The use and perceived helpfulness of self-help interventions for depressive symptoms and sub-threshold depression: comparisons among the general population, patients with depression, and psychiatrists

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Abstract

The aim of this study was to examine the patterns of use and perceived helpfulness of self-help interventions for depressive symptoms and sub-threshold depression in Korean samples drawn from the general population, patients with depression, and psychiatrists. A total of 1000 adults from the community, 114 patients with sub-threshold or mild depression, and 201 psychiatrists were asked to complete questionnaires about the use and helpfulness of 20 self-help interventions for depression chosen via the Delphi method. Psychiatrists (82.6%) and the general population (67.2%) were more likely to prefer self-help methods than were patients with depressive disorders (28.4%). Lifestyle change and psychological approaches were the preferred interventions among those with depressive disorders. Although the general population was more likely to prefer to use health supplements and dietary interventions, the perceived helpfulness of these approaches was generally lower than that of the other interventions. Although self-help strategies have been widely used, psychiatrists, patients with depression, and the general population differ with respect to their preferred intervention. Members of the general population were more likely than were psychiatrists and patients to use not consensually accepted

interventions. The evidence-based use of self-help strategies for depression should be promoted by providing information about their effectiveness.
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Introduction

Depressive disorders seem to include a wide range of symptoms and to exist on a continuum rather than to be divisible into separate entities (Cuijpers *et al.*, 2004). Minor depressive disorder and recurrent brief depressive disorder are described in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) as diseases that do not satisfy the diagnostic criteria for major depressive disorder with respect to severity and duration, respectively (American Psychiatric Association, 1994). Increasing evidence suggests that individuals with sub-threshold or sub-syndromal depression have an increased risk of subsequent major depression and other adverse outcomes (Meeks *et al.*, 2011). Despite this, procedures to diagnose and treat sub-threshold depression have been not been well established due to inconsistencies in definitions and under-recognition by clinicians (Baumeister and Morar, 2008). However, sub-threshold depression has been thought to be common, with a prevalence of 2 to 15% according to previous data (Carta *et al.*, 2011; Korea Centers for Disease Control and Prevention, 2006).

Self-help strategies are reported to be very widely used, particularly for mild depression (Jorm *et al.*, 2004). Previous data showing that antidepressants were not more effective than placebos for mild depression can be viewed as evidence in support of emphasizing the importance of self-help strategies for sub-threshold to mild depression (Carta *et al.*, 2011). However, a lack of consensus exists, even among experts, with respect to how self-help treatment for depression should be conducted and which self-help strategies are helpful (Yap *et al.*, 2011). Furthermore, the availability of specific self-help interventions differs for various reasons, such as cultural diversity.

The aim of this study was to survey the use and perceived helpfulness of self-help interventions for depressive symptoms and sub-threshold depression in Korean samples drawn from the general population, patients with depression, and psychiatrists. This study was designed in consideration of the scant information available about self-help methods in Korea despite the widespread use of these approaches. We assumed that this lack of reliable information would result in differences between mental health experts, such as psychiatrists, and members of the

general population in terms of the use of self-help interventions. Therefore, we surveyed the general population, psychiatrists, and patients with depression.

Method

Selection of self-help strategies

A total of 125 self-help methods were identified by searching data collected on Ovid-Med, Cochrane, EMBASE, and PsycINFO covering 1950 to 2009. The detailed process by which articles were selected by the researchers has been described elsewhere (National Evidence-based Healthcare Collaborating Agency, 2010). First, a committee of experts consisting of six psychiatrists selected 39 self-help strategies considered appropriate for evaluation by the Delphi method (Milholland *et al.*, 1973). Second, the committee excluded 19 methods that were not available in Korea. The remaining 20 interventions were classified into five categories (health supplements, dietary methods, psychological methods, lifestyle modification, and sensory/physical methods) according to the classification developed by Morgan and Jorm (2008). Finally, the expert committee used the Delphi method to group the 20 interventions according to appropriateness of use based on results of a systematic review reported elsewhere (National Evidence-based Healthcare Collaborating Agency, 2010). If the expert panels viewed the self-help methods as appropriate, the method was classified as “consensually accepted”; if not, it was classified as “Not consensually accepted”. If the experts could not decide about the appropriateness of the self-help method due to a paucity of information, the self-help method was classified as “deferred” (Table 1).

