CREATION AND VALIDATION OF THE FILIPINO STUDENT DEPRESSION INVENTORY

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Abstract

Depression studies in the Philippines generally utilize inventories created for, and standardized in, western countries. Western assessments may not accurately measure the unique factors and elements which lead to depression among Filipinos, yet few other options are readily available. In response to recent calls for indigenous assessments, we created the Filipino Student Depression Inventory (FSDI) and conducted a pilot study (N=102) among native Filipino undergraduate students attending an American university. Through factor analysis, the FSDI measures four specific subcategories relevant to Filipino culture: familial connectedness, discomfort with self and others, academic performance, and familial finances. Our study identified that the FSDI demonstrated sufficient reliability, as shown by Cronbach's Alpha =.89, Test-retest Pearson's r=.88, and Spearman Brown r=.87. We also demonstrated sufficient construct validity with the University Student Depression Inventory r=.87, a high level of discriminant validity with self-ratings r=.83, and self-report confirmation through a clinical interview. It is hoped that the FSDI will provide a more culturally accurate measure for identifying depression among Filipino students.

Keywords

Depression Assessment, Indigenous Psychology, Kapwa and Loób, Philippines, Pilot Study

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Studies completed in the last decade reveal alarming rates of depression and related issues among the Filipino young adult population. Nearly one in ten Filipino young adults in the Philippines experience moderate to severe depression (Puyat, et al., 2021). Among Filipino university students, 52% experience multiple symptoms of depression (Valdeavilla, 2019). Indeed, suicide rates among Filipinos have shown a steady rise since 1984 (Redaniel, et al., 2011). Given the known negative effects of depression on quality of life, and considering the vast number of Filipino students represented in these statistics, the magnitude of this weighty concern should motivate the field of psychology to create models describing the unique causes and symptoms of the seemingly universal experience of depression more accurately from a Filipino perspective.

Research measuring depression in the Philippines are frequently facilitated through assessments that were created in the west such as the Mood and Feelings Questionnaire (Datu et al., 2019), the Patient Health Questionnaire 9 (Labana et al., 2020), the Beck Depression Inventory-II (Lorenzo, et al., 2002; Nelms & Castel, 2016), and the University Student Depression Inventory (Baring & Lee, 2020; Lee et al., 2013). These instruments inherently contain assumptions based upon values and priorities that are prevalent in western cultures. These instruments fail to assess non-western cultural values which may lead to potential misrepresentations of psychological functioning. Understandably, the continued use of these western assessments in non-western countries has been challenged (Bernardo, 2011; Sun et al., 2017; Cheung, et al., 2017; Fiedeldey-Van Dijk et al., 2017; Kim, Yang & Hwang, 2006).

Okazaki (1997, 2000) and Uba (1994) both demonstrated that when compared to subjects native to the cultures wherein the instruments were created, Asians consistently exhibit higher levels of emotional distress on self-reported measures of psychological distress. Norasakkunkit & Kalick (2002) suggested that these findings can be explained in part by the interdependent self-construal common in Asians as compared to a more independent self-construal that is common in Euro-Americans. They concluded that western-based assessments may inadvertently over-pathologize Asians due to the likelihood of an interdependent self-construal facilitating responses that may be seen as maladaptive on measures born of cultures that value individual independence.

Henrich et al., (2010) strongly cautioned against the utilization of western, educated, industrialized, rich, and democratic (WEIRD) populations as a standard for approaching and understanding indigenous populations. In response to Henrich et al., Hwang (2019, 2022) recommended the need for more culturally-informed approaches that are rooted in concepts and traditions originating within the cultures being studied. Hwang (2022) further argued for culturally inclusive scientific inquiry to follow the principle of "one mind, many mentalities" (p.13). If scientists, researchers, psychologists, counselors, and others in the mental health profession are to avoid cultural encapsulation (Heppner, et al., 2012), it becomes imperative for inquiry into a supposedly universal construct, such as depression, to include a more emic approach to the unique experiences and expressions of depression that are culturally influenced.

