

Validity and Reliability Study of the Turkish Version of the Unbearable Psychache Scale

ABSTRACT

Background: Suicide is a significant public health issue globally, and psychological pain (psychache) is one of the principal risk factors for suicide. It is suggested that when psychache becomes intolerable, suicide attempts are made to get rid of the pain. This study aims to investigate the reliability and validity of the Turkish version of the Unbearable Psychache Scale, which assesses psychache quickly.

Methods: In this study, we included 136 patients with depression, 45 (33.09%) of whom had previous suicide attempts, and 120 healthy controls. The participants filled out the Unbearable Psychache Scale, Beck Depression Inventory, Beck Suicidal Ideation Scale, Beck Hopelessness Scale, Psychache Scale, and Mee-Bunney Psychological Pain Assessment Scale.

Results: The Beck Depression Inventory, Beck Hopelessness Scale, Beck Suicidal Ideation Scale, Psychache Scale, Mee-Bunney Psychological Pain Assessment Scale, and Unbearable Psychache Scale mean scores were significantly higher in the patients than healthy controls ($P < .001$ for each). The Cronbach's alpha coefficient of the Unbearable Psychache Scale was 0.96 in the internal consistency analysis. The item-total score values were between 0.96 and 0.97. The exploratory factor analysis demonstrated that the Unbearable Psychache Scale was loaded under 1 factor with an eigenvalue above 1 and explained 89.80% of the total variance. The factor loads were between 0.94 and 0.96. There was a significant correlation between the Unbearable Psychache Scale and the Beck Depression Inventory, Beck Hopelessness Scale, Beck Suicidal Ideation Scale, Psychache Scale, and Mee-Bunney Psychological Pain Assessment Scale ($P < .001$ for each). The Unbearable Psychache Scale differentiated 82% of the patients from the control group and 66.90% of the patients with suicidal attempts from those without suicide attempts.

Conclusion: This study demonstrated that the Turkish version of the Unbearable Psychache Scale was valid and reliable and can be used in depressive patients and healthy individuals.

Keywords: Suicide, attempted suicide, depression, psychometrics, validation study

Introduction

Suicide is a significant public health problem. Mortality due to suicide is common worldwide, and each death by suicide affects many populations, including family and friends.¹ Although suicide is not defined as a disorder in classification systems, the *Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)* includes suicidal behavior disorder as "conditions for further study."² Although the rates differ among countries, the World Health Organization (WHO) reported that there are approximately 20 suicidal attempts for each death by suicide.^{1,3} Nock et al⁴ reported a 2.7% lifelong suicidal attempt rate. In addition, deaths due to suicide correspond to 1.4% of all deaths worldwide.⁵

Suicide may be estimated to a certain degree considering the risk factors, such as previous suicide attempts, childhood traumas, and alcohol/substance abuse.⁵ However, predicting suicidal behavior is a complicated process. The described risk factors generally consider



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lifelong behavioral risks instead of near-term risks.⁶ Biological factors (genetic and neurochemical parameters), clinical factors (mental and physical disorders), social factors (living alone and economic hardships), and psychological factors (depression, hopelessness, and psychological pain) can increase the risk of suicide.^{1,7} The psychological risk factors are different concepts, although overlapping at some points.⁶

Psychological pain, defined by Shneidman⁸ as “psychache,” is a process of mental suffering felt in the form of negative inner experiences, such as guilt, shame, helplessness, and grief. It has been stated that psychache arises because of not meeting basic needs, such as feeling safe, being loved, and understood. Psychache is a deeper mental pain than that felt in depression.⁹ The concept of psychache is associated with many psychiatric conditions, but psychache does not necessarily have to be associated with psychopathology; everyone can experience it under certain conditions.¹⁰ Previous studies have revealed the relationships between psychache and suicidality in non-clinical samples and patients with major depressive disorder, obsessive-compulsive disorder, bipolar disorder, schizophrenia.¹¹⁻¹⁷ Psychache has also been revealed to mediate the relationship between potential risk factors such as perfectionism,¹⁸ childhood traumas,¹⁹ general distress,⁹ and suicidal ideation. Shneidman⁸ claimed that psychache directly causes suicidal thoughts when it cannot be tolerated.

