Validation of Korean Version of Parental Depression Literacy Scale

Among Korean American Parents

BY
YOO MI JEONG
B.S. Korean University, 2002
M.S.N. University of California at San Francisco, 2009

THESIS
Submitted as partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Nursing Sciences
to the Graduate College of the
University of Illinois at Chicago, 2016

Chicago, Illinois

Dissertation Defense Committee:
Tonda L. Hughes, Chair and Advisor
Linda McCreary
Timothy Johnson, Institute for Health Research and Policy
Chang Park
Heeseung Choi, Seoul National University

ACKNOWLEDGEMENTS

This study has been completed with the strong support of my dissertation committee members. In particular, I would like to thank my advisor and dissertation committee chair, Dr. Tonda L. Hughes, for her efforts in the completion of this study. I have been very fortunate to have her as my advisor, and I sincerely appreciate her guidance and encouragement. She has taught me how to think critically in preparation for my research and teaching career. Her support and patience have helped me to overcome many challenges as an international student in the United States. I hope that I can be a wise advisor to my future students as Dr. Hughes has been to me.

I am also deeply grateful to my committee members for their enthusiasm in helping me to enhance my statistical and qualitative research skills. I am also thankful to my entire committee for encouraging me to complete this study and for their constructive comments on my dissertation efforts. I am also grateful to all the staff and faculty of the University of Illinois at Chicago who have supported my doctoral studies. Especially, I gratefully acknowledge the time and expertise devoted to reviewing my papers by Jon Mann and Dr. Alicia Matthews.

Finally, I am very thankful to my family and friends for helping me to maintain my commitment to my studies in the United States. Without my family's great support, I could have not completed this project.

TABLE OF CONTENTS

CHAPTER PAGE

I. INTRODUCTION 1
A. Background 1
B. Conceptual Framework 3
C. Problem Statement 3
D. Purpose: Adaptation of D-Lit scale and Psychometric Testing of Parental D-Lit scale 4

II. LITERATURE REVIEW 6

III. METHODOLOGY 10
A. Protection of Human Subjects 10
B. Phase I: Overview of Phase I and Phase II 11
1. Phase I: Committee Translation 12
2. Phase I: Expert Reviews I 12
3. Phase I: Focus Group Interviews. 12
a. Recruitment 12
1) Enrollment 13
b. Data collection and analysis 13
1) Data collection 13
2) Data analysis 14
c. Findings from the focus group interviews 15
1) Definition of depression 15
2) Knowledge and beliefs about cause of depression 15
3) Knowledge and beliefs about depressive symptoms 17
4) Knowledge and beliefs about treatment for depression 19
5) Knowledge and beliefs about mental health resources 19
d. Modification of the Parental D-Lit scale 22
1) Rationale for adding 12 new items 22
4. Phase I: Expert Reviews II 24
5. Phase I: Cognitive Interviews 24
a. Recruitment 24
1) Enrollment 24
b. Data collection and analysis 25
1) Data collection 25
2) Data analysis 25
c. Findings from the cognitive interviews 26
C. Phase II: Survey of the Parental D-Lit scale 26
1. Design 26
2. Research Sample and Setting 27
a. Recruitment 27
1) Enrollment 27
3. Data analysis 27
a. Exploratory Factor Analysis 27
b. Confirmatory Factor Analysis 28
c. Independent T-Tests 28
d. Correlational Analysis 28
4. Survey Instruments 28
a. Parental D-Lit scale 29

TABLE OF CONTENTS (continued)

b. Demographic Questionnaire 29
c. Vignette for recognizing symptoms of depression 29
d. The Attitudes toward Seeking Psychological Health scale 29
e. The Depression Stigma Scale 30
f. The Short version of Suinn-Lew Asian Self-Identity Acculturation Scale 30
g. Scale for exploring knowledge and beliefs about help resources for depression .. 31

IV. RESULTS 32
A. Validation of the Parental D-Lit scale 32
B. Psychometric testing of the Parental D-Lit scale 32
1. Depression Literacy, Attitudes towards Mental Healthcare Services, Depression Stigma, and Acculturation 32
2. Recognition of Depression 33
3. Validity of the Parental D-Lit scale 34
a. Description and analysis of items in the Parental D-Lit scale 34
b. Reliability of the Parental D-Lit scale 35
c. Construct validity 36
1) Exploratory factor analysis 36
2) Confirmatory factor analysis 43
3) Independent t-tests 43
d. Criterion validity: concurrent validity 44

V. DISCUSSION 47
A. Main Findings 47
B. Implications 50
1. Implications for Education 50
2. Implications for Practice 52
3. Implications for Future Research 53
C. Limitations 56
D. Conclusions 58

CITED LITERATURE 60

APPENDICES 66
Appendix A: Depression Literacy Questionnaire items (D-Lit scale) (Griffiths et al., 2004) .. 66
Appendix B: IRB approval 67
Appendix C: Flyers for focus group recruitment 69
Appendix D: Information sheet: focus group interviews 70
Appendix E: Introduction and interview guide for focus groups 72
Appendix F: Demographic questions 74
Appendix G: The modification of D-Lit scale based on focus group findings and cross-culture survey guidelines 75
Appendix H: The Parental D-Lit scale (32 items) 78
Appendix I: Flyers for cognitive interview recruitment 79
Appendix J: Information sheet: cognitive interviews 80
Appendix K: Introduction and questions for cognitive interviews 82

TABLE OF CONTENTS (continued)

Appendix L: Description of rationale for item revision based on cognitive interviews..... 83
Appendix M: Expert Review 1: Parental D-Lit scale 84
Appendix N: Expert Review 2: Parental D-Lit scale 86
Appendix O: Flyers for survey recruitment 88
Appendix P: Information sheet: survey 89
Appendix Q: Vignette for recognition of depression 91
Appendix R: Attitudes toward Seeking Professional Help scale 92
Appendix S: Depression Stigma Scale 93
Appendix T: 12-item SL-ASIA scale 94

VITA 96

LIST OF TABLES

TABLE PAGE

I. Sample characteristics: focus group interviews (n=14) 14

II. Sample characteristics: survey (n=144) 32

III. Depression literacy, attitude towards services, depression stigma, and acculturation (n=144) .. 33

IV. Description of the Parental D-Lit scale items (n=144) 34

V. KR-2O coefficient of the Parental D-Lit scale with 32 items (N=143) 36

VI. Correlation among Depression Literacy items (N=142) 38

VII. EFA of Three-factor model of the Parental D-Lit scale 41

VIII. Three-factor model of the Parental D-Lit scale 42

IX. Goodness of fit statistics for the Parental D-Lit scale 43

X. Correlations among Parental D-Lit scale scores and other scale scores 45

XI. Correlation among sub-domains of the Parental D-Lit scale (N=144) 45

XII. Depression literacy results: Parental D-Lit scale (18 items) 46

LIST OF FIGURES

FIGURES PAGE

1. Depression literacy model (adapted from Jorm, 2000) 3

2. Summary of the parental D-Lit scale adaptation process 10

3. Eigen value of the Parental D-Lit scale 39

4. Scree plot of the Parental D-Lit scale responses 40

SUMMARY

Despite their high rates of depressive symptoms, Korean American adolescents have shown lower use of mental healthcare services than adolescents of other races/ethnicities. High depression literacy has been found to be associated with positive attitudes toward mental healthcare services. As parents are the main decision makers regarding help-seeking for their children's mental health issues, it is important to understand parents' depression literacy. However, theoretically derived and validated depression literacy scales are scarce and have not been tested in the Korean American population. Therefore, a validated depression literacy scale is needed to explore depression literacy and help-seeking behaviors for depression among this population. To address this need, the Depression Literacy (D-Lit) scale developed by Griffiths and colleagues (2004) was translated into Korean and modified based on focus group interviews, expert reviews, and cognitive interviews. Using exploratory factor analysis (EFA), items of the adapted Korean-language Parental D-Lit scale were categorized into three sub-domains: (1) misperceptions about depression and its treatment, (2) knowledge about depression, and (3) knowledge about treatment of depression. These factors were tested statistically using confirmatory factor analysis (CFA).

Findings indicated that the Parental D-Lit scale has moderate reliability and validity among Korean American parents. That is, internal consistency (alpha = 0.72) and content validity (scale-level content validity index = 0.875) were acceptable. Responses to the Parental D-Lit scale indicated that this sample of Korean American parents lacked knowledge and held negative beliefs and misperceptions about depression and its management. EFA resulted in a three-factor model, and CFA showed a close fit to the data (RMSEA = 0.056). Reliability indices indicated that total scale scores are more useful in examining depression literacy than are the scores for the subscales, which had relatively low alpha values. The results support criterion validity by showing statistically significant correlations in the expected direction between depression literacy and other theoretically related concepts, such as attitudes toward mental healthcare services (+), depression stigma (-), recognition of depression (+), and acculturation (+).

Regarding construct validity, Parental D-Lit scale scores showed statistically significant mean differences for depression literacy between parents that recognized depression (M = 18.3, SD = 2.9) and those that did not (M = 16.8, SD = 4.0*; p* < .01). Although more work is needed to refine the scale, the current study results show promise regarding use of the Korean Parental D-Lit scale in educational, clinical, and academic research contexts. Additional research on the scale is needed using larger samples that include greater numbers of Korean American fathers as well as Korean Americans in other regions of the U.S.

I. INTRODUCTION

A. Background and Problem

Approximately 2.8 million adolescents aged 12 to 17 in the U.S. had depressive symptoms in 2013 (National Institute of Mental Health [NIMH], 2013). Depressive symptoms in adolescents have been associated with failure in school, delinquency, vocational problems, poor social relationships, conflicts with family members, and other suicidal and health issues (Consoli et al., 2013; McCarty, 2008; Michaud & Fombonne, 2005). Moreover, untreated or improperly treated depression poses a major risk for suicide among youth (Olfson, Shaffer, Marcus, & Greenberg, 2003). According to data from the Youth Risk Behavior Survey from the Youth Risk Behavior Surveillance System (Center for Disease Control and Prevention [CDC], 2014), which monitors health-risk behaviors that contribute to the leading causes of death and disability, Asian American adolescents (9th to 12th grade) showed the third-highest levels of depressive symptoms and suicide attempts during the 12 months before the survey (after non-Hispanic Native Hawaiians or other Pacific Islanders and non-Hispanic American Indians or Alaskan Natives). However, an earlier study found that Asian American adolescents aged 12 to 19 had the highest rates of depressive symptoms (Chen, Haas, Gillmore, & Kopak, 2011). Moreover, a recent CDC study found suicide to be the leading cause of death among Asian American adolescents aged 15 to 24 and the second-leading cause of death among Asian American adolescent boys in the same age range (CDC, 2013).

Despite the high prevalence of depression among Asian American youth aged 12 to 18 (Chen et al., 2011; NIMH, 2013), only about 9% of Asian Americans were found to have sought help for depression from healthcare services, compared to about 18% of the other races/ethnicities surveyed in the National Comorbidity Survey Replication (Abe-Kim et al., 2007). In addition, managing adolescent depression creates family, economic, and social burdens (Healthy People 2020, 2012; National Health and Medical Research Council, 2011). Early detection and treatment of adolescent depression are important starting points for lessening these burdens. Parents play a crucial role in early detection by recognizing their adolescents' depressive symptoms and are key decision makers about whether to seek mental

healthcare services for their child (Boughton & Lumley, 2011; National Health and Medical Research Council, 2011). Therefore, parental understanding of depressive symptoms and the importance of mental healthcare services play an important role in decisions about whether an adolescent receives help, and ultimately in the mental health of the child.

Koreans are one of the most recent and fastest growing Asian immigrant groups (54% increase between 1990 and 2000) in America: they rank fifth among Asian American immigrants (East-West Center, 2010). Korean Americans are believed to be underrepresented in treatment for depression because of their lack of language proficiency, insurance, and US citizenship as well as their perceptions of chronic diseases, especially mood disorders (Juon, Kim, Shankar, Han, 2004; Sin, Jordan, & Park, 2011). The lack of depression literacy has been shown to be related to low help-seeking behaviors for mental healthcare services in adolescent and young adult populations in general (Gulliver et al., 2012; Rickwood, Deane, Wilson, & Ciarrochi, 2005). Parental depression literacy may be a moderating factor between adolescents' depression symptoms and use of mental healthcare services (National Health and Medical Research Council, 2011; Rickwood et al., 2005). One study found that many adolescents did not think of healthcare providers as having important roles in mental health support (Marcell & Halpern-Felsher, 2007). In addition, adolescents perceived that family members were almost as helpful as mental healthcare services (Wilson, Deane, Ciarrochi, & Rickwood, 2005). In another study, as the families of adolescents and young adults communicated more about health issues, their use of preventive healthcare services for mental health problems was found to increase (Marcell, Ford, Pleck, & Sonenstein, 2007). If parents recognize cues or symptoms of depression among their adolescent children, and they understand the etiology of depression, they may be more willing to seek mental healthcare services for their children in a timely manner. As parents are the main decision-makers for their adolescents regarding use of healthcare services, ensuring that they are able to recognize symptoms of depression is very important.

B. Conceptual Framework

An adapted depression literacy model based on Jorm's (2000) model provided the conceptual framework for the current study (see Figure 1). According to Jorm's model, depression literacy consists of six components: (1) the ability to recognize depression, (2) knowledge and beliefs about causes and symptoms, (3) knowledge and beliefs about self-help intervention, (4) knowledge and beliefs about professional help, (5) attitudes toward help-seeking resources, and (6) knowledge of how to seek mental health information. A high level of mental health literacy has been associated with positive attitudes toward help-seeking behaviors and with higher tolerance of stigma associated with mental disorders (Jorm, 2000).

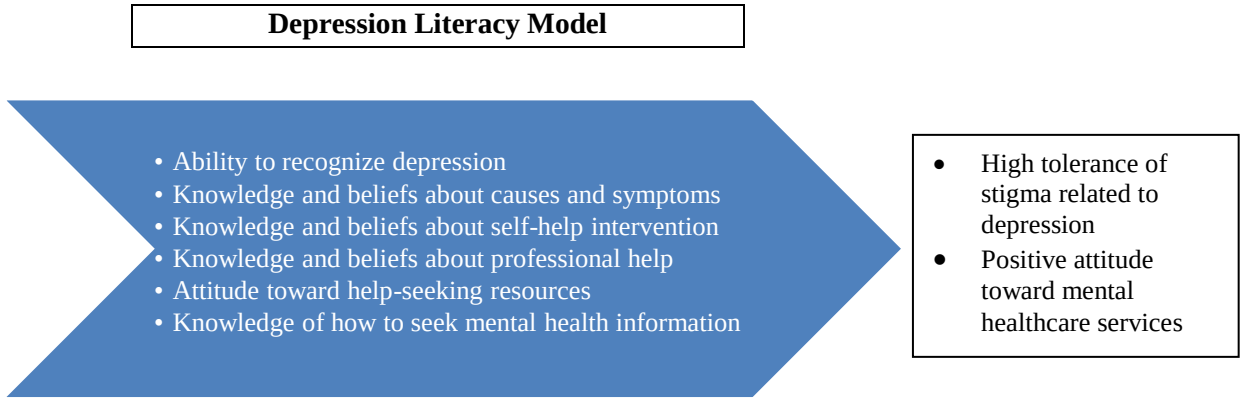

Figure 1. Depression literacy model (adapted from Jorm's mental health literacy model, 2000)

C. Problem Statement

Based on Jorm's (2000) model, depression literacy can be defined as knowledge and beliefs about depression and its management. Depression literacy is related to early seeking of and positive attitudes toward mental healthcare services (Jorm, 2000; Rickwood et al., 2005). However, few studies have used validated scales specific to depression literacy to explore this variable. The lack of measures targeting depression literacy in particular may have limited researchers' ability to capture factors specifically related to depression. Also, no depression literacy scale is available to explore parents' knowledge and

beliefs about adolescent depression and its management. Therefore, a parental depression literacy scale is required to better understand parents' knowledge and beliefs about adolescent depression and to examine the relationship between their depression literacy. The only depression literacy scale currently in use is the Depression Literacy (D-Lit) scale, which was originally developed by Griffiths and colleagues to measure depression literacy in the Australian adult population in support of cognitive behavioral therapy (Griffiths, Christensen, Jorm, Evans, & Groves, 2004). In 2012, Gulliver and colleagues developed a 22-item version of the scale broadening its focus to depression and its treatment. However, neither version of the D-Lit scale was driven by theory (personal communication with Griffiths, April 1, 2015), and neither has ever been tested among Korean American adults.

D. Purpose: Adaptation of D-Lit scale and psychometric testing of Parental D-Lit scale

The purpose of the study was to adapt and validate the 22-item D-Lit scale for use with Korean American parents who have adolescent children. The 22-item D-Lit scale (see Appendix A) was developed by Gulliver and colleagues (2012) and tested with a sample of 59 athletic Australian adults. It is a true/false test of knowledge about depression and its treatment. Total scores for the D-Lit scale range from 0 to 22, with higher scores indicating greater depression literacy. Examples of items on the D-Lit scale are "People with depression may feel guilty when they are not at fault" and "Major depression is one of the leading causes of disability and loss of quality of life in the world." Gulliver and colleagues (2012) reported adequate internal consistency (Cronbach's alpha = .70) and test-retest reliability (r = .71) for the scale in a sample of 40 Australian adults who completed both pre- and post-intervention surveys.

In the current study, after translation of the D-Lit scale into Korean, focus group interviews, expert reviews, and cognitive interviews were conducted to add, delete, and modify items. Using factor analysis, the number of factors the Parental D-Lit scale was identified and confirmed. Having a validated depression literacy scale for use with Korean American parents is needed to enhance knowledge about

Korean American parents' recognition, management, and treatment of depression, and this knowledge can be used to assist parents in finding appropriate resources to manage their adolescent children's depression.

II. LITERATURE REVIEW

A. Depression in Asian American Adolescents

Depression involves the presence of two or more of the following symptoms for at least 2 weeks: "a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide" (American Psychiatric Association [APA], 2015). Adolescence is a critical period in which psychiatric symptoms often appear, influencing the prognosis for mental illness in adulthood (National Health and Medical Research Council, 2011). Korean American adolescents have shown the highest rate of depressive symptoms among Asian American adolescents (Yeh, 2003) and the highest rates of suicide across all racial/ethnic groups (CDC, 2012).

Several researchers have found cultural differences in behaviors related to depression. Specifically, findings suggest that European American adolescents tend to exhibit externalized depressive symptoms (e.g., anger and aggression), whereas Asian American adolescents are more likely to internalize symptoms of depression (sad mood and low confidence) (Choi & Park, 2006; Weine, Phillips, & Achenbach, 1995). This difference has been attributed to traditional Asian values of collectivism that discourage social expression of anger and aggression. In addition, cultural stigma associated with depression may lead to manifestations of somatic symptoms that are more socially accepted by Asian traditional society (Chun, Enomoto, &Sue, 1996).

Cho and Bae (2005) found that the level of internalization of emotional problems among Korean American adolescents was predicted by the level of paternal education; that is, when fathers had less than a high school diploma, higher levels of somatic complaints in adolescents were observed than when fathers had higher education levels. Korean American adolescents report having fewer friends, higher levels of social isolation in peer groups than White adolescents (Rhee, S., Chang, & Rhee, J., 2003), and great difficulty communicating with parents, especially fathers (Cho & Bae, 2005). Korean American

adolescents who reported communicating well with parents and having greater acculturation were found to have higher self-esteem, which is related to lower levels of depressive symptoms (Rhee et al., 2003).

B. **Acculturation**

Acculturation is defined as the process of adjusting to a new host culture and its effects on a person's cognitions, attitudes, and behaviors, including those pertaining to health (Kuo, 2014). Acculturation level influences help-seeking for mental health concerns in the Korean American population in terms of four factors: language barriers, economic barriers, cultural barriers, and family barriers (Chu & Sue, 2011; Jorm, 2000). Lack of English proficiency, low socio-economic status, and preservation of traditional social and family values in low-acculturation groups are believed to be related to low utilization of mental healthcare services in immigrant populations (Derose, Escarce, &Lurie, 2007).

Immigration creates emotional distress in Asian American adolescents because they feel academic, family, and community pressures due to cultural and generational gaps between their traditional Asian and host cultures (Kuo, 2014; Miller et al., 2011). For example, Korean American adolescents aged 11 to 14 living in Chicago reported significant pressure associated with their academics, families, and communities due to cultural and generational gaps (Choi & Dancy, 2009). Also, family conflict, which can be a predictor of negative help-seeking behaviors for mental health issues (e.g., negative attitudes toward or avoidance of using mental health services), was found to be related to an acculturation gap among family members (Miller et al., 2011). The acculturative stressors created by cultural and generational gaps exert pressure to keep school failure, delinquency, and vocational problems due to mental illness hidden from public view. Greater acculturation has been associated with a greater likelihood of expressing depressive symptoms and with greater openness to receiving treatment for depression, such as counseling (Jang, Kim, Hansen, & Chiriboga, 2007; Quach & Hall, 2013).

