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UNIVERSITY OF EDUCATION

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MENTAL HEALTH IN CAMBODIAN ADOLESCENTS: RELATIONSHIP AMONG CULTURAL SPECIFIC SYNDROMES, DEPRESSION, ANXIETY, AND FUNCTIONAL IMPAIRMENT

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SUMMARY OF THESIS SPECIALIZED IN CLINICAL PSYCHOLOGY

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LIST OF SCIENTIFIC WORKS BY AUTHOR RELATED TO THE THESIS

[1] **Khann, S**., Dang, H.M., & Wess, B. (2019). Predictors of mental health help seeking among Cambodian adolescents. *VNU Journal of Science*: *Education Research*, 35(3), 1-10.

[2] **Khann, S**., Dang, H.M., Weiss, B., Desiree, M. S., Tran, V. C. (2019). The Unique relations of Cambodian somatic symptom and syndrome inventory (CSSI) items with functional impairment among adolescents in Cambodia. *The Fifth International Conference on Child Mental Health in Vietnam: Mental Health Literacy in the Schools and Community* in Hanoi, Vietnam October 25-26, 2019.

[3] Hinton, D.E., Seponski, D.M., **Khann, S**., Armes, S.E, Lahar, C.J., Kao, S., & Schunert, T. (2019). Culturally sensitive assessment of anxious-depressive distress in Cambodia: Avoiding category truncation. *Transcultural Psychiatry* 0(0) 1–24. DOI: 10.1177/1363461519851609.

INTRODUCTION

Background of the study

Cambodia experienced many decades of civil war and cruel regimes that have created an extremely challenging and unique situation with regards to mental health. A recent study found 16.7 % of Cambodians reported significant levels of depression, 27.4 % had anxiety disorders, and 7.6 % met criteria for posttraumatic stress disorder (Seponski et al., 2018). Cambodian people, especially those in rural areas, still believe that mental problems are caused by their ancestor spirits' anger (Chhim, 2017; Kim & Peeters, 2017), rather than by psychosocial or biological causes identified by science (Ka, Ka, & Savin, 2014).

Statement of the problem

One possible limitation regarding current approaches to mental health assessment is the reliance on Western-based assessment approaches that do not take into account culturally-specific psychopathology syndromes in Cambodia. Research on mental health in Cambodia still limited, especially for Cambodian adolescents. The current study fills a critical gap in understanding mental health in Cambodia by focusing on adolescents.

Aims of the study

The primary objective of this study is to evaluate the construct validity of culturally-specific psychopathology syndromes in Cambodia using the Cambodian CSSI (Culturally-Specific Syndrome Inventory). To assess the CSSI construct validity, the current study investigated associations among (a) the CSSI syndromes, (b) standard Western-based psychopathology syndromes (depression, and anxiety symptoms), and (c) pathology indicators including functional impairment, mental health treatment seeking behavior, and quality of life. Mental "illness" and "psychopathology" are defined by their relations to factors that indicate dysfunction in the individuals. Construct validity of the CSSI thus was defined as statistically unique relations (controlling for the Western anxiety and depression) to indicators of psychopathology, including functional impairment, quality of life, and help seeking.

Hypotheses

H1. The CSSI Cambodian syndromes and somatic symptoms will significantly correlate with the standard Western (i.e., which are part of DSM and ICD) depression and anxiety syndromes.

H2. The standard Western syndromes of depression and anxiety will significantly correlate with the indicators of psychopathology, including (a) functional impairment, (b) help-seeking, and (c) quality of life.

H3. The CSSI Cambodian syndromes and somatic symptoms will be significantly associated with the indicators of psychopathology, including (a) functional impairment, (b) help-seeking, and (c) quality of life.

H4. The CSSI Cambodian syndrome and somatic symptom scale will have statistically unique associations (i.e., when controlling for the standard Western syndromes of anxiety and depression, correlations remain significant) with (a) functional impairment, (b) help seeking, and (c) quality of life, when controlling for the Western anxiety and depression syndromes.

Significance of the study

An important part of development culturally appropriate assessment and diagnosis of mental health support is effective for prevention, intervention, and treatment. These issues are mainly important for youth mental health, because many mental health problems start early in life. The purpose of the present study is to assess the construct validity of the Cambodian Culturally Specific Syndrome Inventory (CSSI) among adolescents. If unique variance is associated with culturally-specific syndromes and functional impairment and need for treatment, then it will be essential that these culturally-specific syndromes be included in mental health assessments and treatments. The findings of the study can be used by institutions and non-governmental organizations to develop the strategic plan for improving mental health situation in Cambodia, by improving the validity of mental health assessments. This will help us understand the extent to which these culturally-specific syndromes have unique variance, beyond that shared with the traditional syndromes. Most importantly, the study will determine whether there is a

unique relationship between CSSI and functional impairment, perceptions of need for treatment (including family perceptions), and actual treatment seeking.

