

Life Satisfaction Among Diverse Participants

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Abstract

Introduction: Mental health (MH) conditions are among the most common chronic health conditions in the United States. Previous studies suggested decreased in life satisfaction post-COVID-19 in other populations outside the United States. This study explored the correlations between life satisfaction and MH among diverse community post-COVID-19 pandemic. **Methods:** A cross-sectional, non-experimental, retrospective study. The primary outcome was the Satisfaction with Life Scale total score (SWLS_TS) and the characteristics of the cases from self-reported information. Statistical software SPSS was used for descriptive and inferential analyses. **Results:** About 218 cases were included for analysis. Many of the cases were Asian Americans (n = 185, 84.1%). The multiple linear regression model significantly predicted 5.2% of the variance in SWLS_TS. Three out of 6 predictors significantly contributed to the model (age $\beta = .172$, $t = 2.42$, $P = .017$, ethnicity $\beta = .148$, $t = 2.07$, $P = .039$, and no history of MH $\beta = .248$, $t = 3.31$, $P = .001$). **Conclusion:** A diverse population was examined post-COVID-19 pandemic, and the findings suggest a positive correlation with age, ethnicity, and no history of MH with SWLS_TS.

Keywords

satisfaction with life scale, community mental health, mental health outreach programs, diverse participants, mental health stigma, mental health education

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Introduction

Background

According to the Centers for Disease Control (CDC) and Prevention,¹ mental health (MH) conditions are among the most common chronic health conditions in the United States, and it is estimated more than 20% of adults live with MH conditions. The National Institutes of Health² reported 57.8 million adults have been diagnosed with an MH condition in 2021. The stressors of the COVID-19 pandemic exacerbated and compounded these chronic diseases. The World Health Organization (WHO),³ reported 600 million cases of COVID-19 worldwide in 2022.

California's current population is 40 million with geographic variation in sociodemographic (comprised of 37.5% White, 39.1% Latino, 5.3% Black, and 14.4% Asian); the mortality rate of COVID-19 from January 2020 to April 2021 was 59258; the highest in the country.⁴ As of May 2023, the California Department of Public Health⁵ reported the total COVID-19 deaths by race and ethnicity were

101886; Latino 41.9%, Asian 11.3%, African American 7.1%, and Native Hawaiian and Pacific Islander were 0.6%. The pandemic directly affected the public's MH and well-being in a variety of ways, including the stressors of isolation and loneliness, financial instability, illness, and grief.^{6,7} The stay-at-home orders, social distancing, national lockdowns, non-essential workplace modifications, school closures, and limiting daily movements and social gatherings disrupted day-to-day activities.

Social isolation has been identified as a risk factor for mental health conditions, increasing psychological distress

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due to the negative impact of loneliness on physical and MH conditions.⁸ These unique environmental barriers decreased overall life satisfaction during the COVID-19 pandemic.⁹⁻¹¹ A study in Thailand by Phulkerd et al using the Satisfaction with Life Scale (SWLS) found that average life satisfaction decreased from 26% pre-COVID-19 to 22% during COVID-19.¹² MH research is vital in identifying conditions and life triggers and establishing essential tools to aid researchers and clinicians. Substantial research has demonstrated a positive correlation between increased social support, reduced depressive symptoms, and higher life satisfaction.^{8,13,14}

Researchers have developed numerous standardized measurement instruments and scales for screening and assessing health conditions and behaviors. Diener et al¹⁵ introduced the SWLS to measure the component of subjective well-being. SWLS correlates with MH measures and predicts future behaviors. It has been utilized in various population groups across different nationalities and languages, demonstrating global relevance and applicability. The SWLS is a robust instrument with the most vital psychometric properties, making it a gold standard for measuring the cognitive component of life satisfaction.^{9,16-18} SWLS has high internal consistency, test-retest reliability, consistent validity, and convergence validity.^{15,19}

