

調症に比べて少量で有効である可能性が示唆された。うつ病の再発予防に関してはいまのところ有効というエビデンスはない。

非定型抗精神病薬間の差

非定型抗精神病薬の薬剤間の差をみるためにメタ解析が行われている。解析対象は非定型薬4剤についての、16の二重盲検無作為化プラセボ対照比較試験である(Nelson et al, 2009)。結論としては非定型抗精神病薬の追加はプラセボと比べ有意に効果的であり、反応のオッズ比は1.69、寛解のオッズ比は2.00であった。また、非定型抗精神病薬の薬剤間の差はとくになかったと報告している。

うつ病における非定型抗精神病薬の作用機序

うつ病の病態自体、未解明の部分がたくさんある。したがって、非定型抗精神病薬がどのように抗うつ作用を有するのかについても現在のところ詳細は不明である。以下に示すような可能性が考えられる。

・受容体を介したドパミン系への増強作用

OLZやQTPは本来の抗精神病薬としての働きとしてD₂受容体を遮断する作用を持つが、ドパミン神経の前シナプスに存在する5-HT_{1A}受容体への部分作用薬としての作用を有しており、それを介して前頭前野皮質のドパミン放出を増加させる作用がある。

5-HT_{2A}受容体も前頭前皮質のドパミン神経の前シナプスに存在し、その遮断作用によっても前頭前皮質のドパミンの放出が増加するといわれている。

QTPは抗精神病薬でありながらD₂受容体占有率よりも5-HT_{2A}受容体占有率のほうが高く、受容体を占有している時間も5-HT_{2A}受容体のほうが長いので、このことも治療効果と関連しているかもしれない。

(Gefvert O et al, 1998, Gefvert O et al, 2001)

ZhangらはOLZとFLXの同時投与がラット前頭前野のドパミン、ノルエピネフリン遊離を単剤投与よりも長時間増強することを報告している(Zhang W et al, 2000)。

・神経新生に働く

抗うつ薬により神経新生(neurogenesis)が促進されることが確かめられている。これはげ歯類のみならず霊長類でも確認されている。このメカニズムとして、5-HT_{1A}受容体が関与している可能性や糖質コルチコイド受容体が関与している可能性が指摘されている。ラットを使った研究で、抗精神病薬を用いて海馬の神経新生がどのような影響を受けるかを調べたものがあるが、Haloperidol(以下、HPD)では変化がなかったが、OLZ、RISでは神経新生の促進を認めた(Wakade CG et al, 2002)。以上より、非定型抗精神病薬の神経新生の促進が抗うつ作用の一端を担っている可能性はあると考える。

ちなみにLi、Valproate、Carbamazepineにも神経

新生を活性化する作用がある。

・BDNFを介する経路を活性化

BDNFは神経栄養因子の一つで、神経細胞の維・生存あるいは可塑性に欠かせない物質である。抗うつ薬を慢性投与すると、転写調節因子CREBとその活性化型pCREBが海馬や大脳皮質で増加することがわかっている(Nestler EJ et al, 2002)。pCREBはBDNFの転写を促進することが知られている。臨床研究ではうつ病患者の死後脳でBDNFの発現が低下していたとする報告や、うつ病患者では血清中BDNFレベルが減少しており、抗うつ薬治療により正常化することも報告されている。また神経新生はBDNFにより活発になることも知られている。

近年、抗うつ薬服用中の難治性うつ病の患者に低用量のRISを追加したところ、反応例でBDNFの急激な増加がみられたとする報告(Yoshimura R et al, 2010)や、ラットの海馬で慢性拘束ストレスにより神経新生やBDNF発現の減少がQTPとvenlafaxineの各々のみでは困難だが、併用による相乗効果で防ぐことができる(Xu H et al, 2006)など併用療法の意義を報告する研究がでてきている。

・代謝産物が抗うつ作用を有する

QTPの代謝産物であるN-desalkylquetiapineは三環系抗うつ薬と化学構造が類似しており、N-desalkylquetiapineはQTPに比べてNorepinephrine transporterを強力に阻害し、5-HT_{1A}受容体への部分アゴニスト作用を持つ(Jensen NH et al, 2008)。このことが抗うつ作用に関連していることは十分考えられる。

E. 結論

アルゴリズム・ガイドラン、臨床研究やメタ解析などを概観し、うつ病治療における非定型抗精神病薬の役割や意義について考察した。臨床的には有用な治療オプションの一つであるが、作用機序、追加した非定型抗精神病薬を減量する時期など不明な点も多い。今後このあたりの検証研究をしていくことが必須と思われる。

安易に併用することは多剤療法につながるリスクがあり、慎重さを要する。また統合失調症患者に比べて気分障害患者のほうが錐体外路症状が出やすいという報告もあり(Gao K et al, 2008)、安全面からいえば一剤目の抗うつ薬が無効であれば抗うつ薬の切り替えを最優先にすべきと考える。

F. 健康危険情報

特に問題なかった。

G. 研究発表

1. 論文発表

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2. 学会発表

特になし。

H. 知的財産権の出願・登録状況

特になし。

精神科薬物療法アルゴリズムの最適化と均てん化に関する研究

－看護師によるうつ病患者の症状評価の妥当性に関する予備的検討－

研究分担者 稲垣 中 慶應義塾大学大学院健康マネジメント研究科 特別研究准教授
慶應義塾大学医学部精神神経科学教室 兼担准教授
研究協力者 野村優子 慶應義塾大学大学院健康マネジメント研究科看護学専修修士課程 1年

研究要旨：本研究班では看護師によるモンゴメリ・アスバーグうつ病尺度（MADRS）評価の妥当性について予備的検討を行った。検討対象となったのは精神科専門看護師コースに在籍する大学院修士課程学生1名で、模擬患者を使用した2面接場面のDVDを視聴・評価させて、基準評点とどの程度合致するかを検証した。結果としては、2面接場面ともおおむね適正に評価がなされており、適切な訓練を行えば、看護師も精神科医と同様にMADRSによる症状評価を適切に行いうる可能性が示唆された。