C. Depression stigma

Stigma regarding mental illness is known to be a significant barrier to use of mental healthcare services in all ethnic minority groups (Golberstein, Eisenberg, & Gollust, 2008; Kanter, Rusch, & Brondino, 2008). Depression stigma includes both personal and perceived stigma. For example, personal stigma influences parents' attitudes toward depression, and perceived stigma reflects parents' beliefs about the attitudes of others (Golberstein et al., 2008). Both these types of stigma have been related to utilization of mental healthcare services (Griffiths, Christensen, & Jorm, 2008). Stigma is influenced by parents' cultural values regarding children with depressive symptoms (Kramer, Kwong, Lee, & Chung, 2002). For instance, a high level of traditionalism (i.e., adherence to native culture) in parents was associated with less use of mental healthcare services to address their adolescents' psychiatric symptoms (Kramer et al., 2002).

D. Help-seeking behavior

Help-seeking behavior is defined as attempts to obtain help from others and thus requires social relationships and interpersonal communication skills (Rickwood et al., 2005). Regarding help-seeking behaviors for mental healthcare services, more acculturated and more highly educated Korean American adults have been found to have more positive attitudes toward these services (Yi & Tidwell, 2005). In addition, positive attitudes towards mental healthcare services have been associated with high recognition of depressive symptoms and high tolerance of stigma related to depression (Griffiths et al., 2008; Jang, Chiriboga, & Okazaki, 2009).

Despite the high incidence and prevalence of depression among Asian-American adolescents, research has found low rates of self-disclosure of psychiatric symptoms to healthcare providers, and only 30% utilization of mental healthcare services is reported for this population (Garland, Lau, Yeh, McCabe, Hough, & Landsverk, 2005). Despite high rates of emotional distress, Asian immigrants show a high

tolerance of emotional distress; they appear not to perceive emotional distress as problematic as other ethnic groups (Chu & Sue, 2011).

E. **Depression Literacy**

Depression literacy is defined as the ability to recognize depression and make decisions about its treatment (Rickwood et al., 2005). Depression literacy has been found to be related to positive attitudes toward use of mental healthcare services (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006). Moreover, knowledge about mental disorders is associated with early and favorable seeking of professional help (Jorm, 2000). It has been suggested that lack of knowledge about depression is related to somatization in Korean American women and the elderly population and thus to lead to delays in seeking mental healthcare services (Park, & Bernstein, 2008; Jang et al., 2007; Jang, Gum, & Chiriboga, 2011). However, there is a lack of valid and reliable scales for measuring knowledge and beliefs about depression among Korean Americans (Jang et al., 2011), creating a barrier to understanding the association between depression literacy and willingness to use mental healthcare services for the treatment of depression. Moreover, as Korean Americans are known to have low depression literacy (Jang et al., 2011), it is important to develop a valid depression literacy scale for this population. The goal of the study was to adapt an existing depression literacy scale (the D-Lit scale) by translating the scale and modifying, adding, and deleting items for use with Korean American parents. Classical test theory was used to guide the evaluation of the reliability and validity of the Parental D-Lit scale for use with Korean American parents of adolescent children.

III. METHODOLOGY

To adapt and validate an existing depression literacy measure (Gulliver et al., 2012) with Korean American parents in the Chicago area, the PI used a two-phase, six-step mixed-method design (see Figure 2).

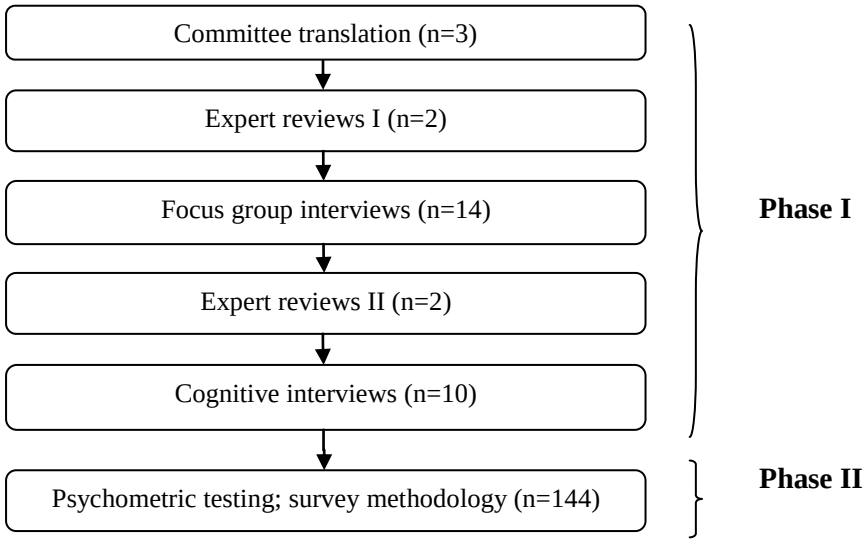

Figure 2. Summary of the parental D-Lit scale adaptation process

A. Protection of Human Subjects

A total of 168 Korean American parents participated in focus group interviews, cognitive interviews, or the survey. Before recruitment began, the study was reviewed and approved by the University of Illinois at Chicago Institutional Review Board (IRB) (see Appendix B). There were minimal risks associated with the focus groups, cognitive interviews, and survey. All participants who participated in the study were informed that they could decline to answer any questions that made them feel uneasy or that they preferred not to answer. At the beginning of each interview and the survey, the PI informed the participants of potential risks and benefits of participation in the study and of their right to refuse to answer any question or to decline to participate (National Institutes of Health [NIH], 2008). The researcher emphasized that participation was voluntary and that steps would be taken to maintain the confidentiality during and after the study. For example, participants' names were not written or otherwise recorded. In addition, all records, including consent forms, audiotapes, field notes, and paper

questionnaires, were stored in a cabinet in a locked office at the College of Nursing at UIC. Participants were informed that all written and audio-taped data from the study will be destroyed within five years after the project completion date.

B. Overview of Phase I and Phase II

In phase I of the study, the PI translated the D-Lit scale, supported by expert reviews, and added, deleted, or modified items based on focus group interviews, expert reviews, and cognitive interviews; and (2) in phase II, the PI conducted a survey to complete psychometric testing of the adapted scale. Cross-cultural survey guidelines were followed to adapt the scale in order to meet the needs of Korean American parents in terms of language and format (Harkness, 2010). This section describes phase I of the study, which consisted of (1) translation, (2) expert reviews I, (3) focus group interviews, (4) expert reviews II, and (5) cognitive interviews.

1. Phase I: Committee Translation

The original D-Lit scale, developed by Dr. Kathy Griffiths (Griffiths et al., 2004), was translated into Korean by three bilingual Korean PhD students who had nursing research experience in the U.S. To ensure semantic equivalence across languages (University of California San Francisco [UCSF], 2007), these bilingual translators independently performed forward-translation and then compared their versions to identify and resolve discrepancies in wordings and cultural concepts associated with depression (Beaton, Bombadier, Guillemin, & Ferraz, 2002). All discussions held during the translation process were documented by the PI.

Cultural discrepancies were found during translation of the original D-Lit scale. For example, the title “psychologist” is not commonly used in Korea and therefore is not widely familiar to the Korean-American population. Therefore, the decision was made to parenthetically define (i.e., counselor) the term. Also, the original scale used “people with depression” and “depressed people” synonymously, but

because Koreans generally consider “depressed people” to be sad or introverted people, this wording was changed to “people with depression” and used consistently throughout the revised scale. In addition, the scale used similar words—such as “signs” and “symptoms”—that could be confusing for Koreans. Koreans use “symptoms” more commonly in relation to health and illness; therefore, the term “symptoms” was consistently used in the translation. After all the suggestions were incorporated the translated scale underwent expert review.

2. Phase I: Expert Reviews I

To ensure conceptual equivalence across cultures (UCSF, 2007), two Korean psychiatric nurses—one in the U.S. and one in South Korea—reviewed the translated D-Lit scale questions for content validity by evaluating whether the scale contained factors and constructs similar to those in the original scale and that major constructs related to depression literacy were included. As a result of this review, four new items addressing knowledge about treatment of depression were added because the instrument lacked items to measure knowledge about side effects and effectiveness of medication, topics considered by the expert reviewers to be important components of depression literacy. The following new items were added: (18) Antidepressant medications should be taken for one’s entire life; (19) Depression cannot be fully treated and is a chronic disease that repeatedly recurs; (24) The only way to treat a child’s depression is to change the parenting style; and (25) If depression is detected and treated early, the treatment is more effective.

3. Phase I: Focus Group Interviews

Focus group interviews were conducted to explore depression literacy among Korean American parents and to evaluate the revised D-Lit scale.

a. Recruitment

Focus group interview participants were recruited from a Korean community center, Korean churches, Korean hair salons, and Korean grocery stores in the Chicago area. The PI

selected Korean American Community Services (KACS), several salons, and stores that were popular among Korean American adults. With the assistance of KACS staff, church leaders and pastors, and store owners, study flyers were distributed to Korean American parents who had adolescent children living with them. The flyers (see Appendix C) directed parents to contact the PI to learn about the study and to volunteer to participate if interested. However, the PI received no responses to the study flyers and thus expanded recruitment efforts. The PI set up tables at three Korean churches on multiple occasions to distribute flyers directly to potential participants. In addition, the PI asked church leaders of small groups within the congregation to introduce the study to their groups.

1) Enrollment

Community center staff and church leaders contacted the PI when Korean American parents indicated interest in the study and/or willingness to participate. In addition, some parents contacted the PI directly via phone or email.

Inclusion and exclusion criteria. Participants were eligible to participate if they were (1) Korean American, (2) had adolescent children aged 12 to 19 years living with them, (3) could fluently speak, read, and write Korean, and (4) could respond to the Parental D-Lit scale's questions during the focus group. Those who volunteered to participate in the study and who met the inclusion criteria provided informed consent for study participation. Fourteen parents (10 mothers and 4 fathers) met the inclusion criteria and participated in the focus group interviews.

b. Data Collection Procedure and Analysis

1) Data Collection

The PI conducted three focus groups: two with mothers (N = 10 and one with fathers (N = 4; total N = 14). Two of the interviews were conducted in a private room in the KACS and one was conducted in a private room in a Korean church. An information sheet was given to the

participants and verbally explained by the PI (see Appendix D). Data were collected using a semi-structured interview guide (see Appendix E), a demographic questionnaire (see Appendix F), and observation of participants' body language and emotional responses during the interviews. Prior to the interviews, participants completed a brief demographic questionnaire asking about their age, gender, year of immigration, level of education, and children's ages. The PI served as the moderator for the interviews. Interviews were audio-taped and notes were handwritten by the PI.

All 14 focus group participants were Korean American parents living with their adolescent children in the greater Chicago area. Residence in the U.S. ranged from 1 to 31 years (mean = 13.1, SD = 7.8), and the age range of the participants was 38 to 56 years old (mean = 44.7, SD = 4.5). All participants had a high school education or higher; the majority had bachelor's degrees. Sample characteristics are summarized in Table I.

TABLE I
SAMPLE CHARACTERISTICS FOR FOCUS GROUP INTERVIEWS (N=14)

	Mean (SD)	Frequency (%)	Range
Age	44.7 (4.5)		38-56
Gender			
Women		10 (71.4)	
Men		4 (28.6)	
Education			
≤ High school		21.4	
Bachelor		71.4	
Master or above		7.1	
Years of living in the US	13.1(7.8)		1-31
Child's age	15.2 (2.8)		11-20

2) Data Analysis

Audio tapes of the focus group interviews were transcribed, and each sentence was numbered. The PI then categorized the sentences according to common themes under the supervision of a Korean professor. To compile the data for each focus group, the PI used an Excel data spreadsheet containing three columns: participants' ID #, coding, and responses (Krueger, 2002). She used the scissor-and-sort technique to arrange thematic categories of comments, and copied and pasted comments having similar themes (Krueger, 2002). Semantic content analysis was used to categorize

sentences or phrases according to their meanings and to explore the attributes of depression and its management (Mallery, 1991).

c. Findings from the Focus Group Interviews

1) Definition of Depression

Groups 1 and 3, which consisted of mothers only (n=10), used the words "sad," "no energy," "loneliness," and "depression" to describe depression. Mothers tended to define depression as "sad"; fathers also defined depression as "sadness" or "loneliness." The fathers defined depression as "having no energy," "having low confidence," "having no interest," "having fear," "related to death," and "feeling confusion." One group of mothers defined depression as being related to physical symptoms such as lack of sleep and lack of appetite.

To define depression, both mothers' and fathers' focus groups used the word "sadness" most frequently. They also used terms such as "having no energy" and "loneliness." The fathers' group also defined depression as "having low confidence," "having no interest," "having fear," "related to death," and "feeling confusion." One mothers' group also defined depression as being related to physical symptoms such as lack of sleep and lack of appetite.

2) Knowledge and Beliefs about Causes of Depression

Korean American parents generally lacked knowledge about the biological causes of depression and held faulty beliefs about depression's causes. Based on their comments, Korean American parents appeared to believe that the main causes of depression among their adolescent children were parenting and family issues. One mother stated that parenting style is a cause of depression. Another mother said that *"When mothers or fathers nag them a lot, children get stressed and depressed."* Another participant mentioned that *"parents expecting and forcing their children to be better than other kids cause children to become depressed."* Both mothers and fathers valued open

communication with their children, and one mother stated that lack of communication between parents and children might cause children to feel depressed. One father said that he wanted to communicate with his daughter but did not know how to initiate a conversation with her.

Because they believed that depression is caused by parenting style, the parents expressed a strong sense of guilt over their children's depressive symptoms. As one mother was saying that she and her husband were too strict with their daughter, she began crying and said that her daughter's symptoms were their fault. The following quote illustrates the belief that depression is caused by style of parenting:

> *My daughter went to the library with her father…. He nagged her for half an hour on the way home because she was not in a good mood. Because he kept nagging her, my daughter said that she wanted to jump out of the car to kill herself. [crying] Even at that time, I did not try to understand my daughter's emotions. [crying] I feel bad that my daughter's symptoms have gotten worse since this happened.*

As the example above, because the parents believed that parenting style is a cause of depression, they said that changing parenting style is one main way to treat depression. Another mother stated that *"a mother should be strong and change her parenting style to more directly show her children that she cares about them."* On the other hand, five mothers felt that depression is a disease that occurs when children have little willpower and receive too much financial support from their parents. One mother stated that depression is a *"bourgeois disease"* because too much support from parents spoils their children and makes them mentally weak. Also, mothers stated that children's emotional and financial dependence on parents weakened their sense of independence to the point that they were prone to mental disorders. These beliefs led parents to feel that depression should be naturally treated by changing their parenting style, not receiving counseling therapy or taking antidepressants.

Other beliefs about the causes of depression included biological factors such as physical illness and weak nervous systems, stress, family history or genetic factors, peer group issues, personality factors (e.g., a tendency towards perfectionism), environmental factors, and low self-confidence or self-esteem. However, all the participants lacked knowledge about the biological causes of depression, and thus they were skeptical that medication would be effective in treating the condition. The parents' comments

revealed false notions about antidepressant medication (e.g. that the medication is addictive) that led them to believe that such medication should be discontinued as soon as possible:

> *There is one son from parents who are both professors, once he started taking medication since a child, he could not stop taking medication, and his symptoms were not better ever since then. He is taking medication so far….I saw him recently, but he still looks awkward. He should've not started taking medication….*

3) Knowledge and Beliefs about Depressive Symptoms

Korean American parents had observed changes in their children's habits, behaviors, and emotions that are consistent with symptoms of depression (American Psychiatric Association, 2013), but mothers and fathers had different perceptions of these changes.

Both mothers and fathers were able to accurately describe depressive symptoms in their children. For example, parents commented on lack of pleasure, sad moods that lasted a long time, low energy, oversleeping or insomnia, overeating or lack of appetite, lack of interest in doing things previously enjoyed, somatization, and suicidal ideation. However, some mothers did not notice somatization in their children. One mother then related this experience:

> *My daughter was sick a lot in 5th grade. Quite often she had a stomachache each month. She also kept saying that she was sick in 6th grade, so she went to a specialist. She was diagnosed as having IBS, which is related to stress. But I did not take her to a psychiatrist or mental health clinic because it was too expensive.*

Another mother replied to this statement:

> *A stomachache is related to stress? I do not think that my kid (son) would have physical symptoms because of stress. My son also said that he had a stomachache for a long time when he went to school 2 years ago.*

Most parents talked about gender-specific changes in their children's behavior and personality characteristics as potential symptoms of depression: they stated that *"boys were more likely to be violent and aggressive and that girls were more likely to isolate themselves and to be oversensitive."*

Mothers' comments exhibited gender-specific perceptions of their children's symptoms. For instance, mothers seemed to notice their daughters' oversensitivity, thought that they should act as a bridge between daughter and father, and felt distressed about playing this role. One mother stated, *"I have to play a role as a negotiator between my child and husband because he does not know how to read the girl's emotions."*

In addition, mothers felt strongly about being emotionally connected with their daughters:

> *A mom has to be strong because a mom influences a daughter a lot, and there is a special relationship and emotional connection between a mom and daughter.*

Fathers thought that some depressive symptoms were typical female characteristics and tended to overlook them. Fathers also expressed a lack of understanding about how to deal with girls' sensitivity. In general, fathers were the last people to know about their children's issues, and typically used the fact that they are busy and stressed with their work as a reason for this. Despite the fact that all parents indicated that fathers are the final decision makers about taking their children to a clinic, fathers often lacked knowledge about their children's symptoms and their severity. In separate focus group interviews, a married couple expressed differing viewpoints about taking their child to a mental health clinic:

> Father: *I was busy trying to make money so I did not know about my daughter's issue until my wife told me. Now I'm willing to take her to a behavioral clinic, but before I understood her issue, I told my wife that I wouldn't spend the money if insurance didn't cover the treatment.*
> Mother: *I felt my daughter has some issue because she did not eat and was very sensitive… At the beginning, I thought she was on a diet like any other girls, but I felt something wrong and serious with her….She looks like she was not pleased on anything….*

In addition, parents stated that they started to become alarmed when they received notifications from school that their children had behavioral problems and peer conflicts.

> *Actually, I was busy with work and making money in the U.S. And I kept saying to my children that I came to the U.S. for you, not for me. I also kept telling them not to make any trouble in school because I am struggling to work hard because of you. But when I got a call from school about my daughter's behavioral problem, I started thinking that my daughter had some issues because I pushed her and nagged her a lot.*

4) Knowledge and Beliefs about Treatment for Depression

During the three focus group interviews, the Korean American mothers (n=10) and fathers (n=4) talked about how difficult it was to find mental healthcare services. They also discussed the insurance issues associated with using these services. The results from the focus group interviews were categorized according to knowledge and beliefs about depression and knowledge and beliefs about treatment for depression.

Focus group participants expressed beliefs that depression cannot be fully treated, that relapses occur easily, and thus that medication should be taken throughout one's life. These beliefs appeared to be based on cases of ineffective treatment of people with depression that they had observed in their neighborhoods and communities. These cases strongly influenced participants' beliefs about the need for counseling or medication to treat depression. Most mothers expressed that counseling does not seem to be effective, because they could not see the positive outcomes in a short time. They expressed that referral to specialists (e.g., psychiatrists) did not seem to be necessary, because those depressive symptoms were not considered to be serious enough to warrant care by a specialist. In addition, parents exhibited deeply rooted false beliefs about depression and its treatment that are common in the Korean American community.

5) Knowledge and Beliefs about Mental Health Resources

Regarding knowledge about mental health resources, Korean American parents identified two different resource types for seeking help for depression: non-professional help and professional help.

As non-professional help, they listed parents, mothers, churches, relatives, schools, self-help for relieving stress, parenting education, religion, someone who can be relied on, educational programs, neighborhoods, and advice from neighbors in the Korean community. However, acculturative stress

hindered children and parents from talking about their depressive feelings and difficulties because each family member did not want to burden the others. Two parents stated that:

> *It's weird living in the U.S. We are family, right? But here, each family member should do well on their own….We cannot rely on each other. When we leave our home, tensions are everywhere. So all of us should do things on our own.*
> *I thought I was the only one who suffers, but everybody does. [laughs] Immigrant families all have the same issue. All families should adjust to U.S. culture; children should adjust to school, and parents should adjust to jobs. That's what immigrant families go through.*

Also, one mother who had been treated for depression and another mother who had a depressed mother stated that non-professional help sometimes was not useful:

> *When I was depressed, I was hurt by others when they said, "Why do you feel lonely? What for?" I used to read a book, and the title was "People Are Lonely Because They Are Human Beings." [Everybody laughs] And I felt that I needed to find professionals. Only professionals could help me, not family or friends.*
> *My mother also has depression. She said that she got hurt a lot when she heard that neighbors did not understand why she was depressed because her children lived well and there was nothing to be worried about.*

For professional help, parents listed hospitals, medication, social workers, psychologists, teachers, counselors, psychiatrists, pediatricians, behavioral hospitals, Korean welfare centers, therapists, school teachers, bilingual professionals, and mental milestones (children are assessed for mental health issues as part of routine pediatric checkups for children). Among these, most mothers stated that Korean pediatricians would be the first to help because their children went to these pediatricians for a long time and the mothers became accustomed to speaking with them. Also, as a recommendation, a mother stated that Korean pediatricians should be familiar with mental healthcare resources that are covered by insurance, especially Korean psychiatrists, in the Chicago area.

