

Mental Well-being as a Predictor of Quality of Life in Elderly Agricultural Workers

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ABSTRACT

Purpose: In this study, it was aimed to evaluate the quality of life and perceived health status of agricultural workers over the age of 65 and to determine the relationship between quality of life and mental well-being.

Methods: This cross-sectional study was conducted on elderly agricultural workers (196 people) living in a rural area in Aydın. The European Quality of Life 5-Dimensions 3-Level Questionnaire was used to assess quality of life and the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was used to assess mental well-being. T test and logistic regression analysis were used for statistical evaluation.

Results: The mean age of the participants was 70.92±6.22 and 50.5% of them were male. In study, three out of four people had experienced some problems in any dimensions of the quality of life. The participants' WEMWBS mean score was 47.12±7.79 and the mean perceived health status score was 50.64±22.03. There was a positive and moderate correlation between mental well-being and perceived health level ($r=0.432$, $p<0.001$). Having problems in at least one of the dimensions about quality of life had increased with age [OR 1.17 (95% CI 1.04-1.32)] and decreased with increasing mental well-being [OR 0.84 (95% CI 0.78-0.90)].

Conclusion: This study shows that more than half of the elderly agricultural workers experience problems about the quality of life, their mental well-being is moderate, and age and mental well-being are determinants of quality of life. The needs of the increasing number of elderly agricultural workers in our country should be evaluated in order to increase their mental well-being and quality of life, interventions should be planned for these needs.

Keywords: Elderly, quality of life, mental health, agricultural workers

Yaşlı Tarım İşçilerinde Yaşam Kalitesinin Yordayıcısı Olarak Mental İyilik Hali

ÖZET

Amaç: Bu çalışmada 65 yaş üzeri tarım işçilerinin yaşam kalitesini ve algılanan sağlık durumunu değerlendirmek, yaşam kalitesiyle mental iyilik hali arasındaki ilişkiyi belirlemek amaçlanmıştır.

Yöntemler: Bu kesitsel araştırma, Aydın ili kırsalında yaşayan yaşlı tarım işçileri (196 kişi) üzerinde yapılmıştır. Avrupa Yaşam Kalitesi Beş Boyutlu Üç Düzeyli Ölçeği, ruhsal iyilik halini değerlendirmede ise Warwick-Edinburgh Mental İyi Oluş Ölçeği (WEMIOÖ) kullanılmıştır. İstatistiksel değerlendirme için T test ve logistic regresyon analizi kullanılmıştır.

Bulgular: Katılımcıların yaş ortalaması 70,92±6,22 ve %50,5'i erkektir. Çalışmada, her dört kişiden üçü yaşam kalitesi boyutlarının herhangi birinde bazı problemler ya da ciddi sorunlar yaşamaktadır. Katılımcıların WEMIOÖ puan ortalaması 47,12±7,79, algılanan sağlık durumu puan ortalaması ise 50,64±22,03'dür. Ruhsal iyilik hali ve algılanan sağlık düzeyi arasında orta, yüksek derecede ilişki vardır ($r=0,432$, $p<0,001$). Yaşam kalitesi ile ilgili boyutlardan en az birinde sorun yaşama yaşla birlikte artmakta [OR 1,17 (%95 GA 1,04-1,32)], artan ruhsal iyilik düzeyiyle [OR 0,84 (%95 GA 0,78-0,90)] azalmaktadır.

Sonuç: Bu çalışma, yaşlı tarım işçilerinin yarısından fazlasının yaşam kalitesi ile ilgili sorunlar yaşadığını, mental iyilik hallerinin orta düzeyde olduğu ve yaş ve mental iyilik halinin yaşam kalitesi üzerinde belirleyici olduğunu göstermektedir. Ülkemizde giderek artan yaşlı tarım çalışanlarının mental iyilik düzeylerini ve yaşam kalitelerini arttırmak amaçlı gereksinimleri değerlendirilmeli ve bu gereksinimlere yönelik müdahaleler planlanmalıdır.

Anahtar Kelimeler: Yaşlı, yaşam kalitesi, ruh sağlığı, tarım işçileri

Socio-demographic changes in the world show that the elderly population is increasing. In the world population trend report, it is stated that with the increase in life expectancy, the population over the age of 65 will exceed 1.5 billion in 2050 and elderly individuals will constitute 16% of the total population (1). The population over the age of 65 has increased by 24% in the last five years according to 2020 data in Turkey (2).

