JNMS Journal of Nippon Medical School https://www.nms.ac.jp/sh/jnms/

Original

Unexpressed Support Needs and Social Distress in Working-Age Cancer Survivors: A Web-Based Cross-Sectional Study in Japan

Kazuho Hisamura[1,2], Miyo Kimura[2], Yoshiharu Motoo[3] and Eisho Yoshikawa[4]

[1]Department of Epidemiology and Public Health, School of Medicine, Kanazawa Medical University, Ishikawa, Japan
[2]Ishikawa Prefectural Cancer Support House, Ishikawa, Japan
[3]Department of Internal Medicine and Multidisciplinary Cancer Center, Fukui Saiseikai Hospital, Fukui, Japan
[4]Department of Medical Psychology, Nippon Medical School, Tokyo, Japan

Background: Cancer patients of working age often face multiple social challenges that remain unrecognized and unmet. The current study aimed to examine the adequacy of social support and unexpressed support needs for social problems among working-age cancer patients in Japan.
Methods: A web-based cross-sectional survey was conducted among 683 cancer patients aged 20–64 years. Using the Social Problem Checklist for Working-age Cancer Patients, we assessed the severity of social problems, the sources of support consulted, and the adequacy of support received. We analyzed differences in the adequacy of support by source and identified social problems associated with unexpressed and unmet support needs using dot diagrams.
Results: Although many participants experienced severe social problems, a substantial proportion reported either not perceiving a need for support or not expressing their support needs. Unexpressed needs were most common in domains related to loneliness, intimate relationships, and sexuality. Adequate support was more frequently reported when non-family sources were consulted, particularly when patients accessed both family and non-family support. Patients who relied solely on family reported support adequacy levels that were similar to those who consulted no one.
Conclusions: Many working-age cancer patients in Japan experience significant social distress but do not voice their support needs, particularly regarding sensitive topics. Support from non-family sources plays a key role in addressing unmet and unexpressed needs. These findings highlight the importance of multidisciplinary psychosocial care and proactive efforts to identify hidden distress and diversify support networks for working-age cancer patients.
(J Nippon Med Sch 2026; 93 (1): 37–48. https://doi.org/10.1272/jnms.JNMS.2026_93-110)

Keywords: neoplasms, social support, psychosocial deprivation, unmet needs, adult

Introduction

Cancer patients often encounter social challenges in their daily lives, including financial difficulties[1–3], employment issues[3,4], strained interpersonal relationships[5–7], and social isolation[8,9]. These problems have been linked to psychological distress[3,7,9], as well as physical symptoms like fatigue and changes in appearance[10,11]. Consequently, some patients experience reduced quality of life and increased risk of death[12–14].

Cancer patients of working age are particularly vulnerable to social distress resulting from life-stage-specific challenges, such as career disruption[3,4,15], childcare responsibilities[14,15], and romantic relationship difficulties[5,15,16]. Unlike older adults, they usually do not qualify for public

Correspondence to Kazuho Hisamura, hisamura@kanazawa-med.ac.jp
https://doi.org/10.1272/jnms.JNMS.2026_93-110
Received: July 2, 2025; Accepted: September 17, 2025

pensions or long-term care services, which increases their need for social support[6,17]. However, most existing research has focused on older populations or patients with specific cancer types[17–19]. Few studies have examined the support needs of working-age patients facing diverse social problems[15].

Social support encompasses emotional, instrumental, informational, and appraisal support. It is provided through informal and formal networks, including family, friends, healthcare providers, and peer communities[20]. Although many patients access informal support, particularly from partners and family members[21–23], they often hesitate to seek help from healthcare professionals regarding sensitive issues, such as sexual concerns or emotional isolation[24–26]. Support from non-family members, such as fellow cancer patients and healthcare professionals, can be critical in addressing these hidden concerns[27,28]. However, prior studies suggest that the presence of social problems does not always correspond to perceived support needs and that satisfaction with support, not just its frequency, affects quality of life[29–31]. Therefore, identifying unmet and unexpressed support needs is essential for improving psychosocial and survival outcomes in working-age cancer patients[28,31].

Our previous survey of working-age cancer patients in Japan revealed that over a quarter of the participants experienced at least one severe social problem, primarily related to finances, child-rearing, and interpersonal relationships[15]. Younger age and psychological distress were significantly associated with these difficulties. On the basis of these findings, in the present study, we conducted a secondary analysis to explore the social support dynamics underlying these severe problems.

The purpose of the current study was threefold: (1) to identify the sources of support accessed by patients, (2) to assess the perceived adequacy of the support received, and (3) to clarify the extent to which patients with severe social problems have unmet or unexpressed support needs. Although this study used data from 2016, the results provide a valuable snapshot of the social problems faced by working-age cancer survivors. Few previous studies have comprehensively assessed the psychosocial difficulties experienced by this population. Our previous analysis of the same dataset identified the frequency of social problems and their associated factors[15]. These findings suggest that key structural and institutional factors, such as labor and welfare systems, healthcare policies, and family demographics, have remained relatively stable. Building on this foundation, the present study advances our earlier work by examining unexpressed needs and the adequacy of support received. Given that the coronavirus disease 2019 pandemic may have exacerbated existing barriers to support and deepened social inequities[32], this pre-pandemic dataset provides an important benchmark for enabling comparative analyses with post-pandemic data.

Materials and Methods

Participants

Eligibility criteria included (1) patients over 20 years of age who had been diagnosed with cancer, (2) those attending a hospital for cancer treatment or follow-up within the past year, and (3) the ability to read Japanese.

