



Dyadic Coping in Colorectal Cancer Patient-Caregiver Dyads: A Scoping Review of Influencing Factors and Interventions from a Systemic-Transactional Perspective*

การเผชิญปัญหาแบบคู่สัมพันธ์ในผู้ป่วยมะเร็งลำไส้ใหญ่และผู้ดูแล: การทบทวน
แบบกำหนดขอบเขตของปัจจัยที่มีอิทธิพลและการจัดการ
จากมุมมองปฏิสัมพันธ์อย่างเป็นระบบ*

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Abstract

Colorectal cancer is the third most common cancer globally; it affects both patients and their caregivers. Dyadic coping (DC) refers to the process in which partners jointly manage stressors within their relationship. Dyadic coping represents a critical interpersonal process through which patient–caregiver dyads jointly manage cancer-related stress. However, existing evidence on its influencing factors, the shared illness and relational experiences of these dyads, and targeted interventions remains fragmented and lacks systematic theoretical integration. Based on the systemic-transactional theory, this scoping review aims to synthesize evidence on factors influencing DC, dyadic experiences, interventions, and intervention efficacy among colorectal cancer (CRC) patients and their caregivers. Following the JBI scoping review framework and PRISMA-ScR guidelines, nine databases (CNKI, Wanfang, CBM, VIP, PubMed, Web of Science, Cochrane Library, CINAHL, Embase) were systematically searched for studies published between January 1995 and April 2025. In accordance with the PICOS criteria, data from included studies were processed, with study screening, data extraction, and thematic analysis independently completed by two reviewers.

This scoping review included results from a total of 22 articles (10 quantitative, 2 qualitative, 10 intervention studies), with 18 originating from China, reflecting research priorities in high-burden regions. DC-related factors were categorized into individual, relational, and environmental levels based on the systemic-transactional model (STM), including demographic characteristics; disease stage; stoma surgery and treatment-related burden; psychological distress; communication patterns; social support; and cultural values. Four qualitative themes consistent with STM were identified: support systems and interaction (common DC), challenges (stress communication), family adaptation (positive DC), and social resource utilization (environmental context). Interventions were classified into three types: STM-based, dyadic illness management, and relationship-strengthening, all of which improved DC skills, relationship quality, and psychological well-being, with high feasibility and acceptability.

This scoping review synthesized evidence regarding DC in CRC patient-caregiver dyads, clarifying multilevel associated factors, DC experiences, and effective intervention approaches. Cultural differences underscore the necessity of culturally adapted interventions in Chinese clinical settings. Future research should develop culturally appropriate programs, investigate policy-level support, and integrate DC assessment and skills training into routine oncology practice to improve outcomes for both patients and caregivers.

Keywords: Caregivers; Colorectal cancer; Dyadic coping; Scoping review; Systemic-transactional theory

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บทคัดย่อ

มะเร็งลำไส้ใหญ่และทวารหนัก เป็นมะเร็งที่พบบ่อยเป็นอันดับสามของโลก โดยส่งผลกระทบต่อผู้ป่วยและผู้ดูแล ผู้ป่วย การเผชิญปัญหาแบบคู่สัมพันธ์ หมายถึง กระบวนการที่คู่สัมพันธ์ร่วมกันจัดการกับความเครียดที่เกิดขึ้นภายในความสัมพันธ์ของตน การเผชิญปัญหาแบบคู่สัมพันธ์ เป็นกระบวนการปฏิสัมพันธ์ระหว่างบุคคลที่มีสำคัญอย่างยิ่ง ซึ่งคู่ผู้ป่วยและผู้ดูแลร่วมกันจัดการกับความเครียดที่เกี่ยวข้องกับโรคมะเร็ง อย่างไรก็ตาม หลักฐานที่มีอยู่ในปัจจุบันเกี่ยวกับปัจจัยที่มีอิทธิพลต่อการรับมือแบบคู่ ประสิทธิภาพร่วมด้านความเจ็บป่วยและความสัมพันธ์ของคู่เหล่านี้ รวมถึงการจัดการที่ตรงเป้าหมาย ยังคงกระจุกกระจายและขาดการบูรณาการทางทฤษฎีอย่างเป็นระบบ การทบทวนขอบเขตงานวิจัยนี้อาศัยกรอบทฤษฎีเชิงระบบ-ปฏิสัมพันธ์ เพื่อสังเคราะห์หลักฐานเกี่ยวกับปัจจัยที่มีอิทธิพลต่อการเผชิญปัญหาแบบคู่สัมพันธ์ ประสิทธิภาพของคู่สัมพันธ์ รูปแบบการจัดการ และประสิทธิผลของการจัดการในผู้ป่วยมะเร็งลำไส้ใหญ่และผู้ดูแล ตามกรอบการทบทวนขอบเขตของสถาบันโจแอนนาบริกส์ (JBI) และแนวทาง PRISMA-ScR ผู้วิจัยได้สืบค้นงานวิจัยอย่างเป็นระบบจาก 9 ฐานข้อมูล ประกอบด้วย CNKI, Wanfang Data, CBM, VIP, PubMed, Web of Science, Cochrane Library, CINAHL และ Embase เพื่อค้นหาการศึกษาที่เกี่ยวข้องซึ่งตีพิมพ์ระหว่างเดือนมกราคม ปี ค.ศ. 1995 ถึง เดือนเมษายน ปี ค.ศ. 2025 กำหนดเกณฑ์การคัดเลือกโดยใช้กรอบ PICOS ผู้วิจัยสองคนคัดกรองบทความอย่างอิสระ สกัดข้อมูล โดยใช้แบบฟอร์มมาตรฐาน และวิเคราะห์ข้อมูลเชิงเนื้อหา