Resilience and life satisfaction correlate with COVID-19-related worries and mental conditions such as depression, anxiety, and stress.²⁰ Resilience is an adaptation to adverse personal and contextual conditions to maintain MH stability during challenging situations.²⁰⁻²² Life satisfaction is a global evaluation or judgment of one's life experience associated with well-being and psychological stability.¹⁴

The presence of diverse individuals' social networks is associated with improved MH and subjective well-being. The availability of social support improves individuals' MH conditions by having a support network to help with their overall mental well-being.^{13,14} Previous studies examined life satisfaction outside the United States in other populations post-COVID-19 pandemic. In China, studies among youths showed that post-pandemic led to more stress, less social support, lower emotional intelligence, and lower life satisfaction associated with hyperarousal symptoms.²³ A similar study on adolescents in Norway reported lower satisfaction with peers and less optimism about future life expectations, which had adverse effects among low-income people and those with less education.²⁴ In contrast, a study on Iranian employees showed COVID-19 does not directly impact life satisfaction; instead, it positively impacts the lives of those who recovered from COVID-19.²⁵

Studies have shown the COVID-19 pandemic has disproportionately affected Hispanic, Asian, Native Hawaiian, Pacific Islander, and Black communities, leading to increased

hospitalization, intensive care unit (ICU) admission, and mortality.²⁶⁻²⁹ More importantly, these studies have also highlighted the significant influence of age on COVID-19 outcomes on mental health.^{27,30-32} Although previous studies have examined life satisfaction in other populations, more research is needed regarding satisfaction with life among community participants from diverse backgrounds post-COVID-19 pandemic in the United States; thus, a survey on these populations is necessary. This study examined the correlations between life satisfaction and MH among diverse communities in Southern California post-COVID-19 pandemic. The community has a high number of Asian and Hispanic populations who were disproportionately impacted by the COVID-19 pandemic.³³

The study objectives were as follows:

1. Describe the sociodemographics, MH, and Satisfaction with Life Scale total score (SWLS_TS) among diverse community cases in Southern California.
2. Describe the relationships between the sociodemographics, MH, and SWLS_TS variables among diverse community cases in Southern California.
3. Describe the variances between the sociodemographics, MH, and SWLS_TS variables among diverse community cases in Southern California.

Methods

Study Design

A cross-sectional, non-experimental, retrospective study design examined the relationships and variances between the sociodemographic variables, MH, and SWLS_TS among community cases in Southern California. The primary outcome was the SWLS_TS score and the characteristics of the cases from self-reported information.

Study Setting and Cases

The data was collected by a professional nursing organization in the community during MH outreach events from a diverse population in Southern California (55.2% White, Hispanic 31.6%, Asian 18.4%, Black 6.4%, and Multiracial 5.8%).³³ The region is north of the U.S.-Mexico international border along the Pacific Ocean. The paper survey was distributed to adult attendees. Over 400 attendees attended these events, and 55% participated in the survey. The eligibility criteria include adults 18 or older willing to complete a paper-based survey. The respondents were not compensated for their participation. Attendees younger than 18 were excluded. The attendees were given one copy of the paper survey, and they returned the completed survey to the registration table. The same nurse data collectors were at the table to ensure respondents completed the survey only once to

avoid duplication. One data collector assigned a unique participant identification number to each survey received.

