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ORIGINAL RESEARCH

Analysis of Self-Disclosure and Empathic Interaction Willingness Among Couples with Malignant Gynaecological Tumours

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Objective: This cross-sectional study aimed to analyse the interaction willingness regarding empathy and self-disclosure among patients with malignant gynaecological tumours and their spouses and elucidate the underlying mechanisms.

Methods: A total of 201 couples, each including one partner diagnosed with a malignant gynaecological tumour, were selected using a convenience sampling method between March 2023 and January 2024. Participants' general information, empathy capabilities, self-disclosure and support coping were assessed by a general information questionnaire, the Interpersonal Reactivity Index-C, the Distress Disclosure Index and the Couple Support Coping Scale, respectively.

Results: Both empathy and self-disclosure scores were significantly higher in the patients than in their spouses. Agent and object effect analyses showed that empathy in patients and their spouses could significantly positively predict their own self-disclosure and supportive coping abilities ($p < 0.001$). Furthermore, mediation effects indicated that spouses' empathy could influence patients' self-disclosure, albeit with a lower coefficient of 0.063, thereby enhancing the perceived effectiveness of spousal support coping. All these effects are statistically significant ($p < 0.001$).

Conclusion: The capabilities of self-disclosure and empathy in patients with malignant gynaecological tumours and their spouses are closely associated with spousal support coping. Therefore, interventions should be crafted from a dyadic perspective to enhance both partners' empathic abilities and self-disclosure skills, thereby promoting mutual support and coping capabilities.

Keywords: gynaecology, neoplasms, spouses, empathy, self-disclosure

Introduction

Cervical cancer, endometrial cancer, breast cancer and ovarian cancer are common gynaecological malignancies. According to global cancer statistics from 2020, cervical cancer, endometrial cancer and ovarian cancer collectively cause approximately 330,000 deaths worldwide annually, severely threatening women's health.[1] Given the challenges they face, severe psychological distress is commonly observed among this patient group.[2] The suffering is not limited to the patients themselves; as typical informal caregivers, their partners must address the patients' physical and emotional needs, adapt to changes in family roles (such as taking on more household duties) and manage financial pressures. Research has shown that many partners experience a deterioration in both physical and psychological health due to the burden of multiple caregiving tasks and a lack of coping resources.[3] Therefore, paying close attention to the physical and mental health of patients with gynaecological malignancies and their spouses is of paramount importance.

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Self-disclosure in marriage, also known as open communication, refers to the ability of one partner to express their feelings or thoughts and seek a response from the other. However, patients with cancer often hesitate to discuss their concerns with their spouses, who may, in turn, avoid or distance themselves from the patients' emotional distress. One reason couples may avoid discussing cancer is to protect their partner from pain, a phenomenon known as protective buffering.[4] Studies indicate that protective buffering can decrease relationship satisfaction and lead to poorer mental health outcomes for both partners. Another reason is the sensitivity and discomfort associated with broaching the topic. Socio-cultural norms and personal emotions prompt individuals to restrain or modify their thoughts, feelings or concerns related to cancer, a behaviour known as social constraint. Research has shown that social constraints can expose patients to higher risks of social and intimate relationship distress and psychological disturbances. Those who are more distressed, suffer from more severe illness or have poorer physical function feel a greater need for disclosure and appear to benefit significantly from it.[5] Patients often seek someone to talk to when feeling upset, sad or in pain but hesitate to share the specific events that trigger their distress or to express their genuine thoughts. This reluctance may stem from a desire not to burden their spouse with their condition and negative emotions or from a belief that their spouse lacks effective solutions to help.[6] However, in Western cultures, individualistic values place more emphasis on individual emotional expression and autonomy, and therefore couples may prefer an open mode of communication.[7] An important aspect of social constraints is the influence of cultural context on self-expressive behaviour. Furthermore, in Western cultures, open emotional expression is seen as a positive coping strategy, whereas in collectivist cultures, emotional restraint is considered important for maintaining family harmony.[8] This cultural difference may lead Chinese patients and their spouses to be more inclined to hide their true feelings in the face of cancer, rather than seeking open communication and support as in Western culture.

Empathy is the ability to share and understand the feelings of others and to respond appropriately to their situations. Empathy has a broad and significant impact on human social life, as it helps individuals form emotional connections with others, reduces aggression and conflict and promotes prosocial behaviour and cooperation.[9] When facing significant trauma, empathy between spouses can facilitate open communication and reduce negative emotions and conflicts,[8] whereas a lack of empathic response from the spouse can decrease the patient's willingness to confide, potentially leading to further psychological distress.[10] Empathy research, originally conducted within the field of psychology in Western countries, has shown that empathetic behaviour by informal caregivers can reduce psychological stress and alleviate discomfort in patients with advanced ovarian cancer.[11] Recent research in China has expanded the study of empathy across multiple disciplines, focusing primarily on its conceptualisation, content and mechanisms, particularly in contexts such as psychological counselling, educational psychology and nursing. However, there is limited research on the training of empathy, especially in nursing, which often explores the impact of nursing staff or nursing students' empathy on patients[12] but rarely specifically addresses empathy between patients with malignant gynaecological tumours and their spouses.