However, even having knowledge about professional help, most mothers said that they were not sure that these resources would be necessary or helpful. One mother stated:

> *I told my child to get help from a teacher. I know one psychiatric doctor, but she talks with my son for 30 minutes without being paid. [laughs] So she sees my child every week in church without asking to be paid…. She knows Korean culture well, so I trust her. But I don't think that*

> *helps a lot. The school said my son needs to see a psychologist, but I don't think that really treats my son's condition [depression].*

Another mother agreed that mental health professionals do not seem to be helpful: *"Time is limited and [psychiatrists] just listen and do nothing and…just make money."*

On the other hand, two fathers insisted that mental healthcare services would be somewhat helpful to their children even though the treatment works slowly. One father stated that:

> *I know various professional resources such as Korean community centers, family, counselors, behavioral hospitals…. I believe that these resources would be better than nothing for helping my children.*

Most participants did not know about mental healthcare services in their community. They stated that they would go to their children's former pediatrician, whether Korean or American, if their children had a mental health problem, because they did not know about more suitable resources. Even though some participants said that they knew about professional resources for mental health in their community, they thought that professional treatment for depression would not help much in improving their children's symptoms. One mother who has used mental healthcare services for her depression expressed the negative feeling and attitude towards these services, because she did not see any improvement in her feelings in a few visits. She expected that her depressive symptoms would get better in a three to five visits, and most participants agreed that treatment takes too long without doing anything but talking.

As reasons for not using treatment services for depression, Korean American parents identified language barriers, financial barriers, and gender role barriers. As language barriers, a mother said that she worried about seeing American doctors that she cannot communicate due her lack of English proficiency. For financial barriers, most mothers and fathers worried whether seeing a doctor would be covered by insurance. They agreed that seeing a specialist (including psychiatrist) is too expensive. Most mothers needed to receive their husbands' approval and agreement for their children to see a doctor because the husbands made the money and were the final decision makers about their children's issues. Even though

fathers were ultimately the decision makers regarding their children's healthcare, they were frequently the last people to know about their children's issues because they were unable to recognize their children's symptoms and were themselves experiencing acculturative stress in their workplaces. Even mothers stated that they felt acculturative stress and that family members received little mutual support because each member was busy adapting to their own environments, such as schools, workplaces, and the American community. Acculturation acted as a main stressor for Korean American families.

d. Modification of the Parental D-Lit scale

Based on findings from the focus group interviews findings, the Parental D-Lit scale was adapted by modifying items in order to provide a better measure of depression literacy among Korean American parents (Harkness, 2010). Appendix G displays the Parental D-Lit scale, identifying the new items, the deletions of original items and the rationale for these changes. A total of 12 questions were added in order to measure additional culturally grounded indicators of knowledge about depression and its treatment among Korean American parents. Five questions that proved difficult to understand were deleted.

1) Rationale for adding 12 new items. Comments made by focus group participants identified that parents lacked knowledge and had false beliefs about the causes of depression. All the participants lacked knowledge about the biological cause of depression, and thus they were skeptical that medication would be effective in treating the condition. In addition, they believed that parenting style was a main cause of depression as well as one main way to treat it. Also, parents tended to ignore depressive symptoms when children did not have issues with school friends. These knowledge deficits and false beliefs influenced their negative attitudes toward antidepressant medication and seeing mental health professionals. The following four questions that assess culturally grounded depression knowledge and beliefs were added to the Parental D-Lit scale: (20) The cause of depression is poor parenting and child characteristics rather than brain-related problems; (21) If people have good social

networks, they will not have depression; (22) If there is someone to talk to openly, one does not become depressed; and (23) If there is an imbalance in brain chemicals or hormones, it can cause depression. Second, two questions related to false beliefs about depression and depressive symptoms were added to the scale: (7) Most people with depression think about committing suicide, and (10) If people become aggressive or oversensitive, it means that they have depression. Korean American parents lacked knowledge and had false beliefs about treatment of depression, including antidepressant medication and seeing mental health professionals. To measure knowledge and beliefs about treatment, the following item was added to the scale: (26) If the environment is changed, depression can be cured naturally. According to Jorm's mental health literacy model, self-management of depression is important, especially in minority groups because of their limited access to professional mental healthcare services due to language, financial, and cultural barriers (Jorm, 2000). In addition, Korean American parents lacked knowledge about how to manage depressive symptoms. To measure self-management knowledge, the following five items were added to the scale: (27) A balanced diet can help to improve depression; (28) Physical exercise is helpful to improve depression; (29) Good quality of sleep is helpful to improve depression; (30) Having a hobby to enjoy is helpful to improve depression; and (31) Talking with other people can help to improve depression.

Six items (1, 3, 5, 10, 11, and 16) were deleted from the scale due to the difficulties participants had in understanding the items (Harkness, 2010). Deleted items were: (1) People with depression often speak in a rambling and disjointed way; and (3) Reckless and foolhardy behavior is a common sign of depression. Other items asked about symptoms of mental disorders other than depression; participants had difficulty differentiating these symptoms from depressive symptoms, because most people were not familiar with the wide variety of mental health issues. The following items were deleted: (5) Not stepping on cracks in the footpath may be a sign of depression, (10) Having several distinct personalities may be a sign of depression, (11) People may move more slowly or become agitated as a result of their depression, and (16) Many treatments for depression are more effective than antidepressants.

4. Phase I: Expert Reviews II

Two Korean professors with expertise in depression research reviewed the modified Parental D-Lit scale. To assess content validity of the scale, the two Korean professors reviewed and rated item relevance to depression literacy (see Appendix M and Appendix N). The scale-level content validity index (S-CVI), which identified the relevance of items using proportional ratings provided by two raters, employed a 5-point Likert scale (ranging from 0 for no agreement to 4 for full agreement) for item relevance (Waltz, Strickland, & Lenz, 2005). An item with a rating of 3 or 4 was judged to be quite or highly relevant, of 2 was judged to be neutral, and of 0 or 1 was judged to have little relevance (Polit & Beck, 2004; Waltz et al., 2005). The two expert raters judged the Parental D-Lit scale to have 28 relevant items out of 32 items, and the S-CVI was calculated to be .875. An S-CVI of .80 or higher is considered to indicate acceptable content validity (Polit & Beck, 2004).

5. Phase I: Cognitive Interviews

Cognitive interviews were then conducted to test the clarity and comprehensibility of the modified scale with representatives of the target population (Harkness, 2010).

a. Recruitment

Cognitive interview participants were recruited from a Korean community center and Korean churches in the Chicago area. The PI selected one community center, KACS, which had many registered adult Korean American members, and one Korean church. The flyers directed parents to contact the PI via phone or email to learn about the study or to volunteer to participate in the study (see Appendix I).

1) Enrollment

Eligibility was based on the same criteria as used for recruitment of focus group participants: (1) Korean Americans, (2) who had adolescent children aged 12 to 19 years living

with them, (3) who could fluently speak, read, and write Korean, and (4) who could respond to the Parental D-Lit scale's questions during the cognitive interviews. Persons were excluded if their physical or mental health would interfere with participating in the cognitive interview. Those who volunteered to participate in the study and who met the inclusion criteria provided informed verbal consent for study participation (see Appendix J). A total of ten Korean American mothers participated in the cognitive interviews.

b. Data Collection Procedure and Analysis

1) Data Collection

The PI conducted the audio-taped interviews individually in a private room at KACS and one church or in the participant's home, based on each mother's preference. Each mother was assigned a participant ID number. At the beginning, a prepared introduction including the purpose of the study (see Appendix K) was read by the PI. During each interview, verbal probing techniques were used: each item was presented in writing to the participant; the PI then read the item and asked whether she understood the question. The participant was queried about the meaning of the question (Knafl, Deatrick, Gallo, Holcombe, Bakitas, Dixon, & Grey, 2007; Willis, 2005) and was asked to paraphrase it in her own words and to discuss her understanding more generally (Knafl et al., 2007; Willis, 2005). Also, participants' suggested modifications of unclear items were solicited.

2) Data Analysis

The PI prepared a line-by-line transcript of each interview, a summary of interpretations, and an analysis of item summaries (Knafl et al., 2007). Participants' interpretations of each item were summarized, and potentially problematic items and reactions to items were recorded (Knafl et al., 2007). The PI's summaries of the participants' interpretations were then added line by line. The item summaries were analyzed by categorizing them according to themes, and items found to be

problematic were modified using suggestions from participants. The resulting Parental D-Lit scale is described in Appendix H.

c. Findings from Cognitive Interviews

After completion of the cognitive interviews, three D-Lit scale items were modified based on participants' interpretations and recommendations (see Appendix L). For example, regarding item 12, "Clinical psychologists can prescribe antidepressants," most participants understood the meaning of this item, but four asked who clinical psychologists are and what they do. Consequently, a parenthetical definition of the meaning of "clinical psychologist" was added to the adapted instrument. Regarding item 13, three participants indicated that "multiple sclerosis" was hard to understand, so the term "physical disease" was substituted. For item 17, half of the participants (n = 5) responded that they were not familiar with cognitive behavioral therapy, so additional explanation was included in parentheses.

C. Phase II: Survey of Korean American Parents

This section describes Phase II of the study, which consisted of a survey to evaluate the reliability and validity of the adapted Parental D-Lit scale.

1. Design

After adding, deleting, and modifying items, a cross-sectional survey was conducted to test the psychometric properties of the adapted Parental D-Lit scale. Survey questionnaires were distributed to approximately 400 Korean American parents in Korean Catholic and Baptist churches, community centers, markets, and hair salons in the Chicago area.

2. Research Sample and Setting

a. Recruitment

To recruit survey participants, the PI contacted community gatekeepers such as church pastors, church leaders, and leaders of the Korean Nurse Association in Chicago. The PI visited Korean Baptist and Catholic churches different from those involved in Phase II, and gatekeepers of the churches introduced the PI to the church members. At each church, the PI set up a table near the main door and distributed study flyers and questionnaires (see Appendix O). In addition, snowball sampling was used. Church leaders who had already participated in the study received permission from other potential participants to provide their address to mail the surveys.

1) Enrollment

Individuals who expressed interest in participating in the study survey were screened to determine whether they met the inclusion criteria. The same inclusion criteria for recruitment in phase I were used in this phase. If eligible, the PI guided potential participants to a private room and an information sheet was given to them and verbally explained by the PI (see Appendix P). Participants completed the survey at Catholic and Baptist Churches, community centers, hair salons, and markets. Participants who opted to complete the survey at home were given the survey, the information sheet, and a stamped envelope to use for returning the survey. Total of 144 participants completed and returned surveys to the PI either in person or via standard mail. Characteristics of the sample are summarized in Table II (Results section).

3. Data Analysis

a. Exploratory Factor Analysis

Exploratory factor analysis (EFA) is used to investigate the construct validity where the relationships among items and constructs are unknown. Williams, Brown, and Onsman (2010) proposed five steps for conducting EFA: (1) testing data to determine whether it is suitable to use factor

analysis; (2) simplifying the factor structure of a group if items, (3) extracting items from the scale, (4) identify similar items, and (5) interpretation. First, Kaiser-Meyer-Olkin (KMO) was used to measure the suitability of the scale for factor analysis (Williams et al., 2010). The KMO is a measure of sampling adequacy for overall scale (Williams et al., 2010). A KMO index of 0.70 is considered appropriate. In the current study the KMO index was 0.65.

b. Confirmatory Factor Analysis

To confirm the number of dimensions underlying the variable statistically, confirmatory factor analysis (CFA) was used based on the EFA findings.

c. Independent T-Test

To test construct validity, independent t-test was performed to compare mean score differences on depression literacy between two known groups: the parents that recognized depression and the parents that did not.

d. Correlational Analysis

To test the construct and criterion validity of the Parental D-Lit scale, correlations among items of the scale and among depression literacy and other variables were examined. In addition, regression analysis was performed to determine the strength of the relationships between Parental D-Lit scale scores and those of other validated scales with respect to attitude toward mental healthcare services, depression stigma, and acculturation.

4. Survey Instruments

The survey included the following: (1) the Parental D-Lit scale; (2) a brief demographic questionnaire; (3) a vignette for assessing parents' recognition of depressive symptoms; (4) the Attitudes toward Seeking Psychological Help scale (ASPH; Whittlesey, 2001); (5) a modified Depression Stigma

scale (Griffith et al., 2008); and (6) the short version of Suinn-Lew Asian Self-Identity Acculturation scale (SL-ASIA; Hofstetter et al., 2004).

a. Parental D-Lit scale

Parental depression literacy was assessed with the 32-item adapted Parental D-Lit scale. Dichotomous (yes/no) responses were used to test knowledge about depression. Total scores for the adapted D-Lit scale range from 0 to 32, with higher scores indicating greater depression literacy (Griffiths et al., 2004). A total of 16 items were added to the scale, 5 items were revised and 6 items were deleted from the original D-Lit scale. The KR-20 coefficient of the current scale with 32 items was 0.73.

b. Demographic Questionnaire

Age of adolescent children and parents' age, gender, year of immigration, and level of education were obtained.

c. Vignette for Recognizing Depression

Recognition of depression was assessed using a Korean translation of a vignette created by Link and colleagues (1999) (see Appendix Q). Greater ability to recognize depression has been identified as one component of depression literacy and has been associated with positive attitudes toward mental healthcare services (Jorm, 2000). The depression vignette was previously used by Link and colleagues (1999), who found its reliability to be 0.80.

d. The Attitudes toward Seeking Psychological Health scale (ASPH)

Attitudes toward seeking professional help for depression were measured using 10 questions with five-point Likert-type response scales (see Appendix R). Items 2, 4, 8, 9, and 10 were reverse-scored because they indicated a negative attitude toward mental healthcare service use; for example, question 10 "Personal and emotional troubles, like many things, tend to work out by themselves."

The scores of the 10 items were then summed (Whittlesey, 2001). Higher total scores indicated more positive attitudes toward seeking professional help. The Cronbach's alpha for the ASPH was 0.76.

e. The Depression Stigma Scale

The 18-item Depression Stigma scale was developed by Griffiths and colleagues (2008) to measure personal (9 items) and public (9 items) stigma associated with depression (see Appendix S). This scale was tested using Australian (n = 3,998) and Japanese adults (n = 2,000) (Griffiths, 2006; Griffiths et al., 2008). The Cronbach's alpha for the original personal stigma regarding depression items was 0.77 for Australians and 0.82 for Japanese; the alpha for the original public stigma regarding depression items was 0.82 for Australians and 0.77 for Japanese. For the total scale, the Cronbach's alpha was 0.78 for Australians and 0.78 for Japanese. Based on the current study's pre-test findings (n=14), the PI extracted 6 items for personal stigma regarding depression and 9 items for public stigma regarding depression and combined them in one adapted instrument. For the adapted scale, the range of possible total scores was 0 to 60 with 0 to 4 for each item, and higher scores indicated more stigma. In the current study, the Cronbach's alpha for the adapted scale was 0.82.

f. The Short Version of Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA)

Acculturation was measured using the SL-ASIA as revised by Hoffstetter et al. (2004) (see appendix T). The 12-item SL-ASIA includes 5 factors underlying acculturation scores: reading/writing/cultural preferences, ethnic interaction, friendship choice, food preferences, and music preferences (Hoffstetter et al., 2004; Suinn et al., 1995). The summary score for the revised SL-ASIA is the average of the total scores of 12 items, and ranges from 1.00 (low acculturation) to 5.00 (high acculturation) with 3 as the cut point of level of acculturation (Hoffstetter et al., 2004; Suinn et al., 1995). This version of SL-ASIA was tested among Korean Americans in California and was found to have

internal consistency as good as that of the original scale (Cronbach's alpha = .88- .90) (Hoffstetter et al., 2004). In the current study, the Cronbach's alpha for 12-item SL-ASIA was 0.81.

g. Scale for exploring knowledge and beliefs about help resources for depression

This 20-item scale was adapted from Jorm's (2000) Mental Health Literacy Survey and assessed participants' perceptions of helpfulness of resources for depression (see Appendix I). The question stem asked "How much would these resources be helpful for treating depression?" and 20 resources were listed below the question. Participants are asked to respond by circling answers on a Likert-type scale 0 for "Very Harmful," 1 for "Harmful," 2 for "Neither," 3 for "Helpful," and 4 for "Very Helpful." The Cronbach's alpha for the scale in the current study was 0.83.

IV. RESULTS

A. Sample Characteristics

As shown in Table II, 143 participants completed the survey. The participants consisted of 36 (25.2%) fathers and 107 (74.8%) mothers. The participants' mean age was 46.8 years (SD = 5.0); the fathers' mean age was 47.8 years (SD = 4.1), and the mothers' mean age was 46.4 years (SD = 5.3). The mean duration of living in the U.S. was 18.8 years (SD = 8.6); fathers had lived in the U.S. longer than mothers. Fathers (M = 3.5, SD = 3.7) also showed more years of education in the U.S. than mothers (M = 2.4, SD = 3.6). The participants were generally highly educated, with more than 87% having a bachelor's degree or above.

TABLE II
SAMPLE CHARACTERISTICS FOR SURVEY (N = 14)

	Mean (SD)	Frequency (%)	Range
Age	46.8 (5.0)		33-61
Gender			
Women		74.8	
Men		25.2	
Education			
< High school		12.8	
Bachelor		66.0	
Master or above		21.3	
Years of living			
U.S.	18.8 (8.6)		1-43
Korea	27.6 (8.1)		9-54
Years of school			
U.S.	2.7 (3.7)		0-20
Korea	14.6 (3.8)		3-23

B. Psychometric testing of the Parental D-Lit scale

1. Depression Literacy, Attitudes toward Mental Healthcare Services, Depression Stigma, and Acculturation

The mean depression literacy score for the survey participants was 22.5 (SD= 3.7, range: 5-31). The mean score for attitudes toward mental healthcare services was 25.1 (SD = 5.4, range: 10-39), and the mean total score for depression stigma was 21.7 (SD = 6.2, range: 0-37). The acculturation

average score was 1.74 (SD = .33) and 86% perceived themselves as "Koreans" rather than "Americans." (see Table III). Slightly more than half of the sample recognized depression from the vignette.

TABLE III
DEPRESSION LITERACY, ATTITUDE TOWARDS SERVICES, DEPRESSION STIGMA, AND ACCULTURATION (N = 144)

	%	M	SD	Range
Depression literacy		22.49	3.72	5-31
Recognized depression				
Yes	53			
No	47			
Attitudes toward Mental Healthcare Services		25.10	5.40	10-39
Stigma regarding depression				
Total		21.74	6.18	0-37
Personal		9.80	3.57	0-19
Public		19.71	5.52	2-36
Acculturation		1.74	.33	1-3.27

2. Recognition of Depression

Of the 144 participants, only about one-half (53%, n = 77) recognized depression when reading the vignette. Of participants who recognized depression, 69% responded that they would go to a counselor (psychologist), whereas 49% of those who did not recognize depression responded that they would do so ($t = -2.42$, $p < .01$). Also, 7% of the group that did not recognize depression responded that they would not need any help with depression, whereas only 1% of the group that recognized depression responded in this way ($t = 1.86$, $p < .05$). Participants with higher depression recognition scores also scored higher in depression literacy than those with lower depression recognition scores. Not surprisingly, the mean score for depression literacy was higher in the group that recognized depression (M = 23.5, SD = 3.7) than in the group that did not (M = 21.8, SD = 4.3) ($t = -1.98$, $p < .05$). In addition, the group that recognized depression had a more positive attitude toward mental healthcare services (M = 26.2, SD = 5.5) than the group that did not (M = 24.3, SD = 6.6; $t = -1.93$, $p < .05$).

3. Validity of the Parental D-Lit scale

a. Description and Analysis of Items in the Parental D-Lit scale

Because responses to the depression literacy scale were dichotomous, the percentages of correct responses for each item are summarized below (Table IV).

TABLE IV
DESCRIPTION OF THE PARENTAL D-LIT SCALE ITEMS (N = 144)

Introduction: "These questions are related to depression literacy, which is defined as knowledge and belief about depression and its management. After thoroughly reading the questions, please answer them with yes or no."