ผลลัพธ์การทบทวนแบบกำหนดขอบเขต จากการสกัดข้อมูลบทความทั้งหมด 22 บทความ (10 บทความศึกษาเชิงปริมาณ 2 บทความศึกษาเชิงคุณภาพ และ 10 บทความศึกษาการจัดการ) มี 18 บทความศึกษาจากประเทศจีน สะท้อนถึงความสำคัญของการวิจัยในพื้นที่ที่มีภาระโรคสูง ปัจจัยที่เกี่ยวข้องกับการเผชิญปัญหาแบบคู่สัมพันธ์ถูกจัดประเภทเป็นระดับบุคคล ระดับความสัมพันธ์ และระดับสิ่งแวดล้อม ตามรูปแบบของปฏิสัมพันธ์อย่างเป็นระบบ (STM) ได้แก่ ลักษณะประชากรศาสตร์ ระยะของโรค และภาวะที่เกี่ยวข้องกับการรักษา สภาวะทุกข์ทางจิต วิธีการสื่อสาร การสนับสนุนทางสังคม และค่านิยมทางวัฒนธรรม ระบุมหาข้อเชิงคุณภาพ 4 ประเด็นที่สอดคล้องกับปฏิสัมพันธ์อย่างเป็นระบบ ได้แก่ ระบบสนับสนุนและการมีปฏิสัมพันธ์ (การเผชิญปัญหาร่วมกัน) ความท้าทาย (การสื่อสารความเครียด) การปรับตัวของครอบครัว (การเผชิญปัญหาเชิงบวก) และการใช้ทรัพยากรทางสังคม (บริบทสิ่งแวดล้อม) รูปแบบการจัดการแบ่งออกเป็น 3 ประเภท ได้แก่ แบบอิงปฏิสัมพันธ์อย่างเป็นระบบ การจัดการความเจ็บป่วยแบบคู่สัมพันธ์ และการจัดการเสริมสร้างความสัมพันธ์ รูปแบบการจัดการทั้งหมดช่วยส่งเสริมความสามารถในการเผชิญปัญหาแบบคู่สัมพันธ์ คุณภาพความสัมพันธ์ และสภาวะทางจิต โดยมีความเป็นไปได้และการยอมรับสูง

การทบทวนแบบกำหนดขอบเขตนี้ ได้รวบรวมหลักฐานเกี่ยวกับการเผชิญปัญหาแบบคู่สัมพันธ์ ในคู่ผู้ป่วยมะเร็งลำไส้ใหญ่และผู้ดูแล โดยระบุถึงปัจจัยที่มีอิทธิพลหลายระดับ ประสิทธิภาพเผชิญปัญหาของคู่สัมพันธ์ และรูปแบบการจัดการที่มีประสิทธิภาพ ความแตกต่างทางวัฒนธรรมทำให้จำเป็นต้องปรับปรุงการจัดการเผชิญปัญหาแบบคู่สัมพันธ์ ให้สอดคล้องกับบริบทการปฏิบัติทางคลินิกในประเทศจีน การวิจัยในอนาคตควรพัฒนาโปรแกรมที่สอดคล้องกับวัฒนธรรม ศึกษาการสนับสนุนเชิงนโยบาย และบูรณาการประเมินการเผชิญปัญหาแบบคู่สัมพันธ์ และการฝึกฝนทักษะเพื่อนำไปใช้ในการปฏิบัติงานด้านมะเร็งวิทยาที่จำเป็นประจำ เพื่อปรับปรุงผลลัพธ์ทั้งผู้ป่วยและผู้ดูแล

