

The number of social support providers enhances the mediating role of resilience between life satisfaction and depression tendency

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Article

Keywords: depression, harmony, resilience, social support, life satisfaction

Posted Date: May 31st, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1654614/v1>

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Additional Declarations: No competing interests reported.

Version of Record: A version of this preprint was published at Scientific Reports on March 24th, 2023. See the published version at <https://doi.org/10.1038/s41598-023-31863-7>.

Abstract

Background

The contribution of psychosocial characteristics, including life satisfaction, resilience, and social support, to depression tendency in adults has been proposed, because the age of onset of depressive disorders, i.e., adolescence to early adulthood, is associated with various impairments in psychosocial functioning. In this study, a psychosocial model is introduced to verify a psychosocial network for the prevention of depression tendency.

Methods

For this study, 370 participants were recruited. They completed several questionnaires to assess their depression tendency: Conner-Davidson Resilience Scale (CD-RISC), Satisfaction with Life Scale (SwLS), Peace of Mind (PoM) scale, Social Support Questionnaire (SSQ), and Beck Depression Inventory (BDI-II).

Results

A negative association was found between depression tendency and all other variables, including PoM and CD-RISC scores, life satisfaction, and social support. Such factors can be considered as protective against increased depression tendency. In addition, an indirect effect was found for PoM and resilience on the negative association between SwLS and depression tendency. Moreover, social support was found to mediate the correlation between PoM and resilience, implying the mediating role of social support between an individual's inner state of mind and resilience.

Conclusions

A psychosocial model for depression prevention involves not only the individual's inner state of mind and subjective view of events and their life, but also outside factors, including social support.

Background

Depression has been identified as the leading cause of disability burden and is regarded as a specific mental illness, ranked in second place by the Global Burden of Disease in 2020¹. Being mentally ill can cause impairment in work performance and decreased social functioning, and poses a significant economic burden on society if left untreated. In addition, being depressed is associated with various psychosocial dysfunctions². In the last two years, the whole world has been affected by the outbreak of the COVID-19 pandemic, which has posed a serious challenge and created uncertainty and unpredictability in the social, economic, and international environment, and people's living conditions. Because of public health policies, people's lives have been restricted, as they have been required to be under quarantine and maintain social distance in response to the pandemic. This has been an extremely stressful situation with decreased self-control and reduced autonomy, leading to deterioration into negative emotions, such as anxiety and depression³. Such instability and reduced control, leading to lower life satisfaction, has greatly impacted mental health⁴.

Such mandatory changes to reduce the spread of the virus have shown an impact on psychological well-being and mental health^{3,5}. In addition, the fear of catching such an infectious disease can also affect life satisfaction^{6,7}. Life satisfaction, a subjective and cognitive evaluation of one's life according to one's goals and achievements⁶, has been described as one dimension of mental health⁸ and an important component of quality of life⁹. Lower satisfaction with life (SwL) has been associated with an elevated risk of mental illness, such as depression. Moreover, the level of life satisfaction has been identified as a predictor for depressive symptoms in a long years later^{10,11}. Thus, level of life satisfaction has gained attention because of its positive association with positive mental health, including longevity¹², and being harmonious and happy¹³. Recent research has reported that satisfaction with life can be meaningfully attained through harmony in life^{14,15}. The concept of life satisfaction includes making evaluations and comparisons between actual and expected life circumstances¹⁴.

Harmony can be described as a state of balance within an individual's mind that emphasizes self-control and emotional regulation with the surroundings to cultivate a socially conscious self¹⁶. Staying in a harmonious and happy mental state can be construed as an emotional status, which has been described as affective well-being valued in the Chinese culture, and called peace of mind (PoM)¹⁷. PoM is described as a stable emotional state that is indicative of inner mental stability and spiritual cultivation to claim an ideal positive state with increased sensitivity to the outside environment. The Chinese conception of well-being refers to "a dynamic process of achieving and maintaining a good fit from within and outward"¹⁶, so having PoM would improve an individual's well-being and decrease the risk of mental illness.