	Total Correct (%)
1. People with depression may feel guilty when they are not at fault.	94 (Y)
2. Loss of confidence and poor self-esteem may be a symptom of depression.	87 (Y)
3. People with depression often hear voices that are not there.	53 (N)
4. Sleeping too much or too little may be a sign of depression.	90 (Y)
5. Eating too much or losing interest in food may be a sign of depression.	82 (Y)
6. Depression does not affect your memory and concentration.	78 (N)
7. Most people with depression think about committing suicide.	15 (N)
8. Clinical psychologists can prescribe antidepressants.	49 (N)
9. Moderate depression disrupts a person's life as much as physical disease.	97 (Y)
10. If people become aggressive or oversensitive, it means that they have depression.	28 (N)
11. Most people with depression need to be hospitalized.	88 (N)
12. Many famous people have suffered from depression.	71 (Y)
13. Counseling is as effective as cognitive behavioral therapy for depression.	24 (Y)
14. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	58 (N)
15. People with depression should stop taking antidepressants as soon as they feel better.	75 (N)
16. Antidepressants are addictive.	36 (N)
17. Antidepressant medications usually work straight away.	69 (N)
18. Antidepressant medications should be taken for one's entire life.	83 (N)
19. Depression cannot be fully treated and is a chronic disease that repeatedly recurs.	68 (N)
20. The cause of depression is poor parenting and child characteristics rather than brain-related problems.	43 (N)
21. If people have good social networks, they will not have depression.	78 (N)
22. If there is someone to talk to openly, one does not become depressed.	24 (N)
23. If there is an imbalance in brain chemicals or hormones, it can cause depression.	86 (Y)
24. The only way to treat a child's depression is to change the parenting.	72 (N)
25. If depression is detected and treated early, the treatment is more effective.	94 (Y)
26. If the environment is changed, depression can be cured naturally.	28 (N)
27. A balanced diet can help to improve depression.	94 (Y)
28. Physical exercise is helpful to improve depression.	99 (Y)
29. Good quality of sleep is helpful to improve depression.	99 (Y)
30. Having a hobby to enjoy is helpful to improve depression.	97 (Y)
31. Talking with other people can help to improve depression.	99 (Y)
32. Cognitive behavioral therapy is as effective as antidepressants for mild to moderate depression.	84 (Y)

Note: Coded correct answers as 1 and incorrect answers as 0

Fewer than 30% of participants correctly answered question related to knowledge and beliefs about depression and its management (i.e. questions 7, 10, 13, 22, and 26). Information gleaned from the cognitive interviews suggest that unclear meanings associated with these questions may have resulted in the low percent of correct answers for these items. For example, some cognitive interview participants said that the term "most people" in item 7 was confusing because a depressed individual might think about suicide, but it was confusing whether thoughts of suicide could be found in most depressed people. Regarding item 10, some cognitive interview participants said that aggressiveness and oversensitivity are common characteristics of puberty, and thus it was difficult to determine whether these characteristics were attributable to puberty or to depression. Items 27 through 31 showed percent correct values ranging from 94% to 99% for both Korean American mothers and fathers. These items refer to self-help interventions for depression.

b. Reliability of the Parental D-Lit scale

Reliability refers to the accuracy of a measure and lack of error (Waltz et al., 2005). In this study, reliability was measured using the KR-20. The KR-20 coefficient for the Parental D-Lit scale was 0.69, which is acceptable reliability (see Table V).

TABLE V

KR-20 COEFFICIENT OF THE PARENTAL D-LIT SCALE WITH 32 ITEMS (N = 143)

Items	Item difficulties	Item variance	Item-rest correlation
1	0.9441	0.0528	-0.0258
2	0.8741	0.1100	0.0859
3	0.5315	0.2490	0.2158
4	0.9021	0.0883	0.1503
5	0.8182	0.1488	0.1793
6	0.7832	0.1698	0.3194
7	0.1469	0.1253	0.0870
8	0.4895	0.2499	0.2989
9	0.9650	0.0337	-0.0174
10	0.2867	0.2045	0.0946
11	0.8811	0.1047	0.3763
12	0.7063	0.2074	0.0896
13	0.2378	0.1812	0.1477
14	0.5804	0.2435	0.3847
15	0.7483	0.1884	0.3530
16	0.3566	0.2294	0.3508
17	0.6993	0.2103	0.3745
18	0.8392	0.1350	0.4166
19	0.6853	0.2157	0.3034
20	0.4266	0.2446	0.2506
21	0.7762	0.1737	0.3594
22	0.2308	0.1775	0.0523
23	0.8601	0.1203	0.1121
24	0.7133	0.2045	0.4027
25	0.9441	0.0528	0.0981
26	0.2797	0.2015	0.2944
27	0.9441	0.0528	0.0483
28	0.9860	0.0138	-0.0180
29	0.9860	0.0138	-0.0660
30	0.9650	0.0337	0.1899
31	0.9930	0.0069	0.3749
32	0.8462	0.1302	0.0622

c. Construct Validity

1) Exploratory Factor Analysis

Exploratory factor analysis is used to examine the relationships among a scale and its items, and to support scale revision to improve the validity of the measure and to determine the number and meaning of latent constructs (Reise, Waller, & Comery, 2000). Using a correlation matrix of all items (see Table VI), the PI conducted EFA to examine the correlations among items and the underlying structure of the Parental D-Lit scale (DeVellis, 2003). In addition, the correlation matrix was used to conduct factor analysis of binary data.

The more that participants knew about the causes of depression, the stronger their knowledge about depressive symptoms. The majority of participants (86%) correctly answered question 23, which stated that an imbalance of brain chemicals can cause depression. Correlational analysis revealed that this item was positively correlated with items 1, 4, 5, and 11, which were associated with identification of depressive symptoms. However, item 23 was negatively related to item 22, which addressed causes of depression. For item 22, participants took it for granted that if someone had good social networks, that person would not have depressive symptoms. Regarding beliefs about the causes of depression, fathers tended to believe that if their children had no difficulties with social relationships, they would not experience depression. Fathers also tended to judge depressive symptoms as being less serious if their children were not having problems with peers at school. However, some participants said that good social networks were a result of lack of depression, whereas others stated that someone having good networks would consequently not experience depression; therefore, the direction of causation was in doubt among cognitive interview participants.

TABLE VI

CORRELATION AMONG DEPRESSION LITERACY ITEMS (N = 142)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	1																														
2	.17*																														
3	.02	-.08																													
4	.13	.22**	-.02																												
5	.04	.19*	.03	.27**																											
6	.02	-.00	.22**	.23**	.02																										
7	-.16	-.01	.11	-.20*	-.11	-.12																									
8	-.12	-.15	.06	.04	-.08	.18*	.10																								
9	.29***	-.07	.13	-.06	-.09	.09	-.14	-.04																							
10	-.05	-.07	-.03	-.16	-.14	-.01	.26**	.05	-.05																						
11	-.09	-.02	.26**	-.05	.05	.44***	.15	.27***	-.07	-.01																					
12	-.02	-.02	.17*	-.00	.14	.15	-.12	.02	-.04	-.14	.00																				
13	-.01	-.12	.13	.13	.01	.09	.05	.07	.11	.16	-.15	.07																			
14	-.09	.04	.21**	.00	.07	.23**	-.04	.11	-.01	.01	.30***	.10	.05																		
15	.18*	-.04	.03	.05	.20*	.18*	.02	.25**	.06	.10	.24**	.02	.16	..23																	
16	-.00	.23**	.01	.08	.06	.09	.10	.10	.06	.01	.05	.07	.06	.12	.10																
17	-.10	.21*	.05	.04	.08	,06	.15	.23**	-.02	..01	.24**	.02	.06	.12	.24**	.25**															
18	.05	.21*	.14	.04	.03	.22**	-.03	.18*	.06	.10	.05	.07	.16	.23**	.09	.18*	.39***														
19	-.10	.13	-.01	.08	-.01	.11	.03	.14	-.13	.15	.13	-.03	.12	.19*	.12	.14	.26**	.45***													
20	.03	-.03	.11	.00	.08	-.02	.12	.18*	.02	.03	.24**	-.00	-.01	.30***	.18*	.11	.06	.01	.05												
21	-.05	-.11	.14	.11	-.03	.13	.08	.26**	.03	.07	.07	-.01	.14	.14	.46***	.19*	.23**	.16*	.14	.23**											
22	-.15	.02	.06	-.09	-.04	-.19*	.19	.04	.01	.14	.14	-.06	.14	.18*	.09	.06	.08	.07	.03	.11	.14										
23	.17*	.08	.11	.21*	.23**	.13	-.12	.07	-.01	.12	.17*	-.01	.10	.05	-.05	.05	-.05	-.02	.03	-.10	-.07	-.25**									
24	-.09	-.06	.15	-.05	.10	.23**	.09	.25**	.02	.01	.05	-.00	.04	.08	.20*	.12	.18*	.21*	.23**	.18*	.14	-.01	.19*								
25	.07	-.01	.14	.33**	.04	.32***	-.16	-.06	.03	.08	.10	.10	-.01	-.02	-.00	-.07	-.10	.05	.03	-.10	.12	-.29***	.25**	.05							
26	-.05	-.07	-.09	-.05	.06	.03	.09	.21*	-.13	.11	.14	.07	.19*	.23**	.29**	.26**	.12	.12	.07	.23**	.23**	.23**	-.01	.19*	-.18*						
27	-.06	-.09	.02	.02	.12	.17*	.01	-.00	.12	-.05	.10	.04	-.15	.04	-.00	-.01	-.03	-.03	.03	-.10	.02	-.22**	.08	.05	.34***	-.05					
28	-.03	.30**	.01	-.04	-.06	-.06	.05	-.00	-.02	-.06	-.04	.05	-.21*	.02	-.07	-.03	-.05	.11	-.08	-.12	-.06	-.07	-.05	-.07	-.03	-.06	-.03				
29	-.03	.13	.01	-.04	.10	-.06	.05	-.12	-.02	-.06	-.04	.05	-.07	-.10	-.07	-.03	-.08	-.05	-.08	-.02	-.06	-.07	-.05	-.07	-.03	-.06	-.03	.49***			
30	-.05	.15	.05	.07	.11	-.01	.08	.04	.17*	-.05	.05	.05	-.07	.07	.07	.06	.04	.22**	.11	.09	-.01	-.07	.03	.05	.12	-.05	.29**	.63***	.30***		
31	-.03	.13	.01	.16	.10	.08	.05	-.00	-.02	.07	.14	.05	.07	.14	.07	-.03	.18*	.27**	.17*	-.02	.08	-.07	.12	.06	.23**	-.06	.23**	-.01	-.01	.30***	
32	.06	.13	-.13	.25**	.30***	.01	-.04	-.05	-.08	-.03	.02	.02	-.22**	-.05	.15	.03	-.03	-.03	.09	.02	.05	.05	.05	-.01	.06	-.08	.15	-.05	.11	.02	.20*

*$p < .05$. **$p < .01$. ***$p < .001$

First, the factor structure of a selected group of items was simplified using factor rotation (Williams et al., 2010). Based on the number of correct responses to items, low-correct response items were deleted due to their low alpha values. Specifically, items 7, 10, 13, and 22 were deleted because less than 30% of study participants were able to correctly answer them, suggesting that there were problems with these items; only 15, 28, 24, and 24 participants correctly answered items 7, 10, 13, and 22, respectively. After these 4 items were deleted, the KR-20 coefficient increased from 0.69 to 0.71.

Second, based on item-rest correlation among the KR-20 results, the negatively correlated items (1, 9, 28, and 29) were examined. First, items 1 and 9 were correlated positively ($r = .29$, $p < .001$), but each item was negatively related to the total scale. Given that both items addressed knowledge about depression, item 1 was deleted because it had a higher negative correlation coefficient than item 9. Second, items 28 and 29 were positively correlated ($r = .49$, $p < .001$), and both addressed self-help for depression; item 29 was deleted because it had a higher negative correlation. After deleting these two items the alpha was 0.71 for the remaining 26 items. Items 2, 9, 28, and 32 had correlations lower than 0.1 and all were deleted, even though items 2 and 28 were positively correlated ($r = .30$, $p < .001$).

Third, the number of underlying components was examined using factor analysis with eigenvalues and the scree plot of eigenvalues, which constitute one of the most commonly used factor extraction techniques to determine the appropriate factor solution (DeVellis, 2003; Ledesma & Valero-Mora, 2007; Reise et al., 2000). Based on the eigenvalues, three factors that had an eigenvalue of 1.0 or greater were retained (see Figure 3). The accumulated explained variance of these three factors was 0.76.

Factors	Eigen values	Differences	Cumulative
1	3.97122	1.23024	.3888
2	1.74099	.62962	.6166
3	1.11137	.25919	.7621
4	.85218	.08154	.8736
5	.77064	.18374	.9744

Figure 3. Eigen value of the Parental D-Lit scale

The scree plot also showed three factors (see Figure 4), and thus the number of factors to be retained was determined to be three.

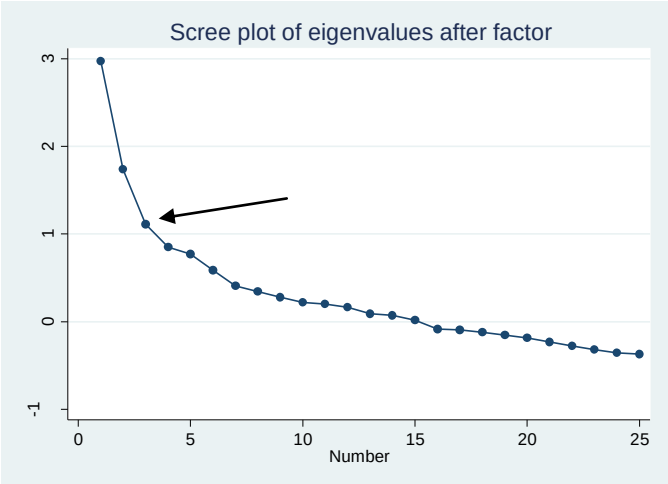

Figure 4. Scree plot of the Parental D-Lit scale

Fourth, factor rotation was conducted to identify similar items in each factor (DeVellis, 2003). An oblique rotation was used because each factor was assumed to be correlated to the other factors; this process was performed using the maximum likelihood common factor analysis feature in STATA. After oblique rotation, three factors were obtained for the 21-item scale (see Table VI).

TABLE VII

EXPLORATORY FACTOR ANALYSIS OF THREE-FACTOR MOEDEL OF THE PARENTAL D-LIT SCALE

	Factor 1	Factor 2	Factor 3
3			
4		.32	
5			
6	.34	.50	
8	.46		
11	.53	.32	
14	.41		
15	.46		
16			
17			.43
18			.58
19			.47
20	.58		
21	.44		
23		.37	
24	.49		
25		.69	
26	.47		
27		.39	
30			.36
31			.47

The cutoff criterion for factor loadings was set at 0.30 or higher, in accordance with Carmines & Zeller (1979). Among the items from the three-factor model, the factor loadings of only 18 items were higher than 0.30 (see Table VII). Therefore, items with lower factor loadings were deleted, and the 18 items with factor loadings higher than .30 were retained.

TABLE VIII

THREE-FACTOR MODEL OF THE PARENTAL D-LIT SCALE

3 Factors	Items	Value
Misperceptions about depression and its treatment	8. Clinical psychologists can prescribe antidepressants.	Negative
	11. Most people with depression need to be hospitalized.	Negative
	14. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	Negative
	15. People with depression should stop taking antidepressants as soon as they feel better.	Negative
	20. The cause of depression is poor parenting and child characteristics rather than brain-related problems.	Negative
	21. If people have good social networks, they will not have depression.	Negative
	24. The only way to treat a child's depression is to change the parenting.	Negative
	26. If the environment is changed, depression can be cured naturally.	Negative
Knowledge about depression	4. Sleeping too much or too little may be a sign of depression.	Positive
	6. Depression does not affect your memory and concentration.	Negative
	23. If there is an imbalance in brain chemicals or hormones, it can cause depression.	Positive
	25. If depression is detected and treated early, the treatment is more effective.	Positive
	27. A balanced diet can help to improve depression.	Positive
Knowledge about treatment	17. Antidepressant medications usually work straight away.	Negative
	18. Antidepressant medications should be taken for one's entire life.	Negative
	19. Depression cannot be fully treated and is a chronic disease that repeatedly recurs.	Negative
	30. Having a hobby to enjoy is helpful to improve depression.	Positive
	31. Talking with other people can help to improve depression.	Positive

As seen in Table VIII, 18 items with factor loadings ranging from .31 to .69 were loaded on three factors. Factor 1 contained items 8, 11, 14, 15, 20, 21, 24, and 26; items 4, 6, 23, 25, and 27 were categorized under factor 2; and items 17, 18, 19, 30, and 31 were categorized under factor 3. The PI interpreted the factors based on the theoretical and conceptual model and on one Korean professor's guidance (Williams et al., 2010). The latent factors with respect to depression literacy were as follows: (1) misperceptions about depression and its treatment, (2) knowledge about depression, and (3) knowledge about treatment of depression. The purpose of the scale was primarily to examine misperceptions of depression and its treatment, so a greater number of incorrect answers-items (n=12) than correct-answer items (n = 6) was employed. Neither positive nor negative items sets have been found to have a direct impact on response bias (Sauro & Lewis, 2011).

The KR-20 of the total scale with 18 items was 0.71, but the KR-20 values for the sub-domains were as follows: (a) factor 1--0.69, (b) factor 2--0.54, and (c) factor 3--0.58. Only the total scale and factor 1 had acceptable reliability.

2) Confirmatory Factor Analysis

To verify the number of dimensions underlying the variable, confirmatory factor analysis (CFA) was applied to confirm the selected three-factor model based on the model fit statistics and the significance of each item coefficient (Acock, 2012; Yong & Pearce, 2013). The three-factor model showed an RMSEA of 0.056 and a CFI of .813 (x^2 (132) = 190.630, p< .001), and the ratio of X^2 and df (1.44) showed acceptable goodness of fit to the data, as the ratio was lower than 2.0; a ratio of less than 3.0 is minimally acceptable (Kline, 2011) (see Table IX). Also, the RMSEA of 0.056 was close to the fit criterion of below 0.05, and this RMSEA was judged to be good enough to show model fit (Kline, 2001).

TABLE IX

GOODNESS OF FIT STATISTICS FOR THE PARENTAL D-LIT SCALE (N = 144)

	Depression Literacy
Indexes	three-factor model with 18 items
X^2 (df)	190.630*** (132)
X^2/df	1.44
RMSEA	.056
CFI	.813
TLI	.783
CD	.970

Note: **p <.05, **p < .01, ***p < .001*

3) Independent t-test

To examine construct validity, an independent samples t-test was conducted to compare mean scores for depression literacy between two known groups: the group that recognized depression and the one that did not. If participants responded to the vignette question with “stress” and/or “puberty” along with “depression,” the response was considered to indicate recognition of depression. If “stress” and/or “puberty” were written without including “depression,” the response was not considered to

indicate recognition of depression. Among the 144 participants, 53% correctly recognized depression as portrayed in the vignette. As predicted, there was a statistically significant difference between the two groups: the group that recognized depression (M = 18.3, SD = 2.9, N=79) scored significantly higher on depression literacy than the group that did not recognize depression (M = 16.8, SD = 4.0, N = 64; t (141) = -2.57, $p < .01$). These results were considered to provide strong support for the scale's discriminant validity.

d. Criterion Validity: Concurrent Validity

Criterion validity was assessed by comparing the construct, depression literacy, measured by the Parental D-Lit scale, with existing validated scales that measure constructs that are theoretically related to depression literacy. We used a measure of acculturation (the revised 12-item SL-ASIA scale), a measure of attitudes toward help-seeking (the 10-item Korean-language version of the ASPH), and the 15-item depression stigma scale (see Table X). Concurrent validity is defined as a comparison of the measure and an outcome assessed at the same time (Carmines & Zeller, 1979). Correlational analysis was used to examine concurrent validity by comparing scores for the Parental D-Lit and the SL-ASIA, ASPH and stigma measures. High depression literacy has been shown to be positively correlated with attitudes toward mental healthcare services (Jang et al., 2011), positively correlated with acculturation (Parker, Chan, & Tully, 2006) and negatively correlated with depression stigma (Griffiths et al., 2004). In the current study, the total score for the Parental D-Lit scale was positively related to attitudes toward mental healthcare services ($r = .34$, $p < .001$) and negatively related to total stigma ($r = -.29$, $p < .001$). However, acculturation showed no significant association with the depression literacy total score. These results provide evidence of the concurrent validity.

TABLE X
CORRELATIONS AMONG PARENTAL D-LIT SCALE AND OTHER VALIDATED SCALES

Total Score	Depression literacy	Stigma	Attitude toward mental healthcare services	Acculturation
Depression literacy	1			
Stigma	-.29***	1		
Attitude toward services	.34***	.23**	1	
Acculturation[a]	.14	-.14	.08	1

Note: **p <.05, **p < .01, ***p < .001; [a]Average of total scores*

The KR-20 of the total scale with 18 items was 0.71, but the KR-20 values for the sub-domains were as follows: (1) factor 1 was 0.69, (2) factor 2 was 0.54, and (3) factor 3 was 0.58. Only the total scale and factor 1 had acceptable reliability. The correlational analysis among the three factors is reported in Table XI. Factor 1 and factor 3 showed a statistically significant correlation (r =.35, p < .001).

TABLE XI
CORRELATION AMONG SUB-DOMAINS OF THE PARENTAL D-LIT SCALE (N = 144)

	Misperceptions about depression and its treatment	Knowledge about depression	Knowledge about treatment of depression
Misperceptions about depression and its treatment	1		
Knowledge about depression	.13	1	
Knowledge about treatment of depression	.35***	.13	1

Note: **p <.05, **p < .01, ***p < .001*

Sample characteristics were analyzed based on the results for the new 18-item scale (see Table XII). Age, gender, education, and acculturation were examined based on Chen's study (2012). In the current study, there was a significant difference in depression literacy among the three age groups at the p < .05 level (F (2, 139) = 4.61, p = .012). Participants younger than 45 years (M = 13.9, SD = 2.6) were found to have higher depression literacy than participants aged 46 to 55 years (M = 13.5, SD = 2.7) and 56 years and older (M = 10.9, SD = 4.8). With the new scale, fathers (M = 13, SD = 3.5) were found to have less depression literacy than mothers (M = 13.7, SD = 2.7), but the difference was very small (f (106, 35) = .59, p < .05). In terms of depression literacy and education levels, Korean American parents who held a bachelor's degree (M = 14.7, SD = 2.9) had higher depression literacy than those who had a

master's degree (M = 13.5, SD = 2.3) or a high school diploma (M = 12, SD = 4.1). With regard to acculturation measured using SL-ASIA, no significant differences in depression literacy scores were found based on education in the U.S. or language skill.

