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CULTURAL APPROPRIATE DEPRESSION SCREENING TOOL: DO WE NEED IT ?

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Depression is a mood disorder that is second prevalent compared to other mental health problems (Kessler et al., 2009; Steel et al., 2014). In 2004, it was the third leading cause in the global burden of disease after lower respiratory infections and diarrheal disease; and by 2030, it is estimated that it will be ranked first (WHO, 2011). In Indonesia, the chairman of Indonesian Psychiatric Association, Eka Viora reported 3.7% of the total population of the country - approximately 9 million people are suffering from depression at any time.[1]

Depression is the leading cause of illness and disabilities worldwide (Gelenberg, 2010; WHO, 2017), and is characterized by such feelings as sadness and difficulty in concentration as core symptoms (Cabelo et al., 2012). Indonesia ranks fourth in the world after India, China and the US on disability adjusted life years (DALYs) because of depression[2]. The DALYs due to depression increased between 1990 and 2010 from 2.3% to 3.2% respectively (Mahendradhata et al., 2017).

Depression may impact on people in relation to their work, their academic performance, relationships, involvement in social activities, home management and ultimately, their quality of life (Fried & Nesse, 2014; Hysenbegasi, Hass & Rowland, 2005; Isacson, Bingefors & von Knorring, 2005; Lam et al., 2012; Roh, Jeon, Kim, Han, & Hahm, 2010; Tse & Bond, 2004; Wang & Gorenstein, 2014).

Recently researchers have suggested variation in the presentation of depression across cultures, and so the value of using culturally appropriate depression assessment tools (Alang, 2016; Brintnell, Sommer, Kuncoro, Setiawan, & Bailey, 2013; Waite, 2006). Changes in temperament, altered cognitions, avoidance and dissociative behaviours, and somatic complaints, have all been described as typical of depression among Afghan refugees in the US (Alemi et al., 2017). For example, somatic complaints including "nerves," unexplainable bodily pain, and lack of energy have also been reported by people with depression in Denmark (Buus, Johannessen, & Stage, 2012). Pain, including headache and musculoskeletal pain, has been reported as prevalent among Turkish women in Iran (Dejman et al., 2011).

[1] Suryani, A. S., (2017). 9 Million Indonesians suffer from Depression: Report. Tempo. https://en.tempo.co/read/news/2017/05/21/240877277/9-Million-Indoensians-Suffer-from-Depression-Report accessed 1 November 2017.
[2] McPhillips, D. (2016). U.S. Among Most Depressed Countries in the World. U.S.News. https://www.usnews.com/news/best-countries/articles/2016-09-14/the-10-most-depressed-countries accessed 1 November 2017.

Cross cultural & culturally specific tools

Considering the impact of culture in mental health, there are two approaches in developing a mental health assessment. The first is by establishing the cross-cultural validity of western tools, the second by developing culturally specific tools (Miller et al., 2006). Western depression tools studied cross culturally and used in research and clinical practice, in Indonesia, are the Beck Depression Inventory (BDI) II (Beck, Steer, & Brown, 1996), the Center of Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977), and the Hamilton Depression Rating Scale (HDRS) (Hamilton, 1960). While these tools are used in clinical practice and research in Indonesia, there are limitations in the assessment process.

The Beck Depression Inventory (BDI) consisting of 21 items was developed in 1961 in the US with twice the number of White patients as Black patients (Beck, Ward, Mendelson, Mock & Erbauck, 1961). The Beck Depression Inventory (BDI) was revised into the BDI II at 1996 to align with the criteria of major depression disorder in the DSM IV (Beck et al., 1996). Cross-cultural studies show that BDI II has good construct validity for measuring depression in many countries (Al-Turkait & Ohaeri, 2012; Joe, Woolley, Brown, Ghahramanlou-Holloway, & Beck, 2008; Kapci, Uslu, Turkcapar, & Karaoglan, 2008; Kojima et al., 2002). This includes Indonesia, where BDI II was reported as having good construct validity, good reliability, and discriminative power between general populations, depressed patients, and coronary heart disease patients (Ginting, Naring, van der Veld, Srisayekti, & Becker, 2013). However, some items in the Indonesian BDI II – those that measure loss of pleasure, loss of interest, indecisiveness, and tiredness or fatigue – had difficulty in translation, resulting in sentences that were longer than in the original BDI II. There were also limitations in emotional terms or words, resulting in the need for lengthy explanations to explain the meaning of items (Ginting et al., 2013). This limitation of the use and range of emotion words is a feature whenever direct translation is required.

