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Using Negative Lived Experience Scale for the Early Detection of Suicidal Ideation

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Keywords: Instrument Development; Negative Lived Experience; Geriatric Suicide; Suicidal Ideation

ABSTRACT

Background: Geriatric suicide is a serious social and public health problem. Suicidal ideation is the best predictor of suicide. Most older adults who experience suicidal ideation or have attempted suicide report negative lived experiences. Literature exploring the lived experiences of elderly suicide victims is sparse, and tools measuring negative lived experiences are lacking.

Purpose: To develop and psychometrically test the Geriatric Negative Lived Experience Scale (GNLES).

Methods: The GNLES measure was developed in three stages. First, items were generated based on the theoretical framework outlined by Wu and existing measures. Second, the items were tested for content validity. Last, the psychometric properties of the instrument were tested as part of a larger study. The data were collected between February and July 2012.

Results: Using linear structural relations (LISREL) Confirmatory Factor Analysis (CFA), a three-factor model was determined to have a good fit. The Cronbach's α coefficient of the GNLES with a 3-factor structure was 0.83. The GNLES has acceptable criterion-related validity. The suicidal ideation-predictive rate of the GNLES was greater than 70% for older adults. The performance of the model was acceptable, with an area under the curve (AUC) of 0.704.

Conclusions/Implications for Practice: The GNLES has acceptable validity and reliability for measuring suicidal ideation among older adults. The GNLES is suitable for use as a screening instrument for early suicidal ideation in the elderly population. The GNLES should be used as the basis for the future development of various care interventions and for the early prevention of suicidal ideation or behavior in the elderly population.

Introduction

Geriatric suicide is a serious social and public health problem. In most countries, the suicide rate among individuals aged 65 or older is higher than that of any other age group. Suicides among older adults receive less attention in terms of social resources, research and media than do suicides among young people [1,2]. The suicide rate among older adults in Taiwan is much higher than that in Germany, the United Kingdom, Italy and Australia. Considering Asian countries specifically, the suicide rate among older adults in Taiwan is higher than in Singapore; however, it is lower than that of the elderly population in South Korea and Japan [3].

Suicidal ideation is defined as a personal intention or plan to commit suicide in the absence of any obvious suicidal behavior [4]. Suicidal ideation is one of the strongest risk factors and the best predictor for suicide attempts and completed suicides [5,6]. Many of risk factors played important roles in suicidal ideation among older adults, including marital status, educational level, living

arrangement, economic status, social support, health conditions, physical disabilities, perceived and depressive symptoms [7,8]. Most people do not take the initiative to inform others of their suicidal intention. It is difficult for clinicians to fully assess suicidal ideation. In fact, accurately confirming a suicide case is a difficult and complex task, particularly when the victim is an older adult [9]. When a person wants to commit suicide, he or she will first carefully consider suicide-related behaviors and the possibility of death; thus, suicidal ideation is a crucially important key point in suicide [2]. In general, elderly people rarely seek mental health care, and they do not often take the initiative in expressing their depressive state. Their primary medical complaint may imply suicidal ideation. For example, they may mention depression, nervousness, restlessness, feeling easily angered, feelings of guilt, impulsiveness, eccentric behavior, and/or changes in sleep and appetite that are associated with anxiety. However, these symptoms are often easily attributed to other physiological diseases or related to the aging process Petkus et al. [2]. Thus, the early detection of suicidal ideation is essential.

Lived experience is a complex phenomenon. An individual does not only exist in the present situation as they experience it; they also carry past experiences. Thus, lived experience is an ongoing and dynamic process. Each lived experience is unique and has its own characteristics and attributes. Lived experience is a subjective awareness of life that exists as a sense of the individual, without external influence [10]. If an individual lived in a difficult environment and could not positively re-construct or re-evaluate his or her situation during that time, he or she might not be able to alleviate stress-related symptoms, and negative emotions and thoughts may result [11]. People who experience suicidal ideation or commit suicide have often experienced many stressful life events. These life events result in defeatism and a perceived inability to escape. These outcomes, combined with the lack of rescue factors, may increase the risk of suicidal behavior. People who struggle with suicidal ideation or who have attempted suicide typically interpret stressful life events as negative lived experiences [12]. Therefore, it is important to explore the relationship between negative lived experience and suicidal ideation.