Study Variables and Instruments

The two surveys were used for data collection: the demographic survey and SWLS. The demographic survey includes the predictor variables age (age in years), gender (gender identity [male, female, transgender]), ethnicity (ethnic background), history of MH (History of mental health condition(s)), family history of MH (family history of mental health condition(s)), and additional information about MH resources (respondent's desire for MH resources [yes/no]). The SWLS was developed by Diener et al.¹⁵ It is a 5-item survey studied globally in various settings and validated in English, Spanish, Arabic, Chinese, Dutch, French, German, Hindi, Hungarian, Vietnamese, and other languages. The SWLS English version has an internal consistency with an alpha of 0.87 and excellent test-retest reliability, with a correlation of .82. The 5-item survey is presented in Table 1. The instructions for completing the survey are provided. The response on the scale on a 1 to 7 point Likert scale. The choices range from strongly disagree to strongly agree (1 strongly disagree, 2 disagree, 3 slightly disagree, 4 neither disagree nor agree, 5 slightly agree, 6 agree, and 7 strongly agree). The SWLS_TS ranges from 5 to 35. A lower score signifies a low level of life satisfaction, while a high score signifies a high level of life satisfaction. The outcome variable in this study is the SWLS_TS.¹⁶ In this study, the attendees were given the option of English version or other languages (Spanish, Filipino, or Chinese). The translated Spanish (Cronbach alpha=.74)³⁴ and Chinese (Cronbach alpha=0.88)³⁵ versions have established reliability and validity. However, the psychometric properties of the Filipino version have yet to be established. Two bilingual healthcare providers and a language expert working for the Department of Health in Southern California translated this version.

Bias

The university's Institutional Review Board determined the study exempt. The investigators received approval from the nursing organization for data access, and the data collection process was reviewed with the organization to address any bias and ethical concerns during the collection process. The participant database has no identifying information, and a unique identification number was used to de-identify cases.

Data Collection and Analysis

Community attendees (n=220) were asked to complete a demographic survey and SWLS during community outreach

events from May 2023 to August 2023 by a nursing organization in Southern California. The nursing organization is composed of diverse nurses. They are active in the community, providing outreach programs to improve community access through education and resources. During the MH events, they educate the attendees on mental health resources, crisis hotlines, and mental health wellness. The members of the nursing organization participated in the recruitment. The nurses asked the attendees if they would complete a short survey. A pen, paper, and clipboard were provided to willing attendees.

The 4-month data collection period provided a sufficient sample size to examine life satisfaction and cases' characteristics from self-reported information. The investigators received approval from the nursing organization to analyze and publish the data. The nursing organization shared the collected data in a Microsoft Excel spreadsheet. The data was then imported into the SPSS 28 statistical program for descriptive and inferential analyses. For descriptive analysis, means and standard deviations were used for continuous data and frequency and percentages were used to analyze categorical data. After determining the data normality and distribution, an inferential statistic was conducted. The non-parametric continuous data was analyzed using Spearman's rho, and Kruskal Wallis was used for categorical data. A multiple linear regression was performed to test for variance for correlated variables. The missing data was excluded from the analysis, and the outliers were investigated and removed. The removal of missing data and outliers did not impact the data analysis. A sample size of 218 cases was considered adequate to detect a moderate effect size ($d=0.3$) using a two-tailed significance test with a power of .80, a significance level of .05, and 6 predictors.^{36,37}

Results

Demographics and Cases

The number of analyzed cases in this study was n=218. The mean age was 60.27 ± 16.19 . Many of the cases were Asian Americans (n=185, 84.1%), followed by Hawaiian/Pacific Islander (n=14, 6.4%), Multiracial (n=7, 3.2%), Hispanic (n=7, 3.2%), White (n=4, 1.8%), and Black (n=1, 0.5%). Most cases were females (n=160, 72.7%), followed by males (n=58, 26.4%). About 172 (78.2%) cases had no MH history, 15 (6.8%) cases had a history of depression, and 14 (6.4%) had a history of anxiety. The majority of cases have no family history of MH conditions (n=163, 74.1%), n=15 (6.8%) cases reported depression, and n=10 (4.5%) cases reported anxiety. Most cases did not elect additional MH information (n=127, 57.7%) (see Table 1). The cases with missing demographic data were excluded from the analysis.

Table 1. Participants Self-reported Demographics (n=218).

