Harkavy-Friedman, J.M., Restifo, K., Malaspina, D., Kaufmann, C.A., Amador, X.F., Yale, S.A., Gorman, J.M., 1999. Suicidal behavior in schizophrenia: characteristics of individuals who had and had not attempted suicide. The American Journal of Psychiatry 156 (8), 1276–1278.
Haukka, J., Suominen, K., Partonen, T., Lonnqvist, J., 2008. Determinations and outcomes of serious attempted suicide: a nationwide study in Finland, 1996-2003. American Journal of Epidemiology 167 (10), 1155–1163.
Heila, H., Heikkinen, M.E., Isometsa, E.T., Henriksson, M.M., Marttunen, M.J., Lonnqvist, J.K., 1999. Life events and completed suicide in schizophrenia: a comparison of suicide victims with and without schizophrenia. Schizophrenia Bulletin 25 (3), 519–531.
Henriksson, S., Isacsson, G., 2006. Increased antidepressant use and fewer suicides in Jamtland county, Sweden, after a primary care educational programme on the treatment of depression. Acta Psychiatrica Scandinavica 114 (3), 159–167.
Hu, W.H., Sun, C.M., Lee, C.T., Peng, S.L., Lin, S.K., Shen, W.W., 1991. A clinical study of schizophrenic suicides 42 cases in Taiwan. Schizophrenia Research 5 (1), 43–50.
Hunt, I.M., Kapur, N., Robinson, J., Shaw, J., Flynn, S., Bailey, H., Meehan, J., Bickley, H., Burns, J., Appleby, L., Parsons, R., 2006a. Suicide within 12 months of mental health service contact in different age and diagnostic groups: National clinical survey. The British Journal of Psychiatry 188, 135–142.
Hunt, I.M., Kapur, N., Windfuhr, K., Robinson, J., Bickley, H., Flynn, S., Parsons, R., Burns, J., Shaw, J., Appleby, L., 2006b. Suicide in schizophrenia: findings from a national clinical survey. Journal of Psychiatric Practice 12 (3), 139–147.
Ichimura, A., Matsumoto, H., Kimura, T., Okuyama, T., Watanabe, T., Nakagawa, Y., Yamamoto, I., Inokuchi, S., Hosaka, T., 2005. Characteristics of suicide attempters with depressive disorders. Psychiatry and Clinical Neurosciences 59 (5), 590–594.
Johnsson Fridell, E., Ojehagen, A., Traskman-Bendz, L., 1996. A 5-year follow-up study of suicide attempts. Acta Psychiatrica Scandinavica 93 (3), 151–157.
Kreyenbuhl, J.A., Kelly, D.L., Conley, R.R., 2002. Circumstances of suicide among individuals with schizophrenia. Schizophrenia Research 58 (2–3), 253–261.
Mann, J.J., Ellis, S.P., Waternaux, C.M., Liu, X., Oquendo, M.A., Malone, K.M., Brodsky, B.S., Haas, G.L., Currier, D., 2008. Classification trees distinguish suicide attempters in major psychiatric disorders: a model of clinical decision making. The Journal of Clinical Psychiatry 69 (1), 23–31.
Owens, D., Horrocks, J., House, A., 2002. Fatal and non-fatal repetition of self-harm. Systematic review. The British Journal of Psychiatry 181, 193–199.
Proulx, F., Lesage, A.D., Grunberg, F., 1997. One hundred in-patient suicides. The British Journal of Psychiatry 171, 247–250.
Radomsky, E.D., Haas, G.L., Mann, J.J., Sweeney, J.A., 1999. Suicidal behavior in patients with schizophrenia and other psychotic disorders. The American Journal of Psychiatry 156 (10), 1590–1595.
Ran, M.S., Wu, Q.H., Conwell, Y., Chen, E.Y., Chan, C.L., 2004. Suicidal behavior among inpatients with schizophrenia and mood disorders in Chengdu, China. Suicide and Life-Threatening Behavior 34 (3), 311–319.
Rutz, W., von Knorring, L., Walinder, J., 1992. Long-term effects of an educational program for general practitioners given by the Swedish Committee for the Prevention and Treatment of Depression. Acta Psychiatrica Scandinavica 85 (1), 83–88.
Steblaj, A., Tavcar, R., Dernovsek, M.Z., 1999. Predictors of suicide in psychiatric hospital. Acta Psychiatrica Scandinavica 100 (5), 383–388.
Suominen, K., Isometsa, E., Suokas, J., Haukka, J., Achte, K., Lonnqvist, J., 2004. Completed suicide after a suicide attempt: a 37-year follow-up study. The American Journal of Psychiatry 161 (3), 562–563.
Szanto, K., Kalmar, S., Hendin, H., Rihmer, Z., Mann, J.J., 2007. A suicide prevention program in a region with a very high suicide rate. Archives of General Psychiatry 64 (8), 914–920.
Tidemalm, D., Langstrom, N., Lichtenstein, P., Runeson, B., 2008. Risk of suicide after suicide attempt according to coexisting psychiatric disorder: Swedish cohort study with long term follow-up. BMJ 337, a2205.
Tremeau, F., Staner, L., Duval, F., Correa, H., Crocq, M.A., Darreye, A., Czobor, P., Dessoubrais, C., Macher, J.P., 2005. Suicide attempts and family history of suicide in three psychiatric populations. Suicide and Life-Threatening Behavior 35 (6), 702–713.
Zahl, D.L., Hawton, K., 2004. Repetition of deliberate self-harm and subsequent suicide risk: long-term follow-up study of 11, 583 patients. The British Journal of Psychiatry 185, 70–75.

医学部・大学附属病院における職域メンタルヘルス支援活動

河西千秋，佐藤直子，岩本洋子，土井原千穂，平安良雄

Key words
day care, depression, group work, network, workplace mental health

はじめに

近年，職域のメンタルヘルス不調者や，長期休職者に占めるメンタルヘルス不調者の割合が増大し，また勤労者世代の自殺者数が増大するに至り，職域のメンタルヘルスのあり方はことさら大きな課題となっている[1,2]。

横浜市立大学附属病院精神科では，長く，地方自治体や各種団体・企業のメンタルヘルス支援業務を委嘱され実践活動を行ってきた。そして，相談案件の増加や，職域関連の問題を抱える外来・入院患者の増加を踏まえ，2007年から地域の職域メンタルヘルス対応従事者によるネットワーク活動を開始し，また2008年より，復職デイケアを開設した。

本論では，これらの活動の概要を紹介し，医学部，ないしは大学病院における職域メンタルヘルス支援活動の意義について論じる。

1．職域メンタルヘルス・ネットワーク活動

著者らは，長く職域（地方自治体やかつての公社，および企業）の嘱託精神科医として，数多くのメンタルヘルス不調者に個別に対応してきたが，メンタルヘルスの基本概念が職場に浸透し，メンタルヘルス・サポート・システムが適切に構築されなければ，嘱託精神科医，あるいは産業医の仕事は，「ちぎっては投げ」の連続であると感じている。そこで，著者らは，2007年に関係団体，企業とともに，「横浜職域メンタルヘルス・ネットワーク」を立ち上げた（図1）。このネットワークの目標は，「すべての勤労者が誰もが十分なメンタルヘルス・サポートを受けることができる」である。そして，その実現のための5つの当面の課題を掲げた[3]（表1）。

ネットワーク参加者は，本学，近隣の一般企業各社，横浜市のメンタルヘルス担当部門，EAP企業などに所属する産業医，産業カウンセラー，臨床心理士，保健師，看護師，ソーシャルワーカー，衛生担当者，人事労務担当者である。他に，産業保健のコンサルタントなども参加している。ネットワークでは年間3回の例会を開催し，表2のプログラムを実施している。

職域のメンタルヘルスの問題の所在の一つはもちろん職場内にあるわけだが，その問題をどの程度，重要視しているのかは，残念ながら企業によりまちまちである。そしてそのことが，

KAWANISHI Chiaki, SATO Naoko, IWAMOTO Yohko, DOIHARA Chiho, HIRAYASU Yoshio: Workplace mental health support by University Hospital and Faculty of Medicine, Yokohama City University
横浜市立大学医学部精神医学：〒236-0004 神奈川県横浜市金沢区福浦 3-9

全体ミーティングの様子

多職種・他業種による事例検討（グループワーク）の様子

図1　横浜職域メンタルヘルス・ネットワーク

表1　ポリシーと課題

ポリシー：「勤労者の誰もが十分なメンタルヘルス・サポートを受けることができる」
当面の課題
1. メンタルヘルス不調者が，適切なケアを受けることができる。
2. メンタルヘルスケア不全者を受け止める仕組みがある。
3. メンタルヘルスケア不全者に対応する人が，充分な知識と技術をもっている。
4. 組織全体が，メンタルヘルスの重要性を知っている。
5. 一人ひとりの勤労者が，メンタルヘルスの重要性を知っている。

表2　ネットワークの定例会のプログラム

1. 対応困難事例の検討
　参加団体・組織が持ち回りで事例を提供し，ワークショップ形式で検討し，発表を行う
2. 勉強会
　1）事例検討に関連した学習
　2）職域メンタルヘルスに関するトピックスの紹介
3. 情報交換
　参加者相互の知識や経験，各団体・組織のシステム・ノウハウの紹介，懇親

国の施策の弱さとあいまって問題を大きくしたり，複雑化させている。しかし，メンタルヘルス不調者に実際に対応している現場の担当者の多くは，困難を抱えながらもよりよい対応・対策を模索している。したがって，1）まずこういった現場の関係者たちが集い，互いの知識やノウハウをシェアし，学習をし，スキルを向上させ，そして適切にメンタルヘルス問題に対応できるようにすること，2）そのことで関係者の困難感を軽減させることが重要と考えた。幸い，例会に対する参加者の満足度は非常に高く，著者らは，この活動内容が，参加者を通じて，それぞれの組織・団体のメンタルヘルス支援システムのありかたに良い形で反映されていくことを期

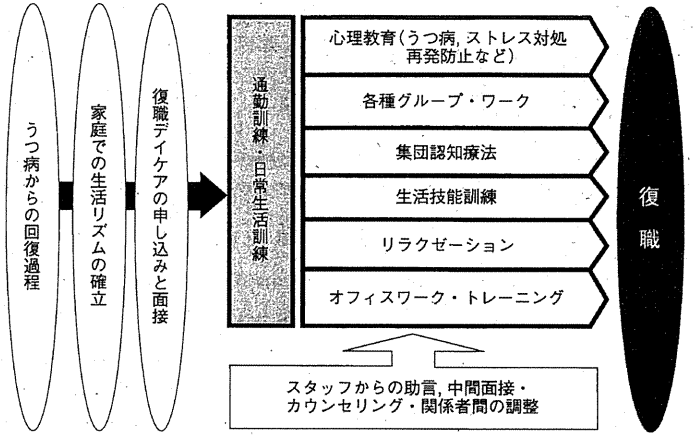

図2　復職デイケア開始までの流れとプログラム構成

待している。

最近，このネットワーク活動が注目され，紹介の機会も増え，2011年1月には，神奈川県産業保健推進センターにおいて参加者を公募し，このプログラムを実施した。

II．復職デイケア活動

1．デイケアの概要：体制と対象・プログラム

本学の復職デイケアは，附属病院精神科外来に設置され，精神科ショートケアとして週に3回（月曜・水曜・金曜）／3ヵ月間を1つのクールとして実施されている。定員は12名で，適応基準は，1）うつ病エピソードから回復過程にある，2）服薬を遵守している，3）日常生活リズムがほぼ確立されている，4）自発性を有し，グループ・ワークへの参加が可能，の4点であり，本学以外に主治医をもつ患者も受け容れている。スタッフの構成は，精神科医1名（筆頭著者），精神保健福祉士1名（専任），臨床心理士3名からなり，他に本学精神医学の大学院生と心理系大学院生の実習生がアシスタントとして参加している。

参加までの段取りは，まず主治医からの紹介状を得て，上記の適応基準の確認のための面接を本学で行い（精神科面接），参加可否を判断する。そして，参加可能と判断された後に，利用者から改めて参加同意書を得て，次に心理士による面接・検査を実施する。これらのプロセスと，プログラムの概要を図2に示した。

日々のプログラムは，デイケア担当医による診察に続き，まず日常活動記録報告から始まる。利用者は，それぞれ週間目標を立てており，互いの課題や解決法をシェアすることになる。図2のグループ・ワークには，KJ法による問題解決も含まれる。テーマは，「休職に至った経緯」，「再発防止・再休職防止の取り組み」などである。プログラムには多くのグループ・ワークが取り入れられているが，グループ・ワークは利用者の自律性，自己省察と客観化，コミュニケーション・スキルの涵養の場となり，業務能力の回復にも役立ち，またピア・サポート機能をももつ。

利用者に対する評価は，スタッフ会議で合議によってなされる。評価項目を，表3に挙げた。

表3　復職デイケア利用者に対する評価項目

1. 日常生活における日課や生活リズムの確立
2. 精神症状が日常生活とデイケア活動に与えている影響
3. 身体症状が日常生活とデイケア活動に与えている影響
4. プログラム全体への取り組みかた
5. 他の利用者やスタッフとのコミュニケーションのありかた
6. 個別のプログラムへの取り組み方と達成度（実際にはプログラムごとに細分化され評価される）
7. 復帰への意欲と準備状況
8. *主治医，職場の産業医・衛生担当者・人事労務担当者・上司間の連携の度合い

*項目8は，必ずしも利用者本人により制御できないものなので参考事項として扱い，状況に応じて主治医に連携強化を促す材料として活用している。

本学では，利用者が必ずしも当院の外来患者ではないことから詳細な精神症状評価は敢えてせず，精神症状や身体症状が結果的に影響を及ぼしているところの日常生活・デイケア活動のレベルと，各種プログラムにおける目標到達度にのみ焦点を当てている。

2. 利用者の概要と転帰

本学のデイケアは，これまでに85人に利用された（男性66人，平均年齢41歳；女性19人，平均年齢36歳）。プログラム終了者の割合は，83.3％であった。終了後の転帰については，現時点で復職をしたものの割合は52％，復職を目的とした馴らし勤務を実施しているものは11％，復帰後に再休職になったものは10％という結果を得ている。これは，最近の時点調査であり，今後，利用者数の増加に合わせて適切な解析を進める予定である。

なお，本学では，利用者の主治医が本学附属病院以外の医師であることが多いため，利用者の所属する会社の産業医や衛生担当者，人事労務担当者と直接的な折衝をする機会はあまりない。しかし，利用者からの要望により，主治医の了解のもと，デイケアのスタッフ，会社の関係者，利用者とで，復職に際しての，あるいは復帰後の業務内容に関する配慮などについて話し合いを持つことがある。

3. プログラムの評価，調査・研究

プログラムの有効性の評価は，利用者の満足度と，最終アウトカムとしての復職達成率をもって判定するのが妥当であろう。利用者の満足度は，プログラム終了時の自由記載文書をもって把握しており，高い評価を得ている。復職達成率データについては前述したが，さらに著者らは，復職の達成／不成功に影響を与えるさまざまな因子を，個々の利用者の特性と併せて検討するための調査・研究を行っている。具体的には，詳細な属性と病歴の把握，各種の精神症状・心理学的評価尺度を用いたアセスメント，職域における問題や広く環境的な問題に関するアセスメントを行いデータベース化している。また，デイケア終了後の追跡調査を行っている。データ数がまだ少ないので成果の提示は控えるが，著者らは，上記の調査・研究を行うことで，プログラムの改善や新規開発を目指している。また，調査・研究を通して，支援・ケアにとって重要な課題が焦点化され，スタッフに必要なスキルも明確化されるものと考える。