CHAPTER 1
THEORETICAL FRAMEWORK

LITERATURE REVIEW

The Diagnostic and Statistical Manual of Mental Health Disorder DSM-5 (APA, 2013) defines cultural perceptions of distress as the ways that different cultural groups experience, understand, and communicate emotional and psychological suffering, related behavioral problems, and troubling thoughts and emotions of people. Culturally-specific syndromes are comprised of three clinically relevant components: (a) cultural syndromes, which are clusters of symptoms that tend to co-occur only in specific cultural group(s) (i.e., there are unique causal processes within this cultural group); (b) cultural idioms of distress, where the distress has cross-cultural causes but the manner of expressing this psychological distress and pain is unique to a culture or culture (e.g., talking about "Wind attack (khyâl)"); and (c) culturally unique explanations or *perceived* causes for these cognitive, emotional, and physical experiences (e.g., being possessed by ghosts) (Lewis-Fernández & Aggarwal., 2013). There are a number of reasons why it is important to identify, assess, and understand the pathological nature of culturally specific syndromes, ultimately related to maximizing the utility and effectiveness of mental health assessment tools and interventions.

Cultural specific syndromes or "idioms of distress" have been found to have consistently strong correlations with various Western-based psychiatric and mental health disorders. A research study by Kohrt et al. (2014), for instance, found a significant association between cultural concepts of distress and Western-based psychiatric disorders, with significant similarity between the cultural concepts of distress, and the Western psychiatric disorders. For example, the CSSI Cambodian syndromes have been found to be positively and significantly associated with anxiety, depression, and PTSD. It has also been found that the CSSI is a significant predictor of increased risk for suicide attempts and suicide completion (Armes et al., 2018). Similarly, other studies have found that "khyaˆl attacks" (a cultural syndrome

similar to panic attacks but with a different cultural explanation) are strongly correlated with the severity of PTSD symptoms. Because of their wide ranging somatic and cognitive symptoms, khyaˆl attacks can strongly shape the ontology of trauma-related disorders, including symptoms of PTSD, the salience of anxiety and panic itself (which is a central experience in all of these related

syndromes, although not necessarily the central conceptualization of all of the syndromes) and the ways of responding to trauma-related distress. Khyaˆl attacks are not just an "idiom of distress" in that they are anxiety formative, which means that they fundamentally shape the patient‟s experiencing of the anxiety symptoms (Hinton et al., 2010). A recent study conducted by Hinton and colleagues found that research participants with high levels anxious-depressive distress and symptoms had statistically greater mean scores on all of the Cambodian symptoms and syndromes addendum (CSSA) items and levels of severity of endorsement in the measure (Hinton et al., 2019). Thus, the various research and reviews discussed above conclude and strongly support the idea that cultural specific syndromes are associated with psychiatric disorders, which supports their conceptualization as "psychopathology".

Cultural specific syndromes / idioms of distress have been shown to influence life functioning and result in life impairment in important domains such as work and occupational activities, in social and family functioning, and general well-being, as assessed by the use of broad quality of life and disability measures. For instance, the complaint of "weakness" which is a component of a number of cultural syndromes has been found to be particularly associated with poorer psychosocial functioning among Asian populations such as Cambodians (Hinton et al., 2007). Moreover, cultural specific syndromes such as those assessed by the CSSI may contribute to variance in work, social, and personal functioning beyond the variance explained by PTSD severity, and anxiety and depression. For instance, it has been found that the cultural syndrome of ataque status continued to have a significant association with mental health-related disability eve after adjusting for traumatic exposure symptoms and the presence of anxiety disorders, including PTSD (Lewis-Fernandez et al. 2009b). Another example of statistically unique relations to functional impairment for culturally specific syndromes is that the common symptoms that occur during khyaˆl attack (Hinton et al., 2010).

The cultural syndromes, cultural idioms of distress and cultural explanations are useful for clinical practice, because they reflect the perceived realities of the individuals and groups within this society. Cultural idioms of distress may not

involve exact symptoms or syndromes of psychopathology (i.e., that are not directly caused by the underlying biological or psychological dysfunction that is causing the psychopathology). Thus, the present study investigated the unique association of Cambodian somatic symptom and syndrome inventory (CSSI) items with functional impairment and help seeking among Cambodian adolescents when controlling for anxiety and depression.

CHAPTER 2
METHODOLOGY

Sample

The study used a cross-sectional design. Data were collected from 391 high school students, grades 10 -11, from two high schools in Phnom Penh (urban area) and two high schools in Prey Veng province (rural area). The sample was composed of 199 boys and 192 girls.

