


Multidimensional Determinants of Well-Being Among Community-Dwelling Older Adults During the Early Stage of the COVID-19 Pandemic in Taiwan

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Abstract

Objectives: Due to the insufficient and inadequate policies on the psychological well-being of the aged population, we aimed to examine the multidimensional determinants of well-being during the early stage of the COVID-19 pandemic. **Method:** Data were collected from face-to-face interviews with 1,232 participants aged 50 and older living in Southern Taiwan. We used multivariate logistic regression to examine the associations between demographics, the physical health, mental health, social ties domains, and well-being. **Results:** We found that (i) in physical health, no dental problems and exercise were related to better well-being; (ii) in mental health, stress and depression decreased well-being, but laughing every day, and a positive attitude toward aging had adverse effects; and (iii) in social ties, subjective social status, family support, and place attachment to the community were positively associated with well-being. **Discussion:** Our findings highlight the multidimensional needs at the individual and community levels for the Chinese population.

Keywords

active life/physical activity, mental health, psychology, socio-economic status

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Introduction

Since the introduction of the aging in place policy around the world, psychological well-being has become a significant social indicator of good health and well-being (Sustainable Development Goals 3). The Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015 as a universal call to action to ensure all people enjoy peace and prosperity. In 2018, the National Sustainable Development Committee of the Taiwan Executive Yuan localized the SDGs proposed by the United Nations and developed the “Taiwan Sustainable Development Goals” (TSDG).

At old age, psychological well-being is strongly related to better health outcomes (Martín-María et al., 2021). The health inequalities of elderly people should be addressed by multidimensional policies to promote good health and well-being (Sustainable Development Goals 3) Previous researchers have suggested that well-being is characterized across multiple domains, rather than as a single factor (Martín-María et al., 2021). Thus, the multidimensional psychological well-being domains

not only discriminate against groups with specific strengths and weaknesses but also offer diverse resources to maintain stable psychosocial well-being during the COVID-19 pandemic (Guzman et al., 2021).

Because social distancing may heighten the risks related to social well-being (Fuller et al., 2020), the outbreak of the COVID-19 pandemic might jeopardize older people’s psychological outcomes. Previous studies demonstrated that elderly people had better emotional well-being than younger adults when facing the threats of COVID-19 (Bruine de Bruin, 2021; Ebert et al., 2020). Preventing psychological burden and social isolation have become important but challenging tasks during the COVID-19 pandemic (Chen, 2020; Chhetri

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et al., 2020). In particular, related public health policies may disproportionately cause deterioration in well-being among vulnerable older adults in the health and social dimensions and create massive barriers to accessing health services and social support (Lloyd-Sherlock et al., 2020).

Influences on older adults are nested into multiple levels such as physical, psychological, and social needs, which should be recognized to develop appropriate interventions. In physical health, mild to moderate physical activity improved the immune system response to viral respiratory infections (Son et al., 2021) and was associated with greater subjective well-being during the COVID-19 pandemic (Corley et al., 2021). Significantly decreased physical activity was strongly associated with poorer well-being for Japanese older adults during the COVID-19 outbreak (Suzuki et al., 2020). Not surprisingly, the COVID-19 outbreak also had a massive impact on mental health among the elderly (Bueno-Notivol et al., 2021). Findings from the English Longitudinal Study of Ageing (ELSA) conducted by (Steptoe & Steel, 2020) demonstrated that the pandemic increased stress, anxiety, and depression, particularly among older people with pre-existing health problems (Steptoe & Steel, 2020). Another study in the United States (Ebert et al., 2020) found that the outbreak had more positive effects and less negative effects on older adults relative to other populations during the first 4 months of COVID-19. In Japan, older adults with negative self-perceptions of aging were strongly associated with poorer emotional outcomes under COVID-19 lockdown restrictions (Losada-Baltar et al., 2021). Social distancing measures may also heighten the risks related to the sense of social well-being (Fuller et al., 2020) because seniors spend more time with families and are home-bound (Son et al., 2021). Findings from Yu et al. (2020) investigated the associations between social support and psychological outcomes in China during the early COVID-19 period. However, insufficient and inadequate attention was paid to vulnerable Chinese older adults in terms of place attachment to the community, and there was little evidence that multidimensional psychological well-being among the Chinese population had been established. A notable Chinese study by Hu et al. (2020) conducted through online surveys on 1,033 participants aged 18 to 60 years found that both unhealthy lifestyle behaviors and negative lifestyle changes were associated with lower well-being during the COVID-19 outbreak.