Methods

A web-based survey was carried out between December 19 and 23, 2016, following Institutional Review Board approval from Kanazawa Medical University (approval number: I-078). We randomly selected 173,423 registered participants from a pool of approximately 1 million registrants recruited by an online survey company (Macromill Inc., Tokyo, Japan). The participants were not informed about the eligibility requirements and were told that the online questionnaire was a study focused on illness. Participants were required to complete screening questions to verify their qualifications and exclude inauthentic respondents. Approximately 800 cancer patients were selected for the study through a stratified sampling method that ensured equal representation of male and female participants and balanced numbers across the following age ranges: 20−39, 40−49, 50−59, and over 60 years. The survey form incorporated the following measurements.

Social problems: The Social Problem Checklist for Working-age Cancer Patients (SPC-W) was developed as a tailored tool to address social issues faced by working-age cancer patients. Participants were recruited from Kanazawa Medical University Hospital and local community-based cancer support groups. Sixteen patients who met the eligibility criteria participated in face-to-face, semi-structured interviews. These interviews were conducted using the previously developed 24-item Social Problem Checklist (SPC) and were audio-recorded for analysis. A multidisciplinary panel comprising oncologists, palliative care clinicians, psychiatrists, nurses, social workers, and psychologists reviewed the interview summaries through in-person meetings and email discussions. On the basis of this review, the finalized SPC-W included 20 items across three domains: social and finan-

cial issues (eight items), family and intimate relationships (six items), and medical care and daily life (six items). Some items, such as "Relationship with dating partners," apply only to unmarried participants. Participants rated the extent of their difficulties or worries in the past week on a five-point Likert scale: 0 (not at all difficult/worried), 1 (not very difficult/worried), 2 (somewhat difficult/worried), 3 (quite difficult/worried), and 4 (very difficult/worried). Scores of 2–4 were classified as indicating social problems, and scores of 3–4 indicated severe social problems.

Sources and adequacy of support: Respondents who reported severe social problems were asked, "Who did you talk to about the problem?" For each item, respondents were asked to select multiple answers from the following options: (a) family and relatives, (b) friends and acquaintances, (c) medical professionals, (d) coworkers and supervisors, (e) fellow cancer patients, (f) others, and (g) nobody. Respondents were also asked to indicate whether they needed no support, received enough support, received some support, or received no support for the problem.

Sociodemographic and clinical characteristics: The gathered information included age, sex, marital status, employment status, financial situation, and medical records, such as the location of the primary cancer, the stage of the disease, the number of months following diagnosis, performance level as rated by the Eastern Cooperative Oncology Group, and previous treatment history.

Statistical Analyses

The primary sample for analysis consisted of individuals aged 20–64 years. We first excluded patients who experienced severe social problems but reported that they did not need support for the problem from the analysis, assuming that the remaining respondents perceived a need for support. Regarding sources of support, responses were grouped as follows: Group 1 consisted of individuals who talked solely to family and relatives about the severe social problem and selected option (a) in response to the aforementioned question. Group 2 consisted of individuals who talked to both family and non-family members. Individuals in Group 3 talked exclusively to non-family members and did not select response (a). Individuals in Group 4 did not talk to anyone about the problem and selected response (g).

To examine the sufficiency of support received for each SPC-W item from the four groups of support sources, one-way analysis of variance was conducted. Assigning scores of 3, 2, and 1 to the responses "I received enough support," "I received some support," and "I received no support at all," respectively, the differences in mean scores across these four groups of support sources were obtained. Tukey's honestly significant difference test was employed as a post hoc analysis to identify specific group differences. A two-dimensional dot diagram was created to visualize unexpressed and unmet support needs. The X-axis represents the percentage of patients who did not seek support, and the Y-axis represents the percentage of patients who received no support. A diagonal reference line was included to facilitate interpretation of relative discrepancies. In a supplementary figure (**Supplementary Figure 1**), bubble size is proportional to the number of respondents for each item.

Listwise deletion was used to exclude missing data. All statistical analyses were two-tailed and performed using IBM SPSS Statistics for Windows, Version 30.0 J (IBM Corp., Armonk, NY, USA), and a significance level of $p < 0.05$ was adopted for all tests.

Results

Sample Characteristics

A total of 971 individuals who qualified for the survey were sent an online questionnaire. Of these, 783 participants provided valid responses, giving a response rate of 80.6%. The characteristics of 683 individuals in the 20–64 years working age group are presented in **Table 1**.

Support Needs and Source of Support for Severe Social Problems

We found that 11.8%–28.0% of patients perceived no need for support for their social problems, even though they rated one of the social problems as severe (**Figure 1**). The problems for which respondents were least likely to perceive a need for support, despite being aware of serious problems, were those related to sexuality (28.0%), having children (26.6%) and finding partners (26.4%), which are included in Domain 2 (Family and Intimate Relationships).

Table 2 shows to whom cancer patients talked about the social problems they perceived as severe and the proportions of patients who accessed the four types of support sources. The data indicated that 8.1%–46.2% of patients exclusively sought support from family members, while 5.4%–34.0% sought support from both family members and non-family members. Approximately 16.9%–44.4% of patients sought support exclusively from non-family members, while 18.0%–55.1% did not seek