A. 研究目的

現在進行中の「精神科薬物療法アルゴリズムの最適化と均てん化に関する研究」では統合失調症患者を治療アルゴリズムに準拠した治療を行う群と従来通りの治療を行う群の2群に分けて、それぞれの治療転帰を比較するという介入研究を行っているが、気分障害患者を対象とした介入研究を行う構想もあった。

気分障害患者を対象とした介入研究を行う際には、ハミルトンうつ病尺度（Hamilton Depression Rating Scale: HAM-D）¹⁾やモンゴメリ・アスバーグうつ病尺度（Montgomery - Asberg Depression Rating Scale: MADRS）²⁾などを用いて定期的に精神症状を評価する必要がある。わが国では、これまで臨床研究におけるHAM-DやMADRSの評価は医師によって行うことが当然視されてきた。しかしながら、近年の精神科医の業務は多忙を極めており、HAM-DやMADRSの評価を医師のみの業務とすると、臨床研究の進行が遅れたり、あるいは欠

損データが数多く発生する可能性が出てくる。

また、よく考えて見れば、臨床研究で精神症状評価を行う者に要求されるのは、どの程度症状評価に習熟しているかであって、医師免許を有しているか否かではないはずである。つまり、医師免許を有していても、症状評価に習熟していない者に評価を行わせることは不適切であるし、逆に、医師免許を有さなくとも、症状評価に習熟しているのであれば、臨床心理士や看護師が評価しても何ら問題はないはずである。しかしながら、これまでのわが国における臨床研究では、精神症状の評価は精神科医によって行われることが事実上不文律とされ、臨床心理士や看護師などといったコメディカルが評価に従事したことはほとんどなかった。

そこで、われわれは精神科専門看護師コースに在籍する大学院修士学生1名を対象に看護師によるうつ病の重症度評価の妥当性に関する予備的検討を行った。

B. 研究方法

1. 対象

今回の検討における研究対象は、精神科専門看護師コースに在籍する大学院修士学生1名(女性、看護師A)であった。

2. 評価者訓練

本研究施行前に、対象である看護師Aは①MADRS評価に関する教科書的知識に関する講習、②MADRSによる面接施行時の注意事項に関する講習、③MADRSによる症状評価時の注意事項に関する講習を受けた。

その後、看護師Aは社団法人日本精神科評価尺度研究会により制作されたMADRS面接DVDを視聴した。このDVDは1名の模擬患者を利用して制作されたもので、治療開始間もない重症の時期の面接場面(以下、場面①)と治療開始後しばらくたって、やや症状が改善した時期の面接場面(以下、場面②)の2つより成る。看護師Aは場面①②の双方についてMADRS10項目をすべて評価した。

3. 妥当性検定の方法

日本精神科評価尺度研究会は面接DVDの制作に際して、場面①②の双方について基準評点を作成していた。

今回われわれは場面①、場面②の両方について、看護師Aと基準評点を相互比較して、看護師による評価の妥当性を検証した。

妥当性検証に際しては、他の評価尺度における慣習にならい、基準評点±1段階以内(MADRSの場合は±2点以内)に評価できた場合には正しく評価できたものとみなし、正答数が全評価項目の8割以上(8項目以上)が正しく評価できていた場合には、MADRS全体を正しく評価できたものとみなした。

C. 結果と考察

場面①②の基準評点と看護師Aによる評点を表1、表2に示した。場面①②とも看護師Aによる各項目の評点は標準回答の±1段階(2点)の範囲におさまっていた。

D. まとめ

今回の検討の結果、適切な訓練を行えば、看護師もMADRSによる症状評価を適切に行うことができる可能性が示唆された。

表1 場面①の基準評点と看護師Aによる回答

項目番号	基準評点	看護師A
1	6	6
2	4	4
3	4	4
4	4	4
5	4	4
6	6	4
7	4	4
8	6	6
9	6	6
10	4	4
合計点	48	46

表2 場面②の基準評点と看護師Aによる回答

項目番号	基準評点	看護師A
1	2	4
2	2	4
3	2	2
4	2	2
5	2	2
6	4	4
7	2	4
8	2	2
9	2	2
10	2	2
合計点	22	28

E. 参考文献

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F. 研究発表

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G. 知的財産権の出願・登録状況

1. 特許取得 なし
2. 実用新案登録 なし
3. その他 なし

Ⅲ. 研究成果の刊行に関する一覧表

研究成果の刊行に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書籍名	出版社名	出版地	出版年	ページ
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IV. 研究成果の刊行物

Unmet supportive needs of cancer patients in an acute care hospital in Japan—a census study

Daisuke Fujisawa · Sunre Park · Rieko Kimura · Ikuko Suyama · Yurie Koyama ·
Mari Takeuchi · Hiroka Yoshikawa · Saori Hashiguchi · Joichiro Shirahase ·
Motoichiro Kato · Junzo Takeda · Haruo Kashima

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Abstract

Purpose Little research has been done on supportive needs of cancer patients in acute hospitals in Japan. This study aims to comprehensively assess the unmet supportive needs of hospitalized cancer patients, as well as literacy and utilization of appropriate professional care.

Methods All cancer patients (aged 20 to 80 years) who were hospitalized in a university hospital in Tokyo during the designated 3-day period between September 1 and October 31, 2007 were recruited for participation in the

study. The M.D. Anderson Symptom Inventory, Brief Cancer-Related Worry Inventory, and Hospital Anxiety and Depression Scale were administered. Patients' knowledge and use of relevant services were evaluated. The results were compared with those of non-cancer patients in the same treatment settings.