Therefore, the overall aim of this present study was to characterize older adults' psychological well-being and self-reported demographics, physical health, mental health, and social health experiences during the early stage of COVID-19 in Taiwan. More specifically, we explored the multiple levels of enabling mechanisms for physical health experiences, mental health experiences, social health experiences, and psychological well-being. We expect this study would reflect the Chinese pandemic context, and provide a framework for building age-friendly communities to support older adults'

well-being when facing a crisis such as COVID-19, or other natural disasters.

Method

Sampling and Participants

This study was a community-based survey including two rural and two urban areas in a southern city of Taiwan from October 2020 to February 2021 under the university social responsibility (USR) project. The USR project was defined as the responsibility of the universities to adopt transparent strategies and actions to positively influence society and the environment, such as fostering student action for justice and equity, democratic participation, and sustainable development, and promoting the health and well-being of the society, in line with the social responsibility of universities in Europe and the development of a community reference framework (EU-USR, 2018). Due to the laws on privacy under the Household Registration Act in Taiwan, we could only conduct interviews with older adults who were willing to be interviewed in the partner communities based on the inclusion criteria, and thus convenience sampling was used.

The survey questionnaire consisted of seven parts: (A) basic demographic information, marital, and residential status; (B) family structure, relative profile, and interaction; (C) health status and behavior; (D) social support and exchange; (E) work history; (F) leisure, activities, and attitudes, views; and (G) economic status. The data on community-dwelling older adults aged 50 and over were drawn from the first wave of surveys for this project.

The survey of the USR project was first explained to the heads of the administrative districts and community leaders who helped to recruit the eligible participants. Then, face-to-face interviews were conducted using hard paper to collect information at local community centers, places of gathering, or residential areas with the assistance of local volunteers and interviewers after receiving informed consent from the participants. All staff members were required to attend interviewer training before the formal fieldwork, and the wearing of masks was required when surveying older adults aged 50 years and over living in the community. The principal investigators decided to exclude inappropriate questionnaires based on the following exclusion criteria: (a) those who had severe cognitive impairments; (b) those who were bed-ridden; and (c) those who were unwilling to disclose their information, or did not sign the informed consent form. The response rate was 89% and a total of 1,232 individuals were included.

Measures

The independent variables were multidimensional domains, including demographics, physical health, mental health, and social ties. More details on the included variables are described as follows:

- a) **Demographics:** Gender, age, education, marital status, and living arrangement.
- b) **Physical health:** Number of major chronic diseases, where those with two or more major chronic diseases were identified as having multimorbidities (Déruez-Luyet et al., 2017). Dental problems were evaluated dichotomously (0=no, 1=yes). Exercise was evaluated by one item (“Do you exercise regularly or not?”) with a dichotomous response (0=no, 1=yes).
- c) **Mental health:** Perceived stress was evaluated using the well-established 14-item Perceived Stress Scale (14 items; $\alpha = .77$) rated on a 5-point Likert scale (0=never, 1=seldom, 2=sometimes, 3=fairly often, and 4=very often). Due to unavailable standard cut-off values in the Chinese population, we categorized 75% quartile scores >27 as high perceived stress. Depression was measured using the Center for Epidemiological Studies Depression Scale (11 items; $\alpha = .72$). The cutoff score for the CES-D (Cheng & Chan, 2005) was ≥ 12 for males and ≥ 10 for females, which indicated worse psychosocial performance. The frequency of laughter was evaluated with one item (“How often do you laugh in your daily life?”) with three response categories (never/seldom=1, at least once a week=2, and almost every day=3). Positive attitude toward aging was evaluated with five items from the Taiwan Longitudinal Study in Aging Project (Tai et al., 2021) on a 5-point Likert scale (strongly agree=5, agree=4, neither agree nor disagree=3, disagree=2, strongly disagree=1). The scale was found to be highly reliable (5 items; $\alpha = .80$).
- d) **Social ties:** Subjective social status was measured with one item using the MacArthur Scale of Subjective Social Status based on the English Longitudinal Study of Ageing (ELSA). The social support from the family scale ($\alpha = .92$) comprised 10 items (Huang et al., 2016) rated on a 3-point Likert scale (often=3, sometimes=2, and seldom=1). Place attachment to the community was evaluated using one item (“How attached are you to the community where you live?”) from the Taiwan Longitudinal Study in Aging Project (Tai et al., 2021) with dichotomous responses (0=no, 1=yes).