Table 1 Characteristics of the study participants

	n = 683 (%)		n = 683 (%)
Age		Performance status†	
Median (interquartile range)	48.0 (39.0–56.0)	ECOG 0	472 (69.1)
Mean (standard deviation)	47.4 (±10.6)	ECOG 1	185 (27.2)
20–39 years old	179 (26.2)	ECOG 2–4	26 (3.8)
40–49 years old	198 (29.0)	Marital status	
50–64 years old	306 (44.8)	Married	475 (69.5)
Sex (male)	327 (47.9)	Separated/divorced/widowed	67 (9.8)
Duration from diagnosis (months)		Single	141 (20.6)
Median (interquartile range)	24.0 (10.0–60.0)	Living arrangement	
Mean (standard deviation)	43.9 (± 54.9)	Living alone	210 (30.7)
≤ 12 months	237 (34.7)	Living with minor children	89 (13.0)
13–36 months	183 (26.8)	Working status at diagnosis	
37–60 months	93 (13.6)	Regular employment	309 (45.2)
≥ 61 months	170 (24.9)	Non-regular employment	139 (20.4)
Primary cancer type		Housework	109 (16.0)
Gastrointestinal§	160 (23.4)	Self-employed	59 (8.6)
Breast	153 (22.4)	Company owners and executives	7 (1.0)
Urologic/prostate	77 (11.3)	Unemployed	42 (6.1)
Gynecological	77 (11.3)	Other	14 (2.0)
Head and neck	54 (7.9)	Current working status	
Blood/lymphatic	45 (6.6)	Regular employment	247 (36.2)
Lung	40 (5.9)	Non-regular employment	120 (17.6)
Others	77 (11.3)	Housework	141 (20.6)
Stage of cancer at diagnosis		Self-employed	57 (8.3)
Stage 0	86 (12.6)	Company owners and executives	11 (1.6)
Stage I	200 (29.3)	Unemployed	89 (13.0)
Stage II	137 (20.1)	Others	14 (2.0)
Stage III	85 (12.4)	Changes in work after diagnosis	527 (77.2)
Stage IV	49 (7.2)	Highest level of education attained	
Do not know	126 (18.4)	Junior high school (9 years)	17 (2.5)
Treatment history		High school (12 years)	218 (31.9)
Surgery	548 (80.2)	Vocational school/junior college (>12 years)	164 (24.0)
Chemotherapy	298 (43.6)	4-year university or higher (≥16 years)	284 (41.6)
Radiation therapy	199 (29.1)	Household income	
Hormone therapy	139 (20.4)	Low (<¥4,000,000) ††	217 (31.8)
Treatment status		Moderate	224 (32.8)
Under treatment¶	333 (48.4)	High (≥¥8,000,000)	141 (20.6)
Follow-up/completed/others	350 (51.2)		

†Performance status was defined using the Eastern Cooperative Oncology Group (ECOG) criteria.
§Includes stomach, colorectal, pancreatic, gallbladder, esophageal, and liver cancers.
¶Includes curative, life-prolonging, supportive, and palliative care.
††¥4,000,000 is equivalent to approximately 27,600 US dollars (¥145 to the dollar).

support from any external source.

Sufficiency of Support by the Sources of Support

We found that 50.0%–100.0% of patients who only consulted family members, 50.0%–100.0% of patients who consulted both family and non-family members, and 46.2%–87.2% of patients who consulted only non-family members perceived that they had received some or sufficient support for severe social problems, compared with 15.8%–62.8% of patients in Group 4 who did not talk to anyone (**Figure 2**). There were significant differences in the scores and proportions of sufficiency of support between Groups 1 to 3 and Group 4, except for four items regarding having a child, romantic relationships, and excretion (**Supplementary Table 1**). For 13 of the 20 SPC-W items, patients who talked to both family and non-family members had significantly higher levels of support than those who talked to no one. Patients who talked only to non-family members showed significantly higher levels of support on 13 items of the SPC-W, while those who