Characteristic	M (\pm SD)
Age	60.27 (\pm 16.19)
Characteristic	n (%)
Ethnicity	
Hispanic	7 (3.2)
Non-Hispanic White	4 (1.8)
Black	1 (0.5)
Asian	185 (84.1)
Hawaiian/Pacific Islander	14 (6.4)
Multiracial	7 (3.2)
Gender	
Female	160 (72.7)
Male	58 (26.4)
Transgender	1 (0.5)
History of mental health	
Depression	15 (6.8)
Depression and anxiety	2 (0.9)
Depression and OCD	1 (0.5)
Depression and bipolar	1 (0.5)
Anxiety	14 (6.4)
Anxiety and OCD	2 (0.9)
Anxiety and PTSD	1 (0.5)
OCD	3 (1.4)
PTSD	4 (1.8)
ADD	3 (1.4)
None	172 (78.2)
Family history of mental health	
Depression	15 (6.8)
Depression and Anxiety	6 (2.7)
Depression and OCD	1 (0.5)
Depression and bipolar	1 (0.5)
Anxiety	10 (4.5)
Anxiety and ADD	1 (0.5)
OCD	4 (1.8)
OCD and PTSD	1 (0.5)
Bipolar	2 (0.9)
PTSD	2 (0.9)
ADD	2 (0.9)
More than 2	9 (4.1)
None	163 (74.1)
More information about mental health	
Yes	88 (40)
No	127 (57.7)

Abbreviations: M, mean; SD, standard deviation.

Satisfaction With Life Scale Inferential Analysis

The test for correlations for nonparametric data included the outcome variable (SWLS_TS) and predictor variables (age, ethnicity, gender, history of MH, family history of MH, and additional MH information). The analysis revealed there was a positive correlation between age and SWLS_TS

Table 2. Correlational Analysis with Satisfaction with Life Scale (n=218).

Characteristic	r_s	P-value
SWLS and age	.21	.003*
<hr/>		
		P-value
SWLS and ethnicity	8.9	.11
SWLS and gender	1.7	.41
SWLS and no MH history	25.25	.008*
SWLS and no family history of MH	21.53	.043*
SWLS and no additional MH information	.081	.78

For nonparametric continuous data, P-values are Spearman's rho (2-sided). For categorical data, P-values are Kruskal Wallis (2-sided). P-value < .05*.

($r(217) = .21, P = .003$), no history of MH and SWLS_TS ($H(11) = 25.25, P = .008$), and no family history of MH and SWLS_TS ($H(12) = 21.5, P = .043$) (see Table 2). Interestingly, attention deficit disorder (ADD) and anxiety ($P = .029$) were positively correlated, and depression and anxiety ($P = .005$) were negatively correlated. Regarding the family history of MH, the following conditions were correlated: anxiety and other MH conditions ($P = .006$): depression, post-traumatic stress disorder (PTSD), and ADD ($P = .020$).

Multiple linear regression was conducted to analyze 6 SWLS_TS predictors (age, ethnicity, gender, history of MH, family history of MH, and additional MH information). The test for correlations between the predictor variables indicated age and SWLS_TS ($r = .25, P < .001$), ethnicity and SWLS_TS ($r = .20, P = .002$), no MH history and SWLS_TS ($r = .26, P < .001$), no family history of MH and SWLS_TS ($r = .15, P = .020$), age and ethnicity ($r = .28, P < .001$), age and gender ($r = .15, P = .019$), age and no family history of MH ($r = .17, P = .009$), ethnicity and gender ($r = .15, P = .02$), ethnicity and no family history of MH ($r = .17, P = .008$), ethnicity and no additional MH information ($r = .13, P = .038$), no MH history and no family history of MH ($r = .45, P < .001$), and no MH history and no additional MH information ($r = .14, P = .024$), were correlated (see Table 3). Further data screening before regression analysis led to eliminating 16 cases due to missing data and outliers and the evaluation of the test assumptions (linearity, normality, and homoscedasticity). The case elimination did not affect the results of the regression analysis. The multiple linear regression model significantly predicted 5.2% of the variance in SWLS_TS, $F(6, 195) = 5.2, P < .001, R^2 = .14, R^2_{adj} = .11$). Three out of 6 predictors significantly contributed to the model (age $\beta = .172, t = 2.42, P = .017$, ethnicity $\beta = .148, t = 2.07, P = .039$, and no history of MH $\beta = .248, t = 3.31, P = .001$). A summary of regression coefficients is presented in Table 4.