III．医学部・大学附属病院における職域メンタルヘルス活動の意義

現在，わが国では自殺問題が深刻の度を増しており，政府の一連の対策として，2010年1月に厚生労働省が自殺・うつ病対策等プロジェクト・チームを設置し，著者ら専門医や有識者からのヒアリングなどが行われ，5月に5つの主要な課題が提示された。そして，この中に，職場におけるメンタルヘルス対策が掲げられた[4]。この提言を受け，同省・労働基準局が職場におけるメンタルヘルス対策検討会を立ち上げ，2010年9月に，勤労者のメンタルヘルス不調の早期発見と対応の方策について提言をした[5]。

大学病院には，診療，教育，研究はもとより，昨今では，地域貢献がタスクとしてより重視されるようになった。社会情勢をみれば，職域メンタルヘルスの増進への寄与は，医学部・大学附属病院にとって特に重要なタスクと言えよう。従来の精神医学教育（専門教育・生涯教育）は，ともすれば個々の疾患ごとの学習に偏っていたかもしれない。しかし，今や，「勤労者のメンタルヘルス不調・精神障害への対応・治療」といった，領域別の治療学の習得が必須である。産業精神医学は，ひとつの精神医学のサブスペシャリティではあるが，しかし，勤労者は通常，一般精神科外来を訪れるので，精神科医には，勤労者にしばしば見られる社会心理学的な問題や，勤労者の診療における要諦，そして休職者への支援やリハビリテーションについての知識が求められる。また，復職プログラムのような専門治療を適切に使いこなすことのできる技量が求められる。個々の患者のケアや職域メンタルヘルス問題の解決に資する研究を発展させていくことも含め，人材養成・情報発信・地域精神保健活動の拠点としての医学部・大学附属病院の役割は大きい。

文献
1) 中央労働災害防止協会・労働者の自殺予防マニュアル作成検討委員会：職場における自殺の予防と対応改訂第4版，中央労働災害防止協会，東京，2009
2) 河西千秋：自殺予防学．新潮社，東京，2010
3) 中央労働災害防止協会：職場における心の健康づくり：労働者の心の健康保持増進のための指針．中央労働災害防止協会，東京，2009
4) 厚生労働省：誰もが安心して生きられる，温かい社会づくりを目指して：厚生労働省における自殺・うつ病等への対策，http://www.mhlw.go.jp/bunya/shougai-hoken/jisatsu/torimatome.html．2010，2011年1月24日閲覧．
5) 厚生労働省労働基準局：職場におけるメンタルヘルス対策検討会報告書，2010

Regular Article

Factors influencing suicidal ideation among Japanese adults: From the national survey by the Cabinet Office

Miyuki Aiba, PhD,[1]* Yutaka Matsui, PhD,[1] Takehiko Kikkawa, MD,[2] Toshihiko Matsumoto, MD, PhD[3] and Hisateru Tachimori, PhD[4]

[1]*Department of Comprehensive Human Sciences, University of Tsukuba, Tsukuba,* [2]*Department of Human Well-Being, Chubu Gakuin University, Gifu,* [3]*Center for Suicide Prevention, National Institute of Mental Health, National Center of Neurology and Psychiatry, and* [4]*Department of Mental Health Policy and Evaluation, National Institute of Mental Health, National Center of Neurology and Psychiatry, Tokyo, Japan*

Aim: Suicide prevention is of pressing importance in Japan, and grappling with this problem necessitates clarifying the causes of suicidal ideation. The purpose of the present study was to investigate several factors influencing suicidal ideation. This was done through analyzing factors examined in prior research and accessing suicide sites.

Methods: A total of 1080 randomly selected adults were asked about stress, stress release, social support sources, depression, access of suicides sites, and suicidal ideation.

Results: Around 6% of men in their 20s and 30s as well as 7% of people with suicide ideations had accessed suicide sites on the web. Those with suicide ideations were more likely to access suicide sites than those without. There was no sex difference in suicide ideations. The results concerning factors influencing past-year suicide ideations revealed that there were age and sex differences in these factors.

Conclusion: For men in their 20s through their 50s, accessing suicide sites influenced suicidal ideations through depression, and for women in the same age bracket, emotional support influenced suicidal ideations through depression. For men and women over the age of 60, depression strongly influenced suicidal ideations.

Key words: depression, Internet, Japanese, social support, suicide.

SINCE 1998, THE number of suicides in Japan has exceeded 30 000 annually. With the eighth highest suicide rate in the world, Japan continues to struggle with this serious problem,[1] and gaining insight into suicide prevention has become an urgent issue.

Suicidal behavior can be classified into three gradations: suicidal ideation, suicide attempt, and suicide itself. According to the National Comorbidity Survey carried out in the USA, 34% of people embracing suicidal ideations create concrete suicide plans, and 72% of those with suicide plans extend them to actual suicide attempts.[2] These figures indicate there is a high risk that people with suicidal ideations will subsequently attempt suicide. In order to help prevent suicide, it is important to clarify the processes involved in suicide ideations. Similarly, surveys carried out in Japan have indicated that the most effective forms of suicide prevention are carried out at the level of suicide ideations.[3]

Much previous research both in Japan and abroad has investigated the factors influencing suicidal behavior and focused on both attempted and completed suicides. For example, demographic research has consistently shown that while more women than men attempt suicide, more men than women complete their attempts.[4,5] However, research on Japanese college students has revealed no sex difference in suicide ideations.[3,6] In advanced countries, the suicide rate is higher among the elderly,[7] whereas the rate for attempted suicide is higher among younger people.[8] In Japan, since 1998 the number of men in their 40s and 50s committing suicide has increased dramatically, and recently the number of suicides among men in their 30s has risen as well.[1] Japan is characterized by not only suicide among the elderly, but also by the large number of middle-aged men who commit suicide. A large amount of research has revealed that among individual characteristics, depression exerts the strongest influence on suicide ideations,[9] and that important environmental factors include such things as social support.[10] The variety of factors that affect suicide differ in means of influence depending on age and sex. For example, depression wields a strong influence among the elderly,[10,11] and low stress tolerance and difficulty in seeking support have a strong correlation with suicide among men.[4] Therefore, it is necessary to take age and sex into account when conducting a comprehensive examination of the influences on suicide.

Recently, the number of so-called 'Internet suicides' that make use of suicide sites on the web has increased and this now represents a serious social problem. However, very little research in Japan has examined suicide sites and 'Internet suicides'. Moreover, what research exists consists largely of content analyses of suicide sites. For example, Sanate[12] and Koyama[13] used search engines to carry out content analyses and revealed that content on suicide sites represented a mix of suicide methods and suicide-prevention tips. However, these studies did not examine whether suicide sites influence suicide ideations. On this point, Katsumata[14] found that, for Japanese junior high school students, a history of suicidal ideation might be associated with a history of searching the Internet for information about suicide or self-injury. Otherwise, Sueki[15] suggested that suicidal ideations decreased when persons browsed the web for these sites.

Research outside Japan, however, has shown that suicide sites have both negative and positive sides.[16] Negative aspects include the spread of information on methods to commit suicide[17,18] and the ability of peer consciousness and peer pressure to lower the threshold for suicidal action.[19] Furthermore, Thompson[20] has shown that suicidal ideations are more easily disclosed on the Internet, particularly in the cases of men under the age of 35. In contrast, anonymously communicating with other persons who are contemplating suicide can produce social support[16] and encourage reception to crisis intervention by a specialist.[21] However, these studies were composed largely of case studies of completed or attempted suicide among people who have visited suicide sites, and did not empirically investigate the influence of suicide sites on suicide itself.

The present study investigated several factors influencing suicidal ideation through analyzing the factors examined in prior research and accessing suicide sites. This research presents the findings of the first study conducted through a random sampling of suicide ideations among adults nationwide in Japan.

METHODS

Participants

A two-stage stratified random sample was used to select 3000 residents (1485 men, 1515 women) from the general population of adult men and women over the age of 20 at 210 sites in 171 municipalities across Japan. The first stage of stratification concerned municipalities. The prefectures were classified into 11 districts, and each district was further classified into four categories according to municipality size: large metropolis, city with a population over 100 000, city with a population under 100 000, and small town. The participants were chosen by first calculating a sampling interval and then by using this sampling interval method to select individuals from the Basic Residential Registry. Valid responses were retrieved from 1808 participants (901 men, 907 women; 60.3% collection rate). Table 1 displays the population statistics for the valid responses.

Procedures

The survey was conducted between 21 February and 9 March 2008. The investigators visited the participants' homes and distributed questionnaires. Approximately 2 weeks later, they again visited the homes and collected the answer sheets, which were sealed in envelopes.

Measures

Stress in the past month

Answers concerning whether the participant experienced dissatisfaction, worries, hardships, and stress in his or her everyday life over the past month were given on a scale of 1 (*not at all*) to 4 (*a high amount*).

Correspondence: Miyuki Aiba, PhD, Department of Comprehensive Human Sciences, University of Tsukuba, 1-1-1 Tennoudai, Tsukuba, Ibaraki 305-8572, Japan. Email: aiba.miyuki@gmail.com
Received 10 July 2010; revised 24 March 2011; accepted 15 April 2011.

Table 1. Sample demographic

	n	%
Age		
20s	183	10.12
30s	320	17.70
40s	341	18.86
50s	354	19.58
60s	341	18.86
70≤	269	14.88
Sex		
Male	901	49.83
Female	907	50.17
Employment status		
Full-time	649	35.90
Part-time	244	13.50
Self-employed	199	11.01
Free-lance profession	64	3.54
Housewife	301	16.65
Retired	263	14.55
Student	32	1.77
Others	11	0.61
Marital status		
Married (living together)	1302	72.01
Married (separation)	28	1.55
Unmarried	272	15.04
Widowed	104	5.75
Divorced	62	3.43
Socioeconomic status		
High	26	1.44
Upper middle	226	12.50
Middle	855	47.29
Lower middle	377	20.85
Low	125	6.91
Unknown	158	8.74

Socioeconomic status was measured by subjective responses.

Stress release

Participants were asked about ways they found to relieve stress in their daily lives. They were able to select multiple responses from a list of 13 choices that included options such as 'shopping' and 'sports'. Analysis was based on the number of options selected and this was termed the 'stress-release number'.

Emotional support sources

To investigate if there were persons available with whom the participants felt they could depend upon to speak openly with about issues such as anxiety, personal or work troubles, or painful emotions, participants were able to select multiple responses from a list of six choices including options such as 'living together with parents/family' and 'friends'. Analysis was based on the number of options selected; this was called the 'emotional-support-sources number'.

Instrumental support sources

To investigate whether physical or financial resources were available in times of need, participants gave multiple responses from a list of six choices including options such as 'living together with parents/family' and 'friends'. Analysis was based on the number of options selected and we named this the 'instrumental-support-sources number'.

Depression in the past month

The six-question K6 scale[22] was employed to measure the degree of depression over the past month.

Access of suicide sites

After reading an explanation that stated 'On the internet there are "suicide sites" where people can learn about suicide methods and invite others to join in suicide pacts', participants were asked to respond with a 'yes' or 'no' to questions regarding whether they had ever looked at such sites.

Past-year suicidal ideation

Participants were asked to respond with a 'yes' or 'no' as to whether they had thought about suicide over the past year.

Statistical analysis

Analysis was carried out according to the following procedures. First, a two-way ANOVA was carried out using the variables related to suicide (stress in the past month, stress-release number, emotional-support-sources number, instrumental-support-sources number, and depression in the past month) as the dependent variables and age and sex as the independent variables in order to test for a difference in the variables related to suicide. A multiple comparison using Tukey's honestly significant difference test was carried out on the variables revealing main effects in the results of the ANOVA test. Furthermore, a χ^2-test was carried out for age and suicide site access, sex and suicide site access, age and past-year suicide ideations, and sex and past-year suicide ideations.

Next, a *t*-test was carried out using the suicide-related variables as the dependent variable and the presence or absence of past-year suicide ideations to test for differences among the variables. Also, a χ^2-test was carried out on the presence or absence of past-year suicide ideations and access to suicide sites. Afterward, a path analysis was carried out using the reiterations of a multiple linear regression (forward selection method) in order to investigate the factors influencing past-year suicidal ideation.

The present study captures stress influences on suicide ideations through depression, the strongest influence on suicide ideations. Moreover, it engages factors, such as social support, promoting or suppressing suicide ideations and depression that have been examined in prior research on factors related to suicide sites and persons who access them. Extending the research along these lines, the present study included stress in the past month as the most basic level. The second-level included suicide site access, the stress relief number, the emotional-support-sources number, and the instrumental-support-sources number. The third level was depression in the past month, and the fourth level was past-year suicide ideations. Analysis was carried out substituting dummy variables for suicide site access and suicide ideations (no = 0, yes = 1). Furthermore, the present study analyzed age and sex differences in the factors influencing suicide ideations. All of the analyses were carried out using the statistical package SPSS 12.0J for Windows and employed a significance level of 5% (two-tailed test).

RESULTS

Sample characteristics

Table 2 displays the characteristics of the sample, including age, sex, and past-year suicide ideations. The ANOVA results revealed a significant difference for

Table 2. Descriptive statistics for suicidality variables by age and sex

		20s–30s			40s–50s			60≤			All		
		Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All
Past month	*n*	245	250	495	330	343	673	296	274	570	871	867	1738
stress[†]	Mean	2.09	2.08	2.08	2.18	2.15	2.16	2.69	2.51	2.60	2.33	2.25	2.29
	(SD)	(0.80)	(0.70)	(0.75)	(0.72)	(0.75)	(0.73)	(0.83)	(0.86)	(0.85)	(0.82)	(0.79)	(0.81)
Stress-release	*n*	249	254	503	338	357	695	314	296	610	901	907	1808
number[‡]	Mean	3.83	4.04	3.94	3.21	3.28	3.24	2.64	2.76	2.70	3.18	3.32	3.25
	(SD)	(2.22)	(1.87)	(2.05)	(1.84)	(1.76)	(1.80)	(1.88)	(1.77)	(1.83)	(2.02)	(1.86)	(1.94)
Emotional-	*n*	249	254	503	338	357	695	314	296	610	901	907	1808
support-sources	Mean	1.51	2.03	1.77	1.38	1.92	1.66	1.28	1.59	1.43	1.38	1.84	1.61
number[§,¶]	(SD)	(0.93)	(0.92)	(0.96)	(0.84)	(0.96)	(0.94)	(0.88)	(1.02)	(0.96)	(0.88)	(0.98)	(0.96)
Instrumental-	*n*	249	254	503	338	357	695	314	296	610	901	907	1808
support-sources	Mean	1.22	1.46	1.34	1.17	1.35	1.26	1.01	1.10	1.05	1.13	1.30	1.21
number[§,¶]	(SD)	(0.79)	(0.75)	(0.78)	(0.83)	(0.77)	(0.80)	(0.76)	(0.73)	(0.74)	(0.80)	(0.76)	(0.79)
Past month	*n*	246	253	499	325	335	660	259	237	496	830	825	1655
depression[‡]	Mean	10.41	10.65	10.53	9.75	10.10	9.93	8.82	9.04	8.93	9.66	9.97	9.81
	(SD)	(4.46)	(5.04)	(4.76)	(3.68)	(4.38)	(4.05)	(3.43)	(3.77)	(3.59)	(3.90)	(4.47)	(4.20)
Access of	*n*	14	4	18	7	3	10	2	5	7	23	12	35
suicide sites[¶]	%	5.83	1.63	3.70	2.15	0.87	1.49	0.69	1.90	1.27	2.69	1.41	2.05
Past-year	*n*	17	18	35	12	10	22	7	8	15	36	36	72
suicidal ideation[¶]	%	7.14	7.35	7.25	3.86	3.10	3.47	2.69	3.32	2.99	4.45	4.45	4.45

[†]Significant difference, 20s–30s, 40s–50s < 60≤.
[‡]Significant difference, 20s–30s > 40s–50s > 60≤.
[§]Significant difference, 20s–30s, 40s–50s > 60≤.
[¶]Significant sex difference; [¶]Significant difference, 20s–30s > 40s–50s, 60≤.
The total number of analysis data is different from each variable because of missing values.