A strong sense of PoM sometimes goes along with a high level of spirituality and calmness while facing life's challenges, and a positive association with quality of life as well as resilience has been suggested^{18,19}. Psychological resilience has been defined as a process of facing diverse challenges, threats, and stresses²⁰ and refers to a dynamic process of adapting to diverse stressors, with the capacity to recover from adverse experiences.

Moreover, based on previous empirical studies, resilience has been indicated as negatively correlated with mental illness, such as depression²⁰⁻²², but positively associated with indicators of mental health maintenance, such as life satisfaction and social support²³.

Another factor related to mental health is social support, which has been suggested to help maintain mental health and reduce morbidity and mortality from medical illness; positive social support can enhance an individual's resilience when facing stress²⁴. Social support has been defined as accessible support for an individual coming from other individuals or groups^{25,26}. Several studies show the importance of resilience as well as other psychological and social factors. Kaufman et al. (2006)²⁷ addressed the important role of social support in conferring resilience to stress by moderating genetic risks for depression in maltreated children.

This study provides a dynamic picture of the construction of public social mentality and contributes to the research on depression. A psychosocial model for depression was constructed as a pyramid containing social support mediating resilience, with PoM and resilience playing mediating roles in the reducing risk of being depressed.

Aim and Objectives

The current study aimed to identify associations between psychosocial factors related to mental health among adults. The specific objectives were as follows: (1) to identify the role of resilience in mediating between life satisfaction and depression; (2) to identify the correlation between PoM and resilience in mediating between life satisfaction and depression; and (3) to evaluate the suitability of the hypothetical model using structural equation modeling (SEM).

Materials And Methods

Ethical considerations

The study was approved by the Research Ethics Committee (REC) at National Cheng Kung University (NCKU No. 109-419). All participants were given a full explanation about the study and signed an informed consent form agreeing to join the research. Each informed consent was obtained from all participants and this study has been performed in accordance with the Declaration of Helsinki. In addition, all participants were provided reimbursement for transportation. Data were anonymized and collected in confidentiality.

Participants

All participants were recruited via advertisements on posters and an online platform. Each participant was required to complete the following questionnaires: the Mandarin version of the Social Support Questionnaire (SSQ), the Satisfaction with Life Scale (SwLS), the Beck Depression Inventory-II (BDI-II), the Peace of Mind (PoM) scale, and the Connor–Davidson Resilience Scale (CD-RISC).

Instruments

Depression tendency

Depression tendency was assessed using the Chinese version of the Beck Depression Inventory-II (BDI-II). The original BD-II is a 21-item self-reported inventory to evaluate people's feelings in the last 7 days, with severity from 0–3 for each item. A higher score indicates more severe depression (<10, normal; 10–18, mild; 19–29 moderate; 30–63, severe)²⁸. The Mandarin version of the BDI-II showed good reliability with Cronbach's α of 0.87²⁹.

Connor-Davidson Resilience Scale (CD-RISC)

The original CD-RISC is a 25-item resilience instrument with five domains: personal competence (CD-RISC_pc), trust in one's instincts (CD-RISC_tru), positive acceptance of change (CD-RISC_acc), control (CD-RISC_con), and spiritual influences (CD-RISC_spi); good psychometric and test–retest reliability are shown by Cronbach's α of 0.89 and 0.87, respectively³⁰. Each item is rated on a 5-point Likert scale (0-4), with higher scores indicating greater resilience. It was later translated into Mandarin and modified, showing good reliability with Cronbach's α of 0.953 and test–retest reliability of 0.798^{31,32}.

Social Support Questionnaire (SSQ)

The SSQ was originally developed with 27 items to evaluate an individual's perception of social support and satisfaction with the support³³. The Mandarin version was translated by Wu (1985)³⁴, and then was shortened and modified to 20 items by Chang (1989)³⁵. The internal reliability of SSQ(N) was 0.91 and of SSQ(S) was 0.92. The 2-week retest reliability for SSQ(N) and SSQ(S) was 0.9269 and 0.9369, respectively.

