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Korean-Americans' Knowledge about Depression and Attitudes about Treatment Options

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Abstract

The purpose of this pilot study was to explore first-generation Korean-Americans' knowledge about depression and attitudes about depression treatment options. Self-report survey data were gathered from 73 first-generation Korean-Americans (KAs) using instruments developed for this study. The data were analyzed using descriptive and inferential statistics including *t*-tests. Data indicated participants lacked knowledge about depression. Among all depression treatment options, exercise was the option that first-generation KAs were most willing to try and was rated as having the least shame attached to it. Taking an antidepressant was the option KAs reported being most unwilling to try and had the highest shame attached to it. No significant differences in knowledge about depression and attitudes about depression treatment options were found between low and high acculturation groups, with the exception that the high acculturation group demonstrated more agreement than the low acculturation group with the item that emotional symptoms, such as mood changes, can be depression symptoms. These results suggest that initiating depression treatment with exercise may be the most acceptable starting point in treating depression in first-generation KA immigrants.

Growing evidence indicates high levels of depression symptoms but low utilization of mental health services among Korean-Americans (KAs). Using a screening tool, approximately 30–49% of the first-generation KAs reported suffering from depression (Kim, 2012; Kim & Rew, 1994; Oh, Koeske, & Sales, 2002), while only 17% utilized mental health services (Lee, Han, Huh, Kim, & Kim, 2014). Within the Western medical model, depression is understood to be caused by biological changes in the neurochemistry of the brain (Katon & Ciechanowski, 2009). However, within the Oriental medical model, depression is considered as an imbalance in the flow of *Qi* (energy), *Yin* (cold) and *Yang* (hot) within the person (Shin, 2010; Yeung & Kam, 2009). KAs who are more intimately familiar with the Oriental medical model may lack general knowledge about depression as based on the Western medical model.

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In the Western medical model, the most-effective, evidence-based depression treatments are antidepressant medications, combined with psychotherapy (Katon & Ciechanowski, 2014). Unfortunately, KAs tend not to seek out these treatments due to misconceptions of mental illness and treatment and the stigma attached to mental illness and treatment, as well as the lack of culturally and linguistically appropriate mental health services in the USA (Shin, 2002). However, lifestyle changes and complementary and alternative medicine (CAM) are widely used in Korea, both as general self-care strategies and specifically as a self-management strategy for depression (Bae, 2004). Yet, it is not empirically known how KAs perceive depression as defined by the Western medical model or depression treatment options that include Western, lifestyle, and CAM treatment approaches.

Previous studies have found that the first-generation KAs tend to express a more positive effect as they become more acculturated to American culture (Jang, Kim, & Chiriboga, 2005; Kim, Seo, & Cain, 2010), but it is not known if this effect extends to their knowledge about depression or their attitudes towards more Westernized treatment options. In other words, does acclimation to a particular culture also impact willingness to accept a foreign medical model? The purposes of this study were: (1) to explore KAs' knowledge about depression and their attitudes towards depression treatment options and (2) to determine if knowledge and attitudes varied between individuals based on levels of acculturation. The knowledge obtained from this study may assist healthcare providers in finding culturally appropriate treatment options for KAs suffering from depression.

DEPRESSION AND DEPRESSION TREATMENT OPTIONS

Diagnosis

Using the Western medical model, the diagnosis of depression is typically based on the identification of depression symptoms and the levels of the symptoms using screening instruments (Williams & Nieuwsma, 2014). Depression can be expressed as emotional symptoms, such as depressed mood, loss of interest or pleasure, and feelings of guilt or low self-worth, or physical symptoms, such as fatigue, headache, abdominal pain, and muscle tension (American Psychiatric Association, DSM-5, 2013; Katon & Ciechanowski, 2009). Depression is likely to increase both the perception and the impact of the physical symptoms (Katon & Ciechanowski, 2009).

Depression Treatment Options

Table 1 summarizes Western, lifestyle, and CAM treatment options for depression, based on effectiveness ratings offered at 'BluePages' (www.bluepages.anu.edu.au/; 2014). Developed and maintained by the National Institute for Mental Health Research at the Australian National University, BluePages is an online tool that uses the latest scientific evidence to compile and rank treatments for depression. The hierarchy of evidence is integral to evidence-based practice in nursing and reflects the relative authority of various types of biomedical research (Gray, 2014; Greenhalgh, 1997). 'UpToDate' is another web-based resource that helps clinicians diagnose and research treatment for a variety of medical conditions, including depression. Psychotherapy, along with pharmacotherapy, is recommended as a first-line therapy for depression in UpToDate (Katon & Ciechanowski,

2014), while BluePages rates psychotherapy as an *effective* treatment (BluePages, 2014). This paper followed recommendations for depression treatment from UpToDate.