Psychological frameworks such as social exchange theory and attachment theory provide valuable insights into how empathy and self-disclosure operate in intimate relationships. Social exchange theory suggests that individuals evaluate the benefits and costs of disclosing personal information, which is crucial when considering the risks involved in revealing distressing feelings.[13] Attachment theory, on the other hand, highlights how emotional bonds between partners shape their willingness to engage in self-disclosure, particularly when facing trauma or stress.[14] Both theories underscore the significance of empathy and mutual support in maintaining relationship satisfaction and emotional well-being, especially in the context of cancer.[15]

Cultural considerations also play an essential role in shaping how couples communicate and express empathy. In collectivist societies, such as China, traditional cultural values often prioritise family harmony and emotional restraint, which can influence how openly individuals express distress or concerns.[14] In these cultures, patients may hesitate to burden their spouse with emotional pain, and spouses may feel constrained by societal expectations to maintain strength and provide support without openly discussing their own emotional struggles.[15] These cultural dynamics can significantly affect how self-disclosure and empathy are expressed within couples dealing with cancer, making it crucial to consider cultural contexts when designing interventions to improve communication and emotional support.

There is very often a mutual dependency between spouses, and the impact of cancer on one patient can spill over to the other partner. Research also confirms that spouses of patients with gynaecological malignancies must handle a range of issues, including social role conflicts, emotional upheaval and psychological distress.[16] Compared with families of survivors of other types of cancer, families of patients with gynaecological malignancies tend to adapt less well to the disease.[17] Communication is a critical process for spouses to understand cancer and participate in social support. Based

on these insights, it can be surmised that empathy and self-disclosure may play significant roles in the intimate relationships of patients with gynaecological malignancies and their spouses. Therefore, this study explores the impacts of empathy and self-disclosure on intimate relationships among couples dealing with gynaecological malignancies, with the aim of addressing the following research question: How do empathy and self-disclosure influence the mutual support and coping abilities of patients and their spouses? The aim is to provide a theoretical basis for designing dyadic psychological interventions for both patients and their spouses.

Materials and Methods

Participants

A convenience sampling method was employed to select patients with gynaecological malignancies and their spouses who visited hospital between March 2023 and January 2024. The research aim to explore the interactions of empathy and self-disclosure in couples facing gynaecological malignancies. As convenience sampling was used, there are limitations related to potential biases. These biases were minimised by employing broad inclusion criteria and excluding participants with major mental or cognitive health issues.

The inclusion criteria for patients were as follows: (1) pathologically diagnosed with gynaecological malignancy; (2) received surgery and chemotherapy, and the course of the disease was >6 months; (3) aged ≥18 years; (4) married and with a living spouse; (5) mentally competent, with sufficient understanding and communication skills; (6) informed about their diagnosis and medically cleared to participate in the study. Spouses were included if they were aged ≥18 years and were the main caregiver with good cognitive and communication abilities. The exclusion criteria were as follows: (1) spouse with cognitive or mental disorder; (2) spouse suffering from a serious physical illness; (3) spouse had recently experienced other major traumatic events, such as the death of a loved one.

Calculation of Sample Size

The sample size was calculated by the rough estimation method following the factor analysis scale proposed by Yu;[18] that is, the sample size was 5–10 times the number of variables. A total of 18 general variables were included in this study. Considering a 20% sample loss, the sample size was calculated to be 108–216. Given that a cross-sectional study was employed, the limitation of not being able to track changes over time means the findings are exploratory. Furthermore, considering that the construction of the structural equation model requires a sample size of >200 cases,[19] the effective sample size of this study required >200 cases.

Materials

General Information Questionnaire

Developed by the researchers, this covers 13 variables: the patient's age, marital duration, educational level, occupation, family monthly income, type of medical insurance, residence, type of disease, number of children, spouse's age, education, occupation and ability to bear medical costs.

Interpersonal Reactivity Index-C

Revised by Zhang et al,[20] this tool measures the participants' empathy level. It consists of 22 items across four dimensions: perspective taking, personal distress, fantasy and empathic concern. The items are scored on a 5-point Likert scale from 0 ('not at all") to 4 ("extremely"), resulting in a total possible score of 0–88. Higher scores indicate greater empathy. Birgili assessed empathy among 358 nurses; the Cronbach's alpha coefficient was 0.89.[21]

Distress Disclosure Index

Revised by Li,[22] this scale assesses the extent to which participants are willing to disclose their personal distress to others. It includes 12 items scored on a 5-point Likert scale from 1 ("strongly disagree") to 5 ("strongly agree"), with total scores ranging from 12 to 60. Higher scores indicate higher levels of self-disclosure. In this study, the Cronbach's alpha coefficients for patients with breast cancer and their spouses were 0.80 and 0.82, respectively.

Couple Support Coping Scale

This scale evaluates the quality of stress communication and joint coping among couples. It comprises six dimensions and 37 items, scored from 1 ("very rarely") to 5 ("very frequently"). Negative coping scores are reversed, and two items

from the coping quality evaluation are excluded from the total score. The overall score ranges from 35 to 175, with 111–145 considered normal and >145 as better than normal. Higher scores indicate more supportive coping behaviours between spouses and better dyadic coping conditions. In 2016, Xu et al[23] conducted a cross-cultural adaptation among 474 Chinese couples, with a Cronbach's alpha coefficient ranging from 0.51 to 0.80. In 2017, Luo Qun et al[24] applied this questionnaire to patients with gynaecological cancer, with satisfactory reliability and validity.