The tolerance for psychache and coping with it were associated with suicidal behavior more than its intensity. The previous studies also revealed that the risk of suicide reaches the highest level when the psychache becomes unbearable and tolerance wears off.²⁰⁻²² Shneidman's⁸ definition of suicide as “an escape from intense and unbearable psychache” shows the importance of the unbearable psychache for suicide.

These findings support that the level of unbearable psychache and tolerance for psychache should be evaluated in determining the risk of suicide. The Tolerance for Mental Pain Scale (TMPS) and TMPS-10 assess the degree of tolerance for psychache.²³⁻²⁴ The Unbearable Psychache Scale (UP3) was developed to determine intolerable psychological pain instead of evaluating general psychache and the related cognitions.²⁵ The UP3 that directly addresses the unbearable psychache emphasized in the theory of suicide is a shorter and easier-to-apply scale than the Turkish version of TMPS-10.^{8,23,25} Ascertaining the psychological risk factors for suicidal thoughts and behavior, such as unbearable psychache, will guide selecting the most appropriate psychotherapeutic approach for the individual's needs. Our study aims to prove that the Turkish version of the UP3 is reliable and valid.

MAIN POINTS

- *The Turkish version of the Unbearable Psychache Scale (UP3), which measures unbearable psychache in a short time, is valid and reliable.*
- *Unbearable psychache plays a role in leading to suicidal behavior.*
- *The UP3 successfully distinguishes individuals who have attempted suicide and who have not.*
- *The UP3 may help identify individuals at risk for suicide and determine appropriate treatment modalities.*

Methods

Participants

The study included 151 patients with major depressive disorder according to the *DSM-5* criteria and 133 healthy individuals who did not have any psychiatric disorders and lived in the same environment with the patients, who were similar to the patients in terms of their sociodemographic data, including age, gender, and educational status. Patients with comorbid mental retardation, neurocognitive disorders, psychiatric comorbidity, and illiterate patients were not included.

The depressive group included 3 patients with psychotic symptoms, 7 patients with panic disorder, thus they were excluded from the study because of the confounding effects of comorbidities. Besides, 5 patients who refused to fill in the scales were also excluded from the study. Among the healthy control group, 4 people filled in the scales incompletely, 4 people were diagnosed with panic disorder, and 5 people were diagnosed with generalized anxiety disorder. Thus, they were excluded from the study. Finally, we conducted the study with 136 depressive patients and 120 healthy controls.

Procedure

The Clinical Research Ethics Committee of Çukurova University approved the study (Acceptance no. 15, December 06, 2019). Both the patients and healthy controls signed the informed written consent form before participation in the study.

The first author conducted a psychiatric interview with all the participants based on the *DSM-5* criteria. A sociodemographic and a clinical data form were given to the participants, in which age, gender, marital status, educational status, and suicide attempts were examined. Any lifelong act intended to end the life was considered a suicide attempt.

The Beck Depression Inventory (BDI), Beck Suicidal Ideation Scale (BSIS), Beck Hopelessness Scale (BHS), Psychache Scale (PS), Mee-Bunney Psychological Pain Assessment Scale (MBPPAS), and UP3 were administered to all the participants.

Measures

Unbearable Psychache Scale: This scale was developed by Pachkowski et al²⁵ to assess unbearable psychache. Three items from the original 13-item PS,²⁶ including items 10, 11, 12, were used for the UP3. The items are evaluated in the range of 1 for strongly disagree to 5 for strongly agree. High scores demonstrate that the psychache reaches an unbearable stage.²⁵⁻²⁶ The Cronbach's alpha value was determined as 0.93 by Pachkowski et al.²⁵ and it was 0.96 in our study.

Translation process: The permission for the study was obtained from Holden via e-mail. The relevant 3 items were derived from the Turkish version of the original PS and approved by linguists.

