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Meaning in life and its relationship with family cohesion: A survey of patients with palliative care in China

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ABSTRACT

Objective: Meaning in life (MIL) and family cohesion are important concerns for the palliative care population; however, evidence of the relationship between MIL and family cohesion is scarce. Therefore, this study aimed to examine the relationship between MIL and family cohesion and explore the factors that influence MIL among the palliative care population.

Methods: In this cross-sectional study, 205 patients with advanced cancer were recruited from two palliative care units in China. Data were collected using the meaning in life scale (MiLS), the family cohesion subscale of the Family Adaptability and Cohesion Scale, second edition, Chinese version, and the Karnofsky Performance Status Scale (KPS). Multivariate linear regression models were used to examine the relationship between family cohesion and perceived MIL and identify the potential factors of participants' MiLS score.

Results: The mean MiLS score was 100.90 (SD = 9.17). The results showed that family cohesion ($r = 0.313$, $P < 0.001$) and KPS scores ($r = 0.311$, $P < 0.001$) were positively correlated with MiLS scores. Multivariate linear regression revealed that MIL was significantly influenced by family cohesion, KPS score, sex, religiosity, whether participants lived alone, and their medical insurance payment method (Adjust $R^2 = 28.4\%$, $F = 6.281$, $P = 0.013$).

Conclusions: Our findings indicate a positive relationship between family cohesion and MIL, suggesting that clinicians should consider increasing patients' family cohesion as an approach to enhance perceived MIL.

Introduction

Cancer diagnosis and treatment often disrupt the daily lives of patients and their families and may increase their risk of experiencing psychological distress.[1] In the past decade, a growing body of research has focused on the development of psychotherapeutic interventions that consider the spiritual aspects of patients' lives, particularly meaning in life (MIL).[2] The belief that one's life is coherent, meaningful, and purposeful is essential to human functioning; accordingly, the desire for finding MIL is considered the main motivation for humans.[3,4] Thus, creating, discovering, and maintaining a sense of MIL are considered key factors in a person's physical and mental health.[1,5]

Finding MIL is often regarded as the goal of several psychotherapies aiming to help patients adapt to cancer diagnosis and treatment, reduce their distress, and manage crises more effectively.[6,7] Indeed, myriad investigations have identified that higher perceived MIL is associated with positive psychological outcomes among cancer survivors,[5,7] including greater social support,[8] emotional adjustment,[9] and decreased depression after crises.[10] Conversely, lower perceived MIL is associated with the loss of dignity,[11] psychological distress (eg. anxiety, fatigue, depression, and hopelessness),[12,13] increased suicidal ideation, and even a wish for euthanasia, especially in patients near the end-of-life.[14,15] During this stage, if patients can still find MIL through connectedness, hope, and love, their perceived MIL may be enhanced.[16]

Family cohesion, conflict, and routines have a significant impact on patients and caregivers' adjustment to the illness. Family cohesion is defined as a close, connected relationship among family members,[17] and has been associated with positive emotional, psychological, and physical

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health outcomes, as well as patients' enhanced efforts in fighting cancer.[18,19] Conversely, family systems characterized by low cohesion may have poor care coordination, limited cooperation, and less participation in care needs. These cohesion-related stressors may increase the burden on patients and reduce their sense of MIL.[20] Prior research has indicated that MIL is embedded in a cultural and ethnic background.[7,18] Influenced by Confucianism and filial piety, Chinese culture emphasizes interdependence, obligation, and family cohesion. Family support is regarded as the principal motivation for dying patients to pursue MIL.[19] However, few studies have explicitly examined the relationship between perceived MIL and family cohesion. In addition, in patients with limited life expectancy, palliative care enhances their quality of life and that of their families. Previous studies have focused on patients who are non-terminally ill and explored the effects of family-related factors on patients' health problems and the burden or emotional distress of caregivers.[21] Few studies have explored MIL and its influencing factors among patients with palliative care in China.

Therefore, the primary aims of the current study were as follows: (1) to examine the relationship between MIL and family cohesion, we hypothesized that higher levels of family cohesion are associated with a higher perceived MIL. (2) To analyze the factors influencing perceived MIL among the palliative care population in China.

Methods

Study design and participants

This cross-sectional study was conducted in two palliative care units in two public hospitals in Shantou, Guangdong Province, China. Participants were selected using convenience sampling between December 2019 and February 2021. Patients were recruited if they were at least 18 years old, had a confirmed diagnosis of stage III or IV cancer, and were able to read and write in Chinese. Patients were excluded if they refused to participate or had significant cognitive impairment, as evaluated by their physicians and documented in the medical records. The local ethics committee approved this study.