Methods

Study Design

This study employed a cross-sectional research design, which involved the collection of data from patients and their spouses using questionnaires. Although the design limits the ability to examine longitudinal outcomes, it is suitable for assessing relationships between empathy, self-disclosure and support coping in a specific timeframe. A large number of relevant studies were read to collect scales that were consistent with the purpose of this study and had good reliability and validity. The study design and data collection process were clearly defined in accordance with ethical guidelines. The recruitment process was clearly outlined to ensure transparency. Questionnaires were distributed to patients and their spouses in outpatient and gynaecological wards, and all questionnaires were collected to analyse the interaction willingness regarding empathy and self-disclosure among the participants.

Survey Methodology

After obtaining informed consent from the patients and their spouses, paper-based questionnaires were administered in outpatient clinics and gynaecology wards. Before the survey, the researcher personally explained the study's purpose, how to complete the scales, and other instructions using standardized language. Participants were informed that participation was voluntary and that they could withdraw at any time. The questionnaires were completed anonymously to ensure confidentiality. Patients and spouses completed the questionnaires separately in quiet rooms to minimize potential influence from each other. While there was no strict time limit for completing the questionnaires, participants were informed that it should take approximately 20–30 minutes. The responses were collected immediately after completion by the researcher. Out of 206 distributed questionnaires, 201 valid responses were obtained after excluding incomplete submissions and those with identical responses across all items. The recruitment process was clearly defined to minimise selection bias, with efforts to ensure a representative sample within the context of convenience sampling.

Ethical Considerations

The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose and their rights. The confidentiality of participants' data was maintained throughout the research process. The study was approved by the ethical review board of the Affiliated Hospital of Jiangnan University.

Data Analysis

At the end of data collection, the investigators checked the contents of the questionnaires one by one, checked the contents of the questionnaires and deleted those with responses that showed obvious regularity or logical confusion to ensure the accuracy and credibility of the data. Statistical analysis was performed by two reviewers to ensure the objectivity and accuracy of the data.

Statistical Methods

Data analysis was performed using SPSS 26.0(IBM, Armonk, NY, USA) software. Normally distributed quantitative data were described using mean ± standard deviation, and qualitative data were expressed as percentages. One-way ANOVA and independent sample *t*-tests were used to analyse correlations between variables, and Pearson's correlation coefficients analysed the levels of self-disclosure, empathy and spousal support coping. For pairwise data analysis, an actor–partner interdependence model (APIM) was established based on Mplus8.0 software. The APIM allows for the simultaneous investigation of agent and object effects, which helps to identify both the impact of individual and partner characteristics on self-disclosure and support coping. In addition, the practical impact of smaller effect sizes was addressed, particularly those observed in the mediation paths, to ensure clearer interpretations of the results.

Results

Demographics of Female Patients with Malignant Gynaecological Tumours and Their Spouses

This study included 201 female patients with malignant gynaecological tumours (mean age 50.75 ± 10.56 years, range 26–81) who underwent surgery and chemotherapy. The majority of patients resided in urban areas (170) and were covered by health insurance (197). The distribution of educational levels was as follows: primary school or less (50), junior high or vocational school (83), and high school diploma or higher (68). Employment status included employed (80), unemployed (53), and retired (68). The diagnoses were cervical cancer (105), ovarian cancer (57), and endometrial cancer (39). The mean scores for empathy, self-disclosure, and coping support among patients were 48.85 ± 13.11, 33.36 ± 12.89, and 122.29 ± 20.55, respectively (see Table 1). The spouses (mean age 52.96 ± 10.86 years, range 25–82) had the following educational levels: primary education or less (41), junior high education or vocational training (92), and high school education or higher (68). Most couples reported that their

Table 1 Descriptive Statistics of Basic Information for Female Patients (n=201)

Category	Subcategory	N/ Mean	Percentage (%)/Standard Deviation
Educational Level	Primary School or Below	50	24.88%
	Junior High or Vocational	83	41.29%
	High School or Above	68	33.83%
Employment Status	Employed	80	39.80%
	Unemployed	53	26.37%
	Retired	68	33.83%
Monthly Family Income (RMB)	Below 2000	19	9.45%
	2000 to 4000	48	23.88%
	4000 to 6000	43	21.39%
	Above 6000	91	45.27%
Number of Children	None	12	5.97%
	One	122	60.70%
	Two to Three	65	32.34%
	More than Three	2	1.00%
Place of Residence	Rural	31	15.42%
	Urban	170	84.58%
Method of Payment for Medical Expenses	Health Insurance	197	98.01%
	Out-of-Pocket	4	1.99%
Type of Gynecological Cancer	Cervical Cancer	105	52.24%
	Ovarian Cancer	57	28.36%
	Endometrial Cancer	39	19.40%
Patient Self-disclosure		33.36	12.89
Patient Empathy		48.85	13.11
Patient Supportive Coping		122.29	20.55

financial capability to cover medical expenses was fully met (75) or partially met (122), with only 3 couples reporting that their expenses were not met at all. The mean scores for empathy, self-disclosure, and coping support among spouses were 45.24 ± 13.03, 32.22 ± 12.53, and 122.92 ± 19.82, respectively (see Table 2).

Impact of Various Factors on Self-Disclosure, Empathy and Spousal Support Coping in Patients and Their Spouses

The study reveals that educational level, occupation, monthly family income and number of children significantly influence the self-expression of pain, empathy capabilities and coping support among both patients and their spouses. Notably, the effect of educational attainment was particularly significant, with those possessing a high school education or higher exhibiting markedly higher scores than those with lower educational levels (see Table 3).