TABLE XII

DEPRESSION LITERACY RESULTS USING THE PARENTAL D-LIT SCALE WITH 18 ITEMS

		Total score
	Number of participants	Mean (SD)
Age*		
36-45	67	13.9 (2.6)
46-55	66	13.5 (2.7)
56 & above	9	10.9 (4.8)
Gender*		
Women	107	13.7 (2.7)
Men	36	13 (3.5)
Education**		
≤ High school	18	12 (4.1)
Bachelor's	30	14.7 (2.9)
Master's or above	93	13.5 (2.3)
SL-ASIA		
0-25%	25	13.1 (2.7)
26-50%	58	13.1 (3.3)
51-75%	28	14.3 (2.2)
76-100%	33	14 (2.7)
Years of Education in U.S.		
Yes	79	13.6 (2.7)
None	65	13.3 (3.0)
Language skill		
Korean	26	13.4 (2.7)
Equal	65	13.7 (2.5)
English	53	13.3 (3.3)

Note: *$p < .05$, **$p < .01$, ***$p < .001$

V. DISCUSSION

Given the high rates of depression and low rates of mental healthcare service use among Korean American adolescents (CDC 2013; 2014) it is important to understand and reduce barriers to help seeking. As Korean American parents are the primary decision makers for their children, parental depression literacy needs to be explored as one potential factor contributing to low use of mental health services. Because no validated depression literacy scale was available for use in the Korean American population, this study aimed to adapt and validate an existing depression literacy scale for use with Korean Americans.

A. Main Findings

Survey responses on the Parental D-Lit scale indicate that participants had overall low levels of depression literacy. Specifically, Korean American parents who participated in the study had adequate knowledge about self-help interventions for depression, but limited knowledge about causes of depression, depressive symptoms, and professional healthcare services. Jorm (2000) suggested that information about self-help as well as professional help be disseminated to minority groups because of their lower levels of access to mental healthcare services. However, Korean American parents in the current study appeared to need information on professional help more than self-help guidance. They appeared knowledgeable about how to promote mental health for adolescents at home—that is, having a balanced diet, adequate physical exercise, good sleep quality, hobbies, and social interaction with others—but lacked knowledge about professional resources for help with depression. Paradoxically, the current study implied that knowledge of and consequent reliance on self-help for controlling depression may hinder parents from seeking professional help such as counseling, cognitive behavioral therapy, or use of antidepressant medications. Due to cultural stigma and general distrust of the American healthcare system (Chun et al., 1996; Chu & Sue, 2011) Korean American parents may attempt to manage their adolescent children's depressive symptoms within the home using self-help principles.

The overall purpose of this study was to adapt an existing depression literacy scale for use with Korean American parents and to test its validity and reliability. The adapted instrument exhibited a three-factor model and the overall scale showed acceptable construct and concurrent validity and reliability. Unfortunately, the validity and reliability for individual subscales were not acceptable. These findings indicate that only the full scale is useful and meaningful for examining the relationship between depression literacy and help-seeking behaviors and that additional work is needed to improve the psychometric properties of the instrument.

This study used both qualitative and quantitative methods. In Phase I of the study, the original D-Lit scale (Griffith et al., 2004) was translated into Korean and reviewed by two content experts. Based on these reviews, it was determined that scale translation alone was insufficient to capture depression literacy among Korean Americans. Thus, focus group interviews were conducted to identify language and concepts that were unfamiliar to Korean Americans as well as scale elements that were inconsistent with Korean culture; the scale was then modified based on information generated from the focus groups. In Phase II, a survey of Korean American parents was conducted to assess the reliability and validity of the modified instrument.

Committee translation was employed to generate a Korean-language version of the D-Lit scale. Many cross-cultural studies have used the back-translation approach for translation of instruments, but this approach has several limitations such as production of unclear wording and meaning from the perspective of the target culture. Interpretation of particular words and phrases in an instrument can vary depending on the respondent's linguistic and cultural background, and thus the intended meaning can be lost (Van Nes, Abma, Jonsson, & Deeg, 2010). However, through committee translation, the specific cultural meanings of the D-Lit scale's words and phrases were discussed with committee members, and the most appropriate wording was selected based on the joint judgment of a variety of knowledgeable researchers. In addition, in applying this approach, keeping detailed records of the committee's

deliberations was useful in the translation decision-making. Overall, the committee translation process was found to maximize the clarity and cultural appropriateness of the language used in the translated scale. However, during the committee members' discussions of the instrument items, all members agreed that the existing items were insufficient to capture Korean American parents' depression literacy. This was the case primarily because the original scale was developed to explore knowledge about depression in the Australian general adult population and lacked adequate cultural focus on Korean American parents' understanding of depression in their adolescent children. Therefore, the committee members agreed that the PI should use focus group interviews to explore what was lacking in the translated instrument.

Based on the focus group interview findings, the content of the scale was modified and expanded to better measure knowledge deficiencies among Korean American parents with respect to depression and its causes, symptoms, and management. During the interviews, Korean American parents exhibited lack of knowledge about depression's causes and symptoms and expressed erroneous beliefs and misperceptions about depression and its treatment. For example, some interview participants falsely believed that depression was a "bourgeois" disease resulting from lack of personal willpower. In addition, some Korean American mothers did not recognize the significance of somatization in their children and treated it like common physical ailments. According to Cho and Bae (2005), unlike European and American Caucasian adolescents, Korean American adolescents tend to internalize emotional problems. Consequently, such problems might be manifested as somatization, which is more socially acceptable than emotional distress in Korean culture (Chun et al., 1996). Moreover, parents showed skepticism toward treatment for depression because they thought, for instance, that counseling was not an effective treatment method. Cognitive interview participants also questioned the PI about the effectiveness of counseling, and they expressed doubts about the value of cognitive behavioral therapy, apparently because they did not fully understand it. In addition, they stated that any kind of medication could be harmful if high dosages were taken on a long-term basis and that they thought that antidepressants were addictive. Given these findings, the PI modified the translated D-Lit scale by adding culturally grounded

items addressing knowledge and beliefs about depression's causes, symptoms, and treatment. At the same time, based on Jorm's (2000) model, and in consultation with three Korean professors of nursing, the PI added items that more specifically addressed knowledge and beliefs about two types of treatment: professional and self-help.

In Phase II, 144 participants were surveyed using the adapted Parental D-Lit scale in order to assess the reliability of validity of the scale. The alpha value for the total scale was 0.69. Criterion validity was assessed based on correlations among depression literacy (Parental D-Lit scale) and attitudes toward mental healthcare services (ASPH), depression stigma (Depression Stigma scale), and a short version of an acculturation scale (SL-ASIA). Strong correlations were observed between the scores on these scales and the overall depression literacy score. In particular, depression stigma was negatively correlated with depression literacy, indicating that cultural stigma might influence parents' help-seeking behaviors. Cultural orientation may influence Korean Americans' help-seeking behaviors because Asians are socialized not to reveal their weaknesses (such as emotional distress), making it difficult for youth to talk about depressive symptoms with their families (Chu & Sue, 2011). Therefore, clinicians and educators should take Korean collectivistic attitudes into account and be aware of Korean American parents' tendency to undervalue or fail to recognize depressive symptoms in their adolescent children.

B. Implications

1. Implications for Education

In this study knowledge of the biologic causes of depression was positively associated with knowledge about depressive symptoms and attitudes toward mental healthcare services. These findings suggest that it would be beneficial to educate Korean American communities about the biologic causes of depression in order to promote their use of mental healthcare services. In addition, in focus group interviews, even the few parents who were interested in knowing about the causes and treatment of

their children's depression did not know how to deal with depressive symptoms. Therefore, educational strategies need to be tailored to the population's level of depression literacy.

Additionally, survey results showed that depression stigma was strongly and negatively associated with depression literacy and with positive attitudes toward use of mental healthcare services. Findings from the focus group interviews indicated that participants lacked understanding of depression and its management: for example, participants expressed beliefs that depression cannot be fully treated, that relapses occur easily, and that medication needs to be taken indefinitely. Such beliefs appeared to stem from the concealed and ineffective treatment of people with depression that participants had observed in their neighborhoods and communities. These cases influenced beliefs to the degree that participants viewed medication, counseling, and therapy as ineffective in the treatment of depression.

In traditional Korean culture, the relationship with one's family and neighborhood affects one's sense of well-being (Jo & Doorenbos, 2009). Likewise, collectivistic attitudes value group harmony more than individual concerns, and thus valuation of self and family is likely to be affected by social comparisons (Chang, 2004). Consequently, it is important that interventions aimed at improving recognition and treatment of depression address both individual and group norms and beliefs. For example, educational programs that increase community awareness of depression and that incorporates case studies of its successful treatment may be an effective strategy in increasing social acceptance of depression and depression treatment.

There is a strong need for education of Korean American parents about how to recognize and respond to symptoms of depression in their adolescent children. Educational programs offered in settings such as churches or barbershops that have been successful in African American communities may also be effective in Korean American communities. The content of programs addressing depression should include its biological causes, the importance of taking prescribed antidepressant medication, coping

strategies for dealing with children's symptoms, and professional resources and success stories about properly treated depression. The modified Parental D-Lit scale developed in this study might be a useful tool to evaluate the effectiveness of such educational interventions.

2. Implications for Practice

Regarding the clinical implications of the findings, treatment of depression among Korean American adolescents not only should address individuals' mental health but also should consider it within their family and community context. For example, mental healthcare providers should keep in mind the influence of the traditional Korean family as well as social stigma toward depression and their dual impacts on recognition of and seeking help for depression. The Parental D-Lit scale could be used in clinical settings as a springboard for discussion of depression and its symptoms as well as a tool for helping to dispel misperceptions about depression. For example, the scale could be completed in a clinic's waiting room and then discussed with the healthcare provider during the visit.

With regard to providing education about depression to Korean Americans, mental healthcare providers should recognize that Koreans are accustomed to showing a fully receptive attitude toward the statements of teachers, elders, and authorities such as healthcare providers, which may lead to difficulties in expressing their own opinions or thoughts (Lee, 2003). Koreans simply tend to nod or say "yes" out of respect when they are listening to professionals or elders. This tendency may have influenced the current study's results as study participants may have responded to the PI's information in this way regardless of their level of understanding. Also, Koreans are accustomed to passive learning; they value "face" to the extent that they may not reveal their lack of understanding of class content, and they fear making mistakes before others (DeWaelsche, 2015). Therefore, when teaching Korean American parents about depression as well as when assessing adolescents for depression, clinicians and others need to ask them direct questions in order to confirm their understanding while maintaining a respectful attitude and tone. Regarding the participants' perspectives, the PI noted in the focus group interviews that they lacked

information about school resources for mental health. This lack of information appeared to be a result of fear of the English language barrier, especially in terms of listening and speaking English (Chu & Sue, 2011; Jorm, 2000). Therefore, it would be beneficial to make Korean American parents aware of the language translation support available in schools.

Based on participant attitudes expressed in the focus group interviews, culturally sensitive teaching methods are needed to effectively educate Korean American parents about depression and its management. In response to a presentation given by the PI about depression and its treatment after data collection for this study was completed, most female participants indicated that it would be helpful to first describe treatment methods for depression and explain why these can be effective by incorporating information about the biologic causes of depression. In addition, participants struggled to restate the information provided by the PI, even though they previously seemed to understand the explanations. This suggests that strategies to reinforce content are needed.

3. Implications for Future Research

The findings from this study provided information about levels of Korean American parents' depression literacy and supported the relationship between depression literacy and attitudes toward mental healthcare services. The Parental D-Lit scale shows promise for evaluating the effect of an educational intervention aimed at increasing Korean American parents' awareness of adolescents' depression as well as in identifying specific deficits in depression literacy.

Issues related to recruitment in this study should be acknowledged for the benefit of future research. The PI distributed 400 surveys at five major churches and two major Korean community centers (KACS and Hanul Korean Association), but only 144 completed surveys were returned to or collected by the PI (a response rate of 36%). In addition, many Korean American parents were unwilling to take part in the focus group interviews for three major reasons: (1) mistrust, (2) stigma, and (3) a busy work schedule.

Although mistrust of research has been widely reported among African Americans (Farmer, Jackson, Camacho, & Hall, 2007; Scharff, Mathews, Jackson, Martin, & Edward, 2010) and Hawaiian and Filipinos (Gollin, Harrigan, Calderon, Perez, & Easa, 2005), little is known about this issue in the Korean American population. However, it might be expected that Korean American's hold similar attitudes, given the historical perspective of Japanese experimentation on the Korean people while concealing studies' actual purposes and procedures. In the current study, a few Korean parents who were older than 50 refused to participate because they were suspicious about the study's purpose and effects. In addition, even though the PI was introduced to church members by the pastor at the beginning of data collection, most church members were suspicious about the PI's actual identity. They said that they felt suspicious about why the PI had come to their church and believed that she might have come from other churches to do some harm, such as to recruit church members. Therefore, the PI participated in church services on a regular basis and provided help with church events as a way to gain the trust of the congregation.

In addition, a few Korean parents resisted the idea of participating in focus group interviews. Specifically, a church leader at one Korean Baptist church said that church members had participated in focus group interviews before, and as a result, they would not participate in the study. They thought that the study was very simple, but being questioned many times for more than one hour in an open discussion made most participants uncomfortable. In addition, a few Korean American parents who refused to participate in the study expressed that they perceived the participation request from the PI as a personal threat. One man asked, "Why do you ask me to do this? Do you think I have a depressed child?"; one woman asked, "Why did you pick me to participate in the study? Is there a reason?" The PI explained several times that they had been randomly invited to participate and that the study was not targeting parents who had depressed children, but they continued to express discomfort. Park and Bernstein (2008) found that mental illness was considered to be the whole family's shame, so Korean Americans tend to hide their family members' mental illness from the public. Moreover, Korean American churches are the sites of complicated social networks such as business dealings and helping new immigrants to find jobs,

houses, or children's schools; get driver's licenses; and connect with Korean businesses such as markets and body shops. Therefore, Korean Americans establish strong networks at churches early in their lives in the U.S. In addition, Korean traditional culture values group and family harmony more than individual well-being (Zhang, Lin, Nonaka, & Beom, 2005), so it was difficult for the PI to convince them to participate in a study related to the mental illness of individual family members. However, when a church leader or family members asked parents to participate in the study, many showed a more positive attitude toward participating and completing the survey. Giarelli and colleagues (2011) found that participation support from family members was a facilitator for participating in health research. As the social network is strong in the Korean American community, it may be helpful to take advantage of social and family connections during study recruitment. Also, regular participation in community activities by researchers may help them to recruit community members for voluntary participation in studies. For example, in this study, the PI had to regularly participate in a parenting education class at KACS for two months in order to build enough rapport with Korean American parents to recruit them for interviews. The PI gained access to the class by contacting one KACS social worker. However, once recruited, parents still faced barriers to study participation in the form of busy schedules. The target population was middle-aged men and women with adolescent children, and they had the principal responsibility for supporting and maintaining their households. Also, most mothers were busy taking their children to school and sports activities by car, and some mothers had jobs as well.

In summary, this and other studies have found distrust of researchers and research as well as stigma related to revealing family and personal information to exist in the Korean American population. Consequently, researchers must gain the trust of potential participants and work closely with gatekeepers who are themselves trusted by the communities from which participants are to be recruited. As gatekeepers, not only church leaders and community center staff but also school teachers, Korean American physicians, and ethnic organization leaders can play a critical role in gaining access to Korean American study populations. In addition, in future studies of these populations, flexible scheduling of data

collection activities, selection of convenient data collection locations, and online surveys should be considered to enhance the participation rate by accommodating participants' busy schedules.

C. Limitations of the Study

This study had several limitations. First, study participants were all volunteers, recruited primarily from churches and a Korean community center, and may not be representative of all Korean American parents—even within the Chicago metropolitan area. Parents who agreed to participate may have been more highly educated or more socially connected and thus more comfortable with sharing their attitudes and opinions. Such bias would limit the generalizability of the study findings because they might not reflect the opinions of parents who are not engaged in the Korean community.

Second, to assess the Parental D-Lit scale's construct validity, recognition of depression was used as a basis for comparing mean scores for depression literacy. Even though there was a difference in depression literacy between the group that recognized depression and the group that did not, the mean difference was small (-1.48) and may not be significant in practical terms. Therefore, the scale's construct validity should be interpreted with this fact in mind.

Third, acculturation could not account for differences in levels of depression literacy in the study participants. In this study, average scores for acculturation were not correlated with depression literacy levels, possibly due to limited measurement of acculturative stress and associated social dynamics. The study's use of average scores for acculturation with a cutoff point of 3.0 between high and low acculturation may have been arbitrary, and this approach may well produce different results across samples. To fully understand acculturation, the interactional context must be understood (Schwartz, Unger, Zamboanga, & Sczapocznik, 2010). For example, with regard to English language skills, Korean American parents tended to think that their writing and reading skills were good but that their speaking and listening skills were not. The acculturation scale's calculation of average scores for both writing and

speaking may have limited its reflection of participants' actual acculturation levels. Furthermore, only acculturation level was measured in parents, whereas familial structure, parenting style, and the relationship quality between parents and their children have also been found to affect acculturation in parents. Therefore, parents' acculturation scores in the current study may not have fully reflected their depression literacy and attitude toward treatment for depression.

Fourth, the Parental D-Lit scale contained 32 items compared to the original D-Lit scale's 22 items, which may influence the reliability of the adapted scale. Therefore, it might have been advisable to reduce the number of items on the Parental D-Lit scale in order to enhance the response rate. Following factor analysis, the Parental D-Lit scale was reduced to 18 items, and its reliability and validity were enhanced. However, goodness-of-fit statistical results indicated a low level of scale acceptability. This finding may have been due to use of the typical CFA approach to the binary items in the study. That is, the assumption of CFA is that a scale is continuous based on the normal theory maximum likelihood (Acock, 2012), and CFA is a linear model that was originally proposed for continuous data (Maydeu-Olivares, 2013). In the current study, CFA was used to examine the Parental D-Lit scale containing binary items with correct or incorrect responses, and the binary items violated the assumption of factor analysis. Therefore, use of the typical CFA approach may have led to biased parameter estimates and a biased model fit test. For future studies involving the Parental D-Lit scale, item response theory (IRT) models, which are nonlinear latent trait models for categorical data (Maydeu-Olivares, 2013), should be considered for testing goodness-of-fit on data and possibly for reducing the number of scale items. In addition, the scale's use of a significant number of incorrect-answer items may have resulted in a relatively small number of correct responses to certain items, and thus the possibility of response error exists (Presser et al., 2004).

Fifth, use of incorrect-answer items (sometimes called negatively-worded items) may result in lower certainty that a scale measures constructs accurately than use of correct-answer items,

and thus there is a greater possibility of response error (Presser, Rothgeb, Couper, Lessler, Martin, E., Martin, J., & Singer, 2004). In the current study, participants may have produced a relatively low number of correct responses to incorrect-answer items. It is noteworthy that of 5 items deleted from the scale before factor analysis due to a low number of correct responses, 4 (7, 10, 22, and 26) were incorrect-answer items. Although scale developers often include incorrect-answer items in an attempt to reduce response bias, evidence suggests that this is not a helpful strategy (Sauro & Lewis, 2011). In a future studies, rewording of items to avoid the over use of these incorrect-answer, negatively worded items, may enhance the scale's performance.

Sixth, a relatively small number of Korean American fathers participated in the study, and this may have limited the ability to capture gender differences in depression literacy, stigma, and attitudes toward mental healthcare services. Because only Korean American mothers participated in the cognitive interviews, fathers' perspectives on depression literacy were not being captured during that portion of the study.

Seventh and finally, the study design was cross-sectional, which precludes explanation of causal relationships among variables.

D. Conclusion

Findings from the study showed that the adapted D-Lit scale has moderate reliability and validity. Regarding the scale's construct validity, a difference in depression literacy was observed between the group that recognized depression and the group that did not. As expected, study results support the scale's criterion validity by showing a positive association between both total and individual scale scores for depression literacy and other scale scores while showing a negative relationship between depression literacy and depression stigma. The findings indicate that the total Parental D-Lit scale can be useful for examining the relationship between depression literacy and help-seeking behaviors. However, additional

refinement of the scale is necessary for use in educational, clinical, and academic research contexts. Moreover, additional research is needed to more comprehensively evaluate the scale items and to test the reliability and validity of the scale with larger samples and in other regions of the U.S.

CITED LITERATURE

Abe-Kim, J., Takeuchi, D. T., Hong, S., Zane, N., Sue, S., Spencer, M. S., … Alegría, M. (2007). Use of mental health–related services among immigrant and US-born Asian Americans: Results from the national Latino and Asian American study. *American Journal of Public Health, 97*(1), 91–98. http://doi.org/10.2105/AJPH.2006.098541

Acock, A. C. (2012). *Measurement, reliability, and validity*. In A gentle introduction to Stata (3rd ed., pp. 325-355). College Station, Texas: Stata Press.

