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Original Article

Impact of Social Support, Uncertainty, Depression, and Self-Efficacy on the Quality of Life in Older Adults

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SUMMARY

Background: In an aging society, the physical and mental health of older adults significantly influences their quality of life (QoL). While mental health issues such as depression are becoming more prevalent, there is limited research on the combined effects of these factors. This study aimed to examine the impact of social support, uncertainty, depression, and self-efficacy on the QoL of adults aged 65 and older, using structural equation modeling (SEM).

Methods: Data were collected from 350 participants using five validated self-report scales between March 28 and April 10, 2022. SEM, mediation analysis, and path analysis were employed to analyze the data.

Results. Social support, depression, and self-efficacy had direct effects on QoL. Additionally, social support, uncertainty, and depression directly influenced self-efficacy. Social support and uncertainty directly affected depression, while social support also directly impacted uncertainty. Social support influenced QoL through five pathways involving uncertainty, depression, and self-efficacy.

Conclusion. Older adults may internalize negative emotional responses, leading to chronic illnesses due to uncertainty and depression. Therefore, physical activity and mental health programs are essential. Disease management education for older adults should be systematized, focusing on conveying medical information and teaching effective coping strategies for managing illnesses.

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1. Introduction

Aging often leads to chronic conditions such as respiratory disorders, diabetes, sleep disturbances, and cognitive decline. These physical symptoms, along with emotional and psychological challenges, are influenced by factors like anxiety, depression, hopelessness, alienation, and self-efficacy.¹ Studies on respiratory health and physical activity,^{2,3} anxiety, depression, self-efficacy,^{4–6} and quality of life (QoL)^{7,8} have been prevalent since 2000. Additionally, anxiety and uncertainty about disease progression can contribute to depression and stress,^{9,10} ultimately diminishing QoL, limiting physical function, and fostering feelings of helplessness.¹¹ Concerns about prognosis and worsening symptoms can further complicate symptom management, particularly pain.¹² This uncertainty exacerbates a range of physical, emotional, and psychological symptoms, including anxiety and depression.^{13,14}

The interplay among social support, uncertainty, depression, self-efficacy, and QoL can be both positive and negative. Depression negatively impacts QoL in older adults by fostering feelings of role loss and impeding recovery from functional impairments.¹⁵ Uncertainty surrounding illness and treatment, often due to a lack of understanding, can heighten anxiety and stress, further lowering QoL.¹⁶

In contrast, social support from family, friends, and community can enhance mental and physical health in older adults, reducing feelings of isolation and depression.¹⁷ Self-efficacy is critical in improving QoL, as it influences an individual's capacity to plan and execute actions for desired outcomes across various situations.¹⁸ High self-efficacy empowers older adults to manage their physical and mental health effectively, thereby improving their QoL.

Health-related QoL reflects an individual's subjective well-being across physical, mental, social, and spiritual dimensions.¹⁹ It can be influenced by healthcare interventions and is particularly indicative of the QoL among those with chronic illnesses. It also serves as a key metric for identifying vulnerable populations, particularly those with disabilities, and for evaluating health policies and services.²⁰

Extensive research has focused on the direct impacts of social support, uncertainty, depression, and self-efficacy on QoL in older adults with chronic conditions. However, few studies have examined the mediating effects of these variables on QoL. This study seeks to address this gap by investigating the QoL of older adults aged 65 and older, identifying measures to improve it. Based on prior research, we developed a hypothetical model that positions social support as the exogenous variable and includes uncertainty, depression, self-efficacy, and QoL as endogenous variables affecting older adults. Structural equation modeling (SEM) was employed to examine the mediating relationships among these variables, providing foundational data to inform strategies for improving QoL among older adults.

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2. Patients and methods

2.1. Participants

This study was conducted from March 28 to April 10, 2022, with participants recruited from four senior welfare centers in Gwangju, South Korea. The variables of interest — social support, uncertainty, depression, self-efficacy, and QoL — were selected based on a thorough literature review. The definitions and measurement tools for these variables were evaluated for reliability and validity, with data collected via a survey following a preliminary study.