© 2011 The Authors
Psychiatry and Clinical Neurosciences © 2011 Japanese Society of Psychiatry and Neurology

Table 3. Descriptive statistics for suicidality variables by past-year suicidal ideation

		Suicidal	Non-suicidal
Past month stress[†]	*n*	70	1518
	Mean (SD)	1.53 (0.61)	2.31 (0.79)
Stress-release number	*n*	72	1545
	Mean (SD)	3.18 (2.22)	3.32 (1.90)
Emotional-support-sources number[†]	*n*	72	1545
	Mean (SD)	1.25 (0.98)	1.68 (0.95)
Instrumental-support-sources number[†]	*n*	72	1545
	Mean (SD)	1.00 (0.80)	1.26 (0.78)
Past month depression[‡]	*n*	68	1455
	Mean (SD)	17.88 (6.06)	9.45 (3.73)
Access of suicide sites[‡]	*n*	5	27
	%	7.40	1.80

[†]Significant difference, those with suicidal ideations < those without suicidal ideations.
[‡]Significant difference, those with suicidal ideations > those without suicidal ideations.

age on all the variables. Stress in the past month was greater for those over 60 than for those in their 20s through 50s (F [2, 1732] = 71.11, $P < 0.01$). On the other hand, the stress-release number varied inversely with age (F [2, 1802] = 59.43, $P < 0.01$). Emotional support sources and instrumental support sources were both greater for those in their 20s to 50s than for those over 60 (F [2, 1802] = 18.48, $P < 0.01$; F [2, 1802] = 20.99, $P < 0.01$). Depression in the past month also varied inversely with age (F [92, 1649] = 18.82, $P < 0.01$).

Regarding sex, emotional support sources and instrumental support sources were both greater for women than for men (F [1, 1802] = 108.46, $P < 0.01$; F [1, 1802] = 21.38, $P < 0.01$). A χ^2-test revealed that access of suicide sites and suicide ideations over the course of 1 year were both greater for those in their 20s and 30s ($\chi^2_2 = 9.32$, $P < 0.01$; $\chi^2_2 = 12.81$, $P < 0.01$).

Table 3 displays the correlation between suicide-related variables and the presence or absence of past-year suicide ideations. The results of a t-test revealed that stress in the past month, emotional support sources, and instrumental support sources were greater for those without suicide ideations than for those with them ($t_{802} = 10.38$, $P < 0.01$; $t_{1615} = 3.72$, $P < 0.01$; $t_{1615} = 2.73$, $P < 0.01$). Additionally, depression in the past month was greater for those with suicide ideations than for those without ($t_{694} = 11.37$, $P < 0.01$). The results of the comparison of the effect of the presence or absence of past-year suicide ideations on access of suicide sites revealed that those with suicide ideations were more likely to access suicide sites than those without ($P < 0.05$).

Factors influencing suicide ideations

Table 4 and Figure 1 display the path analysis results. The results concerning commonalities shared by both sexes for all ages reveal that stress in the past month increases past-year suicide ideations through depression in the past month. On the other hand, there were age and sex differences in the second-level factors influencing past-year suicide ideations. For men in their 20s through 50s, accessing suicide sites increased past-year suicide ideations through depression in the past month. But for women in their 20s through 50s and men in their 20s through 30s, a low emotional-support-sources number increased past-year suicide ideations through depression in the past month. For men in their 40s through 50s and women in their 60s and above, a low instrumental-support-sources number increased suicide ideations through depression in the past month.

DISCUSSION

This study investigated several factors influencing suicide ideations, such as age differences, sex differences, depression, social support, and accessing suicide sites. The results of comparing age and sex differences for the variables related to suicide

Table 4. Beta and adjusted coefficient of determination in multiple linear regression

				LEVEL2					
Dependent variables		Independent variables	LEVEL1	a	b	c	d	LEVEL3	R^2
LEVEL2	a) Suicide sites								
	b) Stress release								
	c) Emotional support	40–50s, female	−0.11*						0.01*
	d) Instrumental support	20–30s, female	−0.15*						0.02*
LEVEL3	Depression in the past month	20–30s, male	0.46**	0.25**		−0.14*			0.31**
		20–30s, female	0.53**		0.19**	−0.19**			0.35**
		40–50s, male	0.45**	0.15**			−0.11*		0.23**
		40–50s, female	0.45**			−0.17**			0.31**
		60≤, male	0.47**						0.22**
		60≤, female	0.46**						0.22**
LEVEL4	Suicidal ideation	20–30s, male						0.40**	0.16**
		20–30s, female						0.49**	0.23**
		40–50s, male					−0.13*	0.33**	0.12**
		40–50s, female						0.25**	0.06**
		60≤, male						0.45**	0.20**
		60≤, female						0.55**	0.30**

*$P < 0.05$; **$P < 0.01$.
Significant results only.

revealed that although those in the elderly group, people in their 60s and above, had comparatively more stress than those in other age groups, they had low stress-release numbers and support source numbers. There was no sex difference in suicide ideations. Furthermore, more people in their 20s and 30s accessed suicide sites and had suicide ideations over the course of 1 year, and those with suicide ideations more often accessed suicide sites than those without. In particular, around 6% of men in their 20s and 30s and around 7% of people with suicide ideations had accessed suicide sites.

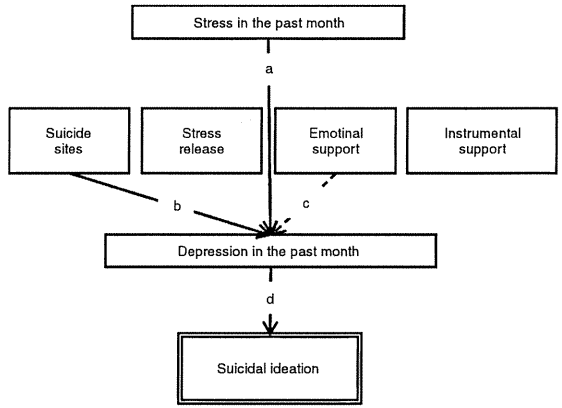

Figure 1. Characteristic influence factors on suicidal ideation. (a) Both sexes and all ages; (b) 20–50s, male; (c) 20–50s, female; (d) 60≤, both sexes.

Prior research has shown that while more elderly people complete suicide,[7] more young people attempt suicide,[8] and that both suicide ideations and attempts are more common among the young. Furthermore, Otsuka[3] and Hasui[6] both confirm that there is no sex difference in suicide ideations among the general Japanese population.

The results concerning factors influencing past-year suicide ideations revealed that there were age and sex differences in these factors. To summarize the specific features of the results, accessing suicide sites influenced suicide ideations through depression for men in their 20s through 50s. These men had higher rates of accessing suicide sites than men in other age groups and women in general. Thus, it is possible that men are different from women in their use and access of suicide sites. Given that our research showed men had fewer support sources than women, and since it is known that men below 35 more readily disclose suicide ideations on the Internet,[20] the following conjectures can be made. First, because of the social norms against men seeking assistance from those around them when problems arise, men are less likely to request support from their family or friends. And because of the high degree of anonymity, suicide sites represent a plausible option for men to turn to for sources of information that could help in problem-solving or for other types of support. Accessing suicide sites in seeking sources for support has a contrary effect of increasing depression and, furthermore, suicide ideations, creating the possibility of a vicious cycle. Accordingly, we must not only seek the regulation of suicide sites through legal activity, but we must also work for an environmental change of the social norms surrounding male members of our society that would enable men in their 20s through 50s to comfortably seek help. In Japan, where a particularly large number of middle-aged men commit suicide, it is extremely important to develop suicide countermeasures that create an environment in which support can be sought and suicide sites can be legally regulated.

For women in their 20s through 50s, emotional support sources influenced suicide ideations through depression. Accordingly, the presence of others with whom they can talk or who can lend emotional support plays an important role in suicide prevention for this group. The results here concurred with prior research showing that depression exerts a direct and strong influence on suicide ideations for both men and women over the age of 60.[10,11] In particular, the influence of emotional and instrumental support was notably absent for men over 60, and forms of social support did not function well for this group. Accordingly, in order to prevent suicide among persons over the age of 60, it is necessary to develop effective forms of support at the level of society in general to mitigate the influence of stress on depression.

The present study is limited in the following ways. First, the valid response rate was only 60.3%, and it is possible that severely depressed survey targets and those with suicide ideations or who had attempted suicide did not respond. Second, because the type of suicide site accessed as well as the type of engagement with the site (such as posting written messages on the site) were not measured, it was not possible to investigate the influence of suicide sites on suicide ideations in great detail. In its survey, this study defined suicide sites as sites 'where people can learn about suicide methods and invite others to join in suicide pacts'. However, Sanate,[12] Koyama,[13] and Sueki[15] have argued that suicide sites include not only those centering on recruiting others to commit suicide and sharing methods of committing suicide, but also those that focus on suicide prevention. Therefore it is possible that the influence of accessing suicide sites on suicide ideations differs depending on the type of site.

ACKNOWLEDGMENTS

This paper is based on the data from the 'National survey of suicide prevention strategy'. We wish to thank the Cabinet Office for permission to use the data. Our thanks are also due to Hajime Sueki, Department of Clinical Psychology, University of Tokyo, who provided us with a paper in press and gave many helpful suggestions.

REFERENCES

1. Cabinet Office, Government of Japan. *White Paper on Suicide Prevention*. Author, Tokyo, 2008.
2. Kessler RC, Borges G, Walters EE. Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Arch. Gen. Psychiatry* 1999; **56**: 617–626.
3. Otsuka A, Seto M, Kanno J, Agari I. Development of the suicide ideation scale for Japanese and a study of the factors related to suicide ideation. *Jpn. J. Couns. Sci.* 1998; **31**: 247–258 (in Japanese).

4. Murphy GE. Why women are less likely than men to commit suicide. *Compr. Psychiatry* 1998; **39**: 165–175.
5. Hawton K. Sex and suicide: gender differences in suicidal behavior. *Br. J. Psychiatry* 2000; **177**: 484–485.
6. Hasui C, Nagata T, Kitamura T. Resilience and guilt feeling: predicting factors of suicidal ideation. *J. Jpn. Clin. Psychol.* 2008; **25**: 625–635 (in Japanese).
7. World Health Organization. Country reports and charts available. 2009 [Cited 28 Sep 2009.] Available from URL: http://www.who.int/mental_health/prevention/suicide/country_reports/en/index.html (last accessed 5 May 2011).
8. Chiles JA, Strosahl KD. *Clinical Manual for Assessment and Treatment of Suicidal Patients*. American Psychiatric Publishing, Washington, DC, 2005.
9. Beck AT, Steer RA, Beck JS, Newman CF. Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide Life Threat. Behav.* 1993; **23**: 139–145.
10. Awata S, Seki T, Koizumi Y *et al.* Factors associated with suicidal ideation in an elderly urban Japanese population: a community-based, cross-sectional study. *Psychiatry Clin. Neurosci.* 2005; **59**: 327–336.
11. Scocco P, Leo DD. One-year prevalence of death thoughts, suicide ideation and behaviors in an elderly population. *Int. J. Geriatr. Psychiatry* 2002; **17**: 842–846.
12. Sanate M, Takeshima T. Research on the realities of information service about suicide on web site. *Research report on the realities of suicide and prevention strategies*. 2003; 211–219 (in Japanese).
13. Koyama T, Hakoda T, Hata M, Tachimori H, Takeshima T. Research on the realities of site related to suicide. *Research report on the suicide prevention based on trend*. 2005 (16 screens). [Cited 1 Oct 2009.] Available from URL: http://ikiru.ncnp.go.jp/ikiru-hp/report/ueda16/ueda16-19.pdf (in Japanese) (last accessed 5 May 2011).
14. Katsumata Y, Matsumoto T, Kitani M, Takeshima T. Electronic media use and suicidal ideation in Japanese adolescents. *Psychiatry Clin. Neurosci.* 2008; **62**: 744–746.
15. Sueki H. User characteristics of suicide preventive information service on the internet and an effect of browsing the contents on users' suicidal ideation: comparison between minors and adults. *Suicide Prev. Crisis Interv.* 2010; **30**: 23–30 (in Japanese).
16. Eichenberg C. Internet message boards for suicidal people: a typology of users. *Cyberpsychol. Behav.* 2008; **11**: 107–113.
17. Alao AO, Yolles JC, Armenta W. Cybersuicide: the internet and suicide. *Am. J. Psychiatry.* 1999; **156**: 1836–1837.
18. Lee DTS, Chan KPM, Yip PSF. Charcoal burning is also popular for suicide pacts made on the internet. *Br. Med. J.* 2005; **330**: 602.
19. Baume P, Cantor CH, Rolfe A. Cybersuicide: the role of interactive suicide notes on the internet. *Crisis* 1997; **18**: 73–79.
20. Thompson S. The internet and its potential influence on suicide. *Psychiatr. Bull.* 1999; **23**: 449–451.
21. Janson MP, Alessandrini ES, Strunjas SS, Shahab H, El-Mallakh R, Lippmann SB. Internet-observed suicide attempts. *J. Clin. Psychiatry* 2001; **62**: 478.
22. Kessler RC, Andrews G, Colpe LJ *et al.* Short screening scales to monitor population prevalences and trends in nonspecific psychological distress. *Psychol. Med.* 2002; **32**: 959–976.

Short Communication

Comparative study of suicide risk in depressive disorder patients with and without problem drinking

Toshihiko Matsumoto, MD, PhD,[1]* Takaharu Azekawa, MD, PhD,[3] Hirotake Uchikado, MD, PhD,[4] Shigeru Ozaki, MD, PhD,[2] Naomi Hasegawa, MD,[7] Yoshikazu Takekawa MD[5] and Sachio Matsushita, MD, PhD[6]

[1]*National Institute of Mental Health, National Center of Neurology and Psychiatry,* [2]*Nakano General Hospital, Tokyo,* [3]*Shioiri Mental Clinic, and* [4]*Yokohama Minami Kyosai Hospital,* [5]*National Hospital Organization Yokohama Medical Center,* [6]*National Hospital Organization Kurihama Alcoholism Center, Kanagawa and* [7]*Daycare Clinic Hotto-Station, Hokkaido, Japan*

The present study sought to determine whether the co-occurrence of problem drinking heightens suicide risk in individuals with depression in Japan, using a sample of 784 outpatients (287 men and 497 women) with depressive disorder. Female subjects with at least a moderate problem drinking showed significantly more severe depression and suicidality than those without, but no such difference was identified in men.

Key words: depressive disorder, problem drinking, suicide risk.

A PREVIOUS STUDY has indicated that the co-occurrence of alcohol abuse/dependence heightens suicide risk in individuals with depression[1] because excessive drinking may worsen psychiatric problems, negatively impact psychosocial situations, and increase impulsive behavior.[2] In spite of this, clinicians are likely to overlook or underestimate the significance of co-occurring alcohol abuse/dependence and depression in patients. All suicide-completers in our previous psychological autopsy study, who were under psychiatric treatment at the time of death and were considered to have co-occurring depression and alcohol-related problems, were receiving pharmacotherapy targeting depressive disorder only; alcohol abuse/dependence went untreated.[3] The purpose of the present study was to examine whether the co-occurrence of problem drinking heightens suicide risk in individuals with depression in Japan.