Analysis of Interrelationships Among Variables

The analysis indicates positive correlations between all pairs of variables, including patient and spouse self-disclosure, empathy and supportive coping, with correlation coefficients generally >0.5. Specifically, patient self-disclosure is positively correlated with spouse empathy (0.443) and patient supportive coping (0.713). Additionally, spouse empathy is positively correlated with patient-supportive coping (0.511) and spouse-supportive coping (0.582), demonstrating significant relational dynamics (see Table 4).

Mediating Role of Empathy Between Pain Self-Disclosure and Spousal Supportive Coping

In the mediation model of actor–partner interdependence, empathy was treated as the independent variable, and self-disclosure and spousal supportive coping were considered the mediating variables. This model, as illustrated in Figure 1, examines how the

Table 2 Descriptive Statistics of Basic Information for Husbands (n=201)

Category	Subcategory	N/ Mean	Percentage (%)/Standard Deviation
Educational Level	Primary School or Below	41	20.40%
	Junior High or Vocational	92	45.77%
	High School or Above	68	33.83%
Spouse's Occupation	Retired	39	19.40%
	Unemployed	10	4.98%
	Employed	152	75.62%
Marriage Duration	Less than 10 years	9	4.48%
	10 to 20 years	50	24.88%
	More than 20 years	142	70.65%
Medical Expense Coverage	Partially Capable	123	61.19%
	Completely Incapable	3	1.49%
	Fully Capable	75	37.31%
Spouse Self-disclosure		32.22	12.53
Spouse Empathy		45.24	13.03
Spouse Supportive Coping		122.92	19.82

Table 3 Impact of Various Factors on Self-Disclosure, Empathy, and Spousal Support Coping in Patients and Their Spouses

Variable		Patient Self-disclosure		Spouse Self-disclosure		Patient Empathy		Spouse Empathy		Patient Supportive Coping		Spouse Supportive Coping	
		Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value
Educational Level	Primary School or Below	24.88 ±11.19	0.000	24.38 ±11.06	0.000	42.76 ±14.69	0.000	38.74 ±12.70	0.000	110.08 ±21.19	0.000	110.32 ±21.22	0.000
	Junior High or Vocational	34.93 ±11.33		33.47 ±12.48		49.71 ±11.35		46.95 ±13.18		122.52 ±18.93		124.07 ±17.98	
	High School or Above	37.68 ±13.11		36.46 ±11.07		52.28 ±12.52		47.93 ±11.55		130.99 ±17.47		130.76 ±16.27	
Occupation	Employed	36.41 ±12.70	0.012	34.61 ±11.96	0.003	48.96 ±12.15	0.232	46.63 ±12.56	0.463	126.94 ±20.62	0.018	128.16 ±18.95	0.004
	Unemployed	29.85 ±13.36		27.32 ±10.71		46.47 ±15.37		44.04 ±15.00		116.98 ±20.69		116.75 ±19.70	
	Retired	32.50 ±12.08		33.22 ±13.57		50.57 ±12.16		44.54 ±11.92		120.96 ±19.40		121.54 ±19.57	
Family Monthly Income	Below 2000 RMB	27.32 ±15.26	0.002	21.53 ±9.29	0.000	48.42 ±14.93	0.246	40.11 ±12.12	0.166	114.53 ±19.71	0.001	116.89 ±21.06	0.008
	2000 to 4000 RMB	29.35 ±11.66		29.19 ±12.50		46.00 ±13.67		44.25 ±14.24		117.73 ±20.78		117.48 ±19.78	
	4000 to 6000 RMB	33.49 ±12.43		33.79 ±13.16		48.33 ±12.78		44.74 ±13.00		117.37 ±21.26		120.93 ±19.92	
	Above 6000 RMB	36.67 ±12.34		35.31 ±11.37		50.69 ±12.46		47.07 ±12.38		122.29 ±20.55		127.98 ±18.53	

(*Continued*)

Table 3 (Continued).

Variable		Patient Self-disclosure		Spouse Self-disclosure		Patient Empathy		Spouse Empathy		Patient Supportive Coping		Spouse Supportive Coping	
		Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value	Mean ± SD	P-value
Number of Children	None	36.08 ±12.96	0.012	34.17 ±11.46	0.039	50.42 ±10.56	0.873	45.67 ±13.08	0.506	125.33 ±18.06	0.200	124.58 ±20.69	0.541
	One	35.21 ±13.02		33.85 ±12.31		49.26 ±12.62		46.27 ±13.22		124.20 ±21.04		124.11 ±19.72	
	Two to Three	29.12 ±11.86		28.60 ±12.61		47.83 ±14.63		43.22 ±12.8		117.88 ±19.79		120.11 ±20.06	
	More than Three	41.50 ±7.78		38.50 ±12.02		47.50 ±4.95		45.50 ±3.54		130.50 ±16.26		131.00 ±12.73	
Residential Location	Rural	31.87 ±12.27	0.486	30.26 ±12.33	0.344	49.06 ±12.86	0.922	44.42 ±11.72	0.704	120.23 ±18.63	0.546	120.45 ±21.06	0.453
	Urban	33.63 ±13.02		32.58 ±12.57		48.81 ±13.19		45.39 ±13.28		122.66 ±20.91		123.36 ±19.61	
Medical Expense Payment Method	Health Insurance	33.40 ±12.96	0.742	32.34 ±12.54	0.358	48.93 ±13.18	0.529	45.34 ±13.13	0.463	122.30 ±20.63	0.939	123.14 ±19.84	0.267
	Out-of-Pocket	31.25 ±9.74		26.50 ±12.40		44.75 ±9.29		40.50 ±4.04		121.50 ±18.48		112.00 ±17.49	