One such expression found in Filipino culture, yet absent in western individualism, is the collective and interdependent identity known as kapwa. Virgilio Enriquez, widely regarded as the father of Filipino psychology, defined *kapwa* as "a recognition of a shared identity, an inner self shared with others" (Enriquez, 1992, p. 60). Kapwa, as described by de Guia (2005) is the core personhood value among Filipinos. Reyes (2015) added that kapwa is the concept of being "together with the person" (p. 149). Kapwa's mutual sense of self-worth grows out of the related Filipino construct of loób which Reyes described as a relational will that is demonstrated in two parts; kagandahang loób (beauty of will) which can be understood as freely giving to benefit another, and utang-na-loób (debt of one's inner self to others) which can be understood as a recognition of benefit received, coupled with a sense of obligation to repay the debt. Kapwa is expressed through daily interactions of loób. The cyclical loop of both receiving and giving back, directly leads to the experience of shared identity, or kapwa. This complex construct of social connection is identified in a myriad of interactions on a continuum of relatedness of varying degrees, which provides Filipinos with a dynamic sense of connection with others.

Within Filipino culture, a sense of self-worth is directly proportional to interdependent connectedness to others; specifically, that Filipinos frequently define meaningful self-worth as based upon the individual's level of contribution to their family, friends, and society (Garcia & Santiago, 2017). Filipino individuals generally feel they are of more value as they sacrifice themselves to benefit family and others (Badana & Andel, 2018). This dynamic expression is a unique construct articulating a Filipino sense-of-self in relation to one another within a give-and-take engagement of social connection.

In contrast, the lack of reciprocal and interdependent connections can lead to a sense of isolation and a degraded sense of self-worth. Filipino university students with low to moderate levels of closeness with their peers had significantly higher depressive symptoms than their fellow students who reported high levels of closeness to their peers (Lee et al., 2013). This paucity of meaning can lead to a sense of weakness and sadness in the individual who derives meaning from interdependent connections.

Multiple authors (Cortez et al., 2016; Hermannsdottir, 2016; Kuroki, 2015; Reyes et al., 2020) have asserted that kapwa remains significantly important in the maintenance of mental health among Filipino individuals. Kapwa suggests that individual Filipinos do not navigate through life alone, but rather together in a shared identity, and this interconnection of shared identity is a rich resource for all Filipinos who live within its expression (Billones et al., 2021). The salience of this social interconnection has been shown to be imperative among Filipino youth when addressing mental health issues (Reyes et al., 2020; see also David et al., 2017). Indeed, Coffey et al. (2022) strongly suggest that traditional western approaches to mental health have been inadequate for Filipino youth and must be reformulated with kapwa as a central construct.

A rising zeitgeist for tailored approaches that are culturally sensitive is manifested in the Indigenous Psychology movement. Many have called for assessments and modalities that are based upon indigenous concepts, theories, and data gathering, while focused specifically on the population being served (Allwood, 2018; Allwood, 2019; Hwang, 2019; Hwang, 2022; Henrich et al., 2010; Tuazon & Clemente, 2022). Several authors have specifically questioned the utility of assessments that are based upon western theories, concepts, and methods in the practice of mental health in the Philippines (Church & Katigbak, 2002; Lagmay, 1984; Tuazon & Clemente, 2022). Specific to the Filipino people, the Philippine Mental Health Act of 2018 called for treatments and interventions to be based upon scientific findings that are responsive to the individual and cultural needs of the Philippine population (Mental Health Act: Republic of the Philippines, 2018; Lally, et al.,2019).

The creation of the University Student Depression Inventory identified that university students have subtle, yet distinct, characteristics of depression that are disparate from the population as a whole (Romaniuk, & Khawaja, 2013). Others have identified that there are also unique characteristics of depression among Filipino university students. Specifically, Valdeavilla, (2019) identified four significant concerns reported by Filipino students contributing to depression as: 1) academic stress, 2) familial stress, 3) friends stress, and 4) financial stress. An investigation into the intersectionality of these four concepts among Filipino university students, along with the influence of interconnected, emic, values such as kapwa and loób, is warranted.