Psychological well-being. The dependent variable was the 5-item World Health Organization Well-Being Index (5 items; $\alpha = .94$), which is a widely used questionnaire that assesses subjective psychological well-being (Topp et al., 2015). A previous study showed the WHO-5 was a reliable and valid instrument in a community population in Taiwan (Lin et al., 2013). The diagnostic accuracy of the cut-off score was below 50 (Topp et al., 2015), therefore we used a cut-off score of ≤ 50 to

indicate poorer (groups with lower scores) or better (groups with high scores) subjective psychological well-being.

Analyses

In this study, the data analyses included descriptive and inferential statistics performed using R software. Due to random missing data, predictive mean matching using the MICE package was used to fill in the missing values. Multivariate logistic regression was used to examine the multidimensional determinants of well-being. Diehl et al. (2011) found the critical value of mental health status was less discriminative in middle-aged and older populations. Thus, we reported the average marginal effect (AME) in the logistic regression to determine the relative strengths between the variables (Norton et al., 2019) in this study instead of the specific critical value for the positive and negative effects on psychological well-being. The odds ratio (OR) and marginal effects (AME) analysis were conducted using the margins package to express the strength of the association based on the logistic regression (Norton et al., 2019). Hypothesis testing was conducted, where a p -value less than .05 was considered statistically significant.

Results

Description of the Samples

The descriptions of the 1,232 participants are shown in Table 1. The two groups were divided based on the scores of the WHO-5 and all between-group demographic differences were statistically significant except for gender and age. The group with lower scores ($n=260$) had the highest proportion of respondents with lower education (51.2%), multimorbidities (63.5%), dental problems (62.7%), more perceived stress (54.6%), and depression (55.8%). In contrast, the group with higher scores ($n=972$) tended to have a greater proportion of respondents with partners (74.4%), permanent residence (96.0%), regular exercise (65.8%), laughing almost every day (60.0%), and perceived place attachment to the community (77.1%). Besides, older adults in the group with higher scores had a more positive attitude toward aging ($M=14.20$, $SD=2.66$), higher subjective social status ($M=6.33$, $SD=1.57$), and perceived more social support from family ($M=24.53$, $SD=5.05$) compared to the group with lower scores.

Factors Associated With Psychological Well-Being

McFadden’s pseudo R^2 (McFadden, 1973) was used to test the goodness-of-fit of the logistic regression model, where a value between .20 and .40 was considered a good fit (Hu & Lo, 2007). The pseudo R^2 value in the present study was .375. All multidimensional determinants influencing well-being are shown in Table 2. In the physical health domain,

Table 1. Basic Description of the Study Sample (n = 1,232).

Baseline characteristic	Low group (total = 260)		High group (total = 972)		p-Value
	n/M	%/SD	n/M	%/SD	
Gender					.544
Male	117	45.00	417	42.90	
Female	143	55.00	555	57.10	
Age	66.89	10.42	65.64	9.24	.06
Education levels					<.001***
Below high school	133	51.20	326	33.50	
High school and over	127	48.80	646	66.50	
Marital status					<.001***
Alone/widowed	102	39.20	249	25.60	
With partners	158	60.80	723	74.40	
Living arrangement					<.001***
Alternate housing	30	11.50	39	4.00	
Permanent housing	230	88.50	933	96.00	
Multimorbidity					<.001***
No	95	36.50	566	58.20	
Yes	165	63.50	406	41.80	
Dental problems					<.001***
Yes	163	62.70	378	38.90	
No	97	37.30	594	61.10	
Exercise habits					
No	153	58.80	332	34.20	
Yes	107	41.20	640	65.80	
Perceived stress					<.001***
No	118	45.40	797	82.00	
Yes	142	54.60	175	18.00	
Depression					
No	115	44.20	787	81.00	
Yes	145	55.80	185	19.00	
Frequency of laughter					<.001***
Never/seldom	35	13.50	18	1.90	
At least once a week	178	68.50	371	38.20	
Almost every day	47	18.10	583	60.00	
Positive attitude toward aging	10.94	2.85	14.2	2.66	<.001***
Subjective social status	4.88	1.39	6.33	1.57	<.001***
Social support from family	20.83	5.28	24.53	5.05	<.001***
Place attachment to the community					<.001***
No	145	55.80	223	22.90	
Yes	115	44.20	749	77.10	

The p-value was denoted as * $p < .05$. ** $p < .01$. *** $p < .001$.