Initially, 350 older adults aged 65 and above were selected. Inclusion criteria required participants to be able to communicate, comprehend, and respond to the questionnaire; to be physically capable of participating; and to have a Mini-Mental State Examination (MMSE) score of 24 or higher. Participants were excluded if they refused consent, had cognitive impairments, or a history of organ transplantation.

Participants completed the survey independently, although assistance was provided for those having difficulty reading or writing. Out of 350 questionnaires distributed, 30 were excluded due to non-responses, dropouts, or incomplete answers. Ultimately, data from 320 questionnaires were analyzed.

2.2. Instruments

2.2.1. Multidimensional Scale of perceived social support (MSPSS)

This 12-item scale²¹ by Zimet et al. assesses family, friend, and medical personnel support on a 7-point Likert scale, with higher scores indicating greater levels of social support. Cronbach's α was .824.

2.2.2. Mishel uncertainty in Illness Scale Community Form (MUIS-C)

The MUIS-C was used to assess uncertainty.²² This scale, developed by Mishel, comprises 33 items: 13 on ambiguity, 7 on complexity, 7 on inconsistency, 5 on unpredictability, and 1 other item not categorized under the four subscales. It uses a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with total scores ranging from 33 to 165. Higher scores indicate greater uncertainty. Cronbach's α was .616.

2.2.3. Short-Form Geriatric Depression Scale

Yesavage and Sheikh's Short-Form Geriatric Depression Scale (SGDS) was employed.²³ This 15-item bipolar scale includes 10 negative items scored as 1 and 5 positive items scored as 0. The five positive "no" questions are reverse-scored. Higher total scores indicate more severe depression. Cronbach's α was .920.

2.2.4. Physical Self-Efficacy Questionnaire

Mahoney's Physical Self-Efficacy Questionnaire (PSEQ) was used to measure self-efficacy.²⁴ The PSEQ comprises nine items: 3 on self-confidence, 3 on self-regulatory efficacy, and 3 on task difficulty preferences. Responses are scored on a 4-point Likert scale ranging from 1 (not at all) to 4 (very much). Higher scores indicate greater self-efficacy. Cronbach's α was .858.

2.2.5. World Health Organization quality of life assessment instrument -100

Quality of life was measured using the Korean version of the World Health Organization Quality of Life Short Form

(WHOQOL-BREF), adapted by Min et al.²⁵ This version comprises 24 items: 7 on physical health, 6 on psychological health, 3 on social health, and 8 on the living environment. Responses are scored on a 5-point Likert scale, with higher scores indicating better QoL. Cronbach's α was .940.

2.3. Data collection

Participants with chronic diseases were selected to explore relationships among uncertainty, depression, and their impact on older adults' QoL. A preliminary survey conducted on March 7, 2022, with 50 older adults at a senior center ensured the appropriateness of the measurement tools.

2.4. Ethical considerations

This study was approved by the Institutional Review Board of Nambu University (IRB No. 1041478-2021-HR-028) and adhered to the ethical guidelines outlined in the Helsinki Declaration. Participants were informed about the study's purpose, provided signed consent, and assured that participation was voluntary and data confidential.

2.5. Statistical analysis

Data were analyzed using SPSS version 25.0 program (IBM SPSS Statistics for Windows, IBM Corp., USA) and AMOS 27.0. Participants' general characteristics were analyzed using frequency analysis and descriptive statistics. The fit and parameters of the structural regression model were estimated using various fit indices: Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Statistical significance was determined at the .05 level.

3. Results

3.1. Participants' general characteristics

Table 1 presents the participants' general characteristics and descriptive statistics.

3.2. Estimated parameters of the final research model and statistical significance testing

The structural regression coefficients of the final research model were estimated and tested for statistical significance, as shown in Table 2 and Figure 1.