The Center for Epidemiologic Studies Depression Scale (CES-D) was developed in 1977 and consists of 20 items with good validity and reliability (Radloff, 1977). Studies have supported the use of CES-D cross culturally (Crockett, Randall, Shen, Russell, & Driscoll, 2005; McCallum, Mackinnon, Simons, & Simons, 1995; O'Rourke, 2003; Pretorius, 1991). However, research results show that different factor structures exist in different cultural contexts, indicating that symptoms of depression may present differently across cultures (Demirchyan, Petrosyan, & Thompson, 2011; Kim, DeCoster, Huang, & Chiriboga, 2011; Lee et al., 2011; Losada et al., 2012; Rivera-Medina, Caraballo, Rodriguez-Cordero, Bernal, & Davila-Marrero, 2010). A study among people from three different ethnic backgrounds – White (European), Black (African Americans) and Mexican Americans – found the use of CES-D to result in response bias, with Mexican Americans more likely to endorse more items than White or Black Americans (Kim, Chiriboga, & Jang, 2009). This suggesting that the CES-D items functioned differently among these ethnicities. CES-D was used in several studies in Indonesia (Lu, 2010; Seyle, Widyatmoko, & Silver, 2013; Tampubolon & Hanandita, 2014). A brief ethnographic study, involving interviewing key informants, was undertaken to confirm the appropriateness of the CES-D to measure distress among Javanese (Seyle et al., 2013). However, again there was a problem for administration of item "*I could not get going,*" which was literally translated to *merasa sulit memulai hari,* even though Javanese have a specific term for this condition, *aras-arasen* or

memeng. This indicates a need exists for a comprehensive yet parsimonious measure that captures the nuances of terms used by individuals suffering depression. A more evaluate approach is required to ensure an appropriate tool is available, one which encapsulates culturally appropriate items with reference to local idioms and presentations, rather than adjusting existing instruments.

The Hamilton Depression Rating Scale (HDRS) was developed by Hamilton in 1960 in the UK, with a clinical sample of 49 men diagnosed with depression (Hamilton, 1960). HDRS consists of 21 items, but four items – diurnal variation, depersonalization, obsessional behaviour, and paranoia – are not included in computing the total score (Fava, Kellner, Munari, & Pavan, 1982). A meta-analysis shows HDRS is a reliable measurement of depression with alpha coefficient was .789 and test retest reliability .65-.98 (Trajković et al., 2011). However, a study among psychiatric residents in Indonesia found that training was needed before administration of the HDRS when diagnosing patients, and three items, namely depressed mood, hypochondria and insight, show persistent group bias, indicating low cultural validity in these items within the Indonesian context (Istriana et al., 2013).

Even though universality in symptoms of depression have been found, some cultural symptoms of depression have also been identified, indicating that using western screening tools cross-culturally may not be especially sensitive in evaluating depression (Sweetland, Belkin, & Verdeli, 2014). Considering the variation in expressions of depression, a number of scholars have argued the value of an appropriate local measure (Alang, 2016; Brintnell et al., 2013; Waite, 2006). Assessment tools need to accommodate cultural variation in the presentation of depression. Local idioms of depression need to be translated and included in standard questionnaires (Kleinman, 1987) to correct for possible under-diagnosis. All manifestations of depression need to be identified, otherwise prevalence may be underreported when the concepts and phrases in the assessment tools do not reflect the cultural concepts of the respondent around the disorder (Demyttenaere et al., 2004).