The types of lived experiences that an elderly person has had over his or her lifetime can lead to the development of suicidal ideation, suicide attempts and suicidal behavior; thus, an in-depth exploration of lived experiences is warranted. Studies on the lived experience of the suicidal elderly population are scarce. Based on these studies findings, the common lived experience of elderly people who attempted or committed suicide involved negative feelings and experiences; the negative feelings and experiences included the feeling that no one cares for them, life as a psychache and burden, loss of love, power and oneself, and death is better than being alive [13-16]. The community-dwelling older adults who had experienced suicidal ideation primarily expressed negative feelings, emotions and thoughts when describing their life experiences, such as feeling useless, waiting to die, and feeling that life is hopeless [17]. How the negative lived experiences of older adults trigger suicidal ideation or suicidal behavior and whether negative lived experiences can predict suicidal ideation or behavior remain unclear. Currently, there is no proper instrument for measuring negative lived experiences. Therefore, the development of an instrument that can measure older adults' negative lived experiences is necessary and important.

Theoretical Framework

The framework of the lived experiences of older adults experiencing suicidal ideation was proposed by the first author [17]. In their study, grounded theory was used to explore the lived experiences of elderly individuals experiencing suicidal ideation. Four categories of lived experiences were identified: loss, negative emotions without outlet, lingering or persistent suicidal ideation, and meaningless existence. Based on this framework, we developed a quantitative measure of negative lived experiences for use with elderly individuals (Figure 1).

Purpose

The purpose of the study was to develop and test the psychometric properties of the Geriatric Negative Lived Experience Scale (GNLES).

Methods

The GNLES was developed in three stages. First, items were generated based on the theoretical framework outlined by Wu et al. [17]. Second, the items were tested for content validity. Last, the psychometric properties of the instrument were tested as part of a larger study.

Stage 1: Item Generation

The following items were created by the first author to address the four categories of lived experiences among elderly individuals experiencing suicidal ideation:

a) Loss: A sense of loss indicates a feeling or emotional response to the loss of loved ones, the loss of possessions, and the degradation of health that often occurs unexpectedly at the end of one's life.

b) Negative emotions without outlet: Negative emotions such as shame, guilt, sadness, fear, anger and loneliness may arise, with no way to express or release them.

c) Lingering or persistent suicidal ideation: An individual may repeatedly experience thoughts of ending his or her life, depending on the situation or event.

d) Meaningless existence: Defined as a life without purpose or expectations, these feelings may include helplessness during the current stage of life and hopelessness about the future [17].