Participants

Participants were divided into three groups: (1) patients at a psychiatric clinic diagnosed with sub-threshold to mild depression ($n = 114$); (2) members of the general population selected from the community ($n = 1000$); and (3) psychiatrists ($n = 201$). All participants were Korean adults.

Patients with depression were included to confirm the perceived effectiveness of and expectations attached to self-help methods in currently depressed patients with sub-threshold to mild depression. These patients had

Table 1. Self-help methods for depression identified by bibliographic search and the Delphi method (2009)

	Cosensually accepted	Not consensually accepted	Deferred
Health supplements		Ginseng Amino acid or taurine Omega-3 <i>Acanthopanax senticosus</i> Caffeine	
Dietary		Carbohydrate-rich and protein-poor diet	
Psychological	Bibliotherapy Computerized intervention		Meditation Forest therapy Humor Recreation
Lifestyle changes	Exercise Relaxation		Pets Prayer
Sensory/physical	Aromatherapy	Progesterone cream	Massage Music

already been diagnosed with depressive disorder and had been treated at the psychiatry outpatient clinics of the general hospitals with which the investigators were affiliated (Kangbuk Samsung Hospital, Gacheon Kil Hospital, Kunkook University Hospital, Kyunghee Medical Center, Hangang Sacred Heart Hospital, and Kangdong Sacred Heart Hospital). The inclusion criteria were age ≥ 18 years and diagnosis of minor depression, dysthymia, or major depressive disorder with mild or moderate severity according to DSM-IV criteria and current sub-threshold to mild depression according to the Hamilton Rating Scale for Depression (HAM-D; total score: ≥ 8 to ≤ 22) (Tadic *et al.*, 2010). Exclusion criteria were diagnoses of bipolar or psychotic disorder, persistent suicidal ideation, and recent suicidal attempts. The Korean version of the HAM-D, a 17-item clinician-administered scale used to assess symptoms of depression, had been previously standardized and validated. To increase interrater reliability, the clinical research nurses from all institutions participated in a joint meeting and educational program. Of the 152 depressed patients initially screened with the HAM-D, patients who were not currently depressed ($n = 22$, HAM-D: < 8) and those with severe depression ($n = 16$, HAM-D: > 22) were excluded. Those with depressive disorder completed the questionnaire between October 2009 and November 2009.

We included a sample drawn from the general population to examine public beliefs about self-help strategies. One thousand adults older than 19 years of age who had never been diagnosed with a depressive disorder participated in this study. Participants were recruited from the population database via e-mail or via web advertising using a sampling program developed by the Gallop organization (Dong-Seo Research Co., Ltd). Individuals included

in the database as well as new recruits were asked to respond to this survey. To ensure that the survey sample was representative of the general population, we used proportional stratified sampling according to sex, age, and region to select participants. The sampling error was ± 2.2 at the 95% confidence interval (95% CI) ($p \leq 0.05$). A structured questionnaire about self-help treatment was administered online during October 2009. The online-survey response rate was 50.9%, and we found no statistically significant demographic (sex, age, and region) differences between non-responders and responders to the online survey system.

A total of 201 psychiatrists with a psychiatric specialist certificate were included in this study. All had graduated from medical school and were trained as psychiatric specialists in Korea. The Gallop organization (Dong-Seo Research Co., Ltd) sent questionnaires via e-mail to psychiatrist members of the Korean Neuropsychiatric Association during October 2009. Informed consent was obtained from each subject. The protocol of this study was approved by the ethics committee of Kangbuk Samsung Hospital.