คำสำคัญ: ผู้ดูแล มะเร็งลำไส้ใหญ่และทวารหนัก การเผชิญปัญหาแบบคู่สัมพันธ์ การทบทวนแบบกำหนดขอบเขต ทฤษฎีเชิงระบบ-ปฏิสัมพันธ์

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Background and significance

Colorectal cancer (CRC) is the third most common cancer globally, accounting for 10.0% of new cases and 9.4% of cancer deaths in 2020 (Sung et al., 2021), with alarmingly high incidence and mortality in China (Zhang et al., 2024). Traditional cancer stress and coping research focuses on individuals, neglecting the interdependence between patients and caregivers (Folkman et al., 1986), who are critical in CRC care (Fujinami et al., 2012).

Over two decades, research has evolved toward a systemic perspective that conceptualizes stress as a shared interpersonal experience. This dyadic framework emphasizes the interdependent nature of coping within relational contexts, framing cancer as “our disease” that affects both patients and their caregivers (Lyons et al., 1998). Evidence shows reciprocal links between patients’ and partners’ distress: greater patient challenges increase caregiver burden, harming the quality of life of both (Ștefănuț et al., 2021).

Dyadic coping (DC) is rooted in Bodenmann’s Systemic Transactional Model (STM), referring to the process in which partners jointly manage stressors within their relationship (Bodenmann et al., 2019). Core STM components include: (1) stress communication (stress expression between partners); (2) positive DC (supportive, delegated, common coping); and (3) negative DC (hostile, ambivalent, superficial responses). CRC patients experience distinct stressors (e.g., stoma surgery, fear of recurrence) which exacerbate caregiver burden; caregivers provide extensive practical and emotional support yet often suffer from high distress, anxiety, and poor quality of life (Kong, 2021; Zhu & Cui, 2022). While prior reviews have explored DC in mixed cancers (Ștefănuț et al., 2021), a CRC-specific scoping review is urgent due to inconsistent results on demographic factors’ impact on DC, unsynthesized CRC-specific variables (stoma surgery, recurrence fear, culture), and unclear applicability of Western DC frameworks to Chinese contexts (Qin et al., 2024). These gaps lack clinical guidance, making a scoping review necessary to map evidence and identify unmet needs.

Accordingly, this review synthesized global research on DC among CRC patients and their primary caregivers, addressing four research questions: (1) What factors are associated with DC in CRC dyads? (2) How do CRC dyads experience DC? (3) What types of DC interventions have been reported? (4) What is the effectiveness of these interventions? It aims to inform clinical practice by identifying key factors and effective interventions, ultimately strengthening DC and improving quality of life for both patients and caregivers.

Research objectives

1. To examine factors associated with DC among CRC dyads.
2. To examine the experience of DC among CRC dyads.
3. To identify the types of DC interventions that have been reported.
4. To identify the effectiveness of these interventions.



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Conceptual framework

This review is guided by two complementary frameworks: Bodenmann's Systemic Transactional Model (STM) (Bodenmann et al., 2019) and the scoping review methodology proposed by Arksey and O'Malley (2005). The STM conceptualizes stress and coping as interdependent dyadic processes in which stress experienced by one partner influences both individuals and their relationship. This model guided the selection of core variables, including stress communication, positive DC (supportive, delegated, and common coping), and negative DC (hostile, ambivalent, and superficial coping). Using this theoretical basis, the review followed Arksey and O'Malley's (2005) five-stage framework: (1) identify research questions; (2) identify relevant studies; (3) select studies; (4) chart data; and (5) collate, summarize, and report results.

Methodology

This review adhered to the Joanna Briggs Institute (JBI) scoping review methodology (Peters et al., 2020) and PRISMA-ScR guidelines (Moher et al., 2010). No ethical approval was needed as it involved no direct human participant data collection. The review protocol was registered in OSF (10.17605/OSF.10/S6UF7).

Eligibility criteria (PICOS)

P (Population): CRC patients (any stage) and their primary caregivers (spouse, adult child, family member/friend). I (Interest of Phenomena): DC as the primary outcome or focus of investigation. Co (Context): Studies conducted in hospitals, community health centers, or home settings. S (Study Design): Quantitative, qualitative, mixed-methods, and intervention studies. Exclusion criteria: incomplete or inaccessible full texts; non-Chinese/English publications; conference abstracts, reviews, dissertations; not focused on DC studies.