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Table 4 Correlation Analysis Among Self-Disclosure, Empathy, and Supportive Coping in Patients with Malignant Gynecological Tumors and Their Spouses

	Patient Self-disclosure	Patient Empathy	Spouse Self-disclosure	Spouse Empathy	Patient Supportive Coping	Spouse Supportive Coping
Patient Self-disclosure	1					
Patient Empathy	0.488**	1				
Spouse Self-disclosure	0.584**	0.343**	1			
Spouse Empathy	0.443**	0.514**	0.521**	1		
Patient Support. Coping	0.713**	0.492**	0.634**	0.511**	1	
Spouse Support. Coping	0.691**	0.534**	0.672**	0.582**	0.870**	1

Notes: **$P<0.05$.

levels of empathy in both partners influence their self-disclosure and supportive coping as well as how these factors mutually affect each other within the context of their relationship dynamics.

Model testing revealed significant agent and object effects. Patient empathy directly and positively influenced patient self-disclosure (coefficient = 0.480, 95% CI: 0.360–0.600) and supportive coping (coefficient = 0.314, 95% CI: 0.236–0.391). Similarly, spouse empathy significantly enhanced spouse self-disclosure (coefficient = 0.501, 95% CI: 0.387–0.616) and supportive coping (coefficient = 0.885).

Regarding object effects, patient empathy positively impacted spouse self-disclosure (coefficient = 0.328, 95% CI: 0.202–0.454) and supportive coping (coefficient = 0.807, 95% CI: 0.629–0.986). Spouse empathy also influenced patient self-disclosure (coefficient = 0.063, 95% CI: 0.314–0.563) and supportive coping (coefficient = 0.805, 95% CI: 0.616–0.995). All effects were statistically significant ($p < 0.001$) (Table 5).

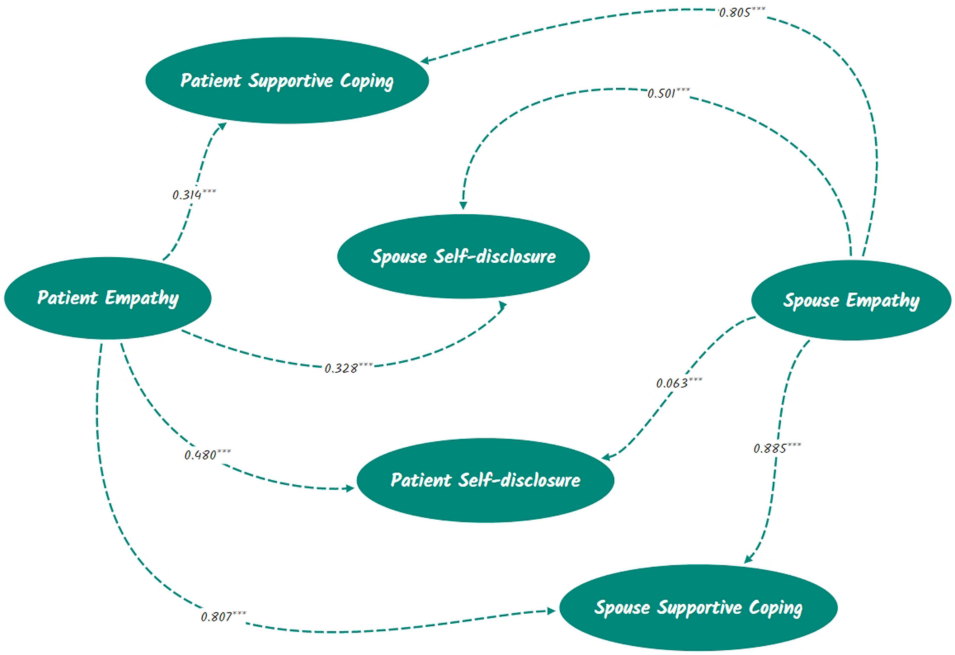

Figure 1 The Mediation Model of Empathy Between Pain Self-Disclosure and Spousal Supportive Coping (The dashed line indicates that the path coefficient is significant. ***P < 0.001).

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Table 5 Agent and Object Effects Testing Results

Path	β Value	95% CI	p-value
Agent Effects			
Patient Empathy → Patient Self-disclosure	0.480	0.360~0.600	<0.001
Spouse Empathy → Spouse Self-disclosure	0.501	0.387~0.616	<0.001
Patient Empathy → Patient Supportive Coping	0.314	0.236~0.391	<0.001
Spouse Empathy → Spouse Supportive Coping	0.885	0.712~1.058	<0.001
Object Effects			
Patient Empathy → Spouse Self-disclosure	0.328	0.202~0.454	<0.001
Spouse Empathy → Patient Self-disclosure	0.063	0.314~0.563	<0.001
Patient Empathy → Spouse Supportive Coping	0.807	0.629~0.986	<0.001
Spouse Empathy → Patient Supportive Coping	0.805	0.616~0.995	<0.001

Discussion

Current Status of Empathy, Self-Disclosure and Spousal Supportive Coping Among Patients with Malignant Gynaecological Tumours and Their Spouses

In terms of self-disclosure, patients with malignant gynaecological tumours have a moderate average score (33.36 ± 12.89) and tend to disclose more than their spouses. This observation aligns with Zhai et al's[25] survey on patients with gynaecological cancer. However, studies indicate that survivors of cancer are often cautious in their communication, carefully avoiding unnecessary disclosure.[7] This tendency can be attributed to cultural norms and expectations within China, where traditional values often encourage more reserved and introverted emotional expressions. Comparative analysis suggests that, unlike in Western contexts such as the United States, conflicts in Chinese couples, driven by differences in support and emotional expression, are perceived as highly stressful.[7] Given this socio-cultural backdrop, Chinese couples dealing with malignant gynaecological tumours may face more significant challenges in communication and adaptation to the disease.