Measurement

Analyses were conducted on data obtained from a 17-item questionnaire on sub-threshold depression and self-help methods. The questionnaire was developed by five psychiatrists (the authors) based on a meta-analysis and was modified based on feedback from 17 other psychiatrists. The questionnaire included eight items on socio-demographic characteristics (sex, age, marital status, education, occupation, family income, residence, and experience with

psychiatric treatment) and nine items on self-help methods for depressive symptoms and sub-threshold depression. Items inquiring about improvements in sub-threshold depression addressed experience with depressive symptoms and sub-threshold depression during the last year (Question 1) as well as the most preferred and advisable methods for ameliorating depression and the degree of effectiveness associated with each method (choices were visiting psychiatrists, visiting psychologists, religion, self-help methods, and just waiting [Questions 2, 3, and 4; Tables 2 and 3]). Other questions about self-help methods addressed experiences with these methods during the last year (Question 5), perceived helpfulness of, and intentions to use, five kinds of self-help methods (Questions 6 and 7; Table 4), and use (Question 8) and perceived helpfulness (Question 9, Table 5) of 20 self-help

methods. Additional details about study questionnaire can be provided by the report of the National Evidence-based Healthcare Collaborating Agency which has been established by the Korean government (National Evidence-based Healthcare Collaborating Agency, 2010).

After a pilot study among employees of the Korean National Evidence-based Healthcare Collaborating Agency, the questionnaire was revised to enhance its validity. All participants were asked if they had experienced depressive symptoms during the last year. The definition of depressive symptoms used in this study was depressed mood or loss of interest without significant functional impairment for more than one day but less than two weeks (Fergusson *et al.*, 2005). The questionnaire evaluated the actual experiences of those participants who had used 20 self-help

Table 2. Expectations of and experiences with interventions for managing depression

	Total (<i>n</i> = 1315)	Patients (<i>n</i> = 114)	General population (<i>n</i> = 1000)	Psychiatrists (<i>n</i> = 201)	<i>p</i> Value ¹
<i>Expectations</i>					
Psychiatrist	3.52 (0.91)	3.80 (3.68–3.96)	3.35 (3.29–3.40)	4.23 (4.13–4.33)	< 0.001
Non-psychiatric professional (psychologist, general physician, or social worker)	2.40 (0.68)	2.34 (2.17–2.47)	2.92 (2.88–2.96)	2.41 (2.21–2.55)	0.028
Self-help methods	3.63 (0.86)	3.04 (2.86–3.17)	3.74 (3.69–3.79)	3.35 (3.31–3.42)	0.001
Just waiting	1.88 (0.93)	1.24 (1.13–1.36)	1.99 (1.93–2.05)	1.68 (1.55–1.82)	0.001
<i>Experience</i>					
Yes	75.3	72.8	74.6	80.1	0.203 ²
No	24.7	27.2	25.4	19.9	

The values are shown as mean (95% confidence interval) for expectations, and proportion (%) for experience.

¹One-way analysis of variance (ANOVA).

²Chi-square test.

Table 3. Preferred methods for dealing with sub-threshold depression or depressive symptoms

	Total (<i>n</i> = 964)	Patients (<i>n</i> = 109)	General population (<i>n</i> = 723)	Psychiatrists (<i>n</i> = 132)	
Psychiatrist	8.3	47.7	4.1	6.1	$\chi^2 = 240.08$ $p < 0.001^1$ 95% CI = 0.000–0.003
Non-psychiatric professional (psychologist, general physician, or social worker)	8.0	8.3	9.4	0.0	
Self-help methods	64.9	28.4	67.2	82.6	
Just waiting	17.7	15.6	19.2	11.4	

Note: From the 964 respondents who said they had experienced sub-threshold depression or depressive symptoms during the last year. The values are shown as proportion (%). 95% CI = 95% confidence interval by Monte Carlo simulation.

¹Chi-square test.