The increasing elderly population also brings about changes in the labor market (3). More elderly population is included in working life with the decreasing young workforce and working life is also stated as a socialization tool for the elderly to provide social participation. On the other hand, elderly individuals become economically vulnerable and impoverished in the capitalist system where every service or product requires money (4). In particular, the elderly population living in rural areas and having a poor education level struggles with poverty and a significant part of them have to work informally in daily jobs and in agriculture (5). 65.5% of the working elderly population works in agriculture according to the data of the Turkish Statistical Institute (6). As a fragile group, elderly agricultural workers are more exposed to physical, chemical, ergonomic and psychological risk factors and their quality of life may be adversely affected (7).

Quality of life is a multidimensional scale proposed as a health indicator of population and is used to evaluate health promotion actions (8). Quality of life is defined by the World Health Organization (WHO) as *"the perception of their position in life in relation to their goals, expectations, standards and concerns; in the context of the culture and value system in which individuals live."*(9). Health-related quality of life is a useful indicator for determining the general health status as it evaluates both the physical and mental health status of the individual and the effect of health status on the quality of life (8). Health-related quality of life for the elderly can be defined as being able to do daily activities, independence and functional status (10,11).

Deterioration in mental health status and depressive symptoms may cause emotional and physical pain, a decrease in quality of life and an increased risk of death in the elderly population (12,13). Decreased quality of life may bring along psychological health problems and may affect mental well-being (14,15). Mental well-being can play an important role in the quality of life of elderly agricultural workers who are both biologically and socially vulnerable.

Determining the quality of life and mental well-being of elderly agricultural workers will be very important in preventing possible health risks and planning health promotion actions. Although there are studies evaluating the quality of life in the elderly (10,16,17), on the national level, the most of them include elderly people who are in nursing homes (18–20) or who apply to health institutions (21). As far as is known, data on the quality of life and mental well-being of elderly agricultural workers on the national level are limited in the literature.

The aim of this population-based study is evaluating the quality of life and perceived health status of agricultural workers over the age of 65 and determining the relationship between quality of life and mental well-being

Material and Methods

The population of this cross-sectional study were agricultural workers over the age of 65 living in the Tepecik neighborhood of Aydın province. It takes immigration from the country and includes different socio-cultural structures due to the widespread agricultural lands in the region. The size of the research population is not known due to the high rate of unregistered work among agricultural workers. G*Power 3.1 software was used to calculate the sample size. The sample size to be included in the study was calculated as 150 people with an effect size of 0.2, a type 1 error level of 5% and a power of 80%. The improbable sampling technique was used and people over the age of 65 were included in the study who have worked in agriculture for at least five years and volunteered to participate. As a result, 196 elderly agricultural workers were included in the study.

The dependent variable of the study is the level of quality of life. The independent variables are the level of mental well-being and the characteristics of socio-demographic and working conditions.

The data collection form consists of 19 questions created by the researchers as a result of the literature review, a section containing the European Quality of Life Five Dimensions Three Level Questionnaire used to question the quality of life and the Warwick-Edinburgh Mental Well-Being Scale used to determine mental well-being. The data were collected using a face-to-face interview technique using a questionnaire between June-November 2022. One of the researchers works in the primary health care institution in the region and has sufficient knowledge about the region. The data were collected in the

field by obtaining address information from the local government.

European Quality of Life Five Dimensions Three Level Questionnaire (EQ-5D-3L)

The EQ-5D-3L scale was used to evaluate the quality of life of elderly agricultural workers which was developed by the EuroQol group in 1990 and adapted by Eser et al. in 2007 (22,23). EQ-5D-3L is a general health scale used to measure quality of life. The first part of the scale consists of five dimensions as mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension consists of a single question. For the situation specified in each dimension, it is evaluated with 1 point if there is no problem, 2 points if there are some problems and 3 points if there are serious problems. The fact that the answers given to all dimensions in the evaluation are '1 point' indicates the state of full health. The second part of the EQ-5D-3L evaluates the perceived health level with the VAS. The person is asked to mark the state of health he felt that day on a line from 0 to 100. A score of 0 indicates the worst state of health and a score of 100 indicates the best state of health (8,24).