Results A total of 125 cancer patients and 59 non-cancer patients were enrolled. Cancer patients and non-cancer patients equally suffered from physical symptoms (15–26% had severe appetite loss, 18–19% had severe dry mouth, and 16–22% had severe pain); however, psychological distress of cancer patients exceeded that of non-cancer patients (28.0% vs 8.5%; $p \leq 0.05$). Severe psychological distress was associated with severe worry about future prospects or interpersonal and social issues and presence of two or more severe symptoms. Two thirds of the patients with severe psychological distress knew about the psychiatric division, but only one third actually sought treatment.

Conclusions Needs related to psychological issues were more prevalent among cancer patients than among non-cancer patients, despite a similar level of physical distress. Special attention should be paid to cancer patients who worry over future prospects or interpersonal and social issues, and those who have two or more severe symptoms.

D. Fujisawa (✉) · M. Takeuchi · J. Shirahase · M. Kato ·
H. Kashima
Department of Neuropsychiatry, School of Medicine,
Keio University,
35 Shinanomachi, Shinjuku-ku,
Tokyo 160-8582, Japan
e-mail: dai_fujisawa@yahoo.co.jp

D. Fujisawa · S. Park · R. Kimura · I. Suyama · M. Takeuchi ·
H. Yoshikawa · S. Hashiguchi · J. Shirahase
Division of Palliative Care, Keio University Hospital,
35 Shinanomachi, Shinjuku-ku,
Tokyo 160-8582, Japan

S. Park
Faculty of Nursing and Medicine Care, Keio University,
35 Shinanomachi, Shinjuku-ku,
Tokyo 160-8582, Japan

Y. Koyama
National College of Nursing, Japan,
1-2-1, Umezono, Kiyose-shi,
Tokyo 204-8575, Japan

H. Yoshikawa · S. Hashiguchi · J. Takeda
Department of Anesthesiology, School of Medicine,
Keio University,
35 Shinanomachi, Shinjuku-ku,
Tokyo 160-8582, Japan

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Service use

Introduction

Cancer patients have diverse needs throughout the course of their illness. Identification and management of supportive needs is an essential component of comprehensive health care

for people with cancer, because unmet supportive needs have a detrimental effect on patients' well-being [32]. The most frequently reported unmet needs were those related to physical, psychological, informational, psychosocial, and daily living issues. Spiritual, communication, and sexuality issues have also been sporadically investigated [13].

Supportive needs of cancer patients differ between individuals and across time. Increased level of needs have been identified among patients who are young, female, unmarried, living in a rural location, or those who have a low income. Poor physical condition, advanced stage of illness at diagnosis, and current and/or past psychiatric problems are also associated with more complex needs [18]. Prevalence trends and predictors of unmet needs were highly variable in all domains and across the phases of illness [13]. During the newly diagnosed phase, patients were more likely to have unmet psychosocial (6–69%) and physical (44%) needs, compared with needs related to activities of daily living (5–10%), economic (11%), information (10–24%), or psychological (12–17%) [9, 21, 51, 60]. During the treatment phase, the prevalence of unmet needs for each domain had the largest variation compared with any other time over the course of the cancer. Unmet needs appear to be highest during the treatment and post-treatment phase [19, 20, 44]. High level of psychosocial needs is reported throughout the trajectory, especially during advanced/palliative phase [22, 37, 49, 58], with a gap between needs and service provision [5, 7].

Rigorous and systemic assessment of needs is the first critical step in supportive care that leads to the delivery and development of appropriate services [31]; however, very little research about cancer patients' needs has been done in Japan. Thus far, the research has been limited to ambulatory patients with specific types of cancer [29, 33], or the selected assessment tools were not validated for use with Japanese patients with cancer [29].

A study of unmet needs in an acute hospital setting is important in Japan, because 80% of the Japanese general population die in hospitals [23], and approximately 50% even prefer to spend the end-of-life period in a hospital rather than at home [45]. This is presumably because they may not cause burden to their family [15]. A nationwide survey demonstrated that 14–25% of the patients are reluctant to discuss end-of-life issues with physicians, which may be a barrier to introduction of quality palliative care [30]. Negative attitude towards palliative care among patients, their family members, and even physicians is one of the barriers against proper referral to palliative care and subsequent delay in terminating active anti-cancer treatment [27]. Misbelief and negative attitude about opioids hamper proper use of opioids [30, 38] and a substantial number of patients and families are currently dissatisfied with the available palliative care services [48].

The present study was conducted in a university hospital in central Tokyo. Survey in a university hospital has the following significance: in the Japanese medical system, patients are allowed to visit any hospital of their choice without paying extra money; the national health insurance covers 70–80% of the medical fee. Regardless of type of illness, health condition, or socioeconomic background, any patient can be seen at university hospitals. Approximately half of all Japanese physicians are initially trained at university hospitals; therefore, development of viable palliative care in university hospital settings is important for the overall progress of palliative care in Japan [28]. At the time of this study, even though a nationwide campaign to promote palliative care had been initiated, the hospital was not equipped with palliative care services. Unfortunately, this lack of services is not unusual in university hospitals in Japan.

First, we sought a validated needs-assessment scale; however, none of the psychometrically reliable scales, identified in a recent review [42], had been validated among Japanese subjects at the time of our survey. Therefore, we used a combination of several validated assessment scales as a substitute for a single needs-assessment scale. We aimed to comprehensively cover the domains that may contribute to the satisfaction and quality of life of the patients. Those domains are generally categorized into physical, psychological, psychosocial, informational, and spiritual issues and problems related to daily living, communication, and sexuality [13, 61]. We used the Japanese version of the M. D. Anderson Symptom Inventory (MDASI) [8, 35] to assess physical needs and daily living issues; the Brief Cancer Worry Inventory (BCWI) [16] to evaluate psychosocial, informational, communication, and sexuality issues; and the Japanese version of Hospital Anxiety and Depression Scale (HADS) [26] to assess undertreated psychological distress. We also attempted to identify factors associated with psychological distress, because psychological distress is highly influenced by unmet needs in other domains [63].