Psychache Scale: This is a 13-item self-report scale used to assess current psychache. Nine items of the PS evaluate the frequency of psychache, and 4 items assess its intensity. The first 9 items are answered in the range of 1 for never to 5 for always, and the last 4 items are answered in the range of 1 for strongly disagree to 5 for strongly agree. The PS successfully differentiates those who attempted suicide and those who did not. The higher the score, the

greater the psychological pain.²⁶ The Turkish version's Cronbach's alpha value was determined as 0.98.¹⁶

Mee-Bunney Psychological Pain Assessment Scale: This scale was developed to evaluate the intensity and frequency of psychache. It is a self-report scale that includes 10 items that provide a 5-point Likert-type measurement. It offers the opportunity to assess psychache at the current time and over the last 3 months. Higher scores reflect more frequent and intense psychache.²⁷ The Turkish version's Cronbach's alpha value was determined as 0.95.¹⁷

Beck Depression Inventory: The BDI is a 4-point Likert-type self-report scale consisting of 21 items. The score obtained from the scale increases as the severity of depression increases.²⁸ The Turkish version's Cronbach's alpha coefficient was determined as 0.80.²⁹

Beck Hopelessness Scale: This is a self-report scale consisting of 20 items that assess the level of hopelessness. Items are answered as yes or no.³⁰ As the score obtained from the scale increases, it shows the increasing hopelessness rate. The Turkish version's Cronbach's alpha coefficient was determined as 0.86.³¹

Beck Suicidal Ideation Scale: This scale includes 19 items and 5 sections. The total score is obtained from the arithmetic sum of the scores from the 5 sections. High scores reflect the severity of suicidal thoughts.³² The Turkish version's Cronbach's alpha value was determined as 0.84.³³

Data Analysis

Descriptive statistics of the data were presented with *n* (%), were shown as "median (min-max)" for non-normalized variables, and were shown as mean (SD) for normal distributions. The normality of the numerical variables was checked with Shapiro–Wilk, Kolmogorov–Smirnov, and Anderson–Darling tests. An independent samples *t*-test was used when the variables showed a normal distribution, and a Mann–Whitney *U* test was used when they did not. In comparing the

differences between the categorical variables, a Pearson's chi-square was used in 2x2 tables.

A Pearson's correlation coefficient was used when the numerical variables showed a normal distribution, and a Spearman's Rho correlation coefficient when did not.

A factor analysis was performed to determine the structure of the UP3. Cronbach's alpha coefficient was used to examine the internal consistency levels to determine the reliability of the scores obtained from the UP3. A confirmatory factor analysis was performed to confirm the structure determined for the UP3 scale. The principal axis factoring extraction method was used in combination with an oblimin rotation. In addition, discriminant analyses were applied to determine whether the UP3 discriminated the depressed patients from the healthy controls and depressive patients with suicidal attempts from those without.

The statistical analyses were performed with Jamovi project (2020), Jamovi (Version 1.8.1) (Retrieved from <https://www.jamovi.org>) and JASP (Version 0.14.1.0) (Retrieved from <https://jasp-stats.org>) software, and the significance value was accepted as .05 (*P* value).

Results

The depressive patients and healthy controls were similar in terms of age, gender, marital status, years of education, and place of residence. The proportion of employed individuals in the depression group was statistically significantly lower than the control group [60 (44.12%) and 79 (65.83%), *P* = .001]. Forty-five (33.09%) of 136 depressive patients had a history of suicide attempts, and none of the healthy controls had previous suicide attempts (*P* < .001). Table 1 presents the demographic and clinical features of the depressive patients and healthy controls.

Table 1. Comparison of Some Demographic and Clinical Characteristics of the Groups

	Group		<i>P</i>
	Depression (<i>n</i> = 136)	Control (<i>n</i> = 120)	
Age, years, mean (SD)	35.8 (12.0)	35.8 (8.2)	.997
Gender, <i>n</i> (%)			
Female	88 (64.71%)	74 (61.67%)	.615
Male	48 (35.29%)	46 (38.33%)	
Marital status, <i>n</i> (%)			
Single	63 (46.32%)	59 (49.17%)	.649
Married	73 (53.68%)	61 (50.83%)	
Employment, <i>n</i> (%)			
Employed	60 (44.12%)	79 (65.83%)	.001
Unemployed	76 (55.88%)	41 (34.17%)	
Residence, <i>n</i> (%)			
City center	96 (70.59%)	79 (65.83%)	.414
Countryside	40 (29.41%)	41 (34.17%)	
Suicide attempt, <i>n</i> (%)			
Yes	45 (33.09%)	0 (0.00%)	<.001
No	91 (66.91%)	120 (100.00%)	
Education, years, mean (SD)	11.8 (3.6)	12.5 (3.4)	.097