Information sources and search strategy

Nine databases were systematically searched: CNKI, Wanfang Data, Chinese Biomedical Literature Database (CBM), VIP, Web of Science, PubMed, Cochrane Library, CINAHL, and Embase. The search covered January 1, 1995 (when Bodenmann formally proposed DC) to April 30, 2025. A combination of subject headings and free-text keywords was applied, with iterative refinement. The evidence included in this review is peer-reviewed evidence. An example search strategy for PubMed is provided below. Similar strategies were adapted for other databases. Examples of PubMed search strategies included: ("Colorectal Neoplasms"[Mesh] OR colorectal neoplasm*[Title/Abstract] OR colorectal cancer [Title/Abstract] OR colorectal carcinoma [Title/Abstract] OR colon cancer [Title/Abstract] OR rectal cancer [Title/Abstract]) AND ("dyadic coping"[Title/Abstract] OR "joint coping"[Title/Abstract] OR "communal coping"[Title/Abstract] OR "dyadic facing"[Title/Abstract] OR "jointly face"[Title/Abstract] OR "collectively face"[Title/Abstract] OR "spousal coping"[Title/Abstract] OR "couple coping"[Title/Abstract] OR "dyadic intervention"[Title/Abstract] OR "actor-partner interdependence model" [Title/Abstract]).



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Study selection

Citations were imported into NoteExpress with duplicates removed. Two reviewers (JS, ZS) independently screened titles/abstracts and full texts; discrepancies were resolved via discussion or third reviewer (YP) consultation.

Data extraction and synthesis

One researcher (JS) extracted data using a structured data extraction form that captured the following fields: author(s), year, country/setting, study design, participants, study aim or purpose, key concepts, interventions (if any), outcomes, and key findings. A separate study selection form was used to operationalize the inclusion and exclusion criteria based on the PICOS framework. A second researcher (ZS) verified the extracted data and the categorization of factors; any discrepancies were resolved through discussion. The extracted data are presented in Table 1.

Data were synthesized thematically: (1) DC factors were coded inductively and organized by STM's three levels; (2) qualitative dyadic experiences were aggregated thematically and mapped to STM concepts; (3) interventions were classified by theoretical basis and synthesized narratively. In line with JBI guidance for scoping reviews, methodological quality assessment was not undertaken, as the aim was to map the breadth of available evidence rather than assess methodological quality.

Characteristics of Included Studies

The basic characteristics of the 22 included studies are summarized in Table 1.

Table 1. Characteristics of Studies on Factors Associated with DC in CRC Patient-Caregiver Dyads (n = 22)

Author(s), Year	Country/Region	Study Type	Participants	Sample Size (Dyads)	Measurement Tools/Methods	Key Factors Examined
Shaffer et al., (2016a)	USA	Prospective (factors together)	CRC patients & caregivers	92	MOS SF-12	physical/mental health, time, age
Shaffer et al., (2016b)	USA	Prospective Longitudinal (factors together)	CRC patients & caregivers	92	Cancer-Related Stress Scale; F&V Intake	Cancer-related stress, healthy dietary practices, treatment phase, social support
Wei et al., (2024)	China	Cross-sectional (factors together)	CRC patients & spouses	268	DCI; CRCs; FCRI-SF	Disease stage, FCR, socioeconomic factors, individual characteristics



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ของปัจจัยที่มีอิทธิพลและการจัดการจากมุมมองปฏิสัมพันธ์อย่างเป็นระบบ

Table 1. Characteristics of Studies on Factors Associated with DC in CRC Patient-Caregiver Dyads
(n = 22) (continue)