*Correspondence: Toshihiko Matsumoto, MD, PhD, National Institute of Mental Health, National Center of Neurology and Psychiatry, 4-1-1 Ogawa-Higashi, Kodaira, Tokyo 187-8553, Japan.
Email: tmatsu@ncnp.go.jp
Received 6 August 2010; revised 11 June 2011; accepted 14 June 2011.

METHODS

Subjects

Our patient pool comprised 963 consecutive outpatients with a DSM-IV-TR diagnosis of depressive disorder (major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified), who visited one of five general psychiatric clinics during December 2009. Psychiatrists at these five clinics recommended study participation to all outpatients who met the DSM-IV-TR criteria for depressive disorder. A total of 917 patients (95.2%) consented to participate. After data-deficit samples were excluded from the 917 patients, 784 (81.4%; 287 men and 497 women; mean age ± SD, 43.8 ± 13.6 years) remained as subjects.

This study was approved by the ethics committee of the National Center of Neurology and Psychiatry.

Procedures

Self-reported information on the severity of each patient's alcohol-related problems, depression, and suicide risk was collected cross-sectionally via a questionnaire consisting of three scales: the Alcohol Use Disorders Identification Test (AUDIT), the Kessler 10 (K10), and the Mini International Neuropsychiatric Interview (M.I.N.I.).

The AUDIT, a self-report rating scale used worldwide, was developed by the World Health Organization to evaluate the severity of an individual's alcohol-related problems.[4] In the original version, a score greater than 8 indicates the presence of a moderate level of problem drinking, and a score greater than 20 indicates a severe level,[5] while in the Japanese version, the cut-off for a moderate level is from 10 to 14.[6] In the present study, each score greater than 10 or 20 was defined as a moderate or severe level.

The K10 is a brief self-report questionnaire that screens for depressive disorder.[7] This rating scale has been employed worldwide in epidemiological studies, and the validity and reliability of the Japanese version have been established.[8]

The M.I.N.I. is a structured interview schedule that screens for various psychiatric disorders.[9] The validity and reliability of the Japanese version have been confirmed.[10] The scores for each answer are weighted according to their importance in assessing suicide risk, with a total score greater than 10 indicating a high risk. The six items on the Japanese M.I.N.I. associated with suicide risk were included in our self-report questionnaire. Total scores were analyzed after the internal consistency of these items was established for our sample (Cronbach's $\alpha = 0.755$).

Statistical analysis

Based on their AUDIT scores, subjects were divided into three groups: the non-problem-drinking (NPD) group (scores ≤9), the moderate problem-drinking (MPD) group (scores 10–19), and the severe problem-drinking (SPD) group (scores ≥20). Consequently, the subjects were divided into the three groups as follows: 638 (81.4%) in the NPD group, 97 (12.4%) in the MPD group, and 49 (6.3%) in the SPD group.

We then performed an ANOVA to compare suicidality as assessed by the K10 and M.I.N.I. portions of the questionnaire across the three groups for each sex. When the ANOVA revealed a significant difference, a Bonferroni post hoc test was performed to explore the difference. The level of significance was set at $P < 0.05$, and all P-values were two-tailed.

RESULTS

An examination of group distribution in each sex revealed that a significantly greater proportion of men exhibited problem drinking (MPD and SPD) compared to women (23.3% [67/287] vs 15.9% [79/497], respectively; see Table 1).

Table 1 compares scores on the K10 and M.I.N.I. suicide risk items across the groups for each sex. Although among men the three groups exhibited no significant differences in the K10 or M.I.N.I. suicide risk scores, among women the groups exhibited significant differences in both scores. Bonferroni post hoc tests demonstrated that the female MPD and SPD groups scored significantly higher on the K10 and M.I.N.I. suicide risk questions than the female NPD group. No such significant difference was observed between the female MPD and SPD groups.

DISCUSSION

Consistent with findings in previous studies,[1] male patients exhibited co-occurring depressive disorder and problem drinking more frequently than women. We observed a significant association between problem drinking and suicidality among women, however, not among men. This suggests that problem drinking may elevate the suicide risk of female patients with depressive disorder. To our knowledge, no previous studies on the co-occurrence of depression and alcohol-related disorders have addressed this sex difference, although our previous study indicated that female substance abusers were more likely to exhibit depression and suicidality than men.[11]

The present study also demonstrated that, in female subjects with problem drinking, the severity of problem drinking was not associated with either severity of depression or suicide risk. This finding is supported by De Leo and Evans,[2] who reported that excessive drinking may be directly instrumental in the act of suicide by increasing impulsive behavior, even if problem-drinking episodes occur only occasionally and/or do not constitute alcohol dependence. Additionally, it has been speculated that some depressive women may drink heavily with a self-destructive intent. It is therefore particularly important for clinicians to pay attention to the drinking behavior of female depressed patients.

© 2011 The Authors
Psychiatry and Clinical Neurosciences © 2011 Japanese Society of Psychiatry and Neurology

Table 1. Comparison of K10 and M.I.N.I. suicide risk scores in non-problem, moderate, and severe problem drinking groups by sex

Classification according to AUDIT score	Non-problem drinking = 9 (n = 638)		Moderate problem drinking 10–19 (n = 97)		Severe problem drinking ≥ 20 (n = 49)		F	P-value	
Men (n = 287)	220 (76.7%) 220 (76.7%)		42 (14.6%) 67 (23.3%)		25 (8.7%)				
	Mean	SD	Mean	SD	Mean	SD			
K10	26.4	10.4	27.4	7.8	27.4	9.1	0.277	0.759	
M.I.N.I. suicide risk	9.2	10.8	10.5	10.4	10.6	12.7	0.371	0.69	χ^2 = 6.663 P = 0.010
Women (n = 497)	418 (84.1%) 418 (84.1%)		55 (11.1%) 79 (15.9%)		24 (4.8%)				
	Mean	SD	Mean	SD	Mean	SD			
K10†	28.1	10	34.0	9	36.1	9	14.615	<0.001	
M.I.N.I. suicide risk‡	11.1	11.8	17.7	13.4	23.0	12.4	17.034	<0.001	

†Bonferroni's post hoc test; moderate problem-drinking (MPD), severe problem drinking (SPD) > non-problem drinking (NPD) (P < 0.001),
‡Bonferroni's post hoc test; MPD, SPD > NPD (P < 0.001).
AUDIT, Alcohol Use Disorders Identification Test; K10, Kessler 10; M.I.N.I., Mini International Neuropsychiatric Interview.

This study has several limitations. First, the presence of a sampling bias cannot be excluded because subjects were from only five psychiatric clinics. Accordingly, the generalizability of our findings is limited. Second, the data were self-reported, acquired via questionnaires rather than through structured interviews. Third, life background, including status of cohabitation and family relationships, was not considered. Lastly, comorbid psychiatric disorders other than alcohol use disorder, including borderline personality disorder, were not considered. Despite these limitations, this study is important as the first to reveal that the co-occurrence of problem drinking may increase suicide risk among female patients with depressive disorder.

REFERENCES

1. Davis LL, Rush JA, Wisniewski SR *et al.* Substance use disorder comorbidity in major depressive disorder: an exploratory analysis of the Sequenced Treatment Alternatives to Relieve Depression cohort. *Compr. Psychiatry* 2005; **46**: 81–89.
2. De Leo D, Evans R. The impact of substance abuse policies on suicide mortality. In: De Leo D, Evans R (ed.). *International Suicide Rates and Prevention Strategies*. Hogrefe & Huber, Cambridge, 2004; 101–112.
3. Akazawa M, Matsumoto T, Katsumata Y *et al.* Psychosocial features of suicide completers with alcohol problem: a psychological autopsy study. *Jpn Alcohol. Drug Depend.* 2010; **45**: 104–118. (in Japanese).
4. Barry KL, Fleming MF. The Alcohol Use Disorders Identification Test (AUDIT) and the SMAST-13: predictive validity in a rural primary care sample. *Alcohol. Alcohol.* 1993; **28**: 33–42.
5. Donovan DM, Kivlahan DR, Doyle SR, Longabaugh R, Greenfield SF. Concurrent validity of the Alcohol Use Disorders Identification Test (AUDIT) and AUDIT zones in defining levels of severity among out-patients with alcohol dependence in the COMBINE study. *Addiction* 2006; **101**: 1696–1704.
6. Hiro H, Shima S. Availability of the Alcohol Use Disorders Identification Test (AUDIT) for a complete health examination in Japan. *Nihon Arukoru Yakubutsu Igakkai Zasshi* 1996; **31**: 437–450 (in Japanese).
7. Kessler RC, Barker PR, Colpe LJ *et al.* Screening for serious mental illness in the general population. *Arch. Gen. Psychiatry* 2003; **60**: 184–189.
8. Furukawa TA, Kessler RC, Slade T, Andrews G. The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being. *Psychol. Med.* 2003; **33**: 357–362.

9. Otsubo T, Tanaka K, Koda R *et al.* Reliability and validity of Japanese version of the Mini International Neuropsychiatric Interview. *Psychiatry Clin. Neurosci.* 2005; **59**: 517–526.
10. Sheehan DV, Lecrubier Y, Sheehan KH *et al.* The Mini International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J. Clin. Psychiatry* 1998; **59**: 22–33.
11. Matsumoto T, Kubayashi O, Kamijo A *et al.* History of suicidal ideation and suicide attempt in inpatients with substance use disorder. *Seishin-Igaku* 2009; **51**: 109–117 (in Japanese).

© 2011 The Authors
Psychiatry and Clinical Neurosciences © 2011 Japanese Society of Psychiatry and Neurology

Psychiatry and Clinical Neurosciences 2011; 65: 576–583 doi:10.1111/j.1440-1819.2011.02267.x

Regular Article

Possible effectiveness of intervention using a self-teaching workbook in adolescent drug abusers detained in a juvenile classification home

Toshihiko Matsumoto, MD, PhD,[1]* Yasuhiko Chiba, MD,[3] Fumi Imamura, MA,[2] Ohji Kobayashi, MD[1,2] and Kiyoshi Wada, MD, PhD[1]

[1]*National Institute of Mental Health,* [2]*National Center Hospital, National Center of Neurology and Psychiatry, Tokyo and* [3]*Yokohama Juvenile Classification Home, Yokohama, Japan*

Aims: The purpose of the present study was to examine whether the possible effectiveness of the juvenile version of the Serigaya Methamphetamine Relapse Prevention Program (SMARPP-Jr.) self-teaching workbook we developed for relapse prevention of drug abuse depends on the severity of the subject's drug-related problems.

Methods: Subjects were 85 adolescent drug abusers who were detained in a juvenile classification home. We compared changes between the subjects' scores on rating scales administered both before and after interventions with the self-teaching workbook, and we examined associations between the effectiveness of the intervention and the severity of the subjects' drug-related problems.

Results: Regardless of the severity of their drug-related problems, the subjects' rating scale scores were significantly different after the intervention, which suggests that use of the workbook increased their awareness of the problems caused by drug dependence and their motivation to obtain treatment. However, use of the workbook did not significantly change their confidence in their capacity to resist drug craving.

Conclusion: Although the self-teaching workbook is a convenient intervention tool that can increase subject awareness and motivation for treatment, it is likely that continuous community-based support systems are required to prevent relapse.

Key words: adolescents, drug abuse, intervention, juvenile classification home, self-teaching workbook.

MANY JUVENILE DRUG abusers in Japan are treated in judicial institutions, such as juvenile classification homes and juvenile training schools, rather than in psychiatric institutions. However, during their treatment in juvenile classification homes they receive little systematic education in how to prevent the recurrence of drug abuse, although juvenile training schools do provide this type of education as a part of remediation. The reason for this is that the adolescents in juvenile classification homes have not yet had a hearing in family court, and no court decision has been reached regarding whether they are a delinquent or guilty of a crime. In other words, similar to adults who are detained, they are still presumed to be innocent. As such, education in preventing drug relapse may draw criticism by the youths' attendants as a violation of their human rights, even if it is intended to benefit the youth. Additionally, the only function that juvenile classification homes are expected to perform is to assess delinquency and criminality, and some judicial professionals are concerned that remediation during the classification period may mask the true picture of the adolescents' behavior.

Correspondence: Toshihiko Matsumoto, MD, PhD, National Institute of Mental Health, National Center of Neurology and Psychiatry, 4-1-1 Ogawa-Higashi, Kodaira, Tokyo 187-8553, Japan. Email: tmatsu@ncnp.go.jp

Received 5 February 2011; revised 7 July 2011; accepted 8 August 2011.

Nevertheless, from a mental health perspective, juvenile classification homes are an ideal place to provide an early intervention for juvenile drug abusers. Many drug-abusing adolescents can be treated in juvenile classification homes because of the wide spectrum of their residents. The residents of these facilities range from adolescents in the early stage of drug abuse who will be given a community-based penalty, such as tentative probationary supervision or probation, to those who are seriously addicted to drugs and who will be placed in juvenile training schools. Because the inventions occur soon after their arrests, it is easier for these adolescents to concentrate on the tasks provided during an intervention in a classification home. Moreover, the detainees are under stress while waiting for the judges' decision, and the classification home provides them with a tranquil environment removed from their relationships with drugs and drug abusers.

Based on this premise, with the cooperation of the director general of the institution, we previously conducted interventions for adolescents with drug-related problems in a juvenile classification home using a self-teaching workbook. We found that the workbook helped the adolescent drug abusers to deepen their understanding of their own drug-related problems and to become aware of the need to obtain help.[1] Our studies using interventions with the juvenile version of the Serigaya Methamphetamine Relapse Prevention Program (SMARPP-Jr.)[1] workbook represent the first intervention research to assess the possible effectiveness on drug abuse and dependence of an intervention that only uses a self-teaching workbook, although a study in the USA[2] reported that a comprehensive intervention for alcohol abusers, including a self-teaching workbook, was effective. It is important to note that in our previous studies we did not determine whether the possible effectiveness of an intervention using the self-teaching workbook depended on the severity of the subjects' drug-related problems.

The purpose of the present study was to examine whether there is an association between the severity of the subjects' drug-related problems and the possible effectiveness of a self-teaching workbook.

METHODS

Participants

During the 24-month period from January 2009 to December 2010, 2078 adolescents (1829 boys and 249 girls) were detained in a juvenile classification home 'A.' Irrespective of the alleged delinquency or crime for which they were taken into custody, those who met three criteria were selected as candidates for participation in this study. The criteria used were: (i) the initial medical examination by the attending physician revealed a history of illicit drug abuse; (ii) the initial medical examination resulted in a diagnosis of 'harmful use' or 'dependence' syndrome according to the ICD-10[3] or 'F1: Mental and behavioral disorders because of psychoactive substance use;' and (iii) the physician concluded that the adolescent had sufficient mental and linguistic capacities to use the workbook.

Of the adolescents detained during the period of the study, 98 met the above criteria and all 98 were asked to participate in the study. Of these 98 adolescents, 89 subjects agreed to participate but four did not complete the workbook. As such, 85 (56 boys, 29 girls) adolescents participated in this study. Their ages ranged from 14 to 19 years, and their mean age (±SD) was 17.4 (±1.3) years. The drugs that the adolescents most frequently abused immediately prior to their detainment were cannabis (48.2%), methamphetamine (18.8%), toluene (15.3%), butane gas (14.1%), ketamine (2.4%), and 3,4-methylenedioxymethamphetamine (MDMA; 1.2%).

Self-teaching workbook

The self-teaching workbook used in the present study was prepared by simplifying the Serigaya Methamphetamine Relapse Prevention Program (SMARPP) workbook that we previously used in a comprehensive outpatient drug-dependence treatment program.[4] The SMARPP workbook, which is based on the Matrix model[5] used in the USA, is simplified by consultations with the staff of a juvenile classification home, and it is called SMARPP-Jr.[1] The SMARPP-Jr. workbook consists of 12 parts that are designed to provide psychoeducation on drug abuse and dependence, training in coping skills for drug cravings, and resource information for recovering from drug abuse and dependence. If the subject completes one part per day, the entire workbook can be completed

within the typically 2–3-week period of detention in a classification home.