no dental problems and a habit of exercising exhibited significant differences (OR=1.725; 95% CI [1.178, 2.533]; $p = .005$; and OR=2.261; 95% CI [1.531, 3.352]; $p < .001$, respectively). In addition, all variables in the mental health domain were significant. Older adults with more perceived stress (OR=0.403; 95% CI [0.272, 0.598]; $p < .001$) and higher levels of depression (OR=0.458; 95% CI [0.307, 0.683]; $p < .001$) were associated with a low sense of well-being. On the contrary, those who laughed every day were associated with higher levels of well-being than those who seldom laughed (OR=3.734; 95% CI [1.678, 8.406]; $p = .001$) and those with a positive attitude toward aging had better well-being (OR=1.200; 95% CI [1.116, 1.292]; $p < .001$). Finally, in the social ties domain, subjective

social status (OR=1.397; 95% CI [1.225, 1.596]; $p < .001$), social support from family (OR=1.055; 95% CI [1.017, 1.095]; $p = .004$), and place attachment to the community (OR=1.792; 95% CI [1.215, 2.636]; $p = .003$) showed significant differences, indicating that individuals who perceived themselves as having a higher social status, more family support, and community place attachment were associated with higher levels of well-being.

The Relative Strengths of Potential Factors to Psychological Well-Being

The marginal effects analysis quantified the incremental risk associated with each factor and was aimed toward

Table 2. Determinants of the Different Domains Influencing Well-Being of the Community-Dwelling Older Adults in the Multivariate Logistic Regression.

Effect	Estimate	95% CI	p-Value
		[LL, UL]	
Demographics			
Female (ref: male)	0.941	[0.641, 1.377]	.753
Age	1.000	[0.979, 1.021]	.986
High school or over (ref: below high school)	1.227	[0.820, 1.832]	.317
Marital status with partners (ref: alone/widowed)	0.747	[0.493, 1.121]	.163
Living with permanent residence (ref: alternate residence)	1.522	[0.740, 3.099]	.249
Physical health			
Multimorbidity (ref: no)	0.709	[0.484, 1.036]	.075
No dental problems (ref: yes)	1.725	[1.178, 2.533]	.005**
Regular exercise (ref: no)	2.261	[1.531, 3.352]	<.001***
Mental health			
Perceived stress (ref: no)	0.403	[0.272, 0.598]	<.001***
Depression (ref: no)	0.458	[0.307, 0.683]	<.001***
Laughing at least once a week (ref: never/seldom)	1.820	[0.859, 3.921]	.120
Laughing almost every day (ref: never/seldom)	3.734	[1.678, 8.406]	.001**
Positive attitude toward aging	1.200	[1.116, 1.292]	<.001***
Social ties			
Subjective social status	1.397	[1.225, 1.596]	<.001***
Social support from family	1.055	[1.017, 1.095]	.004**
Place attachment to the community (ref: no)	1.792	[1.215, 2.636]	.003**

Note. Estimates was odds ratio (OR); CI= confidence interval; LL=lower limit; UL=upper limit. The p-value was denoted as * $p < .05$. ** $p < .01$. *** $p < .001$.

determining changes in the probability of the outcome variables when the risk factor changed by 1 unit while holding all the other explanatory variables constant (Norton et al., 2019). This allowed for one summary effect of an independent variable even when multiple linked coefficients were included in the model (Mize, 2019) and avoided the problematic identification (scaling) issues of the estimates (Breen et al., 2018). In logistic regression, the most common approach is to report the average marginal effect across individuals (Norton et al., 2019), knowing the relative strengths between the variables. Table 3 shows the average marginal effects and related 95% CI for the statistically significant factors from the multivariate logistic regressions that influence well-being, implying their predicted probabilities while holding all the other covariates at their mean.

In the physical health domain shown in Table 3, older people who habitually exercised had a 0.086 greater predicted likelihood of having a sense of well-being as compared to their counterparts who did not exercise regularly. Those with no dental problems had a 0.055 greater predicted likelihood of having a sense of well-being than those who had dental issues. As for the mental health domain, individuals who were experiencing stress or depression had a lower predicted probability of having a sense of well-being than those who were not (-1.01 and -0.09, respectively), and older people who laughed every day or those with a positive attitude toward aging had a greater predicted likelihood of

having a sense of well-being than their counterparts (0.15 and 0.018, respectively). Finally, in the social ties domain, those with higher subjective social status, more family support, or place attachment to the community had a greater predicted likelihood of having a sense of well-being than their counterparts (from 0.005 to 0.061). We have summarized the significant risk and protective factors from the marginal effect analysis in Figure 1 which shows a visual representation of how these determinants relate to well-being.