We compared cancer patients with non-cancer patients who were hospitalized in the same ward during the same study period. In the study-site hospital, as is usually the case with most hospitals in Japan, place of admission is determined by the site of primary illness and not by type of illness. For example, patients with chronic lung disease and patients with lung cancer are admitted to the same "pulmonary ward" and are cared for by the same nursing team and often seen by the same physician. Therefore, the non-cancer patients in the same ward served as a comparison group to identify areas that require further support among cancer patients.

In brief, this study aims to assess the unmet supportive needs of hospitalized cancer patients in a university hospital setting in Japan. All types of cancer sites and all stages of illness were included, and needs of cancer patients were

compared with non-cancer patients in the same treatment setting.

Patients and methods

Participants

This study was conducted in a 1,000-bed private general tertiary medical facility affiliated to a medical university located in the central Tokyo. The candidates for participation included all patients who were hospitalized during the study period and undergoing treatment or diagnostic testing for cancer in the medical, surgical, or radiological departments of the abovementioned hospital. Participants were recruited during the designated 3-day period between September 1 and October 31, 2007 (dates were determined by each department). Those who were aged 20 to 80 years and were able to complete a written questionnaire were eligible. Patients were excluded for surgical procedures within the week before the survey or if they were incapable of understanding and consenting to participation in the study (based on the judgment of the physician in charge). All patients who were not diagnosed with cancer and were hospitalized during the same period were approached for participation in the comparison group.

Procedure

Eligible patients who gave written consent were asked to fill out three self-report questionnaires: the MDASI, BCWI, and HADS. The measures used in this study do not literally assess unmet needs; alternatively, we attempted to supplement this by directly asking about awareness and utilization of relevant services. The relevant services included the pain clinic, psychiatric division, social services, rehabilitation medicine, and clinical nurse specialists. Research assistants provided support to participants who required help in filling out the questionnaires. These assistants were physicians or registered nurses who were not involved in the care of the participants. Participants' demographic and clinical data, including Eastern Cooperative Oncology Group performance status, were collected from the medical records.

This study was approved by the institutional review committee of Keio University School of Medicine and was registered in the national clinical trial registry, the UMIN-CTR (register number: UMIN000000811).

Measures

All the measures used in this study were previously standardized among Japanese cancer patients. The Japanese version of the MDASI is a 19-item self-report questionnaire

scored on an 11-point Likert scale (0–10). It is designed to assess the severity and impact of cancer-related physical and psychological symptoms within the past 24 h. The BCWI is a 15-item self-report questionnaire designed to assess cancer-related worries on a numeric scale (0–100). Severity of worry is calculated by totaling the scores for each item. The inventory consists of three factors: future prospects, physical problems, and social and interpersonal problems [16]. When assessing non-cancer patients, the item regarding “worry about cancer” was modified to “worry about your current illness”. The Japanese version of HADS is a 14-item self-report questionnaire designed to assess depression and anxiety. Each question is answered by choosing a score from 0 to 3. HADS total score of 20 or more or HADS depression subscale score of 11 or more indicates that the respondent is highly likely to have major depression. HADS total score of 11 or more, HADS depression subscale score of 5 or more, or HADS anxiety subscale score of 8 or more indicates that the respondent is highly likely to have an adjustment disorder or a major depressive disorder [26].

Statistical analysis

Cancer patients' data were compared with the non-cancer patients' data by using chi-square test for categorical variables, Mann–Whitney *U* test for non-parametric variables, and unpaired *t* test for continuous variables. Significance was set at $p < 0.05$. Mantel test was used to compare prevalence of moderate and severe symptoms on MDASI between cancer and non-cancer patients.

Stepwise logistic regression analysis (forward selection) was performed to explore for factors that predicted severe psychological distress. Major depression based on the results of the HADS was entered into the analysis as the dependent variable, and the following variables were entered as predictor variables: patients' demographic factors (age, gender, and performance status), presence of severe symptoms according to the MDASI, number of severe symptoms, and presence of severe worry in each BCWI domain. Predictor variables were dichotomized, according to age, into categories of 65 years or over and others, performance status into categories of three or over and others, MDASI symptoms (items 1 to 13) into categories of severe (score of 8 or over) and others, and mean score of BCWI domains into categories of 80 or over and others.

Results

Participants

Of the 287 patients who were approached, 215 (74.9%) met the inclusion criteria. The reasons for exclusion were

cognitive dysfunction (22 patients), severe physical condition (18 patients), decision of the physician in charge (four patients), and other unspecified reasons (38 patients). Of those, 184 patients (97 males and 87 females) gave written consent and were enrolled in the study (response rate, 85.6%). Differences in gender and age were not significant between those included and those excluded.

The demographic data of the participants are shown in Table 1. The participants consisted of 125 cancer patients with mean age of 58.9 years (SD=12.5) and 59 non-cancer patients with mean age of 61.2 years (SD=13.9). The majority of cancer and non-cancer patients were admitted for active treatment, and a few were admitted for evaluation and diagnosis. Few patients were admitted solely for palliative purpose; however, it should be noted that a large proportion of cancer patients have cancers that are considered unresectable or incurable; thus, even though the patients were admitted for active treatment, a substantial proportion of patients were implicitly at the stage of palliation. Opiates were prescribed for only 18 patients (12.1%).

Prevalence of physical and psychological symptoms

The mean number of severe symptoms was 1.9 (SD=2.6) in the cancer patient group and 1.7 (SD=2.5) in the non-cancer patient group, and the difference was not significant.

Figure 1 shows the results of the MDASI, listed in the order of prevalence. Symptoms related to psychological state outweighed physical symptoms. Cancer patients frequently (>20%) suffered from severe distress, lack of appetite, drowsiness, disturbed sleep, sad mood, and dry mouth, whereas the non-cancer patients frequently suffered from pain, disturbed sleep, numbness or tingling, and feelings of distress. There were no significant differences in the severity of any symptoms between cancer patients and non-cancer patients.