Table 4. Experience with and intention to use self-help methods

	Experience with self-help methods among respondents who had used self-help methods (<i>n</i> = 990)				Intention to use self-help methods among respondents who had never used self-help methods (<i>n</i> = 325)			
	Patients (<i>n</i> = 83)	General population (<i>n</i> = 746)	Psychiatrists (<i>n</i> = 161)	<i>p</i> Value	Patients (<i>n</i> = 31)	General population (<i>n</i> = 254)	Psychiatrists (<i>n</i> = 40)	<i>p</i> Value
Health supplements	14.5 (0.22–0.85*)	21.8	11.2 (0.28–0.82*)	0.002*	16.1 (0.13–1.14)	22.8	0.0	0.223
Dietary	20.5 (0.43–1.36)	32.3	24.2 (0.45–1.01)	0.116	12.9 (0.39–3.29)	17.7	25.0 (0.60–3.05)	0.757
Psychological	44.6 (0.24–0.63)	70.4	80.1 (1.18–2.79)	<0.001**	38.7 (0.21–1.04)	57.5	72.5 (0.89–4.05)	0.036*
Lifestyle changes	75.9 (0.91–2.70)	65.4	88.2 (2.64–7.34*)	<0.001**	64.5 (0.67–3.55)	54.7	95.0 (3.81–69.88**)	0.001*
Sensory/physical	16.9 (0.42–1.44)	24.1	34.8 (1.29–2.77*)	0.002*	6.5 (0.04–0.81*)	26.0	32.5 (0.82–3.75)	0.025*

Note: Those who responded that they had used self-help methods for sub-threshold or mild depression were asked about their experience with self-help methods. Those who responded that they had never used self-help methods for sub-threshold or mild depression were asked about their expectations of self-help methods. The values are shown as percentage (95% confidence interval, reference group: general population). Statistical values for group differences were calculated using logistic regression analysis after controlling for age and sex.

* $p < 0.05$, ** $p < 0.001$.

methods for sub-threshold depression ($n = 990$ of 1315 participants who had used self-help methods for sub-threshold depression). Participants were required to assess the perceived helpfulness of the self-help method only if they had ever used that method. The self-reported effectiveness of and preference for each self-help method were assessed using five-point Likert scales (very negative, a little negative, neutral, a little positive, very positive).

Statistical analysis

Demographic differences among patients with sub-threshold to mild depression, the general population, and psychiatrists were assessed by a one-way analysis of variance (ANOVA) test for continuous variables or by a chi-square test for categorical variables. Odds ratios (OR values) for all demographic variables were also calculated for sub-threshold or mild depression. Of the 1315 participants, 964 (109 depressed patients, 723 members of the general population, and 132 psychiatrists) who had experienced sub-threshold depression or depressive symptoms for more than one day during the last year were asked about preferred methods for dealing with sub-threshold depression or depressive symptoms. A total of 990 patients who had ever used self-help methods to ameliorate depression or sub-threshold depression were asked to assess their use, and the perceived helpfulness, of each self-help method. The discrepancy in the number of respondents derived from the step-by-step design of the online survey, which screened access to subsequent questions based on answers to previous ones.

Expectations about whether each self-help method would overcome depressive symptoms and perceptions about the effectiveness of each self-help method were rated on a five-point Likert scale, with higher figures indicating greater self-reported helpfulness. We used logistic regression analysis to compare differences among the three groups. Group differences in mean ratings were analyzed by ANOVA with *post hoc* analysis using Tukey's method. Because the mean ages of the three groups differed statistically, multivariate analysis of covariance (MANCOVA) was also performed to compare the mean ratings of the perceived helpfulness of each self-help method among the three groups after adjusting for age as a covariate. Group differences in experiences with and intentions to use self-help methods for sub-threshold depression were analyzed with chi-square tests. All analyses were performed using SPSS 17.0 software (SPSS, Inc., Chicago, IL, USA) with the threshold for statistical significance set at $p < 0.05$.

