



# Chinese Cancer Patients' Attitudes Toward Psychotherapy and Their Willingness to Participate in Clinical Trials of Psychotherapy

Cancer Control  
Volume 29: 1–10  
© The Author(s) 2022  
Article reuse guidelines:  
[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)  
DOI: 10.1177/10732748221112664  
[journals.sagepub.com/home/ccx](https://journals.sagepub.com/home/ccx)  


Zhi Zeng<sup>1,†</sup>, Yaotiao Deng<sup>1,†</sup>, Jie Liu<sup>1</sup>, Keyi Yang<sup>1</sup>, Hu Peng<sup>1</sup> and Yu Jiang<sup>1</sup> 

## Abstract

**Introduction:** Psychotherapy is considered part of the standard treatment of cancer in Western countries. However, there is no literature on the attitudes of Chinese cancer patients toward psychotherapy.

**Methods:** In a multicenter, cross-sectional study in China, a homemade questionnaire was delivered to cancer patients. The targeted population was Chinese hospitalized cancer patients who were informed of their state of illness.

**Results:** Five hundred and fifty cancer patients received our questionnaire, and 83.3% completed the questionnaire. Among the 458 patients, 43.2% indicated that they had never heard of psychotherapy before the survey. However, after a brief introduction of psychotherapy, most (92.1%) cancer patients indicated that psychotherapy is essential for cancer patients, and over half of patients (57.4%) were willing to take psychotherapy on the advice of the oncologist in charge. Participants aged 45 years or younger, had a family income > 10000 yuan per month, and had an ECOG PS (Eastern Cooperative Oncology Group Performance Status) of 2-4 were more willing to receive psychotherapy. Of all patients, 59.2% and 57.6% were willing to participate in individual and group psychotherapy clinical trials, respectively. Participants who had a bachelor's degree or higher (odds ratio, OR = 2.09) and were aged 45 years or younger (OR = 1.67) were more willing to participate in individual and group psychotherapy clinical trials, respectively.

**Conclusion:** The unmet psychological needs of cancer patients in China remain high, and doctors' advice is likely to positively impact the patients' acceptance of psychotherapy. Psychological education for Chinese cancer patients should be strengthened. More high-quality clinical trials of psychotherapy should be conducted in China to achieve greater benefits for cancer patients and their families.

## Keywords

cancer, Chinese, attitude, psychotherapy, clinical trials

Received March 1, 2022. Received revised June 14, 2022. Accepted for publication June 21, 2022.

## Introduction

In 2014, there were over 3.8 million new cancer cases and nearly 2.3 million cancer deaths in China, according to Chinese Cancer Statistics released by the China Cancer Registry in 2018.<sup>1</sup> Cancer not only affects the physiological condition of the patient but also places psychological distress on the patient, which can lead to symptoms of anxiety and depression.<sup>2</sup> These mental symptoms often recur during the

<sup>1</sup>Department of Medical Oncology, Cancer Center, West China Hospital, Sichuan University, Chengdu, People's Republic of China

<sup>†</sup>Zhi Zeng and Yaotiao Deng contributed equally to this work

### Corresponding Author:

Yu Jiang, Department of Medical Oncology, Cancer Center, West China Hospital, Sichuan University, No. 37, Guoxue Lane, Wuhou District, Chengdu 610041, People's Republic of China.  
Email: [jiang\\_yu@scu.edu.cn](mailto:jiang_yu@scu.edu.cn)



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

course of the disease and may cause sequelae.<sup>3</sup> Herschbach et al<sup>4</sup> showed that the incidence of psychological distress in cancer patients was 10%-50%. Studies showed that the prevalence of psychological distress in Chinese cancer inpatients was 30.0%-46.5%.<sup>5-7</sup> Anxiety and depression in cancer patients may deteriorate the quality of life, increase hospital admission rates and prolong hospitalizations.<sup>8,9</sup> Furthermore, cancer patients with depression have an increase in cancer-specific mortality.<sup>10,11</sup> Psychotherapy is a comprehensive biological treatment modifying the patient's mental, emotional and behavioral disorders so that patients with mental illness can adapt to the family, society, and work environment.<sup>12</sup> A meta-analysis showed that various forms of psycho-oncologic interventions (psychological support, individual psychotherapy, group psychotherapy, etc.) could significantly improve cancer patients' emotional distress and quality of life.<sup>13</sup> At present, psychological counseling psychotherapy is considered part of the standard treatment of cancer in several Western countries<sup>14</sup>; however, the neglect of the psychological needs of cancer patients remains common in Chinese oncology departments.<sup>15</sup> In 2018, among the 78090 hospitalized cancer patients in Peking University Cancer Hospital, only 173 (.22%) received psychological counseling due to mood disorders (anxiety, depression).<sup>15</sup> However, 28.9% of German cancer patients have received psychological counseling or psychotherapy due to cancer.<sup>16</sup>

In China, psychotherapy as a primary method of treating mental disorders is severely under-resourced, as cultural differences, economic levels, funding, and policies affect the development of psychotherapy.<sup>17,18</sup> Fortunately, advances in psychology and medicine have facilitated the development of psychotherapy in China.<sup>17</sup> In addition, with the development of psychosocial oncology in China, the Chinese Psycho-Oncology Society (CPOS) has more than 2000 members and published the first version of the Chinese Psychosocial Oncology Therapy Guidelines for Cancer Patients in 2016.<sup>19</sup> However, there remains a significant number of unmet psychological needs in Chinese oncology departments due to the highly strained medical resources, the reduced average length of stay and inappropriate or inadequate training of professionals.<sup>15</sup>

Resource barriers, information and knowledge barriers, and policy and legislative barriers have been identified as barriers to the provision of mental health services in low-and middle-income countries (LMICs).<sup>20</sup> Additionally, attitudinal barriers (cultural beliefs, confidence in the medical system, sense of shame and stigma, etc.), structural barriers (cost of services, limited insurance coverage, etc.), knowledge barriers (lack of knowledge about existing services), and treatment-related barriers (patients' concern about treatment negative aspects) were challenges in the utilization of mental health services in LMICs.<sup>20</sup> In fact, a previous study found that patients who were more optimistic about psychotherapy were more likely to receive psychotherapy.<sup>16</sup> Therefore, investigating the attitudes of Chinese cancer patients to psychotherapy may help find barriers that prevent them from receiving psychotherapy.