Satisfaction with Life Scale (SwLS)

The Mandarin version of the Satisfaction with Life Scale (SwLS) is a 5-item questionnaire rated from 1, strongly disagree, to 7, strongly agree, measuring subjective perception of well-being⁶. Cronbach's alpha was 0.87, and two-month retest reliability was 0.82³⁶. Several studies have

reported only one factor³⁶⁻³⁸. The Chinese version of SwLS was defined and validated with a Cronbach's alpha of 0.96³⁹.

Peace of Mind (PoM) scale

The PoM scale was developed and defined according to an internal state of peacefulness and harmony. The construct was originally developed based on the description of well-being valuation in Chinese culture¹⁷. The cross-cultural validation was conducted and showed cultural differences with a higher PoM score for Taiwanese individuals than Europeans or Americans.

Data Analysis

Pearson's *r* correlation analysis was conducted to explore the associations among variables. SPSS 22.0 (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. To further explore the mediating role of resilience in the association between life satisfaction and depression, the role of peace of mind between life satisfaction and depression, and the role of social support between peace of mind and resilience, bootstrap analysis was carried out. Structural equation modeling (SEM) was employed to empirically test the hypothesis that number of social support providers indirectly mediates the correlation between well-being and resilience, in which peace of mind plays a double mediating role between depression and social satisfaction. The fit index was computed to evaluate model fit, with RMSEA < 0.08^{40,41}.

Results

General characteristics of participants

A total of 370 participants with a mean age of 26.84 years (SD = 12.69 years) and no self-reported mental or neurological disorders were recruited via an online platform. Among the participants, 168 were men, with a mean age of 27.84 ± 14.07 years, and 202 were women, with a mean age of 26.01 ± 11.41 years.

Correlations between depression, resilience, and life satisfaction

The Pearson's *r* correlation analysis showed significant correlations between depression, total CD-RISC score, PoM score, and SwLS score (Table 1). A significant negative correlation was found between depression and CD-RISC and PoM scores, and a significant positive association was found between CD-RISC score and PoM and SwLS scores.

Insert Table 1 here

Psychosocial model of resilience and social support

The hypothesized psychosocial model for social support, PoM, resilience, and depression was constructed using SEM analysis. The dimensions of resilience from CD-RISC were included in the model as latent variables, and the unidimensional constructs of depression and life satisfaction were included as observable variables. Goodness of fit indices of the model (Figure 1) indicated good fit to the data, and the model was acceptable ($\chi^2/df = 1.398$, RMSEA = 0.033, SRMR = 0.0174, CFI = 0.998, IFI = 0.998).

Insert Figure 1 here

The results of effect analysis using bootstrapping to identify the direct, indirect, and total effects on depression are shown in Table 2. The level of life satisfaction was found to have significant negative direct ($\beta = -0.301$; $p = .001$), indirect ($\beta = -0.247$, $p = 0.001$), and total ($\beta = -0.549$; $p = 0.001$) effects on depression risk. The level of resilience ($\beta = -0.228$; $p = 0.001$) had a direct effect on depression risk, while peace of mind had significant direct and indirect effects on depression ($\beta = -0.240$; $p = 0.001$ and $\beta = -0.072$, $p < .0005$, respectively). The number of social support providers had a significant indirect effect on depression ($\beta = -0.038$, $p < .0005$) and a significant direct effect on resilience ($\beta = 0.166$, $p = 0.001$). Peace of mind had a significant direct effect ($\beta = 0.139$, $p = 0.005$) on the number of social support providers.

Insert Table 2 here

Discussion

The finding in the current study supports our hypothesis that the psychosocial model of resilience for reducing depression could be a hierarchical pyramidal. From the biological viewpoint on resilience, reports have revealed the importance of an individual's inner mind status. For people who are more optimistic and hopeful while facing extreme or chronic stress, their inner reward system could become hypersensitive or resistant to change⁴². With such "resilience," the reward system would assist individuals in maintaining an appropriate tone during highly stressful and challenging situations and reduce their risk of becoming depressed. Such a system might develop based on highly sensitive dopamine receptors and correlate with the resistance to stress-induced cerebral dopamine depletion. Highly resilient people may also exhibit high cognitive function by remaining positive and hopeful about the future while facing long periods of extreme stress. In such circumstances, resilience plays an indirect mediating role between life satisfaction and depression. Another model, the affective neuroscience model, indicated that to boost resilience in adults, social support is one suggested strategy, which can boost resilience through several pathways⁴³. The finding in the current study is in line with previous reports on the possible enhancement of resilience by social support, particularly the number of support providers when individuals who face stress seek further support.