3.3. Estimating the indirect effects of the final research model and testing for statistical significance

Using AMOS 27.0, five indirect effects were established: [social support \rightarrow depression \rightarrow QoL], [social support \rightarrow self-efficacy \rightarrow QoL], [social support \rightarrow depression \rightarrow self-efficacy \rightarrow QoL], [social support \rightarrow depression \rightarrow self-efficacy \rightarrow QoL], [social support \rightarrow uncertainty \rightarrow depression \rightarrow QoL], and [social support \rightarrow uncertainty \rightarrow self-efficacy \rightarrow QoL]. Subsequently, the bootstrapping procedure was applied to estimate these indirect effects and perform statistical significance tests, with the results presented in Figure 2.

The statistical significance of the regression coefficients indicating the direct effects of the variables within the structural regression model was assessed. The direct effects of social support ($B =$

Table 1

General characteristics and descriptive statistics of the study participants (n = 320).

Variable	Category	n	%
Gender	Male	90	28.13
	Female	230	71.88
Age (years)	65–69	88	27.50
	70–79	102	31.88
	80–89	123	38.44
	≥ 90	7	2.19
Number of children	2	19	5.94
	3	70	21.88
	4	125	39.06
	5	71	22.19
	6	33	10.31
	7	2	.63
Education level	None	103	32.19
	Elementary school	88	27.50
	Middle school	58	18.13
	High school	29	9.06
	≥ University	42	13.13
Living situation	Alone	160	50.00
	With spouse	160	50.00
Religion	None	117	36.56
	Christian	130	40.63
	Catholic	35	10.94
	Buddhist	38	11.88
Marital status	Married	160	50.00
	Widowed	159	49.69
	Divorced	1	.31
Economic status	Difficult	4	1.25
	Average	282	88.13
	Good	32	10.00
	Very good	2	.63
Housing situation	Own home	313	97.81
	Public rental housing	7	2.19
Comorbidity	High blood pressure	34	10.63
	Diabetes	79	24.69
	Asthma, pneumonia, and lung disease	88	27.50
	Neuralgia, arthritis, and chronic back pain	112	35.00
	None	7	2.19

Descriptive statistics of the participants' general characteristics (n = 320).

Characteristic	Mean ± SD	Range
Age (years)	77.36 ± 8.10	65–97
Height (cm)	157.43 ± 7.36	134–175
Weight (kg)	51.05 ± 8.74	38–69
BMI (kg/m ²)	20.48 ± 2.41	15.8–25.8
Oxygen saturation (%)	96.64 ± 2.77	83–100
Pulse (bpm)	77.17 ± 10.84	51–117

Note: BMI, body mass index; SD, standard deviation.

.347, $p = .002$), depression ($B = -.517$, $p = .001$), and self-efficacy ($B = 1.356$, $p = .001$) on QoL were found to be statistically significant (Table 3). Similarly, the direct effects of social support ($B = .254$, $p = .002$), depression ($B = -.163$, $p = .001$), and uncertainty ($B = -.126$, $p = .013$) on self-efficacy were statistically significant. Additionally, the direct effects of social support ($B = -.869$, $p = .001$) and uncertainty ($B = .699$, $p = .001$) on depression were significant, as was the direct effect of social support on uncertainty ($B = -.343$, $p = .005$). Given that the fit of the modified model was deemed satisfactory and all parameters were statistically significant, it was confirmed as the final research model.

The indirect effect of [social support → depression → self-efficacy → QoL] was statistically significant ($B = .192$, $p = .011$), as was the indirect effect of [social support → uncertainty → depression → QoL] ($B = .124$, $p = .011$) (Table 4). Furthermore, the indirect ef-

Table 2

Statistical significance test results of the final research model fit.

Model	NPAR	DF	CMIN	NC	TLI	CFI	SRMR	RMSEA	
								LO	HI
Final model	41	94	232.39	2.51	.93	.95	.03	.06	.08

Note: NPAR, number of parameters in the model; DF, degrees of freedom; CMIN, chi-square value; NC, Normed chi-square; TLI, Tucker-Lewis index; CFI, comparative fit index; SRMR, standardized root mean square residual; RMSEA, root mean square error of approximation; LO, lower bound of RMSEA; HI, upper bound of RMSEA.

fects of [social support, uncertainty, self-efficacy, QoL] were statistically significant ($B = .058$, $p = .037$).