Although clinical trials of psychotherapy have received increased attention from healthcare professionals, the number of psychotherapy clinical trials and the number of recruited patients was low in China.<sup>21,22</sup> There were only 207 psychological intervention clinical trials (involving 19,607 cancer patients) for cancer patients in China from 2001 to 2013.<sup>21</sup> Patient attitudes toward clinical trials affect participant recruitment and compliance. Studies have shown that demographic factors influence patients' willingness to participate in clinical trials.<sup>23-25</sup> A recent survey showed that Chinese cancer patients had limited awareness of clinical trials, only half of the participants had a correct understanding of the clinical trial, and nearly 10% of participants believed that participating in clinical trials was the victim of scientific research.<sup>24</sup> As a result, only a few Chinese cancer patients have participated in clinical trials.<sup>26</sup> According to the report, only 49,517 subjects were enrolled in the 322 newly registered clinical trials of cancer drugs in China in 2018.<sup>24</sup> However, there was no literature on the attitudes of Chinese cancer patients toward clinical trials of psychotherapy. The purpose of this study was to investigate the attitudes of Chinese cancer patients to psychotherapy and their preference for clinical trials of psychotherapy. We speculate that the needs of Chinese cancer patients for psychotherapy have not yet been met, and the patient's age, education level, and economic status may affect their attitudes toward psychotherapy.

## Materials and Methods

### Subjects

The cross-sectional study was conducted at seven hospitals affiliated with seven universities across North China, Northwest China, Southwest China, Central China, and South China from October 2018 to April 2019. All subjects were inpatients (completed or undergoing treatment), aged 18 years or older, pathologically diagnosed with cancer, informed of their cancer diagnosis and able to understand and complete a questionnaire independently and communicate with the interviewer. Patients who were unable to complete the questionnaire due to vision or hearing problems; or those with mental illness or lack of basic cognitive ability, such as schizophrenia, or Alzheimer's disease, were excluded. Written informed consent was obtained from all participants with regard to collecting information about their demographics, illness, attitudes and need for psychotherapy. Those who did not complete the survey for any reason were excluded from further analysis.

### Definition of Principle Terms

In this study, the definitions of clinical cancer stage (early and advanced stages), psychotherapy, and clinical trials were referenced from the National Cancer Institute's Dictionary of Cancer Terms.<sup>27</sup> Early-stage cancer was defined as cancer that

was early in its growth, which may not have metastasized to other parts of the body. Advanced-stage cancer was described as cancer that had metastasized to other parts of the body and was difficult to control or treat. Psychotherapy was defined as interventions, such as discussion, listening, and counseling to treat mental, emotional, personality, and behavioral disorders (also known as talk therapy). Individual psychotherapy referred to psychotherapy whereby only one patient and at least one doctor are present at each psychotherapy session. Group psychotherapy was defined as psychotherapy in which more than one patient and at least one doctor were present in the session. We defined clinical trials as studies that tested whether a new intervention (screening, prevention, diagnosis, or treatment) is helpful for a population, also known as clinical research.

### Questionnaire

In this study, we used a homemade questionnaire to investigate patients' attitudes toward psychotherapy and clinical trials of psychotherapy. Factors previously reported that might be correlated with patients' attitudes toward psychotherapy and willingness to participate in clinical trials were included in the questionnaire design. The questionnaires did not ask for the names or addresses of participants. Before administration, the questionnaire was pilot-tested in 30 cancer patients to ensure that it was straightforward to follow. The survey contents included the following: (1) demographic and characteristics data of the respondents: age, gender, ethnicity, marital status, educational level, occupation, religious beliefs, place of residence, family income; (2) disease-related data: comorbidity, tumor type, disease stage, course of disease, Eastern Cooperative Oncology Group performance status (ECOG PS) and treatment received, reimbursable ratio of medical insurance, medical expenses burden; (3) knowledge about psychotherapy: whether patients were aware of psychotherapy, and ways to learn about psychotherapy; (4) attitudes toward psychotherapy, which included the following questions: a. perception of current psychological needs and experience with psychotherapy, b. perception of the necessity of cancer patients and families to receive psychotherapy, c. willingness to receive psychotherapy; and (5) perception of willingness to participate in psychotherapy clinical trials, and the most important reason for this choice. Responses were made on a four-point scale: 'very likely,' 'likely,' 'not likely,' and 'do not'. The medical expense burden of the patients was assessed by the patient and was divided into three levels: high, medium, and low. We also allowed participants to include textual answers. The questionnaire is provided in the online supplemental material (questionnaire S1).

### Study Procedures

Patients completed the questionnaire after signing the consent form. Patients completed the questionnaire independently or

with the help of the interviewer. Before the start of the survey, we conducted standardized training for the investigators to ensure the consistency of the survey process. After confirming with the doctor in charge or family members that the patient was aware of his condition (has been informed of their cancer diagnosis), the interviewers delivered the questionnaire to all eligible hospitalized patients. The investigators explained the knowledge of psychotherapy to all patients in an objective, consistent and noninductive approach based on the definition in the questionnaire. All responses and answers were entered into a computer database by an investigator who did not participate in the data collection. Incomplete questionnaires were excluded from the analysis. The reporting of this study conforms to STROBE guidelines.<sup>28</sup>

### Statistical Analysis

First, we used probability in the descriptive statistics to calculate the distribution of choices for each question. The response options 'very likely' and 'likely' were transformed into 'willing to do,' and 'not likely' and 'do not' were transformed into 'unwilling to do'. Univariate binary logistic regression and odds ratio (OR) were performed for the correlation between the main survey contents, demographic data, and disease-related data. Any factor with  $P < .05$  in the single-factor analysis method was further evaluated using multivariable logistic regression analysis (Tables S2, S3, S4, and S5 in the Online Supplemental Materials). Statistical significance was set at  $P < .05$  (two-tailed). Data were analyzed in SPSS statistical software (version 23.0).