Severity of worries

Table 2 shows the severity of worries assessed by the BCWI. In all domains and for most items, worry was significantly more severe among cancer patients than among non-cancer patients. Worry was remarkable (mean score >50) among cancer patients with regards to treatment and prognosis, such as “the cancer itself”, “the cancer might get worse in the future”, “life and death”, “effect of current treatment”, “side effects of the treatment”, and “future of family members”. Cancer patients were significantly more worried about their “mental status” and “how to cope with the illness”.

The severity of worry was generally low with regards to physical symptoms and daily life issues, such as sexual problems, economic problems, relationships with family

members, and work or housework among cancer and non-cancer patients.

Age significantly correlated with the severity of all domains of worry, and the younger group had the most severe worries ($r=0.34$, $p<0.01$). Gender did not significantly correlate with the severity of worries. Performance status weakly correlated with the physical domain of worry, and worry became increasingly more severe as performance status declined ($r=0.15$, $p<0.05$).

Prevalence of psychological distress and predictive variables

As shown in Table 3, cancer patients had significantly higher total HADS scores and HADS anxiety subscale scores ($p<0.05$). Based on the cutoff scores recommended in a previous study [26], 93 (74.4%) of the 125 cancer patients suffered from psychological distress that corresponded to an adjustment disorder or major depression, and 35 (28.0%) suffered from severe psychological distress that corresponded to major depression. The prevalence of both was significantly higher in the cancer group. In the non-cancer group, 34 (57.6%) of 59 patients suffered from psychological distress that corresponded to an adjustment disorder or major depression, and only four (6.8%) suffered from severe psychological distress that corresponded to major depression.

Table 4 shows the results of a stepwise binary logistic regression analysis to identify factors associated with severe psychological distress. The analysis yielded a significant model (omnibus Chi-square=27.45, $df=3$, $p<0.001$), accounting for between 21.4% and 30.6% of the variance, with 76.3% of overall predictions being accurate. The future-prospects domain and social-and-interpersonal-problems domain of the BCWI and the presence of two or more severe symptoms according to the MDASI were significantly associated with severe psychological distress.

Literacy rate and rate of utilization of relevant services

Table 5 shows the percentage of patients who knew about (literacy rate) and who used (utilization rate) the relevant services. About two thirds of the patients knew about the psychiatric division, but less than 50% knew about social services, the pain clinic, and clinical nurse specialists. The literacy and utilization rates of cancer patients and non-cancer patients were not significantly different, except that the psychiatric division was more likely to be used by cancer patients.

Among the patients suspected of having major depression ($n=39$), 24 patients (61.5%) were aware of the psychiatric division, but only 11 patients (29.7%) actually used it; thus, 13 (33.3%) of the 39 patients who were

Table 1 Demographics of the participants

	Total (%)	Cancer (n=125)	Non-cancer (n=59)	p ^a
Male	97 (52.7)	68 (54.4)	29 (49.2)	0.53
Female	87 (47.3)	57 (45.6)	30 (50.8)	
Age (year)	59.6 (SD = 13.1)	58.9 (SD = 12.5)	61.2 (SD = 13.9)	0.27
Surgical ward	128 (69.57)	83 (66.4)	45 (76.3)	0.17
Medical ward	56 (30.43)	42 (33.6)	14 (23.7)	
ECOG performance status				
0	21 (11.5)	13 (10.5)	8 (13.6)	0.30
1	85 (56.5)	64 (51.6)	21 (35.6)	
2	47 (25.7)	29 (23.4)	18 (30.5)	
3	24 (13.1)	14 (11.3)	10 (17.0)	
4	6 (3.2)	4 (3.2)	2 (3.4)	
Cancer progression				
Curable/resectable		33 (26.4)		
Advanced		82 (65.6)		
Not identified		10 (8.0)		
Treatment phase				
Diagnostic (pretreatment)	8 (4.3)	6 (4.8)	2 (3.4)	
Active treatment	141 (76.6)	97 (77.6)	44 (74.6)	
Palliative	23 (12.5)	14 (11.2)	9 (15.3)	
Not identified	12 (6.5)	8 (6.4)	4 (6.8)	
Purpose of admission				
Examination/diagnosis	9 (4.9)	5 (4.0)	4 (6.8)	
Chemotherapy	64 (34.8)	64 (51.2)	0 (0.0)	
Other disease-targeted pharmacotherapy	23 (12.5)	0 (0.0)	23 (39.0)	
Radiotherapy	19 (10.3)	19 (15.2)	0 (0.0)	
Operation	53 (28.8)	33 (26.4)	20 (33.9)	
Local operation	1 (0.5)	0 (0.0)	1 (1.7)	
Rehabilitation	14 (7.6)	6 (4.8)	8 (13.6)	
Symptom control	34 (18.5)	22 (17.6)	12 (20.3)	
End-of-life care	3 (1.6)	3 (2.4)	0 (0.0)	
Others	8 (4.3)	6 (4.8)	2 (3.4)	
Use of opioids				
Yes	18 (9.8)	15 (12.0)	3 (5.1)	0.13
No	166 (90.2)	110 (88.0)	56 (94.9)	
Primary site of illness				
Gastrointestinal (surgical)	30 (16.3)	23 (18.4)	7 (11.9)	
Musculoskeletal	27 (14.7)	9 (7.2)	18 (30.5)	
Gastrointestinal (medical)	24 (13.0)	17 (13.6)	7 (11.9)	
Gynecological	20 (10.9)	20 (16.0)	0 (0.0)	
Hematological	18 (9.8)	18 (14.4)	0 (0.0)	
Head and neck	16 (8.7)	14 (11.2)	2 (3.4)	
Dermatological	10 (5.4)	3 (2.4)	7 (11.9)	
Urological	10 (5.4)	7 (5.6)	3 (5.1)	
Respiratory (medical)	7 (3.8)	3 (2.4)	4 (6.8)	
Neurosurgical	7 (3.8)	4 (3.2)	3 (5.1)	
Cardiovascular	4 (2.2)	0 (0.0)	4 (6.8)	
Respiratory (surgical)	4 (2.2)	3 (2.4)	1 (1.7)	
Radiological ^b	4 (2.2)	4 (3.2)	0 (0.0)	
Rehabilitation medicine ^c	3 (1.6)	0 (0.0)	3 (5.1)	