Table 3. Multiple Linear Regression Correlational Analysis with Satisfaction with Life Scale and Predictor Variables (n = 202).

Measure	1	2	3	4	5	6	7
1. SWLS_TS	–	.25***	.20**	.097	.26***	.15*	–.002
2. Age		–	.28***	.15*	.105	.17**	–.076
3. Ethnicity			–	.15*	.021	.17**	.13*
4. Gender				–	.041	.015	–.017
5. No MH History					–	.45***	.14*
6. No Family History of MH						–	.113
7. No Additional Information about MH							–

Abbreviations: SWLS_TS, Satisfaction with Life Scale Total Score.

For all predictors entered in the regression model, *P*-values are Pearson's *r* (2-sided). *P*-value < .05*, *P*-value < .01**, *P*-value < .001***.

Table 4. Multiple Linear Regression Analysis with Satisfaction with Life Scale and Predictor Variables (n = 202).

Predictor	B	95% CI	β	<i>t</i>	<i>P</i>	Bivariate <i>r</i>	Partial <i>r</i>
Age	0.001	0.000, 0.002	0.172	2.42	.017	.246	.171
Ethnicity	0.037	0.002, 0.071	0.148	2.07	.039	.200	.147
Gender	0.008	–0.019, 0.035	0.040	0.592	.555	.097	.042
No MH history	0.054	0.022, 0.087	0.248	3.31	.001	.259	.230
No family history of MH	–0.003	–0.034, 0.028	–0.014	–0.186	.853	.146	–.013
No additional information about MH	–0.007	–0.033, 0.018	–0.040	–0.587	.558	–.002	–.042

Abbreviation: CI, confidence interval for B.

Discussion

This study examined the correlations between life satisfaction and MH among community cases post-COVID-19 pandemic. We described the relationships and variances between the sociodemographics, MH, and SWLS_TS variables. SWLS is a reliable and valid instrument for assessing life satisfaction. It has been validated in various settings in Asian communities (Chinese, Hindi, Vietnamese, Malaysian, and Korean).²⁰ In this study, SWLS screening was valuable during MH outreach events. The events were held in areas with high numbers of Asian Americans and mostly female attendees. The mean age was much older than the general population (mean age = 60.27 ± 16.19). This finding contrasted with a previous study where older groups were under-represented.³⁸ Interestingly, the correlations were positive when we examined the relationships between no MH history and having no family history of MH. Cases with no MH history and no family history of MH also had higher SWLS_TS scores. In this study, the positive correlation between MH history and family history with SWLS_TS provides additional data on how their MH and family history can influence life satisfaction. A positive relationship with cases without mental health conditions or family history indicates better life satisfaction. Furthermore, the correlations allow us to evaluate the SWLS constructs and their associations with MH conditions. This finding

corroborates previous research on Mexican adults about family support and MH, where MH's family history can impact a person's life satisfaction.³⁴ These findings support MH screening with SWLS suitable for use for research and practice from diverse backgrounds.

There was a positive correlation between SWLS_TS and age. In addition, the study results suggest as the respondents' age increases, so does the SWLS_TS by 0.017. This finding is consistent with a previous finding in the Korean population: as age increases, satisfaction with life improves. The older respondents have better SWLS_TS, which may be due to a better support system.^{38,39} In a study by Clench-Aas et al, satisfaction with life measured by SWLS among Norwegians has different meanings across the lifespan.⁴⁰ In the present study, the positive correlation supports age's impact on one's SWLS score. However, the meaning of life satisfaction can vary per individuals' life experiences, values, and culture. Compared to the study by Clench-Aas et al,⁴⁰ this study found variance among age groups, including adults ranging from 19 to 86 years old. This significant finding suggests that SWLS scores and age can partly be explained by varying socialization practices, age-specific life events, and adaptation strategies. Another predictor for increased SWLS_TS was ethnicity (primarily Asians). However, this finding must be interpreted cautiously as

the differences in SWLS scores across countries were inconsistent, as suggested by a previous study.⁴¹