Very Effective and Effective Treatments

Antidepressant pharmacotherapy and psychotherapy are first-line treatments that are effective, well researched, and widely used (Katon & Ciechanowski, 2014). Using both pharmacotherapy and psychotherapy is more effective than using either modality independently (Cuijpers, Dekker, Hollon, & Andersson, 2009; Cuijpers, van Straten, Warmerdam, & Andersson, 2009). A systematic review of 14 randomized controlled trials revealed that, in the primary care setting, antidepressants were more effective in treating depression than placebos (Arroll et al. 2009). However, in the USA, only 25–30% of individuals with depression received an effective level of treatment using either antidepressants or psychotherapy (Wang, Berglund, & Kessler, 2000). In addition, ethnic minorities were largely missing from the scientific inquiry that defines effective treatment (Maranda, Schoenbaum, Sherbourne, Duan, & Wells, 2004).

None of the lifestyle or CAM interventions for depression are categorized in BluePages as *very effective* (BluePages, 2014). However, exercise is categorized as an *effective* treatment and has been recommended as an option under lifestyle interventions for depression (BluePages, 2014; Sarris, Neil, Coulson, Schweitzer, & Berk, 2014). Individuals who exercised showed fewer depression symptoms, while insufficient exercise might be a risk factor for the development of depression (Sarris, Kavanagh, & Newton, 2008; Sarris et al. 2014).

UpToDate also recommends light therapy (i.e., phototherapy) as a first-line therapy for patients who are not actively suicidal, have contraindications to or cannot tolerate antidepressants, or have previously responded well to phototherapy (Saeed & Bruce, 2014).

A series of well-controlled trials has shown that light therapy was effective for seasonal affective disorder (Jorm, Christensen, Griffiths, & Rodgers, 2002). A meta-analysis of trials revealed that the brighter the light, the better the response (Lee & Chan, 1999). In a double-blind randomized controlled trial, light therapy was as effective as antidepressants (Lam et al. 2006). However, in one study, the drop-out rate was 50% due to the lengthy (90 min) treatment sessions (Lande, Williams, Gragnani, & Tsai, 2011).

Promising and Ineffective Treatments

Both a double-blind, randomized, placebo-controlled study (Allen, Schnyer, & Hitt, 1998) and a single-blind, placebo-controlled study (Röschke et al. 2000) found that not only did acupuncture help depression, it might be as effective as antidepressant drugs. Once-weekly acupuncture was shown to be as effective as twice-weekly psychotherapy treatment (Yeung, Ameral, Chuzy, Fava, & Mischoulon, 2011). No difference was found between the acupuncture-only treatment group and the group receiving both acupuncture and Chinese herbs (Lyons, van der Watt, Shen, & Janca, 2012). In a review of five randomized controlled trials on yoga for depression, all studies reported positive findings of yoga (Pilkington, Kirkwood, Rampes, & Richardson, 2005). In a pre-post intervention study, 8-week yoga intervention was effective in decreasing depression symptoms (Kinser, Bourguignon, Taylor,

& Steeves, 2013). Using meta-analysis, the mean effect size for improving mental health was 0.5 among 18 studies that used Mindfulness-based stress reduction intervention (Grossman, Niemann, Schmidt, & Walach, 2004). Mindfulness meditation also increased the quality and duration of sleep for 6 months after completion of intervention (Kreitzer, Gross, Ye, Russas, & Treesak, 2005). In a pre-post control group study, yoga meditation was found to be effective for patients with depression and anxiety (Srivastava, Talukdar, & Lahan, 2011). Lastly, clinical trials have found the popular medicinal herb, St John's wort, not effective for treatment of depression and UpToDate does not recommend its use for depression treatment (Hypericum Depression Trial Study Group, 2002; Rapaport et al. 2011; Saper, 2014; Shelton et al. 2001).