Recently, researchers have paid greater attention to cultural variation, resulting in the development of culturally appropriate assessments (Kaiser, Kohrt, Keys, Khoury, & Brewster, 2013; Masse et al., 1998; Miller et al., 2006; Rasmussen, Katoni, Keller, & Wilkinson, 2011; Thomas, Cairney, Gunthorpe, Paradies, & Sayers, 2010). For example, Wong and colleagues (2012) developed a Chinese American Depression Scale (CADS) by combining an emic approach, interviewing clinicians and patients, with an item response analysis, to construct the scale. Interviews were conducted with 34 Chinese patients with depression and 29 clinicians to gain insight into cultural manifestations of depression among Chinese American immigrants, and based on these results, a culturally sensitive depression assessment was developed. The final brief scale included nine items, of which four items coincided with major depressive symptoms in the DSM IV, while the others were idiomatic expressions and culturally based concepts (Wong, Wu, Guo, Lam, & Snowden, 2012).

Karasz and colleagues (2013) developed a South Asian Tension Scale for Bangladeshi immigrant women in the Bronx, New York, by using a participatory dialogue method through a partnership between researchers, clinicians and community members. Sixteen women from the community were recruited as partners to the researchers in an outreach meeting. These women discussed a common mental disorder (CMD), focusing on their experiences of emotional distress, its social context, its antecedents and potential syndromes. This resulted in "tension" as a syndrome to

describe their emotional distress. Tension consists of emotional symptoms associated with the western concept of CMD; physical symptoms include somatic expressions and culture-specific symptoms. A South Asia Tension Scale was developed based on the results from discussions, consisting of 24 items that described emotional, physical, and culture-specific symptoms; the scale had excellent psychometric properties (Karasz, Patel, Kabita, & Shimu, 2013).

Two approaches in developing a new scale

Generally, there are two approaches when developing a new scale: "top down" and "bottom up." One psychological construct can be measured through a tool developed by either approach. For example, in assessing personality based on the five factor model of personality theory,[3] instruments have been developed through both approaches (Widiger, 2017). The top down approach is similar to a theoretical-rational or deductive approach to develop an instrument (Achenbach, Dumenci, & Rescorla, 2003), whereby the construct to be measured is conceptualized firstly, and item pools are generated from extant research; item selection and psychometric evaluation are then undertaken (Clark & Watson, 1995). Using components of the DSM to develop an assessment tool is an example of a top down approach (McConaughy, 2001). A bottom up approach is empirically based, and starts with the collection of data on particular behaviour (McConaughy, 2001). This approach is inductive (Achenbach et al., 2003). These different approaches to developing a new scale have been applied in previous research on culturally appropriate tools.

Stages in developing a new culturally mental health instrument

Basically, in developing a new culturally appropriate mental health instrument, two main stages are applied: deriving the items and validating the new instrument. Most studies combined a qualitative approach in deriving items and quantitative analysis in the validation stage (69.70%). Although only four articles directly stated the use of mixed methods (e.g., Miller et al., 2006; Mutumba et al., 2015; Praditsathaporn et al., 2011; Wong et al., 2012), the other articles described a qualitative approach used to derive items and quantitative analysis of the newly developed tool; hence the methods were used in sequence rather than "mixed" with data interacting. In the qualitative stage, data were gathered mainly through interviews and focus group discussions, while in the quantitative stage, psychometric properties of the tool were analysed with particular attention to reliability and validity.