In this study, spouses' levels of empathy were significantly lower than those of patients, consistent with findings by Li et al[26] and others. Research indicates that women are more sensitive to others' emotions, experience stronger empathy and provide more accurate empathetic responses than men. Men and women exhibit distinct empathetic tendencies and styles.[26] Higher educational levels in patients and spouses are associated with stronger empathy, likely because better-educated individuals place a greater emphasis on communication skills and interaction methods, leading to more rational and effective communication between spouses.

Gynaecological cancers involve sensitive parts of the reproductive system, heightening female patients' concerns about changes in sexual function, which can significantly impact marital intimacy. Additionally, the stigma of attributing the cause of these cancers to unhygienic sexual practices leads to higher levels of anxiety, depression and fear among these patients than among other groups, accompanied by considerable shame, illness stigma and self-stigmatisation. These factors impose substantial physiological, psychological and social pressures on patients, causing their quality of life to deteriorate. This study found approximately equal scores for spousal supportive coping among male and female spouses, all within normal ranges. Lower-income and unemployed/underemployed patients and spouses scored lower, likely because a cancer diagnosis shifts life's focus to the hospital setting, leading to relative social isolation and symptomatic distress from treatment, which can severely impact the quality of life.[27] Financial stability, or the lack thereof, can play a crucial role in facilitating self-disclosure, as individuals with fewer financial burdens may feel less stressed and more capable of openly discussing their concerns. As primary caregivers, spouses endure the dual pressures

of financial strain and the responsibility for the patient's daily care, which can reduce their own quality of life. Therefore, it is crucial not only to attend to the patient's physical and mental health but also to consider the spouse's well-being, emphasising the evaluation of life quality for both parties and actively implementing interventions to enhance the quality of life for couples dealing with cancer.

Interactions Between Spousal Self-Disclosure, Empathy and Supportive Coping

Results from agent–object effect testing indicate that in patients with malignant gynaecological tumours and their spouses, empathy positively influences both self-disclosure and supportive coping. Specifically, higher levels of patient empathy are associated with a greater propensity to express concerns and burdens related to the illness and to engage in building an intimate marital relationship. Despite gender-related differences in empathetic capacity, both parties may encourage more self-disclosure and intimate interactions through their own heightened empathetic abilities. This likely occurs because having a partner with a high level of empathy can facilitate the appropriate expression of one's troubles and negative emotions, which can more readily attract the spouse's attention. One study found that empathy from the spouses of patients with breast cancer could moderate the impact of body image changes on depressive symptoms.[28] This, in turn, enables the spouse to perceive changes in emotions sooner, thereby encouraging expressions of care and companionship that enhance emotional bonds and marital satisfaction.

In terms of object effects, the empathetic abilities of both partners with malignant gynaecological tumours positively influence their self-disclosure and spousal support coping. This aligns with the findings of Rosen et al,[29] who observed in their study of couples dealing with vulvodynia that women exhibiting stronger empathetic responses also demonstrated higher relational adjustment capabilities. Furthermore, when partners perceived strong empathetic responses from their female partners, these women displayed enhanced relational adjustment abilities. This may be because mutual support and empathetic expressions between spouses signify recognition, affection and commitment to the relationship. According to models of intimacy, increased emotional disclosure allows women to better manage emotional information about their pain and shared sexual activities, thereby enhancing intimacy and positive impacts and reducing avoidance of emotional and sexual activities. Through this process, frequent perceptions of emotional disclosure can mitigate impacts on women's quality of life. In this context, patient empathy has a positive impact on spouse self-disclosure, and spouse empathy similarly influences patient self-disclosure positively. Open communication and an understanding of each other's expectations can help spouses better adapt to cancer,[30] strengthen their sense of "shared experience", restore a "sense of normalcy", increase relationship cohesion,[31] alleviate feelings of helplessness and decrease depression.[32] As a cooperative mechanism, marital self-disclosure can enhance marital quality and intimacy, improve marital functionality and enrich the patient's experience of empathetic care from their caregiver. Long-married couples may even develop a higher psychological adaptability.[5]

Moreover, this study highlights the interconnected patterns between empathy, self-disclosure and spousal support coping. Analysis indicates that a spouse's empathy can impact the patient's self-disclosure, thereby enhancing their perceived spousal support coping capabilities. Self-disclosure is foundational for developing spousal supportive coping, affecting the formation and evolution of marital relationships, and ultimately influencing the quality of spousal support coping and life quality. Intimate marital relations, in turn, can affect the content, meaning and extent of an individual's self-disclosure.[33] The results suggest that correct responses and understanding from spouses to patient self-disclosure, encouraging more extensive self-disclosure, can enhance marital satisfaction. These findings underscore the importance of empathy-based interventions in improving self-disclosure levels among patients with malignant gynaecological tumours, particularly for enhancing spousal support coping and promoting psychological well-being in both partners. Empathy is a skill that can be trained and shaped;[34] thus, spouses of patients with malignant gynaecological tumours are encouraged to engage in training that enhances their ability to perceive and experience the emotional and affective states of the patient, thereby fostering disclosure capabilities and improving marital satisfaction. This study underscore the importance of empathy-based interventions in improving self-disclosure levels among patients with malignant gynaecological tumours, particularly for enhancing spousal support coping and promoting psychological well-being in both partners. For example, couples could benefit from communication skills training focused on active listening and empathetic responding. Such interventions could also be integrated into broader supportive care programs, providing

couples with resources and strategies to navigate the challenges of cancer treatment together. Spouses of patients with malignant gynaecological tumours are encouraged to engage in training that enhances their ability to perceive and experience the emotional and affective states of the patient, thereby fostering disclosure capabilities and improving marital satisfaction.