CAM Options for Depression Treatment

Researchers have found that up to 12% of the US population used CAM options to manage depression (Barnes, Powell-Griner, McFann, & Nahin, 2004). Psychiatric inpatients (61% of whom had depressive disorders) used herbal therapies most frequently (44%), followed by mind-body therapies (30%), and finally, spiritual and other healings (30%) (Elkins, Rajab, & Marcus, 2005). However, most respondents stated that they did not discuss use of CAM options with mental healthcare providers (Elkins et al. 2005). Asian-American adults (43%) are more likely to use CAM options to treat depression than European-American (36%), or African-American adults (26%) (Barnes et al. 2004). In Korea, a web-based CAM depression management program is available that summarizes the effects of relaxation, aromatherapy, meditation, music therapy, horticulture therapy, art therapy, and writing therapy (Bae et al. 2009).

DEPRESSION AMONG KOREAN-AMERICANS

Prevalence

Using scores computed through the Center for Epidemiologic Studies-Depression (CES-D) scale (Radloff, 1977), approximately 40% of first-generation KAs (Oh et al. 2002); 30% of first-generation KA parents (Kim, 2011b); 49% of first-generation KA women (Kim & Rew, 1994); and 40–60% of KA adolescents (Kim & Cain, 2008; Nam, 2013), reported cut-score (i.e., 16) or higher in CES-D, indicating they were depressed. Further, the levels of depression symptoms found in the KA population were higher than those found in studies of the US general public (Radloff, 1977), European-Americans (Henderson et al. 2005), and other Asian-Americans (Yeh, 2003).

Acculturation and Depression

Acculturation is the phenomena of sequential psychologic changes that occur as a result of continuous and direct contact between individuals of different cultures (Berry, 2006). Generally, first-generation KA adults maintain their Korean language, cultural values, and customs while adopting the English language and some cultural values and customs of the USA (Kim & Wolpin, 2008). The Korean cultural norm is to not express personal positive emotions, such as happiness and satisfaction (Jang et al. 2005; Park & Bernstein, 2008). However, first-generation KA immigrants tend to express more positive affect as they acculturate into the USA because they adopt the US-based open expression of positive

affect. This may contribute to lower CES-D scores among highly-accultured KA immigrants (Jang et al. 2005). Kim et al. (2010) found adaption of American culture by first-generation KA immigrants was positively related to more expression of positive affect items but maintenance of Korean culture by the same sub-group was not related to positive affect items. This phenomenon related to acculturation was not found among KA adolescents and their scores of positive items were similar to those of American adolescents, with one exception; KA adolescents reported enjoying life less than their counterparts (Kim, Landis, & Cain, 2013).

First-generation Korean-Americans' Beliefs about Depression

A study of 70 first-generation KAs found that study participants tended to perceive depression based on the Oriental medical model in which wellbeing is achieved through a balance of *yin* and *yang* (Shin, 2010). Depression was viewed as an imbalanced self in mind, body, and the environment. This imbalance can be attributed to stressful situations related to life as an immigrant; medical problems, such as hormonal changes related to menopause, or punishment from God for wrongdoings. When study participants were depressed, they experienced changes in affect (e.g., suppressed anger), cognition (e.g., shame), and behavior (e.g., complain of physical illness). Shin (2010) found that first-generation KAs, in her study, tended to express their emotional distress with somatic symptoms, such as headaches.

Help-seeking Behaviors

First-generation KAs often delay seeking treatment for depression. After the onset of symptoms, first-generation KAs took an average of 5.3 years to get a psychiatric consultation for depression (Shin, 2002). KAs usually tried solitary coping strategies (e.g., self-reliance, prayer, and faith) and relied on family, friends, and formal service interventions (e.g., primary care providers, Oriental medicine practitioners, social service providers, and ministers) before they used psychiatric services (e.g., psychiatric emergency services, inpatient hospitalization, and outpatient services). Barriers to seeking psychiatric help included the high cost of services, stigma attached to depression, a lack of culturally appropriate intervention, a lack of available services with bilingual and bicultural therapists, a lack of information about available services, and geographic proximity (Shin, 2002) to service providers. Only 17% of the first-generation KA participants who scored as having clinical depression or thoughts of death/self-injury using the Patient Health Questionnaire (PHQ-9K) reported utilizing mental health services (Lee et al. 2014).