In deriving items, researchers adopted different approaches. The first group of articles relied on the experience of patients (21.21%). These studies drew on Kleinman's (1980) explanatory model of illness (EMs), both of patients and practitioners, to provide explanations of the aetiology of illness and its treatments. In these articles, the experiences were drawn from interviews and focus group discussions with the patients. The second group of articles depended on the opinions of lay people or experts (45.45%). This approach also referred to Kleinman's explanatory model of illness. Even though the explanations from lay people or experts might be different to the explanations of people with lived experiences of depression (Johnson et al., 2017), these two groups of articles used a bottom up approach in developing culturally

[3] Neuroticism, extraversion, openness, agreeableness and conscientiousness are factor of personality, based on five factor model of personality theory (Widiger, 2017).

appropriate tools. The third group selected items from previous standard assessment tools or from a literature review, with judgement from experts on those items that were relevant with specific populations (27.27%). This group of authors aligned with Kleinman's (1987) suggestion to add local idioms of depression to standard measurement tools. In summary, in developing a culturally appropriate tool, some researchers used a top down approach to generate items based on the published literature, by involving expert panels to ensure the items were appropriate for the target population.

In validating a new scale, psychometric properties including factor structure, reliability, and validity were reported in most studies. Two types of factor analysis - explanatory factor analysis (EFA) and confirmatory factor analysis (CFA) - were conducted with some variation. A substantial number of studies applied EFA (42.42%). Generally, EFA was used when there was little or no theoretical or empirical basis to determine the number of common factors or what specifically observed variable, influenced a particular common factor (Fabrigar, Wegener, MacCallum, & Strahan, 1999), whereby a new theory could be generated from the results of EFA (Henson & Roberts, 2006). In addition, EFA and CFA could be applied in series, by using the result of EFA as a basis of creating a model of factor structure in CFA (Fabrigar et al., 1999). Among these studies, 15.15% applied both EFA and CFA. CFA is used to test whether a model of factor structure could be specified based on either a theoretical or empirical basis (Fabrigar et al., 1999; Henson & Roberts, 2006). Two studies (6.06%) applied CFA only (Kim, 2002; Koh et al., 2007). Kim (2002) developed the Kim Depression Scale for Korean Americans (KDSKA) by conducting focus group discussions to establish an emic understanding of depression, resulting in a scale with 25 items that was analysed with CFA to test the measurement model. Koh and colleagues (2007) reviewed the literature on depression and conducted observations among Asian children as the basis of developing the Asian Children Depression Scale, and then the new tool was analysed with CFA. Drawing on the work of these two studies, CFA could be applied to test the model of a new measurement, whether the model was developed on a theoretical understanding or empirical data.

Reliability is a psychometric property that is characterized in classical test theory as a measurement theory, in which the observed score is a function of the true score and measurement error (Furr & Bacharach, 2014). Of the three methods used to estimate reliability, internal consistency was most frequently reported in research on developing culturally appropriate tools (84.85%). The wide use of internal consistency is influenced by its advantages, including that respondents need only fill out one tool on one occasion, so less effort is required compared to the two other methods (Furr & Bacharach, 2014; Streiner, 2003). The second type of reliability, test-retest reliability was reported in seven studies, in which both internal consistency and test-retest reliability were applied. In measuring mood, internal consistency seems to be more accurate than test-retest reliability as mood changes over time (McCrae, Kurtz, Yamagata, & Terracciano, 2011). None of the studies reported parallel forms of reliability. The problem with the parallel form method is that two different measurements are required to measure the same true score and the same amount of variance is needed (Furr & Bacharach, 2014). In practice, it is difficult to develop two parallel tools.

Validity based on traditional perspectives of psychometry consists of content validity, criterion validity and construct validity (Furr & Bacharach, 2014). Among these three types of validity, criterion related validity was most often reported in the studies (63.64%), including convergent, divergent, concurrent, predictive and discriminant validity. Construct validity and content validity were reported among 30.30% and 21.21% of studies, respectively. From a contemporary perspective, construct validity - indicating how far the test score can be interpreted as a psychological construct – is an essential concept that depends on the content of the test, its internal structure, the psychological process used in test response, the association among test scores and other variables, as well as the consequences of test use (Furr & Bacharach, 2014). It can be said that construct validity is influenced by content validity, factor structure, and criterion validity, therefore validity does not only rely on one single statistic (Coaley, 2010).