Table 5. Use and perceived helpfulness of each self-help method

	Use			Perceived helpfulness				Tukey's HSD		
	General population			Patients				Psychiatrists		
	Total (n=990)	Patients (n=83)	General population (n=746)	Psychiatrists (n=161)	Total	Patients (n=83)	General population (n=746)	Psychiatrists (n=161)	General population – Psychiatrists	General population – Patients
Health supplements										
Ginseng	69.6	7.2	79.6	55.3	2.49 (0.84)	2.17 (0.98)	2.54 (0.82)	2.21 (0.86)	p=0.002	p=0.002
Aminoic acid or Taurine	65.7	2.4	78.2	40.4	2.47 (0.82)	2.00 (1.41)	2.53 (0.82)	2.02 (0.74)	p<0.001	p<0.001
Omega-3	64.5	4.8	77.1	37.3	2.50 (0.85)	1.75 (0.96)	2.54 (0.85)	2.15 (0.80)	p=0.001	p=0.002
<i>Acanthopanax senticosus</i>	0.8	3.6	75.2	23.6	2.39 (0.81)	2.00 (1.00)	2.43 (0.81)	1.76 (0.59)	p<0.001	p<0.001
Carbohydrate-rich, Protein-poor diet	78.9	7.20	89.0	68.9	2.50 (0.90)	2.50 (1.52)	2.55 (0.90)	2.34 (0.84)	p=0.002	p=0.001
Dietary										
Caffeine	86.2	16.9	93.6	87.6	2.61 (0.93)	2.50 (0.85)	2.69 (0.92)	2.22 (0.85)	p<0.001	p<0.001
Forestry	84.9	15.7	93.4	81.4	3.65 (0.89)	3.15 (0.90)	3.69 (0.90)	3.47 (0.85)	p=0.004	p=0.025
Meditation	87.5	20.5	93.8	92.5	3.21 (0.91)	2.88 (1.05)	3.19 (0.96)	3.31 (0.87)	p=0.154	
Bibliotherapy	91.6	30.1	97.3	96.9	3.03 (0.92)	2.68 (1.07)	3.06 (0.93)	2.97 (0.79)	p=0.082	
Computerized intervention	69.4	4.8	82.8	40.4	2.70 (0.99)	2.75 (1.71)	2.74 (0.98)	2.35 (0.93)	p=0.012	p=0.008
Psychological										
Humor	95.1	47.0	99.4	100.0	3.81 (0.81)	3.25 (1.27)	3.85 (0.80)	3.76 (0.70)	p=0.079	p<0.001
Prayer	78.4	47.0	83.1	72.7	3.02 (1.05)	3.03 (1.04)	2.94 (1.04)	3.50 (1.00)	p<0.001	p<0.001
Recreation	91.0	26.5	98.8	88.2	3.63 (0.81)	3.41 (0.96)	3.66 (0.82)	3.54 (0.69)	p=0.114	
Pets	9.7	18.1	80.1	44.7	3.02 (0.98)	2.60 (1.06)	3.02 (0.99)	3.17 (0.79)	p=0.112	
Exercise	95.7	62.7	98.5	99.4	3.17 (1.06)	3.17 (1.06)	3.69 (0.78)	3.83 (0.68)	p<0.001	p<0.001
Relaxation	74.6	19.3	80.1	74.5	3.13 (0.87)	2.81 (1.22)	3.09 (0.87)	3.38 (0.76)	p=0.002	p=0.003
Lifestyle change (Yoga, Qigong)										
Aromatherapy	66.2	4.8	78.6	40.4	2.94 (0.86)	2.75 (0.50)	2.97 (0.86)	2.60 (0.86)	p=0.004	p=0.003
Massage	73.0	6.0	83.2	60.9	3.15 (0.89)	2.60 (1.52)	3.19 (0.88)	2.99 (0.91)	p=0.053	
Music	89.9	15.6	97.5	93.2	3.44 (0.87)	3.46 (0.78)	3.49 (0.88)	3.18 (0.76)	p<0.001	p<0.001
Sensory/physical	54.7	0.0	68.5	19.3	2.56 (0.87)	—	2.60 (0.87)	2.00 (0.73)	p<0.001	