METHOD

Design and Sample

This study used a cross-sectional, correlational research design. Participants were 73 first-generation KA parents who participated in the Korean Parent Training Program. The power analysis showed 84% power to detect differences between groups of 0.7 standard deviations (SD; Cohen's $d = 0.7$), with the sample size of 72. KAs in this study were defined as persons born of ethnic Korean parents; and residing in the USA at the time of the study. Even though permanent residents and sojourners are not technically KAs, psychologists include them under the term 'Korean-American' in research because of the limited number of accessible

participants (Uba, 1994). In this study, there were 15 males (20.5%) and 58 females (79.5%). The mean age of participants was 37.05 (SD = 4.24) years. All 73 participants were born in Korea and had lived in the USA for an average of 13.27 (SD = 9.48) years. Participants had received an average of 16.62 (SD = 1.52) years of education. In total, 37 (51%) participants were US citizens, 24 (33%) were permanent residents, and 10 (14%) were temporary residents. Data were missing for two (3%) participants. A total of 53 (73%) participants identified themselves as Korean, 19 (26%) identified themselves as Korean-American, and one participant did not respond to this question.

Instrumentation

The *Knowledge about Depression* tool was developed to assess KA's knowledge about common, biomedical aspects of depression. This six-item questionnaire was based on information about adult depression and was designed to assist primary care providers in speaking with patients who were reluctant to accept the diagnosis of depression (Katon & Ciechanowski, 2009). A sample statement is: 'Depression is common.' Participants respond to statements using a 5-point, Likert-type scale that includes: 'strongly disagree = (1)' to 'half agree = (3)' and 'strongly agree = (5).' Scores for each item range from 1 to 5, with a higher score indicating knowledge of depression that is more aligned with common biomedical information, as contained in the Western medical model. Cronbach's alpha reliability for this KA study sample was 0.86.

The *Attitudes about Depression Treatment Options* (AADTO) was developed to assess participants' attitudes on nine, evidence-based depression treatment options, including 'very effective' (antidepressant, counseling); 'effective' (exercise, light therapy); 'promising' (acupuncture, yoga, relaxation therapy); or 'not effective/not studied' (meditation, St John's wort). Since KAs might not be familiar with the term 'psychotherapy', the term 'counseling' was used instead. The AADTO assesses participants' views of these treatment options in relation to willingness and shamefulness. Willingness items ask participants to check the 'degree to which you are willing to try' a specific treatment option. Shamefulness items ask participants to check the 'degree to which seeking this treatment would make you feel ashamed or embarrassed.' Participants respond to statements using a 5-point, Likert-type scale that includes: 'not at all = (1)' to 'a little = (3)' and 'a great deal = (5).' Scores for each item range from 1 to 5, with higher scores indicating a greater willingness to try an option and/or a higher level of shame associated with an option. The AADTO also included two open-ended questions, so that the respondent could indicate: (1) the treatment he/she was most willing to try and (2) the one he/she was least willing to try. Cronbach's alpha reliability for willingness was 0.86 and 0.85 for shamefulness.

The *Acculturation Rating Scale for Mexican-Americans-II* (ARSMA-II) was developed to assess the level of acculturation (Cuellar, Arnold, & Maldonado, 1995) among Mexican-Americans. The original 12-item ARSMA-II consists of two sub-scales that measure Mexican Orientation and American Orientation, compatible with Berry's (2006) framework. The English version of ARSMA-II was translated into Korean and adopted for Korean-Americans using forward and backward translation (Brislin, 1970). This questionnaire asks about language, ethnic behaviors, and ethnic interactions. Sample items are: 'I speak

Korean' and 'I speak English.' The sub-scales include American Orientation (AO) and Korean Orientation (KO). Participants respond on a 5-point, Likert-type scale from 'not at all = (1)' to 'almost always = (5).' Scores for each item range from 1 to 5, with higher scores indicating greater daily lifestyle practices of either American or Korean culture. The acculturation score was calculated by subtracting the KO score from the AO score. Cuellar and colleagues (1995) established concurrent validity and reliability for the original Mexican-American version. Cronbach's alpha reliability for this KA sample was 0.90 for AO and 0.86 for KO.

Procedure

The participants were recruited from six KA churches. The author visited churches to explain the study and to distribute the survey. The self-report survey included both Korean and English versions, so participants could use their preferred language. A total of 13 participants chose the English version. Each participant completed the survey at a time and in a place of their choosing, apart from the investigator. Completed surveys were mailed to the investigator using the self-addressed stamped envelope provided to each participant. The investigator's Institutional Human Subjects Review Committee approved the study, and informed written consent was obtained from each participant before participation. A \$10 gift certificate was given per family for completing the survey.