Specific symptoms in culturally appropriate depression screening tools

Even though some items in culturally appropriate depression screening tools were similar to items in Western depression screening tools, differences also existed either in the symptoms or in the local idioms and terminology used to refer to these. Among older Caribbean residents in London, UK, for example, different symptoms were identified, including feeling cut off (feelings of social isolation or family alienation); emptiness (coming from inside themselves); feeling fed up; feeling "low;" tiredness; pain all over; feeling pressured; and having fear or palpitations around the heart and having a sensation of gas bubbling in the stomach (Abas et al., 1996). Among Acholi youth in Northern Uganda, three local syndromes - *two tam, kumu* and *par* - were related to the Western concept of depression; however, a culturally specific description of the symptoms also existed - *kumu*, characterized as sitting while holding one's cheek in one's hand and not greeting people (Betancourt et al., 2009). "Feelings of going crazy" is a unique item of the Vietnamese Depression Scale, which is a combination of suffering, desperateness and loss of control, but without psychotic symptoms (Kinzie at al., 1982).

Depression manifested in a social context in some target groups. Among Pakistanis in Peshawar and Lahore, depression manifested through social functioning disturbances rather than their personal feelings (Mumford et al., 2005). However, among Singaporean Chinese children aged 6 to 12 years old, one culturally salient factor - negative social self - was established as one of four factors of the Asian Children Depression Scale (Koh et al., 2007). This was also documented among Asian adolescents in Singapore (Woo et al., 2004), with concern over self-other relationships, reflecting negative social experience. Social items were also present in the culturally appropriate depression screening tool for Chinese American immigrants, relating to interpersonal responsibility, need or problem, and included five items: fear of losing working ability, loneliness, being afraid, nervousness, and worry (Wong, et al., 2012).

Somatic symptoms were established in some of the new tools developed. The Kim Depression Scale for Korean American (KDSKA) has a somatic subscale with four items (Kim, 2002), whereas the Lee and Rhee Depression Scale (LRDS) developed for Koreans in Korea has a somatization dimension with five items that distinguishes it from Western screening tools, especially the Beck Depression Inventory (BDI) (Hwang et al., 2012). Nine of 19 final items of the Dar-es-Salaam Symptom Questionnaire (DSQ), developed for Tanzanian women, also reflect somatic symptoms (Kaaya et al.,

2008). Some items in the depression scale of the Phan Vietnamese Psychiatric Scale (PVPS) combine dysphoric mood and physical symptoms that are meaningful in Vietnamese culture (Phan et al., 2004).

The premise in Western understandings is that depression manifests through internalized emotion; however, in some target groups, depression manifests through externalized emotions. For example, among indigenous Australians, depression arises through anger (Thomas et al., 2010). Anger was also included in the Chinese American Depression Scale developed for Chinese American immigrants in the US (Wong et al., 2012).

Other dimensions that are not included in Western screening tools - such as religiosity – were also found in the culturally appropriate depression screening tools reviewed. For example, in the Pakistan Anxiety and Depression Questionnaire (PADQ), even though some of the 30 final items overlapped with Western questionnaires, the expression of local idioms was more functional, and included two religiously based items (Mumford et al., 2005). Among Chinese American immigrants in the US, two items referred to spirituality and personal relationships in Chinese culture - "face" and "fate" – and both were included in the newly developed tool (Wong et al., 2012).