Data collection and instruments

After obtaining their written informed consent, participants were invited to complete a set of questionnaires anonymously. A total of 205 participants provided their written consent and took 8–20 min to complete all questionnaires without interference. All the data were collected by two trained investigators. Sociodemographic data included age, sex, educational background, self-perceived religiosity, marital status, number of children, employment status, place of residence, living alone, and care venue. Medical information, including diagnosis, cancer stage, and metastasis, was obtained from the medical records.

The meaning in life scale (MiLS) developed by Dr. Wang has 28 items and was designed for use in patients with cancer.[22] The scale is mainly based on Frankl's theory and constructed theoretically through interviews expert consultation. The content covers the core concepts of Frankl meaning therapy.[23] MiLS is a widely used instrument for evaluating the MIL among patients with cancer in China.[24] It comprises six subscales (will to seek meaning, existential frustration, meaning and satisfaction in life, controlling one's life, bearing suffering, and acceptance of death). Controlling one's life refers to the degree to which an individual is free to make life choices and be responsible for his or her life. Bearing suffering refers to the degree to which an individual understands and accepts the meaning of suffering. Items are rated on a 5-point scale ranging from 1 ("totally disagree") to 5 ("totally agree"). The total MiLS score ranges from 28 to 140 points. A higher score indicates a higher level of MIL. The MiLS has demonstrated satisfactory reliability and validity in patients with cancer. The internal consistency reliability of the original MiLS was 0.725. In our study, the internal consistency reliability was 0.864.

The Family Adaptability and Cohesion Scale, second edition (FACES II), developed by Olson[17] and translated into Chinese by Phillips et al.[25]; the Chinese version (FACES II-CV) has good reliability and validity. The FACES II-CV comprises 30 items, consisting of two subscales: family cohesion (16 items) and family adaptability (14 items). It is rated on a 5-point scale ranging from 1 ("almost never") to 5 ("almost always"). This study only evaluated the relationship between family members' emotional bonding and sense of MIL. Thus, the FACES-11-CV's family cohesion subscale was used. Items 2, 5, 10, and 15 were reverse-scored. A higher score indicated a higher level of family cohesion. In this study, the internal consistency reliability was 0.904.

The Karnofsky Performance Status Scale (KPS) was used to assess participants' functional status. The total score ranges from 0 (death) to 100 (normal activity, no evidence of disease). A higher score indicated less physical impairment.

Data analysis

Statistical analyses were performed using SPSS, version 23.0 software (SPSS Inc., Chicago, IL, USA). Categorical variables were described as numbers and percentages, whereas continuous variables were described as means and standard deviations. The Kolmogorov–Smirnov statistical test was used to evaluate the normality of the continuous and nominal variables. Independent t-tests and one-way analyses of variance were used to identify potential factors influencing the dependent variable (total MiLS score). Bivariate analyses (Pearson correlations) were used to explore the correlations between the FACES II-CV, the KPS, and the MiLS. The dependent variable was the total MiLS score. Variables with $P < 0.05$ in the previously performed univariate analysis and bivariate analyses were used as independent variables. The sociodemographic characteristics shown to be significantly associated with perceived MIL in other studies[26–28] (age, marital status, and whether participants were living alone) were entered as control variables and included in the regression model. Multiple linear regression analysis (forward) was used to evaluate the factors associated with patients' MIL. All statistical analyses were two-sided and statistical significance was set at $P < 0.05$.

Results

Participant characteristics

In total, 205 of 242 initially eligible patients completed all questionnaires (response rate: 84.71%). Among 205 patients, most were male (52.20%), married (82.44%), non-religious (87.80%), received less than nine years of education (52.68%), and lived with their family members (95.12%). The average age of the patients was 60.23 years (SD = 12.36, range: 26–99) and 110 (53.66%) patients were over 60 years old. The average time since they received a cancer diagnosis was 25.73 months (SD = 32.78, range: 1–228). The details of patient characteristics are presented in Table 1. We have compared the characteristics of participants recruited from the two centers, and no significant differences were observed (Supplementary Table S1). Therefore, we combined their data together without further adjustment for study center in the regression model.

Perceived MIL, family cohesion, and KPS score

Patients rated their family cohesion as 65.63 points (SD = 7.01, range: 33–80). The mean total MiLS score was 100.90 points (SD = 9.17, range: 74–127). Means and standard deviations of KPS, family cohesion, and MiLS are presented in Table 2.

Relationships between the participants' characteristics and their MIL

The total MiLS score was used as a dependent variable. Univariate analysis indicated that individuals with a higher level of MIL were male

Table 1
Association of sociodemographic and medical information with meaning in life for patients with advanced cancer ($n = 205$).