4. Discussion

This study examined the relationships among social support, uncertainty, depression, and self-efficacy in relation to the QoL of older adults aged 65 years and older. The following results were confirmed:

First, social support significantly influences older adults' QoL. A positive perception of social correlates with higher QoL. Enhancing social support can substantially improve the QoL of older adults, particularly through family support, which is essential for adaptation to life's challenges. The results align with the assertions of Hamburg and Adams²⁶ and Cobb,²⁷ who emphasize that family provides the majority of social support as individuals age. The findings highlight the need for innovative policies to bolster social support networks for older adults.

Second, depression directly affects older adults' QoL, with a more negative perception of depression correlating with lower QoL. Older adults experiencing depression often report diminished QoL, highlighting the necessity for healthcare providers to recognize and address mental health concerns alongside physical symptoms. Depression in older adults reflects their self-perceived mental health.²⁸ Subjective health status — the individual's perception and assessment of their health — significantly influences mental health behaviors and overall QoL,²⁹ illustrating that while depression is not caused by aging, it is often related to the physical and mental health challenges commonly experienced in later life.³⁰ Depression can lower the QoL of older adults, causing reduced physical activity and social isolation due to psychological withdrawal, ultimately leading to an overall decline in QoL.

Third, self-efficacy directly influences older adults' QoL. Higher self-efficacy correlates with better QoL, as it reflects individuals' perceptions of their capabilities in managing health-related behaviors. Older adults with high self-efficacy are more likely to engage in health-promoting activities, while those with low self-efficacy may struggle to access social support or participate in health-promoting behaviors.³¹ Empowering older adults to promote their mental health through daily activities is essential, particularly given their increased vulnerability to stress and depression. They should be encouraged to recognize and enhance their self-efficacy.

Fourth, social support significantly impacts older adults' self-efficacy, suggesting that higher levels of social support enhance older adults' self-efficacy. Our results identify several sources of self-efficacy: achievement experiences, vicarious experiences, verbal persuasion, and physiological and emotional states.³² Verbal persuasion, including encouragement and praise, significantly shapes self-efficacy, underscoring the importance of social support for older adults. For individuals lacking family support, friends, neighbors, and healthcare providers can serve as valuable alternatives. A robust