Abbreviations: D, patients with depression; G, general population; P, Psychiatrists

Note: Perceived effectiveness is shown as mean (standard deviation [SD]). Statistical values were calculated using one-way analysis of variance; *post hoc* analysis by Tukey's HSD. *Post hoc* analysis was not conducted on those who used natural progesterone cream because no participant in the depressed group had used this method. Percentages (%) were calculated from all participants with experience with each self-help method, including those who gave neutral answers. The values are shown as percentage (%).

Bold: Highest scored three self-help methods of use frequency and helpfulness.

Results

The mean age of patients (52.66 ± 18.87 years) was higher than that of the general population (41.29 ± 11.41 years) or psychiatrists (42.62 ± 8.46 years) ($F = 51.23$, $p < 0.001$). The psychiatrist group included a higher proportion of males ($n = 164$, 81.6%) than did the patient group ($n = 36$, 31.6%) or the general population ($n = 494$, 49.4%) ($\chi^2 = 92.093$, $p < 0.001$). The marital status, educational level, and monthly family income of patients and members of the general population did not differ (not assessed in psychiatrists). A total of 73.2% of all participants ($n = 963$), 72.3% of the general population ($n = 723$), and 65.7% of psychiatrists ($n = 132$) reported having experienced depressive symptoms during the last year. We found no differences among the groups in terms of the prevalence of experience with self-help methods for sub-threshold depression or depressive symptoms. Being female (male to female: $p < 0.001$, OR = 0.41, 95% CI = 0.31–0.55) and being currently unmarried or separated ($p = 0.047$, OR = 1.42, 95% CI = 1.01–1.99) were risk factors for sub-threshold depression only in the sample drawn from the general population. Groups with and without experience with sub-threshold depression did not differ with respect to educational level or monthly income.

Table 2 presents data on expectations held about the ability of different methods to overcome sub-threshold depression or depressive symptoms. The general population held more positive expectations about self-help (mean [M] = 3.63, standard deviation [SD] = 0.86) than about other methods. However, visiting a psychiatrist was regarded as the most effective method by psychiatrists ($M = 4.23$, $SD = 0.74$) and patients with depression ($M = 3.80$, $SD = 0.84$). Although all participants had relatively negative expectations about visiting non-psychiatric professionals (psychologists, social workers, or primary physicians; $M = 2.40$, $SD = 0.68$) and about just waiting for spontaneous remission ($M = 1.88$, $SD = 0.93$), a considerable portion of participants with experience with sub-threshold depression preferred visiting non-psychiatric professionals ($n = 77$, 8.0%) or waiting for remission ($n = 171$, 17.7%). However, individuals with experience with sub-threshold or mild depression were more likely to use self-help methods ($n = 626$, 64.9%) than to visit either a psychiatrist ($n = 90$, 8.3%) or a non-psychiatric professional. Unlike patients with depressive disorder, who preferred visiting a psychiatrist ($n = 52$, 47.7%) over using self-help methods ($n = 31$, 28.4%), members of the general population ($n = 486$, 67.2%) and psychiatrists ($n = 109$, 82.6%) preferred using self-help methods to overcome sub-threshold depression or depressive symptoms (Table 3).