Data Analysis

Data analysis was conducted using SPSS 20. Descriptive statistics, such as means, standard deviations, ranges, frequencies, and distributions were calculated. No demographic variables were related to depression attitudes or depression treatment options. To examine the effect of acculturation, the sample was divided into two groups using a median score as a cut-off point. A median split was utilized because previous studies found it an effective indicator when dividing Korean immigrants into low and high acculturation groups (Jang et al. 2005; Kim, Cain, & McCubbin, 2006; Kim, Han, & McCubbin, 2007). Independent sample *t*-test was used to examine mean differences between low and high acculturation groups.

RESULTS

Table 2 shows means and standard deviations for each item in the 'Knowledge about Depression Scale'. The total mean score was 3.65 (SD = .74) and mean scores for each item ranged from 3.23 to 4.08. Agreement was highest with regard to the items: 'Depression is associated with both emotional and physical symptoms' (4.08 ± 0.79) and 'Depression increases both the perception and impact of physical symptoms' (4.01 ± 0.87). Agreement was lowest for the item: 'Depression is common' (3.23 ± 1.20). When participants were divided into high and low acculturation, those in the high acculturation group scored significantly higher (3.70 ± 0.85) on the item: 'Emotional symptoms such as mood changes can be depression symptoms,' than the low acculturation group (3.09 ± 0.95).

Table 3 summarizes means and standard deviations for each item in the attitudes towards depression treatment options. Overall, KAs reports on 'willingness to try' treatment options ranged from 2.18 (for St John's wort) to 4.28 (for exercise). The overall scores for

shamefulness for trying various depression treatment options were low, ranging from 1.16 (for exercise) to 2.33 (for antidepressants). When participants were divided into high and low acculturation groups, no significant difference was found between two groups in any of the items. Of the participants, 42 (58%) reported that they are most willing to try exercise as a treatment option, followed by counseling ($n = 15$, 21%), and antidepressants ($n = 6$, 9%). A total of 39 (53%) participants reported that antidepressants were the treatment option they would be most unwilling to try, followed by acupuncture ($n = 9$, 12%), and meditation ($n = 7$, 11%).

DISCUSSION

The goal of this study was to explore first-generation KAs' knowledge about depression and attitudes towards various treatment options for depression. When presented with six common biomedical aspects of depression, this sample of KAs reported half agreement to agreement overall, indicating that many did not have accurate knowledge about depression. In this study, KA participants were most in agreement with the statement, 'Depression is associated with both emotional symptoms and physical symptoms.' However, results show they did not agree on specific emotional and physical depression symptoms (i.e., items 3 and 4). When acculturation was taken into consideration, the high-acculturation KA group had more statistically significant agreement with the statement, 'Emotional symptoms, such as mood changes, could be seen as a sign of depression.' This indicates that as KAs acculturate into the USA, they may obtain knowledge about emotional depression symptoms, as defined by the Western medical model. The lowest level of agreement between participants regarding the statement that 'Depression is common' could reflect a previous finding that some KAs perceive depression as a consequence of their immigrant situation, rather than as a legitimate mental illness (Shin, 2010). This misattribution may also cause KAs to delay in seeking treatment; a delay that has been demonstrated in earlier studies (Shin, 2002).

First-generation KAs lack a general understanding of depression as informed by a Western medical model, is consistent with existing studies on Koreans' manifestation of depression. A recent study found that outpatients living in Korea who were diagnosed with a major depression disorder reported lower levels of depressed mood and guilt, including verbal and non-verbal expression of depressed mood and feelings of punishment, when compared with Americans diagnosed with a major depression disorder, after adjusting for age and sex (Jeon et al. 2013). In addition, depression symptoms may be viewed by KAs as *Hwa-byung*. *Hwa-byung* is a culture-bound syndrome that KAs experience for emotion-related disorder (American Psychiatric Association, DSM-5, 2013). Due to the stigma attached to mental illness, Koreans view the admission of mental illness as a possible invitation for criticism. However, KAs publicly accept *Hwa-byung* (Choi & Yeom, 2011; American Psychiatric Association, DSM-5, 2013; Suh, 2013). *Hwa* means 'fire and anger' and *byung* means 'illness' (Yong & McCallion, 2003). When negative emotions are suppressed in *Hwa-byung* they can manifest as any number of physical symptoms, including insomnia, fatigue, panic, fear of impending death, dysphonic effect, indigestion, anorexia, dyspnea, palpitation, generalized aches and pains, and a feeling of a mass in the epigastrium (American Psychiatric Association, DSM-5, 2013). In one study, approximately 39% of KA women have admitted experiencing *Hwa-byung*. The women reported that this experience negatively