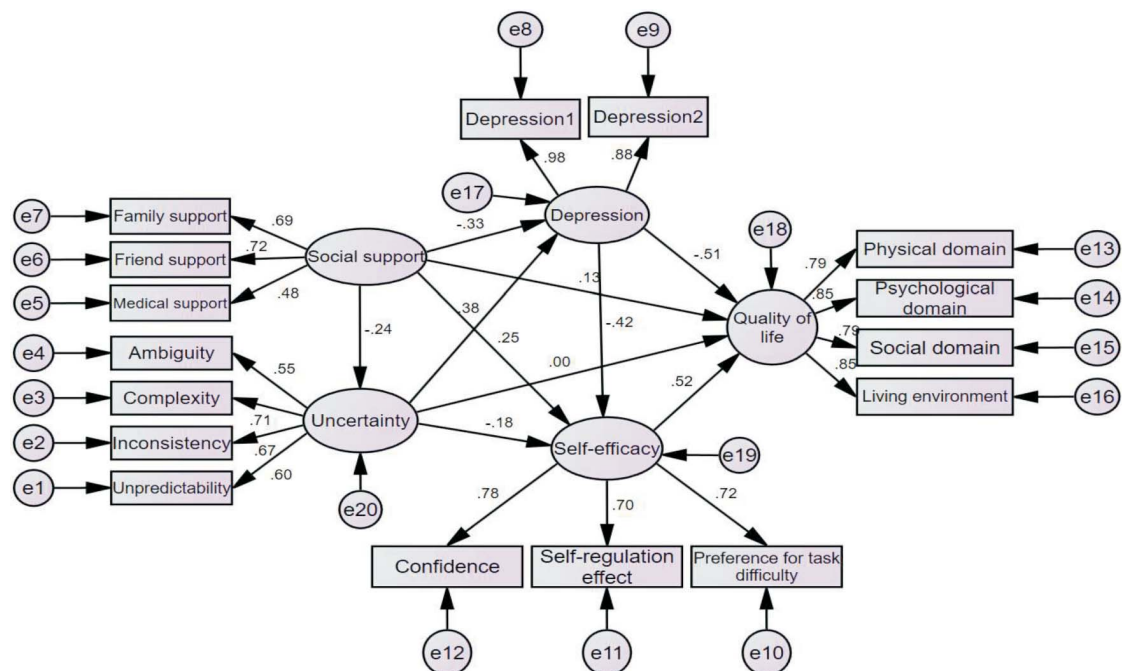


Figure 1. Estimated parameters of the final research model.

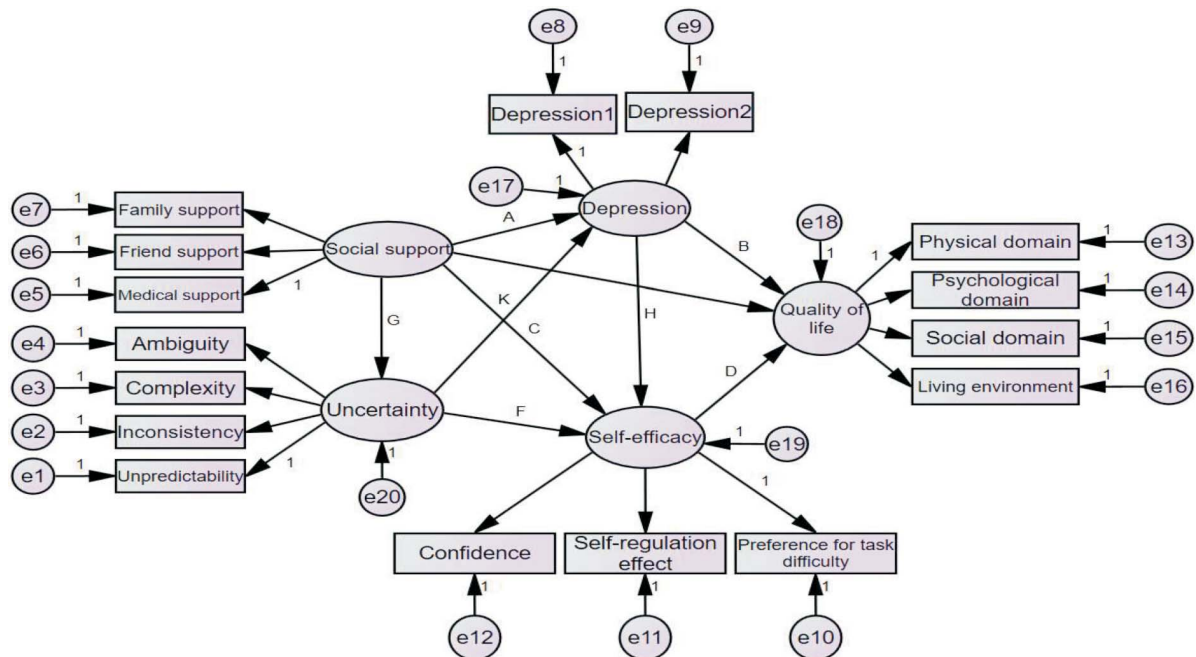


Figure 2. Indirect effect estimates of the final research model. A: Path showing the effect of social support on depression. B: Path showing the effect of depression on quality of life. C: Path showing the effect of social support on self-efficacy. D: Path showing the effect of self-efficacy on quality of life. F: Path showing the effect of uncertainty on self-efficacy. G: Path showing the effect of social support on uncertainty. H: Path showing the effect of depression on self-efficacy. K: Path showing the effect of uncertainty on depression.