Peace of mind also plays an important mediating role between life satisfaction and resilience, in that having an internal state of peacefulness and harmony can mediate the correlation between life satisfaction or well-being and resilience, as considered in Chinese culture. In addition, such a trait may indirectly affect the negative association between life satisfaction and depression. Being more peaceful may allow people to be happier and have a more meaningful life, to become more involved in their life and consider it pleasant⁴⁴, to become more resilient when facing chronic stress and to have decreased symptoms of depression^{45,46}.

In the last few years, the whole world has been affected by the COVID-19 pandemic. People all over the world have lived in circumstances of fear and distraction, during which unexpected viral strains quickly spread across the globe. Researchers have suggested that during extremely stressful circumstances, an individual's prior social support has a time-lag effect on their PoM⁴⁷. Previous findings support our observations, and the number of social support providers plays a better, more immediate role in indirectly enhancing an individual's strength of mind and resilience.

Limitations and Prospects

Although our findings provide an empirical and theoretical contribution, there are some limitations that need to be addressed for the future. First, although the psychosocial model tested in the current study ensured the interactions among factors related to mental health, the studied samples were cross-sectional; most participants were young adults, who may not have had previous experience with extreme stress. It is advised that future studies recruit a more homogeneous group of participants and conduct longitudinal tracking investigation of relevant models. Second, although this study was conducted during several stages of the COVID-19 epidemic, the disease was under control in Taiwan most of the time, so people may not have been as affected as those in other countries. How people perceived the stress could be explored in a future study, to compare with our participants, who were studied during a different period of the pandemic. Third, this study shows that the number of social support providers has an indirect effect on PoM and resilience, and other factors related to social support could be considered in future studies, such as the resources provided and the intimacy of providers, and what role the content of social support plays in the resilient dynamic process⁴⁸. Additional studies are needed to examine this further.

Declarations

Ethical Approval and Consent to participate

The study was approved by the Research Ethics Committee (REC) at National Cheng Kung University (NCKU No. 109-419). All participants were given a full explanation about the study and signed an informed consent form agreeing to join the research.

Availability of supporting data

All data generated or analyzed during this study are included in this manuscript.

Consent for publication

All authors had agreement for this publication.

Competing interests

All authors have reported no conflict of interest.

Funding

This study was supported Ministry of Science and Technology, Taiwan (MOST 108-2321-B-006-022-MY2, MOST 108-2410-H-006-038-MY3, MOST110-2321-B-006 -004 & MOST 111-2321-B-006-008-).

Authors' contributions

YHC wrote the draft, analyzed and interpreted the data. CTY and SH designed the study and gave critical comments to the manuscript. All authors read and approved the final manuscript.

Acknowledgements

The researchers thank all the participants in their agreement and sharing their experiences in joining this study.

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Tables

Table 1. Correlation matrix among variables

	Mean	SD.	SwLS	BDI-II	PoM	CD-RISC_t	CD-RISC_pc	CD-RISC_tru.	CD-RISC_acc	CD-RISC_con.	CD-RISC_spi.	SSQ(N)
SwLS	22.04	6.78	1	-0.55***	0.50***	0.57***	0.52***	0.44***	0.51***	0.59***	0.36***	0.13*
BDI-II	7.76	7.10		1	-0.51***	-0.52***	-0.47***	-0.41***	-0.51***	-0.51***	-0.32***	-0.10
PoM	3.46	0.77			1	0.51***	0.47***	0.38***	0.51***	0.50***	0.34***	0.14**
CD-RISC_t	65.06	15.16				1	0.94***	0.88***	0.87***	0.84***	0.60***	0.26***
CD-RISC_pc	20.71	5.89					1	0.77***	0.76***	0.77***	0.45***	0.22***
CD-RISC_tru.	18.30	4.21						1	0.71***	0.64***	0.45***	0.18***
CD-RISC_acc	13.57	3.33							1	0.68***	0.52***	0.28***
CD-RISC_con.	7.39	2.43								1	0.50***	0.26***
CD-RISC_spi.	5.09	1.59									1	0.18***
SSQ(N)	25.65	15.68										1