Author(s), Year	Country/ Region	Study Type	Participants	Sample Size (Dyads)	Measurement Tools/Methods	Key Factors Examined
Jin et al., (2024)	China	Cross-sectional (factors together)	CRC stoma patients & family caregivers	312	Perceived Stress Scale (Chinese); Relationship Assessment Scale; Distress Disclosure Index; POMS-SF	Perceived stress, relationship satisfaction, distress disclosure, gender differences
Stulz et al., (2022)	France	Cross-sectional (factors together)	Colon cancer patients & partners	13	Perceived Social Support; DCI; Sexual Function Questionnaire	Social support, communication quality, DC strategies, individual sexual history
Qiu et al., (2025a)	China	Cross-sectional (factors together)	CRC survivors & spousal caregivers	343	Cancer Survivors' Unmet Needs; Partners' Unmet Needs; HADS; BFS	Age, education, caregiving duration, psychological factors, benefit finding, cultural
Zhang et al., (2021)	China	Cross-sectional (factors together)	Post-op rectal cancer stoma patients & spouses	152	SDS; DCI	DC strategies, gender, cultural
Qin et al., (2024)	China	Cross-sectional (factors together)	CRC patients & spouses	178	Family Resilience Assessment Scale; DCI	DC styles, psychological/emo tional support, family resilience, cultural, disease- related
Lin et al., (2021)	China	Cross-sectional (factors together)	CRC patients & spouses	286	17-item BFS; HADS; MOS SF-12	Benefit finding, psychological distress, marital relationship
Chen et al., (2023b)	China	Cross-sectional (factors together)	CRC patients & spouses	200	Self-Perceived Burden Scale; Caregiver Burden Inventory; DCI; HADS	Self-perceived burden, caregiver burden, DC strategies



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Table 1. Characteristics of Studies on Factors Associated with DC in CRC Patient-Caregiver Dyads
(n = 22) (continue)

Author(s), Year	Country/ Region	Study Type	Participants	Sample Size (Dyads)	Measurement Tools/Methods	Key Factors Examined
Yang et al., (2024)	China	Descriptive Phenomenology (experience together)	Permanent colostomy patients & spouses	10	Semi-structured interviews	Family crisis/stress, adaptation, resource utilization
Gong et al., (2023)	China	Descriptive Phenomenology (experience together)	CRC patients & spouses	11	Semi-structured interviews	Disease & pandemic factors, psychological factor, social support, intimacy
Ren & Xue, (2019)	China	RCT (interventions together)	CRC patients & spouses	121 (61 CG, 60 IG)	Psychological Distress Scale; Marital Adjustment Scale	DC strategies, communication, trust, shared coping awareness
Kong, (2021)	China	RCT (interventions together)	Low rectal cancer stoma patients & caregivers	84 (42 CG, 42 IG)	ZBI; Family Caregiver Competence Scale	Dyadic appraisal, dyadic management behaviors, dyadic health
Zhu & Cui, (2022)	China	RCT (interventions together)	Rectal cancer stoma patients & partners	84 (42 CG, 42 IG)	SAS; SDS; HHI; ZBI; SF- 36	DC-based appraisal, management, health evaluation
Wang et al., (2024)	China	Single-blind RCT (interventions together)	CRC patients & spouses	173 (91 IG, 82 CG)	37-item DCI; RDAS; MOS SF-12; BFS; HADS	6-week STM-based DC psychoeducation, skill training
Luo et al., (2021)	China	Pre-post (interventions together)	CRC patients & spouses	20	12-item Cancer Behavior Scale; 37- item DCI; MOS SF-12; HADS; BFS; RDAS	Online + face-to- face health info, psychoeducation, participant needs/ preferences
Chen et al., (2023a)	China	Pre-post (interventions together)	CRC patients & spouses	16	37-item DCI; RDAS; MOS SF-12; BFS; HADS	STM-based dyadic communication, illness perception, care time, culture, education



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(n = 22) (continue)

Author(s), Year	Country/ Region	Study Type	Participants	Sample Size (Dyads)	Measurement Tools/Methods	Key Factors Examined
Sun et al., (2024)	China	Pre-post (interventions together)	CRC patients & spouses	20	Cancer Survivors' Unmet Needs; Partners' Unmet Needs; CRCC; MOS SF- 12; BFS; HADS	based intervention, role factors, economic burden, FCR, communication, positive emotion
Qiu et al., (2025b)	China	Pre-post (interventions together)	CRC patients & spouses	19	Chinese Family Resilience Scale; HHI; MHC-SF; Family Sense of Coherence; PSSS; CRCC	Walsh Family Resilience-based 6-week psychoeducation, role factors, family resilience, communication, social support, cultural
Zhang et al. (2024)	China	Pre-post (interventions together)	CRC patients & spouses	19	Brief Illness Perception Questionnaire; CRCC; 37-item DCI; MOS SF- 12; BFS; HADS	CSM-based 6-week illness perception psychoeducation, skills, cultural
Zhou et al. (2024)	China	RCT (interventions together)	Colon cancer patients & partners	131 (65 IG, 66 CG)	CRCS; DCI; RDAS; HADS; BFS; MOS SF-12	RIM-based Mutual Communication Intervention role factors, cultural