Innovation

To date, no study has been found that analyses the interaction willingness regarding empathy and self-disclosure and related influencing factors of spouses of patients with malignant gynaecological tumours. This study integrates multiple factors, such as empathy, self-disclosure and coping support scores, to provide a comprehensive research framework. Moreover, through an in-depth analysis of the relationship between these factors, it aims to better understand the interaction willingness regarding empathy and self-disclosure of spouses of patients with malignant gynaecological tumours and to innovate the research perspective. In addition, this study highlights the practical concern for the mental health of families of patients with malignant gynaecological tumours and provides a new reference for clinical practice and psychological interventions focused on improving both patient and spouse outcomes.

Limitations of the Study

This study has several limitations to acknowledge. First, the single-center convenience sampling strategy constrains socio-demographic diversity and generalizability. Future multi-center collaborations should employ stratified sampling across diverse healthcare systems to capture cultural and clinical heterogeneity. Second, while clinically justified, the exclusion criteria may have oversimplified health stressor-empathy interactions through selection bias. Subsequent research should systematically quantify demographic shifts introduced by exclusion protocols. Third, the cross-sectional design cannot establish temporal precedence between self-disclosure and empathy. Longitudinal tracking of couples across life stages with dyadic analysis would better elucidate causality. Finally, the absence of psychological metrics (eg, personality inventories, pre-intervention relationship assessments) leaves potential mediators unaccounted for. Integrating standardized psychosocial evaluations with biobehavioral measures could disentangle these complex pathways.

Conclusion

This study revealed that empathy, self-disclosure and supportive coping are closely interconnected among couples dealing with malignant gynaecological tumours. The findings highlight the mediating role of empathy in enhancing self-disclosure and improving spousal coping abilities. These insights suggest that fostering empathy and encouraging open self-disclosure can significantly strengthen mutual support and coping strategies within the marital relationship. The practical applications of these findings are critical for developing targeted interventions that not only enhance emotional communication but also address the specific needs of both patients and their spouses. Therefore, it is essential for nursing staff to assess and enhance the empathic and self-disclosure abilities of both patients and their spouses in clinical settings and to proactively develop intervention strategies aimed at improving their psychological well-being and relationship satisfaction.

Disclosure

All of the authors had no any personal, financial, commercial, or academic conflicts of interest separately.

References

1. Ferlay J, Colombet M, Soerjomataram I, et al. Cancer statistics for the year 2020: an overview. *Int J Cancer*. 2021;149(4):778–789. doi:10.1002/ijc.33588
2. Chen X, Xu X, Wang T, Qiu C, Li M. Couple communication quality and family resilience among Chinese gynecologic cancer patients and their spouses: a dyadic study. *Support Care Cancer*. 2023;31(5):271. doi:10.1007/s00520-023-07727-1
3. Chen M, Gong J, Cao Q, Luo X, Li J, Li Q. A literature review of the relationship between dyadic coping and dyadic outcomes in cancer couples. *Eur J Oncol Nurs*. 2021;54:102035. doi:10.1016/j.ejon.2021.102035