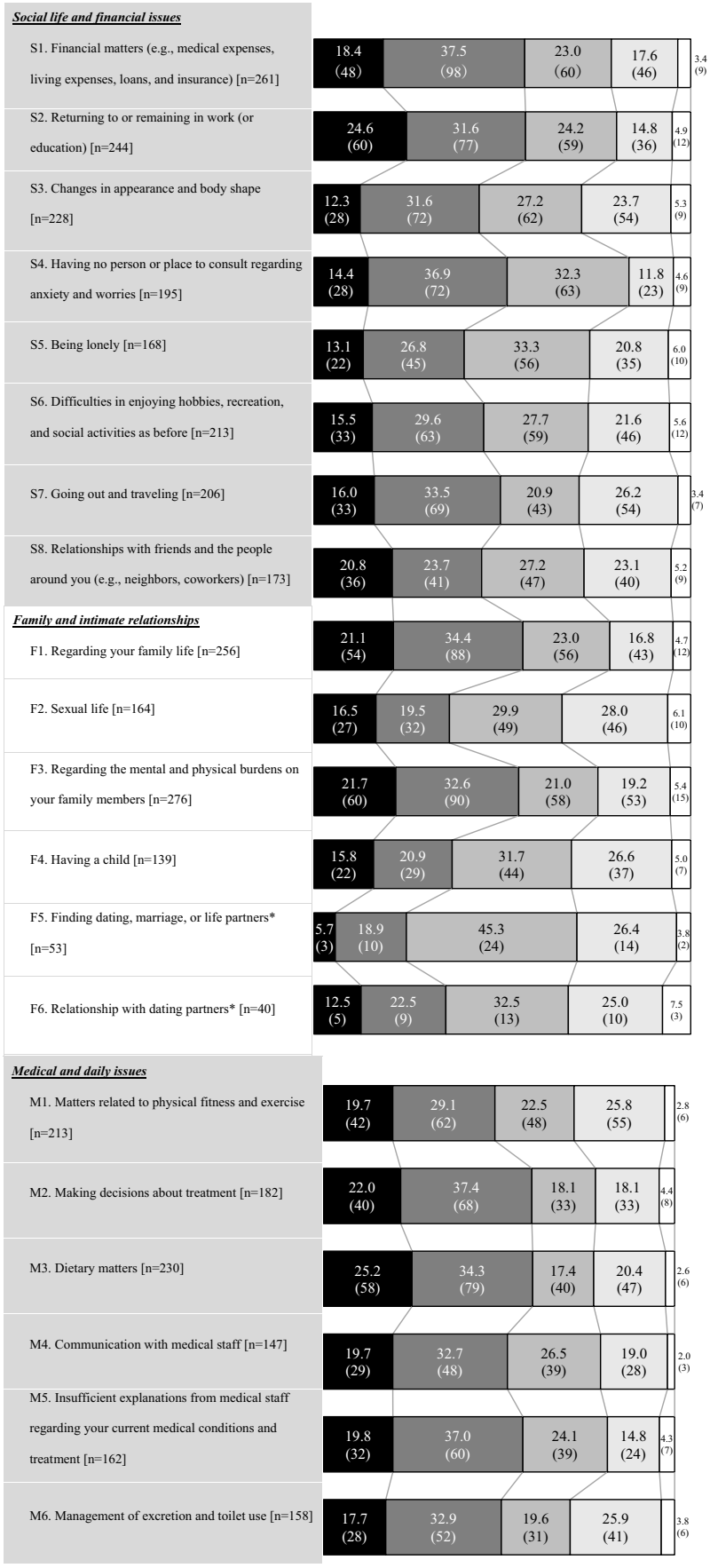

Figure 1 Support needs among working-age cancer patients with severe social problems

Support levels:

■received enough support;

▒received some support;

▒received no support at all;

□did not need support;

□did not want to answer.

Each item reflects a specific psychosocial or practical concern experienced by patients.

*Responses for items F5 and F6 were limited to unmarried participants (n = 208).

Table 2 Sources of support for working-age cancer patients experiencing severe social problems

				C. Source of support								D. Groups by source of support for analysis			
				Group 2: Both family and non-family members											
	Number of respondents	A. Experience of severe social problems	B. Perceived need for support	Group 1	Group 3: Non-family members					Group 4		Group 1	Group 2	Group 3	Group 4
				Family	Friends	Medical staff	Co-workers	Fellow patients	Others	No one	NA†	Families	Both family and non-family members	Non-family members	No one
	n	% (n)	%[1] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[2] (n)	%[3] (n)	%[3] (n)	%[3] (n)	%[3] (n)
Domain 1: Social life and Finance															
S1. Financial matters	683	38.2	78.9	**46.6**	15.5	11.7	7.3	3.9	1.9	32.5	1.5	**37.9**	9.4	19.4	34.0
		(261)	(206)	**(96)**	(32)	(24)	(15)	(8)	(4)	(67)	(3)	**(77)**	(19)	(40)	(67)
S2. Returniing to/ remaining in work	683	35.7	80.3	**51.5**	24.5	20.4	44.9	6.1	1.5	17.9	1.0	18.0	**34.0**	29.9	18.0
		(244)	(196)	**(101)**	(48)	(40)	(88)	(12)	(3)	(35)	(2)	(35)	**(66)**	(58)	(35)
S3. Changes in appearance	683	33.4	71.1	**34.6**	24.7	26.5	6.2	6.2	1.2	30.2	1.9	20.8	14.5	**34.0**	30.8
		(228)	(162)	**(56)**	(40)	(43)	(10)	(10)	(2)	(49)	(3)	(33)	(23)	**(54)**	(49)
S4. No place/persion to consult	683	28.6	83.6	20.2	19.6	14.7	5.5	4.9	0.0	**50.3**	1.8	13.8	6.9	28.1	**51.2**
		(195)	(163)	(33)	(32)	(24)	(9)	(8)	(0)	**(82)**	(3)	(22)	(11)	(45)	**(82)**
S5. Being lonely	683	24.6	73.2	15.4	20.3	13.0	5.7	5.7	0.0	**52.8**	4.1	10.2	5.9	28.8	**55.1**
		(168)	(123)	(19)	(25)	(16)	(7)	(7)	(0)	**(68)**	(5)	(12)	(7)	(34)	**(65)**
S6. Enjoying hobbies	683	31.2	72.8	30.3	23.2	9.0	4.5	5.2	0.6	47.1	1.3	18.3	12.4	21.6	**47.7**
		(213)	(155)	(47)	(36)	(14)	(7)	(8)	(1)	(73)	(2)	(28)	(19)	(33)	**(73)**
S7. Going out/travel	683	30.2	70.4	**37.9**	24.8	23.4	7.6	6.2	0.0	27.6	3.4	22.9	16.4	**32.1**	28.6
		(206)	(145)	**(55)**	(36)	(34)	(11)	(9)	(0)	(40)	(5)	(32)	(23)	**(45)**	(40)