Discussion

The World Health Organization (WHO, 2002) defined healthy aging as the process of growing older without growing old through the maintenance of physical, social, and spiritual activities throughout the lifetime, which describes a process of optimizing opportunities for health, participation, and security to enhance the quality of life as people age and reflects ongoing interaction between individuals and the environments they inhabit. To the best of our knowledge, the present study was the first to examine the effects of multidimensional factors (demographics, physical health, mental health, and social ties) on well-being among community-dwelling older adults during the early-stage of the COVID-19 pandemic in Taiwan. The findings support the presence of multiple needs related to well-being in the physical, mental health, and social domains, and we have

Table 3. Average Marginal Effects for the Multidimensional Determinants of Well-Being Among the Community-Dwelling Older Adults.

Effect	AME	SE	95% CI	p-Value
			[LL, UL]	
Physical health				
Regular exercise	0.086	0.022	[0.043, 0.128]	<.001***
No dental problems	0.055	0.020	[0.016, 0.094]	.006**
Mental health				
Perceived stress	-0.101	0.024	[-0.148, -0.053]	<.001***
Depression	-0.085	0.024	[-0.132, -0.038]	<.001***
Laughing never or seldom				
At least once a week	0.075	0.052	[-0.027, 0.178]	.150
Almost everyday	0.148	0.054	[0.042, 0.254]	.006**
Positive attitude toward aging	0.018	0.004	[0.011, 0.025]	<.001***
Social ties				
Subjective social status	0.033	0.007	[0.020, 0.046]	<.001***
Social support from family	0.005	0.002	[0.002, 0.009]	.004**
Place attachment to the community	0.061	0.022	[0.019, 0.104]	.005**

Note. AME = average marginal effect; CI = confidence interval; LL = lower limit; UL = upper limit.

The p-value was denoted as * $p < .05$. ** $p < .01$. *** $p < .001$.

**Figure 1.** Multidimensional determinants of well-being.

Note. Protective factors are in green (+) and risk factors are in red (-).

articulated the potential practical implications for health practice during the COVID-19 crisis in this study.

Multidimensionality on Well-Being

The multidimensional perspective on well-being could be useful for developing valuable health policies and related public practices that serve protective functions. Our study validated the positive associations between physical health and well-being during the COVID-19 period. A previous study showed that mild to moderate

physical activity such as home gardening was associated with greater subjective well-being during COVID-19 (Corley et al., 2021), which concurred with our findings that those who engaged in regular exercise had a better sense of well-being. In addition, oral health and functional tooth retention in older adults can prevent physical decline by fostering a healthy diet and enhancing the quality of life (Tonetti et al., 2017), consistent with our findings demonstrating that subjects who did not have dental problems had a better sense of well-being.

The mental health domain echoes dual (risk/protective) needs among community-dwelling older adults. On the one hand, stress or depression were risk factors for well-being in our findings. On the other hand, laughing almost every day and having a positive attitude toward aging had a positive impact on well-being, which was similar to recent studies which found that Japanese adults who laughed every day had lower adverse outcomes than those who never laughed (Tamada et al., 2021) and that negative self-perceptions of aging were strongly associated with emotional outcomes under COVID-19 lockdown restrictions (Losada-Baltar et al., 2021).

Regarding the social ties domain, as a result of following the rules regarding lockdown or reductions in leisure services and access to community facilities (Son et al., 2021), seniors spent more time with families and were home-bound. Place attachment reflects a concept of having a sense of belonging to the community or a sense of security. Those who have higher levels of place attachment tend to trust others more, feel less isolated and establish better communication with other people (Afshar et al., 2017). The present study demonstrated that older adults with self-perceived place attachment to

their community were associated with feeling a sense of well-being during the COVID-19 period, consistent with findings from other studies which found that place attachment was a strong predictor of well-being in older populations (Afshar et al., 2017) and that there was an association between a sense of community and subjective well-being (Guo et al., 2021). Another key result of this study was that individuals with more social support from family members had higher levels of well-being, also supported by findings that show associations between social support and psychological outcomes during the early COVID-19 period in China (Yu et al., 2020). Furthermore, we found an association between subjective social status and well-being, similar to findings suggesting that lower socioeconomic position is associated with poorer subjective health and well-being (Read et al., 2016).

