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Investigation of the relationship between altruism levels and willingness to work with the elderly of elderly care, disability care and physiotherapy program students

 Ayse Oz¹,  Yasemin Kartal¹,  Oguzhan Ozturk²,  Oguzhan Harmandaoglu²,  Kubra Kaya Harmandaoglu³

¹Kastamonu University, Çatalzeytin Vocational School, Department of Health Care Services, Kastamonu, Türkiye

²Kastamonu University, Çatalzeytin Vocational School, Department of Therapy and Rehabilitation, Kastamonu, Türkiye

³Kastamonu Physical Therapy and Rehabilitation Hospital, Department of General Physiotherapy, Kastamonu, Türkiye

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Abstract

The older population is steadily increasing worldwide and in Türkiye, making it essential to understand the altruism levels and willingness to work with the elderly among associate degree students in health programs to ensure high-quality care for aging individuals. This study aimed to examine the relationship between altruism and willingness to work with the elderly among students enrolled in elderly care, disability care and rehabilitation, and physiotherapy programs. This cross-sectional, correlational study was conducted with 302 students studying in health-related fields. Participants completed a Sociodemographic Information Form, the Altruism Scale, and the Willingness to Work with the Elderly Scale. Of the students, 50.3% (n = 152) were aged 20 years or younger and 83.4% (n = 252) were female. Female students, those living in the Eastern Anatolia region, and second year students had significantly higher scores on both scales or their subdimensions, while students from extended families and rural areas scored significantly higher only in willingness to work with the elderly ($p < 0.05$). Students in the elderly care program obtained significantly higher total scores on the Willingness to Work with the Elderly Scale and higher scores in several altruism subdimensions compared with the other departments ($p < 0.05$). A moderate positive correlation was observed between the total scores of the Willingness to Work with the Elderly Scale and the Altruism Scale ($r = 0.377$, $p < 0.001$). The relationships between sociodemographic variables and scale scores suggest that cultural and environmental factors may influence helping behaviors and professional orientation. Moreover, the strong association between altruism and willingness to work with the elderly highlights the importance of educational programs that promote empathy, self-sacrifice, and prosocial values. Increasing geriatric-focused curricular content, expanding clinical experiences, and strengthening value-based educational approaches may be effective strategies for enhancing students' motivation to work with older individuals.

Keywords: Elderly, health education, healthcare, altruism, students

Introduction

The global older population continues to expand rapidly. Projections from the World Population Prospects 2024 indicate that by 2070 the number of individuals aged 65 years and older is expected to exceed 2.2 billion, surpassing the population under 18 years of age. Furthermore, it is anticipated that by the mid-2030s approximately 265 million people will be aged 80 years or older, a figure projected to outnumber the infant population worldwide [1]. According to data released by the Turkish

Statistical Institute (TÜİK) in 2024, Türkiye's older population reached 9.112.298 individuals, accounting for 10.6% of the total population. This proportion is forecast to rise to 13.5% by 2030 and to 33.4% by 2080. Based on these demographic trends, Türkiye is categorized as a very old country under the World Health Organization's classification system, and the number of older adults is increasing steadily [2].

Population aging increases the prevalence of chronic diseases, functional impairments, geriatric syndromes, and mental health

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Corresponding Author: Ayse Oz, Kastamonu University, Çatalzeytin Vocational School, Department of Health Care Services, Kastamonu, Türkiye
Email: ayseoz@kastamonu.edu.tr

conditions, often requiring complex medical care and long-term support [3].

Beyond health-related concerns, older adults also encounter numerous social challenges, including age-based discrimination, loneliness, economic vulnerability, elder abuse, caregiving burdens, and obstacles related to transportation, housing, and participation in community life [4].