S8. Relationships with friends and others	683	25.3	71.7	21.8	21.	18.5	10.5	4.8	0.0	**46.0**	24	12.4	9.9	30.6	**47.1**
		(173)	(124)	(27)	(26)	(23)	(13)	(6)	(0)	**(57)**	(3)	(15)	(12)	(37)	**(57)**
Domain 2: Family and intimate relationships															
F1. Family life	683	37.5	78.5	**57.2**	18.9	11.4	3.0	2.0	1.5	24.9	1.0	**46.2**	11.4	16.9	25.1
		(256)	(201)	**(115)**	(38)	(23)	(6)	(4)	(3)	(50)	(2)	**(92)**	(23)	(34)	(50)
F2. Sexual life	683	24.0	65.9	16.7	24.1	20.4	11.1	3.7	0.9	**48.1**	0.9	8.4	8.4	34.6	**48.6**
		(164)	(108)	(18)	(26)	(22)	(12)	(4)	(1)	**(52)**	(1)	(9)	(9)	(37)	**(52)**
F3. Family burdens	683	40.4	75.4	**49.5**	19.7	16.3	5.8	3.8	0.5	31.3	1.4	**33.7**	16.6	18.0	31.3
		(276)	(208)	**(103)**	(41)	(34)	(12)	(8)	(1)	(65)	(3)	**(69)**	(34)	(37)	(65)
F4. Having a child	683	20.4	68.8	30.5	23.2	21.1	7.4	7.4	1.1	**38.9**	0	14.7	15.8	30.5	**38.9**
		(139)	(95)	(29)	(22)	(20)	(7)	(7)	(1)	**(37)**	(0)	(14)	(15)	(29)	**(37)**
F5. Finding partners§	208	25.5	69.8	13.5	27.0	8.1	8.1	2.7	2.7	**51.4**	0	8.1	5.4	35.1	**51.4**
		(53)	(37)	(5)	(10)	(3)	(3)	(1)	(1)	**(19)**	(0)	(3)	(2)	(13)	**(19)**
F6. Relationships with dating partners§	208	19.2	67.5	18.5	**40.7**	18.5	7.4	7.4	3.7	37.0	0	11.1	7.4	**44.4**	37.0
		(40)	(27)	(5)	**(11)**	(5)	(2)	(2)	(1)	(10)	(0)	(3)	(2)	**(12)**	(10)
Domain 3: Medical and daily issues															
M1. Physical fitness and exercise	683	31.2	71.4	30.9	20.4	27.6	6.6	4.6	0.0	**36.2**	2	16.7	14.7	32.0	**36.7**
		(213)	(152)	(47)	(31)	(42)	(10)	(7)	(0)	**(55)**	(1.3)	(25)	(22)	(48)	**(55)**
M2. Making treatment decisions	683	26.6	77.5	**36.2**	24.8	**36.2**	5.0	5.7	1.4	20.6	1.4	18.7	18.0	**42.4**	20.9
		(182)	(141)	**(51)**	(35)	**(51)**	(7)	(8)	(2)	(29)	(2)	(26)	(25)	**(59)**	(29)
M3. Dietary matters	683	33.7	77	**44.1**	17.5	35.0	5.6	5.1	0.6	24.3	1.1	23.4	21.1	**30.9**	24.6
		(230)	(177)	**(78)**	(31)	(62)	(10)	(9)	(1)	(43)	(2)	(41)	(37)	**(54)**	(43)
M4. Communication with medical staff	683	21.5	78.9	26.7	25	17.2	6.0	6.0	0.0	**37.9**	1.7	17.5	9.6	34.2	**38.6**
		(147)	(116)	(31)	(29)	(20)	(7)	(7)	(0)	**(44)**	(2)	(20)	(11)	(39)	**(44)**
M5. Insufficient medical information	683	23.7	80.9	28.2	24.4	20.6	3.1	6.9	0.8	**33.6**	2.3	16.4	12.5	**36.7**	34.4
		(162)	(131)	(37)	(32)	(27)	(4)	(9)	(1)	**(44)**	(3)	(21)	(16)	**(47)**	(44)
M6. Excretion and use of toilet	683	23.1	70.3	33.3	15.3	**34.2**	3.6	7.2	0.0	29.7	3.6	19.6	15.0	**34.6**	30.8
		(158)	(111)	(37)	(17)	**(38)**	(4)	(8)	(0)	(33)	(4)	(21)	(16)	**(37)**	(33)