American Psychiatric Association (2015). *Depression,* Retrieved Feb., 10th from http://www.apa.org/topics/depression/

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2002). Recommendations for the cross-cultural adaptation of the DASH & QuickDASH outcome measures. *Institute for Work & Health*, 1-45.

Boughton, K. L. & Lumley, M. N. (2011). Parent prediction of child mood and emotional resilience: The role of parental responsiveness and psychological control. *Depression Research and Treatment,* 2011 (Article ID 375398), 1-9. doi:10.1155/2011/375398

Carmines, E. G. & Zeller, R. A. (1979). *Reliability and Validity Assessment.* Thousand Oaks, CA: SAGE Publications, Inc. doi: http://dx.doi.org/10.4135/9781412985642

Center for Disease Control and Prevention. (2013). Injury Prevention & Control: Data & Statistics (WISQARS™). Retrieved Dec., 3rd from http://www.cdc.gov/injury/wisqars/leading_causes_death.html

Centers for Disease Control and Prevention. (2014). Youth risk behavior surveillance – United States, *Morbidity and mortality weekly report. 63*(4), Retrieved Dec., 3rd from http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf

Chen, A. C. C., Haas, S., Gillmore, M. R., & Kopak, A. (2011). Trajectories of depressive symptoms from adolescence to young adulthood: Chinese Americans vs. non-Hispanic White**s**. *Research in Nursing & Health*, *34*(3), 176–191. http://doi.org/10.1002/nur.20429

Cho, S., & Bae, S. W. (2005). Demography, psychosocial factors, and emotional problems of Korean American adolescents. *Adolescence, 40,* 533-549.

Choi, H, & Dancy, B. L. (2009). Korean American adolescents' and their parents' perceptions of acculturative stress. *Journal of Child & Adolescent Psychiatric Nursing, 22*(4), 204-210. doi: 10.1111/j.1744-6171.2009.00200.x

Choi, H., & Park, C. G. (2006). Understanding adolescent depression in an ethnocultural context: Updated with empirical findings. *Advances in Nursing Science, 29*, e1-12

Christensen, H., Leach, L. S., Barney, L., Mackinnon, A. J., & Griffiths, K. M. (2006). The effect of web based depression interventions on self-reported help seeking: Randomised controlled trial. *BMC Psychiatry, 6*, 13, doi:10.1186/1471-244X-6-13

Chu, J. P., & Sue, S. (2011). Asian American mental health: What we know and what we don't know. *Online Readings in Psychology and Culture, 3*(1). 1-18. doi: http://dx.doi.org/10.9707/2307-0919.1026

Chun, C, Enomoto, K., & Sue, S. (1996). *Health issues among Asian Americans implications of somatiza*tion. In A handbook of diversity issues in health psychology (pp 347-365), New York: Plenum Press, doi: 10.1007/978-0-585-27572-7_18

Consoli, A., Peyre, H., Speranza, M., Hassler, C., Falissard, B., Touchette, E., . . . Révah-Lévy, A. (2013). Suicidal behaviors in depressed adolescents: Role of perceived relationships in family. *Consoli et al. Child and Adolescent Psychiatry and Mental Health, 7*, 8. Retrieved December 3, 2014 http://www.capmh.com/content/7/1/8

Derose, K. P., Escarce, J. J., & Lurie, N. (2007). Immigrants and health care: Sources of vulnerability. *Health Affairs, 26*(5), 1258-1268. doi: 10.1377/hlthaff.26.5.1258.

DeVellis, R. F. (2003). Scale development: Theory and applications (2nd ed.). Thousand Oaks, CA: SAGE publication.

DeWaelsche, S. A. (2015). Critical thinking, questioning and student engagement in Korean university English courses. *Linguistics and Education, 32*(B), 131–147 doi:10.1016/j.linged.2015.10.003

East-West Center. (2010). South Korea matters for America. Retrieved from November 10 http://www.asiamattersforamerica.org/southkorea/data/koreanamericanpopulation

Farmer, D. F., Jackson, S. A., Camacho, F., & Hall, M. A. (2007). Attitudes of African American and low socioeconomic status white women toward medical research. *Journal of Health Care Poor Underserved. 18*(1), 85–99.

Garland, A. F., Lau, A. S., Yeh, M., McCabe, K. M., Hough, R. L., & Landsverk, J. A. (2005). Racial and ethnic differences in utilization of mental health services among high-risk youths. *American Journal of Psychiatry, 162*, 1336-1343.

Giarelli, E., Bruner, D. W., Nguyen, E., Basham, S., Marathe, P., Dao, D., …Nguyen, G. (2011). Research participation among Asian American women at risk for cervical cancer: Exploratory pilot of barriers and enhancers. *Journal of Immigrant Minor Health, 13*(6), 1055–1068.

Golberstein, E., Eisenberg, D., & Gollust, S. E. (2008). Perceived stigma and mental health care seeking. *Psychiatric Services, 59*, 392–339.

Gollin, L. X., Harrigan, R. C., Calderon, J. L., Perez, J., & Easa, D. (2005). Improving Hawaiian and Filipino involvement in clinical research opportunities: Qualitative findings from Hawaii, *Ethnicity & Disease, 15*(4-5), s5-111-9.

Griffiths, K. M., Christensen, H., & Jorm, A. F. (2008). Predictors of depression stigma. *BMC Psychiatry*, 1-12.

Griffiths, K. M., Christensen, H., Jorm, A. F., Evans, K., & Groves, C. (2004). Effect of web-based depression literacy and cognitive-behavioural therapy interventions on stigmatising attitudes to depression: Randomised controlled trial. *British Journal of Psychiatry. 185*, 342–349. doi: 10.1192/bjp.185.4.342.

Griffiths, K.M., Nakane, Y., Christensen, H., Yoshioka, K., Jorm A.F., & Nakane, H. (2006). Stigma in response to mental disorders: A comparison of Australia and Japan. *BMC Psychiatry, 6*(21)

Gulliver, A., Griffiths, K. M., Christensen, H., Mackinnon, A., Calear, A. L., Parsons, A., … Stanimirovic, R. (2012). Internet-based interventions to promote mental health help-seeking in elite athletes: An exploratory randomized controlled trial. *Journal of Medical Internet Research, 14*(3), e69. doi:10.2196/jmir.1864

Harkness, J. A. (2010). *Adaptation of survey instrument.* Retrieved May 1, 2016 from http://projects.isr.umich.edu/csdi/adaptation.cfm

Healthy People 2020. (2012). *Adolescents Health.* Retrieved December 3, 2013 from http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=2

Hofstetter, C. R., Hovell, M. F., Lee, J., Zakarian, J., Park, H., Paik, H. Y., & Irvin, V. (2004). Tobacco use and acculturation among Californians of Korean descent: A behavioral epidemiological analysis. *Nicotine Tobacco Research, 6*(3), 481-489. doi: 10.1080/14622200410001696646.

Jang, Y., Chiriboga, D. A., & Okazaki, S. (2009). Attitudes toward mental health services: Age-group differences in Korean American adults. *Aging Mental Health. 13*(1), 127-134. doi: 10.1080/13607860802591070

Jang, Y., Gum, A. M., & Chiriboga, D. A. (2011). Knowledge of depression among Korean American older adults. *Journal of Applied Gerontology, 30*(5), 655-665. doi: 10.1177/0733464810374468.

Jang, Y., Kim, G., Hansen, L., & Chiriboga, D. (2007). Attitudes of older Korean Americans toward mental health services. *Journal of the American Geriatrics Society. 55,* 616–620.

Jo, K.-H., & Doorenbos, A. (2009). Understanding the meaning of human dignity in Korea: A content analysis. *International Journal of Palliative Nursing*,*15*(4), 178–185.

Jorm, A. F. (2000). Mental health literacy: Public knowledge and beliefs about mental disorders. *The British Journal of Psychiatry,* 177, 396-401. doi: 10.1192/bjp.177.5.396

Juon, H. S., Kim, M., Shankar, S., & Han, W. (2004). Predictors of adherence to screening mammography among Korean American women. *Preventive Medicine, 39*(3), 474-481.

Kanter, J. W., Rusch, L. C., & Brondino, M. J. (2008). Depression self-stigma: A new measure and preliminary findings. *The Journal of Nervous and Mental Disease*, *196*(9), 663–670.

Kline, R. B. (2001). *Hypothesis testing.* In Principles and practice of structural equation modeling (3rd ed., pp. 189-229). New York: A Division of Guilford Publications, Inc.

Knafl, K., Deatrick, J., Gallo, A., Holcombe, G., Bakitas, M., Dixon, J., & Grey, M. (2007). Focus on research methods: The analysis and interpretation of cognitive interviews for instrument development. *Research in Nursing & Health, 30*, 224-234.

Kramer, E. J., Kwong, K., Lee, E., & Chung, H. (2002). Cultural factors influencing the mental health of Asian Americans. *Western Journal of Medicine, 176*(4), 227–231.

Krueger, R. A. (2002). Designing and conducting focus group interviewing. *Eastern Illinois University.* Retrieved December 3 2014 from http://www.eiu.edu/~ihec/Krueger-FocusGroupInterviews.pdf

Kuo, B. C. H. (2014). Coping, acculturation, and psychological adaptation among migrants: A theoretical and empirical review and synthesis of the literature. *Health Psychology and Behavioral Medicine*, *2*(1), 16–33. http://doi.org/10.1080/21642850.2013.843459

Ledesma, R. D. & Valrero-Mora, P. (2007). Determining the number of factors to retain in EFA: An easy-to-use computer program for carrying out parallel analysis. Practical Assessment, *Research & Evaluation, 12*(2), 1-11.

Lee, G. (2003). Understanding immigrated Korean children's educational needs. Kappa Delta Pi Record, 168-172.

Link, B. G., Phelan, J. C., Bresnahan, M., Stueve, A., & Pescosolido, B. A. (1999). Public conceptions of mental illness: Labels, causes, dangerousness, and social distance. *American Journal of Public Health*, *89*(9), 1328–1333.

McCarty, C. A. (2008). Adolescent school failure predicts depression among girls. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *43*(2), 180–187. http://doi.org/10.1016/j.jadohealth.2008.01.023

Marcell, A. V., & Halpern-Felsher, B. L. (2007). Adolescents' beliefs about preferred resources for help vary depending on the health issue. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *41*(1), 61–68. doi:10.1016/j.jadohealth.2007.02.006

Marcell, A. V., Ford, C. A., Pleck, J. H., & Sonenstein, F. L. (2007). Masculine beliefs, parental communication, and male adolescents' health care use. *Pediatrics*, *119*(4), e966-975.

Mallery, J. C. (1991). *Semantic content analysis: A new methodology for the RELAUS natural language environment*. In Artificial intelligence and international politics (pp.47-48), Boulder: West view Press.

Maydeu-Olivares, A. (2013). Goodness-of-fit assessment of item response theory models, *Measurement, 11*, 71–101. doi: 10.1080/15366367.2013.831680

Michaud, P. A., & Fombonne, E. (2005). Common mental health problems. *BMJ : British Medical Journal*, *330*(7495), 835–838.

Miller, M., Yang, M., Hui, K., Choi, N. Y., & Lim, R. H. (2011). Acculturation, enculturation, and Asian American college students' mental health and attitudes toward seeking professional psychological help. *Journal of Counseling Psychology, 58*(3), 346-357. doi: 10.1037/a0023636

National Health and Medical Research Council. (2011). Clinical practice guidelines: Depression in Adolescents and young adults. Retrieved from December 3, 2014 https://www.nhmrc.gov.au/guidelines-publications/ext0007

National Institute of Health. (2008). Protecting human research participants. *NIH Office of Extramural Research.* Retrieved December 3, 2014 from https://phrp.nihtraining.com/users/PHRP.pdf

National Institute of Mental Health. (2013). Depression and High School Student. Retrieved December 3, 2014 from http://www.nimh.nih.gov/health/publications/depression-and-high-school-students/index.shtml

Olfson, M., Shaffer, D., Marcus, S. C., & Greenberg, T. (2003). Relationship between antidepressant medication treatment and suicide in adolescents. *Archives of General Psychiatry, 60*, 978–982.10.1001/archpsyc.60.9.978

Park, S. & Bernstein, K. S. (2008). Depression and Korean American immigrants. *Archives of Psychiatric Nursing, 22*(1), 12-9.

Polit, D. F., & Beck, C. T. (2004). Nursing research: Principles and methods (7th ed.) Philadelphia: Lippincott, Williams, & Wilkins

Presser, S., Rothgeb, J. M., Couper, M. P., Lessler, J. T., Martin, E., Martin, J., & Singer, E. (2004). Methods for testing and evaluating survey questionnaires. New York: John Wiley and Sons.

Quach, A. S. & Hall, D. H. (2013). Chinese American attitudes toward therapy: Effects of gender, shame, and acculturation. International Journal of Humanities and Social Science, 3(12).

Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment, 12*(3), 287-297. doi: 10.1037//1040-3590.12.3.287.

Rhee, S. Chang, J., & Rhee, J. (2003). Acculturation, communication patterns, and self-esteem among Asian and Caucasian American adolescents. *Adolescence, 38* (152), 749-768.

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health, 4*(3), Retrieved June 5 2014 from www.auseinet.com/journal/vol4iss3suppl/rickwood.pdf

Sauro, J. & Lewis, J. R. (2011). When designing usability questionnaires, does it hurt to be positive?, CHI 2011, May 7–12, Vancouver, BC, Canada

Scharff, D. P., Mathews, K. J., Jackson, P., Martin, E., & Edward, D. (2010). More than tuskegee: Understanding mistrust about research participation. *Journal of Health Care Poor Underserved, 21*(3), 879–897. doi: 10.1353/hpu.0.0323

Schwartz, S. J., Unger, J. B., Zamboanga, B. L., & Szapocznik, J. (2010). Rethinking the concept of acculturation: Implications for theory and research. *The American Psychologist, 65*(4), 237-251. doi: 10.1037/a0019330.

Sin, M. K., Jordan, P., & Park, J. (2011). Perceptions of depression in Korean American immigrants. *Issues in Mental Health Nursing, 32*, 177-183. doi: 10.3109/01612840.2010.536611

Suinn, R. M., Khoo, G., & Ahuna, C. (1995). The Suinn-Lew Asian Self-Identity Scale: Cross-cultural information. *Multicultural Counseling and Development, 23*, 139-148.

University of California San Francisco. (2008). Guidelines for translating surveys in cross-cultural research prepared by the measurement and methods more of the center for aging in diverse Communities, *University of California San Francisco*, 1-7.

Van Nes, F., Abma, T., Jonsson, H., & Deeg, D. (2010). Language differences in qualitative research: Is meaning lost in translation? *European Journal of Ageing, 7*(4), 313–316. http://doi.org/10.1007/s10433-010-0168-y

Waltz, C. F., Strickland, O. L., & Lenz, E. R. (2005). *Measurement reliability*. In Measurement in nursing and health research (3rd ed., pp. 137-153). New York: Springer Publishing Company.

Weine, A. M., Phillips, J. S., & Achenbach, T. M. (1995). Behavioral and emotional problems among Chinese and American children: Parent and teacher reports for ages 6 to 13. *Journal of Abnormal Child Psychology, 23*(5), 619-639. doi: 10.1007/BF01447666.

Whittlesey, V. (2001). Diversity activities for psychology. Boston: Allyn and Bacon, and Fischer, E., and Farina, A. (1995). Attitudes toward seeking psychological professional help: A shortened form and considerations for research. *Journal of College Student Development, 36*, 368-373.

Williams, B., Brown, T., & Onsman, A. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine, 8*(3). Retrieved from http://ro.ecu.edu.au/jephc/vol8/iss3/1

Willis, G. B. (2005). Cognitive interviewing: A "How To" guide. *Research Triangle Institute.* Retrieved from December 3, 2014 http://www.uiowa.edu/~c07b209/interview.pdf

Wilson, C. J., Deane, F. P., Ciarrochi, J., & Rickwood, D. (2005). Measuring help-seeking intentions: Properties of the general help-seeking questionnaire. *Canadian Journal of Counseling, 39*(1), 15-28

Yeh, C. J. (2003). Age, acculturation, cultural adjustment, and mental health symptoms of Chinese, Korean, and Japanese immigrant youths. *Cultural Diversity and Ethnic Minority Psychology, 9*, 34-48. doi: 10.1037/1099-9809.9.1.34.

Yi, S., & Tidwell, R. (2005). Adult Korean Americans: Their attitudes toward seeking professional counseling services. *Community Mental Health Journal, 41*, 571–580.

Yong, A. G. & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. Tutorials in Quantitative Methods for Psychology, 9(2), 79-94.

Zhang, Y. B., Lin, M., Nonaka, A., & Beom, K. (2005). Harmony, hierarchy and conservatism: A cross-cultural comparison of confucian values in China, Korea, Japan, and Taiwan, Communication Research Reports, 22(2), 107-115. doi: 10.1080/00036810500130539.

Appendix A

Depression Literacy Questionnaire items (D-Lit scale) (Gulliver et al., 2012)

Questions	Correct Response
1. People with depression often speak in a rambling and disjointed way.	No
2. People with depression may feel guilty when they are not at fault.	Yes
3. Reckless and foolhardy behaviour is a common sign of depression.	No
4. Loss of confidence and poor self-esteem may be a symptom of depression.	Yes
5. Not stepping on cracks in the footpath may be a sign of depression.	No
6. People with depression often hear voices that are not there.	No
7. Sleeping too much or too little may be a sign of depression.	Yes
8. Eating too much or losing interes1t in food may be a sign of depression.	Yes
9. Depression does not affect your memory and concentration.	No
10. Having several distinct personalities may be a sign of depression.	No
11. People may move more slowly or become agitated as a result of their depression.	No
12. Clinical psychologists can prescribe antidepressants.	No
13. Moderate depression disrupts a person's life as much as multiple sclerosis or deafness.	Yes
14. Most people with depression need to be hospitalized.	No
15. Many famous people have suffered from depression.	Yes
16. Many treatments for depression are more effective than antidepressants.	No
17. Counseling is as effective as cognitive behavioral therapy for depression.	Yes
18. Cognitive behavioral therapy is as effective as antidepressants for mild to moderate depression.	No
19. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	No No
20. People with depression should stop taking antidepressants as soon as they feel better.	No
21. Antidepressants are addictive.	No
22. Antidepressant medications usually work straight away.	No

Appendix B

IRB Approval

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice

Initial Review (Response To Modifications)

March 12, 2015
Yoo Mi Jeong
Health Systems Science
845 S Damen Ave
M/C 802
Chicago, IL 60612
Phone: (305) 469-4123 / Fax: (312) 996-8945
RE: Protocol # 2015-0160

"Validation of a Korean Version of the Depression Literacy Scale among Korean American Parents with Adolescent Children"

Dear Dr. Jeong:

Kindly note that if surveys will be revised as the phases proceed, an Amendment Form will need to be submitted prior to their use in the field.

Your Initial Review (Response To Modifications) was reviewed and approved by the Expedited review process on March 5, 2015. You may now begin your research

Please note the following information about your approved research protocol:

Protocol Approval Period: March 5, 2015 - March 4, 2016

Approved Subject Enrollment #: 200

Additional Determinations for Research Involving Minors: These determinations have not been made for this study since it has not been approved for enrollment of minors.

Performance Sites: UIC

Sponsor: None

PAF#: Not Applicable

Research Protocol(s):

a) Research Protocol; Version 2; 03/02/2015

Recruitment Material(s):

a) Confirmation Letter; Version 1; 02/04/2015
b) Confirmation Letter (Korean); Version 1; 02/04/2015
c) Flyer for Cognitive Interviews; Version 2; 03/02/2015
d) Flyer for Cognitive Interviews (Korean); Version 2; 03/02/2015

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category(ies):

(6) Collection of data from voice, video, digital, or image recordings made for research purposes., (7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
02/04/2015	Initial Review	Expedited	02/05/2015	Modifications Required
03/02/2015	Response To Modifications	Expedited	03/05/2015	Approved

Please remember to:

→ Use your **research protocol number** (2015-0160) on any documents or correspondence with the IRB concerning your research protocol.
→ Review and comply with all requirements on the enclosure,

"UIC Investigator Responsibilities, Protection of Human Research Subjects"
*(*http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf*)*

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

Appendix C

Are You a Korean Parent of a Teenager?

Volunteers needed to discuss teenage depression and parenting

Study purpose: The purpose of this research study is to learn how Korean American parents understand depression and feel about some of the daily issues associated with parenting adolescent children.

Are you:

- A parent of one or more children aged 12 – 19 who are living with you?
- Fluent in Korean (speaking, reading, writing)?