Graduates of associate degree programs in elderly care, disability care, and physiotherapy constitute a substantial proportion of the healthcare workforce involved in the daily provision of services to older adults. Employment in geriatric settings is frequently accompanied by psychological and social challenges, including depressive symptoms, occupational burnout, and social withdrawal, as well as various physical health concerns [4,5]. Previous studies have shown that students demonstrate limited interest in careers related to gerontology [5,6]. The attitudes of current and future healthcare professionals toward older adults, together with their willingness to provide care, play a pivotal role in enhancing older individuals' quality of life and ensuring high standards of service delivery [7].

Altruism is conceptualized as a disposition reflecting an individual's inclination to engage in actions that promote others' well-being without anticipation of personal gain [8]. The Turkish Language Association's Dictionary of Terms defines altruism as an ethical stance centered on self-sacrifice for the benefit of others and as a readiness to relinquish personal interests in order to offer help motivated by non-selfish intentions. Within the medical profession, altruism has long been regarded as a foundational value, with its origins traced to the Hippocratic Oath [9]. Health-related occupations are commonly associated with altruistic motivations, and individuals who possess a strong desire to assist others are thought to gravitate toward such professions [10,11].

Despite this theoretical link, empirical evidence regarding the association between altruistic tendencies and willingness to work with older adults among students enrolled in elderly care, disability care, and physiotherapy programs remains limited. Because geriatric care frequently demands compassion, dedication, and personal sacrifice, understanding students' levels of altruism is important. It may also help explain their intentions to work with older populations and contribute to the development of educational strategies aimed at strengthening geriatric services. Accordingly, the present study seeks to investigate the relationship between altruism and willingness to work with older adults among students in these associate degree health programs.

Material and Methods

This cross-sectional correlational study was conducted in 2025 with the participation of 302 students studying in the Elderly Care, Disability Care and Rehabilitation, Physiotherapy program at Kastamonu University Çatalzeytin Vocational School. Ethical approval for this study was obtained from the Publication Ethics Committee of Social and Human Sciences at Kastamonu

University, with the decision dated April 10, 2025 (Protocol No: 2500047570; Decision No: 4/49). Work started after obtaining the necessary permission from the Directorate of Çatalzeytin Vocational School. Informed consent was obtained from all participants. This study was carried out in accordance with the Declaration of Helsinki.

In this study, firstly, students were asked to fill out the Sociodemographic Information Form prepared by the researchers by examining the literature. Then, they were asked to answer the questions of the Altruism Scale and the Willingness to Work with the Elderly Scale. The scales and forms were administered face-to-face when the students were available.

Criteria for Inclusion of Participants in the Research

1. To be studying in one of the associate degree departments of Elderly Care, Disabled Care or Physiotherapy,
2. Volunteering to participate in the study.

Criteria for exclusion of participants from the research

1. Participants with incomplete or inconsistent responses in the data collection forms,
2. Participants who voluntarily withdrew from the study during the research process.

Sociodemographic Information Form

It consists of 16 questions. It includes age, gender, class, program of study, parents' education level, monthly income, most common geographical region, family structure, being a relative over the age of 65, living with a relative over the age of 65 and duration, frequency of visits to nursing homes or elderly care homes, desire to work with the elderly and taking courses on old age.

Altruism Scale

It was developed by Ümmet et al. (2013). The scale consists of seven subdimensions: participation in voluntary activities (items 18, 15, 11, 26, 12, 25, and 36), financial assistance (items 4, 5, 6, 2, 1, and 21), assistance in traumatic situations (items 33, 23, 28, 30, 31, and 34), assistance to the elderly/patients (items 10, 8, 20, and 24), assistance based on physical strength (items 16, 22, 17, 3, and 7), assistance in the educational process (items 14, 9, 19, 13, and 29), and assistance arising from a sense of closeness (items 37, 32, 38, 35, and 27). The scale contains no reverse-coded items. Higher scores indicate higher levels of altruism [12]. In this study, the Cronbach's alpha internal consistency coefficient was 0.94, indicating excellent reliability.