In response to the escalating call for more culturally tailored assessments designed toward indigenous populations, we created the Filipino Student Depression Inventory (FSDI) and conducted a pilot study among native Filipino university students. The aims of this study were first, to develop a culturally-informed inventory that is sensitive to the unique characteristics associated with depression among the Filipino population, and second, to

assess the psychometric properties of this new inventory. In creating an inventory specifically sensitive to Filipino culture, we sought to more accurately measure depression among Filipino students by creating a questionnaire that assesses factors of social connections, academic performance, familial issues, and financial stressors. We sought to confirm sufficient reliability of this instrument through a repeated measure design, and establish validity through both comparative assessment and clinical interviews.

METHOD

Participants
The sample consisted of 102 indigenous citizens of the Philippines who were full-time undergraduate students at an American university. All members of the university Filipino Club were invited to participate. Participants included 58 women (57%) and 44 men (43%) ranging in age from 19 to 32 years, with a mean age of 25. Participants signed up for 20-minute sessions to complete online surveys and complete a clinical interview with a psychologist. Among the 102 participants 74 completed the assessment only 1 time. Test-retest reliability data was gathered on the other 28 participants who completed the assessment battery during two of the three data gathering sessions.

Measures
The battery consisted of an informed consent form, identifying information, the Filipino Student Depression Inventory (FSDI), the University Student Depression Inventory (USDI), two open-ended questions about depression, a scaling question about current level of depression, and a clinical interview with a licensed clinical psychologist.

University Student Depression Inventory
The USDI is a 30-item self-report questionnaire used to assess depression in university students (Khawaja & Bryden, 2006). It is answered on a 5-point frequency scale from 1 "not at all" to 5 "all the time" in response to the statement "Please circle the number that indicates how often you have experienced each item over the past two weeks" (Khawaja & Bryden, p. 24). The USDI demonstrated internal consistency for the full scale, Lethargy, Cognitive/Emotional, and Academic Motivation sub scales respectively (α=.95, .89, .92, .84, p<.001). Test-retest reliability was also shown to demonstrate significant reliability with a r=.86, p<.001 for the full-scale assessment.

Open-Ended Questions and Clinical Interview
Norasakkunkit & Kalick (2002) strongly recommended using open-ended questions when inquiring about the subjective distress of individuals who have been raised in a non-western cultural context. The FSDI included the open-ended question "Do you think depression is real? If yes, why?", and a confirmatory scaling question "Do you feel like you are depressed? If yes, how depressed are you on a scale of 1-10? (10 as the highest)."

The clinical interview with the licensed psychologist included a review of suicidal questions from the FSDI, a discussion of the participant's overall scores on the FSDI and the USDI, and discussion about both the open-ended and confirmatory questions. The psychologist utilized a structured interview to review with the participant the relationship between the two inventory scores, and compared those with how the subject answered the open-ended and confirmatory questions regarding their current level of depression. The clinical interviewer also sought to identify potential negative impacts of the assessment and general mental health concerns. Students who identified as living with depression were invited to make an appointment with a mental health professional. The clinical psychologist followed up with all of the students who identified as living with depression, within two weeks of data gathering, to ensure their safety and to encourage the utilization of mental health services on campus or in the community.

Item Generation
Informed by previously published studies of depression in the Philippines, native Filipino psychology students, educated in measurement and evaluation theory and practice, gathered into focus groups to identify themes emerging as common to depression as experienced among Filipino students. Four elemental aspects of Filipino culture were agreed upon as commonly recurring factors undergirding emotional distress expressed as depression in Filipino culture: (a) social connections, (b) academic performance, (c) familial issues, and (d) financial stressors. The FSDI was constructed with these elemental aspects in mind.

This group of Filipino psychology students worked as a focus group to create questions relevant to indigenous Filipinos, concentrating on how the experience of depression is manifested among Filipino students. All questions came from the lived experiences of the Filipino students as well as relevant literature review of depression among Filipino populations (Datu et al., 2019; Datu, & Lizada, 2018; Magulod, 2019; Allwood, 2018; Badana, & Andel, 2018; Dube, et al., 2018; Hock et al., 2018, 2016; David et al., 2017; Hermannsdóttir, & Ægisdóttir, 2016; Pastorelli et al., 2016; Cortez et al., 2016; Kuroki, 2015; Lee et al, 2013; Cheung, & Park, 2010; Reyes, & Galand, 2009; De Guia, 2005; Lansford et al., 2005; Cimmarusti, 1996; Enriquez, 1992; Lagmay, 1984)

The initial 95 questions were pared down to 48 questions after feedback from a subject matter expert who was a licensed clinical psychologist with 15 years of working with Filipino student clientele (Worthington & Whitaker, 2006). The resulting inventory was a 48 question negatively worded self-report measure, answered on a 5-point Likert scale from 1 "not at all" to 5 "all the time" in response to the statement, "How often do you experience each item."