Note. BFS: Benefit Finding Scale; CG: Control Group; CSM: Common-Sense Model; CRCC: Cancer-Related Couple Communication; CRCS: Cancer-Related Communication Scale; FCR: fear of cancer recurrence; FCRI-SF: Fear of Cancer Recurrence Inventory-Short Form; HADS: Hospital Anxiety and Depression Scale; HHI: Herth Hope Index; IG: Intervention Group; MHC-SF: Mental Health Continuum-Short Form; MOS SF-36/12: Medical Outcomes Study Short Form 12/36 Health Survey; POMS-SF: Profile of Mood States-Short Form; PSSS: Perceived Social Support Scale; RDAS: Revised Dyadic Adjustment Scale; RCT: Randomized Controlled Trial; RIM: Relationship Intimacy Model; SAS: Self-Rating Anxiety Scale; SCNF: Supportive Care Needs Framework; SDS: Self-Rating Depression Scale; STM: Systemic-Transactional Model; ZBI: Zarit Burden Interview



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Results

Literature selection process

The initial search yielded 564 records (156 Chinese, 408 English). After removing 196 duplicates, 368 records underwent title/abstract screening (276 excluded). The remaining 92 full texts were assessed, resulting in 22 included studies: 10 quantitative, 2 descriptive qualitative, and 10 intervention studies (Figure 1).

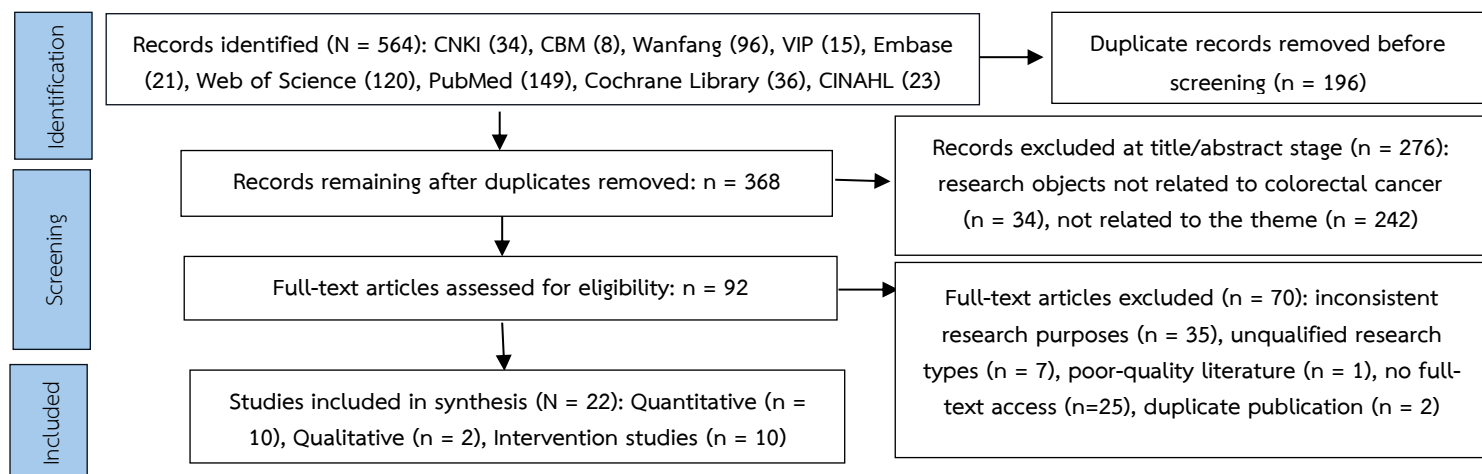


Figure 1. PRISMA flow diagram of study selection

Characteristics of included studies

The basic characteristics of the 22 included studies are summarized in Table 1.

STM-based factors associated with DC in CRC dyads

1. Individual-Level Factors

Demographic Characteristics: Age, gender, socioeconomic status, and education were significantly associated with DC. Specifically, younger age was associated with greater financial instability and poorer DC (Wei et al., 2024). Regarding gender differences, male emotional restraint and female negative information processing both impaired DC quality (Jin et al., 2024). Higher socioeconomic status and higher caregiver education level were associated with stronger collaborative coping and improved identification of unmet care needs (Qiu et al., 2025a; Wei et al., 2024).