Willingness to Work with the Elderly Scale

The Willingness to Work with the Elderly Scale was originally developed by Fadayeveatan et al. (2018) and later adapted into Turkish by Akpınar Söylemez et al. (2022). The instrument comprises 20 items distributed across four subdimensions: attitude (items M1 – M5), subjective norm (items M6 – M10), perceived behavioral control (items M11 – M15), and intention

(items M16 – M20). None of the items are reverse-coded. Total scores range from 20 to 120, with higher scores reflecting a stronger inclination to work with older adults [13,14]. In the present study, the internal consistency of the scale was high, as indicated by a Cronbach's alpha coefficient of 0.88.

Statistical Analysis

All collected data were entered into IBM SPSS Statistics version 26 (IBM, Armonk, NY, USA) for statistical processing. Categorical variables were summarized using frequencies and percentages, whereas continuous variables were described by means, standard deviations, and minimum and maximum values. Prior to inferential analyses, the Kolmogorov – Smirnov test (for sample sizes greater than 30) was employed to assess the normality of score distributions, and the results demonstrated that all variables satisfied the assumptions required for parametric testing.

Accordingly, independent samples t-tests were conducted to compare mean scores between two groups, while one-way analysis of variance (ANOVA) was applied for comparisons involving more than two independent groups. Post hoc pairwise comparisons were performed using Tukey's test to identify specific group differences when statistically significant results were obtained. Pearson correlation coefficients were calculated to evaluate the strength and direction of associations between numerical variables, without implying causality. The level of statistical significance was set at $p < 0.05$.

Results

A total of 302 students participated in the present study, of whom 50.3% ($n = 152$) were aged 20 years or younger. Female students constituted the majority of the sample (83.4%, $n = 252$). Regarding academic programs, 37.7% ($n = 114$) were enrolled in Physiotherapy, 32.1% ($n = 97$) in Elderly Care, and 30.1% ($n = 91$) in Disability Care and Rehabilitation. In terms of year of study, most participants were in their second year (62.3%, $n = 188$).

When classified according to the region in which they had resided for the longest period, the largest proportion reported living in the Black Sea Region (29.5%, $n = 89$), followed by Central Anatolia (18.5%, $n = 56$), Eastern Anatolia (12.9%, $n = 39$), and Southeastern Anatolia (12.6%, $n = 38$). With respect to maternal educational background, 41.4% ($n = 125$) of the students' mothers had completed primary school, while 23.5% ($n = 71$) had secondary education, 17.5% ($n = 53$) had graduated from high school, 4.0% ($n = 12$) held undergraduate or higher degrees, and 13.6% ($n = 41$) were illiterate. Concerning paternal education, 31.5% ($n = 95$) had completed secondary school, 31.1% ($n = 94$) were high school graduates, 30.5% ($n = 92$) had primary education, 4.0% ($n = 12$) possessed undergraduate or higher qualifications, and 3.0% ($n = 9$) were illiterate.

It was determined that the income of 64.9% ($n = 196$) of the students was equal to the expense, the income of 19.9% ($n =$

60) was less than the expense, and 15.2% ($n = 46$) of the income was more than the expense. It is seen that 73.5% ($n = 222$) of the students have a nuclear family, 25.8% ($n = 78$) have an extended family, and 0.7% ($n = 2$) have a fragmented family structure.

It was determined that the most common settlement of the students was the province (39.4% ($n = 119$)).

It was determined that 77.8% ($n = 235$) of the students had a relative over the age of 65, the proportion of the students who stated that they lived with a relative over the age of 65 at any time in their lives was 58.6% ($n = 177$), and 48.0% ($n = 85$) of the students lived with the elderly for 1 – 5 years.

64.2% ($n = 194$) of the students stated that they never visited nursing homes or elderly care centers, 34.8% ($n = 105$) occasionally, and 1.0% ($n = 3$) frequently. The proportion of students who wanted to work in fields related to the elderly after graduation was 76.2% ($n = 230$). 70.2% ($n = 212$) of the students stated that they took courses on old age and the aging process. The distribution of the demographic characteristics of the students is presented in Table 1 with frequency and percentage values.