Experience with and expectations of each kind of self-help method are presented in Table 4. Participants in all groups who had experienced sub-threshold depression or depressive symptoms ($n = 990$) tended to use psychological methods ($n = 693$, 70.0%) and lifestyle change ($n = 691$, 69.8%). Psychiatrists and patients were most likely to change their lifestyle when they experienced sub-threshold depression or depressive symptoms (88.2% and 75.9%, respectively). Compared with the prevalence of experience with psychological methods among psychiatrists and the general population, patients in the depressed group had a relatively low rate of experience with psychological methods (44.6%). With the exception of dietary methods, experience with, and intention to use, self-help methods differed among the three groups after adjusting for age and sex. The rate at which those who had not experienced sub-threshold depression during the last year ($n = 25$) intended to use self-help methods in the future did not differ significantly from the rate at which they actually used self-help methods. However, patients diagnosed with depression were less likely (38.7%) than were other groups to express an intention to use psychological methods. However, none of the psychiatrists intended to take health supplements, whereas some patients with depression (16.1%) and some members of the general population (22.8%) expected health supplements to be effective. Thus, the three groups differed significantly with respect to their intentions to use self-help methods.

Exercise was the most widely used self-help method (95.7%) among participants who had used these methods. This was followed by humor (95.1%) and bibliotherapy (91.6%). Members of the patient group were less likely to use all self-help methods, and they assessed all the self-help methods that they had used negatively ($F = 53.58$, $p < 0.001$). The patient group used exercise to deal with depression most frequently; this was followed by humor and prayer. However, more than half of the self-help methods were used by less than 10% of the patients. Members of the general population frequently used humor, recreation, and exercise, activities included in the category of lifestyle change. Psychiatrists frequently used humor, exercise, and recreation. Exercise was used frequently by members of all groups.

The general population perceived all methods involving health supplements and dietary interventions to be less effective than did psychiatrists. The psychiatrist and patient groups did not differ in this regard. Relaxation and prayer were evaluated more positively by psychiatrists than by others. In contrast, aromatherapy and music, approaches in the physical/sensory category, were viewed more positively by the general population than by psychiatrists. Only

five (meditation, bibliotherapy, recreation, pets, and massage) of the 20 self-help methods examined were perceived equally among the three groups. All of these results, except that for massage, whose perceived helpfulness differed significantly between members of the general population and others (unadjusted $F = 3.144$, $p = 0.053$; adjusted $F = 20.58$, $p < 0.001$), were maintained after adjusting for age as a covariate (Table 5).

Discussion

To the best of our knowledge, this is the first study to investigate differences in the preferences for and perceived helpfulness of self-help methods for depressive symptoms among the general population, patients with depression, and psychiatrists. We confirmed our hypothesis that these groups would show both similarities and differences in terms of these issues. More specifically, the general population differed from patients with depression and psychiatrists in their preference for and actual use of self-help methods. Patients and psychiatrists expected that meeting with psychiatrists would be a more helpful intervention than would any of the other methods examined in this study. However, members of the general population had the highest expectations of self-help methods. Self-help methods were not only widely used, but they were also expected to be the most effective method for managing depression among the general population. Such high expectations about self-help methods may be attributable to their lower cost and easy accessibility and to the stigma attached to psychiatric treatment (Griffiths *et al.*, 2011; Park and Kim, 1998).

Members of the general population and psychiatrists did not differ with regard to the perceived effectiveness of the most widely used self-help methods. This finding is consistent with a recent study that showed that popular ratings of the probable helpfulness of effective self-help methods such as exercise tended to be consistent with expert ratings (Morgan *et al.*, 2012). Exercise, the most widely used self-help method in our study, has been shown to be effective for depressive disorder (Sjosten and Kivela, 2006). Given that studies of individuals with subclinical depression include participants who have been depressed for different durations (Morgan and Jorm, 2008), the type and amount of exercise recommended should be examined in future research. Experts should be aware that exercise is an appropriate self-help method that is preferred both by patients and by experts themselves. However, humor, although widely used, is supported by scant evidence as an intervention for depression, especially with respect to its long-term efficacy

(Danzer *et al.*, 1990; National Evidence-based Healthcare Collaborating Agency, 2010).

