.org/10.1007/BF02766777>.
- Hsieh CC, Lin ZZ, Ho CC, et al. The short- and long-term causal relationships between self-compassion, trait mindfulness, caregiver stress, and depressive symptoms in family caregivers of patients with lung cancer. *Mindfulness*. 2021;12(7):1812–1821. <https://doi.org/10.1007/s12671-021-01642-4>.
- Li Q, Lin Y, Chen Y, Loke AY. Mutual support and challenges among Chinese couples living with colorectal cancer: a qualitative study. *Cancer Nurs*. 2018;41(5):E50–E60. <https://doi.org/10.1097/NCC.0000000000000553>.
- Li C, Yuan J, Huang X, Zhang S, Hong Y, Zhong J. Correlation between depression and intimacy in lung cancer patients and their family caregivers. *BMC Palliat Care*. 2022;21(1):99. <https://doi.org/10.1186/s12904-022-00992-7>.
- Arantzamendi M, García-Rueda N, Carvajal A, Robinson CA. People with advanced cancer: the process of living well with awareness of dying. *Qual Health Res*. 2020; 30(8):1143–1155. <https://doi.org/10.1177/1049732318816298>.
- Heynsbergh N, Botti M, Heckel L, Livingston PM. Caring for the person with cancer and the role of digital technology in supporting carers. *Support Care Cancer*. 2019; 27(6):2203–2209. <https://doi.org/10.1007/s00520-018-4503-8>.
- Bodschwinna D, Weissflog G, Döhner H, et al. Couples coping with hematological cancer: support within and outside the couple - findings from a qualitative analysis of dyadic interviews. *Front Psychol*. 2022;13:855638. <https://doi.org/10.3389/fpsyg.2022.855638>.
- Liu W, Lewis FM, Oxford M, Kantrowitz-Gordon I. Common dyadic coping and its congruence in couples facing breast cancer: the impact on couples' psychological distress. *Psycho-Oncol*. 2024;33(3):e6314. <https://doi.org/10.1002/pon.6314>.
- Meier F, Cairo Notari S, Bodenmann G, Revenson TA, Favez N. We are in this together - aren't we? Congruence of common dyadic coping and psychological distress of couples facing breast cancer. *Psycho-Oncol*. 2019;28(12):2374–2381. <https://doi.org/10.1002/pon.5238>.
- Stulz A, Favez N, Flahault C. Emotional and sexual adaptation to colon cancer: perceptual congruence of dyadic coping among couples. *Front Psychol*. 2022;13: 802603. <https://doi.org/10.3389/fpsyg.2022.802603>.
- Krok D, Telka E, Morón M. Marital satisfaction, partner communication, and illness acceptance among couples coping with breast cancer: a dyadic approach. *Psycho-Oncol*. 2023;32(8):1240–1247. <https://doi.org/10.1002/pon.6174>.
- Siminoff LA, Wilson-Genderson M, Barta S, Thomson MD. Hematological cancer patient-caregiver dyadic communication: a longitudinal examination of cancer

- communication concordance. *Psycho-Oncol.* 2020;29(10):1571–1578. <https://doi.org/10.1002/pon.5458>.
28. Walshe C, Roberts D, Appleton L, et al. Coping well with advanced cancer: a serial qualitative interview study with patients and family carers. *PLoS One.* 2017;12(1): e0169071. <https://doi.org/10.1371/journal.pone.0169071>.
29. Sun L, Liu JE, Ji M, Wang Y, Chen S, Wang L. Coping with multiple chronic conditions among Chinese older couples: a community of shared destiny. *Geriatr Nurs.* 2022;48:214–223. <https://doi.org/10.1016/j.gerinurse.2022.09.019>.
30. Horn AB, Zimmerli L, Maercker A, Holzer BM. The worse we feel, the more intensively we need to stick together: a qualitative study of couples' emotional co-regulation of the challenge of multimorbidity. *Front Psychol.* 2023;14:1213927. <https://doi.org/10.3389/fpsyg.2023.1213927>.