4. 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. doi:10.3389/fpsyg.2022.816626
5. Zhou Y, Che CC, Chong MC, Zhao H, Lu Y. Effects of marital self-disclosure on marital relationship and psychological outcome for cancer patients: a systematic review. *Support Care Cancer*. 2023;31(6):361. doi:10.1007/s00520-023-07826-z
6. Du X, Wang D, Du H, Zou Q, Jin Y. The correlation between intimate relationship, self-disclosure, and adaptability among colorectal cancer enterostomy patients. *Medicine*. 2021;100(19):e25904. doi:10.1097/MD.0000000000025904
7. Rabin C. Cancer-related self-disclosure in the workplace/school by adolescent and young adult cancer survivors. *J Adolesc Young Adult Oncol*. 2020;9(4):528–533. doi:10.1089/jayao.2019.0159
8. Main A, Walle EA, Kho C, Halpern J. The interpersonal functions of empathy: a relational perspective. *Emotion Rev*. 2017;9(4):358–366. doi:10.1177/1754073916669440
9. Su Y, Huang L. Gender differences in empathy and their possible influencing factors. *J Southwest Univ*. 2014;40(4):77–83+183.
10. Sun Y, Chen L, Zhao C, et al. The study on relationship between perception of partner responsiveness and reproductive anxiety in breast cancer patients of childbearing age. *J Nurs Adm*. 2022;22(2):134–138.
11. Lobchuk MM, Bokhari SA. Linkages among empathic behaviors, physical symptoms, and psychological distress in patients with ovarian cancer: a pilot study. *Oncol Nurs Forum*. 2008;35(5):808–814. doi:10.1188/08.ONF.808-814
12. Xiong Y. The impact of caregiver empathy on the quality of life and post-traumatic growth of lung cancer chemotherapy patients. *Chin Gen Pract Nurs*. 2021;19(8):1103–1105.
13. Kadji K, Schmid MM. The effect of physician self-disclosure on patient self-disclosure and patient perceptions of the physician. *Patient Educ Couns*. 2021;104(9):2224–2231. doi:10.1016/j.pec.2021.02.030
14. Lui F, Zhang Q, Bao G, et al. Refinement of a meaning-centered counseling program for Chinese patients with advanced cancer: integrating cultural adaptation and implementation science approaches. *BMC Health Serv Res*. 2025;25(1):85. doi:10.1186/s12913-024-12124-3
15. Kirchner-Häusler A, De Leersnyder J, Uskul AK, et al. Cultural fit of emotions and subjective well-being: replicating comparative evidence and extending it to the Mediterranean region. *Curr Res Ecol Soc Psychol*. 2023;5:100171. doi:10.1016/j.cresp.2023.100171
16. Tan JH, Sharpe L, Russell H. The impact of ovarian cancer on individuals and their caregivers: a qualitative analysis. *Psychooncology*. 2021;30 (2):212–220. doi:10.1002/pon.5551
17. Aquil A, El Kherchi O, El Azmaoui N, et al. Body image dissatisfaction and lower self-esteem as major predictors of poor sleep quality in gynecological cancer patients after surgery: cross-sectional study. *BMC Womens Health*. 2021;21(1):229. doi:10.1186/s12905-021-01375-5
18. Yu SC, Qi X, Hu YH, Zheng WJ, Wang QQ, Yao HY. Overview of multivariate regression model analysis and application. *Zhonghua Yu Fang Yi Xue Za Zhi*. 2019;53(3):334–336. Chinese. doi:10.3760/cma.j.issn.0253-9624.2019.03.020
19. Gegenfurtner A. Bifactor exploratory structural equation modeling: a meta-analytic review of model fit. *Front Psychol*. 2022;13:1037111. doi:10.3389/fpsyg.2022.1037111
20. Zhang F, Dong Y, Wang K, Zhan Z, Xie L. Reliability and validity of the Chinese version of the interpersonal reactivity index-C. *Chin J Clin Psychol*. 2010;18(2):155–157.
21. Birgili F, Uğurlu NB, Dincer NG, Yazkan G, Alaca Ç, Acar F. Validity and reliability evaluation of the Turkish version of the clinical interpersonal reactivity index. *Int J Nurs Pract*. 2024;30(5):e13220. doi:10.1111/ijn.13220
22. Li X. *Research on the Relationship Between Adult Attachment, Self-Disclosure and Depression of College Students*. Shijiazhuang: Hebei Normal University; 2009.
23. Xu F, Hilpert P, Randall AK, Li Q, Bodenmann G. Validation of the dyadic coping inventory with Chinese couples: factorial structure, measurement invariance, and construct validity. *Psychol Assess*. 2016;28(8):e127–40. doi:10.1037/pas0000329
24. Luo Q, Zhou L, Wang W, Ni Q, Zhang S. Relationship between marital support coping and close relationship in patients with gynecological cancer and their spouses. *Chin J Mental Health*. 2017;31(12):964–970.
25. Zhai W, Luo S, Li K, Liu L, Li D. Interaction between empathy and self-disclosure on post-traumatic growth in couples with gynecological cancer. *J Nurs Administrat*. 2023;23(1):31–36.
26. Li L, Chen L, Wu C. Interaction influence of conjugal empathy on self disclosure and intimate relationship in young hreast cancer patients and spouse. *J Nurs Sci*. 2022;37(18):75–78.
27. Molgora S, Fenaroli V, Prino LE, et al. Fear of childbirth in primiparous Italian pregnant women: the role of anxiety, depression, and couple adjustment. *Women Birth*. 2018;31(2):117–123. doi:10.1016/j.wombi.2017.06.022
28. Fang SY, Chang HT, Shu BC. The moderating effect of perceived partner empathy on body image and depression among breast cancer survivors. *Psychooncology*. 2015;24(12):1815–1822. doi:10.1002/pon.3868
29. Rosen NO, Bois K, Mayrand MH, Vannier S, Bergeron S. Observed and perceived disclosure and empathy are associated with better relationship adjustment and quality of life in couples coping with vulvodynia. *Arch Sex Behav*. 2016;45(8):1945–1956. doi:10.1007/s10508-016-0739-x
30. Badr H, Herbert K, Chhabria K, Sandulache VC, Chiao EY, Wagner T. Self-management intervention for head and neck cancer couples: results of a randomized pilot trial. *Cancer*. 2019;125(7):1176–1184. doi:10.1002/cncr.31906
31. Watts KJ, Sherman KA, Mireskandari S, Meiser B, Taylor A, Tucker K. Predictors of relationship adjustment among couples coping with a high risk of developing breast/ovarian cancer. *Psychol Health*. 2011;26(Suppl 1):21–39. doi:10.1080/08870441003592587
32. Ernst J, Hinz A, Niederwieser D, et al. Dyadic coping of patients with hematologic malignancies and their partners and its relation to quality of life - a longitudinal study. *Leuk Lymphoma*. 2017;58(3):655–665. doi:10.1080/10428194.2016.1194983
33. Lee J, Gillath O, Miller A. Effects of self- and partner's online disclosure on relationship intimacy and satisfaction. *PLoS One*. 2019;14(3): e0212186. doi:10.1371/journal.pone.0212186
34. Yuan Y, Geng L, Zhang C. Research progress on clinical nurses sympathetic fatigue intervention. *J Nurs Sci*. 2019;34(8):97–100.