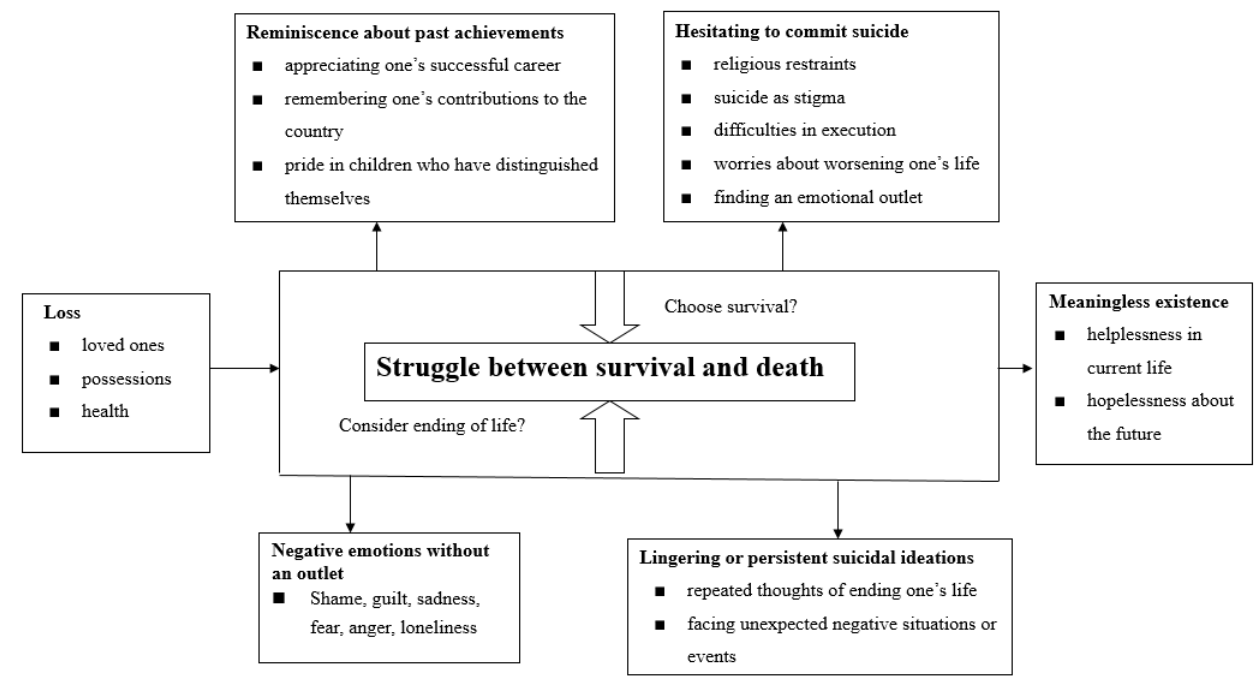

Figure 1: The framework of the lived experiences of older adults experiencing suicidal ideation Wu et al. (2012).

The original pool consisted of 32 items distributed across the 4 categories outlined above. All these items were reviewed by the authors for redundancy and relevance. A sorting process was applied to eliminate repetitive items and to combine items to condense the scale, resulting in a total of 18 items (4 pertaining to loss, 7 pertaining to negative emotions without outlet, 3 pertaining to lingering or persistent suicidal ideation, and 4 pertaining to meaningless existence). The questions were answered using a Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree).

Stage 2: Analysis of Content Validity

A total of 6 professor-level experts in different areas, including psychiatry, psychiatric nursing, elderly care and suicide prevention, were invited to rate the questionnaire in terms of the appropriateness and the rhetorical and semantic expression of the text using a four-point rating scale ranging from 1 (unrelated) to 4 (indicating a strong association) [18]. Based on the opinions of various experts, the wording of some questions was modified. Three items were omitted because they were only loosely related to negative lived experience; these items addressed the idea of ending one's own life, the event that intensified the suicidal thought, and experiencing suicidal ideation without action. The total number of items was reduced from 18 to 15, and the content validity index (CVI) was 0.83. The final revised measure contained 15 items distributed across 3 dimensions: loss (4 items), negative emotions without outlet (7 items), and meaningless existence (4 items).

Stage 3: Psychometric Testing

Sample/Participants: The inclusion criteria for participation were as follows: elderly individuals (aged 65 years or older) living in institutions or communities who had no serious hearing impairment and were able to communicate in Mandarin or Taiwanese. Taiwan's health policy uses the Brief Symptoms Rating Scale (BSRS-5) to screen people's emotional status. Because the BSRS-5 is suitable for measuring the emotional status of elderly individuals, we used it as an inclusion criterion. The BSRS-5 includes five items:

a) Feeling nervous.

b) Easily becoming angered or upset.

c) Feeling depressed and in low spirits.

d) Feeling inferior to others and

e) Having sleep issues, such as difficulty falling asleep, being easily awoken, or waking up early.

The scoring system ranges from 0 (none) to 5 (very severe). The BSRS-5 is a self-report and the included items have a 7-day recall period. (Lung & Lee, 2008). Added an extra item to the scale to measure the frequency of suicidal ideation. For this item, a value equal to or greater than 1 indicates that the participant experienced suicidal ideation, while a value equal to 0 indicates that the participant did not experience suicidal ideation. The item indicated the strength of the correlation found by Lung and Lee (2008).