If so, you may be eligible to participate in the study. In this study:

- 8 to 10 parents will meet for an audio-recorded group discussion for approximately 90 minutes
- Group members will share their thoughts about and understanding of depression and how to cope with it
- Two group discussions will be held: one for fathers and one for mothers

Conducted by
Yoo Mi Jeong
PhD Candidate in the College of Nursing, University of Illinois at Chicago
Phone: 305-469-4123; Email: yjeong20@uic.edu

Please contact me at the telephone number or e-mail address provided below. **Participants will receive a $10 Starbucks gift card!**

Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**

Appendix D

Information sheet for participating in the focus group interviews

This is an information sheet for participating in a research study. You are being asked to participate in a focus group interview on depression literacy among Korean American parents. Before you decide whether to participate, you should know what the study is about, the possible risks and benefits, and what you will have to do in this study. You are being asked to participate in this study voluntarily. You can choose whether you participate or not in the focus group interview, and you can leave the group at any time during the interview. Deciding whether or not to participate will not affect the subject's relationship with UIC. Please read this sheet and ask any questions you may have.

Who is doing the research, and why is it being done?

This research study has been approved by the University of Illinois at Chicago (UIC) and is being conducted by Yoo Mi Jeong, who is a PhD student, and Dr. Tonda Hughes of the UIC College of Nursing. Dr. Hughes will oversee all aspects of the study. Her contact information is 312-996-5106 (phone) and thughes@uic.edu (e-mail). The purpose of the study is to explore the key factors of depression literacy among Korean American parents living in Chicago who have adolescent children aged 12 to 19 years.

What procedures are involved?

You are being asked to participate in a focus group interview on depression literacy among Korean American parents. Questions will address your opinions about the causes of depression and help-seeking behaviors for depression. There are no right or wrong answers to the interview questions, so you can freely share your ideas and opinions about depression literacy. The findings from the focus group interview will be used to better understand depression literacy among Korean American parents; the findings may also facilitate treatment of depression among Korean American adolescents. During the interview, it is expected that you will be honest and respectful to others who are voicing their own opinions. The interview will take approximately 90 minutes and will be audio-recorded. However, no identifying information will be recorded in order to preserve participants' confidentiality. All focus group participants are reminded to keep what is said in the interview confidential and are asked to use a "nickname" rather than your own name. Although we ask everyone in the group to respect everyone else's privacy and not to identify anyone in the group or repeat what is said during the group discussion, confidentiality cannot be guaranteed.

What about the potential risks and discomforts, and benefits from this study?

There are very minimal risks involved in participating in the study, but some participants may feel uneasy or uncomfortable about sharing their perceptions about depression. There is no direct benefit for your participation, but it is hoped that you will acquire information about the causes and symptoms of depression and about available healthcare resources from a booklet that will be provided.

Who should you contact if you have questions about the research study and participants' right?

If you have questions following the focus group interview, please call the researcher (Yoo Mi Jeong) at (305) 469-4123. If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, you may call the Office for the Protection of

Research Subjects (OPRS) at 312-996-1711 (local) or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu. If you have any questions or concerns regarding your privacy rights under HIPAA, you should contact the UIC Privacy Officer at (312) 996-2271.

Following completion of the interview, you will be given a $10 Starbucks gift card.

Appendix E

Introduction and questions for the focus group interview

	Focus group
Introduction	**Welcome:** *"Thank you for agreeing to participate in our focus group. I really appreciate your participation."* **Introduction:** *"I am Yoo Mi Jeong, a PhD student in the College of Nursing at UIC. I will be moderating the focus group."* **Purpose of the study:** *"I am interested in learning about your knowledge and beliefs about depression and how to deal with it. I would like to hear your opinions about these matters specifically."* **Ground rules:** *"To facilitate the focus group interview, there are a few rules to be kept in mind by each member. First, there are no right or wrong answers for questions, so I hope that you will be honest and talk freely about your own ideas and opinions. Second, everything that we talk about will be kept in this room in order to make all members feel comfortable in sharing information. Third, I hope that each of you will speak and will be respectful to the other members. Finally, I will be audio-recording and taking notes on your responses during the interview, but all data will be kept anonymous and secure to protect your confidentiality. All focus group participants are reminded to keep what is said in the interview confidential and are asked to use a "nickname" rather than your own name. Although we ask everyone in the group to respect everyone else's privacy and not to identify anyone in the group or repeat what is said during the group discussion, confidentiality cannot be guaranteed."* *"Let's begin with everyone introducing themselves using only their nicknames. Please tell each other what you are currently doing, the length of time that you have lived in the U.S., and how old your adolescent child is."*
Engagement questions	Questionnaires for demographic data, blank paper sheet, and pencils will be distributed to participants by the researcher. *"Before the interview, I would like to ask you to answer the questions and circle the answer which fits your situation. These questions are to aid in the analysis of the data and this information will not be linked to your name nor will it be shared with anyone else."* The researcher will gather the completed questionnaires for demographic data. *"Now, I am interested in learning about your knowledge and beliefs regarding depression and how to deal with it. First of all, I would like to hear your thoughts about depression. What kinds of words come to your mind when you think about depression?"* After participants list words related to depression, *"Please circle the words that describe depression well. Why do you think so? Let's talk about your opinions."*
Exploration questions	*"Do you think you can distinguish between depressed and non-depressed children?"* *"I would like to hear your opinion about the cause of depression."* *"I would like to hear your opinion about help-seeking behaviors for depression."* *"I would like to hear your beliefs about help-seeking behaviors for depression."* *"I would like to hear about your attitude toward any mental healthcare services."* *"I would like to hear your opinion about seeking help for depression."*
Exit questions	*"Finally, is there anything else you would like to talk about regarding your knowledge or beliefs about depression? Or is there anything you want to tell me that I didn't ask about your depression knowledge or beliefs?"*

Closure	*"Thank you again for participating in this focus group. Your passion and your responses will help us to determine how to enhance knowledge about depression and about how depressed children can be helped in a timely manner. Thank you."* A $10 Starbucks gift card will be given to each participant.

Appendix F

Demographic questions

To aid in the analysis of the data, we would appreciate you sharing a little information about yourself. Please, answer the questions and circle the answer which fits your situation. This information will not be linked to your name nor will it be shared with anyone else.

1. What is your age?	
2. How long has it been since you immigrated from Korea to the U.S.?	
3. What is your adolescent children's age?	
4. What is the highest level of education (completed)?	Up to high school Bachelor Masters' degree or Above

Appendix G

The Modification of D-Lit Scale Based on Focus Group Findings and Cross-Culture Survey Guidelines*

D-Lit scale	Revised version	Rationale/Construct Measured
1. People with depression often speak in a rambling and disjointed way.	Deleted	Difficult to understand the words "rambling" and "disjointed"
2. People with depression may feel guilty when they are not at fault.	1. People with depression may feel guilty when they are not at fault.	**Knowledge of depressive symptoms**
3. Reckless and foolhardy behaviour is a common sign of depression.	Deleted	Difficult to understand words "reckless" and "foolhardy behavior"
4. Loss of confidence and poor self-esteem may be a symptom of depression.	2. Loss of confidence and poor self-esteem may be a symptom of depression.	**Knowledge of depressive symptoms**
5. Not stepping on cracks in the footpath may be a sign of depression.	Deleted	Difficult to differentiate this symptom from depressive symptoms
6. People with depression often hear voices that are not there.	3. People with depression often hear voices that are not there.	**Knowledge of depressive symptoms**
7. Sleeping too much or too little may be a sign of depression.	4. Sleeping too much or too little may be a sign of depression.	**Knowledge of depressive symptoms**
8. Eating too much or losing interest in food may be a sign of depression.	5. Eating too much or losing interest in food may be a sign of depression.	**Knowledge of depressive symptoms**
9. Depression does not affect your memory and concentration.	6. Depression does not affect your memory and concentration.	**Knowledge of depressive symptoms**
10. Having several distinct personalities may be a sign of depression.	Deleted	Difficult to differentiate this symptom from depressive symptoms
11. People may move more slowly or become agitated as a result of their depression.	Deleted	Difficult to differentiate this symptom from depressive symptoms
	7. ADDED: *Most people with depression think about committing suicide.*	**Knowledge of depressive symptoms**
12. Clinical psychologists can prescribe antidepressants.	8. Clinical psychologists can prescribe antidepressants.	**Knowledge of treatment for depression**
13. Moderate depression disrupts a person's life as much as multiple sclerosis or deafness.	9. Moderate depression disrupts a person's life as much as physical disease.	**Knowledge about depression**
	10. ADDED: *If people become aggressive or oversensitive, it means that they have depression.*	**Depressive symptoms.** Emotional change was added as a depressive symptom
14. Most people with depression need to be hospitalized.	11. Most people with depression need to be hospitalized.	**False belief about depression**
15. Many famous people have suffered from depression.	12. Many famous people have suffered from depression.	**Knowledge about depression**
16. Many treatments for depression are more effective than antidepressants.	Deleted	
17. Counseling is as effective as cognitive behavioral therapy for depression.	13. Counseling is as effective as cognitive behavioral therapy for depression.	**Knowledge and belief about treatment for depression**
18. Cognitive behavioral therapy is as effective as antidepressants for mild	32. Cognitive behavioral therapy is as effective as antidepressants for mild to	**Knowledge about treatment**

to moderate depression.	moderate depression.	
19. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	14. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	**False knowledge and belief about treatment for depression**
20. People with depression should stop taking antidepressants as soon as they feel better.	15. People with depression should stop taking antidepressants as soon as they feel better.	**False knowledge and belief about treatment for depression**
21. Antidepressants are addictive.	16. Antidepressants are addictive.	**False knowledge about treatment for depression (antidepressants)**
22. Antidepressant medications usually work straight away.	17. Antidepressant medications usually work straight away.	**False knowledge about treatment for depression (antidepressants)**
	18. ADDED: *Antidepressant medications should be taken for one's entire life.*	**False knowledge about treatment for depression (antidepressants).** Participants expressed concerns, mostly about taking medication for one's entire life. Therefore, this item was added to check for false knowledge about antidepressants.
	19. ADDED: *Depression cannot be fully treated and is a chronic disease that repeatedly recurs.*	**False knowledge about treatment for depression.** Participants had a strong false belief that depression cannot be cured or treated successfully.
	20. ADDED: *The cause of depression is poor parenting and child characteristics rather than brain-related problems.*	**False knowledge and belief about the cause of depression.** Participants thought that a main cause of depression was their parenting, not biological factors. This belief produced strong guilt among fathers and mothers. Therefore, this item was added to check for false knowledge and belief about the cause of depression.
	21. ADDED: *If people have good social networks, they will not have depression.*	**False knowledge and belief about the cause of depression.** Participants thought that a main cause of depression was bad family, peer, or neighborhood networks. Therefore, this item was added to check for false knowledge and belief because there are many causes for depression other than relationships with others.
	22. ADDED: *If there is someone to talk to openly, one does not become depressed.*	**False knowledge and belief about the cause of depression.** Participants thought that a main cause of depression was bad family, peer, or neighborhood networks. Therefore, this item was added to check for false knowledge and belief because there are many causes for depression other than relationships with others.
	23. ADDED: *If there is an imbalance in brain chemicals or hormones, it can cause depression.*	**Knowledge and belief about the cause of depression.** Participants lacked information about the biological cause of depression. Therefore this item was added to check for knowledge and belief about the biological cause of depression.
	24. ADDED: *The only way to treat a*	**False knowledge and belief about the**

	child's depression is to change the parenting.	**treatment for depression.** Participants thought a main cause of depression was their parenting, not biological factors. This belief caused strong guilt among fathers and mothers. Therefore, this item was added to check for false knowledge and belief about the cause of depression.
	25. ADDED: *If depression is detected and treated early, the treatment is more effective.*	**Knowledge about treatment for depression.** Focus group interview participants lacked knowledge about treatment for depression.
	26. ADDED: *If the environment is changed, depression can be cured naturally.*	**False knowledge and belief about treatment for depression.** Participants lacked knowledge about treatment for depression.
	27. ADDED: *A balanced diet can help to improve depression.*	**Knowledge about self-help intervention for depression.** This item was added based on Jorm's mental health literacy model.
	28. ADDED: *Physical exercise is helpful to improve depression.*	**Knowledge about self-help intervention for depression.** This item was added based on Jorm's mental health literacy model.
	29. ADDED: *Good quality of sleep is helpful to improve depression.*	**Knowledge about self-help intervention for depression.** This item was added based on Jorm's mental health literacy model.
	30. ADDED: *Having a hobby to enjoy is helpful to improve depression.*	**Knowledge about self-help intervention for depression.** This item was added based on Jorm's mental health literacy model.
	31. ADDED: *Talking with other people can help to improve depression.*	**Knowledge about self-help intervention for depression.** This item was added based on Jorm's mental health literacy model.

*Harkness, J. A. (2010). *Adaptation of survey instrument.* Retrieved May 1, 2016 from http://projects.isr.umich.edu/csdi/adaptation.cfm

Appendix H

The Parental D-Lit scale with 32 items

Parental D-Lit scale	Answers
1. People with depression may feel guilty when they are not at fault.	Yes
2. Loss of confidence and poor self-esteem may be a symptom of depression.	Yes
3. People with depression often hear voices that are not there.	No
4. Sleeping too much or too little may be a sign of depression.	Yes
5. Eating too much or losing interest in food may be a sign of depression.	Yes
6. Depression does not affect your memory and concentration.	No
7. Most people with depression think about committing suicide.	No
8. Clinical psychologists can prescribe antidepressants.	No
9. Moderate depression disrupts a person's life as much as physical disease.	Yes
10. If people become aggressive or oversensitive, it means that they have depression.	No
11. Most people with depression need to be hospitalized.	No
12. Many famous people have suffered from depression.	Yes
13. Counseling is as effective as cognitive behavioral therapy for depression.	Yes
14. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful.	No
15. People with depression should stop taking antidepressants as soon as they feel better.	No
16. Antidepressants are addictive.	No
17. Antidepressant medications usually work straight away.	No
18. Antidepressant medications should be taken for one's entire life.	No
19. Depression cannot be fully treated and is a chronic disease that repeatedly recurs.	No
20. The cause of depression is poor parenting and child characteristics rather than brain-related problems.	No
21. If people have good social networks, they will not have depression.	No
22. If there is someone to talk to openly, one does not become depressed.	No
23. If there is an imbalance in brain chemicals or hormones, it can cause depression.	Yes
24. The only way to treat a child's depression is to change the parenting.	No
25. If depression is detected and treated early, the treatment is more effective.	Yes
26. If the environment is changed, depression can be cured naturally.	No
27. A balanced diet can help to improve depression.	Yes
28. Physical exercise is helpful to improve depression.	Yes
29. Good quality of sleep is helpful to improve depression.	Yes
30. Having a hobby to enjoy is helpful to improve depression.	Yes
31. Talking with other people can help to improve depression.	Yes
32. Cognitive behavioral therapy is as effective as antidepressants for mild to moderate depression.	Yes

Appendix I

Flyers for Cognitive Interviews

Are You a Korean Parent of a Teenager?

Volunteers needed to be asked about teenage depression

Study purpose: The purpose of this research study is to evaluate whether questions on the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources, are easy for you to understand.

Are you:

- A parent of one or more children aged 12 – 19 who are living with you?
- Fluent in Korean (speaking, reading, writing)?

If so, you may be eligible to participate in the study. In this study:

- Volunteers will be individually asked about the clarity of the Depression Literacy Scale's questions.
- This meeting will take about 40 minutes and will be audio-recorded.

Conducted by
Yoo Mi Jeong
PhD Candidate in the College of Nursing, University of Illinois at Chicago
Phone: 305-469-4123; Email: yjeong20@uic.edu

Please contact me at the telephone number or e-mail address provided below. **Participants will receive a $10 Starbucks gift card!**

Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**

Appendix J

Information sheet for participating in the cognitive (individual) interview

This is an information sheet for participating in a research study. You are being asked to participate in a cognitive (individual) interview on the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources among Korean American parents. Before you decide whether to participate, you should know what the study is about, the possible risks and benefits, and what you will have to do in this study. You are being asked to participate in this study voluntarily. You can choose whether you participate or not in the cognitive interview, and you can leave the interview at any time. Deciding whether or not to participate will not affect the subject's relationship with the University of Illinois at Chicago (UIC). Please read this sheet and ask any questions you may have.

Who is doing the research, and why is it being done?

This research study has been approved by UIC and is being conducted by Yoo Mi Jeong, who is a PhD student, and Dr. Tonda Hughes of the UIC College of Nursing. Dr. Hughes will oversee all aspects of the study. Her contact information is 312-996-5106 (phone) and thughes@uic.edu (e-mail). The purpose of the study is to examine the understandability of each question on the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources among Korean American parents who have children aged 12 to 19 years living with them in Chicago.

What procedures are involved?

You are being asked to participate in a cognitive (individual) interview on the understandability of the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources among Korean American parents. Questions will address your understanding of questions about the causes of depression and help-seeking behaviors for depression. There are no right or wrong answers to the interview questions, so you can freely express your ideas and opinions. The findings from the cognitive interview will be used to better understand depression literacy among Korean American parents; the findings may also facilitate treatment of depression among Korean American adolescents. The interview will take about 40 minutes and will be audio-taped, but no identifying information will be recorded in order to preserve your confidentiality.

What about the potential risks and discomforts, and benefits from this study?

There are very minimal risks involved in participating in the study, but some participants may feel uneasy or uncomfortable about sharing their perceptions about depression. In addition, there is a risk that a breach of privacy (others will know the subject is participating the research) and confidentiality (accidental disclosure of identifiable data) may occur. There is no direct benefit for your participation, but it is hoped that you will acquire information about the causes and symptoms of depression and about available healthcare resources from a booklet that will be provided.

Who should you contact if you have questions about the research study and participants' right?

If you have questions following the focus group interview, please call the researcher (Yoo Mi Jeong) at (305) 469-4123. If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, you may call the Office for the Protection of

Research Subjects (OPRS) at 312-996-1711 (local) or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu. If you have any questions or concerns regarding your privacy rights under HIPAA, you should contact the UIC Privacy Officer at (312) 996-2271.

Following completion of the interview, you will be given a $10 Starbucks gift card.

Appendix K

Introduction and questions for the cognitive interviews

	Individual interview
Introduction	**Welcome:** *"Thank you for agreeing to participate in the individual interview. I really appreciate your participation."* **Introduction*:*** *"I am Yoo Mi Jeong, a PhD student in the College of Nursing at UIC. I will be moderating the focus group."* **Purpose of the study:** *"I am interested in learning about your understanding of questionnaires for knowledge and beliefs about your children's depression. I would like to hear your opinions about these matters specifically."*
Exploration questions	After showing the Parental D-Lit scale, *"1. Please read first questions. What do you think about this question? Can you tell me what this sentence means?"* *"2. Is it easy to understand? If not, what do you recommend for amendment?"* *"3. Is any other suggestion to make the question better to make sense?"*
Closure	*"Thank you again for participating in this focus group. Your passion and your responses will help us to determine how to enhance the understandability of the Parental D-Lit scale. Thank you."* A $10 Starbucks gift card will be given to each participant.

Appendix L

Summaries of interpretation and recommendation of items from cognitive interviews

Item	Interpretation and recommendation from participants	The PI's modification of the scale
12. Clinical psychologists can prescribe antidepressants.	1, 4, & 6: I don't know what clinical psychologists are and what they do. Recommendation: The explanation about psychologist needs to be stated.	8. Clinical psychologists (psychologist) can prescribe antidepressant.
13. Moderate depression disrupts a person's life as much as multiple sclerosis or deafness.	2, 5, & 10: Depression is influencing physical health as well. But, what is multiscleosis? It is hard to know what it is. Recommendation: if there is additional explanation with parenthesis, I think that would enough to understand. I would recommend that bullet the word frequency like often or more because sometimes I did not read them thoroughly.	9. Moderate depression disrupts a person's life as much as physical disease.
17. Counseling is as effective as cognitive behavioral therapy for depression.	1, 2, 5, 7, & 9: CBT is effective much like antidepressant. 3: I do not understand what differences between counseling and cognitive behavioral therapy. CBT? It is hard to understand. What is it? 2: maybe "counseling is NOT effective like CBT" rather than "counseling is effective like CBT" I hoped it would better positive sentence rather than negative sentence like "not influence on --> influence on". Sometimes it is hard to understand Korean so positive sentence might be better to understand than negative sentence. Recommendation: I think the additional explanation about this therapy with parenthesis would be helpful to understand. It might be better to include extra explanation with parenthesis.	32. Cognitive behavioral therapy (changing the perspectives on phenomenon or object negative to positive) is as effective as antidepressants for mild to moderate depression.