Table 2. The Comparison of Scale Scores

	Group		P
	Depression (n = 136)	Control (n = 120)	
Beck Depression Inventory, median (min-max)	26.5 [3.0-55.0]	4.5 [0.0-36.0]	<.001
Beck Hopelessness Scale, median (min-max)	10.0 [0.0-20.0]	3.0 [0.0-19.0]	<.001
Beck Suicidal Ideation Scale, median (min-max)	3.0 [0.0-35.0]	0.0 [0.0-10.0]	<.001
Mee-Bunney Psychological Pain Assessment Scale, mean (SD)	30.9 (8.6)	17.6 (6.8)	<.001
Psychache Scale, mean (SD)	40.8 (12.5)	21.0 (8.1)	<.001
Unbearable Psychache Scale, mean (SD)	9.6 (3.5)	4.4 (2.0)	<.001

Independent samples t-test. Descriptive statistics were given as mean (SD). Mann-Whitney U test. Descriptive statistics were summarized as median [minimum-maximum].

Table 3. The Exploratory Factor Analysis for the Single Factor Structure (Bearing the Pain) of the Turkish Version of UP3

Factor	Eigenvalue	Explained variance	Item No	Factor Loads
1*	2.69	89.80	1	0.94
			2	0.96
			3	0.95

UP3, Unbearable Psychache Scale.
*Bearing the pain.

The BDI, BHS, BSIS, MBPPAS, PS, and UP3 total scores of the depressive patients were statistically significantly higher than the healthy controls (Table 2, $P < .001$ for each).

The Kaiser-Meyer-Olkin (KMO) and Bartlett statistics values (KMO = 0.78, $P < .001$) were evaluated before the factor analysis for the UP3. We found that the sample size was appropriate for factor analysis. Table 3 reveals a single factor with an eigenvalue above 1. Accordingly, the UP3 scale had a single-factor structure (bearing the pain). The explained variance by the 3-item UP3 scale was 89.80%. The factor loads were between 0.94 and 0.96, and because the factor loads were above 0.30, the items were sufficient for measuring the demanded feature.³⁴

Table 4 demonstrates the internal consistency analysis of the UP3 and the item-total score correlations. The item-total score correlations were between 0.96 and 0.97. The Cronbach's alpha value for the scale was 0.96.

The loads in the confirmatory factor analysis were between 0.94 and 0.96. The scale was consistent with a single-factor structure, and all the load values were statistically significant (for each, $P = .001$). A perfect fit was observed when the model-data fit indices were examined (Table 5).

Table 6 demonstrates the significant correlation between the UP3 total score and the BDI ($P < .001$, $r = 0.727$), BHS ($P < .001$, $r = 0.593$), BSIS ($P < .001$, $r = 0.354$), MBPPAS ($P < .001$, $r = 0.791$), and PS ($P < .001$, $r = 0.913$) total scores, in the same direction.

Table 4. Internal Consistency Analysis-Item-Total Score Correlation of the Turkish Version of UP3

Item No	Item-Total Score Correlation	Corrected Item-Total Score Correlation	Cronbach's Alpha
1	0.96	0.92	0.96
2	0.97	0.93	
3	0.97	0.92	

UP3, Unbearable Psychache Scale.

Table 5. The Confirmatory Factor Analysis of the Turkish Version of UP3

Item No	Standardized Load Values	P	Model Fitness Indices			
			χ^2	CFI	TLI	RMSEA
1	0.94	.001	<0.001	1.00	1.00	0.000
2	0.96	.001				
3	0.95	.001				

UP3, Unbearable Psychache Scale; CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, Root Mean Square Error of Approximation.

Table 6. Examination of the Relations Between UP3 and Other Scale Scores in Patients

	r	P
UP3-Beck Depression Inventory	0.727	<.001
UP3-Beck Hopelessness Scale	0.593	<.001
UP3-Beck Suicidal Ideation Scale	0.354	<.001
UP3-Mee-Bunney Psychological Pain Assessment Scale	0.791	<.001
UP3-Psychache Scale	0.913	<.001

UP3, Unbearable Psychache Scale.