For a confirmatory factor analysis (CFA), the suitable sample size should not be less than 200 [19]. In total, 229 participants were selected using convenient sampling, including 60 participants experiencing suicidal ideation (26.2%) and 169 participants not experiencing suicidal ideation (73.8%) based on the BSRS-5. The average age was 77.2 years (SD=7.2). The gender distribution was 64.2% female and 35.8% male. Furthermore, 43.7% of the participants were widowed, and 20.5% of the participants lived with spouse. In terms of the participants' education level, 41.9% had an elementary school education level, and 19.2% of the participants had no formal education (Table 1).

Table 1: Participant Characteristics (N = 229).

Characteristics	n	%
Age		
65-75	103	45.0
76-85	96	41.9
86 or above	30	13.1
Gender		
Male	83	35.8
Female	146	64.2
Education level		
No formal education	44	19.2
Elementary school	96	41.9
Junior high school	28	12.8
High school/Vocational school	34	14.8
College or above	27	11.8
Marital status		
Widowed	100	43.7
Married	97	42.4
Single	18	7.9
Divorced	10	4.4
Separated	4	1.7
Residence status		
Solitary	93	40.6
With spouse	47	20.5
With child(ren)	44	19.2
With spouse and child(ren)	41	17.9
Other	4	1.8
Economic condition		
More than enough	11	4.8
Just enough	153	66.8
Not enough	65	28.4
Source of income		
Government grants	129	39.8
Retirement pension	96	29.6
Child(ren) sponsor	95	29.3
Other	4	1.2
Suicidal ideation		
Yes	60	26.2
No	169	73.8

Instrument: The Geriatric Depression Scale-Short Form (GDS-SF) consists of 15 items with a yes or no answer format, and items 1, 5, 7, 11, and 13 are reverse-scored. Scores range from 0 to 15 points. Scores of 0 to 4 indicate no depression, scores of 5 to 10 indicate mild depression, and scores of 11 to 15 indicate moderate depression. The GDS is widely used to assess elderly depression. This scale has been shown to have good reliability and validity, with a sensitivity of 0.92 and a specificity of 0.89. Compared with other scales, the GDS more effectively assesses the state of depression in older adults [20]. In the present study, the Cronbach's alpha value of this scale was 0.86. In the present study, 172 participants displayed normal mood (75.1%), 45 displayed mild depression (19.7%), and 12 displayed moderate depression (5.2%).

Ethical Considerations: The present study was approved by the Institutional Review Board (CN-IRB-2012-061) of the National Taipei University of Nursing and Health Science prior to data collection. The researchers described the purpose of the study and the procedure to the administrator in charge of the health services center. The manager of the center provided the registration information of the elderly residents experiencing suicidal ideation and that of other residents over 65 years of age. The researchers explained the aim, procedure, and value of the study to the prospective participants. After the residents agreed to participate in the study, they signed a consent form. The respondents' personal information was kept confidential. For the high-risk group experiencing suicidal ideation, the emotional and special conditions of each individual case were reported to the case management nurses at the health services center following the interview to ensure the safety of the respondents.

Data Collection: The data were collected between February and July 2012. The participants were recruited from an administrative district of Taipei. Case management registration for elderly subjects (over age 65) was obtained following permission from the director of the health services center in the administrative district. Based on the registration list, the researchers conducted care visits to collect data. The respondents were explained the purpose of the study, the research content, the principles of anonymity and confidentiality, and the time required to complete the questionnaire. The respondents who agreed to participate in the study signed a consent form, and illiterate participants provided their fingerprints in lieu of their signatures. After completing the questionnaire, each respondent received a gift from the interviewers.