Measures

Cambodian Somatic Symptom and Syndrome Inventory (CSSI), a self-report measure, [18] consist of a list of somatic symptoms and cultural syndromes that have been found to be clinically important in groups of patients. The CSSI is now widely used in Cambodia as a standard mental health assessment tool in clinics, and has been found to differentiate mental health patients from non-patients. The CSSI produces two subscales: (a) Somatic Complaints; and (b) Cultural Syndromes. The Somatic Complaints subscale has 18 items (e.g., ―neck soreness‖). The Cultural Syndrome subscale has 19 items arranged into five subscales: Somatic focused syndromes (10 items; e.g., khyaˆl attacks), Agoraphobia / Motion-sickness syndromes (2 items; e.g., poisoned by cars), Emotion-focused syndromes (2 items; e.g., thinking too much), Cognitive-capacity syndromes (1 item; e.g., forgetfulness/mental distraction), and Spiritual-type syndromes (4 items; e.g., ghost pushing you down). Each item is rated on a 5-point scale (0=not at all, 1=a little bit, 2=moderately, 3=quite a bit, and 4=extremely). The reliability for the somatic scale and syndrome scale were .91 and.89, respectively [18]. In the current study, the CSSI demonstrated good internal consistency (e.g. somatic complaints $\alpha = .88$, cultural syndromes $\alpha = .88$). All the CSSI items are easily understood by patients

and have clear face validity in their cultural context as CSSI items were developed in Khmer language.

The Patient Health Questionnaire (PHQ-9) [19] is used internationally to screen and assess the severity of depression. It consists of nine items (e.g., ―little interest or pleasure in doing things) based on DSM-IV criteria. The PHQ-9 has been translated and validated in over 40 languages, including several Asian languages [20]. Each item on the PHQ measure is rated on a 4-point scale (0=not at all, 1=several days, 2= more than half the days and 3=nearly every day). Cut-off scores of PHQ-9 are: 5-9 =minimal symptoms; 10-14=minor depression; 15-19= major depression, moderate; and >20=major depression, severe. PHQ-9 has demonstrated good internal consistency for the current sample ($\alpha = .82$).

The Generalized Anxiety Disorder questionnaire (GAD-7) [21] is a self-report measure for generalized anxiety disorder. It has 7 items (e.g., ―feeling nervous, anxious, or on edge‖) based on DSM-IV criteria. The GAD-7 has been adapted and translated for over 40 languages and has been validated internationally [20]. Each item on the measure is rated on a 4-point scale (0=not at all, 1=several days, 2= more than half the days and 3=nearly every day). Cut-off scores for GAD-7 are 5-9 = mild anxiety; 10-14 = moderate anxiety; 15-21 = severe anxiety. The GAD-7 has demonstrated good internal consistency for the current sample ($\alpha = .87$).

The Brief Impairment Scale (BIS) [22] is a parent-report measure that has 23-items that assess global functioning in three domains: Interpersonal functioning (e.g., ―How much of a problem has your child had getting along with his mother (or step mother or foster mother); School/Work subscale (e.g., ―How often has your child missed school/work over the past 12 months‖); and Self-care subscale (e.g., ―Compared to others his age, how well does your child take care of his/her health‖. Each item on the measure is rated on a 4-point scale (0= no problem; 1= some problem; 2= a considerable problem; 3= a serious problem). The BIS has demonstrated adequate internal consistency in the current sample ($\alpha = .69$).

The Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) assesses respondents' quality of life enjoyment and satisfaction [23]. It has 14 items that assess life satisfaction over the past week (e.g., ―Taking

everything into consideration, during the past week how satisfied have you been with your physical health‖). Each item on the measure is rated on a 5-point scale (1= not at all; 2= a little; 3= moderately; 4= very much; 5=extremely). The Q-LES-Q-SF has demonstrated good internal consistency for the current sample (α =.85).

The General Help Seeking Questionnaire (GHSQ) [24] was developed to assess people's use of various sources of mental-health related help that the person has sought over the past six months. It asks respondents to indicate their help sources (e.g., relative; physician), number of times getting help, and usefulness of this help. The GHSQ was found to have satisfactory reliability and validity, and appears to be a flexible measure of help-seeking that can be applied to a range of contexts [24].It has 13 items / potential help sources, with each item rated for (a) whether help was sought from this source; (b) if yes, how many times, and (c) the usefulness of this help on a 5-point scale (1=not at all helpful; 2=a little helpful; 3=somewhat helpful; 4=pretty helpful; and 5=extremely helpful). GHSQ demonstrated good internal consistency for the current sample (α =.72).

All the research questionnaires, except CSSI, were translated and back translated into Khmer. After translating, the researcher conducted a pilot test with these translated scales with first year undergraduate students who provided feedback on the measures, which was used for further refinement and final adaption.

Procedure

Two classrooms of Grade 10 and two classrooms of Grade 11 were randomly selected in each selected school using a probability sampling technique, resulting in 8 classrooms in each location. A quota sampling technique with systematic selection was used to select 25 students in each selected classroom.