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

The WEMWBS scale developed by Tennant et al. in 2007 (25), measures the mental well-being of individuals. The Turkish validity and reliability study of the scale was performed by Keldal et al. in 2015 (26). The scale consists of 14 questions and is answered in a 5-point Likert type (strongly disagree-1, ... strongly agree-5) and there is no reverse scored item. A minimum of 14 and a maximum of 70 points are obtained from the scale and high scores indicate high mental well-being. The Cronbach's alpha value of the scale was calculated as 0.89 for this study.

Ethics committee approval (21.12.2022-E-53938333-050-14831) was obtained for the study. Informed consent was obtained from the participants and necessary information about the study was given.

The data were evaluated in SPSS version 25.0 statistical program. In descriptive analysis, numerical variables are shown as mean and standard deviation, categorical variables are shown as numbers and percentages. The normal distribution of the data was evaluated with the Kolmogorov-Smirnov tests. The correlation between WEMWBS and EQ-5D-3L VAS was calculated using the Spearman's Rank Correlation Coefficient. When analyzing the factors related to quality of life, the participants were

evaluated in two groups as those who had some or serious problems in any dimension of the EQ-5D-3L and those who had no problems at all. After the data were analyzed with the chi-square test and Student's T test, all significant variables were included in the multivariate binary logistic regression model using the "enter" approach. %95 confidence interval and $p < 0.05$ value were used to evaluate statistical significance.

Results

The descriptive characteristics of the participants are shown in Table 1. The mean age of the study group was 70.92 ± 6.22 (minimum 65, maximum 90). 50.5% of them were male, 66.8% were married, 45.9% were graduated from primary school, 49.5% had middle-income, 95.4% had social security and 67.3% of them lived alone. 51.5% of the participants had a working period of 20-49 years in agriculture, 59.7% of them had a work accident in the last year, 70.9% of them had a chronic disease (Table 1).

While the rate of those who stated that they had some problems or serious problems in any dimension of the EQ-5D-3L was 75%, the highest problem was the pain/discomfort dimension with 63.3% and the anxiety/depression dimension with 53.5% in the second rank (Table 2).

The participants' WEMWBS mean score was 47.12 ± 7.79 and the mean perceived health status score according to VAS was 50.64 ± 22.03 . Positive and moderately significant correlation was found between WEMWBS and VAS scores ($r = 0.432$, $p < 0.001$) (Table 3).

In univariate analyzes, it was found that problems related to quality of life were significantly lower in young age, males, higher education level, living in nuclear family, working in agriculture sector for a short time, those without chronic diseases and those with high mental well being ($p < 0.05$).

In Table 4, the odds ratios (OR) of having problems in at least one of the five dimensions were evaluated for all variables that were significant in univariate analyzes with the multivariate logistic regression model. The results revealed that the most important determinants were age and mental well-being. Problems with at least one of the five dimensions of EQ-5D-3L increased with age [OR 1.17 (95% CI 1.04–1.32)]. Having problems in at least one of the five dimensions of EQ-5D-3L decreased with increasing mental well-being [OR 0.84 (95% CI 0.78-0.90)] (Table 4).

Table 1. Descriptive characteristics of the study group, N=196

Descriptive characteristics	n	%
Age (Mean±SD=70.92±6.22)		
65-69	104	53.1
70-74	44	22.4
75-89	48	24.5
Gender		
Female	97	49.5
Male	99	50.5
Marital status		
Married	131	66.8
Single/Divorced/Widowed	65	33.2
Education level		
Illiterate	12	6.1
Literate	45	23.0
Primary	90	45.9
Secondary	29	14.8
High School	20	10.2
Perception of income		
Bad	94	47.9
Average	97	49.5
Good	5	2.6
Social security		
No	9	4.6
Yes	187	95.4
Family type		
Alone	132	67.3
Nuclear family	36	18.4
Extended family	28	14.3
Years of work in agriculture (Mean±SD=38.63±16.11)		
5-19	22	11.2
20-49	101	51.5
≥50	73	37.3
Work accident (last year)		
No	81	41.3
Yes	115	59.7
Type of work accident (last year)		
Musculoskeletal injuries	92	46.9
Insect bites	64	32.7
Sharps injuries	26	13.3
Sunstroke	2	1.0
Chronic disease		
No	57	29.1
Yes	139	70.9