Data Collection

After the FSDI was created, we sought and received Internal Review Board approval for a pilot study. Filipino students were invited to attend any two of three separately scheduled data collection sessions. The series of data collection sessions was interrupted by the global Covid-19 pandemic, leading to an extension of data collection from the initial planned delay of two months for the final iteration of data collection, to a total of 20 months between the first and the last data collection sessions.

All participants were informed as to the nature of the study both verbally and in writing and then completed the USDI, FSDI, and the 4-item questionnaire. Upon completion of the measures each student completed a clinical interview with a licensed psychologist. The licensed psychologist asked each participant a semi-structured set of questions about their experience with the tests, as well as tailored follow-up questions specifically pertinent to the participant's answers.

RESULTS

Preliminary Screening

Data Cleaning and Screening
All subjects had complete datasets on the FSDI, USDI, and clinical interview. No subjects were deleted or excluded from the analysis. Test-retest reliability was calculated on the 28 subjects who completed the battery of assessments at both pre and post-test iterations. All other measurements were completed using the entire pool of 102 subjects.

Internal consistency of the USDI
Coefficient alpha for the USDI within the study population is excellent (Taber, 2017). Internal consistency was demonstrated among the subjects of this study with the USDI (n=102). Coefficient alpha for the USDI Full Scale, Lethargy, Cognitive/Emotional, and Academic Motivation sub scores was α=.96, 92, .90, & .70 respectively.

Factor Analysis Exploration of Initial Questions
We conducted a Factor Analysis (FA) using the JAMOVI statistical suite v2.3.13, (Jamovi Inc, 2020) with the original 48 items. As there is sparse research on the underlying factors of depression among Filipino students, an exploratory factor analysis was used to determine the nature of those factors (Khawaja & Bryden, 2006; Tabachnick & Fidell, 2007).

Kaiser–Meyer–Olkin Measure of Sampling Adequacy test results demonstrated that the original 48 items of the FSDI were factorable. This measure of sampling adequacy of .82 indicated a "meritorious" level of intercorrelations among the items (Kaiser, 1974). Bartlett's Test of Sphericity demonstrated sufficient correlations to perform a factor analysis $\chi2$ (3300) df=128 with a significance value of p<.001.

Eigenvalues and a scree-test with parallel analysis were used to confirm the underlying factors. Five factors demonstrated an eigenvalue >1 which accounted for 58.2% of the variance (Samuels, 2017). A scree-test with parallel analysis identified four factors above the regression line as contributing significantly to the total variance (Ledesma et al., 2015). These four factors were consistent with previous theories about depression and Filipino culture and the resulting solution was interpretable. The communalities averaged >.6 suggesting that the sample size of over 100 was "adequate" (Reise et al., 2000).

Principle components and common factor methods were used with oblique and orthogonal rotations, which demonstrated similar solutions across all methods, suggesting that the four-factor model was stable (Gorsuch, 1983). In our efforts to decrease error we utilized Principle Axis Factoring to extract the solution. An Oblimin rotation was used due to the high correlation, >.32, between three of the four factors (Tabachnick & Fidell, 2007).

After the extraction and rotation methods were confirmed, the items were gradually reduced involving a process of deleting items with low communalities and low factor loading. Items with communalities ≤.3, or factor loading less than .4 were eliminated to ensure that variance within the remaining scale items were related to each other and thus related to the overall construct of Filipino student depression (Tabachnick & Fidell, 2007). The structure matrix demonstrated that total loadings were low (Hair et al., 2010). The final reduction resulted in 22 questions demonstrating an adequate sample size with a 4.63/1 ratio of subjects to items (Velicer, & Fava, 1998).