The study was approved by the Cambodian Ministry of Education, Sport and Youth (MoEYS). The approval letter from the MoEYS and the Ethics Committee were sent to Department of Education, Sports and Youth in Prey Veng province and Phnom Penh City as part of the request for permission to involve the high school students in the selected schools in the project. The selection of high schools was based on purposely selecting urban and rural high schools using convenience sampling. School principals and teachers in grades 10 and 11 of the selected schools were contacted to introduce the study. Then researcher randomly selected two

classes from each grade in each school. A quota sampling technique with systematic selection was used to select 25 students in each selected class.

The selected students were asked to bring the informed consent home to their parents. For students with consent, the students who were interested in participating in the study signed their informed consent form. Those who were interested and signed the informed consents were given the questionnaires and provided with the study instructions. If parents consented but the child did not consent, then the child was not included in the study.

The study was reviewed and approved by Cambodian National Ethics Committee for Health Research (NECHR) on January 1, 2018 (005 NECHR), which gave permission to conduct the research study with high school students. The data collection was started only after receiving voluntary informed consent signed from the participants.

Data analysis

The analyses were conducted using SPSS (IBM SPSS statistics for Windows, 2013). The analyses included descriptive and inferential analyses among specified concepts generated from the above questionnaires. The Pearson Chi-Square statistical test and the one-way analysis of variance (ANOVA) were used to compare differences e.g. urban versus rural respondent of demographic background and SES factors, CSSI, anxiety, depression, functional impairment, quality of life and help seeking behavior.

A general linear model (GLM) approach was used for the primary data analyses because of its flexibility in data analysis; GLM subsumes several standard statistical models, including Analysis of Variance, Analysis of Covariance, Multiple Regression, and t-tests. Specifically, GLM was used for several reasons. First, it allows for assessment of total and unique effects, which is central to this study's hypotheses. In this context, we are interested in Type III Sums of Squares, which gives the unique effect controlling for other variables in the model. Second, GLM allows for inclusion of categorical and continuous measures, which is necessary for this study. GLM was used to examine the relations between the CSSI Cambodian syndromes, CSSI somatic symptoms with typical DSM and ICD syndromes

(depression, anxiety symptoms) controlling for demographic background and SES factors; the relation between CSSI Cambodian syndromes, CSSI somatic symptoms with functional impairment, help seeking and quality of life controlling for demographic background and SES factors; the relation between the standard Western syndromes of depression, anxiety with CSSI Cambodian syndromes, CSSI somatic symptoms with functional impairment, help seeking and quality of life controlling for demographic background and SES factors; to examine the unique relation of CSSI Cambodian syndromes, CSSI somatic symptoms with functional impairment, help seeking and quality of life controlling for anxiety and depression symptoms.

CHAPTER 3
RESULTS AND DISCUSSION

Results

1. Background characteristics of respondents and Socio-Economic Status (SES)

The total sample comprised of 391 high school student participants from two residences: Phnom Penh city (urban) and Prey Veang province (rural). There were 194 students (boys=100, girls=94) from Phnom Penh city and 197 students (boys=99, girls=98) in Prey Veang province. The students were in grade10 and 11 and the mean age of participants was 16.62 (SD=1.091, Min=15 & Max=19). Eighty five percent of respondents reported living with intact parents (78.87% of urban versus 90.36% of rural respondents), and 15% (21.13% of urban versus 9.64% of rural respondents) of respondents reported living with non-intact parents (See Table1).

Table 1. Respondents' Background Characteristics and SES

Variables	Urban N=194	Rural N=197	Total N=391
Age			
Mean year (SD)	16.51 (1.08)	16.73 (1.09)	16.62 (1.09)
Sex			
Male (N=199)	52%	50%	51%
Female (N=192)	48%	50%	49%
Grade			
10 (N=192)	49%	49%	49%
11 (N=199)	51%	51%	51%
Marital status of parents			

Nonintact (N=60)	21%	10%	15%
Intact (N=331)	79%	90%	85%
Father occupation			
Farmer (n=180)	14%	78%	46%
Office staff (N=84)	35%	8%	21%
Seller, worker (N=87)	37%	8%	22%
Others (N=40)	14%	6%	10%
Mother occupation			
Farmer (N=172)	10%	78%	44%
Office staff (N=23)	9%	3%	6%
Seller, worker (N=67)	25%	9%	17%
Housewife (N=114)	53%	6%	29%
Others (N=15)	4%	4%	4%
Living Condition			
Poor (N=30)	9%	7%	8%
Medium (N=350)	89%	90%	90%
Rich (N=11)	3%	3%	3%

2. Associations between CSSI Cambodian syndromes with depression, anxiety, symptoms, controlling for demographic background and SES factors

Table 2 indicates that CSSI Cambodian syndromes were positively and significantly associated with depression [F (1, 381) = 350.64, p< .0001], controlling factors such as demographic background and SES factors include residence, grade, sex, age, living condition, parent marital status, father occupation and mother occupation. The results also indicate that only one control variable; residence [F= (1, 381) 6.10, p< .05] is statistically significant.

