Loneliness and Major Depressive Disorder in the Elderly with a History of Suicidal Ideation or Attempt: A Comment on “Therapist-Guided Internet-Based Treatments for Loneliness” by Käll et al.

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Käll et al. [1] demonstrated that loneliness, a prevailing risk factor of mental and physical health problems, can improve with psychological interventions. Despite notable differences between internet-based cognitive behavioral therapy and interpersonal therapy, both had medium-to-large within-group effect sizes 4 months post-intervention. This encouraging finding indicates that clinical management of loneliness in addition to treatment for depression and anxiety is a possible avenue to prevent elderly suicide, as we demonstrated in our study that loneliness and mood disorder insight [2] were proximal to state suicidality among the elderly.

The study aims to examine the role psychological factors play in the link of elderly depression and suicidality. While major depressive disorder has been established as

a leading predictor of suicide, existing theories assert that it may only be relevant due to its impact on certain psychological factors [3]. For instance, enhanced distress, reduced reward, and capability of suicide may mediate the relationship between depression and suicide [4, 5]. As such, clarifying the psychological factors proximal to current suicidality should benefit the clinical management of suicidality among patients with depression.

The hypothesis was tested in a sample of Taiwanese elderly outpatients with major depressive disorder (MDD; $n = 120$, age = 66.78 ± 5.67 years, 18% male, years of education = 8.17 ± 3.62) and healthy controls ($n = 20$, age = 69.05 ± 5.38 years, 40% male, years of education = 11.35

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± 4.17). The Structural Clinical Interview of the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders*, and the Mini-International Neuropsychiatric Interview were conducted, respectively, to make the MDD diagnosis in patients and to ensure the absence of major psychiatric disorders in the healthy participants. Item No. 3 of the Hamilton Rating Scale for Depression (HAM-D) was used to group the participants diagnosed with depression based on their history of suicidal behaviors (ideator, $n = 42$; attempter, $n = 30$; depressed control, $n = 48$). No demographic differences were evident among the clinical groups. For the attempter group, the mean age of the first attempt was 53 years ($SD = 13$, range 20–78). The average number of previous suicidal attempts was 2.26 ($SD = 1.58$, range 1–6).

Validated Chinese versions of clinician- and self-rating scales were used to evaluate psychiatric dysfunction and psychological factors. State suicidality was evaluated by the Beck Scale for Suicide Ideation (BSS). Depression and anxiety were assessed by the HAM-D and the Hamilton Anxiety Rating Scale (HAM-A). Enhanced distress was assessed by the Mood Disorder Insight Scale and the neuroticism subscale in the Eysenck Personality Questionnaire (EPQ). Reduced reward was captured by the Apathy Evaluation Scale, the Short-Form Health Survey (which measures quality of life), the extraversion subscale of the EPQ, and the UCLA Loneliness Scale. Impulsivity was measured by the Barratt Impulsivity Scale. The following variables that indicate cognitive functioning were used as control variables in the analysis [6]. These include global cognition assessed by the Mini-Mental State Examination and executive controls indicated by a composite score based on the Digit Span, Letter-Number Sequencing, Digit Symbol Coding, and Category Fluency tests.

State suicidality were significantly correlated with all but two (i.e., neuroticism and apathy) across depression and anxiety, enhanced distress, reduced reward, and impulsivity (from the smallest effect size with impulsivity, Cohen's $d = 0.47$, to the largest with loneliness, $d = 0.95$). To identify the unique effect of each variable on state suicidality, multiple regression analysis was performed, with depression and anxiety, the psychological factors, cognitive functioning, and demographics serving as independent variables simultaneously. Two models were constructed separately for depression and anxiety to prevent the collinearity. The effects of depression and anxiety ($\beta_s = 0.10$ and 0.17 , $t_s = 0.74$ and 1.33 , $p_s = 0.46$ and 0.19) became insignificant when the psychological factors were considered. Among the psychological factors, the effect of

loneliness (in the models of depression and anxiety, $\beta_s = 0.44$ and 0.40 , $t_s = 2.94$ and 2.71 , $p_s < 0.01$) and mood disorder insight ($\beta_s = 0.28$ and 0.29 , $t_s = 2.32$ and 2.38 , $p_s = 0.02$) remained significant.

Some limitations should be noted. Regarding loneliness, the results did not differentiate a lack of social contact per se [7] from perceived rejection [8]. Whether or not an internalized rejection is sufficient for the sense of disconnectedness in suicide remains to be investigated [9, 10]. Second, attempters recruited in an elderly sample may not be representative of populations that attempt suicide at a younger age as the mean age of first suicide attempt was 53 years. Nonetheless, in light of the recent findings by Käll et al. [1], this study suggests that a targeted intervention on loneliness should be considered for the elderly with depression and a history of suicidality.

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

S.-H. Lee and C.-D. Chiu jointly conceived the initial research idea. H.C. Siu and C.-D. Chiu conducted the literature review and developed the conceptual framework with J.S. Au. S.-H. Lee, and C. Lin contributed to study design and data collection together with C.-M. Huang, Y.-F. Tsai, T. M.-C. Lee, and H.-L. Liu. C.-D. Chiu performed the data analysis and interpreted the data with A.P.-K. Lo and H.C. Siu. H.C. Siu and C.-D. Chiu prepared the first draft in conjunction with J.S. Au and A.P.-K. Lo. All authors participated in revisions of the manuscript and approved the final version for submission.

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