Variables		Number (%)	Mean ± SD for MiLS	*t/F*	*P*
Age[a]	< 60 years	95 (46.34)	100.86 ± 10.32	−0.145	0.885
	≥ 60 years	110 (53.66)	101.05 ± 8.56		
Gender[a]	Male	107 (52.20)	102.63 ± 8.69	2.850	0.008
	Female	98 (47.80)	99.15 ± 9.83		
Education level[a]	< 9 years	108 (52.68)	99.55 ± 7.90	−2.207	0.022
	≥ 9 years	97 (47.32)	102.55 ± 10.63		
Self-perceived Religiosity[a]	Not religious	180 (87.80)	100.43 ± 9.31	−2.199	0.029
	Religious	25 (12.20)	104.80 ± 9.27		
Marital status[a]	No partner (unmarried/divorced/widowed)	36 (17.56)	100.00 ± 8.12	−0.679	0.498
	Partner (married)	169 (82.44)	101.17 ± 9.65		
Number of children[a]	≤ 3	181 (88.29)	101.56 ± 9.27	2.535	0.012
	> 3	24 (11.71)	96.46 ± 9.30		
Employment status[a]	Employed	14 (6.83)	108.21 ± 9.70	0.241	0.002
	Unemployed/retired	191 (93.17)	100.43 ± 9.17		
Place of residence[a]	Urban	90 (43.90)	102.50 ± 9.95	2.086	0.038
	Rural	115 (56.10)	99.77 ± 8.79		
Living alone[a]	Yes	10 (4.88)	91.00 ± 15.19	−2.163	0.058
	No	195 (95.12)	101.48 ± 8.76		
Care venue[a]	Inpatient	91 (44.39)	102.02 ± 10.21	1.442	0.151
	Outpatient	114 (55.61)	100.12 ± 8.64		
Primary cancer site[b]	Nasopharynx	8 (3.90)	102.00 ± 9.24	0.747	0.650
	Esophagus	17 (8.29)	99.00 ± 7.60		
	Stomach	8 (3.90)	97.88 ± 11.21		
	Lung	51 (24.88)	100.73 ± 10.98		
	Breast	23 (11.22)	104.22 ± 8.57		
	Liver	21 (10.24)	102.90 ± 10.83		
	Colon/rectum	43 (20.98)	100.67 ± 9.04		
	Gynecological	8 (3.90)	100.38 ± 2.07		
	Others	26 (12.68)	99.58 ± 8.03		
Cancer stage[a]	III	30 (14.63)	102.63 ± 9.17	1.053	0.294
	IV	175 (85.34)	100.68 ± 9.43		
Metastasis[a]	Yes	27 (13.17)	102.70 ± 9.51	1.032	0.303
	No	178 (86.83)	100.70 ± 9.37		
Time since confirmed diagnosis (Months)[b]	≤ 12	78 (38.05)	99.98 ± 9.23	0.907	0.406
	12–36	90 (43.90)	100.71 ± 9.93		
	≥ 36	37 (18.05)	101.49 ± 8.33		
Medical insurance payment method[a]	New rural cooperative medical scheme/ Urban resident basic medical insurance	128 (62.44)	99.20 ± 7.98	−3.562	<0.001
	Urban employee basic medical insurance	77 (37.56)	103.90 ± 10.79		

[a] Indicates that *T*-test is used for analysis.
[b] Indicates that ANOVA is used for analysis.

($P = 0.008$), received more than nine years of education ($P = 0.022$), had religious ($P = 0.029$), were still working ($P = 0.002$), had less than three children ($P = 0.012$), lived in urban areas ($P = 0.038$), and their medical insurance payment method was an urban employee-based basic medical insurance scheme ($P < 0.001$). The details of the univariate analysis are presented in Table 1.

Correlations of MiLS with family cohesion and KPS scores

Pearson's correlations revealed that the total MiLS score was positively associated with family cohesion ($r = 0.313$, $P < 0.001$). Individuals with poor health conditions face a barrier to finding MIL. A positive correlation was observed between total MiLS and KPS scores ($r = 0.311$, $P < 0.001$).