### Results

A total of 550 questionnaires were distributed to hospitalized cancer patients from October 2018 to April 2019, and 83.3% completed the questionnaire. Reasons for refusing to participate in the survey included the following (the actual responses of the patient): "the patient was undergoing chemotherapy and thought their spirit was poor; the patient felt less educated and was unwilling to complete." The demographic data of participants are summarized in Table 1. Patient disease-related information is summarized in Table 2. Of the 458 patients who completed the questionnaire, 43.2% indicated that they had never heard of psychotherapy before the survey. Of the patients who had heard of psychotherapy (56.8%), the ways in which they had learned about psychotherapy were (listed in descending order): WeChat, internet, television, friends, doctors, nurses, families, and others, as shown in Figure 1. Patients who had heard of psychotherapy were those aged 45 years or younger (OR 1.76, 95% CI 1.13–2.72,  $P = .01$ ), who had previously received traditional Chinese medicine (TCM) (OR 2.76, 95% CI 1.31–5.82,  $P = .008$ ).

Each bar represents the number of participants selecting the option. The first bar represents "79 participants learned about psychotherapy from doctors". The second bar represents "49

**Table 1.** Demographic Characteristics of Participants (n = 458).

Characteristic		N	%
Age	Mean, range (y)	50.0 (19–87)	
Gender	Male	232	50.7
	Female	226	49.3
Ethnicity	Han	445	97.2
	Minority	13	2.8
Residence	City	215	46.9
	County	100	21.8
	Suburbs	20	4.4
	Rural	123	26.9
Marital status	Married	412	90.0
	Single	46	10.0
Education	Did not complete college	362	79.0
	Complete college	96	21.0
Occupation	Professional staff	233	50.9
	Farmer	103	22.5
	Retirement	86	18.8
	Unemployment	36	7.9
Religion	Yes	42	9.2
	No	416	90.8
Household income (yuan) <sup>a</sup> /month	≤5000	194	42.2
	5000–10000	119	26.0
	>10000	60	13.1
	Not willing to tell	85	18.6
Medical expenses reimbursement	≥50%	278	60.7
	<50%	180	39.3
Medical expenses burden	High	152	33.2
	Medium	226	49.3
	Low	80	17.5

<sup>a</sup>5000 yuan = 754 USD.

participants learned about psychotherapy from nurses”. The third bar represents “87 participants learned about psychotherapy from friends”. The fourth bar represents “47 participants learned about psychotherapy from families”. The fifth bar represents “113 participants learned about psychotherapy from WeChat or the Internet or TV”. The sixth bar represents “95 participants chose ‘Others’ in this question” (from top to bottom).

### Cancer Patients’ Attitudes Toward Psychotherapy

**Attitudes Toward the Question “Do you Currently Require a Doctor’s Psychological Support or Help?”.** Among the 458 cancer patients, 34.3% reported needing psychological support or help during the survey (Table 3). Patients with an ECOG PS of 2–4 (OR 1.64, 95% CI 1.11–2.42,  $P = .01$ ) were more likely to require psychological support from a doctor (Table S2 in the online supplemental materials).

**Attitudes Toward the Question “Do you Think It is Necessary for Cancer Patients to Receive Psychotherapy?”.** The vast majority (92.1%) of patients indicated that it is necessary for cancer patients to receive psychotherapy throughout their illness (Table 3). However, only nine had received psychotherapy

previously. Participants who had heard of psychotherapy (OR 4.64, 95% CI 2.05–10.51,  $P < .001$ ), had received chemotherapy (OR 4.12, 95% CI 1.73–9.78,  $P = .001$ ), had ECOG PS of 2–4 (OR 2.90, 95% CI 1.24–6.79,  $P = .01$ ), and had a medical expense reimbursement ratio  $\geq 50\%$  (OR 2.32, 95% CI 1.08–4.98,  $P = .03$ ) were more likely to agree that cancer patients need to receive psychotherapy (Table S6 in the Online Supplemental Materials).

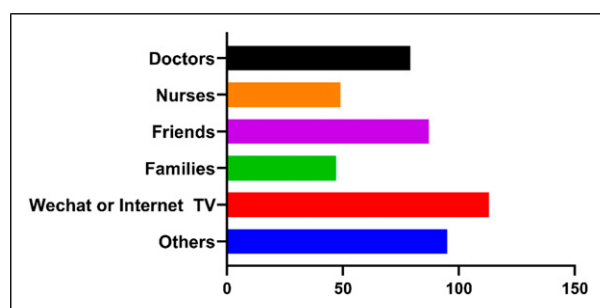
**Attitudes Toward the Question “Do you Think It is Necessary for Family Members of Cancer Patients to Receive Psychotherapy?”.** Of the 458 cancer patients, 51.3% of participants reported that it is necessary for family members of cancer patients to receive psychotherapy (Table 3). Participants who had heard of psychotherapy (OR 3.06, 95% CI 2.03–4.62,  $P < .001$ ) and had an ECOG PS of 2–4 (OR 1.54, 95% CI 1.02–2.33,  $P = .04$ ) were more likely to believe that family members of cancer patients need to receive psychotherapy (Table S6 in the Online Supplemental Materials).