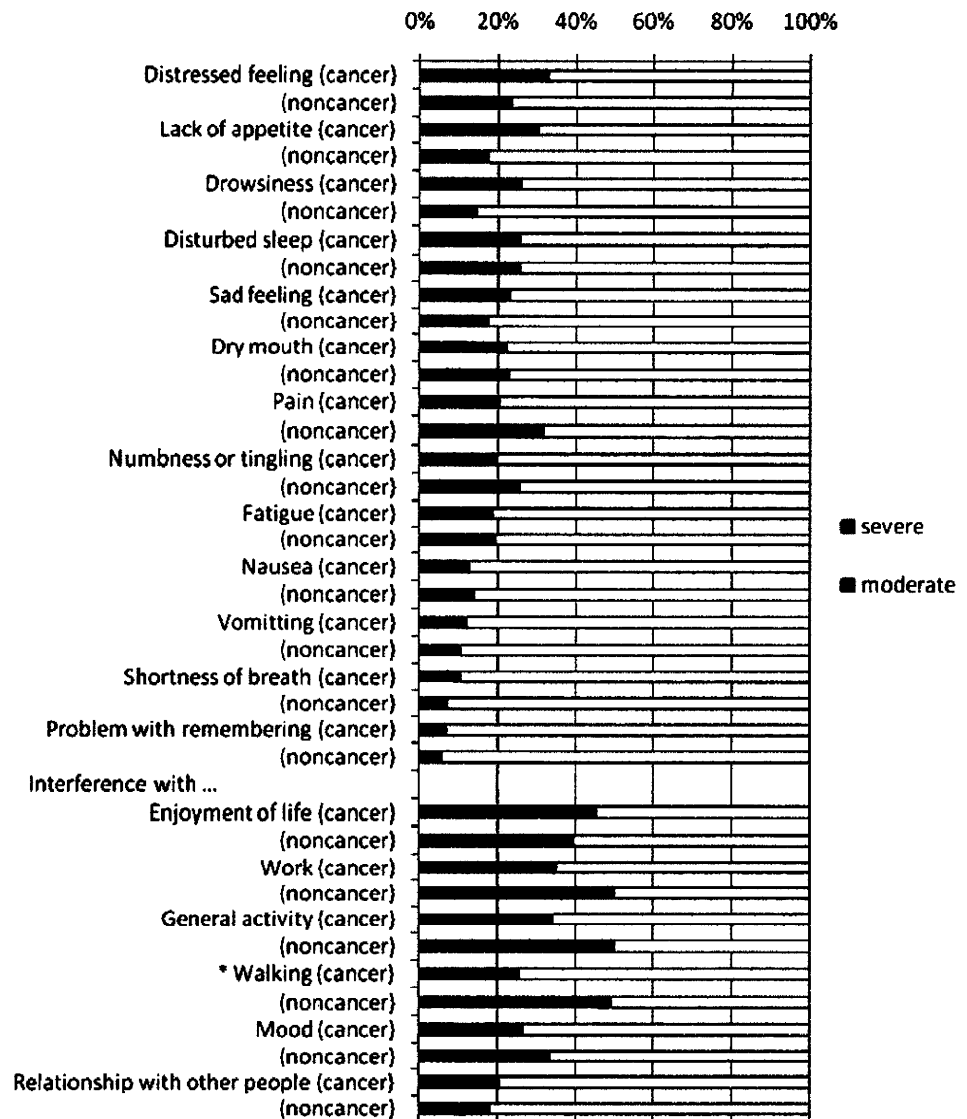
ECOG Eastern Cooperative Oncology Group

^a Chi-square test for gender, for whether medical or surgical division, for performance status and for use of opioids. Student's *t* test for age

^b Admitted for radiologic treatments, site unspecified

^c Admitted for multi-system rehabilitation therapy, site unspecified

Fig. 1 Distribution of severity for M.D. Anderson Symptom Inventory



suspected of having major depression did not consult the psychiatric division even though they knew it was available. Fifteen (38.5%) of the 39 patients did not know about the availability of psychiatric service.

Among the patients suspected of having an adjustment disorder ($n=127$), 87 patients (68.5%) knew of the availability of the psychiatric division, but only 17 patients (13.7%) actually used it; therefore, 70 (55.1%) of the 127 patients suspected of having an adjustment disorder did not consult the psychiatric division even though they knew about the availability of the service, and 40 (38.5%) of 127 patients did not know about the availability of psychiatric help. Only 15 (38.5%) of the patients with moderate-to-severe pain ($n=39$) knew about the services offered by the pain clinic, and only six patients (15.4%) actually used the clinic.

Discussion

The aim of our study was to comprehensively assess the unmet supportive needs of cancer patients who were hospitalized in an acute care hospital. Our results demonstrated that a substantial number of patients experience a wide range of symptoms and had worries that were undertreated. Detection and appropriate management of these symptoms and worries appear to be a pervasive problem.