Rating scales/questionnaires

Drug Abuse Screening Test, 20 items

The Drug Abuse Screening Test, 20 items (DAST-20) is a 20-item self-administered rating scale that was developed to screen for abuse of illicit and medicinal drugs.[6] The Japanese version was prepared by the Hizen Psychiatric Center.[7] This version was used in this study to assess the baseline severity of participants' drug-related problems prior to the intervention. Based on scores that can range from 0 to 20, the Japanese version of the DAST-20 is used to classify the severity of problems into the following five levels: 'None' (0 points), 'Low' (1–5 points), 'Intermediate' (6–10 points), 'Substantial' (11–15 points), and 'Severe' (16–20 points). However, because they were adolescents, we expected the subjects of this study would have had a relatively short history of drug abuse. Accordingly, we classified them into the following three groups based on their scores: 'low dependence' (1–5 points), 'moderate dependence' (6–10 points), and 'high dependence' (11–20 points).

Although the Japanese DAST-20 has not yet been standardized, the scale has been widely used in Japan[7,8] because the items are phrased to ask about the presence or absence of psychosocial issues related to drug abuse. Therefore, the items have obvious face validity (i.e., the literal description of each item reflects the concept measured by the item).

Self-efficacy Scale for Drug Dependence

The Self-efficacy Scale for Drug Dependence (SSDD) consists of two parts and is an original self-administered rating scale that was developed and shown to be both valid and reliable by Morita and colleagues.[9] It measures the degree of confidence (i.e. self-efficacy) a subject has in their ability to cope with drug cravings. The first part consists of five questions regarding general self-efficacy that transcends specific situations, and responses are made on a 5-point scale from 1 (not true for me) to 5 (true for me). The second part consists of 11 questions that ask about subjects' degree of confidence in their ability to refrain from abusing drugs in specific situations. It asks about situations such as 'being tempted to use drugs' and responses are made on a 7-point scale from 1 (not at all confident) to 7 (absolutely confident). We administered this scale before and after the intervention, and we compared changes in the total scores on the 'General Self-efficacy' and 'Situation-specific Self-efficacy' subscales and on the entire scale.

Stages of Change Readiness and Treatment Eagerness Scale

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) is a self-administered rating scale consisting of 19 items. It was developed by Miller and Tonigan[10] to assess a subject's awareness of problems caused by alcohol or drug dependence and their degree of motivation for treatment. The questions in the English version have a three-factor structure composed of 'Recognition' (Questions 1, 3, 7, 10, 12, 15 and 17), 'Ambivalence' (Questions 2, 6, 11 and 16), and 'Taking Steps' (Questions 4, 5, 8, 9, 13, 14, 18 and 19). Subjects with high scores in Recognition are considered to be acknowledging that they are having problems related to drug abuse and that they need to change their behavior because various harmful effects will occur if they continue to abuse drugs. Subjects with high scores in Ambivalence are indicating that they sometimes wonder whether they are in control of their drug abuse, are hurting other people, are an addict, or all three. Subjects with high scores in Taking Steps are indicating that they are already doing things to make positive changes regarding their drug problem or want help making these changes. Indeed, there is a positive correlation between total SOCRATES scores and the development of readiness for treatment,[11] and subjects with higher scores were found to remain in treatment longer in a short-term intervention that was conducted with poorly motivated drug abusers.[12]

The Japanese version of the SOCRATES-8D is specifically designed for drug abusers and was prepared by one of the authors (O. Kobayashi) by back-translation. The Japanese version was used to assess the adolescents before and after the workbook intervention. Although the Japanese version has not gone through a standardization process, each item has high face validity. Moreover, since we have previously demonstrated that the scale has excellent internal consistency (Cronbach's alpha = 0.798),[1] we compared the total SOCRATES-8D scores obtained before and after the intervention. Because the internal consistency of the individual sub-scales has not been established, the results for the sub-factors (Recognition, Ambivalence, and Taking Steps) are presented for reference purposes only.

Procedure

This study was conducted at the discretion of the director of juvenile classification home 'A' as a part of the home's regular duties to 'provide information to promote healthy youth development.' The procedure was as follows.

Based on the initial examination by the attending physician at the home, adolescents who met the previously described criteria were selected as candidates. The physician proposed that they use the workbook by saying, 'You have problems with drugs. Why don't you take this opportunity to learn about them?' At the same time, the physician explained that 'it is not compulsory, and whether or not you use the workbook will not affect your treatment.' Once participants consented to use the workbook, they were immediately asked to fill out the DAST-20, SSDD, and SOCRATES (baseline assessment). They were asked to give their written consent after it was explained to them that signing the response sheet would be regarded as their formal consent to use the workbook.

The participants used the self-teaching workbook in their own room and at their own pace. Those who completed the workbook were immediately asked to fill out the SSDD and SOCRATES (post-intervention evaluation). These materials were distributed and collected by the attending physician, who was not involved in the subjects' classification or daily treatment.

The scores on the scales described above were anonymized in a linkable fashion (by the director of the medical section of the home, Chiba). The first author of this study was given the anonymized scores and analyzed the data. The Ethics Committee of the National Center of Neurology and Psychiatry approved all procedures, analyses, and publications.

Statistical analyses

The subjects were divided into three groups based on their DAST-20 scores. Changes in scores on the rating scales administered before and after the self-teaching workbook intervention were compared between the groups using the Wilcoxon signed-rank test. Continuous variables among the three groups were compared using one-way ANOVA. If the one-way ANOVA found a significant main effect, a Bonferroni's post-hoc test was performed to identify significant differences between any of the groups. All statistical analyses were performed using SPSS for Windows version 17.0 (SPSS, Chicago, IL, USA), and the significance level was set at $P < 0.05$, two-tailed.

RESULTS

The DAST-20 scores of the 46 participants ranged from 1 to 18 points, and the mean score [±SD] was 5.64 [±3.41] points. Based on their DAST-20 scores, we placed 46 of the 85 (54.1%) participants into the 'low-dependence' group, 28 (32.9%) participants into the 'moderate-dependence' group, and 11 (12.9%) participants into the 'high-dependence' group.

Table 1 shows the total scores of the three groups on each of the two drug dependence scales prior to the workbook intervention. There was a significant

Table 1. Comparison of the scores on the SSDD and SOCRATES-8D rating scales according to the severity of the subject's drug-related problems

	Severity of drug dependence				
	Low $n = 46$	Medium $n = 28$	High $n = 11$	F (d.f.)	P
SSDD (±SD)	95.83 ± 9.691	83.71 ± 20.777	76.00 ± 25.43.6	8.765 (2, 82)	*$P < 0.001$
SOCRATES-8D, total score (±SD)	63.57 ± 9.050	67.61 ± 12.294	70.18 ± 9.261	2.53 (2, 82)	$P = 0.086$

*$P < 0.001$; Bonferroni's post-hoc test, Medium-dependence group > High-dependence group, $P = 0.009$; Low-dependence group > High-dependence group, $P = 0.002$.
High, high-dependence group; Low, low-dependence group; Medium, medium-dependence group; SOCRATES-8D, Stages of Change Readiness and Treatment Eagerness Scale, 8th version for drug dependence; SSDD, Self-efficacy Scale for Drug Dependence.

Table 2. Comparison between scores on the SSDD and SOCRATES-8D rating scales before and after the intervention ($n = 85$)

		Pre-intervention		Post-intervention			
		Mean	SD	Mean	SD	z	*P*
SSDD	General self-efficacy score	22.48	3.83	22.33	4.59	1.146	0.252
	Situation-specific self-efficacy score	66.79	14.60	69.44	10.44	2.654	0.008
	Total score	89.27	17.97	91.76	15.18	2.018	0.044
SOCRATES-8D	Recognition	23.85	4.83	25.98	5.64	4.325	<0.001
	Ambivalence	11.27	3.63	12.18	3.67	2.736	0.006
	Taking Steps	30.64	6.44	33.71	6.28	5.531	<0.001
	Total score	65.75	10.44	71.86	11.62	5.750	<0.001

SOCRATES-8D, Stages of Change Readiness and Treatment Eagerness Scale, 8th version for drug dependence; SSDD, Self-efficacy Scale for Drug Dependence.

ifference among the three groups in the SSDD ($P < 0.001$). A Bonferroni post-hoc test revealed that the low-dependence group ($P = 0.002$) and the moderate-dependence group ($P = 0.009$) had significantly higher scores on the scale than the high-dependence group.

Table 2 shows the mean rating scale scores before and after the intervention. After the workbook intervention, the total scores on the SSDD ($P = 0.044$) and the scores for the 'Situation-specific Self-efficacy' sub-factor ($P = 0.008$) were significantly higher than before the intervention. However, no significant change was observed in the 'General Self-efficacy' sub-factor. In addition, the total SOCRATES-8D scores ($P < 0.001$) were significantly higher after the intervention. Furthermore, although reported for reference only, there were significant increases in the scores for the Recognition ($P < 0.001$), Ambivalence ($P = 0.006$), and Taking Steps ($P < 0.001$) sub-factors.

Table 3 shows the mean rating scale scores before and after the intervention for each of the three groups that were classified according to the severity of their drug-related problems. In the low-dependence group, the increase in scores for the 'Situation-specific Self-efficacy' sub-factor was statistically significant ($P = 0.034$), but there was no significant change in total scores on the SSDD. In contrast, the total SOCRATES-8D scores were significantly higher ($P < 0.001$). Although reported for reference only, scores for the Recognition ($P = 0.001$) and Taking Steps ($P < 0.001$) sub-factors were also significantly higher. In the moderate-dependence group, no significant increases were observed in the total scores on the SSDD and the scores for the sub-factors. However, the total SOCRATES-8D scores ($P = 0.010$) and the scores for the Taking Steps sub-factor ($P = 0.003$) were significantly higher. In the high-dependence group, no significant increases were observed in the total scores on the SSDD, although the scores for the 'Situation-specific Self-efficacy' sub-factor were significantly higher ($P = 0.045$). Additionally, the total SOCRATES-8D scores ($P = 0.011$) and the scores for the Recognition sub-factor ($P = 0.016$) were significantly higher.

DISCUSSION

The present study using interventions with the SMARPP-Jr.[1] workbook is unique in that it is an intervention study that addresses drug-related problems at a juvenile institution. Although many juvenile institutions have offered remediation services to young drug abusers in Japan, to our knowledge, there have been no reports on the effectiveness of such interventions. This situation may be similar in other countries as the only academic article on the effectiveness of intervention to treat drug abuse at juvenile institutions that we could retrieve from the scientific literature concerned 'physical training.'[13] The fact that the present study included interventions for drug-related problems at a juvenile classification home where remediation is not mandated makes this study especially significant. In particular, 85 of the 89 adolescents who consented to participate in this study completed the nearly 50-page workbook. It is doubtful whether such a high completion rate would be obtained if similar interventions were implemented in another setting.

Table 3. Mean scores before and after the intervention on the SSDD and SOCRATES-8D rating scales according to the severity of the subject's drug dependence

			Pre-intervention		Post-intervention			
			mean	SD	mean	SD	z	*P*
Low ($n = 46$)	SSDD	General self-efficacy score	23.67	2.49	23.52	3.54	1.139	0.255
		Situation-specific self-efficacy score	72.15	7.88	74.65	3.40	2.124	0.034
		Total score	95.83	9.69	98.17	6.50	1.601	0.109
	SOCRATES-8D	Recognition	22.39	4.11	24.87	5.56	3.453	0.001
		Ambivalence	9.91	3.14	10.65	3.25	1.730	0.084
		Taking Steps	31.26	5.59	34.52	5.60	4.255	<0.001
		Total score	63.57	9.05	70.04	11.37	4.564	<0.001
Medium ($n = 28$)	SSDD	General self-efficacy score	21.43	4.16	20.75	5.00	0.290	0.977
		Situation-specific self-efficacy score	62.29	16.95	63.79	14.55	0.634	0.526
		Total score	83.71	20.78	84.54	17.53	0.259	0.796
	SOCRATES-8D	Recognition	24.82	4.81	26.36	5.53	1.773	0.076
		Ambivalence	13.00	3.40	13.75	3.43	1.364	0.173
		Taking Steps	29.79	7.65	32.71	7.10	2.939	0.003
		Total score	67.79	12.29	72.82	12.28	2.585	0.010
High ($n = 11$)	SSDD	General self-efficacy score	20.18	5.74	21.36	4.95	1.194	0.233
		Situation-specific self-efficacy score	55.82	20.33	62.00	17.79	2.003	0.045
		Total score	76.00	25.44	83.36	22.42	1.960	0.050
	SOCRATES-8D	Recognition	27.45	5.57	29.64	4.97	2.409	0.016
		Ambivalence	12.55	4.08	14.55	3.21	1.727	0.084
		Taking Steps	30.18	6.75	32.82	6.90	1.847	0.065
		Total score	70.18	9.26	77.00	9.95	2.542	0.011

High, high-dependence group; Low, low-dependence group; Medium, medium-dependence group; SSDD, Self-efficacy Scale for Drug-dependence; SOCRATES-8D, Stages of Change Readiness and Treatment Eagerness Scale, 8th version for drug dependence.

In the present study, a self-teaching workbook was assessed as an intervention tool for drug abusers detained in a juvenile classification home. Consistent with the results of our previous study using the same workbook,[1] there was a significant increase in the total scores on the SSDD and a particularly prominent increase in SOCRATES-8D scores. These results appear to confirm that the self-teaching workbook more effectively increased the participants' awareness of problems and motivation for treatment ('my problem is more serious than I thought it was', 'I need to get some help') than their confidence in their ability to resist drug cravings ('I can say no if someone asks me to take drugs').

In the present study, we also examined whether the possible effectiveness of an intervention with the self-teaching workbook differed depending on the severity of abusers' drug-related problems. The marked increases in SOCRATES-8D scores did not differ between each of the three severity groups. Moreover, no significant changes were observed in the total scores on the SSDD in any group. As such, we suggest that our self-teaching workbook may be effective in increasing awareness of problems and motivation for treatment regardless of the severity of drug-related problems.

We believe that the changes in rating scale scores observed in each of the three groups indicate possible effectiveness of the brief intervention in adolescent drug abusers. In our clinical experience, high self-efficacy regarding drug dependence is often coupled with a subject underestimating the magnitude of their problem with drugs by tending to think 'my problem is not that serious.' Hence, deepening their awareness of their problems and increasing their motivation for treatment, rather than raising self-efficacy, could make remediation after transfer to a juvenile training school more effective. Moreover, it could make adolescents more likely to attend the clinic of a specialized medical institution in their community. Alternatively, adolescents gaining a deeper awareness of their problems may

independently play a role in preventing a return to drug abuse.

Nevertheless, we need to consider the reasons why none of the three groups showed a significant increase in total scores on the SSDD. Although our workbook consists of many elements of cognitive behavior therapy that assist subjects to cope with drug cravings, using the workbook alone may not be a sufficient intervention for drug-abusing adolescents. As such, there remains a need for resources to support them in the community after their release from the juvenile classification home.

Although a need for community support remains, supporting adolescent drug abusers in their community is very difficult because there are no support resources for teenage drug abusers in Japan. As general psychiatry departments and child psychiatry departments are unable to provide useful support resources, teenage drug abusers are often referred to a psychiatric institution that specializes in drug dependence, and few psychiatric institutions that specialize in drug dependence have prepared treatment programs for teenage drug abusers. Indeed, several attempts to provide such a treatment program have been previously undertaken. The Hizen Psychiatric Center implemented an early intervention program that consisted of a series of three outpatient visits.[7] Moreover, in collaboration with the Fukuoka Bar Association, inpatient treatment was provided for adolescents who were under tentative probationary supervision.[14] Nevertheless, these interventions are limited because specialized psychiatric institutions are rare. Private rehabilitation facilities, such as the Drug Addiction Rehabilitation Center (DARC), are also rare. Meetings attended by large numbers of adult drug addicts are not always a comfortable treatment environment for adolescent drug abusers, especially for adolescents who have engaged in only minor drug abuse.