**Attitudes Toward the Question “If Your Doctor in Charge Advises You to Receive Counseling or Psychotherapy, Would You be Willing to Do so?”.** In our survey, 57.4% stated that they would be

**Table 2.** Disease-Related Conditions of Patients (n = 458).

Characteristic	N	%	
Type of cancer	Liver cancer	16	3.5
	Lung cancer	88	19.2
	Esophageal cancer	23	5.0
	Gastric cancer	30	6.6
	Colorectal cancer	47	10.3
	Breast cancer	99	21.6
	Head and neck cancer	70	15.3
	Lymphoma	39	8.5
	STS <sup>a</sup> and osteosarcoma	19	4.1
	Gynecologic cancer	13	2.8
	Urinary cancer	7	1.5
Comorbidities	Yes	316	69.0
	No	142	31.0
Stage	Non-advanced	302	65.9
	Advanced	103	22.5
	Do not know	53	11.6
Disease duration	Within one month	41	9.0
	1–3 months	117	25.5
	3–6 months	116	25.3
	6–12 months	77	16.8
	More than one year	107	23.4
Previous treatment	Surgery	249	54.4
	Chemotherapy	385	83.1
	Radiotherapy	126	27.5
	Biotherapy	20	4.4
	Traditional Chinese medicine	50	10.9
ECOG PS score <sup>b</sup>	Not receiving treatment	20	4.4
	0–1	264	57.6
	2–4	194	42.4

Abbreviations

<sup>a</sup>STS: Soft tissue sarcoma.<sup>b</sup>ECOG PS: Eastern cooperative oncology group performance status.**Figure 1.** Ways for cancer patients to know about psychotherapy (n = 260).

willing to receive counseling or psychotherapy at the recommendation of the doctor in charge (Table 3). Participants who were aged 45 years or younger (OR 1.65, 95% CI 1.07–2.56,  $P = .02$ ), had a family income > 10,000 yuan per month (OR 1.77, 95% CI 1.05–2.98,  $P = .03$ ), had received chemotherapy previously (OR 1.82, 95% CI 1.05–3.14,  $P = .03$ ),

and had heard of psychotherapy (OR 2.91, 95% CI 1.93–4.38,  $P < .001$ ) were more willing to receive psychotherapy at the advice of their doctor (Table S7 in the Online Supplemental Materials). Compared with urban residents, county residents were more reluctant to receive psychotherapy (OR .51, 95% CI 0.30–.85,  $P = .01$ ) (Table S7 in the Online Supplemental Materials).

**Willingness to Participate in Clinical Trials of Psychotherapy.** Among the 458 patients, 271 (59.2%) and 264 (57.6%) patients were willing to participate in individual or group psychotherapy clinical trials, respectively (Figure 2). The main reasons for patients to participate in individual psychotherapy clinical trials included doctors' advice, and patients had a desire to participate. The main reason for patients to participate in group psychotherapy clinical trials was the doctors' advice. The primary reasons for patients to refuse to participate in psychotherapy clinical trials were the unwillingness to be a 'guinea pig' and the notion that psychotherapy does not help treat cancer (Figure 2).

Each bar represents the number of participants selecting the option. The right side represents the reason why patients were willing to participate in the psychotherapy clinical trial. The left side represents the reason why patients were unwilling to participate in psychotherapy clinical trials. "Family members" means that the patient's willingness or refusal to participate in the clinical trial was due to the family's consent or disagreement. "The patient himself" means that the patient's willingness or refusal to participate in the clinical trial was due to 'The patient insists on doing so' or 'Not want to be a guinea pig'. "Psychotherapy" means that the patient's willingness or refusal to participate in the clinical trial was due to 'Hope to try new treatments' or 'Does not help with my illness, Worried about negative impact on mental'. "Patient groups" means that the patient's willingness or refusal to participate in the clinical trial was due to 'Communicate and discuss with other patients' or 'Psychological problems are personal'.

Participants who had a bachelor's degree or higher (OR 2.09, 95% CI 1.26–3.49,  $P = .004$ ) and had heard of psychotherapy (OR 2.15, 95% CI 1.46–3.16,  $P < .001$ ) were more willing to participate in individual psychotherapy clinical trials (Table S8 in the Online Supplemental Materials). Patients who were aged 45 years or younger (OR 1.67, 95% CI 1.10–2.54,  $P = .02$ ) and had heard of psychotherapy (OR 2.20, 95% CI 1.50–3.23,  $P < .001$ ) were more willing to participate in group psychotherapy clinical trials (Table S8 in the Online Supplemental Materials).

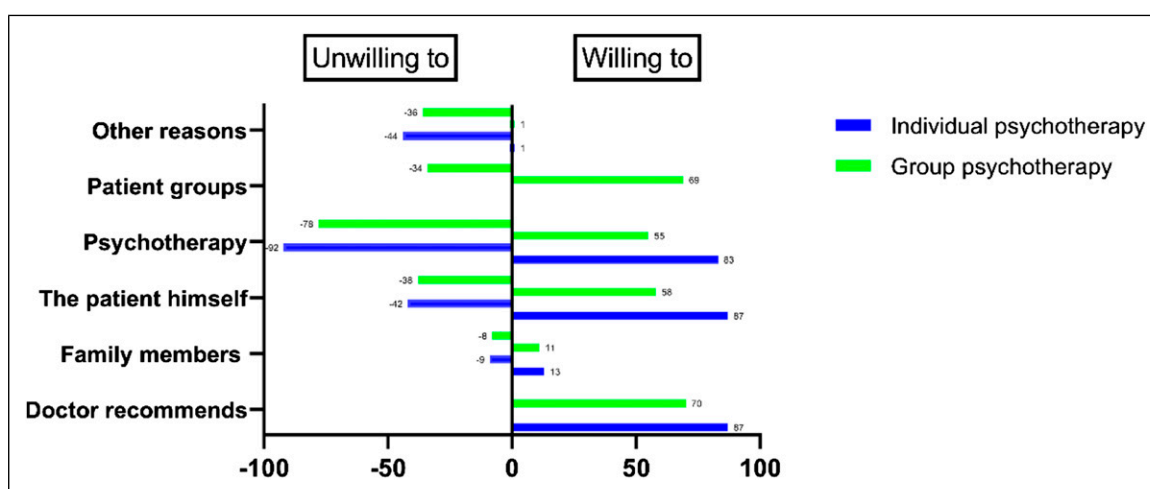
## Discussion

This is the first study to investigate attitudes toward psychotherapy and clinical trials of psychotherapy in Chinese cancer patients. The main findings from this study were that most Chinese cancer patients consider psychotherapy to be essential during the course of their disease. Age, educational