Disease Status: Stoma surgery, advanced disease, and treatment-related burdens induce anxiety, depression, and caregiver burden, which reduce DC efficacy (Kong, 2021; Wei et al., 2024; Zhu & Cui, 2022).

Psychological Factors: Fear of cancer recurrence (FCR), anxiety, depression, and caregiver fatigue formed bidirectional negative cycles that damaged stress communication and weakened supportive DC (Gong et al., 2023; Wei et al., 2024). Psychological distress links to unmet care needs and reduced benefit findings, highlighting the need for psychological intervention (Qiu et al., 2025a). These psychological factors affect both stress communication (how partners express distress) and their capacity for supportive responses.



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2. Relationship-Level Factors

Communication and Role Interaction: Timely role restructuring and positive emotional communication promoted collaborative DC, whereas poor communication, imbalanced dependence, and patient self-perceived burden (SPB) lowered proactive DC (Chen et al., 2023b; Yang et al., 2024).

Relationship Quality and Shared Stress Management: Higher marital quality predicted better DC by improving supportive capacity (Lin et al., 2021). Shared stress management and supportive DC facilitated sexual health adaptation (Stulz et al., 2022).

3. Environmental-Level Factors

Social Support: Inadequate professional guidance and limited insurance support restricted available resources for DC, while early post-diagnosis social, medical, and peer support networks enhanced family resilience and supported more effective DC (Gong et al., 2023; Yang et al., 2024). According to STM, environmental resources provide the context within which DC occurs, either facilitating or hindering effective coping processes.

Cultural Context: Chinese "family harmony" values drive protective buffering and indirect communication, which restricts emotional exchange and weakened DC (Qin et al., 2024; Wei et al., 2024). Collectivist norms prioritize patients, risking caregiver burnout (Qiu et al., 2025a). East-West coping differences necessitate culturally sensitive interventions. These cultural factors fundamentally shape how stress is communicated and whether positive DC strategies are employed.

4. Dyadic Experiences of Coping with CRC

Two phenomenological studies (Gong et al., 2023; Yang et al., 2024) identified four STM-aligned themes. Theme 1: Support Systems and Interaction (Common DC) – mutual/external support and role rebalancing fostered joint coping and relational bonding; Theme 2: Challenges (Stress Communication) – bidirectional physical/mental strain and caregiver burden, with poor communication impeding stress expression and supportive responses; Theme 3: Family Adaptation and Adjustment (Positive DC) –health prioritization, role redistribution and collaborative lifestyle adjustment enhanced family cohesion via positive DC; Theme 4: Social Resource Utilization and Expectations (Environmental Context)– inadequate information, care, and social insurance hindered resource access, with dyads demanding improved supportive systems. These four themes directly map to STM core components, validating the model's applicability to CRC dyads.

5. DC Interventions for CRC Dyads

Three primary DC intervention categories for CRC patient-caregiver dyads were identified, with key effects summarized as follows:

STM-based interventions (Chen et al., 2023a; Luo et al., 2021; Wang et al., 2024) were 6-week programs (60-90 minutes/session), targeting psychoeducation, communication skills training, and cognitive adjustment. These structured programs significantly improved DC skills,



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marital adjustment, and relational intimacy, while reducing anxiety and depression in both partners (Qiu et al., 2025b; Zhu & Cui, 2022).

Dyadic illness management interventions (Kong, 2021) comprised three in-hospital sessions combined with six months of post-discharge follow-up, concentrating on disease-related education, shared decision-making, and emotional support. This approach effectively alleviated psychological distress, boosted positive affect, and improved physical, psychological, social, and spiritual health, and overall quality of life (Sun et al., 2024; Zhang et al., 2024).

Relationship-strengthening interventions (Ren & Xue, 2019) were 3-week programs (2 sessions/week, 60 minutes each) emphasizing rapport-building, mutual coping strategies, and intimacy enhancement. Corresponding benefits included improved dyadic coping capacity, emotional adaptation, and quality of life for both dyad members (Zhou et al., 2024).

Across all interventions, core effective components included joint stress communication psychoeducation, guided communication practice, and strategies to mitigate maladaptive protective buffering. Notably, STM-based interventions showed the strongest theoretical alignment with DC processes and the most consistent, robust beneficial outcomes.

Discussion

Summary of key findings

This scoping review synthesized 22 CRC patient-caregiver DC studies (16 in 5 years; 18 in China). Ten quantitative studies identified STM-categorized (individual/ relational/environmental) DC factors; two qualitative studies revealed STM-aligned DC experiences; and ten intervention studies confirmed STM-based interventions effectively improved DC skills, relationship quality, and psychological well-being, with high feasibility and acceptability.