impacted on their quality of life and, in turn, had a negative correlation to depression symptoms (Kim & Rew, 1994). One study found approximately 61–67% comorbidity between depression and *Hwa-byung* in 280 KA participants (Min & Suh, 2010). Further investigation that compares and contrasts KAs' perceptions of depression with that of *Hwa-byung*, as well as treatment options for both, would be useful.

In this study, first-generation KAs rated St John's wort as the treatment option that they were least willing to try. However, when they were asked to indicate only one treatment option that they were most unwilling to try, 53% indicated antidepressants. This discrepancy may be related to KAs unfamiliarity with St John's wort as a possible treatment option. KAs reported that they would be most ashamed to try antidepressants as a treatment option. This finding is not surprising considering KA's unwillingness to utilize mental health services. A recent study found that among 92 KAs who had clinical depression, using the Patient Health Questionnaire (PHQ-9 Korean version), only 15% reported utilizing mental health services (Lee, Han, Huh, Kim, & Kim, 2014). Healthcare professionals need to consider the negative attitudes KAs may hold regarding antidepressants, and that these attitudes may not improve even with further acculturation. Healthcare providers also need to be aware that non-adherence to antidepressant treatment regimens is common, with estimates ranging from 40–75% (Pampallona, Bollini, Tibaldi, Kupelnick, & Munizza, 2002).

Among all depression treatment options, first-generation KAs in this study chose exercise as the option that they were the most willing to try and the least ashamed of trying. No difference was found on this perception between low and high acculturation groups. Current literature strongly supports the beneficial effects of physical activity on depression. In a meta-analysis of 37 randomized controlled clinical trials testing the effect of exercise on depression, the standard mean differences for treating depression was -0.62 (95% confidence interval -0.81 to -0.42), indicating moderate clinical effect (Cooney et al. 2013). Interventions studied included aerobic exercise, such as running, cycling, walking, or dancing. Recently, one study found that a single, 15-min session of pedaling a stationary exercise bicycle decreased both saliva-free cortisol levels and subjective depression symptoms (Ida et al. 2013).

Exercise is a relatively low cost and safe intervention that has been shown to provide a range of additional health benefits (Sarris et al. 2008; Sarris et al. 2014). Some preliminary evidence suggests exercise promotes psychobiological wellbeing through benefitting the immune system, the hypothalamic pituitary adrenal axis, and the autonomic nervous system (Hamer, Endrighi, & Roole, 2012). Exercise not only benefits the neuroendocrine system but also increases an individual's sense of self-efficacy and self-esteem. To exercise, an individual must participate in activities and must develop and attain fitness goals, all of which can benefit people who are depressed (Deslandes et al. 2009). UpToDate recommends aerobic exercise or resistance training (Katon & Ciechanowski, 2014). Aerobic exercise should be 45–60 min long per session and individuals should achieve a 50–85% maximum heart rate intensity. In resistance training, individuals should do three sets of eight repetitions at 80% of maximum weight that can be lifted in a single repetition for a given exercise. Individuals should exercise 3–5 times per week for at least 10 weeks (Katon & Ciechanowski, 2014).

While this study contributes to an understanding of KAs' knowledge about depression and their attitudes towards treatment options, its limitations indicate that the findings should be viewed with caution. As a pilot study, the sample size was small and sampling bias might have occurred because participants were recruited from KA churches and not from the broader public. Therefore, the sample may not represent the overall KA population. Second, the instruments used to measure participant's perceptions and knowledge were newly developed for this study and thus, their reliability and validity has not yet been established.

CONCLUSION

Considering 30–49% of KAs report high levels of depression symptoms (Kim, 2011a; Kim & Rew, 1994; Oh et al. 2002) but also believe depression is not common (study findings), it is important to assess first-generation KA patients for depression and to find culturally appropriate treatment options for this specific, at-risk population. This study has provided information that suggests culturally appropriate treatment options for KAs. Study findings show that first-generation KAs feel a stigma toward seeking Western mental health treatments (such as antidepressants) and prefer lifestyle modifications, especially exercise. Thus, healthcare providers who work with first-generation KAs could use this information and include exercise, when appropriate, in treatment regimens for depression. In addition, providers must fully address any concerns KA patients might have toward antidepressants. Further research is needed with KA populations to compare *Hwa-byung* to depression and to test the effects of exercise on depression and *Hwa-byung* among this population.