**Table 3.** Experience and Attitudes of Cancer Patients to Psychotherapy (n = 458).

		N	%
Do you need a doctor's psychological support or help now?	Yes	157	34.3
	No	301	65.7
Have you received psychotherapy?	Yes	9	2.0
	No	449	98.0
Is it necessary for cancer patients to receive psychotherapy?	Yes	422	92.1
	No	36	7.9
Is it necessary for families of cancer patients to receive psychotherapy?	Yes	235	51.3
	No	223	48.7
Are you willing to accept psychotherapy under the doctor's advice?	Yes	263	57.4
	No	195	42.6

**Figure 2.** Willingness of cancer patients to participate in clinical trials of psychotherapy (n = 458).

level, family income, treatment received, and ECOG PS influenced their attitudes toward psychotherapy and clinical trials of psychotherapy.

In our sample, an interesting finding was that patients who had been treated with TCM were more likely to have heard of psychotherapy. One possible explanation is that TCM views the body and the spirit (emotion) as a whole and focuses on restoring the balance of body and emotion through integrated therapy.<sup>29</sup> Previous studies have shown that TCM can alleviate the chronic stress caused by cancer pain and reduce the psychological distress of cancer patients.<sup>30,31</sup> Therefore, patients who have been treated with TCM may pay more attention to their mental health.

Among patients who had heard of psychotherapy, 30.3% had been informed of psychotherapy by oncologists. This demonstrated that Chinese oncologists pay limited attention to the psychological needs of cancer patients or that they lack knowledge regarding psychosocial oncology. In fact, in another survey we conducted, more than half of (53.9%) oncologists indicated “did not acquaint themselves with psychotherapy” (unpublished results). Previous studies have

shown that the sensitivity of oncologists in identifying psychiatric morbidity in cancer patients was only 28.87%; therefore, many patients were left untreated.<sup>32</sup> After reading the detailed introduction to psychotherapy in the questionnaire, 34.3% reported that they needed psychological support and only correlated with the patient's ECOG PS score. Tang et al. found that demographic factors that were significantly related to psychosocial care needs (help with anxiety, etc.) of Chinese breast cancer patients included ethnicity, age, income source and level, religious beliefs, education level, marital status, residential status, and current therapies.<sup>33</sup> Additionally, our study suggested that a doctor's advice likely has a positive impact on a patient's acceptance of psychotherapy. Overall, the identification and screening of psychological problems should be targeted at oncologists, so oncologists could be aware of patients' need for psychotherapy and provide a referral if needed.

The medical expenses for cancer treatment have gradually increased in the past few years, with most developing countries relying on out-of-pocket payments, which contributes to the financial burden for cancer patients.<sup>34,35</sup> Poverty

is associated with an increased risk for psychological distress and the need for care, but many low-income adults do not receive treatment because of attitudinal and systemic barriers.<sup>36</sup> Therefore, economic conditions can affect cancer patients' attitudes toward and utilization of psychotherapy.

We found that 43% of patients had learned about psychotherapy through social networks or the media, suggesting social media's importance in disseminating information about psychotherapy. Several studies have shown that smartphone applications have clinical value in China for following up cancer patients, collecting patient outcome information, and providing caregiver support.<sup>37-39</sup> In addition, a cross-sectional study conducted in Germany showed that women with cancer might benefit from psycho-oncological electronic health applications, especially for coping with psychological problems, such as anxiety and depression.<sup>40</sup> Therefore, if Chinese cancer patients can learn about psychosocial oncology through social media, it may help them understand and access psychotherapy.

However, only 2% had previously used psychological care. This ratio is similar to previous research data (1.39%).<sup>15</sup> The reasons for such a small proportion may be because (1) the development of psychosocial oncology care in China lags behind Western countries<sup>15</sup>; (2) there is a lack of experts in psychosocial oncology and mental health; (3) oncologists underrecognize the psychological problems of cancer patients<sup>32</sup>; (4) the medical resources of cancer hospitals in China are highly strained, and the average length of stay of medical oncology wards in a general cancer hospital dropped from 11.2 to 2.29 days, which might lead to the neglect of the psychosocial needs of cancer patients.<sup>15</sup> (5) Because of the traditional social and cultural backgrounds, mental health in the Chinese population is primarily based on interpersonal relationships and family harmony, whereas psychotherapy emphasizes individual growth and autonomy, which has had an effect on its development and popularization among traditional Chinese communities<sup>41</sup>; perhaps the recommendations of the attending doctors were also affected. (6) Lack of family or social support, which is also a deterrent factor against the utilization of mental health services in other developing countries, such as Nepal, Pakistan, and Southeastern Europe.<sup>42-45</sup> A previous study showed that only 55.6% of the family members of Chinese cancer patients would actively advise patients to receive psychotherapy.<sup>46</sup> (7) Ming and cancer fatalism.<sup>47</sup> Ming is believed to be an invisible force that governs everything in the course of human life, including aging, illness, and death, and is responsible for cancer fatalism in China, which eventually leads to reduced cancer treatment utilization of mental health services.<sup>20,47</sup> (8) There is concern about social stigma or personal shame, which is the main attitudinal barrier to the utilization of mental health services in LMICs.<sup>20,42</sup> (9) Time-related barriers.<sup>20,48</sup> However, unlike other LMICs and Hong Kong, the cost of services and limited insurance coverage were not barriers preventing mainland Chinese patients from access to psychotherapy.<sup>20</sup> A survey showed that the fee for counseling and psychotherapy in

public hospitals in China was 40-360 RMB/hour (100 RMB = 15.38 USD), which was the same as the affordability of most people.<sup>49</sup> In the future, researchers should conduct semi-structured interviews to understand why Chinese cancer patients receive less counseling or psychotherapy and explore how to integrate psychosocial care into the multidisciplinary treatment model of cancer. Overall, increasing the attention given to psychological problems in cancer patients, their families, and oncologists and integrating psychological care into the multidisciplinary treatment model of Chinese cancer patients may be feasible measures to improve the current status quo.