Multiple linear regression analysis for participants' MIL

Multiple linear regression analysis was performed to identify the factors influencing perceived MIL. The total MiLS score was used as the dependent variable. Significant variables in previous univariate analyses and correlation analyses (gender, educational level, self-perceived religiosity, number of children, employment status, place of residence, medical insurance payment method, family cohesion score, and KPS score) were entered as independent variables. The age, marital status, and whether participants were living alone were entered as control variables and included in the regression model. Multiple regression analyses (Table 3) indicated that family cohesion ($\beta = 0.300$, $P < 0.001$) and KPS ($\beta = 0.274$, $P < 0.001$) were positively associated with participants' MIL. Participants who lived with their families ($\beta = -0.156$, $P = 0.009$), had urban employee basic medical insurance (UEBMI; $\beta = -0.153$, $P = 0.012$), were male ($\beta = 0.200$, $P = 0.001$), had self-perceived religiosity ($\beta = 0.154$, $P = 0.011$), and a high level of MIL explained 28.4% of the variance.

Subgroup analysis by sex differences in the six dimensions of MiLS

Subgroup analysis of the six dimensions of MiLS indicated that individuals with a higher level of will to seek meaning were men ($P = 0.015$). The other dimensions indicated that were no statistical differences regarding gender. Detailed results are presented in Table 4.

Table 2
Means and standard deviations of KPS, family cohesion, and MiLS.

Variables	Scores (SD)	Range
KPS	61.34 (23.42)	20–90
Family cohesion	65.63 (7.01)	33–80
MiLS total	100.97 (9.39)	74–140
Will to seek meaning	15.81 (2.14)	9–20
Existential frustration	17.05 (2.99)	10–25
Meaning and satisfaction in life	13.71 (2.02)	10–20
Controlling one's life	26.54 (3.49)	16–35
Bearing suffering	14.04 (1.85)	8–20
Acceptance of death	13.81 (2.40)	8–20

Table 3
Results of multiple linear regression analysis of associated factors of MiLS ($n = 205$).

Factors	Unstandardized coefficients (B)	Standard error (SE)	Standardized coefficients (β)	*P*	95% CI
Constant	81.584	6.678	–	< 0.001	68.415 to 94.753
Family cohesion	0.480	0.096	0.300	< 0.001	0.291 to 0.669
KPS	0.110	0.024	0.274	< 0.001	0.063 to 0.157
Gender	3.754	1.109	0.200	0.001	1.942 to 4.566
Medical insurance payment method	−2.951	1.162	−0.153	0.012	−5.242 to −0.660
Self-perceived religiosity	4.404	1.705	0.154	0.011	1.041 to 7.767
Living alone	−6.786	2.572	−0.156	0.009	−11.858 to −1.713

CI: Confidence interval.
Multiple linear regression analysis (forward) was used to evaluate the factors associated with the patient's MIL.
Gender was coded 1 = male and 0 = female.
Medical insurance payment method was coded 1 = NCMS/URBMI and 0 = UEBMI.
Self-perceived Religiosity was coded 1 = yes, and 0 = no.
Living alone was coded 1 = yes, 0 = no.
$R^2 = 0.305$, Adjust $R^2 = 0.284$, $F = 6.281$, $P = 0.013$.

Discussion

To the best of our knowledge, this study is the first to examine the effects of family cohesion and individual characteristics on MIL in a palliative care population. Consistent with the previous hypothesis, family cohesion has a significant positive influence with perceived MIL as higher levels of family cohesion were associated with enhanced perceived MIL. In addition, we found that male individuals who had a higher KPS, had UEBMI, had self-perceived religiosity, and lived with family members exhibited a higher perceived MIL.

The total MiLS score was 100.97 ± 9.39 points and ranged from 74 to 140, which was a moderate level. The score for MIL satisfaction and acceptance of death was the lowest of the subscales in the MiLS questionnaire. Meaning and satisfaction in life refers to the degree to which an individual has a clear, strong, and meaningful life purpose and is satisfied with his or her life purpose. A sense of MIL is positively correlated with life satisfaction and contributes to overall happiness.[29] The acceptance of death refers to the degree to which an individual is not afraid of death. A previous study showed that MIL was significantly negatively correlated with death anxiety.[30] When patients have a strong sense of MIL, their fear of death may be reduced to improve their acceptance of death. Thus, it is very important for health providers to help patients with advanced cancer establish or rebuild positive and reasonable life goals, fight cancer, and accept the illness.

The main finding of this study was that patients with advanced cancer who have higher family cohesion may have a higher sense of MIL. This study showed that the majority of participants had good family cohesion. In addition, we also found that patients who lived alone had a lower sense of MIL, which was in line with a previous study.[28] Patients who live alone may experience more psychosocial and spiritual distress, poorer adjustment to cancer, and a worse quality of life than those who live with family members.[31] Lack of adequate family support may lead to isolation and loneliness, and subsequently reduce an individual's perceived MIL. Cancer diagnosis is a crisis for all families. Family members may focus more on the attention and care of the patient and have more opportunities for emotional connection, thereby fostering family cohesion, which could lead to the patient perceiving higher family intimacy. The closeness between patients and their families may increase and deepen individuals' sense of MIL.[1,32] Family support was an important support force motivating almost all participants to survive, which highlights the influence of Chinese Confucian culture via the strong concept of family. This finding is significant, as it indicates that the perceived MIL of patients with advanced cancer could be improved by enhancing their family cohesion.