A Principal Component Analysis was rerun on the final items. Kaiser–Meyer–Olkin Measure of Sampling Adequacy test results demonstrated that the resultant 22 items of the FSDI were factorable. This measure of sampling adequacy of 0.86, indicated a "meritorious" level of intercorrelations among the items (Kaiser, 1974).

Bartlett's Test of Sphericity demonstrated sufficient correlations to perform a factor analysis χ2 (1317) df=231 with a significance value of p<.001.

Eigenvalues and a scree-test with parallel analysis were used to confirm the underlying components. Four components demonstrated an eigenvalue >1 which accounted for 65.9% of the variance (Samuels, 2017). A scree-test with parallel analysis identified four components above the regression line as contributing significantly to the total variance (Ledesma et al., 2015).

The factor analysis resulted in a 22-item scale which loaded on four factors as shown in Table 1. Factor 1 *Familial Connectedness,* comprised five questions assessing the nature of connections with family and the type of familial support that is perceived by the subject. Factor 2 *Discomfort with Self and Others,* comprised eight questions associated with subject perceptions as pertaining to a sense of belonging with others and the perception of the experience with the self in terms of mood and sense of self. Factor 3 *Academic Performance,* comprised five questions assessing subject perceptions of how well they are doing in school tasks. Factor 4 *Familial Finances,* comprised of four questions about concerns regarding the finances of both the student and the family of origin.

Factor analysis results for the final scale
Factor analysis identified a 22-question scale that loaded on four factors as shown in Table1.

Factor analysis for the final 22 item FSDI	Factors				Communalities	
	1	2	3	4	Initial	Extraction
Familial Connectedness						
My family does not really care about whatever I do.	*-0.68*	0.07	-0.12	0.06	0.55	0.49
I do not feel connected to my family.	*-0.90*	0.02	0.02	-0.07	0.74	0.80
I feel that my family lacks support in the things I want to do.	*-0.80*	0.03	-0.06	0.05	0.69	0.66
My family does not show appreciation in the things I do.	*-0.70*	0.02	0.06	0.02	0.58	0.56
My family and I do not have a close relationship.	*-0.65*	-0.08	0.24	0.09	0.69	0.60
Discomfort with self and others						
I feel valued by people.	0.25	*-0.48*	-0.17	0.13	0.61	0.53
I do not feel like I belong.	-0.14	*0.72*	0.02	-0.15	0.66	0.62
I do not feel connected to my friends.	-0.07	*0.78*	-0.01	-0.09	0.69	0.62
Other people do not understand me.	0.04	*0.79*	-0.02	0.03	0.60	0.58
I feel sad.	-0.03	*0.77*	0.04	0.15	0.72	0.73
I feel weak.	0.03	*0.53*	0.30	0.14	0.70	0.60
I am disappointed in myself.	-0.02	*0.63*	0.04	0.20	0.63	0.53
I have trouble understanding my own thoughts.	-0.01	*0.55*	0.31	0.08	0.67	0.64
Academic Pressure						
I have less interest in what I'm studying than before	-0.01	0.13	*0.64*	-0.20	0.58	0.49
I cannot balance my school schedule	-0.06	-0.08	*0.75*	0.08	0.58	0.57
I cannot focus on my studies	-0.07	0.07	*0.77*	0.02	0.69	0.72
I do not feel productive in my classes	-0.01	0.03	*0.78*	0.05	0.66	0.66
I do not submit my home works on time	0.06	0.18	*0.69*	0.14	0.69	0.69
Familial Finances						
I/My parents do not have a stable job.	-0.11	0.17	-0.05	**0.65**	0.65	0.56
I am required to work to support my family	-0.01	0.08	-0.05	**0.74**	0.57	0.56
I/My family am/are not comfortable with our economic status.	-0.09	-0.13	0.16	**0.62**	0.60	0.48
I/My family struggle financially	0.00	-0.01	0.01	**0.95**	0.75	0.89

N=102. Factor loadings are in italics. Factor loadings are unique loadings from the Pattern Matrix

Table 1. Factor analysis for the final 22 items FSDI

The full scale FSDI produced a score between 22 and 110, $\overline{X}$=57.81 (SD=14.31; N=102). We calculated the results for the four subscales by adding the items from each scale. Factor 1: *Familial Connectedness* subscale produced a score between 5 and 25, $\overline{X}$=10.24 (SD=4.36; N=102). Factor 2: *Discomfort with Self and Others* subscale produced a score between 8 and 40, $\overline{X}$=23.66 (SD=5.33; N=102). Factor 3: *Academic performance* subscale produced a score between 5 and 25, $\overline{X}$=12.40 (SD=3.93, N=102). Factor 4: *Familial Finances* subscale produced a score between 4 and 20, $\overline{X}$=9.75 (SD=4.56, N=102).