Table 2. **The relations between CSSI-Cambodian syndromes and depression, controlling for demographic background and SES factors**

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	9	381	47.51	.53
CSSI Cambodian syndromes	1	381	350.64 ****	.48
Residence	1	381	6.10 *	.02
Grade	1	381	2.93	.01
Sex	1	381	0.93	.00
Age	1	381	0.01	.00
Living condition	1	381	3.54	.01
Parents marital status	1	381	3.49	.01
Father occupation	1	381	0.48	.00
Mother occupation	1	381	0.00	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.

[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

Table 3 indicates that CSSI Cambodian syndromes has a statistically significant relation with anxiety [F= (1, 381) 329.58, p< .0001], controlling for demographic background and SES factors. Only one control variable, residence [F= (1, 381) 5.80, p< .05], is statistically significant.

Table 3. **The relations between CSSI- Cambodian syndromes and anxiety, controlling for *demographic* background and SES factors**

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	9	381	42.63	.50
CSSI Cambodian syndromes	1	381	329.58 ****	.46
Residence	1	381	5.80 *	.02
Grade	1	381	.25	.00
Sex	1	381	.26	.00
Age	1	381	1.13	.00
Living condition	1	381	2.25	.01
Parents marital status	1	381	2.10	.01
Father occupation	1	381	.39	.00
Mother occupation	1	381	.12	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

3. Associations of CSSI Cambodian syndromes with functional impairment, help-seeking, and quality of life controlling for demographic background and SES factors

Table 4 indicates that CSSI Cambodian syndromes [F= (1, 381) 64.13, p< .0001] has a statistically significant associations with functional impairment, controlling for demographic background and SES factors. The results also reveal that there are two control variables, residence [F= (1, 381) 4.27, p< .05] and parents marital status [F= (1, 381) 17.70, p< .0001], are statistically significant.

Table 4. **Associations between CSSI Cambodian syndromes and functional impairment, controlling for demographic background and SES factors**

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	9	381	15.90	.27
CSSI Cambodian syndromes	1	381	64.13 ****	.14
Residence	1	381	4.27 *	.01
Grade	1	381	0.49	.00

Sex	1	381	1.74	.00
Age	1	381	0.22	.00
Living condition	1	381	0.62	.00
Parents marital status	1	381	17.70 ****	.04
Father occupation	1	381	3.20	.01
Mother occupation	1	381	0.01	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

Table 5 reports that CSSI Cambodian syndromes have a statistically significant association with quality of life [F= (1, 381) 6.04, p< .05], controlling for demographic background and SES factors. The results also indicate that two control variables, residence [F= (1, 381) 13.72, p< .0001] and living condition [F= (1, 381) 6.05, p< .05], are statistically significant.

Table 5. Associations between CSSI Cambodian syndromes and quality of life, controlling for demographic background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	9	381	5.44	.11
CSSI Cambodian syndromes	1	381	6.04 *	.02
Residence	1	381	13.72 ****	.03
Grade	1	381	0.80	.00
Sex	1	381	0.56	.00
Age	1	381	0.11	.00
Living condition	1	381	6.05 *	.02
Parents marital status	1	381	1.05	.00
Father occupation	1	381	0.00	.00
Mother occupation	1	381	0.19	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

Table 6 shows a statically significant association between CSSI Cambodian syndromes and general help seeking [F= (1, 381) 8.80, p < .01], controlling for demographic background and SES factors. There are two control variables, grade [F= (1, 381) 7.19, p < .01] and sex [F= (1, 381) 6.71, p < .05], are statistically significant.

Table 6. Associations between CSSI Cambodian syndromes and general help seeking, controlling for demographic background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]

Model	9	381	3.17	.07
CSSI Cambodian syndromes	1	381	8.80 **	.02
Residence	1	381	0.24	.00
Grade	1	381	7.19 **	.02
Sex	1	381	6.71 *	.02
Age	1	381	3.58	.01
Living condition	1	381	0.66	.00
Parents marital status	1	381	3.34	.01
Father occupation	1	381	0.77	.00
Mother occupation	1	381	0.03	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

4. Associations of depression, anxiety with functional impairment, help-seeking, and quality of life with controlling for demographic background and SES factors

In Table 7, depression and anxiety were combined together in the same model. The results indicate that anxiety [F= (1, 380) 15.84, p< .0001] and depression [F= (1, 381) 14.12, p< .0001] have a statistically significant association with functional impairment, controlling for demographic background and SES factors. However, the F-value of depression and anxiety decrease, for example, depression decreases from 121.06 to 14.12 and anxiety decreases from 123.26 to 15.84. Two control variables; parent's marital status [F= (1, 380) 14.19, p< .0001] and father occupation [F= (1, 380) 5.04, p< .05] are statistically significant.