Implications of the Multidimensional Perspective of the COVID-19 Crisis

When COVID-19 spread across countries, it deepened our understanding of existing health or social inequalities. However, the health inequalities in older populations were addressed by multidimensional policies to achieve the SDGs to promote good health and well-being for all (Leal Filho et al., 2020). Our results emphasize the multiple needs among community-dwelling older adults and appropriate interventions to improve well-being during the COVID-19 outbreak. A previous study showed that mild to moderate physical activity improved the immune system's response to viral respiratory infections (Son et al., 2021), therefore leisure home gardening activities that put people in contact with nature might offer a promising exercise option for older adults (Scott et al., 2020) instead of group-based exercise. Besides, it was evident in our findings and in those of previous studies that reducing barriers to oral care for vulnerable older adults are recommended to prevent physical decline (Tonetti et al., 2017) and enhance well-being.

Indeed, the COVID-19 outbreak has had a massive impact on mental health (Bueno-Notivol et al., 2021). We should bear in mind that viewing stressful social media content during this period may lead to more negative outcomes as well as depression (Kadam & Atre, 2020). Even though associations between risk factors such as depression or stress and adverse outcomes have been thoroughly validated, maintaining a positive attitude toward aging may also improve the subjective well-being of older individuals based on our findings during the COVID-19 crisis. Therefore, health policies comprised of preventive and emotion-focused strategies (Charles & Carstensen, 2007) to improve psychological well-being during this period are strongly recommended.

Because community-dwelling older adults are more likely to have lower socioeconomic status, the outbreak of the COVID pandemic would double jeopardize their

well-being. Therefore, preventing seniors from feeling socially disadvantaged should be a part of critical social policies and social development to improve their psychological well-being. More importantly, it should be noted that family support and place attachment to the community played roles in their sense of well-being as well. Our findings add valuable information that can serve as a reference for policymakers when dealing with the well-being of community older adults at the individual level, such as their socioeconomic status and changeable social ties. Also, family-based recommendations and strengthening place attachment and living arrangements at the community level during the COVID-19 outbreak should be considered.

Although it has been well-documented that psychological well-being is multidimensional, our findings of the potential factors such as attitude toward aging as well as place attachment to the community can contribute to the development of innovative intervention activities during the COVID-19 crisis. According to the WHO world report on aging and health, healthy aging is defined as the "ongoing process of developing and maintaining the functional ability that enables well-being in older age" (WHO, 2015). To improve the lives of older adults and foster healthy aging, the WHO (2020) published (UN Decade of Healthy Aging 2020-2030) and two out of the four proposed goals were: (1) to change how we think, feel, and act toward age and aging and (2) to ensure that communities foster the abilities of older people. Interdisciplinary efforts to develop effective programs or interventions to reduce ageism have become crucial for creating more age-friendly societies (Chu et al., 2020). Not only is maintaining positive attitudes toward aging useful for enabling seniors to have higher levels of psychological well-being, but also the provision of age-friendly social resources under the concept of place attachment would enhance their psychological well-being.

Limitations and Future Studies

There are several limitations in our study. First, a comparative study of the period before and after the COVID-19 crisis should be considered in future studies. Although the present study was the first wave of our series of USR projects, we plan to follow the same groups of older adults to examine the trajectories and changes in the effects. More importantly, a relatively high number of confirmed cases were found in mid-May 2021 in Taiwan, so the influence of government action and response to the COVID-19 outbreak can be evaluated in our next study. Thirdly, future research should also try to examine the ratio of dimensions because the critical value was not universal across age. Finally, due to the higher response rate required for face-to-face interviews and the challenges inherent in data collection under COVID-19 restrictions, future studies with more representative sampling techniques instead of convenience sampling

are recommended. Therefore, the results of this study should be generalized with caution.

Conclusion

During the COVID-19 period, the multidimensional determinants of psychological well-being at the individual level such as physical health, socioeconomic status, and family-based interventions together with those at the community level related to social ties may provide information for policymakers and stakeholders for allocating resources and strengthening actions. Based on the factors identified in our study which influence psychological well-being among community-dwelling older adults, it is imperative to incorporate multiple-way recommendations and maximize health opportunities at both the individual and community level to ensure good health and well-being during the stressful COVID-19 pandemic.

Declaration of Conflicting Interests

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Ethical Approval

Anonymity and confidentiality were safeguarded for all participants. Firstly, all the participants in the sample units were informed regarding the purpose of this study and their right to voluntarily respond to the questionnaire. To those who participated, no negative effects were granted. The ethical approval of this research was obtained by National Cheng Kung University Human Research Ethics Committee (Approval No: A-ER-109-361).

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