Local idioms of distress were also found in some cultural groups and included in the culturally appropriate tools developed. In the Afghan Symptom Checklist, four indigenous constructs were found as indicators of distress: *jigar khun* (a form of sadness including grief following interpersonal loss); *asabi* (highly stressed by life stressors); *fishar-e-bala* (emotional pressure and agitation); and *fishar-e-payin* (low energy and motivation) (Miller et al., 2006). In a measurement of psychological distress for Ugandan adolescents living with HIV, two items - "thinking that you are watched or talked about by others" and "thoughts about ending your life" - were characteristic of distress among the target population, although commonly recognized respectively as indicators of paranoia and suicidal ideation by expert panels (Mutumba et al., 2015). Idioms of distress among Haitian Creole were also added in a culturally appropriate depression screening tool, including *de la* (low energy), *ke sere* (constricted heart), and *kalkile twop* (thinking too much) (Rasmussen et al., 2015).

Each culture has different constructs on depression. Darfuris have an idiom *majnun* (literally "madness") referring to depression (Rasmussen et al., 2011). Weaver and Hadley (2011) found that the construct of their Tension Scale developed for Indian women with diabetes type 2 is closer to depression than anxiety, while Masse et al. (1998) identified that in their psychological distress scale, depression and anxiety were merged into one construct.

Understanding local idioms and terminology is important as not all of these expressions can be directly translated into other languages, including into English. Among Sri Lankan Sinhalese, for example, *kala kereema* (roughly translated as loss of hope resulting in depression and lack of energy) and *bahu bootha* (fright arising from seeing a ghost) are examples of local idioms that are not easily translated into English (Fernando, 2008). Some items in the newly developed tool for Chinese American immigrants in the US are also difficult to translate into English, such as item 3 – "troubled" and item 7 – "bored", both of which are considered as indicators of mild distress (Wong et al., 2012). Moreover, each local item has a specific meaning. For instance, among Vietnamese refugees in the US, sadness is characterized through three expressions *huon phien* (sad and bothered), *buc* (bothered), and *bimon* (sad) (Kinzie et al., 1982).

In some target populations, people with depression speak of thinking too much, as already discussed. However, each target group has different local idioms relevant to thinking too much. Among Africans in Zimbabwe, *kufungisisa* is a local idiom of distress related to thinking too much and was included in the Shona Symptom Questionnaire (SSQ) (Patel et al., 1997). Moreover, among Haitian Creole, two different local idioms exist for thinking too much, *reflechi twop,* which was included in the Kreyol Distress Idiom (KDI) (Kaiser et al., 2013), and *kalkile twop,* which was included in the Zanmi Lasante Depression Symptom Inventory (ZLDSI) (Rasmussen et al., 2015). Thinking too much was also found among Afghanis in Kabul, Afghanistan and included in the Afghan Symptom Checklist (Miller et al., 2006) and among Darfur refugees in Chad, Central Africa (Rasmussen et al., 2011). This emphasizes the need for an emic approach in understanding and assessing depression across cultures, whereby a cultural overlay requires inclusion when evaluating depression among susceptible clients.

The Indonesian Depression Checklist

Deriving items of the Indonesian Depression Checklist

Qualitative analysis of data from interviews with people with depression generated six clusters of depression symptoms – Physical Symptoms, Affect, Cognition, Social Engagement, Religiosity and Other. In each cluster, the depression symptoms were ordered according to frequency, enabling us to determine common symptoms of depression (Table 1). The most common symptoms – items reported by at least ten percent of people with depression and confirmed clinical psychologist working in the primary health care centers - were selected as items for the IDC. Items related to suicidal ideation were not selected for the IDC as the clinical psychologists were ambivalent about whether these items should be asked of people with depression for ethical reasons. The IDC consisted of 40 items in six clusters of symptoms, and used a 4-point Likert Scale to identify the level of frequency of the symptoms as experienced by people with depression.