Table 2. Distribution of the scores in dimensions of the EQ-5D-3L, N=196

Dimensions	n (%)
Mobility	
1 No problems	129 (65.8)
2 Some problems	67 (34.2)
3 Serious problems	0
Self Care	
1 No problems	146 (74.5)
2 Some problems	50 (25.5)
3 Serious problems	0
Usual activities	
1 No problems	129 (65.8)
2 Some problems	67 (34.2)
3 Serious problems	0
Pain/discomfort	
1 No problems	72 (36.7)
2 Some problems	116 (59.2)
3 Serious problems	8 (4.1)
Anxiety/depression	
1 No problems	91 (46.4)
2 Some problems	101 (51.5)
3 Serious problems	4 (2.0)
Some problems or serious problems in any dimension	147 (75.0)

Table 3. Scale scores and correlations of mental well-being and perceived health status

	Mean± Standard deviation	Minimum	Maximum	r*
Warwick-Edinburgh Mental Well-Being Scale	47.12±7.79	24	65	0.432**
Visual Analogue Scale	50.64±22.03	10	100	

* Spearman correlation coefficient **p<0.001

Table 4. Risk factors for some or serious problems with any dimension of the EQ-5D-3L

Variables ^a	Quality of life (Some problems or serious problems) ^b		
	n (%)	B (S.E.)	OR (95% Confidence interval)
Age		0.16 (0.06)	1.17 (1.04-1.32)*
Gender			
Male(R)	65 (65.7)		1.00
Female	82 (84.5)	0.33 (0.52)	1.39 (0.50-3.88)
Education level			
High school (R)	12 (60.0)		1.00
Primary-secondary	83 (69.7)	0.19 (0.71)	1.21 (0.29-3.94)
Literate	41 (91.1)	0.74 (0.97)	1.11 (0.31-1.42)
Illiterate	11 (91.7)	0.20 (1.38)	1.22 (0.08-1.84)
Family type			
Nuclear (R)	91 (68.9)		1.00
Extended	30 (83.3)	0.29 (0.68)	1.34 (0.35-1.52)
Alone	26 (92.9)	0.93 (0.88)	2.53 (0.44-3.36)
Years of work in agriculture		-0.06 (0.24)	0.94 (0.58-1.52)
Work accident (last year)			
No (R)	49 (60.5)		1.00
Yes	98 (85.2)	0.43 (0.51)	1.54 (0.55-2.46)
Chronic disease			
No (R)	30 (52.6)		1.00
Yes	117 (84.2)	0.77 (0.49)	2.16 (0.82-2.66)
Mental well-being^c		-0.17 (0.03)	0.84 (0.78-0.90)**

*R*²=0.34 (Cox&Snell), 0.51 (Nagelkerke), $\chi^2(8)=9.48$, $p>0.05$ (Hosmer&Lemeshow. ^a R= Reference category. ^bDependent variable; ^c "No problems with any dimension of the EQ-5D-3L" = 0, "Experiencing some issues and serious issues with any dimension of the EQ-5D-3L" = 1. ^c Warwick-Edinburgh Mental Well-Being Scale. * $p < 0.01$, ** $p < 0.001$

Discussion

In this study, the relationship between the quality of life of elderly agricultural workers and mental well-being and other factors was investigated. Unlike the studies in the literature that evaluate the quality of life of elderly individuals living in nursing homes or applying to health institutions, the results of this community-based study are important which includes elderly individuals working in agriculture.

When the quality of life of the individuals included in the study is evaluated, three out of every four people experience some problems or serious problems in any dimensions of the quality of life. The rate of those who reported

problems especially in the dimensions of pain/discomfort and depression/anxiety is higher. There are many studies evaluating quality of life in elderly individuals in Turkey using different quality of life scales such as SF-36, WHOQoL-BREF (10,16,18-20), but few studies were found evaluating quality of life with EQ-5D (8,17,21). In a national study that evaluated the level of quality of life with the EQ-5D scale in Turkey, two out of three men and nine out of ten women over the age of 65 had problems in at least one of the quality of life dimensions and it was found that problems in the dimensions of mobility, pain/discomfort and anxiety/depression were seen with a higher frequency (8). Although the quality of life levels were similar, the fact that those who reported problems in the dimension of mobility were less frequent in this study may be due to the fact that it was done in the elderly working actively in agriculture. In international studies evaluating the quality of life of the elderly, it is stated that the quality of life levels are lower in the elderly living in rural areas (4,27,28). Similar to the results of this study, in a study conducted in rural areas in Thailand, the quality of life was found to be good in only 13.8% of the elderly. In addition, while there was no difference between working status and quality of life, the quality of life of those who reported their occupation as a farmer was found to be lower (4).