Based on the present situation, interventions that are conducted using a self-teaching workbook and in a juvenile classification is a realistic and efficient method of treatment because these homes house many and exclusively juvenile drug abusers, and this method does not require specialized human resources. Furthermore, this workbook can be used at a variety of institutions that deal with adolescent drug-related problems, including general psychiatric hospitals, juvenile training schools, and Family Courts. To make the SMARPP-Jr. self-teaching workbook available for use in a wide range of institutions, we will continue to develop it by further investigating its effectiveness and revising it based on our findings.

Finally, the present study contains three particularly important limitations. First, there was no control group. Thus, the possibility that the effects observed in this study are attributable to spontaneous changes that result from detention in a juvenile classification home cannot be excluded. Second, similar to the first limitation, responses on the self-administered rating scales may have been influenced by the subjects' status as detainees in a juvenile classification home awaiting a judicial decision. However, it was explained to them that their responses on the scales were totally independent of any decisions regarding their treatment or the decision of the court. Third, the dependent measures of this study were changes in scores on rating scales following an intervention. These measures represent a proxy for actual changes in behavior, such as a recurrence of drug abuse or use of support organizations in the community. Accordingly, the correlation between changes in scores on these rating scales and actual utilization of support resources or recurrence of drug abuse should be further investigated by outcome studies.

Despite these limitations, the present study is a valuable contribution to our understanding of relapse prevention because it is the first research to examine whether there is a correlation between the possible effectiveness of interventions that exclusively use a self-teaching workbook to attenuate substance abuse and dependence and the severity of drug-related problems.

ACKNOWLEDGMENTS

This study has been supported by a Health Labour Research Grant by the Ministry of Health and Welfare, Research on Pharmaceutical and Medical Regulatory Science 'A study on epidemiology of drug abuse and dependence, and social resources for relapse prevention' (principal investigator, Wada K.).

REFERENCES

1. Matsumoto T, Imamura F, Kobayashi O, Chiba Y, Wada K. Development and evaluation of a relapse prevention tool for drug-abusing delinquents incarcerated in a juvenile classification home: A self-teaching workbook for adolescents, the 'SMARPP-Jr'. *Nihon Arukoru Yakubutsu Igakkai Zasshi* 2009; **44**: 121–138 (in Japanese).
2. World Health Organization. *The ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guideline*. World Health Organization, Geneva, 1992.
3. Fleming MF, Mundt MP, French MT *et al.* Brief physician advice for problem drinkers: Long-term efficacy and benefit-cost analysis. *Epidemiol. Prev. Alcohol. Clin. Exp. Res.* 2002; **26**: 36–43.
4. Kobayashi O, Matsumoto T, Otsuki M *et al.* A preliminary study on outpatient relapse prevention program for methamphetamine dependent patients: Serigaya Methamphetamine Relapse Prevention Program (SMARPP). *Nihon Arukoru Yakubutsu Igakkai Zasshi* 2007; **42**: 507–521 (in Japanese).
5. Obert JL, McCann MJ, Marinelli-Casey P *et al.* The Matrix Model of outpatient stimulant abuse treatment: History and description. *J. Psychoactive Drugs* 2000; **32**: 157–164.
6. Skiner HA. The drug abuse screening test. *Addict. Behav.* 1982; **7**: 363–371.
7. Suzuki K, Murakami S, Yuzuriha T *et al.* Preliminary survey of illegal drug misuse among Japanese high school students. *Nihon Arukoru Yakubutsu Igakkai Zasshi* 1999; **34**: 465–474 (in Japanese).
8. Matsumoto T, Okada T, Chiba Y. Association between substance abuse problems and antisocial tendencies in male juvenile delinquents: A study using the Psychopathy Checklist, Youth Version. *Nihon Arukoru Yakubutsu Igakkai Zasshi* 2006; **41**: 59–71 (in Japanese).
9. Morita N, Suetsugu S, Shimane T *et al.* Development of a manualized cognitive behavioral therapy program for Japanese drug addicts and a study of the efficacy of the program. *Nihon Arukoru Yakubutsu Igakkai Zasshi* 2007; **42**: 487–505 (in Japanese).
10. Miller WR, Tonigan JS. Assessing drinkers' motivation for change: The Stage of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychol. Addict. Behav.* 1996; **10**: 81–89.
11. Mitchell D, Angelone DJ, Cox SM. An exploration of readiness to change processes in a clinical sample of military service members. *J. Addict. Dis.* 2007; **26**: 53–60.
12. Mitchell D, Angelone DJ. Assessing the validity of the Stages of Change Readiness and Treatment Eagerness Scale with treatment-seeking military service members. *Mil. Med.* 2006; **171**: 900–904.
13. Collingwood TR, Sunderlin J, Reynolds R *et al.* Physical training as a substance abuse prevention intervention for youth. *J. Drug Educ.* 2000; **30**: 435–451.
14. Yahiro H, Tanigawa M, Murakami Y *et al.* A study on preparation of diversion programs for adolescent drug abusers. The 2002 annual report of the Health Labour Research Grant by Ministry of Welfare, Research on Pharmaceutical and Medical Safety 'A study on treatment and care for drug addicts (Chief. Murakami Y),' pp.69–85, National Hospital Organization Hizen Psychiatric Center, 2003 (in Japanese).

© 2011 The Authors
Psychiatry and Clinical Neurosciences © 2011 Japanese Society of Psychiatry and Neurology

Short Communication

Psychosocial and psychiatric aspects of suicide completers with unmanageable debt: A psychological autopsy study

Akiko Kameyama, PhD,[1,2]* Toshihiko Matsumoto, MD, PhD,[2,3] Yotaro Katsumata, PhD,[2] Masato Akazawa, PhD,[2] Masahiko Kitani, MA,[2] Seiko Hirokawa, MA[2] and Tadashi Takeshima, MD, PhD[2,3]

[1]*The Institute of Humanities and Social Sciences, College of Humanities and Sciences, Nihon University,* [2]*National Institute of Mental Health, National Center of Neurology and Psychiatry, Tokyo and* [3]*Center for Suicide Prevention, National Institute of Mental Health, National Center of Neurology and Psychiatry, Kodaira, Japan*

This study examined the psychosocial and psychiatric features of 16 Japanese suicide completers with unmanageable debt compared with 23 suicide completers without such debt at time of death, using a psychological autopsy method. The individuals with unmanageable debt were more likely to have been self-employed and to have experienced divorce. They were less likely to have engaged in help-seeking behavior, despite having mental health problems. Our findings suggest that providing comprehensive support and promoting help-seeking behavior may be important for suicide prevention in middle-aged men.

Key words: debt, middle age, psychological autopsy, suicide.

IN JAPAN, THE number of suicide completers has increased rapidly to over 30 000 in 1998. Since then, the number of suicides has continued to be high (suicide rate: 25.8 per 100 000 in 2009[1]). In particular, suicides of middle-aged men, many of whom had unmanageable debt, have remarkably increased.[2] Countermeasures to address financial problems may be essential for suicide prevention in middle-aged men. However, we question whether these measures alone can reduce suicide in this population, as previous studies have shown that an interaction of multiple factors, including psychiatric disorders, psychosocial isolation, and economic difficulties, may lead to suicidal behavior.[3] We suspect that suicide in middle-aged individuals with financial problems might be caused not solely by economic difficulties; suicide risk may be aggravated by psychiatric or psychosocial problems.

*Correspondence: Akiko Kameyama, PhD, The Institute of Humanities and Social Sciences, College of Humanities and Sciences, Nihon University, 3-25-40 Sakura-Josui, Setagaya-ku, Tokyo 156-8550, Japan. Email: akikokameyama@gmail.com
Received 20 April 2010; revised 17 May 2011; accepted 8 August 2011.

The purpose of the present study was to examine psychosocial and psychiatric features of suicide completers with unmanageable debt compared to those without such debt, using a psychological autopsy method. This study also aimed to obtain useful findings relevant to suicide prevention in Japanese middle-aged men.

METHODS

Since December 2007, we have been conducting a Japan-wide study on suicide completers using a psychological autopsy method.[4] We collected information on suicide completers who had died since January 2006 and whose bereaved consulted the prefectural Mental Health Welfare Centers (MHWC) that had consented to participate in our study. In cooperation with 54 prefectural MHWC, a semi-structured interview by a psychiatrist and other mental health professionals was conducted with the closest bereaved. The semi-structured interview was based on an assessment instrument developed by the Beijing Suicide Research and Prevention Center in China.[5] The items included questions about family environment, history of suicide attempts, life history, socioeconomic and physical health status, and psychiatric diagnosis according to DSM-IV criteria[6] at the time of death. This study was approved by the ethics committee of the National Institute of Mental Health, National Center of Neurology and Psychiatry.

As of December 2009, we had collected psychosocial and psychiatric information on 76 Japanese suicide cases. Of the 76 cases, 39 middle-aged men between 30 and 64 years of age ($M = 44.9 \pm 9.25$) were selected as the subjects of this study. The subjects were divided into two groups according to those with unmanageable debt (the Debt group) or those without unmanageable debt (the No debt group) at the time of death, according to the bereaved. In this study, the term 'unmanageable debt' was defined as debt that is considered to be detrimental to a household budget by the closest bereaved, regardless of the amount. The following items were compared between these groups: demographic factors (age, employment, living situation, marital status), life history (family problems, job history, unmanageable debt), financial status (income, economic condition), sleep-related problems (sleep disturbance, regular 'night cap' drinking, regular use of sleep medication), physical illness, history of suicide attempt, disappearing episode including fugue, help-seeking behavior during the year prior to death (seeking help only from health professionals, which includes history of consultation or treatment from physicians, other medical professionals, or psychiatrists), and DSM-IV psychiatric diagnosis.

We compared the differences between the groups using Fisher's exact test for qualitative variables, and the Mann–Whitney *U*-test for the annual income, which is not normally a distributed variable. Statistical analyses were performed using SPSS Version 16.0 (SPSS, Chicago, IL, USA).

RESULTS

Table 1 shows the characteristics of the Debt and No debt groups. The former comprised 16 cases (41.0%), and the latter comprised 23 cases (59.0%). Although no significant differences were found in family environment and age between the groups, significant differences were found in employment and experience of divorce. The Debt group more frequently included self-employed or divorced individuals. This group was also more likely to have had financial problems, despite no significant differences in annual income between the two groups.

Prevalence of psychiatric diagnoses speculated at time of death were similar in the two groups, although the Debt group was conjectured to have had a higher rate of adjustment disorders. Help-seeking behavior was less frequent in the Debt group, despite the high prevalence of psychiatric disorders.

Twelve cases in the Debt group (75.0%) had unmanageable debt for over a year prior to death. Seven cases (43.8%) were multiply indebted individuals who borrowed from many lending companies. The following is a more detailed breakdown of debt (excluding four missing cases): one case (8.0%) under 300 000 yen, five cases (38.5%) 300 000–200 000 000 yen, five cases (38.5%) 200 000 000–600 000 000 yen, and one case (8.0%) over 600 000 000 yen. Debts resulted mainly from business funds (25.0%), money wasted on amusements (25.0%), financial difficulty in business (18.8%), gambling (12.5%), and shopping (12.5%).

DISCUSSION

To our knowledge, this is the first study to examine differences in psychosocial and psychiatric features between middle-aged suicide-completing men with and without unmanageable debt at time of death using a psychological autopsy method. Our study found no significant difference in annual income between the two groups. However, those with unmanageable debt were more likely to have had financial problems. This suggests stress related to debt repayment, not low income. Those with unmanageable debt resulting from financial difficulty in business more frequently included the self-employed. Such difficulties may lead to an adjustment disorder, which was more prevalent in this group.

More suicide completers with unmanageable debt had experienced divorce than those without debt. However, our study did not examine whether divorce was a cause or effect of unmanageable debt. It seems that suicide completers with unmanageable debt were more likely to have had difficulties not only in their jobs but also in their private lives. They may have lost relationships with significant others, resulting in psychosocial isolation before the time of death.

A most remarkable finding of the present study is that suicide completers with unmanageable debt engaged in considerably less help-seeking behavior

Table 1. Sociodemographic, psychosocial, and psychiatric profiles of suicide completers with and without unmanageable debt

	Debt group ($n = 16$)	No debt group ($n = 23$)	*P*-value
Age group			
30–39 years	4 (25.0%)	10 (43.5%)	0.467
40–49 years	7 (43.8%)	6 (26.1%)	
50–64 years	5 (31.2%)	7 (30.4%)	
Employment			
Self-employed	7 (43.8%)	1 (4.3%)	0.007**
Employee	8 (50.0%)	17 (73.9%)	
Unemployed	1 (6.2%)	5 (21.7%)	
Living situation			
Living alone	2 (12.5%)	1 (4.3%)	0.557
Marital status			
No spouse	6 (37.5%)	6 (26.1%)	0.498
Unmarried	4 (25.0%)	5 (21.7%)	1.000
Family problems			
Divorced	5 (31.2%)	0 (0.0%)	0.008**
Divorced during the year prior to death	1 (6.2%)	0 (0.0%)	0.410
Suicide of relative or friend	10 (62.5%)	18 (78.3%)	0.307
Job history			
Job change	10 (62.5%)	17 (73.9%)	0.498
Job change during the year prior to death	2 (12.5%)	3 (13.0%)	1.000
Administrative leave	4 (25.0%)	10 (43.5%)	0.317
Administrative leave during the year prior to death	1 (6.2%)	5 (21.7%)	0.370
Financial status			
Financial problems (economic poverty)	11 (68.8%)	5 (21.7%)	0.007**
Annual income of family[†]	¥6 120 000	¥6 760 000	0.987
Sleep-related problems			
Sleep disturbance	10 (62.5%)	20 (87.0%)	0.123
Regular 'night cap' drinking	5 (31.2%)	2 (8.7%)	
Regular use of sleep medication	2 (12.5%)	9 (39.1%)	0.127
Regular 'night cap' drinking and use of sleep medication	1 (6.2%)	3 (13.0%)	
Physical illness	5 (31.2%)	8 (36.4%)	1.000
Behavior before suicide			
History of suicide attempt	5 (31.2%)	3 (13.0%)	0.235
Disappearing episode including fugue	8 (50.0%)	5 (21.7%)	0.090
Help-seeking behavior during the year prior to death	4 (25.0%)	16 (69.6%)	0.010*
Prevalence of psychiatric disorders speculated at the time of death	16 (100.0%)	20 (87.0%)	0.255
DSM-IV psychiatric diagnosis			
Alcohol abuse or dependence	5 (31.2%)	2 (8.7%)	0.101
Major depression	6 (37.5%)	15 (65.2%)	0.112
Dysthymic disorder	0 (0.0%)	4 (17.4%)	0.130
Bipolar II disorder	1 (6.2%)	1 (4.3%)	1.000
Obsessive–compulsive disorder	0 (0.0%)	1 (4.3%)	1.000
Generalized anxiety disorder	3 (18.8%)	1 (4.3%)	0.286
Panic disorder	1 (6.2%)	0 (0.0%)	0.410
Schizophrenia	1 (6.2%)	2 (8.7%)	1.000
Pathological gambling	2 (12.5%)	0 (0.0%)	0.162
Hypochondria	1 (6.2%)	0 (0.0%)	0.410
Personality disorder	2 (12.5%)	2 (8.7%)	1.000
Adjustment disorder	4 (25.0%)	0 (0.0%)	0.022*
Substance abuse or dependence	0 (0.0%)	1 (4.3%)	1.000
Mental retardation	0 (0.0%)	1 (4.3%)	1.000

**$P < 0.01$, *$P < 0.05$.
[†]The value of the annual income of the family is a median value of each group.

than those without unmanageable debt. Namely, even though the financial and psychosocial burdens in their lives were supposed to cause mentally stressful conditions to such suicide completers, they had little contact with health professionals, including physicians and psychiatrists, during the year prior to death. This tendency is explained by the following two reasons: (i) the culturally prejudiced view regarding debt[7,8] might prevent them from accessing health professionals; and (ii) demands for debt repayment might distract individuals' attention from their mental health condition. In fact, a previous study suggested the association between not utilizing psychiatric services and unmanageable debt,[9] although additional researches are required to clarify the reason why subjects with unmanageable debt engage in less help-seeking behavior.