The results of the present study suggest that higher KPS and religiosity are significantly related to perceived MIL, consistent with previous studies.[33,34] Wang et al.[35] found that women were more likely to experience a higher perceived MIL than men. However, our study obtained the opposite result: women had a lower perceived MIL than men. Further analysis of the six dimensions of the MiLS scale showed that the scores of men's will to seek meaning were significantly and statistically different to those of women ($P = 0.015$). The meaning-making theory indicates that when a traumatic event occurs, individuals have a desire to seek MIL, which may encourage them try to rebuild meaning systems.[35,36] In this study, compared with women, men were more likely to seek MIL when faced with terminal illness, which may lead to a higher MIL. Further studies are required to confirm our findings.

Another novel finding in this study is that having UEBMI was positively associated with higher perceived MIL. China's social health insurance schemes include the new rural cooperative medical scheme, the urban resident basic medical insurance, and the UEBMI.[37] Compared with the other schemes, the UEBMI provides more benefits and has the highest reimbursement rate.[37,38] An increased medical insurance reimbursement rate could effectively relieve participants' financial stress. A previous study also found that financial distress is associated with lower perceived MIL.[39] Thus, it is necessary to focus on improving the benefits of social health insurance schemes in China.

The present study has several limitations. First, this study has a cross-sectional design, so the causality between family cohesion and perceived MIL cannot be fully confirmed. Further rigorous randomized controlled trials are needed to establish causal pathways and confirm our findings. Second, the sample size was relatively small and all participants were

Table 4
Subgroup analysis by sex differences in the six dimensions of MiLS ($n = 205$).

	Will to seek meaning	Existential frustration	Meaning and satisfaction in life	Controlling one's life	Bearing suffering	Acceptance of death
Male	16.28 ± 2.00	17.22 ± 2.87	13.75 ± 2.13	27.10 ± 3.42	14.06 ± 1.54	14.11 ± 2.18
Female	15.30 ± 2.17	16.86 ± 3.13	13.67 ± 1.90	26.92 ± 3.46	13.92 ± 2.15	13.49 ± 2.59
t/F	3.378	0.877	0.262	2.461	0.928	1.866
P	0.015	0.382	0.115	0.125	0.056	0.204

recruited from only two medical institutes. Our findings may not be generalizable to the palliative care population in other contexts. Third, we measured participants' family cohesion through self-reporting instead of actual family cohesion, which might have caused deviations in the results. In addition, the old Chinese adage, "do not wash your dirty linen in public," indicates that it is not acceptable to discuss intimate family matters in public, especially if they are of a shameful nature.[18] Thus, some participants might have reported a higher level of family cohesion. In addition, future studies should consider some confounding variables in the correlation between MIL and family (such as pain or psychotropic medication) to reduce potential bias.

Nevertheless, the present study provides preliminary evidence for understanding the sense of MIL of the palliative care population in China. With the development of palliative care, there is a need to develop new strategies to promote physical comfort and emotional adjustment in patients. In this regard, MIL interventions play a key role in promoting well-being and can alleviate existential distress at the end-of-life stage. Recognition of the factors that affect meaning of life can guide health providers to promote effective interventions on the psychospiritual needs of survivors and improve their quality of life. The findings in this study indicated that patients' perceived MIL was relevant to culture, family cohesion, performance status, and individuals themselves. Our findings suggest that interventions to enhance family cohesion play a key role in patients' perceived MIL. Thus, health providers should actively cooperate with the family members of survivors and encourage them to build close bonding family relationships.

Author contributions

Xiaocheng Liu and Zhili Liu contributed to the study conception and design. Wenjuan Ying and Xiaoling Gong performed the data collection. Xiaoying Wu, Dali Lu and Yan Zhang performed statistical analyses and prepared the tables. Xiaocheng Liu and Zhili Liu drafted the manuscript. Qinqin Cheng and Wenjuan Ying reviewed and revised the manuscript.

Declaration of competing interest

None declared.

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Ethics statement

All the participants provided written informed consent. This study was approved by the ethics committees of the First Affiliated Hospital of Shantou University Medical College (Approval No. 2019088) and Shantou Longhu People's Hospital (Approval No. LHLL2020005).

Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.apjon.2022.100118.

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