Although there were no significant differences in the severity of each physical symptom between cancer patients and non-cancer patients, cancer patients are more likely to be psychologically distressed. These findings are consistent with other studies from Australia [46] and Finland [43], reporting that cancer patients have more needs in psychological domains than in physical domains. Our study

Table 2 Severity of worries

Item content and domains of worries	Cancer patients		Non-cancer patients		<i>p</i> ^a
	Mean	SD	Mean	SD	
Item content					
Current illness itself	71.0	26.2	54.2	34.3	<0.01
Illness might get worse in the future	66.9	29.6	43.5	35.3	<0.001
Life and death of self	56.5	33.1	31.0	34.3	<0.001
Ability to cope with the illness	55.5	29.8	38.0	31.5	<0.001
Effect of current treatment	53.4	30.1	38.7	30.9	<0.01
Side effects of the treatment	52.2	31.1	32.6	30.8	<0.0001
Future of family members	51.2	33.7	29.3	33.0	<0.0001
Mental status	49.1	27.6	33.7	29.9	<0.001
Physical symptom	46.5	29.5	40.7	30.5	0.22
Ability to do job or house work	41.3	33.7	39.3	35.0	0.71
Economic problems	39.8	32.4	32.7	33.3	0.17
Change of appearance	38.3	31.4	22.9	28.3	<0.001
Relationships with medical staff	25.6	26.9	15.0	23.9	<0.05
Relationships with family members	24.1	25.5	18.5	28.6	0.18
Sexual issues	16.3	24.6	13.3	24.4	0.46
Domains					
Future prospects	59.0	29.4	40.0	32.7	<0.0001
Physical problems	38.0	29.2	27.7	28.5	<0.01
Social and interpersonal problems	36.0	30.4	27.6	30.7	<0.05
Total	46.2	29.7	33.0	30.9	<0.0001

^a Student's *t* test

showed a higher rate of depression and anxiety than found in the Finnish study.

The distribution and frequency of each symptom were similar to the results of previous studies [4, 43]. Among the symptoms covered by the MDASI, feelings of distress, lack of appetite, disturbed sleep, drowsiness, and sad feelings were the most prevalent symptoms. Dry mouth was another frequent symptom among both cancer patients and non-cancer patients, suggesting another important area that requires care and attention. Tong et al. [54] reported that dry mouth was the most common oral symptom among medical oncology patients. Furthermore, they found that the symptom was associated with lower performance status and poorer quality of life.

Severe pain was present in 18.4% of our cancer group. Although the World Health Organization guidelines declare that 90% of cancer pain can be eliminated by proper analgesic use [62], our results showed a failure of the medical system in meeting this standard. It appeared that patients' pain is not adequately relieved even in a university hospital in the capital city. This unfortunate finding is evidenced by a low rate of opium usage and low rate of referrals to a pain specialist. The results of our study were

marginally better than those reported in the UK [14], Finland [43], and The Netherlands [56], but our findings replicate a series of previous reports showing the inadequacy of pain treatment in Japan [36, 52, 55].

Possible reasons of low opioid usage include (1) patients' cultural view of pain behaviors [17], (2) patients' beliefs and negative attitudes toward opioids, (3) under-detection of pain due to lack of routine screening, (4) insufficient knowledge and skills in prescribing opioids among physicians [38, 53], and (5) exclusion of severely ill patients from our sample. A nationwide survey showed that approximately 40% of the general population believes that cancer pain is not relievable, and approximately 30% believe that opioids cause addiction and shorten life [30, 38]. Further investigation into pain management is needed.

The results of the BCWI suggested that cancer patients had more severe worries and concerns about a larger range of issues compared with non-cancer patients. The severity of worry increases as their performance status declines. Their worry is more severe with regards to the course of illness and treatment, and issues related to mental status and coping with the illness. They worry less about social and interpersonal issues, including sexual and financial issues.

Table 3 Mean scores of Hospital Anxiety and Depression Scale and prevalence of major depression and adjustment

	Cancer (n=125)		Non-cancer (n=59)		p
HADS score					
Total	13.9 ^a	7.4 ^b	11.4 ^a	6.8 ^b	0.03
Depression subscale	7.2 ^a	3.9 ^b	6.2 ^a	3.7 ^b	0.08
Anxiety subscale	6.7 ^a	4.2 ^b	5.2 ^a	3.6 ^b	0.02
Prevalence					
Major depression (MDD)	35 ^c	28.0%	5 ^c	8.5%	0.001
Adjustment disorder or MDD	93 ^c	74.4%	34 ^c	57.6%	0.022

Student's *t* test for HADS scores and chi-square test for prevalence

Major depression: HADS total score ≥ 20 or HADS depression subscale ≥ 11

Adjustment disorder: HADS total score ≥ 11 or HADS depression subscale ≥ 5 or HADS anxiety subscale ≥ 8

HADS Hospital Anxiety and Depression Scale, *SD* standard deviation

^a Mean

^b SD

^c n

There are several possible reasons for these findings. First, the patients in our study were undergoing active treatment, and such patients may be more concerned about their illness and the ongoing treatment than about daily life issues that lie ahead after discharge. In fact, the results of previous needs studies [46, 50] suggest that cancer patients who are evaluated in medical facilities are more likely to emphasize needs and concerns related to cancer and treatment, whereas cancer patients evaluated in the community are more likely to report that daily life issues have a greater impact on their quality of life [57]. The medical staff should be aware that all issues must be addressed at some point in the course of treatment, even though the patients' interest in future concerns is less acute during the hospital stay. Second, ethnicity and culture may have influenced the low level of worry about sexual issues, because Japanese people are generally less likely to report

sex-related problems, although it is uncertain whether this is purely due to cultural differences or due to their hesitancy to report them [24]. Further study is needed to explore whether these foci of worry change according to the stage of cancer treatment and treatment setting. The medical staff should be sensitive to changes in patients' needs in order to offer relevant information.