Results

Construct Validity

Construct validity was assessed using confirmatory factor analysis (CFA). CFA was used to test the degree of compliance of the factors and the items on the scale to obtain the most effective factor structure for the theoretical construct [21]. Using linear structural relations (LISREL) software, the overall fit of the three-factor model was evaluated using the following indicators: relative $\chi 2$ ($\chi 2/df$), root mean square error of approximation (RMSEA), goodness of fit

(GFI), adjusted goodness of fit (AGFI), normed fit index (NFI) and non-normed fit index (NNFI). The results indicated that the overall fit indicators of the GNLES were acceptable according to the various fit statistics ($\chi 2/df$ =1.56, RMSEA=0.050, GFI=0.93, AGFI=0.90, NFI=0.93 and NNFI=0.97). The RMSEA fit index was defined as relative $\chi 2$ ($\chi 2$ /df) and equal to or less than 3, while the GFI, AGFI, NFI and NNFI values were greater than 0.9, indicating that the model had a good fit [21]. Therefore, the model was determined to have an acceptable fit. The factor loadings ranged from 0.05 to 0.40 for loss, 0.29 to 0.55 for negative emotions, and 0.22 to 0.55 for meaningless existence, as shown in Figure 2.

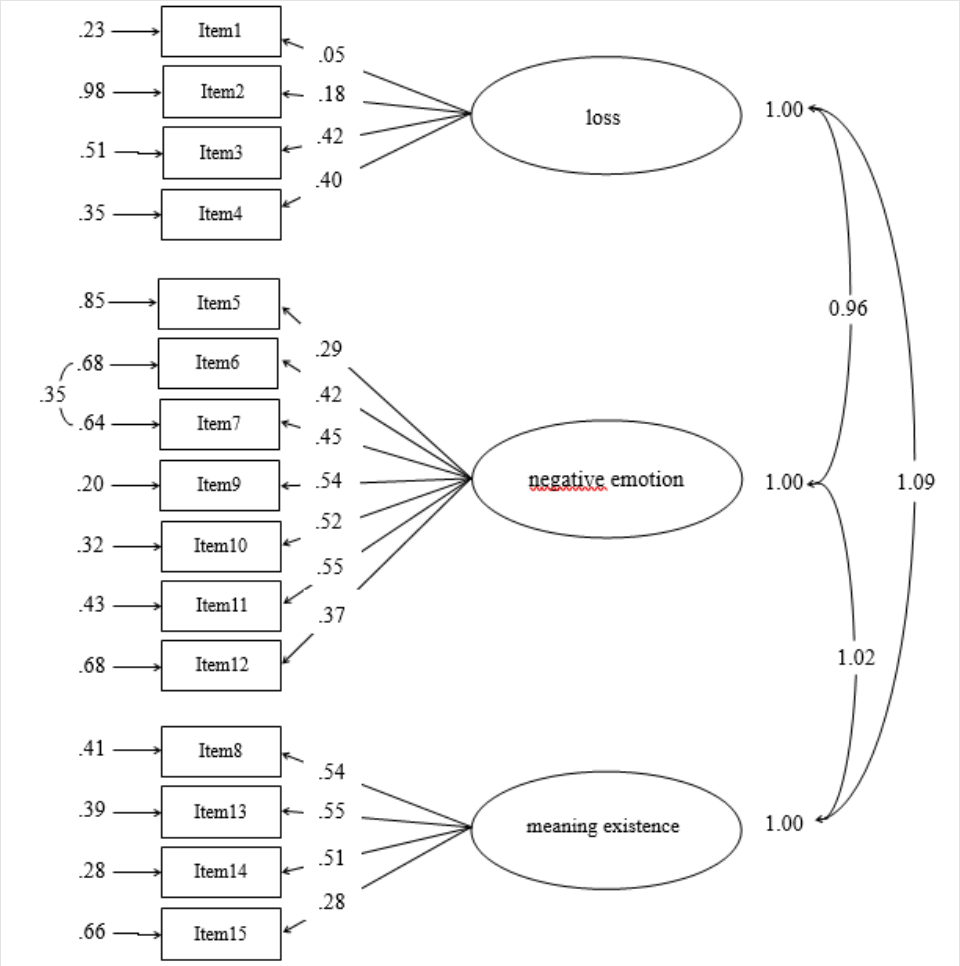

Figure 2: Confirmatory factor analysis of the Geriatric Negative Lived Experience Scale.