Furthermore, we found significant differences among the three groups in preferred self-help methods. The most prominent difference between the general population and psychiatrists related to self-help methods involving health supplements and diet. Although all of the approaches in this category were considered not consensually accepted by the experts in this study, a considerable portion of participants who had used self-help methods for their depressive symptoms used health supplements and dietary interventions. This tendency to prefer health supplements was particularly remarkable in the general population; for example, four kinds of health supplements were used by more than 75% of the general population. However, due to inadequate or absent evidence, none of the health supplements or dietary methods examined were classified as "consensually accepted" by experts, according to the Delphi method used in this study. Clinicians should be aware that despite this dearth of evidence about efficacy, the belief in the efficacy of and the use of certain foods as antidepressants are widespread in the general population. Similarly, a previous study showed that 57% of participants from a general community believed that health supplements were effective for ameliorating depressive symptoms (Jorm *et al.*, 2002).

We hypothesize that preferences for inappropriate self-help methods such as health supplements, dietary interventions, or a progesterone cream may be caused by a lack of reliable information about the efficacy of these approaches and/or by the unavailability of effective self-help methods. Self-help methods such as exercise and bibliotherapy have proven efficacy. However, little information about how to perform them is available. For example, questions about the kind, frequency, and duration of exercise need to be answered before using this method. In other words, a lack of detailed and appropriate information about self-help methods may result in the use by the Korean population of approaches that have little support but that are easy to use. Additionally, self-help methods may also be preferred because they can save money. However, *Acanthopanax senticosus* root extract, for example, which is believed by members of East-Asian cultures to have an antidepressant-like effect (Fujikawa *et al.*, 2005), costs even more than routine psychiatric treatment with antidepressants in Korea (Jung, 2010).

This divergence between expert opinion and actual patterns of use not only causes problems related to cost-effectiveness but also can exacerbate the illnesses by delaying therapeutic intervention. Indeed, it has been reported that sub-syndromal depression may be a prodromal symptom

of a major depressive episode. Thus, proper treatment in the early course of depression is important to prevent the aggravation of depressive symptoms (Kovacs and Lopez-Duran, 2010) and/or the worsening of the course of the illness. It is well known that early intervention into depressive symptoms usually results in better treatment outcomes (de Diego-Adelino *et al.*, 2010).

Another significant finding to emerge from this study was that patients currently experiencing sub-threshold to mild depression who were currently receiving psychiatric treatment were less likely to use self-help methods than were the general population and psychiatrists. These findings suggest that it may be beneficial to add a proven self-help intervention to their regimens. We would hypothesize that feasibility constitutes one barrier to this combined approach. Although computerized intervention has been reported to be an effective self-help method for depression and depressive symptoms (Stuhlmiller and Tolchard, 2009), only a few patients had used this approach. Patients with depression usually experience lack of motivation and energy as part of their symptoms. Thus, even those self-help methods with good efficacy are unlikely to be used by patients unless they are easy to use, strongly recommended by doctors, and strongly supported by public opinion.

This study was limited in that the severity of depression was measured only in those with depressive disorder. Measurement of this variable among the general population and among psychiatrists would have improved efforts to determine relationships between current level of depression

and the effectiveness of self-help methods. Moreover, the frequency and specific characteristics of self-help methods were not surveyed. For example, “recreation” and “humor” are so general in meaning that participants in this study may have had different understandings of them. Another major limitation of this study involves its use of self-reports. Indeed, inconsistencies in the data were often observed during the analysis.

Despite these limitations, our results raise important issues for mental health experts. The recognition by experts of the existence of a gap between their own attitudes and those of the general population may facilitate development of treatment alliances and provision of psychoeducational services. Accurate information (e.g. data on efficacy and detailed instructions about use) about self-help methods for depression should be provided to the population as soon as possible to protect them from wasting time and money on ineffective self-help methods supported by weak evidence. Given that a mild state of depression can sometimes be exacerbated by waiting before a therapeutic intervention is implemented, the need to provide reliable information about self-help methods cannot be overemphasized.

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