Our previous study showed that 54.5-75.6% of Chinese patients were willing to join a cancer clinical trial, and willingness was affected by disease stage.<sup>23</sup> In this study, more than half of the patients were willing to participate in individual and group psychotherapy clinical trials. However, the present study indicated that the disease stage was not related to the patient's willingness to participate in the clinical trial evaluating psychotherapy. The main reasons for patients to refuse to participate in clinical trials of psychotherapy were as follows: do not want to be a 'guinea pig' or psychotherapy does not help treat cancer. Similarly, our previous study demonstrated that patients refused to participate in clinical trials because they did not want to be a 'guinea pig' or were uncertain about the drug's efficacy.<sup>23</sup> The present study indicated that Chinese cancer patients had a certain degree of misunderstanding of clinical trials and a lack of awareness of psychotherapy. Previous studies have shown that patient preferences and attitudes toward psychotherapy influence the compliance and efficacy of psychotherapy.<sup>50</sup> Taken together, these findings suggest that cancer patients' understanding of psychotherapy needs to be improved, and further relevant clinical trials need to be conducted.

Our research has several limitations. First, our study was a cross-sectional survey that reflected the attitudes and thoughts of cancer patients at the time of the survey only. A prospective study may allow the detection of more dynamic changes in patients' attitudes. In addition, considering that Chinese cancer patients are a large group, a larger sample size may help determine the predictors that influence cancer patients' attitudes toward psychotherapy. In fact, some statisticians recommend the desired sample size for multiple regression analyses, which is 15-20 times the number of independent variables.<sup>51</sup> Second, we used only homemade questionnaires in our study. Validated and standardized questionnaires may help provide more reliable results, but similar questionnaires cannot cover the issues we investigated. Third, the study was conducted in hospitalized patients in large tertiary hospitals and thus, did not include local lower-level hospitals. Therefore, we may have overestimated the perception and acceptance of psychotherapy in Chinese cancer patients. Fourth, all participants were inpatients, and we did not investigate the attitudes of outpatients. As previous studies have shown, there were no significant differences in the distress thermometer

score between inpatient and outpatient settings among Chinese cancer patients.<sup>5</sup> Moreover, in China, most cancer patients are treated in the inpatient department; although, oncologists and nurses have recently begun examining the application and safety of outpatient chemotherapy.<sup>52</sup> Therefore, with the increase in the number of patients receiving outpatient cancer treatment and care, the attitudes of outpatients should also be considered in future studies. Fifth, a considerable number of patients had not heard of psychotherapy before our survey. Although we described psychotherapy in the questionnaire and the researchers introduced the patients to the knowledge of psychotherapy, the attitudes of cancer patients toward psychotherapy may still be biased.

## Conclusion

The vast majority of Chinese cancer patients believe that it is essential for cancer patients to receive psychotherapy. The unmet psychological needs of cancer patients in China remain high, and doctors' advice is likely to positively impact patients' acceptance of psychotherapy. Cancer patients' understanding of psychotherapy needs to be improved. Moreover, more high-quality clinical trials of psychotherapy should be conducted in China to achieve greater benefits for cancer patients and their families.

## Acknowledgments

We thank all the participants for their help. We also thank all the doctors and nurses who helped us in this study.

## Author Contributions

Zhi Zeng and Yaotiao Deng contributed equally to this work. All authors made substantial contributions to the conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

## Availability of Data and Material

The data that support the findings of this study are available on request from the corresponding author.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Ethics Approval and Informed Consent

All procedures performed in this study involving human participants were conducted in accordance with the Declaration of Helsinki. This study was approved by the Ethics Committee of West China Hospital of Sichuan University (2015-152). Written informed consent was obtained from all participants with regard to collecting information

about their demographics, illness, attitudes and need for psychotherapy.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by the National Natural Science Foundation of China (81602732).

## ORCID iD

Yu Jiang  <https://orcid.org/0000-0003-0716-4334>

## Supplemental Material

Supplemental material for this article is available online.

## References

1. Chen WQ, Li H, Sun KX, et al. Report of cancer incidence and mortality in China, 2014. *Zhonghua Zhongliu Zazhi*. 2018;40(1): 5-13. Chinese. doi:10.3760/cma.j.issn.0253-3766.2018.01.002
2. McFarland DC, Shaffer KM, Tiersten A, Holland J. Physical symptom burden and its association with distress, anxiety, and depression in breast cancer. *Psychosomatics*. 2018;59(5): 464-471. doi:10.1016/j.psych.2018.01.005
3. Tanaka M, Vécsei L. Editorial of special issue "crosstalk between depression, anxiety, and dementia: comorbidity in behavioral neurology and neuropsychiatry". *Biomedicine*. 2021; 9(5):517. doi:10.3390/biomedicine9050517
4. Herschbach P, Book K, Brandl T, et al. Psychological distress in cancer patients assessed with an expert rating scale. *Br J Cancer*. 2008;99(1):37-43. doi:10.1038/sj.bjc.6604420
5. Thapa S, Sun H, Pokhrel G, Wang B, Dahal S, Yu S. Performance of distress thermometer and associated factors of psychological distress among Chinese cancer patients. *J Oncol*. 2020;2020:3293589. doi:10.1155/2020/3293589
6. Deng YT, Zhong WN, Jiang Y. Measurement of distress and its alteration during treatment in patients with nasopharyngeal carcinoma. *Head Neck*. 2014;36(8):1077-1086. doi:10.1002/hed.23412
7. Zheng B, Du P, Yi TW, et al. Effects of two translated phrases of distress thermometer on screening distress in Chinese cancer patients: a comparative study. *J Clin Nurs*. 2019;28(5-6): 828-835. doi:10.1111/jocn.14678
8. Mols F, Schoormans D, de Hingh I, Oerlemans S, Husson O. Symptoms of anxiety and depression among colorectal cancer survivors from the population-based, longitudinal profiles registry: prevalence, predictors, and impact on quality of life. *Cancer*. 2018;124(12):2621-2628. doi:10.1002/ncr.31369
9. Nipp RD, El-Jawahri A, Moran SM, et al. The relationship between physical and psychological symptoms and health care utilization in hospitalized patients with advanced cancer. *Cancer*. 2017;123(23):4720-4727. doi:10.1002/ncr.30912
10. Batty GD, Russ TC, Stamatakis E, Kivimäki M. Psychological distress in relation to site specific cancer mortality: pooling of