The four factors were intercorrelated. Familial Connectedness sub scale correlated with Discomfort with Self and Others, Academic standing, and Familial Finances (r=.39, .41,.15) respectively. Discomfort with Self and Others sub scale correlated with Academic Performance and Familial Finances (r=.36, .31) respectively. Academic Performance sub scale correlated with Familial Finances (r=.18). All intercorrelations were below .85 suggesting sufficient discriminate validity between the sub scales (Hair et al., 2010).

Internal Consistency

The internal consistency calculated for full scale FSDI 22 items was "strong" r=.91. Each sub scale scored was identified as "reliable" (Taber, 2017): Familial Connectedness α=.88, Discomfort with Self and Others α=.82, Academic Performance α=.88, and Familial Finances α=.85. Additionally, using odd or even question numbering, the FSDI was divided in half to identify Spearman Brown split-half reliability which demonstrated a reliability coefficient of: r=.82 (Noble, 1955).

Temporal Stability

The test-retest reliability of the FSDI was determined by calculating the correlation coefficients between 28 participants of the scale taken between 2 to 20 months apart (DeVellis & Thorpe. 2021). The total FSDI scores were significantly correlated between time one and time two r=.88, p<.001. Each sub scale also highly correlated between time one and time two: Familial Connectedness, Discomfort with Self and Others, Academic Performance, Familial Finances (r=.81, .85, .80, .81) respectively p<.001.

VALIDITY

Convergent and Divergent Validity

We calculated a bivariate correlation coefficient between the observed scores of the FSDI, the USDI, and the self-report scaled questions. These observations demonstrated significant correlation between the three approaches to assess the construct of depression among the subjects (Swank, & Mullen, 2017). The total FSDI score correlation with the total USDI score (r=0.83, p<.001, N=102), and the FSDI with the self-rating scale (r=.755, p<0.001, N=102).

We also calculated the bivariate correlation coefficient between the sub scales of the FSDI and USDI which demonstrated several points of convergent validity among the sub scales; Academic performance and Academic motivation (r=.81, p<.001, N=102), Discomfort with Self and Others scale with two of the USDI scales; Cognitive /Emotional, and Lethargy (r=.90, and r=.72, p<.001, N=102) respectively. The total FSDI score was highly correlated with the USDI Cognitive Behavioral sub scale (r=.84, p<.001, N=102) as compared to the other two sub scales: Lethargy and Academic Motivation (r=.730, r=.624, p<.001, N=102) respectively.

Bivariate correlations to demonstrated divergent validity scores. The FSDI identifies aspects of depression that are quite divergent from the USDI in that the *Familial Connectedness*, and *Familial Finances* sub scales did not demonstrate correlation with the USDI (r=.48, p<.001, n=102, and r=.36, p<.001, N=102) respectively. This is consistent with our expectation that the FSDI will have a divergent approach to depression as compared to the USDI.

	FSDI Score	Family Kapwa	Discomfort w/ Self & Others	Acad Performance	Family Finances	USDI Total	USDI Lethargy	USDI CogB	USDI Academic
Family Kapwa	.764**	--							
Discomfort w/Self & Others	.834**	.499**	--						
Academic Performance	.744**	.434**	.585**	--					
Fam Finances	.668**	.434**	.323**	.300**	--				
USDI TOTAL	.834**	.480**	.833**	.783**	.356**	--			
USDI Lethargy	.730**	.369**	.722**	.764**	.311**	.932**	--		
USDI CogB	.839**	.516**	.896**	.648**	.360**	.946**	.808**	--	
USDI Academic	.642**	.366**	.523**	.808**	.271**	.827**	.759**	.651**	--
Self Rating Scale	.755**	.475**	.736**	.552**	.454**	.723**	.632**	.752**	.501**
** Correlation is significant at the 0.01 level (2-tailed)									

TABLE 2.