Note: SwLS: satisfaction with life scale; BDI-II: Beck Depression Inventory-II total score; CD-RISC_t: Connor-Davidson Resilience Scale total score; CD-RISC_pc: personal competence; CD-RISC_tru.: trust in one's instincts; CD-RISC_acc: positive acceptance of change; CD-RISC_con. : control; CD-RISC_spi. : spiritual influences; S.S.Q(N): Numbers of social support

*: $p < .05$; **: $p < .005$; ***: $p < .0005$

Table 2 is available in the Supplementary Files section.

Figures

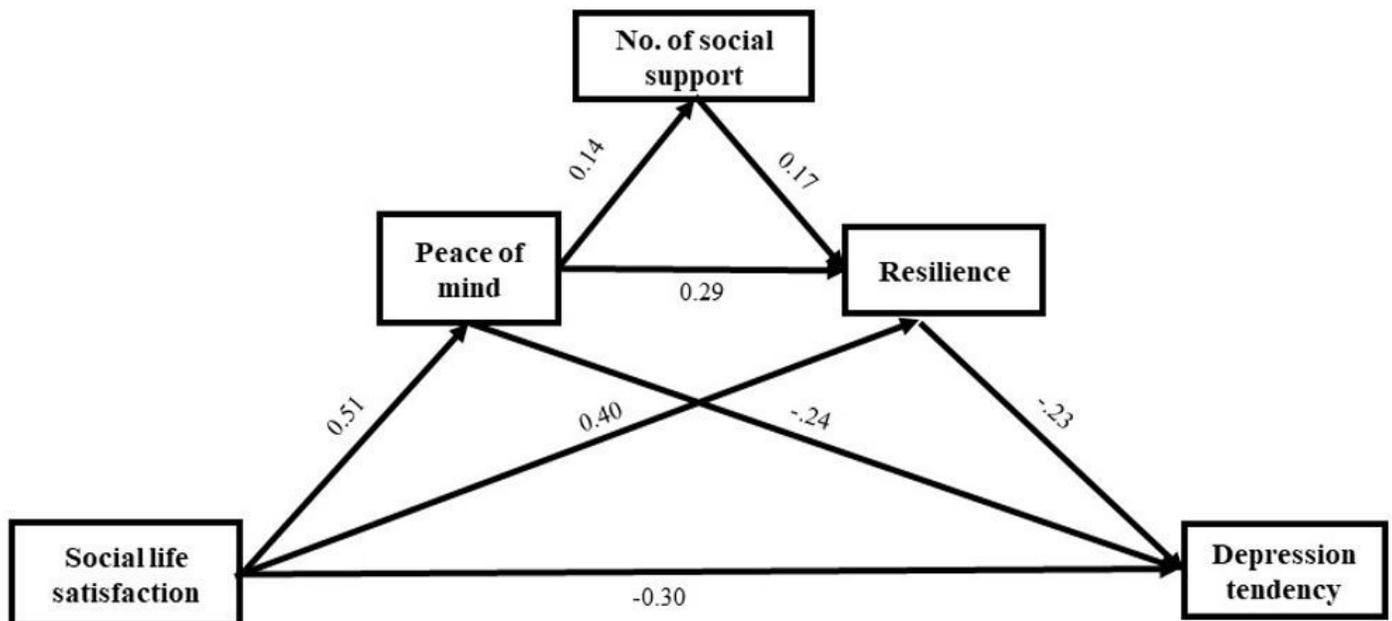


Figure 1

The psycho-social model for depression tendency in young adulthood

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Table2.jpg](#)