- unpublished data from 16 prospective cohort studies. *BMJ*. 2017;356:j108. doi:10.1136/bmj.j108
11. Zhu J, Fang F, Sjölander A, Fall K, Adami HO, Valdimarsdóttir U. First-onset mental disorders after cancer diagnosis and cancer-specific mortality: a nationwide cohort study. *Ann Oncol*. 2017;28(8):1964-1969. doi:10.1093/annonc/mdx265
  12. Balogh L, Tanaka M, Török N, Vécsei L, Taguchi S. Crosstalk between existential phenomenological psychotherapy and neurological sciences in mood and anxiety disorders. *Biomedicines*. 2021;9(4):340. doi:10.3390/biomedicines9040340
  13. Faller H, Schuler M, Richard M, Heckl U, Weis J, Küffner R. Effects of psycho-oncologic interventions on emotional distress and quality of life in adult patients with cancer: systematic review and meta-analysis. *J Clin Oncol*. 2013;31(6):782-793. doi:10.1200/JCO.2011.40.8922
  14. Riba MB. 2021. Available at: [https://www.nccn.org/professionals/physician\\_gls/pdf/distress.pdf](https://www.nccn.org/professionals/physician_gls/pdf/distress.pdf). Accessed 11 November 2021.
  15. Li Z, Li J, Tang L, Pang Y. Development of psychosocial oncology care in China: consultation-liaison psychiatric service in a cancer center. *Psycho Oncol*. 2019;28(11):2247-2249. doi:10.1002/pon.5219
  16. Faller H, Weis J, Koch U, et al. Utilization of professional psychological care in a large German sample of cancer patients. *Psycho Oncol*. 2017;26(4):537-543. doi:10.1002/pon.4197
  17. Ng RMK, Lee CK, Liu J, et al. Psychotherapy services in China: current provisions and future development. *J Contemp Psychother*. 2017;47:87-94. doi:10.1007/s10879-016-9345-4
  18. Saraceno B, van Ommeren M, Batniji R, et al. Barriers to improvement of mental health services in low-income and middle-income countries. *Lancet*. 2007;370(9593):1164-1174. doi:10.1016/S0140-6736(07)61263-X
  19. Tang L. Memories of Dr Jimmie Holland, the pioneer of psycho-oncology-while she is gone, her spirit lives forever. *Psycho Oncol*. 2018;27(5):1385-1386. doi:10.1002/pon.4704
  20. Sarikhani Y, Bastani P, Rafiee M, Kavosi Z, Ravangard R. Key barriers to the provision and utilization of mental health services in low-and middle-income countries: a scope study. *Comm Ment Health J*. 2021;57(5):836-852. doi:10.1007/s10597-020-00619-2
  21. Tao WW, Jiang P, Liu Y, Aunguroch Y, Tao XM. Psycho-oncologic interventions to reduce distress in cancer patients: a meta-analysis of controlled clinical studies published in People's Republic of China. *Psycho Oncol*. 2015;24(3):269-278. doi:10.1002/pon.3634
  22. Chambers SK, Hyde MK, Au AM, Ip D, Shum D, Dunn J. A systematic review of psycho-oncology research in Chinese populations: emerging trends. *Eur J Cancer Care*. 2013;22(6):824-831. doi:10.1111/ecc.12087
  23. Li JY, Yu CH, Jiang Y. Participation in cancer clinical trials as viewed by Chinese patients and their families. *Oncology*. 2010;79(5-6):343-348. doi:10.1159/000323325
  24. Huang H, Fang Y, Fang H, et al. Awareness and influencing factors of clinical trial among cancer patients in China. *Zhongguo Fei Ai Za Zhi*. 2020;23(1):5-14. Chinese. doi:10.3779/j.issn.1009-3419.2020.01.02
  25. Lara PN Jr, Paterniti DA, Chiechi C, et al. Evaluation of factors affecting awareness of and willingness to participate in cancer clinical trials. *J Clin Oncol*. 2005;23(36):9282-9289. doi:10.1200/JCO.2005.02.6245
  26. Li N, Huang HY, Wu DW, et al. Changes in clinical trials of cancer drugs in mainland China over the decade 2009-18: a systematic review. *Lancet Oncol*. 2019;20(11):e619-e626. doi:10.1016/S1470-2045(19)30491-7
  27. NCI Dictionary of Cancer Terms. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms>. Accessed 1 September 2018.
  28. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The strengthening of reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *Ann Intern Med*. 2007;147:573-577.
  29. Tan C, Chen W, Wu Y, Chen S. Chinese medicine for mental disorder and its applications in psychosomatic diseases. *Altern Ther Health Med*. 2013;19(1):59-69.
  30. Cui B, Peng F, Lu J, et al. Cancer and stress: NextGen strategies. *Brain Behav Immun*. 2021;93:368-383. doi:10.1016/j.bbi.2020.11.005
  31. Tao W, Luo X, Cui B, et al. Practice of traditional Chinese medicine for psycho-behavioral intervention improves quality of life in cancer patients: a systematic review and meta-analysis. *Oncotarget*. 2015;6(37):39725-39739. doi:10.18632/oncotarget.5388
  32. Fallowfield L, Ratcliffe D, Jenkins V, Saul J. Psychiatric morbidity and its recognition by doctors in patients with cancer. *Br J Cancer*. 2001;84(8):1011-1015. doi:10.1054/bjoc.2001.1724.
  33. Tang L, Zhang Y, Pang Y, et al. A comparison of psychosocial care preferences of breast cancer women in Mainland China and Hong Kong. *Psycho Oncol*. 2019;28(2):343-350. doi:10.1002/pon.4947
  34. Zhu Z, Xing W, Zhang X, Hu Y, So WKW. Cancer survivors' experiences with financial toxicity: a systematic review and meta-synthesis of qualitative studies. *Psycho Oncol*. 2020;29(6):945-959. doi:10.1002/pon.5361
  35. Jan S, Kimman M, Peters SA, Woodward M, Action Study Group. Financial catastrophe, treatment discontinuation and death associated with surgically operable cancer in South-East Asia: Results from the ACTION Study. *Surgery*. 2015;157(6):971-982. doi:10.1016/j.surg.2015.02.012
  36. Santiago CD, Kaltman S, Miranda J. Poverty and mental health: how do low-income adults and children fare in psychotherapy? *J Clin Psychol*. 2013;69(2):115-126. doi:10.1002/jclp.21951
  37. Lyu KX, Zhao J, Wang B, et al. Smartphone application wechat for clinical follow-up of discharged patients with head and neck tumors: a randomized controlled trial. *Chin Med J (Engl)*. 2016;129(23):2816-2823. doi:10.4103/0366-6999.194635
  38. Wang J, Yao N, Shen M, et al. Supporting caregivers of children with acute lymphoblastic leukemia via a smartphone app: a pilot study of usability and effectiveness. *Comput Inform Nurs*. 2016;34(11):520-527. doi:10.1097/CIN.0000000000000265
  39. Wang J, Yao NA, Liu Y, et al. Development of a smartphone application to monitor pediatric patient-reported outcomes.