Table 3

Direct effect estimations and statistical significance results.

Direct effect	B	SE	CR	p-value	β
Social support → Quality of life	.347	.111	3.14*	.002	.130
Depression → Quality of life	-.517	.078	-11.37*	.001	-.513
Self-efficacy → Quality of life	1.356	.148	9.18*	.001	.522
Social support → Self-efficacy	.254	.081	3.14*	.002	.247
Uncertainty → Self-efficacy	-.126	.050	-2.49*	.013	-.177
Depression → Self-efficacy	-.163	.028	-5.77*	.001	-.419
Social support → Depression	-.869	.197	-4.42*	.001	-.328
Uncertainty → Depression	.699	.127	5.49*	.001	.382
Social support → Uncertainty	-.343	.122	-2.815*	.005	-.237

Note: CR, critical ratio; SE, standard error.

support system is crucial for promoting health and encouraging physical activity among older adults.

Fifth, uncertainty directly affects older adults' self-efficacy; those experiencing higher uncertainty generally have lower self-efficacy due to differences in accessing and understanding information. This uncertainty can heighten anxiety due to a lack of clarity and predictability.³³ To mitigate uncertainty, we recommend interventions providing education on disease management and prognosis.

Sixth, depression directly affects older adults' self-efficacy. Our findings indicate that older adults with higher depression levels exhibit lower self-efficacy, often relying on external solutions to envi-

Table 4

Indirect effect estimation and statistical significance verification results.

Indirect effect	Indirect effect coefficient	
	B	p-value
Social support → Depression → Quality of life	.449	.025
Social support → Self-efficacy → Quality of life	.344	.012
Social support → Depression → Self-efficacy → Quality of life	.192	.011
Social support → Uncertainty → Depression → Quality of life	.124	.011
Social support → Uncertainty → Self-efficacy → Quality of life	.058	.037

ronmental problems.³⁴ McAuley and Blissmer found that declines in physical function negatively impact self-efficacy, revealing that physical limitations can deteriorate mental and emotional states.³ Therefore, strategies promoting self-fulfillment through active programs to alleviate depression may significantly benefit mental health.

Seventh, social support directly influences depression levels in older adults. Those with greater social support experience lower depression levels, which is critical for their physical, emotional, and psychological well-being.³⁵ Older adults lacking social support are more vulnerable to stress and depression. Strengthening social support systems and promoting physical activity through daily activities can enhance social engagement and mental health in the community.

Eighth, uncertainty impacts depression in older adults. Higher uncertainty levels often correlate with increased depressed, primarily due to inadequate information about unpredictable diseases. Older adults with chronic conditions face uncertainty that leads to psychological distress and stress, impairing their QoL.^{36,37} Support from caregivers and healthcare providers can help them shift from negative emotions to more positive perspectives.

Finally, social support influences uncertainty among older adults. Research shows that greater social support corresponds with lower uncertainty. Support from family, friends, and healthcare providers can enhance older adults' adaptability, buffering against stressful situations and providing emotional stability.^{38,39} Medical personnel can alleviate physical pain and psychological anxiety, promoting physical health.

A limitation of this study is the lack of analysis on gender differences among older adults, as gender significantly influences the relationships between social support, uncertainty, depression, self-efficacy, and QoL. Future research could provide more meaningful insights by investigating these differences.

5. Conclusion

Social support, depression, and self-efficacy directly impact the QoL of older adults, while uncertainty does not. However, uncertainty related to minor or unknown illnesses may not significantly influence QoL, as it is not perceived as critical. Social support indirectly affects QoL by influencing uncertainty, depression, and self-efficacy. These results highlight that social support is vital for enhancing the QoL of older adults. Older adults may internalize negative emotions, such as uncertainty and depression, due to chronic illness. Therefore, developing physical activity and mental health programs is essential for reducing these negative emotions.

Disclosure statement

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Data availability statement

All data relevant to the study is included in the article. Data were collected from studies published online or publicly available, and specific details related to the data will be made available upon request.

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