Table 1
Common Depression Symptoms in each Cluster

Cluster	Symptoms	%	Cluster	Symptoms	%
Affect	Feel sad	55	Physical Symptoms	Have a headache	60
	Cry for no obvious reason	50		Difficult to sleep	45
	Feel distressed	35		Have no energy	35
	Feel hurt	30		Loss appetite	35
	Feel hopeless	45		Lose weight	20
	Feel ashamed or embarrassed	25		Easily get tired	15
	Feel disappointed	20		Have chest pain	15
	Feel guilty	20		Feel faster heart beat	15
	Feel lonely	15		Have gastritis	15
	Feel restless	15	Cognition	Feel confused	60
	Feel sorry	15		Think about your problems over and over again	35
	Feel useless	15		Cannot think as usual	20
Religiosity	Have difficulty praying	10		Have difficulty in concentrating	15

	Find not helpful to pray	10		Have an empty mind	15
	Not going to any religious activity in the community	10	Social Engagement	Only stay in your room	50
	Feel not connected with fellow believers	10		Lack motivation to do various activities	40
Other	Feel worried	10		Feel not enthusiast	25
	Feel afraid	45		Want to be alone	20
	Feel irritable	25		Think only about your self	10
	Feel angry	65		Not care for others	10

Validating the Indonesian Depression Checklist

Confirmatory Factor Analysis

We compared correlational and hierarchical models based on several indexes (Table 2). Confirmatory factor analysis indicated that for 19 items of the IDC with a five-factor structure, either using a correlational or hierarchical model, there was good fit for the model. Although the correlational model had a better fit than the hierarchical model, we chose the hierarchical model based on our consideration of reliability, as explained later.

Table 2
Comparison Goodness Fit Index of the Indonesian Depression Checklist

Index	Correlational Model	Hierarchical Model
χ^2	156,404	168,157
P	.163	.091
RMSEA	.031	.036
CI	90%	90%
Lower Value	.000	.054
Upper Value	.000	.058
CFI	.974	.963
TLI	.968	.957

In the hierarchical model, all items loaded significantly in the five factors with factor loading varying from .39 – .82 (p<.05). Factor loading ranged from .43 – .82, .61 – .77, .52 – .75, .70 – .81, and .39 – .72 for Physical Symptoms, Affect, Cognition, Social Engagement and Religiosity factors, respectively. In the Physical Symptoms factor, two sub-factors, Energy and Illness, loaded significantly (.58 and .70 respectively). Each factor loaded into a higher order variable. Based on factor loadings, Cognition had the highest factor loading on depression, followed by Affect, Physical Symptoms, Social Engagement and Religiosity factors.

Reliability

Reliability of the IDC was assessed by internal consistency for both correlational and hierarchical models. Using the correlational model, all 19 items were analyzed together, while for the hierarchical model, items were analyzed for each factor. The Cronbach's Alpha coefficient of the IDC for the correlational model was .84, with the corrected item total correlation ranging from .07 to .62. Three items had a corrected item total correlation lower than .3: religious 2 (.07), religious 3 (.24), and physical 2 (.27). The Cronbach's Alpha coefficient of the IDC for the hierarchical model is presented in Table 3.

Table 3
Reliability Analysis of the Indonesian Depression Checklist Hierarchical Model

Factor	Cronbach's Alpha	Corrected Item Total Correlation
Physical Symptoms	.70	.38 to .51
Affect	.79	.53 to .67
Cognition	.69	.40 to .57
Social Engagement	.81	.62 to .71
Religiosity	.62	.34 to .50

As in Table 3, the Cronbach's Alpha coefficient for each factor ranged from .62 to .81, with no item having a corrected item total correlation below .3. Based on reliability analysis, the hierarchical model of the IDC appears to be more appropriate than the correlational model.

Convergent validity

The IDC and the CES-D

The Indonesian Depression Checklist had a high correlation with the CES-D (r_{xy}=.81; p<.001). All factors correlated significantly with the CES-D in the Pearson bivariate correlation. From the multiple regression, all factors except Social Engagement factors contributed significantly to the CES-D. Table 4 indicates that Cognition, Physical Symptoms, Religiosity and Affect factors were related to the CES-D.