Criterion-Related Validity

Concurrent validity

Concurrent validity refers to a scenario in which two measurement tools are administered to the same participant and both tools measure the same or similar phenomena or concepts: the higher the correlation between the results of these two measurement instruments, the better the concurrent validity [18]. In the present study, the concurrent validity of the GNLES was tested using the GDS. The correlation coefficients of the three subscales and the total scale of the GNLES and the GDS were 0.416, 0.598, 0.609, and 0.642, respectively; the scales were significantly correlated ($p < 0.01$), as shown in Table 2. Cohen's effect size criteria, with Pearson's r of .10 considered small, .30 medium, and .50 large [22]. Thus, correlations with the GDS were strong for negative emotions (0.598), meaningless existence (0.609) and total GNLES (0.642) and moderate for loss (0.416).

Table 2: Correlations Between GNLES and GDS-SF.

Scale	Loss	Negative emotions	Meaningless existence	GNLES	GDS-SF
Loss	1	0.530＊＊	0.539＊＊	0.920＊＊	0.416＊＊
Negative emotions		1	0.731＊＊	0.689＊＊	0.598＊＊
Meaningless existence			1	0.680＊＊	0.609＊＊
GNLES				1	0.642＊＊
GDS-SF					1

＊＊$p < 0.01$.

GNLES: Geriatric Negative Lived Experience Scale.

GDS-SF: Geriatric Depression Scale-Short Form.

Predictive Validity

Predictive validity refers to the correlation between the scores obtained at the current time and those obtained at a future time point for the same concept or behavior [18]. In the present study, scores of 0 and 1 or above from the BSRS-5 were subjected to logistic regression. The results indicated that the predictive rates of the total scale and its three subscales of loss, negative emotions and meaningless existence were 75.5%, 73.4%, 75.1%, and 76%, as shown in Table 3 shows. Therefore, the predictive rates of the GNLES were greater than 70%, and this scale can be applied as an early screening tool for suicidal ideation among community-dwelling older adults.

Table 3: Correlations Between GNLES and GDS-SF.

Scale	B	S.E.	Sig.	OR	Predictive rate (%)
GNLES	.133	.024	<.001	1.120	75.5
Loss	.300	.091	.001	1.350	73.4
Negative emotions	.181	.044	<.001	1.199	75.1
Meaningless existence	.343	.071	<.001	1.409	76.0

GNLES: Geriatric Negative Lived Experience Scale.

Sensitivity and Specificity

To test how accurately the instrument was able to predict risk or no risk of suicidal ideation, we used the sensitivity and specificity of the GNLES. Receiver operating characteristic (ROC) curve were used to determine the range of trade-offs. [23] Based on the total score the GNLES, which ranges from 15 to 75. The performance of the model was good, with an area under the curve (AUC) of 0.704. The estimated probability at the sensitivity and specificity maximum sum was a cut-off probability of 0.330. The sensitivity of the model was 77%, the specificity was 56%, and the optimal cut-off value was 41. In other words, a GNLES score greater than 41 points indicated the possibility of suicidal ideation.

Reliability

In the present study, the Cronbach's α coefficient was used to test the internal consistency of the GNLES subscales and total scale. Many scholars apply the following principles to make rough estimates: an α coefficient greater than 0.9 is considered excellent, approximately 0.8 is considered very good, 0.7 is considered moderate, 0.5 or higher is considered acceptable, and less than 0.5 is considered inadequate [18]. The Cronbach's α coefficients of the three subscales and the total scale of the GNLES were 0.281, 0.744, 0.658, and 0.835, respectively. Thus, the Cronbach's α coefficient of the total scale of the GNLES was very good (0.835), that for the negative emotions subscale (0.744) was moderate, that for the meaningless existence subscale (0.658) was acceptable, and that for the loss subscale (0.281) was below the threshold for adequate.