Table 7. Associations between anxiety, depression and functional impairment, controlling for demographic background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	10	380	23.42	.38
Anxiety	1	380	15.84 ****	.04
Depression	1	380	14.12 ****	.04
Residence	1	380	1.20	.00
Grade	1	380	0.06	.00
Sex	1	380	2.30	.01
Age	1	380	0.62	.00
Living condition	1	380	0.00	.00
Parents marital status	1	380	14.19 ****	.04
Father occupation	1	380	5.04 *	.01

Mother occupation	1	380	0.00	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
1 = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

In Table 8, depression and anxiety were combined together in the same model. The results indicate that only anxiety [F= (1, 380) 11.27, p< .0001] is statically significant association with general help seeking, controlling for demographic background and SES factors. However, the F-value of anxiety decreases from 21.84 to 11.27. Two control variables; grade [F= (1, 381) 7.58, p< .01] and sex [F= (1, 381) 6.20, p < .05] are still statistically significant with general help seeking.

Table 8. **Associations between anxiety, depression and general help seeking, controlling for demographic background and SES factors**

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	10	380	4.26	.10
Anxiety	1	380	11.27 **	.03
Depression	1	380	0.38	.00
Residence	1	380	0.81	.00
Grade	1	380	7.58 **	.02
Sex	1	380	6.20 *	.02
Age	1	380	2.91	.01
Living condition	1	380	1.12	.00
Parents marital status	1	380	2.63	.01
Father occupation	1	380	0.62	.00
Mother occupation	1	380	0.07	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
1 = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

In Table 9, the depression syndrome and anxiety syndrome were included together in the same model, to see their unique relations to quality of life. The results of this analysis were that depression and anxiety did not have unique statistically significant associations with quality of life when controlling for each, and when controlling for the demographic background factors and SES factors. Two of the control variables, residence [F= (1, 381) 11.71, p< .01] and living condition [F= (1, 381) 5.02, p<. 05] did have a statistically significant relation with quality of life.

Table 9. Associations between anxiety, depression and quality of life, controlling for demographic background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	10	380	5.51	.13
Anxiety	1	380	0.08	.00
Depression	1	380	3.50	.01
Residence	1	380	11.71 **	.03
Grade	1	380	0.49	.00
Sex	1	380	0.43	.00
Age	1	380	0.10	.00
Living condition	1	380	5.02 *	.01
Parents marital status	1	380	0.63	.00
Father occupation	1	380	0.02	.00
Mother occupation	1	380	0.19	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

5. Unique associations of CSSI Cambodian syndrome with functional impairment, help-seeking, and quality of life, when controlling for the Western anxiety and depression syndromes

The demographic background and SES factors were added into the model as controlling factors, along with anxiety and depression (Table10). The results reveal that CSSI Cambodian syndromes still did not have a unique relationship with functional impairment. The control variables, anxiety [F= (1, 379) 14.24, p<. 0001], depression [F= (1, 379) 12.30, p<.01], parent's marital status [F= (1, 379) 14.14, p<. 0001] and father occupation [F= (1, 379) 5.01, p<. 05] did have a unique relationship with functional impairment.

Table 10.The unique associations between CSSI Cambodian syndrome and functional impairment, controlling for anxiety and depression, and the demographic background and SES factors.

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	11	379	21.23	.38
CSSI Cambodian syndromes	1	379	0.00	.00
Anxiety	1	379	14.24 ****	.04
Depression	1	379	12.30 **	.03
Residence	1	379	1.18	.00
Grade	1	379	0.06	.00
Sex	1	379	2.29	.01
Age	1	379	0.62	.00

Living condition	1	379	0.00	.00
Parents marital status	1	379	14.14****	.04
Father occupation	1	379	5.01*	.01
Mother occupation	1	379	0.00	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

The demographic background and SES factors were added into the model as controlling factors with anxiety and depression (Table 11). The results reveal that CSSI Cambodian syndromes do not have a unique association with general help seeking. The control variables, anxiety [F= (1, 379) 10.23, p<. 01], grade [F= (1, 379) 7.55, p<.01], and sex [F= (1, 379) 6.15, p<. 05], have a unique relationship with general help seeking.