Appendix M

Expert Review 1 for the Parental D-Lit scale

일반 부모의 청소년 우울증 원인, 증상, 치료에 대한 지식, 신념 체크	Concept	Opinion	0	1	2	3	4
v 0-no agree at all, 1-some disagree, 2-neither disagree or agree, 2-some agree, 3-absolute agree)			no agree at all	some disagree	neither disagree or agree	some agree	absoute agree
1. 우울증이 있는 사람들은 아무 이유 없이 죄책감을 느낄 수 있다.	증상						V
2. 자신감 부족과 낮은 자존감은 우울증의 증상일 수 있다.	증상					V	
3. 우울증이 있는 사람들은 흔히 환청이 들린다.	증상						V
4. 수면과다나 수면부족은 우울증의 한 신호일 수 있다.	증상						V
5. 너무 많이 먹거나 식욕 감퇴는 우울증의 증상일 수 있다.	증상						V
6. 우울증은 기억력과 집중력에 영향을 미치지 않는다.	증상						V
7. 우울증이 있는 사람들은 보통 자살 생각을 많이 한다.	증상						V
8. 임상 심리사 (psychologist) 들은 항우울제를 처방할 수 있다.	치료	Definition of psychologist?		V			
9. 우울증이 중간 단계 이상일 경우 신체적 질병과 같이 개인 일상의 삶에 지장을 줄 수 있다.	증상						V
10. 성격이 공격적으로 변하거나 예민하게 변하면 우울증이 있음을 의미한다.	증상						V
11. 우울증이 있는 대부분의 사람들은 입원이 필요하다.	치료						V
12. 많은 유명인들은 우울증을 앓고 있다.	일반지식	necessary to check parents perception on their children's idols?		V			
13. 상담 및 심리치료는 항우울제보다 더 효과적이다.	치료						V
14. 우울증 치료에 쓰이는 대체 요법과 생활방식 개선 요법 중에서, 비타민 섭취가 가장 효과적일 것이다.	치료	치료에 대한 설명의 상세함			V		
15. 우울증이 있는 사람들은 기분이 나아지면 항우울제 복용을 바로 중단해도 된다.	치료						V
16. 항우울제는 중독성이 있다.	치료						V
17. 항우울제는 보통 복용 즉시 효과가 나타난다.	치료						V
18. 항우울제는 평생 복용해야 한다.	치료						V
19. 우울증은 완치가 되지 않으며, 반복적으로 재발하는 만성질환이다.	일반지식						V
20. 우울증은 뇌의 문제라기 보다는 아이의 기질과 부모님의 양육 방식의 문제로 발생한다.	원인						V
21. 대인관계가 좋은 사람은 우울증이 걸리지 않는다.	원인					V	
22. 마음을 터놓을 수 있는 사람이 없으면 우울증이 걸리기 쉽다.	원인						V
23. 뇌의 신경전달물질이나 호르몬 분비 및 조절에 이상이 있을 경우에 우울증이 올 수 있다.	원인						V
24. 아이의 우울증을 치료하기 위해서 부모의 양육방식 개선만이 방법이다.	치료						V

25. 우울증을 조기에 발견하여 치료하면 효과가 더 좋다.	**치료**						**V**
26. 우울증은 환경이 변화되면 저절로 좋아지기도 한다.	**치료**						**V**
27. 균형 잡힌 식습관을 갖는 것이 우울증 개선시키는데 도움을 준다.	**치료**						**V**
28. 신체 운동이 우울증 개선시키는데 도움을 준다	**치료**						**V**
29. 좋은 수면이 우울증 개선시키는데 도움을 준다.	**치료**						**V**
30. 뭔가 즐길 수 있는 취미를 갖는 것이 우울증 개선시키는데 도움을 준다.	**치료**						**V**
31. 누군가와 대화를 나누는 것은 우울증 개선시키는데 도움을 준다.	**치료**						**V**
32. 인지행동치료 (cognitive behavioral therapy) 는 경증, 중증 우울증에 항우울제만큼 효과적이다.	**치료**	**CBT?**			**V**		

Appendix N

Expert Review 2 for the Parental D-Lit scale

일반 부모의 청소년 우울증 원인, 증상, 치료에 대한 지식, 신념 체크			0	1	2	3	4
v 0-no agree at all, 1-some disagree, 2-neither disagree or agree, 2-some agree, 3-absolute agree)		의견	no agree at all	some disagree	neither disagree or agree	some agree	absoute agree
1. 우울증이 있는 사람들은 아무 이유 없이 죄책감을 느낄 수 있다.	증상						V
2. 자신감 부족과 낮은 자존감은 우울증의 증상일 수 있다.	증상					V	
3. 우울증이 있는 사람들은 흔히 환청이 들린다.	증상						V
4. 수면과다나 수면부족은 우울증의 한 신호일 수 있다.	증상						V
5. 너무 많이 먹거나 식욕 감퇴는 우울증의 증상일 수 있다.	증상						V
6. 우울증은 기억력과 집중력에 영향을 미치지 않는다.	증상						V
7. 우울증이 있는 사람들은 보통 자살 생각을 많이 한다.	증상						V
8. 임상 심리사 (psychologist) 들은 항우울제를 처방할 수 있다.	치료				V		
9. 우울증이 중간 단계 이상일 경우 신체적 질병과 같이 개인 일상의 삶에 지장을 줄 수 있다.	증상						V
10. 성격이 공격적으로 변하거나 예민하게 변하면 우울증이 있음을 의미한다.	증상				V		
11. 우울증이 있는 대부분의 사람들은 입원이 필요하다.	치료						V
12. 많은 유명인들은 우울증을 앓고 있다.	일반지식				V		
13. 상담 및 심리치료는 항우울제보다 더 효과적이다.	치료						V
14. 우울증 치료에 쓰이는 대체 요법과 생활방식 개선 요법 중에서, 비타민 섭취가 가장 효과적일 것이다.	치료						V
15. 우울증이 있는 사람들은 기분이 나아지면 항우울제 복용을 바로 중단해도 된다.	치료						V
16. 항우울제는 중독성이 있다.	치료						V
17. 항우울제는 보통 복용 즉시 효과가 나타난다.	치료						V
18. 항우울제는 평생 복용해야 한다.	치료						V
19. 우울증은 완치가 되지 않으며, 반복적으로 재발하는 만성질환이다.	일반지식						V
20. 우울증은 뇌의 문제라기 보다는 아이의 기질과 부모님의 양육 방식의 문제로 발생한다.	원인						V
21. 대인관계가 좋은 사람은 우울증이 걸리지 않는다.	원인					V	
22. 마음을 터놓을 수 있는 사람이 없으면 우울증이 걸리기 쉽다.	원인						V
23. 뇌의 신경전달물질이나 호르몬 분비 및 조절에 이상이 있을 경우에 우울증이 올 수 있다.	원인						V
24. 아이의 우울증을 치료하기 위해서 부모의 양육방식 개선만이 방법이다.	치료						V
25. 우울증을 조기에 발견하여 치료하면 효과가 더 좋다.	치료						V
26. 우울증은 환경이 변화되면 저절로 좋아지기도 한다.	치료						V
27. 균형 잡힌 식습관을 갖는 것이 우울증 개선시키는데 도움을 준다.	치료						V
28. 신체 운동이 우울증 개선시키는데 도움을 준다	치료						V

29. 좋은 수면이 우울증 개선시키는데 도움을 준다.	**치료**						**V**
30. 뭔가 즐길 수 있는 취미를 갖는 것이 우울증 개선시키는데 도움을 준다.	**치료**						**V**
31. 누군가와 대화를 나누는 것은 우울증 개선시키는데 도움을 준다.	**치료**						**V**
32. 인지행동치료 (cognitive behavioral therapy) 는 경증, 중증 우울증에 항우울제만큼 효과적이다.	**치료**				**V**		

Appendix O

Flyers for surveys

Are You a Korean Parent of a Teenager?

Volunteers needed to complete a survey on teenage depression

Study purpose: The purpose of this research study is to evaluate whether the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources, is appropriate for measuring depression literacy among Korean American parents.

Are you:

- A parent of one or more children aged 12 – 19 who are living with you?
- Fluent in Korean (speaking, reading, writing)?

If so, you may be eligible to participate in the study. In this study:

- Volunteers will complete questionnaires either in a private room in the Korean community center or at home.
- You will have the option of having the questionnaires mailed to you.
- Completing the questionnaires will take approximately 30 to 40 minutes.

UIC COLLEGE OF NURSING
UNIVERSITY OF ILLINOIS AT CHICAGO

Conducted by
Yoo Mi Jeong
PhD Candidate in the College of Nursing, University of Illinois at Chicago
Phone: 305-469-4123; Email: yjeong20@uic.edu

Please contact me at the telephone number or e-mail address provided below. **Participants will receive a $5 Starbucks gift card!**

Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**	**Yoo Mi Jeong 305-469-4123 yjeong20@uic.edu**

Appendix P

Information sheet for participating in the survey

This is an information sheet for participating in a research study. You are being asked to complete a survey about depression literacy, which includes the ability to recognize depression and knowledge about relevant healthcare resources, among Korean American parents. Before you decide whether to participate, you should know what the study is about, the possible risks and benefits, and what you will have to do in this study. You are being asked to participate in this study voluntarily. You can choose whether you participate or not in the survey, and you can stop completing the survey at any time. Deciding whether or not to participate will not affect the subject's relationship with the University of Illinois at Chicago (UIC). Please read this sheet and ask any questions you may have.

Who is doing the research, and why is it being done?

This research study has been approved by UIC and is being conducted by Yoo Mi Jeong, who is a PhD student, and Dr. Tonda Hughes of the UIC College of Nursing. Dr. Hughes will oversee all aspects of the study. Her contact information is 312-996-5106 (phone) and thughes@uic.edu (e-mail). The purpose of the survey is to evaluate the appropriateness of the Depression Literacy Scale, which is a questionnaire used to measure the ability to recognize depression and knowledge about relevant healthcare resources, for use among Korean American parents who have adolescent children aged 12 to 19 years.

What procedures are involved?

You are being asked to complete a survey about depression literacy, which includes the ability to recognize depression and knowledge about relevant healthcare resources, among Korean American parents. Questions will address your knowledge about the causes of depression and help-seeking behaviors for depression. There are no right or wrong answers to the survey questions, so you can freely answer these questions. The findings from the survey will be used to help understand depression literacy among Korean American parents and may facilitate treatment of depression among Korean American adolescents. Completing the questionnaires will take about 30 to 40 minutes. To protect confidentiality, any personal identifying information such as names, phone numbers, and addresses will be kept separate from the study data, and they will not be linked. This personal information will be destroyed as soon as data collection is completed.

What about the potential risks and discomforts, and benefits from this study?

There are very minimal risks involved in participating in the study, but some participants may feel uneasy or uncomfortable about sharing their perceptions about depression. In addition, there is a risk that a breach of privacy (others will know the subject is participating the research) and confidentiality (accidental disclosure of identifiable data) may occur. There is no direct benefit for participating in this study, but it is hoped that you can obtain information about causes and symptoms of depression and available healthcare resources via a booklet that will be provided.

Who should you contact if you have questions about the research study and participants' right?

If you have questions following the focus group interview, please call the researcher (Yoo Mi Jeong) at (305) 469-4123. If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 (local) or 1-866-789-6215 (toll-free) or e-mail OPRS at

uicirb@uic.edu. If you have any questions or concerns regarding your privacy rights under HIPAA, you should contact the UIC Privacy Officer at (312) 996-2271.

In appreciation of your participation in the survey, you will be given a Starbucks gift card for $5.

Appendix Q

The Vignette for Recognition of Depression

A mother tells a pastor in a Korean church that her adolescent child Katy/Brian has an ongoing issue. “Sir, I do not know what Katy/Brian is thinking these days. S/he used to be very nice and kind, but s/he has changed a lot. The child isn’t enjoying things the way s/he normally would. S/he does not say much, s/he gets upset easily, s/he sometimes gets furious over nothing, and s/he often argues with her/his sister. Her/his room light is on late at night, s/he can’t go to sleep at night, and s/he wakes up in the morning with a groggy feeling. S/he looks like s/he is losing her/his appetite, and even though I ask what is happening at school or home, s/he recently does not say anything. S/he used to watch Korean drama/baseball games on TV all the time, but now s/he does not come out of her/his room and doesn’t enjoy watching TV anymore. I have noticed that s/he hasn’t been herself/himself for the last month and that s/he has pulled away from me and other family members. Katy/Brian just doesn’t feel like talking. At first, I thought it was a part of puberty, but I am getting worried because these symptoms have been going on for 3 months already.”

Do you know a name for this problem, and what name would you give this problem?

If ”Yes,” how many symptoms did you find in this scenario?

Appendix R

Attitudes toward Seeking Professional Help

Instructions
Read each statement carefully and indicate your degree of agreement using the scale below.
In responding, please be completely candid.
0 = Disagree 1 = Partly disagree 2 = Partly agree 3 = Agree 4 = Strongly agree

	0	1	2	3	4
1. If I believed I was having a mental breakdown, my first inclination would be to get professional attention.					
2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.					
3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy.					
4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help.					
5. I would want to get psychological help if I were worried or upset for a long period of time.					
6. I might want to have psychological counseling in the future.					
7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.					
8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.					
9. A person should work out his or her own problems; getting psychological counseling would be a last resort.					
10. Personal and emotional troubles, like many things, tend to work out by themselves.					

Appendix S

Depression Stigma Scale

Instructions
Read each statement carefully and indicate your degree of agreement using the scale below.
In responding, please be completely candid.
0 = Disagree 1 = Partly disagree 2 = Partly agree 3 = Agree 4 = Strongly agree

	0	1	2	3	4
1. People with depression could snap out of it if they wanted					
2. Depression is a sign of personal weakness					
3. Depression is not a real medical illness					
4. People with depression are dangerous					
5. It is best to avoid people with depression so that you don't become depressed yourself					
6. People with depression are unpredictable					
7. If I had a problem like John's I would not tell anyone					
8. I would not employ someone if I knew they had been depressed					
9 I would not vote for a politician if I knew they had been depressed					
10. Most people believe that people with depression could snap out of it if they wanted					
11. Most people believe that depression is a sign of personal weakness					
12. Most people believe that depression is not a real medical illness					
13. Most people believe that people with depression are dangerous					
14. Most people believe that it is best to avoid people with depression so that you don't become depressed yourself					
15. Most people believe that people with depression are unpredictable.					
16. Most people would not tell anyone if they had depression					
17. Most people would not employ someone they knew had been depressed					
18. Most people would not vote for a politician they knew had been depressed					

Appendix T

The 12-item SL-ASIA scale

42. How well do you speak English?
1. Fluent like a native speaker
2. Well
3. So-So
4. Poorly
5. Not at all

43. The questions which follow are for the purpose of collecting information about your historical background as well as more recent behaviors which may be related to your cultural identity. Choose the **one answer** which best describes you.

1) What language can you speak?
1. Asian only (for example, Chinese, Korean, Vietnamese)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

2) Do you
1. Read only an Asian language?
2. Read an Asian language better than English?
3. Read both Asian and English equally well?
4. Read English better than an Asian language?
5. Read only English?

3) What language do you prefer?
1. Asian only (for example, Chinese, Korean, Vietnamese)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

4) What was the ethnic origin of the friends and peers you had, as a child up to age 6?
1. Almost exclusively Asians, Asian-Americans
2. Mostly Asians, Asian-Americans
3. About equally Asian groups and White groups
4. Mostly Whites, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Whites, Blacks, Hispanics, or other non-Asian ethnic groups

5) What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?
1. Almost exclusively Asians, Asian-Americans
2. Mostly Asians, Asian-Americans
3. About equally Asian groups and White groups
4. Mostly Whites, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Whites, Blacks, Hispanics, or other non-Asian ethnic groups

6) If you could pick, whom would you prefer to associate with in the community?
1. Almost exclusively Asians, Asian-Americans
2. Mostly Asians, Asian-Americans
3. About equally Asian groups and White groups
4. Mostly Whites, Blacks, Hispanics, or other non-Asian ethnic groups

7) What is your music preference?
1. Only Asian music (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian
3. Equally Asian and English
4. Mostly English
5. English only

8) What is your food preference at home?
1. Exclusively Asian food
2. Mostly Asian food, some American
3. About equally Asian and American
4. Mostly American food
5. Exclusively American food

9) What is your food preference in restaurants?
1. Exclusively Asian food
2. Mostly Asian food, some American
3. About equally Asian and American
4. Mostly American food
5. Exclusively American food

10) How would you rate yourself?
1. Very Asian
2. Mostly Asian
3. Bicultural
4. Mostly Westernized
5. Very Westernized

11a) About how many years of formal schooling have you completed in the U.S.? _____

11b) If any education was in Korea/China/Vietnam, how many years of formal schooling did you complete in Korea/China/Vietnam?

_____

12a) About how many years have you lived in Korea/China/Vietnam? _____

12b) About how many years have you lived in the U.S.? _____

CURRICULUM VITA

NAME:	Yoo Mi Jeong
EDUCATION:	B. A., Nursing, Korea University, Seoul, Korea, 2002
	M. S., Nursing, University of California at San Francisco, CA. 2011
PROFESSIONAL EXPERIENCE:	Research assistant for NIH/National institute of diabetes and digestive and kidney diseases multivariable closed-loop technologies for physically active young adults with type 1 diabetes, University of Illinois at Chicago (PI: A. Cinar, Illinois Institute of Technology), 2015-current
	Teaching assistant for Kyung Hee University undergraduates from Korea about clinical practice at University of Illinois at Chicago, 2012-current
	Teaching assistant for simulation lab and for nursing leadership management in healthcare course, University of Illinois at Chicago, 2011-2014
	Educator, hemo- and peri-dialysis, Nursecape Company, Seoul, Korea, 2007-2008
	Manager Nurse in psychiatric unit, Ansan Korea University Hospital, Korea, 2006-2008
	Staff Nurse in hemo-dialysis unit, Ansan Korea university hospital, Korea, 2003-2006
	Staff Nurse in medical intensive care unit, Ansan Korea university hospital, Korea, 2002-2003
PROFESSIONAL LICENSURE:	Registered Professional Nurse, California License Registered Professional Nurse, New York License Registered Professional Nurse, Korea
PROFESSIONAL MEMBERSHIP:	American Psychiatric Nurse Association Midwest Nursing Research Society Sigma Theta Tau Nursing Association
HONORS:	One of three graduate students from the UIC College of Nursing selected to present a poster at the Midwest Nursing Research Society (award covered conference registration, travel and lodging), Milwaukee, Wisconsin, 2015
	Seth & Denise Rosen graduate student research award, College of Nursing, University of Illinois at Chicago, 2015
	Virginia M. Ohlson international studies award, College of Nursing, University of Illinois at Chicago, 2015
	Chancellor's Student Service award, University of Illinois at Chicago, 2014

W. E. Van Doren Scholarship, College of Nursing, University of Illinois at Chicago, 2013

The Academy of International Leadership Development award for Korean graduate student scholarship, College of Nursing, University of Illinois at Chicago, 2012

MANUSCRIPTS: Jeong, Y. M., Veldhuis, C., Aranda, F., & Hughes, T. L. (in press). Racial/ethnic Differences in unmet needs for mental health and substance use treatment in a community-based sample of sexual minority women. *Journal of Clinical Nursing*

Jeong, Y. M., Kim, N., Quinn, L., & Martyn-Nemeth, P. (in review). Diabetes mellitus-related stigma in young adults with type 1 diabetes mellitus. University of Illinois at Chicago, *Diabetes Educator*

Kang, M., Jeong, Y. M., & Piano, M. (in progress). Binge drinking among working mothers in the U.S.

Jeong, Y. M., Park, H., Park, C., Kim, N., & Quinn, L. (in progress). Time effects of the exercise stress test on glucose variability among patients with type 1 diabetes

Jeong, Y. M. (in progress). Help-seeking behaviors among Asian Americans

PRESENTATIONS: Jeong, Y. M., Kim, N., Quinn, L., & Martyn-Nemeth, P. (2016, June). Diabetes mellitus-related stigma in young adults with type 1 diabetes mellitus, American Diabetes Association, New Orleans

Park, H., Jeong, Y. M., Park, C., & Quinn, L. (2016, June). Time effects of the exercise stress test on glucose variability among patients with type 1 diabetes, American Diabetes Association, New Orleans

Lin, k., Park, M., Jeong, Y. M., Martyn-Nemeth, P., Littlejohn, E., Turksoy, K., . . . Quinn, L. (2016, June). Illness intrusiveness and psychological well-being among young adults with type 1 diabetes mellitus, American Diabetes Association, New Orleans

Jeong, Y. M., McCreary, L., Park, C., Choi, H., Jonson, T., & Hughes, T. L. (2016, March). Depression literacy among Korean American parents who have adolescent children. Abstract for poster presentation, Midwest Nursing Research Society, Milwaukee, Wisconsin

Jeong, Y. M., Park, H., Park, C., Kim, N., & Quinn, L. (2016, March). Impact of glucose value on heart rate variability during aerobic exercise in type I diabetes. Abstract for poster presentation, Midwest Nursing Research Society, Milwaukee, Wisconsin

Kang, M., Jeong, Y. M., & Piano, M. (2016, March). Binge drinking among working mothers in the U.S. Abstract for poster presentation, Midwest Nursing Research Society, Milwaukee, Wisconsin

Jeong, Y. M., Aranda, F., & Hughes, T. L. (2015, April). Racial/ethnic differences in seeking health services for depression and/or Hazardous Drinking: Using the Andersen model. Abstract for poster presentation, Women's Health Research Day, Chicago, Illinois

Jeong, Y. M., Aranda, F., & Hughes, T. L. (2015, October). Racial/ethnic differences in seeking health services for depression and/or Hazardous Drinking: Using the Andersen model. Abstract for poster presentation, American Psychiatric Nursing Association, Orlando, Florida

Jeong, Y. M., Aranda, F., & Hughes, T. L. (2015, July). Racial/ethnic differences in seeking health services for depression and/or Hazardous Drinking: Using the Andersen model. Abstract for poster presentation. Abstract for poster presentation, Sigma Theta Tau International Nursing Association, San Juan, Puerto Rico.