Discussion

Relationship between Cronbach's α Coefficient and Instrument Homogeneity

The Cronbach's α coefficient for the total scale of the GNLES was 0.835, indicating the internal consistency was very good. The Cronbach's α coefficients for the loss subscale was 0.281, indicating inadequate internal consistency. Some scholars believe that the α coefficient should not be used as an index of the homogeneity of an instrument and that a high α coefficient does not indicate that the items represent a single dimension. The α coefficient value is affected by the variation of the items, the average inter-relation of the items, the number of items and the homogeneity of the items. The reliability obtained using CFA can bypass the issues outlined above, indicating that the CFA result is superior to Cronbach's α coefficient [21]. In the present study, there were lower Cronbach reliability values for the loss subscales of the GNLES. In the future, actions aimed at improving the internal consistency of the GNLES should be investigated.

Avoid Being Labeled: Geriatric Suicidal Ideation Measurement Terminology

Currently, the items on the instrument measuring geriatric suicide use language pertaining to suicidal ideation, plans to commit suicide and suicidal behavior or ending one's own life [4,24,25]. Relevant studies investigating suicidal ideation among older adults [26,27] have used the Beck Scale for Suicide Ideation in Taiwan. Due to cultural considerations and national conditions, the words "death" and "suicide" are taboo among older adults in Taiwan. It is difficult for them to accept a measurement related to suicide. To avoid being labeled or having their family and friends worry about their situation, older adults tend to avoid discussing their true feelings and experiences [17]. The GNLES was developed based on a qualitative study exploring the lived experiences of elderly individuals experiencing suicidal ideation. The loss, negative emotions and meaningless existence dimensions all pertain to a participant's real life and thus may more accurately measure the current emotional state and social life of an older adult. The validity and reliability of the GNLES were tested to demonstrate the scale's predictive power for suicidal ideation. The GNLES can serve as an acceptable tool for early screening for suicidal ideation in community-dwelling older adults.

Prediction of Suicidal Ideation Allows Early Intervention and the Prevention of Geriatric Suicide

Suicidal ideation can be used to evaluate existing and potential suicide attempts, thus predicting the future risk of suicide [4]. Some scholars believe that the predictors of geriatric suicide include a history of suicide attempts, severe depression, perceived health, perceived burden, hopelessness and impulsivity [28,29]. The suicidal ideation predictive rate among older adults using the GNLES was greater than 70%; therefore, negative lived experience is also a predictor of suicide in the elderly population. The GNLES is suitable for use as an early screening tool for suicidal ideation among community-dwelling older adults. If suicidal ideation in older adults can be detected early and interventions provided, suicidal behavior may be reduced or prevented.

Limitations

Because of limitations of time, manpower and material resources, only elderly individuals over the age of 65 within a specific administrative district of Taipei served as participants in the present study. Purposive sampling did not take into consideration differences between urban and rural areas or somatization and other presentations of depression and suicide risk among older adults. Because the sample was not representative of all older adults, the findings of the present study cannot be generalized to older adults in other areas of the country. Furthermore, because our study sample was Taiwanese and was not heterogeneous, we could not further investigate cross-cultural issues or applications. At present, the GNLES is only at the reliability and validity testing stage. Because the present study was a pilot, it could not provide more comprehensive evidence of the GNLES construct validity or test-retest information to indicate the measure's stability. A large-scale formal test of older adults within communities is recommended to re-test the reliability and validity of the scale. The content of the scale may be revised accordingly to ensure that it is more fully developed and complete.

Conclusion

In many countries, the suicide rate among older adults is the highest among all age groups. Elderly suicide is an important public health issue in the 21st century. The GNLES contains a total of 15 items and was developed based on qualitative data generated from the lived experiences of the elderly population. Its wording is localized and closely reflects daily life, and its items are briefly expressed. The scale includes three dimensions (loss, negative emotions and meaningless existence) and displays acceptable reliability and validity. The GNLES is suitable for use with community-dwelling older adult populations. Further assessments of the scale's validity and internal consistency reliability should be performed by collecting additional data and using additional criterion measures.

Implications for Practice

The GNLES was developed based on the lived experiences of elderly individuals and it is suitable for use as a screening instrument for early suicidal ideation in the elderly population. The GNLES should be used as the basis for the future development of various care interventions and for the early prevention of suicidal ideation or behavior in the elderly population.

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Conflict of interest

No conflict of interest has been declared by the authors.

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