Discriminant Validity

Consistent with the recommendation from Norasakkunkit & Kalick (2002) each participant was asked to scale their current level of depression from 0 to 10 with 0 indicating a low level of depression and 10 indicating a high level. The open-ended and scaled (0-10) question response was compared against categorized full scale scores of both the FSDI and USDI.

We determined discriminant validity by using an independent samples t-test to identify whether the FSDI differentiated between high and low scores on the USDI and the self-rating scale. Using an extreme groups design (Preacher et al., 2015) participants who scored one standard deviation above or below the mean on the FSDI were grouped as high (N=19) or low depression (N=18). Students with high scores on the FSDI demonstrated significantly higher scores on the USDI ($\overline{X}$=109.68, SD = 21.10) as compared to students who had low scores on

the FSDI ($\overline{X}$=54.11, SD=22.00) p<.001. Additionally, students with low scores on the FSDI had significantly lower scores on the self-rating scores ($\overline{X}$=0.05, SD=0.23) as compared to students with high scores on the FSDI ($\overline{X}$=8.05, SD=1.07) p<0.001.

All subjects, of the high and low depression groups, verbally confirmed the consistency of the FSDI and USDI scores with their open-ended written responses about their current lived experience with depression. All participants in the High depression group, who scored 8 or above on their scaled score, also scored in the clinical population according to their scores on the FSDI. No students in the Low group, self-scaled score below 4, or below 48 on the FSDI, expressed current concerns with depression. These results demonstrate a promising trend (Preacher et al., 2015) for the FSDI's ability to differentiate individuals with high verses low levels of depression.

DISCUSSION

The Filipino Student Depression Inventory (FSDI) was created to assess the experiences of depression that are unique among Filipino students. Factor analysis resulted in a 22-item inventory with solid psychometrics that identified four inter-related subscales: Familial Connectedness, Discomfort with Self and Others, Academic Performance, and Familial Finances.

The Factors of Filipino Student Depression

Familial Connectedness issues as an indicator of depression is a unique contribution of this study. The Familial Connectedness factor is characterized by addressing the central manner in which Filipino students identify with their families. The family is of prime importance in the Filipino culture (Cimmarusti, 1996), therefore, maintaining harmonious relationships and strong connections, even while attending a university as a full-time student, are seen as top priorities for Filipinos. The items on this factor reflect on the nature of the relationship the student has with their family, specifically the level of support, appreciation, and overall closeness of that relationship. Familial influence on the emotional health of students appears to be a double-edged-sword; familial connections can improve emotional health and academic performance as well as contribute to academic struggles and emotional distress. Lopinga (2021) indicated strong family alliance as a significant protective factor for Filipino students against depression and suicidal ideation, while Valdeavilla, (2019) demonstrated that 69.5% of Filipino university students identified relationship issues within the family as a significant cause for the depression they experienced.

Discomfort with Self and Others is characterized by a combination of struggles with negative self-evaluation and emotions, and poor social relationships. This factor is consistent with previous research that has demonstrated the importance of negative thought processes (Broomhall, & Phillips, 2018; Lee, et al., 2013), negative emotions (Lee et al., 2013, Porillo, & Tungol, 2021) and the importance of peer relationships (Baring, & Lee 2020) in moderating depression among Filipino students. Items on this factor relate to weakness, sadness, and a sense of being disappointed in self and illustrate a struggle with the subject's own thoughts and emotions. Poor social relationship items on this scale include questions assessing a sense of belonging, connection, and valuation from others in their social environment.