Table 4
Correlation and Regression Summary for each Factor of the IDC to the CES-D and Clinical Psychologists' Score

Factors	The CES-D				Clinical Psychologists' Score			
	Zero order correlation	Beta	*T*	*p*	Zero order correlation	Beta	*t*	*p*
Physical Symptoms	.58**	.29	5.36	.00	.42**	.18	2.36	.02
Affect	.61**	.16	2.68	.01	.53**	.20	2.30	.02
Cognition	.78**	.53	8.56	.00	.61**	.40	4.56	.00
Social Engagement	.49**	.07	1.25	.21	.38**	.04	.50	.62
Religiosity	.29**	.15	3.05	.00	.26**	.15	2.13	.04

** Correlation is significant at the .01 level (two tail)

Table 5 describes only three items of the IDC that are similar to items in the CES-D. Seven other items in the CES-D also corresponded with items in the IDC, but these items were deleted from the IDC based on modification indices in the confirmatory factor analysis. Another ten items in the CES-D did not match with any items of the IDC. These items were, in English language version, *I felt I was just as good as other people, I felt depressed, I felt that everything I did was an effort, I thought my life had been a failure, My sleep was restless, I was happy, I talked less than usual, People were unfriendly, I enjoyed life,* and *I felt that people disliked me*.

Table 5
Comparing the IDC Items and the CES-D Items

Factors	Stayed in the IDC	The CES-D	Deleted from the IDC	The CES-D
Physical Symptoms	Go to sleep easily		Have a headache	
	Have no energy		Have a good appetite	I did not feel like eating; my appetite was poor.
	Easily get tired		Lose weight	
	Have chest pain			
	Feel faster heart beat			
	Have gastritis			
Affect & Others	Feel ashamed or embarrassed		Feel sad	I felt sad. I felt that I could not shake off the blues even with help from my family or friends,
	Feel guilty		Cry for no obvious reason	I had crying spells.
	Feel sorry		Feel distressed	
	Feel afraid	I felt fearful.	Feel hurt	
			Feel hopeful	I felt hopeful about the future.
			Feel disappointed	
			Feel lonely	I felt lonely.
			Feel restless	
			Feel useful	
			Feel worried	
			Feel irritable	I was bothered by things that usually don't bother me
			Feel angry	
Cognition	Feel confused		Ability to think is as usual	
	Think about your problems over and over again		Have an empty mind	
	Have difficulty in concentrating	I had trouble keeping my mind on what I was doing.		
Social Engagement	Only stay in your room	I could not get "going."	Feel enthusiast	
	Lack motivation to do various activities		Think only about your self	
	Want to be alone		Care for others	
Religiosity	Find it helpful to pray		Have difficulty praying	
	Go to any religious activity in the community			
	Feel connected with fellow believers			

The IDC and CP score

The Indonesian Depression Checklist correlated strongly (Hills, 2011) with the level of depression of the participant as determined by the clinical psychologist (r_{xy}=.65; p<.001). As illustrated in Table 4, all factors had significant correlation with the level of depression of the participant as determined by the clinical psychologists. All factors except Social Engagement factors contributed significantly to the level of depression of participants, based on the multi regression analyses.

Finalizing the Indonesian Depression Checklist

The Indonesian Depression Checklist was designed to be used by clinical psychologists to screen depression in their patients. Based on confirmatory factor analysis, the IDC consists of 19 items in five clusters. The IDC is a 4-point Likert Scale from Never (0) to Always (3) for favorable items, and is reverse scored for unfavorable items.

Concluding remarks

The IDC shows good psychometric properties, including factor structure, reliability and validity. Therefore, the IDC is an initial contribution working towards managing depression in Indonesia. By using the IDC, people with depression within Indonesia, especially Javanese, have a better chance of getting appropriate diagnostic assessment and treatment.

Considering depression was manifested and experienced differently in different ethnic and cultural groups, a cultural appropriate depression screening tool is needed for better assessment and thus better treatment of depression.

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