Three limitations of the present study should be noted. First, the sample size of this study is relatively small, and sample-representation is biased. Accordingly, generalization of the findings is limited. Second, recall and reporting bias cannot be excluded because information was collected retrospectively from the bereaved. Finally, this study lacks a comparison group. Therefore, risk factors for suicide in middle-aged men with unmanageable debt cannot be addressed.

Despite these limitations, this is the first study to clarify psychosocial and psychiatric features of suicide-completing men with unmanageable debt, using a psychological autopsy method. Our findings may be useful for suicide prevention in Japanese middle-aged men with economic difficulty, a population that has experienced a rapid increase in suicides since 1998. Comprehensive support, including both financial support and psychiatric treatment, and promotion of help-seeking behavior may be required for suicide prevention in middle-aged men.

REFERENCES

1. Cabinet Office. White paper of suicide prevention in Japan. 2009.
2. Kondo N, Subramanian SV, Kawachi I, Takeda Y, Yamagata Z. Economic recession and health inequalities in Japan: Analysis with a national sample, 1986–2001. *J. Epidemiol. Commun. H* 2008; **62**: 869–875.
3. Meltzar H, Bebbington P, Brugha T, Jenkins R, McManus S, Dennis MS. Personal debt and suicidal ideation. *Psychol. Med.* 2010; **16**: 1–8.
4. Katsumata Y, Matsumoto T, Takahashi Y *et al.* Psychological autopsy study in Japan, Suicide in Japan (symposium). The 2nd World Congress of Asian Psychiatry, Taipei, Nov 2009; 80.
5. Phillips MR, Yang G, Zhang Y, Wang L, Ji H, Zhou M. Risk factors for suicide in China: A national case-control psychological autopsy study. *Lancet* 2002; **360**: 1728–1736.
6. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th edn. American Psychiatric Association, Washington DC, 1994.
7. Shimizu S, Kawano K, Ishihara T, Shimura Y, Takasaki F, Miyazaki T. The study for a method of clarifying suicide-related psycho-social factors: The community survey for suicide related problems. Annual report of the National Institute of Mental Health, NCNP, Japan. [Cited 26 August 2011.] Available from URL: http://ikiru.ncnp.go.jp/ikiru-hp/report/imada15/15-2-6.pdf.
8. Wong PWC, Chan WSC, Conwell Y, Conner K, Yip P. A psychological autopsy study of pathological gamblers who died by suicide. *J. Affect. Disord.* 2010; **120**: 213–216.
9. Law YW, Wong PWC, Yip P. Suicide with psychiatric diagnosis and without utilization of psychiatric service. *BMC Public Health* 2010; **10**: 431.

特集　自殺予防と精神保健医療の役割

自死遺族の精神保健的問題

川野　健治

1. はじめに

一説によると，一件の自殺によってその周囲の6人が衝撃を受ける（McIntosh, 1988）．1998年以降，日本では年間3万人程度の自殺者数をだしているが，ある民間団体は一般住民の家族構成を用いて，年間130万～150万人が遺族になると推計している（Chen, et al., 2008）．あるいは他のどのような推計方法にせよ，これらは自死遺族支援の必要性を数として示唆するものであるが，2006年に制定された自殺対策基本では，その目的を示す第一条に以下のように述べている．

> 第一条　（前略）自殺対策に関し，基本理念を定め，及び国，地方公共団体等の責務を明らかにするとともに，自殺対策の基本となる事項を定めること等により，自殺対策を総合的に推進して，自殺の防止を図り，あわせて自殺者の親族等に対する支援の充実を図り，もって国民が健康で生きがいを持って暮らすことのできる社会の実現に寄与することを目的とする．

すなわち，ここでは自殺の防止と自殺者親族などに対する支援の充実を併置して，自殺対策の重要な目的としているのである．

では，自死遺族の支援は，具体的にはどのような内容を必要とするのだろうか．本稿は，これを精神保健の観点から整理するものである．

2. 遺族の経験する諸問題

自死遺族の経験する問題を，大きく3つにわけて整理してみる（図1）．一つ目は生活上の混乱である．故人との死別に際しての諸手続きの中には，通常生活では意識していないものも多い．役所への死亡届けはいつまでにするべきなのか．葬儀費用の補助が受けられるのか．故人の所有していた各種免許，銀行などの口座や財産についての手続き，クレジットカードやインターネットの解約の時期も調べたことはないかも知れない．このような細々とした作業は，自死遺族から，悲嘆過程に向かい，喪の作業に取り組む時間を奪うことになる．また，死亡事故などにともなって行われる警察の取調べや司法解剖などは，ときに自死遺族の心情と食い違い，傷つける体験となることもある．逆にいえば，これらについてあらかじめ情報提供を行うことができれば，メンタルヘルスの面からも自死遺族の支援につながるものといえるだろう．

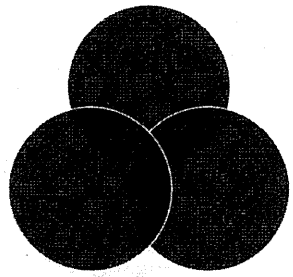

図1　自死遺族の経験する諸問題

著者所属：国立精神・神経医療研究センター精神保健研究所自殺予防総合対策センター

また，故人が主に家計を担っていた場合には，直接的に収入の確保が問題になる場合もある．たとえば，子どもが成長すると教育費などの負担が増すことが考えられ，その場合は福祉や教育（助成金）などの情報が遺族のQOLの向上につながる．さらに，（時に自殺の経緯に関係して）多額の借金が残される場合があり，相続放棄の手続きが必要になることがある．また自死の経緯について遺族が不信に思い，過労死裁判を行う場合もあるため，弁護士や司法書士による法律の面からの支援が必要となることもある．

これらの生活の混乱は，精神保健の問題そのものではないが，直接的に自死遺族の生活の質に影響をあたえ，あるいは間接的に（時間を奪うことによって）精神的・身体的な回復の過程を妨げることになるかもしれない．図1では，自死遺族の経験する問題が3つのグループから構成されていることだけではなく，問題が相互に重なりあい，影響しあっていることを示している．

3. 心身の不調

次に，本稿の主題でもあるメンタルヘルスについてみていこう．（自死に限らず）死別にともなう心身の反応としては，ショック，悲しみ，後悔と自責の念，羞恥，怒り，不安，混乱，とまどいといったこころの反応に加え，食欲の変化，体力の低下，睡眠の変化，胃腸の不調などが起こることが知られている．ただし，これらは死別にともなう正常な反応である．近年の研究で，「信じられないという気持ち」「悲しみ」「故人への思慕」「怒り」「うつ」「死を受け入れる」といった心理的反応を縦断的に観察し，多くの場合6ヶ月以内にそのピークが過ぎることが実証的に示された（Maciejewski, et al., 2007）．ここから，死別における陰性感情の6ヶ月以上の継続は，適応の困難を示している可能性があるので，その事例の評価を継続し，治療へつなぐことを検討したほうがよいと著者らは指摘している．

この研究に対して，Association for Death Education and Counseling（以後ADEC）は会のHP上でコメントを発表している．この研究成果を部分的に評価しつつ，ただし，「6ヶ月以上陰性感情が継続すればサイコセラピーが必要」という含意は，支持できないと表明したのである．これに対し，先の研究グループの主導的役割を果たしているPrigersonは同じHPにレスポンスを掲載し，さらにADECがそれに反論を掲載した．論争の詳細はHPなどで確認していただくとして，ここに悲嘆過程をめぐる支援者の2つの立場をみることができる．すなわち，悲嘆過程を「正常な」反応として扱うことの重要性を意識してきたADECの立場と，明確な定義がないため治療や研究が進みにくい状況があることを問題とし，「複雑性悲嘆」をあらたにDSM-Vの診断基準とすることを提案しているPrigersonらの立場である．それはすなわち，悲嘆過程を精神保健の問題として扱う際の難しさを示唆するものでもある．自死遺族支援においても，「自死で遺されたものは病気なのか」という現場の声にどのように応えて行くのかは，支援上の重要な課題といえるだろう．

ところで，自死で遺されたことが精神保健の問題につながる可能性があることが，いくつかの研究で指摘されている．Zhang, Tong & Zhou（2005）や張（2002）は，心理学的剖検の手法を用いて，自死遺族の30％から60％にうつ症状が見受けられたことを報告した．そして先のPrigersonらのグループの一連の研究では（2004；2005），複雑性悲嘆と希死念慮の関係性についてエビデンスを示しており，家族や大切な他者を自殺で亡くした成人，高齢者の自殺関連行動では，統計的にうつをコントロールしてさえ，5倍から10倍の危険率があることを示した．

川野ら（2009）は，自死遺族支援グループと接点をもつ全国の自死遺族を対象に，遺族支援グループより調査用紙と返信用封筒を配布してもらう形式で質問紙調査を実施し，111名より回収した．5件法で尋ねた心理的反応について，図2に示す．

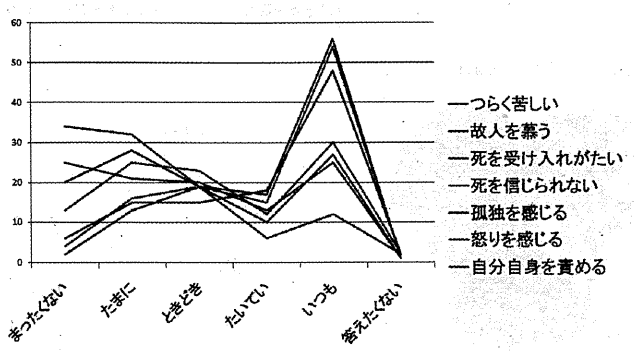

図2　自死遺族の心理的反応

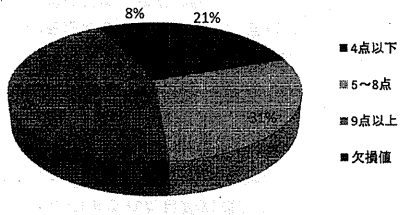

図3　K6の得点分布

頻繁に経験する心理的反応としては，「つらく苦しい」「自分自身を責める」「故人を慕う」があげられており，ここまで紹介した海外の研究結果と食い違うものではなかった．とくに，「自分を責める気持ち」は，他の死別と比べても自死遺族の心理を説明する特徴的な反応といえるが，援助希求行動を妨げる要因となる場合があり，正常な心理反応とはいえ，注意が必要である．一方，図3には，メンタルヘルスを評価するために用いたK6の得点分布を示した．

この尺度を気分・不安障害のスクリーニングテストとして用いる場合のカットオフポイントを基準とすると，それを超える自死遺族は全体の48％を占め，自死遺族支援グループに参加している遺族の中には，精神科的な医療を必要とする可能性のある人が半数近くいることが示唆された．サンプルに偏りがあるため，この結果をもってわが国の自死遺族の実態を推測するのは慎重であるべきだが，さらなる調査が必要である．

自死遺族の全てが心身の不調を訴えるということではない．しかし，それとは独立に，とくにメンタルヘルスの問題については支援を受けにくい社会文化的状況にあるのかもしれない．この点には注意が必要である．

4．対人関係の困難

ところで，悲嘆反応とメンタルヘルスに関するシステマティックレビュー（Sveen & Walby, 2008）では，自殺と他の死因との間で一般的なメンタルヘルスの指標，うつ，PTSD，不安，希死念慮に差はないものの，自死の場合，遺族がスティグマの存在や恥を感じ，死因が自殺であることを隠す傾向にあることを指摘している．先に自責の念についても指摘したことだが，これらは，自死遺族がメンタルヘルスの問題に関して，援助希求を示しにくいことを示唆するものである．たとえば，NYで一年間の自殺事例のうち，遺族がなんらかの支援を利用したのは25％にすぎないという報告がある（Provini, et al., 2000）．先の研究で，川野ら（2009）は，支えや助けを受けられなかったという主観的な経験の有無を尋ねたところ半数近くが該当した．その理由についての自由記載の一部を，表1に示す．

このように，自死遺族はその経験を他者に打ち明けることが難しいと感じていることがある．正常な悲嘆過程であればまだしも，心身の健康に問題がある場合には，援助希求の乏しさは好ましい状態とはいえないだろう．

ただし，それは一概に自死遺族の心理的障壁の問題として，自死遺族への心理教育や普及啓発などで解決すべき問題と捉えるべきではない．つまり，背景には自死遺族が周囲との関わりの中で傷ついた経験，つまり二次的被害の影響を推測することができるのである．川野ら（2009）では，被害という事実の有無というより主観的経験に着目し，「二次的傷つき体験」という表現を用いて整理している．図4には，自死遺族と接する機会のある様々な関係性について，二次的傷つき体験とソーシャルサポートの有無を尋ねた結果を示す．

ここからは，身近な対象である家族，親戚，友人，近隣住民，上司・同僚などが，自死遺族のソーシャルサポート源となる頻度が高いことと同時に，高い頻度で二次的傷つき体験の対象ともなっていることがわかる．また，医療従事者や他の遺族といった質的に重要なサポート源となることが推測される対象との間にも同様な傾向を指摘できる．これらの二次的傷つき体験が，自死遺族のメンタルヘルスに影響を与える可能性について検討したところ，家族，親戚，友人，他の遺族との間では統計的に優位な影響が見出された．いずれも，

表1　自死遺族が支えや助けを受けられなかった理由（一部）

- 支えを受けるに値しない人間だと思いそんなことも考えなかった．
- 心療内科で話をあまり聞いてもらえなかった（2～3分の時もあり）．薬を飲んでいればいいと言われた．それで3ヶ月で通院をやめた．
- あの娘の思い出や話をしたいのに誰も聞いてくれない．話す相手もいなく，ひとりでアルコール依存みたいになって太った．
- どうしようもないです．死んだ者が生き返ることはできないので！　自責の念に只，耐えるしかないと思っています．