A discriminant analysis was performed to examine the accuracy of classifying the diagnosis (patient-control) group by the UP3. The mean UP3 score of the patient group was 9.6 (3.5), and the control group was 4.4 (2.0). The discriminant analysis revealed that a single function was produced, and the chi-square value of the Wilks lambda statistic of this function was statistically significant ($P < .001$). The eigenvalue was 0.82. The canonical correlation value was 0.672. Additionally, 107 (78.68%) of the patient group and 103 (85.83%) of the control group were classified correctly. The percentage of the total correct classification of the discriminant function was 82%.

A discriminant analysis was also performed to examine the accuracy of the UP3 in classifying suicide in depressive group. The mean UP3 score of the patients who attempted suicide was 10.5 (3.8), and it was 9.2 (3.3) for those who did not. The discriminant analysis demonstrated that a single function was produced, and the chi-square value of the Wilks lambda statistic of this function was statistically

Table 7. Discriminant Analyses for the Turkish Version of UP3

Diagnosis	Predicted Classification				Function		
	Group	Patient	Control	Total	Un.Std	Std	
		n (%)	n (%)	n (%)			
Observed Classification	Patient	107 (78.68)	29 (21.32)	136 (100)	UP3	0.35	1.00
	Control	17 (14.17)	103 (85.83)	120 (100)	Constant	-2.49	
Total Percentage of Correct Classification: 82%							
Patient-Suicide attempt	Predicted Classification				Function		
	Group	Present	Absent	Total	Un.Std	Std	
		n (%)	n (%)	n (%)			
Observed Classification	Yes	0 (0)	45 (100)	45 (100)	UP3	0.29	1.00
	No	0 (0)	91 (100)	91 (100)	Constant	-2.81	
Total Percentage of Correct Classification: 66.90%							

UP3, Unbearable Psychache Scale; Un. Std., unstandardized coefficient; Std., standardized coefficient.

significant ($P=.036$). The eigenvalue for this function was 0.03, and the canonical correlation value was 0.18. The percentage of the total correct classification of the discriminant function was 66.90%. Table 7 presents the classification percentages obtained by the discriminant analysis.

Discussion

Suicide is a global health issue, and nearly 1 million people commit suicide yearly.^{3,35} The way to prevent suicide is to determine the nature of the suicidal tendency and risk factors. Shneidman⁸ suggested that suicide is caused by unbearable psychache, and relief from psychache is an important motivation for suicide. Our study demonstrated the validity and reliability of the UP3's Turkish version.

Pachkowski et al examined the UP3 in 2 different samples (online participants and inpatients) in their original study. They determined a Cronbach's alpha coefficient of 0.93 for both groups in the internal consistency analysis of the scale.²⁵ In our study, Cronbach's alpha value was 0.96. These results revealed that the Turkish version of UP3 had an excellent internal consistency and was reliable.³⁶ Pachkowski et al²⁵ determined that the mean scale score was 5.79 (3.28) for online participants and 7.89 (4.20) for inpatients. After the face-to-face interviews, we found a mean score of 4.4 (2.0) in the healthy control group and 9.6 (3.5) in the depressive group. Pachkowski et al²⁵ did not specify the diagnoses of the inpatients, the UP3 total score difference can be explained by the possibility of different mental disorder diagnoses. Meerwijk et al²⁴ associated the difference between individuals' levels of tolerance for psychache with coping attitudes, which are used to neutralize psychological stress. Coping attitudes can be categorized into 2 different types: problem-solving and emotion-focused. Although problem-solving coping attitudes can improve mental health, emotion-focused coping attitudes may increase the severity of psychiatric complaints.³⁷ The difference in the UP3 total scores between the study of Pachkowski et al²⁵ and our study can also be explained by the use of different coping strategies in different cultures.³⁸