- Comput Inform Nurs.* 2017;35(11):590-598. doi:[10.1097/CIN.0000000000000357](https://doi.org/10.1097/CIN.0000000000000357)
40. Ringwald J, Marwedel L, Junne F, et al. Demands and needs for psycho-oncological ehealth interventions in women with cancer: cross-sectional study. *JMIR Cancer.* 2017;3(2):e19. doi:[10.2196/cancer.7973](https://doi.org/10.2196/cancer.7973)
41. Hsiao FH, Klimidis S, Minas H, Tan ES. Cultural attribution of mental health suffering in Chinese societies: the views of Chinese patients with mental illness and their caregivers. *J Clin Nurs.* 2006;15(8):998-1006. doi:[10.1111/j.1365-2702.2006.01331.x](https://doi.org/10.1111/j.1365-2702.2006.01331.x)
42. Yu S, Kowitt SD, Fisher EB, Li G. Mental health in China: stigma, family obligations, and the potential of peer support. *Community Ment Health J.* 2018;54(6):757-764. doi:[10.1007/s10597-017-0182-z](https://doi.org/10.1007/s10597-017-0182-z)
43. Luitel NP, Jordans MJD, Kohrt BA, Rathod SD, Komproe IH. Treatment gap and barriers for mental health care: a cross-sectional community survey in Nepal. *PLoS One.* 2017;12(8):e0183223. doi:[10.1371/journal.pone.0183223](https://doi.org/10.1371/journal.pone.0183223)
44. Husain W. Barriers in seeking psychological help: public perception in Pakistan. *Comm Ment Health J.* 2020;56(1):75-78. doi:[10.1007/s10597-019-00464-y](https://doi.org/10.1007/s10597-019-00464-y)
45. Tirintica AR, Andjelkovic I, Sota O, et al. Factors that influence access to mental health services in South-Eastern Europe. *Int J Ment Health Syst.* 2018;12:75. doi:[10.1186/s13033-018-0255-6](https://doi.org/10.1186/s13033-018-0255-6)
46. Chen J, Zhang JL, Liu H, et al. Study of the attitude of cancer patient's family members to the psychotherapy for cancer patients. *Journal of Cancer Control and Treatment.* 2016;29(01):35-39. doi:[10.3969/j.issn.1674-0904.2016.01.007](https://doi.org/10.3969/j.issn.1674-0904.2016.01.007)
47. Goss PE, Strasser-Weippl K, Lee-Bychkovsky BL, et al. Challenges to effective cancer control in China, India, and Russia. *Lancet Oncol.* 2014;15(5):489-538. doi:[10.1016/S1470-2045\(14\)70029-4](https://doi.org/10.1016/S1470-2045(14)70029-4)
48. Sun KS, Lam TP, Lam KF, Lo TL. Barriers and facilitators for psychiatrists in managing mental health patients in Hong Kong-impact of Chinese culture and health system. *Asia Pac Psychiatr.* 2018;10(1):e12279. doi:[10.1111/appy.12279](https://doi.org/10.1111/appy.12279)
49. Zhang AL, Wang ZM, Huang XT. Current situation of fee of counseling and psychotherapy in China. *Chin Ment Health J.* 2017;31(1):40-45. doi:[10.3969/j.issn.1000-6729.2017.01.008](https://doi.org/10.3969/j.issn.1000-6729.2017.01.008)
50. Moradveisi L, Huibers M, Renner F, Arntz A. The influence of patients' preference/attitude towards psychotherapy and anti-depressant medication on the treatment of major depressive disorder. *J Behav Ther Exp Psychiatr.* 2014;45(1):170-177. doi:[10.1016/j.jbtep.2013.10.003](https://doi.org/10.1016/j.jbtep.2013.10.003)
51. Siddiqui KA. Heuristics for sample size determination in multivariate statistical techniques. *World Appl Sci J.* 2013;27(2):285-287. doi:[10.5829/idosi.wasj.2013.27.02.889](https://doi.org/10.5829/idosi.wasj.2013.27.02.889)
52. Feng Y, Lu S, Song Z, Xu L, Shi Y, Chen Z. Safety analysis of ambulatory chemotherapy in lung cancer. *Zhongguo Fei Ai Za Zhi.* 2010;13(7):713-716. Chinese. doi:[10.3779/j.issn.1009-3419.2010.07.10](https://doi.org/10.3779/j.issn.1009-3419.2010.07.10)