Table 11.The unique associations between CSSI Cambodian syndrome and general help seeking, controlling for anxiety and depression, and the demographic background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]
Model	11	379	3.86	.10
CSSI Cambodian syndromes	1	379	0.00	.00
Anxiety	1	379	10.23**	.03
Depression	1	379	0.33	.00
Residence	1	379	0.79	.00
Grade	1	379	7.55**	.02
Sex	1	379	6.15*	.02
Age	1	379	2.90	.01
Living condition	1	379	1.11	.00
Parents marital status	1	379	2.62	.01
Father occupation	1	379	0.62	.00
Mother occupation	1	379	0.07	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

The demographic background and SES factors were added into the model as controlling factors with anxiety and depression (Table 12). The results reveal that CSSI Cambodian syndromes do not have a unique relationship with quality of life. The control variables, residence [F= (1, 379) 11.40, p<. 01], and living condition [F= (1, 379) 4.97, p<.05] have a unique association with general help seeking.

Table 12.The unique associations between CSSI Cambodian syndrome and quality of life, controlling for anxiety, depression, demographic

background and SES factors

Source	Df(1)	Df(2)	F	Eta-squared[1]
Corrected Model	11	379	5.00	.13
CSSI Cambodian syndromes	1	379	0.01	.00
Anxiety	1	379	0.06	.00
Depression	1	379	2.99	.01
Residence	1	379	11.40 **	.03
Grade	1	379	0.49	.00
Sex	1	379	0.42	.00
Age	1	379	0.10	.00
Living condition	1	379	4.97 *	.01
Parents marital status	1	379	0.64	.00
Father occupation	1	379	0.02	.00
Mother occupation	1	379	0.19	.00

Notes: * = p < .05, ** = p < .01, *** = p < .001, **** = p < .0001.
[1] = eta-squared for Model is full eta-squared, eta-squared for individual factors is partial eta-squared.

DISCUSSION

The current study found that CSSI was positively and significantly associated with depression and anxiety, which indicates that there is conceptual and empirical overlap between these two domains of syndromes. The CSSI was positively and significantly associated with functional impairment, quality of life and general health seeking, indicating that they represent psychopathology, since "pathology" represents relations to impairment both in functioning and quality of life, and help seeking. The current study also found that anxiety and depression had statistically significant associations with these same indicators of pathology, indicating that the standard Western mental health syndromes also represent pathology in this Cambodian sample. However, and most importantly, the CSSI did not have unique relations with functional impairment, quality of life, and help seeking, indicating that they do not provide additional information about psychopathology, at least in this sample.

There are number reasons why it is important to identify, assess, and understand the pathological nature of culturally specific syndromes, ultimately related to maximizing the utility and effectiveness of mental health assessment tools and interventions.

First, culturally specific syndromes such as assessed in this study may

represent unique forms of psychopathology, in the sense of reflecting culturally unique underlying causal processes. Culturally specific syndromes, that is, may fundamentally represent psychopathology that does not exist in other cultures. However, the two key study findings were that the CSSI syndromes (a) were related to the indicators of pathology, but did not (b) have unique relations to the indicators of pathology. This overlap between the Western and CSSI Cambodian syndromes, due in part to the high correlation between CSSI Cambodian syndromes and anxiety ($r = .691$) and depression ($r = .708$) suggests that although the culturally-specific CSSI syndromes represent pathology (i.e., they are correlated with the indicators of pathology), they are occurring at the level of the social and cultural interpretation of the symptoms rather than at a causal level. That is, if the CSSI syndromes had unique or even partially unique causes, one would expect that the syndromes' consequences (impairment in functioning and quality of life, and help-seeking) also would have unique relations to pathology indicators, as the underlying causes are directly responsible for the functioning of these indicators. If the CSSI syndromes had unique underlying causal processes, some clients would have high levels of the CSSI syndromes but low of the Western syndromes and therefore there would be unique relations to impairment. But there were not unique relations to impairment, suggesting that there were not unique underlying causal processes.

However, a second reason why it is important to understand the pathological nature of culturally-specific syndromes is that these syndromes may represent culturally important beliefs about psychopathology that by their nature are not captured in the standard Western syndromes. For instance, the Cambodian concept of khyaˆl attacks, which is included in the CSSI, represents a key idiom of distress among Cambodian people. Western-based assessment instruments like the PHQ and GAD do not include items such as this. Therefore, assessment of these syndromes may allow for more complete and at least initially easier to understand communication between clinicians and mental health clients. This should in turn increase engagement in the assessment and treatment process, by providing an opportunity for clients to define their distress in their own words, allowing for more effective assessment and intervention (Belsiyal, Sasirekha, 2017).

Thus, the current study's findings may suggest how clinicians and psychologists in Cambodia can useful the culturally specific syndromes assessed by the CSSI. First, given that these syndromes do represent "psychopathology", clinicians or psychologists can use them to explore the local idioms of distress, which should lead to more understanding of their clients' problems with in the Cambodian context. Using CSSI syndromes should help clients understand more easily their own symptoms or problems, so that they can communicate more easily in their own words. As DSM 5 notes, discussing mental health problems in the language that clients understood should result in better communication, facilitating treatment negotiation and engagement, and higher treatment maintenance and compliance (DSM-5, 2013). Finally, it should also build the relationship between the clinician and the client, as the patients should be more comfortable with discussing their symptoms when they understand these symptoms from their own cultural perspective.