In the study, the perceived health status scores of the elderly as assessed by VAS were found to be moderate. In another national study, the mean score of perceived health was higher in individuals over the age of 65 than the results of the current study (8). In another study, which included the results of further analysis of a national study, it was revealed that the perceived health status was lower in older workers (29). It was stated that the perceived health status is lower especially in elderly workers (5). In a study comparing the quality of life of the elderly in rural and urban areas, general health perception was significantly lower in rural areas (27). The lower perceived health status in this study may be due to the fact that it was done in the elderly working in a rural area and in a relatively low socioeconomic status working in agriculture.

In this study, it was shown that the mental well-being levels of the elderly individuals were moderate. The elderly are one of the most vulnerable groups in society and mental health problems are common. In addition, it is stated that employment of the elderly in working life may have different effects on mental health in a review on the mental health problems of elderly workers (3).

The participation of the elderly in employment for non-economic reasons such as finding meaning in life and social contact can make a positive contribution to the protection of the mental health. However, working in agriculture with economic concerns and dangerous work accidents in rural areas may explain the poor mental well-being of them (7).

In this study, it was shown that having problems in at least one of the dimensions related to quality of life decreases with increasing mental well-being. This result is similar to the results of a study conducted on elderly individuals in a semi-urban area in Manisa. In the study, the quality of life of elderly individuals with positive mood was found to be better than those with depressive mood (30). There are studies showing a negative relationship between mental well-being and quality of life in both national (10,17,30–32) and international studies (33,34) in elderly individuals. In a study evaluating the depression levels and quality of life of the elderly, a significant decrease was found in the quality of life for each increase in geriatric depression scores (10).

In this study, it was shown that another factor affecting the quality of life in the elderly is age. It was found that having problems in at least one of the dimensions related to quality of life increased with age. This finding is consistent with the results of other studies showing that the quality of life in the elderly decreases with increasing age (8,10,16,20,35). Studies show that there is an increase in the prevalence of health problems with age, a decrease in contribution to society and these conditions negatively affect quality of life and perceived health status (36). WHO introduced the concept of active aging in the 1990s and defined it as the process of maximizing health, safety and participation in society in order to increase the quality of life in the aging process (37). Health and social service practices specific to elderly agricultural workers, which will contribute to the active aging process, can prevent the decrease in the quality of life with advancing age.

One of the most important limitations of this study is that a probabilistic sample selection could not be made because the size of the study population was not known. In addition, the study only includes individuals working in agriculture in a region and therefore may not be representative of all older agricultural workers. However, it is the first study in the national literature to determine the quality of life and mental well-being of elderly agricultural workers.

Conclusion

In this study which was conducted with elderly individuals working in agriculture in a certain region, it was determined that three out of every four people had problems in terms of quality of life and their perceived health and mental well-being were at moderate level. In addition, this study reveals that low mental well-being and advanced age negatively affect quality of life. In addition, this study reveals that low mental well-being and advanced age negatively affect the quality of life. With a holistic approach, the needs of the increasing number of elderly agricultural workers in Turkey should be evaluated in order to increase their mental well-being and quality of life, interventions should be planned for these needs, and the effects of these interventions on the quality of life should be evaluated.

Declarations

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Ethics Approval

The study was conducted according to the Helsinki Declaration for Ethical Principles of Research. Approval was obtained from the Ethics Committee (21.12.2022-E-53938333-050-14831).

Availability of Data and Material

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Authors' Contributions

All authors discussed their research goals, objectives, and questions and participated in the phases of this study, recruitment and data collection (N.K, F.K, D.F.), data analysis, interpretation (C.V.A, A.M.), writing the article and reviewing the article critically (C.V.A, A.M, S.Ö, F.A). All authors have read and approved the final article.

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