The Academic Performance factor is characterized by the inherent stress and concern that Filipino students feel toward their performance as a student. This factor is consistent with the findings on the USDI that identify academic motivation as being significantly related to depression among university students (Khawaja & Bryden, 2006). Items relate to student's interest, focus, and balance in their studies, with specific questions about their level of production and concentration on academic work. 92% of Filipino university students identified academics as the top reason for their depressive symptoms (Valdeavilla et al., 2019). Although the stress of performing well academically has been shown to be a consistent contributor to mental health issues across the world (Barker et al., 2018; Dube et al., 2018; Kumaraswamy, 2013), within the Filipino culture steeped in kapwa, failure to achieve academically may carry the further burden of a failure to serve the family and pay back those who have been supporting the student (Olfindo, 2018). Reyes & Galang, (2009) underscored that the motivational pressures to perform well academically are directly related to a student's sense of achieving a greater ability to fulfill filial and familial responsibilities. Successfully completing college is an exercise in kapwa and a means to express filial piety and gratitude toward the family (Alampay & Garcia, 2019). When Filipinos are able to give back to their parents they are engaging in utang-na-loób. Additionally, as they are able to serve other extended family members such as siblings, nephews and nieces, or contribute to the community they are applying kagandahang loób. These actions of giving back to family of origin and extending help to younger generations facilitate a sense of kapwa.

Familial Finances is also a unique element identified in the FSDI. This factor is characterized by stress and concerns regarding finances among the family of origin. From childhood, Filipino family members have the expectation that they directly share responsibility for the financial wellbeing of the family (Bulloch, 2021). Financial difficulties challenge each family member's sense of self when opportunities are lost or diminished. Valeavilla (2019) demonstrated that 41% of Filipino students identified money as a significant cause of depression. Additionally, Lee et al., (2013) demonstrated that university students who were not satisfied with their economic status had significantly more elevated levels of depression as compared to those who were satisfied with their

finances. Items on the FSDI assess level of comfort and struggles with familial finances and the pressure that Filipino students feel concerning financial pressures of their family. Indeed, it has been demonstrated that young Filipino adults' sense of responsibility increases as they move into adulthood (Fuligni & Pederson, 2002) when compared to East Asian and European counterparts.

The four-factor structure of the FSDI has been supported by previous research on each factor. Most assessments of depression include universally experienced concepts such as negative emotions and negative thought content (Khawaja, & Bryden, 2006; Hagen, 2007; Malpass, et al., 2016). Similarly, the FSDI identified the Discomfort with Self and Others as a significant factor. Also consistent with recent research about the importance of academic concerns among students on the USDI (Khawaja, &Bryden, 2006), the FSDI identified academic stress as a significant factor. Importantly, this project identified two additional factors that are more emic to the Filipino population of students. Familial connectedness and Familial Finances both address unique formulations of interconnectedness experienced by Filipino students that are not specifically included in western-based assessments of depression.

CONCLUSION

As a tool designed specifically by, and for, an indigenous Filipino student population, the FSDI scale can be utilized to assess specific etiological elements of depression unique to Filipino students. The intersectionality of cultural core identity values with specific depression indicators such as; Familial Connectedness, Discomfort with Self and Others, Academic Performance, and Familial Finances varies significantly in Filipino life from the western cultures upon which most instruments are standardized. The insights uncovered in this pilot study could provide a more culturally informed approach to counselors in educational settings who serve Filipino students.

This study demonstrated that the FSDI can show both reliability, as well as convergent and discriminate validity. The results for both validity and reliability garnered in this pilot study are encouraging signals of the potentiality of depression inventories being developed and standardized specific to unique cultural constructs associated with indigenous populations.

Scales that are sensitive to indigenous cultures and ways of being may prove to be a welcome addition to the inventory of measurements currently in use. Inclusion of cultural constructs such as the importance of familial and social connectedness and the experience of kapwa and loób may provide a more complete understanding of the etiology behind depressive thoughts or feelings among Filipino students.

This scale is in the preliminary stages of development and although initial data are encouraging, further study is warranted. Confirmation of these factors on another study population, preferably in schools in the Philippines, would improve the clinical utility and generalizability of the measure. The sample used in this study was limited due to the relative population size of indigenous Filipino students attending full time as international students in an American university. These international students, although being native born Filipinos, may not be an accurate representation of Filipino students in the Philippines and elsewhere.

Further research to confirm the validity of the four factors on the FSDI would also be useful on a broader basis with a larger population pool. Clinical utility of the scale within differing levels of education (elementary, secondary, tertiary) should also be conducted.

The current move away from western modes of understanding, assessment, and intervention to a more indigenous psychology continues to gain traction throughout the Asia Pacific region. This study hopes to support such an approach.

Works Citation

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