Using the CSSI to address the Cambodian idioms of distress could also increase the number of persons seeking treatment for psychological disorders and who were willing to participate in treatment, as it can help the clients increase their own understanding their problems or symptoms. In addition, use of local idioms of distress can increase the therapeutic alliance and empathic rapport; e.g. Knowing the language of the patient both linguistically and in terms of the prevailing concepts, may prove helpful in communication, and facilitate negotiation that leads to higher treatment retention and adherence.

It could be possible to interpret the results of this study to indicate that it is not necessary to use culturally-unique/specific measures, since the current Western measures (PHQ, GAD) appear to cover the range of psychopathology covered by the CSSI. However, such findings do not necessarily imply that the CSSI and other culturally specific syndromes do not have clinical utility, for both assessment and treatment. The culture terms and explanations represented by these syndromes are important to include in assessment and case formulation as they may help to clarify symptoms and etiological explanations for the clients, who might at least initially become confused by Western-label symptoms and etiological explanations that are

foreign to them (Karthick & Sangita, 2017). Clients may thus become more engaged in the assessment and evaluation process.

Conversely, however, the use of Western syndromes that are not currently inherent parts of the cultural system of conceptualization may be beneficial for several reasons. First, they may be less stigmatized. Traditional symptoms of distress or illness can be interpreted as indicating signs of moral weakness, physical frailty, or inability and failure to carry out important social roles. These personal characteristics may be evaluated negatively as they can signify that a person (or a family member) has failed in some important social role. When people evaluate their own or other's distress or illness negatively in this way, they will have emotional responses of shame, humiliation, anxiety or fear (Arnault, 2009), representing stigma. Syndromes that are less integrated into the cultural may be less stigmatized because there is less history of their being linked to negative outcomes (Chhabra, Bhatia, & Gupta, 2008). Second, and critically, Western-based mental health syndromes are more directly connected to objective science and research, are more empirically derived and more directly linked to causal processes scientifically identified. As a consequence, the use of more scientifically based syndromes such as anxiety and depression ultimately might be more beneficial as, because of their empirical links to causals processes, they should link to treatment programs that are objectively effective. Ultimately, perhaps, a hybrid approach might be useful.

There are several study limitations that should be considered. First, in order to focus on the early processes of development of cultural models of psychopathology, we used an adolescent sample. However, it is possible that the culturally unique causal processes may not develop fully until later in development and only then create unique relations to the indicators of psychopathology. This would in and of itself be a very interesting and important finding. Second, the study focused on one country. Although Cambodia is a nation and culture where culturally specific syndromes have been identified, it is possible that there are other culturally specific syndromes in other countries that do have unique relation to factors that define psychopathology (e.g., functional impairment, help-seeking) that were not covered by our measure in Cambodia. A third possible limitation is that most of the

measures used in this study have not been formally validated in Cambodia. For instance, although the CSSI was developed in a highly culturally sensitive process, was reviewed extensively by Cambodia clinicians, and is accepted in Cambodia by experts as valid, it has not been formally validated, which is a limitation. However, much work in LMIC has similar limitations. For instance, in a study in neighboring Vietnam conducted by Hinton and colleagues (Hinton et al., 2018), the Vietnamese Symptom and Cultural Syndrome Addendum (VN SSA) was used to assess psychological complaints prominent among Vietnamese people, beyond the standard symptoms assessed by Western-based anxiety and depression. Thus, although the lack of formal validation is a limitation, this and similar studies can still provide useful information.

CHAPTER4

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The current study found that the CSSI Cambodian syndromes were positively and significantly associated with the standard Western depression and anxiety syndromes. It also found that the CSSI Cambodian syndromes as well as the standard Western syndromes of depression and anxiety were positively and significantly associated with functional impairment, quality of life and general health seeking. However, the findings clearly indicated that CSSI Cambodian syndromes and Western-based psychopathology syndromes (depression, anxiety) may have conceptual and empirical overlap, and that the CSSI syndromes do not provide unique information about pathology.

RECOMMENDATIONS

The following recommendations are made:

1. Researchers determine whether culturally specific syndromes among adults have unique relations to psychopathology indicators, in order to determine whether culturally unique casual processes may occur later in humand development.
2. Conduct similar research among other ethnic groups in Cambodia such as the Cham, in order to determine if there are unique effects for CSSI syndromes among cultural minorities in Cambodia.
3. Use these findings regardings the CSSI in training of clinical psychology master's students at the Royal University of Phnom Penh to encourage the new psychologists in the understanding of Khmer psychometric and psychopathology assessment.