Bold values indicate the highest value of %. †Percentage and number of respondents who answered "Do not want to answer." § Responses only from unmarried persons (n = 208). [1] Percentage of patients who recognized their need for support among those who experienced severe social problems, which is represented by n/A. [2] The denominator is the number of patients who perceived a need for support, which is represented by n/B. [3] The denominator is the number of patients who perceived a need for support (B) minus the number of NA , which is represented by n/ (B-NA).

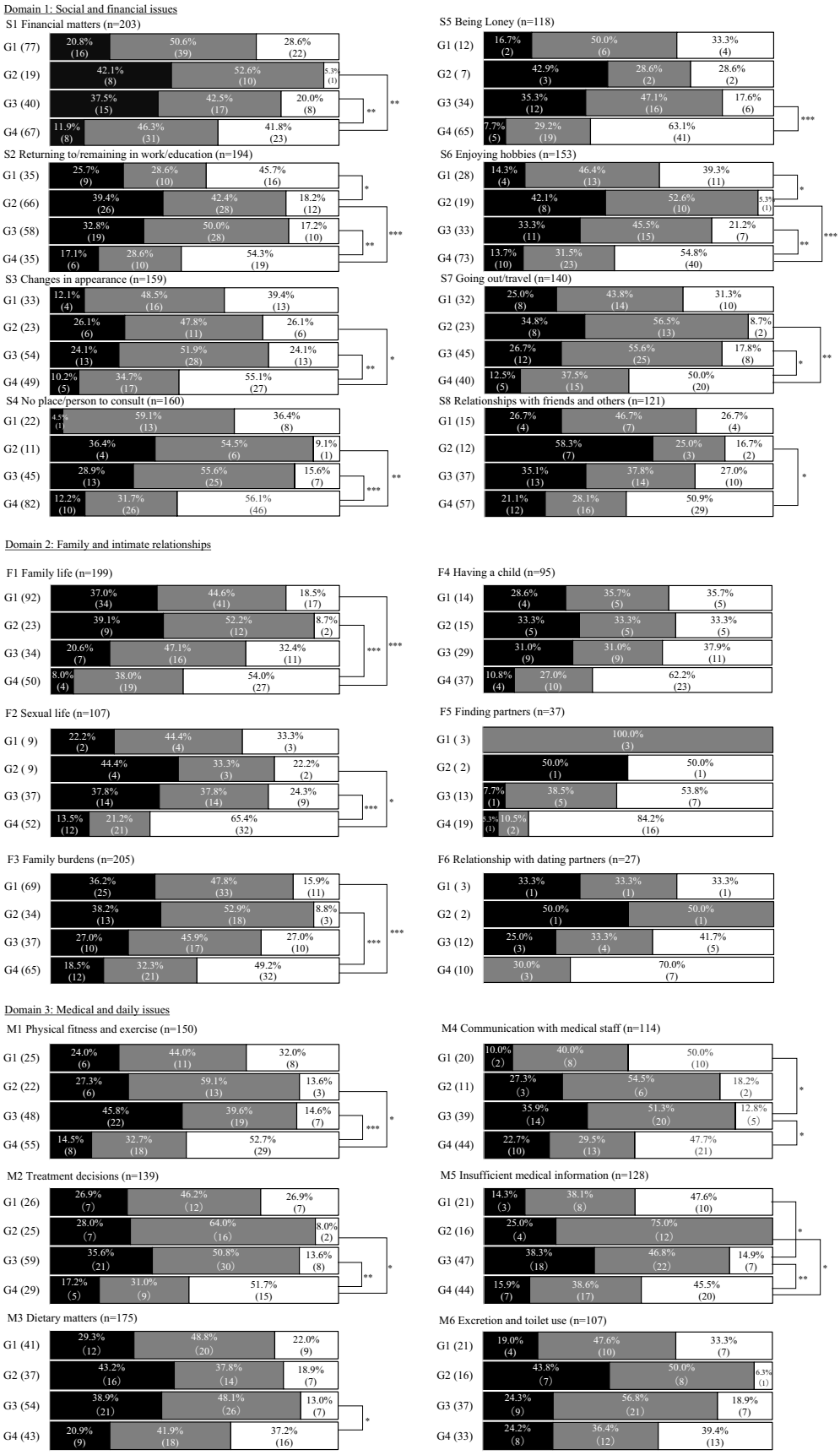

Figure 2 Differences in perceived adequacy of support among working-age cancer patients with severe social problems, categorized by source of support
Support groups: G1 = family only; G2 = both family and non-family members; G3 = non-family only; G4 = no one.
Support levels:
■3. Received enough support;
▒2. Received some support;
□1. Received no support at all.
Differences in mean scores across these four groups (Groups 1–4) of support sources were assessed using analysis of variance, with the responses "I received enough support," "I received some support," and "I received no support at all" assigned scores of 3, 2, and 1, respectively (See **Supplementary Table 1**). Tukey's honestly significant difference test was used as a post hoc analysis to identify specific group differences.
*p<0.05, **p<0.01, ***p<0.001.