Current state of DC research in CRC dyads

Predominantly Chinese studies reflect China's high CRC burden and growing dyadic research interest but limit cross-cultural generalizability; CRC DC research is emerging and rapidly developing.

DC factors and STM alignment

The factors identified in this review were consistent with the three levels of the STM and demonstrated clear systemic relationships with DC. Individual-level demographics and psychological factors (anxiety, depression, fear of recurrence) influenced initial stress appraisal and emotional expression, thereby shaping how distress was communicated between partners. At the relational level, communication patterns and relationship quality governed interaction patterns and mediated the quality of mutual coping efforts. Among Chinese dyads, protective buffering, often driven by family harmony values, restricted genuine stress communication and impaired DC. Environmental-level social support and cultural values provided external resources that either enabled or constrained DC. Through transactional processes in STM, these factors jointly affected DC in CRC couples. Better DC was associated with lower psychological distress,



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higher relationship quality, and stronger social support, whereas protective buffering and inadequate communication predicted worse DC outcomes.

Dyadic experiences and STM processes

Qualitative themes (challenges, family adaptation, support systems) closely aligned with STM core processes (stress communication, positive DC, environmental resources), reinforcing STM's applicability to CRC dyads.

Interventions: Characteristics, effectiveness, and STM alignment

Among ten interventions, STM-based ones had the strongest theoretical grounding and consistent effects, as they directly targeted stress communication and mutual coping processes central to the Systemic-Transactional Perspective. Key gaps: only three interventions were explicitly STM-guided; components varied widely; negative DC patterns were under-addressed; and cultural adaptation for Chinese populations was insufficient. Effective components (joint psychoeducation, communication training, and reducing protective buffering) targeted key STM processes.

Given the multifactorial, systemic links between identified factors and DC, future interventions should adopt a more structured STM framework, address maladaptive coping patterns, and incorporate culturally tailored strategies to enhance real-world effectiveness.

Cultural considerations and implications

Chinese cultural values (family harmony, indirect communication) drive protective buffering and hinder open stress communication (Qin et al., 2024). Culturally tailored interventions should acknowledge family harmony, provide culturally appropriate stress communication strategies, and involve extended family as needed. STM is universally applicable but requires cultural adaptation.

Limitations of the evidence base

Predominantly cross-sectional designs (no causal inference); spousal caregiver bias; limited long-term follow-up; insufficient cultural diversity; understudied negative DC; and overrepresentation of Chinese samples (restricting generalizability).

Conclusion

This review synthesized 22 CRC DC studies, mapping STM-categorized multilevel factors and four STM-aligned qualitative themes. STM-based DC interventions are feasible, acceptable, and effective. The dyadic perspective advances cancer care research; Chinese CRC DC research is emerging and requires rigorous cultural adaptation of theories and interventions. Future research should explore cultural influences on dyadic interactions, develop culturally congruent interventions, embed DC assessment and skills training into routine oncology practice, and strengthen ongoing dyadic communication support to improve outcomes for CRC patients and caregivers.



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Applications of research findings

Clinical Practice Recommendations: Routinely assess DC using validated tools (e.g., DC Inventory); screen high-risk dyads (financial strain, poor communication, limited support) and assess protective buffering among Chinese dyads; provide culturally congruent communication strategies; and integrate family resilience training. Implement targeted, brief DC-skills training in routine oncology care and strengthen one-on-one dyadic communication guidance during follow-up visits.

Clinical Service Improvements: Embed DC assessment and supportive counseling into daily clinical care and outpatient follow-up procedures; establish a dedicated psycho-oncology service to provide ongoing dyadic support for CRC couples.

Suggestions for further research

For future research, longitudinal and cross-cultural studies are needed, as are theory-driven STM-based interventions with rigorous cultural adaptation. The use of dyadic analytic approaches, such as the Actor-Partner Interdependence Model, is also encouraged. Further explore how individual, relational, and environmental factors interact to influence DC, to support more precise clinical intervention strategies.

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Conflict of interest statement

The authors declare no competing interests.

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การเผชิญปัญหาแบบคู่สัมพันธ์ในผู้ป่วยมะเร็งลำไส้ใหญ่และผู้ดูแล: การทบทวนแบบกำหนดขอบเขต
ของปัจจัยที่มีอิทธิพลและการจัดการจากมุมมองปฏิสัมพันธ์อย่างเป็นระบบ

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