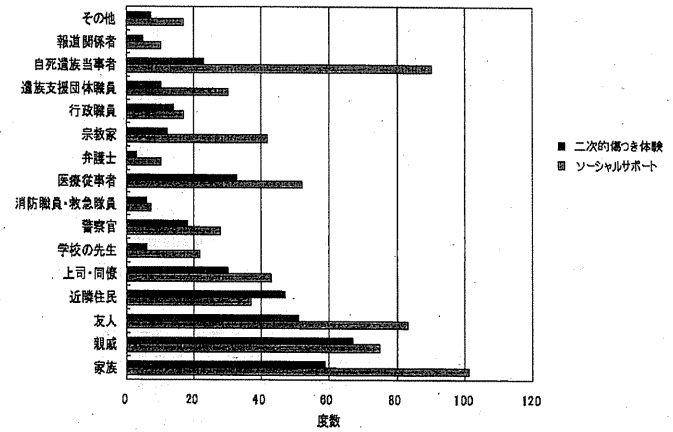

図4　自死遺族の二次的傷つき体験とソーシャルサポート

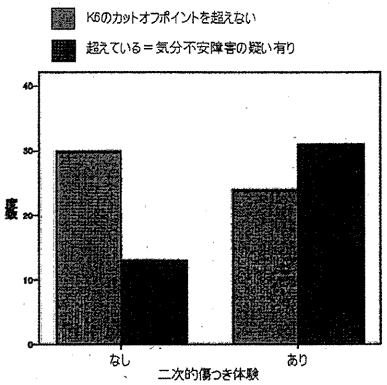

図5　家族との二次的傷つき体験の有無と気分不安障害の疑い

二次的傷つき体験があると，K6の値がカットオフポイントを超える可能性が高くなった．上記にあげた関係ではいずれも同様のパターンとなるため，ここでは家族の分析結果（$\chi^2=6.7$，$p<0.5$）のみを図5で示す．

このように，生活の混乱と同様に，対人関係の問題も自死遺族のメンタルヘルスをふくむ健康の問題と深く関わりあっている．つまり，自死遺族支援において複合的な支援が必要であることを示すものである．対人関係の問題がある場合，遺族は心身の不調については我慢したり，援助希求を抑えたりすることも考えられる．

「自死で遺されたものがイコール病気ではないのだから，メンタルヘルスの問題よりも生活の混乱や対人関係の問題（特に二次的被害の問題）についての取り組みを優先してほしい」という自死遺族当事者からの意見が聞かれることがある．ここまで示したようにこの主張は理解できる一方，睡眠や食欲などの身体的健康に加え，希死念慮や精神疾患の高まりの程度など，医療的な支援が優先される場合も想定される．医療機関での支援においては，十分な情報収集と観察を行うことが大切である．

5．おわりに

イギリスの国営医療サービスNHSが提供している遺族のための手引きHelp is At Handに含まれている内容を見てみると，Practical matters（実際の問題），Experiencing bereavement（死別において経験すること），Bereaved people with particular needs（特に必要となること），How friends and colleagues can help（友人や同僚にできること），Sources of support（支援のための資源），そしてEvaluation form（このガイドの評価のためのシート）と実に多様であることがわかる．さらに，支援のための資源としてあげられているものには，死別に関する支援組織，自助グループ，自殺予防に積極的なグループ，スピリチュアルカウンセリング，死別カウンセリング，葬儀，経済問題と遺書，検死に関連する組織，その他の支援組織とWebサイト，読書案内（自死による死別，自死一般，うつ，など）とやはり多様な内容が含まれている．

他方，わが国の自死遺族支援の状況は，自殺対策基本法の制定以前と比べると驚くほど改善されているが，まだメニューの数は十分とはいえないようである．とくに，複雑性悲嘆への専門医療については，今後整備が待たれるところである．日本トラウマティックストレス学会で治療法の検討が始まるなど，現状でも新しい動きがあることを付け加えておきたい．

文　献

1) ADECのコメント（http://adec.org/より2010.8.10取得）

2) Chen, J., Choi, Y.J., Mori, K., et al.: Those who are left behind: An estimate of the number of family members of suicide victims in Japan. Social Indicators Research, 94 (3); 535-544, 2009

3) 張　賢徳，津川律子，李　一幸ほか：自殺既遂者遺族の悲嘆について．自殺予防と危機介入，23；26-34，2005

4) Help is at hand: a resource for people bereaved by suicide and other sudden, traumatic death (2008 edition) (http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4139006より2010.8.10取得)

5) 川野健治：自死遺族の悲嘆と期待されるコミュニケーションの欠如．ストレス科学，24；24-32，2009

6) Latham, A.E., Prigerson, H.G.: Suicidality and bereavement: Complicated grief as psychiatric disorder presenting greatest risk for suicidality. Suicide and Life-Threatening Behavior, 34; 350-362, 2004

7) Maciejewski, P.K., Zhang, B., Block, S.D., et al.: An empirical examination of the stage theory of grief. JAMA, 297; 716-723, 2007

8) McIntosh, J.L., Wrobleski, A.: Grief reactions among suicide survivors: An exploratory comparison of relationships. Death Studies, 12 (1); 21-39, 1988

9) Mitchell, A.M., Kim, Y., Prigerson, H.G., et al.: Complicated grief and suicidal ideation in adult survivors of suicide. Suicide and Life-Threatening Behavior, 35 (5); 498-506, 2005

10) Provini, C., Everett, J.R., Pfeffer, C.R.: Adults mourning suicide: Self-reported concerns about bereavement, needs for assistance, and help-seeking behavior. Death Studies, 24 (1); 1-19, 2000

11) Sveen, C., Walby, Fredrik, A.: Suicide survivors' mental health and grief reactions: A systematic review of controlled studies. Suicide and Life-Threatening Behavior, 38 (1); 2008

12) Zhang, J., Tong, H.Q., Zhou, L.: The effect of bereavement due to suicide on survivors' depression: A study of Chinese samples. Omega: Journal of Death and Dying, 51 (3); 217-227, 2005

The Mental Health of Persons Bereaved by Suicide

Kenji KAWANO

Center for Suicide Prevention, National Institute of Mental Health, National Center of Neurology and Psychiatry

This paper aims to describe the care for persons bereaved by suicide from the perspective of mental health. Those bereaved by suicide experience three types of difficulties. The first encompasses difficulties in daily life, including death notifications, dealing with the funeral, cancellation of bank accounts, legal issues such as disagreements related to inheritance, and so on. The second type involves difficulties with health. Bereaved persons will sometimes experience psychological responses, such as feelings of sadness, guilt, anger, fear, embarrassment; these may be accompanied by somatic complaints. These are normal responses related to the grief process, but responses may be escalated as complicated grief in unusual circumstances, such as when people are bereaved by suicide. The third type comprises interpersonal difficulties, including lack of seeking social support, withdrawing, and secondary wounding experiences.

While these difficulties often occur separately, they may also affect each other. For example, problems in daily life decrease a person's quality of life, and rob the bereaved of time to do their mourning work, while interpersonal problems may discourage them from seeking help from others around them.

In this study, 111 persons bereaved by suicide were recruited from self-help/support groups. Of these, 48% showed a symptom of mental health problems, as measured by K6, and the relationship between the symptom of mental health issues and secondary wounding experiences of family members, relatives, friends, and other people bereaved by suicide was confirmed by ANOVA. Many persons bereaved by suicide may use existing supports and appear "resilient" after their shocking experiences, but they should be carefully observed, and, if necessary, should be offered specialized help, including psychological and/or psychiatric support.

<Author's abstract>

<**Key words**: persons bereaved by suicide, mental health, secondary wounding experiences, K6>

Q2 糖尿病とうつ

糖尿病とうつの関係について教えてください

A2 峯山智佳 Mineyama, Tomoka
国立国際医療研究センター国府台病院 内科

糖尿病とうつ病の疫学

うつ病と糖尿病の日本人における有病率は，ともに近年著しく増加してきました．国内の疫学調査では，ICD-10分類によるうつ病の生涯有病率が6.6%（平成18年度厚生労働科学研究），糖尿病が強く疑われる人と糖尿病の可能性が否定できない人をあわせた数が約2,210万人（平成19年国民健康・栄養調査）と報告されています．うつ病と糖尿病は，その有病率の高さから両疾患が併存しやすいというだけでなく，それぞれの発症や予後に双方向性に影響し合っている可能性が高いことが明らかにされつつあります．前向き縦断研究に基づくメタ解析の結果では，抑うつ症状が先行する患者における糖尿病発症の相対危険度は1.60（95% CI　1.37-1.88），耐糖能異常が先行する患者において抑うつ症状が出現する相対危険度は1.15（1.02-1.30）から1.24（1.18-1.31）でした[1,2]．また横断研究のメタ解析においては，糖尿病患者におけるうつ病の点有病率は非糖尿病集団と比較して2〜3倍高くなり[3]，1型・2型糖尿病の別や性別にかかわらず有意に上昇していたこと[4]，さらに糖尿病性合併症の数や重篤度が増すほどうつ病の有病率が増加すること[5]が報告されています．

うつ病を併存する糖尿病患者の臨床上の問題点

糖尿病患者にうつ病が併存すると，血糖コントロール不良（高血糖状態）に陥りやすいことに加えて，肥満，高血圧や脂質異常症といったほかの慢性疾患の合併率も上昇する結果[5]，古典的糖尿病合併症や心血管疾患の合併率が上昇，さらには死亡率も増加すると報告されています．2型糖尿病患者を，追跡開始時に抑うつ症状を有する群と有さない群とに分けて約8年間追跡したオーストラリアの調査では，抑うつ症状合併群での総死亡（ハザード比1.38）と心血管疾患死（同1.56）が有意に増加していました[6]．また米国のデータに基づく調査では，うつ病が併存する糖尿病患者では総医療費も著明に増加すると報告されており[7]，身体的，社会的にさまざまな面で患者負担が増大することが問題です．これらの背景として，うつ病を併存する患者ではセルフケア行動を行う身体的・精神的機能が低下したり，治療へのアドヒアランス，コンプライアンスが低下していることが一因に挙げられています[5,8]．

糖尿病とうつ病が併存しやすい原因

糖尿病患者は，診断や治療の過程でさまざまな肉体的苦痛や心理的負担を経験する場合がありますが，これが抑うつ症状を引きおこすと考えられています．失明や末期腎不全などの重症合併症と診断されるとき，患者は健康や身体機能の一部を失う喪失体験をしたり，「治療に失敗した」という後悔や罪悪感などを体験する結果，悲しみ，抑うつ，怒りなどの強い情緒的反応をおこします．これは糖尿病と診断を受け，ライフスタイルの変

表　糖尿病治療上，特に心理的問題に配慮すべき状況

1. 糖尿病と診断されたとき
2. 治療法が強化されたとき（特にインスリン治療開始時）
3. 血糖コントロールがきわめて不良，または不安定なとき
4. 重症合併症を発症したとき
5. 精神科疾患の合併

（日本糖尿病学会編：糖尿病治療ガイド　2010．文光堂，2010．より）

更を余儀なくされるときや，薬物治療が開始されるとき（特にインスリン導入時）も同様です．さらに重症合併症に伴う疼痛や睡眠障害，インスリン注射や血糖自己測定を行う際の疼痛といった肉体的苦痛を伴ったり，QOLが著しく障害されている症例において抑うつ症状は増悪する危険性が高いと推測されており，実際に合併症の数や重篤度が増すほどうつ病の有病率が増加することが報告されています[5]．上述したものを含め，日本糖尿病学会では糖尿病診療上，特に心理的問題に配慮すべき状況について，「糖尿病治療ガイド2010」に記載しています（表）．

うつ病患者で糖尿病が併存しやすい生理学的要因として，①視床下部―下垂体―副腎皮質系の亢進，②交感神経系のふ活，③TNF-αやIL-6などの炎症性サイトカインの増加が影響していると考えられています．これらはいずれもインスリン抵抗性を惹起し，耐糖能を悪化させる方向に作用しますが，近年，糖尿病患者や内臓肥満患者においても同様の生理学的変化が認められることが報告されています[9,10]．このことから糖尿病とうつ病は，一方から他方へと一方向的に進展するのではなく，両疾患間に共通するさまざまな因子を介して相互作用しているのではないかと推測されています．

うつ病を併存する糖尿病患者の治療

うつ病を併存する糖尿病患者に既存のうつ病の治療を行って，抑うつ症状と血糖値が改善するかどうかを検討した14報のランダム化比較試験（RCT）をまとめたsystematic reviewが報告されています[11]．ここではうつ病の治療法を，①三環系抗うつ薬（TCAs）やセロトニン選択的再取り込み阻害薬（SSRI）を用いた抗うつ薬治療（7RCTs，n=304），②認知行動療法や支持療法などの心理学的治療（5RCTs，n=310），③集団ベースでの薬物療法と心理学的治療の併用療法（3RCTs，n=1,133）の3カテゴリーに分類し，いずれの治療法が血糖コントロールに有効であるかをサブ解析していますが，中等度以上の血糖改善効果が期待されたのは心理学的治療のみでした．

現在のわが国の糖尿病診療の現場で，まず重要なのは抑うつ症状を併存する患者を早期発見することです．特に上述した「心理的問題に配慮すべき状況」にある患者に対しては，Problem Areas in Diabetes Survey（PAID）やPatient Health Questionnaire-9（PHQ-9）といった自記式抑うつ評定尺度を用いてスクリーニングすることを米国糖尿病学会は推奨しています．

精神科と併診している症例では精神科主治医との連絡を密にして，患者の現在の抑うつ症状の重症度や，使用している精神科薬剤を把握しておくことが必要です．たとえば糖尿病教育を行う場合，重症の抑うつ症状を認める時期には休養や睡眠も治療として重要であることを伝えなければなりませんが，抑うつ症状が軽減してきた場合には，精神科医の意見をうかがいつつ，規則正しい生活や軽度の身体活動を再開してみることを勧めていくなど，抑うつ症状の重症度に応じて指導内容を変更していく必要があります．精神科薬剤に関しては，特にTCAsやモノアミン再取り込み（MAO）阻害薬，抗精神病薬（特に第二世代抗精神病薬のオランザピンとクエチアピン）を使用していないか把握しておくことが重要で，TCAsによる口渇や体重増加，MAO阻害薬とSU薬の併用による低血糖，抗精神病薬開始後の体重増加や血糖コントロールの悪化がないかどうかを常にモニタリングしておく必要があります．

うつ病を併存する糖尿病患者を診療していくためには，精神科と良好な診療関係を構築して，患者の診療情報を共有し，共通の病態認識に基づいて，その都度適切な治療法を検討していける環境づくりが，今後ますます重要になると考えられます．

文　献

1) Mezuk, M. et al. : Depression and Type 2 diabetes over the lifespan. *Diabetes Care,* **31** : 2383～2390, 2008.
2) Nouwen, A. et al. : Type 2 diabates mellitus as a risk factor for the onset of depression : a systematic review and meta-analysis. *Diabetologia,* **53** : 2480～2486, 2010.
3) Musselman, D.L. et al. : Relationship of Depression to Diabetes Types 1 and 2 : Epidemiology, Biology, and Treatment. *Biol Psychiatry,* **54** : 317～329, 2003.
4) Anderson, R.J. et al. : The prevalence of comorbid depression in adults with diabetes. *Diabetes Care,* **24** : 1069～1078, 2001.
5) de Groot, M. et al. : Association of Depression and Diabetes Complication : A Meta-analysis. *Psychosom Med,* **63** : 619～630, 2001.
6) Bruce, D.G. et al. : A prospective study of depression and mortality in patients with type 2 diabetes : the Fremantle Diabetes Study. *Diabetelogia,* **48** : 2532～2539, 2005.
7) Le, T.K. et al. : Resource use among patients with diabetes, diabetic neuropathy, or diabetes with depression. *Cost Eff Resour Alloc,* **4** : 18, 2006.
8) Gonzalez, J.S. et al. : Depression and Diabetes treatment nonadherence : a meta-analysis. *Diabetes Care,* **31** : 2398～2403, 2008.
9) Champaneri, S. et al. : Biological basis of depression in adults with diabetes. *Curr Diab Rep,* **10** : 396～405, 2010.
10) Golden, S.H. : A review of the evidence for a neuroendocrine link between stress, depression and diabetes mellitus. *Curr Diabetes Rev,* **3** : 252～259, 2007.
11) van der Feltz-Cornelis, C.M., N. et al. : Effect of interversions for major depressive disorder and significant depressive symptoms in patients with diabetes mellitus : a systematic review and meta-analysis. *Gen Hosp Psychiatry,* **32** : 380～395, 2010.

*　　*　　*