Recommendations

In this study, the survey was not tailored to a specific ethnicity from a similar culture. However, we can conclude, the respondents who identified as Asian had higher SWLS_TS. The last SWLS_TS predictor had no history of MH. The respondents who reported no history of MH had an increased SWLS_TS by 0.15. Thus, individuals with higher SWLS_TS are less likely to seek MH help. Further studies are necessary to explore the predictors of life satisfaction and MH in different cultures. Although the number of respondents was sufficient for the study, there was limited space for quiet and private places to complete the survey. It is recommended that a dedicated space be provided for respondents. SWLS is a brief survey; it must be utilized with a demographic survey and another MH assessment to better evaluate individuals' MH.

Face-to-face recruitment was implemented during the data collection, where the nurses educated the attendees. The MH education provided in these events alleviates some biases about MH in diverse cultures.⁴² These findings are consistent with those of Crowe and Kim,⁴³ who found ethnicity, life satisfaction, and self and public stigma were predictors of MH treatment. The MH outreach program provided by the nursing organization established a solid foundation for informing and educating the community about MH.

The study was conducted when there was no mask mandate and social distancing policies, and many people returned to their lives before the pandemic. Previous studies examined life satisfaction outside the United States in other populations post-COVID-19 pandemic and suggested COVID-19 impacted the younger population's (adolescents) life satisfaction.^{23,24} In contrast, our findings indicate that the COVID-19 pandemic has less impacted most adults in this group. However, these findings must be interpreted with caution as further study is needed to examine the impact of COVID-19 on MH among adults. In addition, most cases did not have MH nor a family history of MH, and we found homogeneity in their responses on their life satisfaction. This homogeneity, while limiting the generalizability of our findings, also highlights the need for further research in this area. The results may differ when compared to respondents from the clinical population. Despite these limitations, our study adds to the growing body of knowledge on the impact of the COVID-19 pandemic on the life satisfaction of the non-clinical population.

Limitations were further identified with the utilization of a standardized instrument. Though the SWLS is simple and easy to complete, the questions are limited to the participant's subjective reporting of life satisfaction. It measures 2 significant components: the emotional or affective component and

the judgment or cognitive component.¹⁶ Therefore, the scale does not apply to individuals with cognitive impairment. In addition, the scale does not screen common MH conditions such as depression, anxiety, and stress. Despite the SWLS limitations, the instrument can conduct a preliminary MH screening in the community and clinical setting. Further study must consider utilizing a linguistically and culturally relevant scale, essential in communities and healthcare settings with highly diverse populations. We must be aware of many immigrants' linguistic and cultural variations, and their English comprehension may be limited. Thus, their response to SWLS may not accurately assess their life satisfaction. In addition, other scales may be appropriate for this population post-COVID-19, such as the COVID-19 Stress Scale and the Pandemic Stress Scale. Due to the study's retrospective design, the results were limited to the data collected by the nursing organization.

Conclusion

The COVID-19 pandemic made a significant impact on our public mental health. SWLS is a validated MH screening instrument with established psychometrics available in multiple languages. It is simple and easy to administer in community health events and primary care settings. Individuals identified with low scores may indicate the need for additional mental health evaluation. The predictors identified in our study contributed to the body of knowledge about the general population's life satisfaction post-COVID-19 pandemic. Previous research on life satisfaction was conducted in different settings, which makes this instrument versatile due to its applicability in other populations. Like other studies, our findings support the relevance of SWLS across the lifespan in diverse populations. This instrument's versatility makes it more applicable in different settings (clinic, hospital, community, workplace, and others). Despite the study's limitations, utilizing SWLS as a screening instrument was successful during community events. There is, at present, sufficient evidence the SWLS instrument can be used in diverse populations during outreach events in the community to screen for MH post-COVID-19. As part of a public health initiative, MH screening can alleviate the demand for community MH services through early screening and detection.

Declaration of Conflicting Interests

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