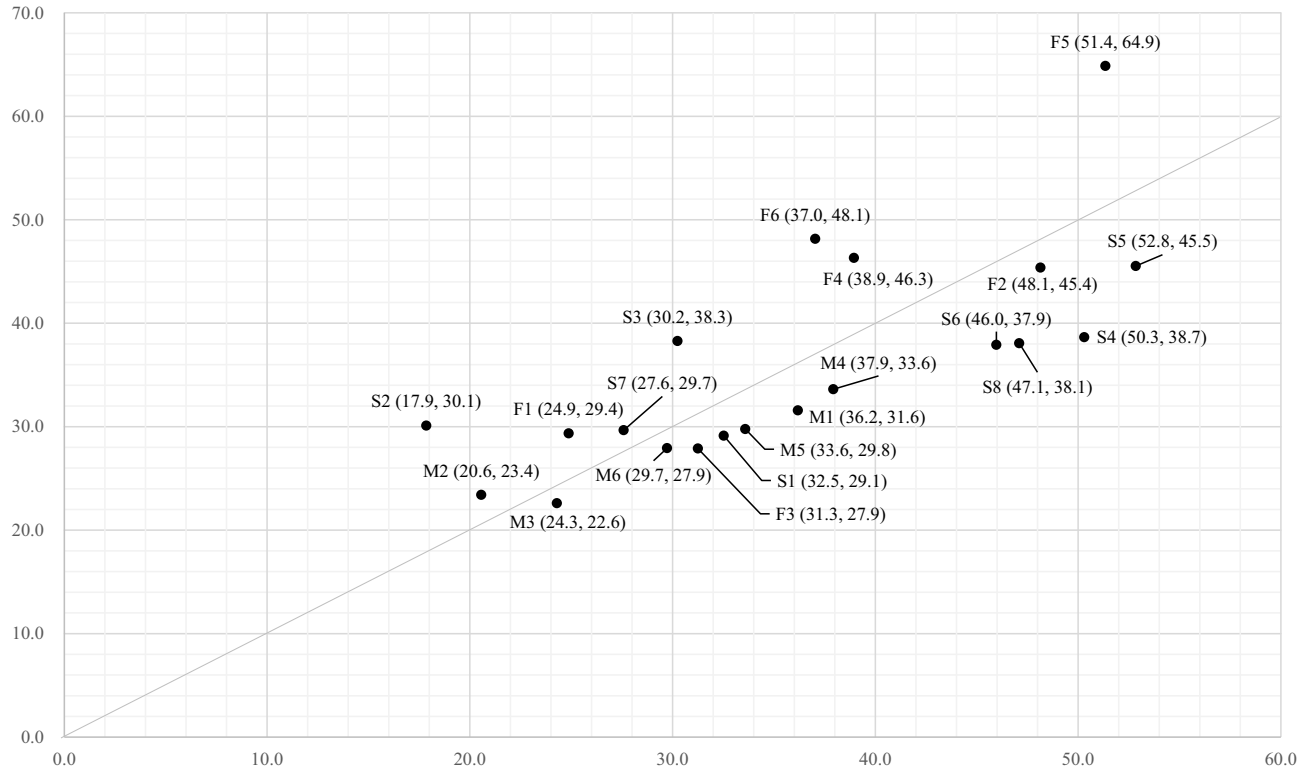

Figure 3 Unmet and unexpressed support needs among working-age cancer patients with severe social problems
Each dot represents one SPC-W item and is positioned according to the SPC-W item (X%, Y%).
X-axis: % of patients who did not seek support
Y-axis: % of patients who received no support
Domain 1: Social and financial issues (S1−S8)
Domain 2: Family and intimate relationships (F1−F6)
Domain 3: Medical and daily issues (M1−M6)
Each dot represents a specific SPC-W item and is plotted according to the percentage of patients who did not seek support (X-axis) and the percentage of patients who received no support (Y-axis). Items in the upper-right quadrant reflect high levels of unaddressed social distress.
A diagonal reference line was added to highlight discrepancies: items above the line indicate that even patients who sought support often received none (e.g., F5: Finding Partners), while items below the line suggest that patients received some support despite not actively seeking it (e.g., S5: Loneliness).
A version of this figure that uses bubble size to indicate the number of patients experiencing each issue is presented as **Supplementary Figure 1**.

talked only to family members showed higher levels of support on two items regarding family life and burdens compared with those who talked to no one.

Social Problems with Unexpressed and Unmet Needs for Support

Figure 3 shows each SPC-W item as a dot positioned according to the percentage of patients who did not seek support (X-axis) and the percentage of patients who received no support (Y-axis). This two-dimensional mapping enables identification of social problems involving unmet and unexpressed support needs, particularly in the upper-right quadrant. These social problems encompass four of the six items in Domain 2 (Family and Intimate Relationships) and four of the eight items in Domain 1 (Social and Financial Issues). The diagonal reference line differentiates between "expressed-but-unmet" and "unexpressed-but-partially-met" needs.

While the main figure emphasizes the comparative relationships among problem types, a supplementary version of the figure (**Supplementary Figure 1**) uses bubble size to represent the number of patients reporting each problem. This visual cue further highlights the relative prevalence and public health impact of each issue, particularly those that are both common and under-supported.

Discussion

The present findings yielded important insights regarding needs for support, sources of support, sufficiency of support received, and unmet and unexpressed support needs in relation to social problems experienced by working-age cancer patients.

Support Needs and Sources of Support

Although 65.9%–83.6% of working-age cancer patients with severe social problems sought support, a subgroup remained unaware of their need for support, consistent with the findings of previous studies[25,29]. Even patients who experienced severe problems and perceived a need for support did not necessarily seek support.

Sources of support differed by problem type. For half of the SPC-W items, the largest group of patients sought help from no one. The next-largest group of patients sought support only from non-family members, particularly for problems related to romantic relationships and problems related to medical care and daily living. Support for returning to work was the only issue in which both family and non-family members were most likely to be involved. Compared with other issues, financial challenges and family life were more often addressed exclusively with family members. Issues such as sexual life and fertility were rarely discussed with family members, confirming previous findings[26]. In the domain of social life and finances, more than half of the patients did not discuss loneliness, lack of confidants, social activities, or interpersonal issues with anyone. These issues represent significant but unmet and unexpressed support needs for working-age cancer patients.

Sufficiency of Support

Importantly, the results revealed that 15.8%–62.8% of patients reported feeling somewhat or sufficiently supported despite not having sought support from anyone. This finding may reflect patients' ability to find solutions independently, possibly through social networking sites, or proactive management of such issues by healthcare professionals. It is plausible that some patients received additional support from family members and close friends without seeking help. Conversely, problems plotted above the diagonal reference line in **Figure 3**, such as finding partners and having a child, represent issues for which patients were more likely to seek help but still received no support. This suggests significant limitations in the availability or appropriateness of support. These findings underscore the importance of identifying which types of problems tend to remain unaddressed, even when support is sought, as well as whether patients seek support.

The level of perceived support varied according to the source of support. When family was the only source of support, patients' perceptions of support sufficiency were similar to those of patients who consulted no one, except for two items related to family life and family burdens. However, support from non-family members significantly improved patients' perceptions of support for problems related to work, confidants, communication with medical staff, and access to information, compared with only family support. A majority of patients who received support from non-family members, ranging from 80% to 90%, reported receiving some or sufficient support. These findings suggest that the presence of additional sources of support beyond family members has a positive impact on perceptions of sufficient support among working-age cancer patients.

Unmet and Unexpressed Need for Support

A subset of patients perceived the challenges they face in their social lives, including loneliness, a lack of people to talk to about their problems, and difficulties in interpersonal relationships and enjoying hobbies and social activities, as serious problems. Although they perceived a need for support for these problems, these individuals did not discuss this need with anyone, resulting in an unmet need for support. It is important to recognize that issues regarding relationships with family and difficulties regarding intimate relationships, including sexual life, fertility concerns, and romantic relationships, may also present support needs that are difficult for family members and health care providers to assess, mainly because these issues are often not discussed with anyone. Conversely, the proportion of people receiving some or sufficient support for financial problems, returning to work, family life concerns, and medical and daily living issues was relatively high, although a relatively high number of patients were experiencing severe problems.

This suggests that, in addressing the unmet support needs for social problems experienced by working-age cancer patients, more attention should be given to specific concerns related to social life, such as loneliness, lack of confidants, and difficulties in intimate and sexual relationships that are not expressed to patients' families or others close to them. Furthermore, some respondents who reported that they "did not need support" despite having severe social problems may have refrained from

seeking help. Reasons for this may include handling issues independently[24,25], being reluctant to burden others[24,33], or distrusting available resources[34]. This suggests that those in the "did not need support" group have ongoing unmet needs but did not express them. Therefore, although the results identified individuals who "needed but did not seek support," we could not determine how many more people have unmet and unexpressed support needs.