The results of the HADS imply high prevalence of major depression and adjustment disorders among our sample. Psychological distress, especially major depression, has a strong negative impact on quality of life, treatment compliance, length of hospital stay, health-care costs, morbidity, and possibly mortality among cancer patients [41]; therefore, early intervention is crucial. Despite the high prevalence of psychological distress, the utilization rate of the psychiatric division was low. About one third of the patients with psychological distress did not even know

Table 4 Factors associated with severe psychological distress in cancer patients

	Beta	SE	Wald	df	p	Odds ratio	95% CI	
							Lower	Upper
Domains of worries (BCWI)								
Future prospects	1.26	0.49	6.56	1	0.01	3.53	1.34	9.28
Social and interpersonal problems	2.10	0.90	5.46	1	0.02	8.16	1.40	47.52
Clinical symptoms (MDASI)								
Number of severe symptoms ≥ 2	1.03	0.49	4.47	1	0.03	2.81	1.08	7.34

Binary stepwise logistic regression analysis (forward selection)

SE standard error, df degree of freedom, CI confidence interval, MDASI M.D. Anderson Symptom Inventory, BCWI Brief Cancer Worry Inventory

Table 5 Literacy rate and utility rate of relevant services

	Cancer patients (n=125)					Non-cancer patients (n=59)				
	Number of patients	Literacy rate ^a		Utilization rate ^b		Number of patients	Literacy rate ^a		Utilization rate ^b	
Psychiatry division										
Total	125	81	64.8%	17	13.6%	59	43	72.9%	2	3.4%
Patients with major depression	35	20	57.1%	9	25.7%	5	4	80.0%	2	40.0%
Patients with adjustment disorder	58	42	72.4%	5	8.6%	29	27	93.1%	0	0.0%
Others	32	19	59.4%	3	9.4%	25	10	40.0%	0	0.0%
Pain clinic										
Patients with moderate to severe pain	38	6	15.8%	3	7.9%	22	10	45.5%	4	18.2%
Others	87	30	34.5%	5	5.7%	37	10	27.0%	1	2.7%
Rehabilitation unit	125	98	78.4%	41	32.8%	59	50	84.7%	30	50.8%
Social services	125	56	44.8%	12	9.6%	59	31	52.5%	5	8.5%
Clinical nurse specialists	125	32	25.6%	12	9.6%	59	20	33.9%	5	8.5%

^aNumber (percent) of patients who knew about the service

^bNumber (percent) of patients who used the service

that they could use the psychiatric division. These patients might have received better treatment if their psychological problems had been detected and if they had been properly referred to the psychiatric division. Patients and staff share responsibility for the failure to access psychiatric services, because psychological distress is overlooked by both patients and the staff [34, 39, 40]. In addition, misunderstandings and negative attitudes towards psychological distress and psychiatric treatment hinders access to care [7, 11]. Proper psychoeducation and referral programs may reduce the patient-related barriers to seeking and utilizing optimal mental health care services among cancer patients [6, 47]. Raising physicians' awareness of psychological problems may enhance commitment between patients and physicians [12].

The results of the logistic regression analysis indicated that cancer patients who worry over future prospects and over interpersonal and social issues are at higher risk for severe psychological distress. The risk for patients with two or more severe symptoms was almost three times higher than the risk of those with one or no severe symptoms; thus, the medical staff should pay careful attention to such patients.

Our study had several limitations. First, our sample only included a small number of hospitalized patients in a single facility. Second, patients in very severe condition or with cognitive impairment were excluded. Such patients are likely to have more severe symptoms and more problems, thus the needs may be underestimated in our study. Third, the cross-sectional design using self-report questionnaires limits the power of assessment. The prevalence of major

depression and adjustment disorder was higher than in previous studies of Japanese cancer patients [3, 25, 26], and this may be due to usage of self-report questionnaires. Fourth, heterogeneous clinical nature of the sample made the results more difficult to interpret, as was suggested by the review of literature [13]. Fifth, physical and prognostic conditions were not matched between the cancer group and the comparison group. In previous studies, there was a comparable prognosis for cancer and non-cancer patients. For example, Addington-Hall et al. conducted retrospective interviews with relatives, friends, or other caregivers of patients who died of stroke [2] and a retrospective survey among relatives, friends, or other caregivers for non-cancer patients with similar symptom burden within a year of death [1]. Another study compared chronic respiratory diseases and lung cancer in the final 12 months of life [10]. Although these studies have limited accuracy because of retrospective design, there is evidence to suggest that non-cancer patients in the palliation phase have equally severe physical and psychosocial needs and possibly a greater problem with unmet information needs than cancer patients. It seems likely that the terminal non-cancer population also needs promotion of specialized palliative care. Sixth, the census method, although helpful for service planning, belies the unique needs of individual patients. Lastly, this study lacks direct measurement of quality of life and satisfaction of the participants, thus making the result difficult to interpret. Although this study covers various domains that may affect patients' quality of life and satisfaction, interrelations among those needs can be potentially damaging as a whole, because meeting a certain

area of need may impair other domain of need, and may result in impaired satisfaction or quality of life. In this sense, needs of cancer patients should be assessed upon a strong conceptual theory on multiple domains of needs, quality of life, and satisfaction; however, assessment tool that stands upon robust theory is scarce so far [59].

These limitations are outweighed by the following. To our knowledge, no needs research involving all patients in all stages of illness in acute care hospitals has been conducted in Japan. Weakness of our study design is set-off by the use of standardized assessment instruments [46, 50].

In conclusion, cancer patients in an acute care hospital suffer from a variety of physical, psychological, and social needs that are undertreated. Psychological issues are more prevalent among cancer patients than among non-cancer patients, despite the same level of physical distress. Considering high prevalence of various unmet needs and low rate of literacy and utilization of relevant services, routine screening for both psychological and physical symptoms is essential. Medical staff should pay special attention to cancer patients who worry over future prospects or interpersonal and social issues, and those with two or more severe symptoms. Further research is needed in this population, incorporating search for patients' satisfaction and quality of life, as well as relationship among various domains of needs.

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