Our study revealed statistically significant correlations between the UP3 score and the PS, MBPPAS, BDI, BHS, and BSIS total scores. The results show that the UP3 has a high concordance validity. Pachkowski et al²⁵ determined a strong relationship between the UP3 scores and suicidal desire and hopelessness in the original study. Suicide theories offer different hypotheses as to why people attempt

suicide. Similar to Shneidman,⁸ Leenars³⁹ reported that escape is one of the main themes in suicide notes. Baumeister's⁴⁰ escape theory claims that suicide attempts result from the need to reduce painful self-awareness. Williams and Pollock stated that suicidal behavior should be considered as a cry of pain. They also suggested that suicidal behavior is reactive, and it is a response to a situation with 3 elements, "defeat, no rescue, no escape."⁴¹ The integrated motivational-volitional (IMV) model of suicidal behavior is based on Williams' defeat-entrapment model. The IMV model assumes that the inescapable experience of defeat/humiliation, that is, being trapped, is the primary driver of suicidal ideation. Suicidal behavior is accepted as an attempt to end the individual's suffering or escape from unbearable life conditions.⁴¹⁻⁴² Furthermore, an evaluation of suicide notes revealed that the desire to escape from unbearable psychache is common.⁴³ Klonsky and May⁴⁴ emphasized the importance of unbearable psychache in developing a suicidal desire. In other theories of suicide, the roles of perceived burdensomeness and thwarted belongingness,⁴⁵ cognitive processes,⁴⁶ and impulsivity⁴⁷ were emphasized.⁴⁸ Consistent with the previous suicide theories, we can also conclude that as the psychache intensifies and becomes unbearable, the severity of depression, hopelessness, suicidal thoughts increase. Although we did not evaluate impulsivity and belongingness, demonstrating the relationship between unbearable psychache and suicidality supports the theme of "escape," which is often emphasized in previous suicide theories.

In the Turkish adaptation study of the PS, the success of the scale was 90% in classifying the patient and the healthy group and 65.1% in classifying the patient group with and without suicide attempts.¹⁶ Similar to PS, the UP3 correctly classifies depressive patients who attempt suicide and those who do not, at a rate of 66.90%, and the patient and healthy groups at 82%. These results show that the UP3 can be helpful in monitoring the suicide risk of depressive patients and in daily practice and clinical research to distinguish clinical and non-clinical samples.

Compared to the general population, a significant loss of functionality is detected in patients with depressive disorder. Depressive patients show impairment in more than one functional area, including the ability to perform daily living activities and establish and maintain interpersonal relationships, work capacity, and productivity.⁴⁹ In our study, the employment rate of the depressive patients was lower than the healthy controls, reflecting the loss of functionality.

Our study has some limitations and strengths. First, we did not evaluate the time and severity of the suicide attempts in depressive patients. The selection of all the patients from a university hospital might have limited the generalization of our results. The absence of test-retest analyses for temporal reliability can be considered as another limitation. One of the strengths of our study is that the validity and reliability of a measurement tool that can be used to evaluate suicide were assessed in both patients and healthy individuals. Another strength is that we examined not only suicidal ideation but also the relationship between previous suicide attempts, which are known to be important risk factors for suicide. Besides, we used 2 psychache scales (PS and MBPPAS) to assess the convergent validity of the UP3.

Conclusion

Measurement tools that assess suicide risk can help reduce suicide rates. Since the UP3 is short, easy to fill, it can be applied in many settings, such as outpatient and emergency clinics. Furthermore, healthcare professionals can use UP3, both for inpatient follow-ups and clinical trials. To the best of our knowledge, our study that shows the Turkish version of the UP3 is valid and reliable is the first adaptation of the scale in a different language. Future studies evaluating the severity and time of suicide attempts and assessing the psychache with various suicide theories not only in depression but also in other psychiatric disorders will be helpful.

Ethics Committee Approval: The Non-Invasive Clinical Research Ethics Committee of Çukurova University approved the study (Acceptance no. 15, December 06, 2019).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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Author Contributions: Concept - Z.N., M.E.D., L.T., M.O.K., C.Y.; Design - Z.N., M.E.D., L.T., M.O.K., C.Y.; Supervision - Z.N., M.E.D., L.T.; Resource - Z.N., M.E.D., L.T., M.O.K., C.Y.; Materials - Z.N., M.E.D., L.T.; Data Collection and/or Processing - Z.N., M.E.D., L.T., M.O.K., C.Y.; Analysis and/or Interpretation - Z.N., M.E.D., L.T., M.O.K., C.Y.; Literature Search - Z.N., M.E.D., L.T., M.O.K., C.Y.; Writing - Z.N., M.E.D., L.T., M.O.K., C.Y.; Critical Reviews - Z.N., M.E.D., L.T., M.O.K., C.Y.

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Data Availability: The data sets are available from the corresponding author on request.

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