Implications for Psychosocial Providers

This study highlights the importance of expanding support networks beyond family members for working-age cancer patients, as reliance solely on family support often results in unmet and unexpressed needs. The findings suggest that patients who sought support from sources outside of their families perceived the support as more adequate than those who relied exclusively on family or did not seek support at all. Given that many patients experience difficulties expressing their need for support, particularly in areas such as loneliness, interpersonal relationships, and sexuality, psychosocial providers must actively facilitate opportunities for patients to seek diverse forms of support beyond the family.

Barriers to seeking social support, including stigma, lack of awareness, and limited access to community resources, must be addressed through targeted interventions. Our sample included a higher proportion of college-educated and high-income individuals compared with national averages, which must be considered when interpreting the results. Individuals with higher levels of education and income may use their interpersonal networks to find information or services[34]. Conversely, socioeconomically disadvantaged individuals may have greater employment and financial difficulties and less ability to access sufficient support. Healthcare providers should enhance their understanding of patients' unexpressed needs and socio-economic background, as well as their collaboration with social workers, peer support programs[35], and patient organizations. Greater coordination among multidisciplinary professionals can help bridge the gap between medical care and psychosocial support, ensuring that patients receive comprehensive care.

Furthermore, systematic screening for social distress should be integrated into routine oncology care. Many patients with severe social problems do not proactively seek support, yet evidence suggests that social distress screening is generally accepted by patients and can help to identify hidden needs[36]. By implementing proactive screening and follow-up interventions, healthcare professionals can better assess unexpressed support needs and connect patients with appropriate community resources.

Limitations

The present study involved several limitations. First, despite the recruitment of a substantial sample of working-age cancer patients, the characteristics of non-responders could not be determined because the sample was obtained from a web survey company. Second, the sample may not accurately represent the broader population because of the relatively high concentration of individuals with a college education and households with high incomes. Additionally, selection bias may have resulted from the use of a commercial web panel. Participants in web-based surveys tend to have greater digital and health literacy, and to be more proactive in seeking health-related information or services, potentially limiting the representativeness of the sample[37]. Third, patient self-reported data were used, which could potentially affect the accuracy of the recorded cancer and treatment information. Fourth, this study was based on data collected in 2016. Although the primary social problems identified, such as financial issues, family problems, and difficulty accessing support, are likely to persist, the coronavirus disease 2019 pandemic may have altered the broader context of survivorship. Several support infrastructures emerged in response to the pandemic, including an expanded employment support program and online peer support. However, new or intensified challenges also emerged, including rising treatment costs, reduced family caregiving capacity, and growing social isolation. Although our dataset provides a pre-pandemic benchmark, these contextual changes must be considered when interpreting the findings and assessing their generalizability. Fifth, the SPC-W was developed through interviews with cancer patients and reviewed by healthcare professionals, but has not undergone formal psychometric validation. This limits the reliability and generalizability of the findings. Future studies should aim to validate the SPC-W through factor analysis, internal consistency, and criterion-related validity. Sixth, because this study did not distinguish between respondents with resolved issues and those with ongoing problems who did not seek support, the true extent of unmet and unexpressed needs may have been underestimated. Another limitation is the unequal distribution of respondents across the four support source groups for certain items. Some items had a small number of respondents in Groups 1 and 2, reduc-

ing the statistical power needed to detect group differences. This could affect the stability of the estimated means, impacting the analysis of variance results. Finally, further research is necessary to gain a more comprehensive understanding of the social issues specific to working-age cancer patients and their sources of support. A comparative analysis with older cancer patients and healthy individuals of the same generation is recommended to further refine the research design and enhance the generalizability of the findings.

Conclusions

Many working-age cancer patients in Japan experience significant social distress but do not voice their support needs, particularly regarding sensitive topics such as loneliness, intimate relationships, and sexuality. The current findings suggest that support from non-family sources improves support quality. Reliance on family support alone was associated with lower perceived adequacy, similar to that of individuals who did not seek support at all. These results underscore the importance of proactive, multidisciplinary psychosocial care that extends beyond family networks. Systematic screening for social distress and active facilitation of access to diverse support resources are essential for identifying hidden needs and strengthening support networks for working-age cancer patients.

Author Contributions: KH conceived and designed the study, secured funding, supervised the project administration, conducted the investigation, performed data management, analysis, and interpretation, and drafted the initial manuscript. MK conducted the investigation, contributed to data analysis and interpretation, and reviewed the preliminary manuscript. YM contributed to the study design, data analysis and interpretation, critically reviewed and revised the manuscript, and supervised the overall study. EY contributed to data analysis and interpretation and critically reviewed and revised the manuscript.

Acknowledgments: We would like to express our sincere gratitude to the members of the expert panel, including Daisuke Hama (social worker), Michiko Michibuchi, Takanori Wagatsuma (nurses), Fukumi Kitamoto (psychologist), Masao Ogawa (palliative care physician), and Eisuke Matsushima (psychiatrist), for their valuable insights and contributions to the development of the survey items. We thank Benjamin Knight, MSc., from Edanz (https://jp.edanz.com/ac) for editing a draft of this manuscript.

Funding: This work was supported by the Japan Society for the Promotion of Science (JSPS) KAKENHI (grant numbers 15 K13100, 18K02128, and 22K02047).

Conflict of Interest: All authors declare no conflicts of interest.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process: The authors used ChatGPT (OpenAI, San Francisco, CA, USA) for assistance with English language editing and improving clarity. All content was critically reviewed and edited by the authors, who take full responsibility for the final manuscript.

Supplementary Material: Supplementary material associated with this article is available at https://doi.org/10.1272/jnms.JNMS.2026_93-110.

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