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TABLE 1**Level of Evidence and Depression Treatment Options**

Very effective	Antidepressants, psychotherapy
Effective	Exercise, light therapy
Promising	Acupuncture, yoga, relaxation therapy
Not effective	Meditation, St John's wort

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TABLE 2

Knowledge about Depression

Statement	Total (n = 72)	Low acculturation (n = 37)	High acculturation (n = 35)	t-test for equality of means
	Mean (SD)	Mean (SD)	Mean (SD)	t
1. Depression is common	3.23 (1.20)	3.09 (1.15)	3.35 (1.25)	-0.94
2. Depression is associated with both emotional symptoms and physical symptoms	4.08 (0.79)	4.09 (0.70)	4.05 (0.88)	0.17
3. Emotional symptoms, such as mood changes, can be depression symptoms	3.41 (0.94)	3.09 (0.95)	3.70 (0.85)	-2.91 **
4. Physical symptoms, such as fatigue, headache, abdominal pain, and muscle tension, can be part of depression symptoms	3.62 (0.95)	3.40 (0.98)	3.84 (0.90)	-1.98
5. Depression increases both the perception and impact of physical symptoms	4.01 (0.87)	4.00 (0.87)	4.03 (0.90)	-0.13
6. Depression is a physical illness, associated with biological changes in neurochemistry in the brain	3.56 (0.97)	3.63 (0.91)	3.51 (1.04)	0.50
Total	3.65 (0.74)	3.55 (0.68)	3.75 (0.79)	-1.05

**
p < 0.01.

TABLE 3

Willingness and Shamefulness toward Trying Depression Treatment Options

	Willing to try					Ashamed to try				
	Total (n = 72)		Low acculturation (n = 37)		t-test	Total (n = 72)		Low acculturation (n = 37)		t-test
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Antidepressants	2.29 (1.26)	2.46 (1.34)	2.17 (1.18)	2.33 (1.33)	0.97	2.33 (1.33)	2.18 (1.18)	2.51 (1.46)	2.00 (1.12)	-1.02
Counseling	3.86 (1.23)	4.11 (1.08)	3.67 (1.31)	1.85 (0.99)	1.57	1.85 (0.99)	1.73 (0.84)	2.00 (1.12)	1.26 (0.79)	-1.12
Exercise	4.28 (1.04)	4.31 (0.93)	4.31 (1.11)	1.16 (0.61)	0.00	1.16 (0.61)	1.06 (0.35)	1.26 (0.79)	1.72 (1.05)	-1.36
Light therapy	2.53 (1.28)	2.43 (1.27)	2.67 (1.29)	1.60 (0.98)	-0.79	1.60 (0.98)	1.50 (0.92)	1.72 (1.05)	1.81 (1.19)	-0.89
St John's wort	2.18 (1.15)	2.29 (1.13)	2.11 (1.18)	1.56 (0.97)	0.62	1.56 (0.97)	1.34 (0.65)	1.81 (1.19)	1.69 (1.18)	-1.92
Acupuncture	2.22 (1.24)	2.20 (1.16)	2.28 (1.32)	1.55 (1.03)	-0.26	1.55 (1.03)	1.42 (0.87)	1.69 (1.18)	1.24 (0.61)	-1.03
Yoga	3.08 (1.41)	3.26 (1.29)	2.97 (1.52)	1.24 (0.58)	0.86	1.24 (0.58)	1.24 (0.56)	1.24 (0.61)	1.36 (0.82)	0.00
Relaxation	3.13 (1.34)	3.09 (1.09)	3.22 (1.53)	1.31 (0.72)	-0.43	1.31 (0.72)	1.27 (0.63)	1.36 (0.82)	1.27 (0.72)	-0.51
Meditation	2.96 (1.42)	2.97 (1.38)	3.00 (1.45)	1.27 (0.67)	-0.09	1.27 (0.67)	1.28 (0.63)	1.27 (0.72)		0.05

Higher mean scores indicate more willingness and/or more shamefulness.