The mean scores of female students were found to be statistically significantly higher in the total score of altruism by gender and participation in voluntary activities, financial aid, and help arising from the sense of closeness ($p < 0.05$). In the comparison made by departments, there was no statistically significant difference in terms of altruism total score ($p > 0.05$), while the highest mean in the Elderly Care sub-dimension was found to be 26.81 (± 2.931) in the Elderly Care section ($p < 0.01$). In the sub-dimension of assistance to the elderly/patients, the highest mean was determined as 17.72 (± 2.115) in the Elderly Care section. According to grade level, the mean of second grade students was found to be 24.59 (± 3.381) in the financial aid sub-dimension significantly higher than first grade students ($p < 0.05$).

The mean score of the students living in the Eastern Anatolia Region for helping the elderly/sick was 18.08 (± 1.992), which was significantly higher than the mean score of the students living in the Mediterranean and Central Anatolia Regions ($p = 0.015$), (Table 2).

The mean scores of the students whose mothers were primary school graduates were found to be significantly higher ($p < 0.05$). It was seen that the mean scores of the students whose income was less than their expenditure were significantly higher than the other groups in the total score according to the monthly income status of the family and in the sub-dimensions of participation in volunteer activities, financial aid, assistance to the elderly/sick, assistance in the education process and assistance arising from the feeling of closeness ($p = 0.006$), (Table 3).

Students who reported visiting nursing homes or elderly care centers occasionally or frequently demonstrated significantly higher mean scores than those who had never visited such facilities ($p < 0.01$). Likewise, participants who expressed an intention to pursue employment in elderly-related fields after

graduation achieved significantly higher mean scores compared with those who did not report such intentions ($p < 0.01$). There was no statistically significant difference in terms of altruism total score and all sub-dimensions in comparisons made according to family structure, most common residence, having a relative over the age of 65, living with a relative over the age of 65 at any time in their life, duration if any, and taking courses about old age and aging process ($p > 0.05$), (Table 3 and Table 4).

Differences in willingness to work with older adults scores across demographic variables revealed that female students achieved significantly higher mean scores in the financial aid subdimension ($p < 0.05$). When examined by academic program, students enrolled in the Elderly Care department demonstrated the highest mean total scores and subdimension scores on the Willingness to Work with Older Adults Scale, whereas those studying Physiotherapy recorded the lowest values ($p < 0.001$). With respect to academic year, second year students exhibited significantly higher total scores and higher scores in the help in traumatic situations subdimension compared with first-year students ($p < 0.05$). In terms of region of longest residence, students from Eastern Anatolia reported significantly higher mean scores than those residing in the Marmara region ($p < 0.05$), (Table 5).

Students from extended families obtained significantly higher mean scores than those from nuclear families ($p = 0.044$). Similarly, individuals living in villages or towns scored significantly higher than those residing in provincial centers. No statistically significant differences were observed in total or subdimension scores according to having a relative aged 65 years or older ($p > 0.05$). However, students who had lived with an older relative at any point in their lives displayed significantly higher mean scores than those who had not ($p < 0.05$), (Table 6).

Furthermore, willingness to work scores were significantly higher among students who reported visiting nursing homes or elderly care facilities, had taken courses related to aging, and expressed an intention to work with older adults after graduation ($p < 0.05$), (Table 7).

Correlation analyses indicated a moderate positive association between the total scores of the Willingness to Work with Older Adults Scale and the Altruism Scale ($r = 0.377$, $p < 0.001$). In addition, willingness to work total scores were moderately and positively correlated with all altruism subdimensions ($r = 0.260 - 0.350$, $p < 0.001$). Conversely, altruism total scores showed low-to-moderate positive correlations with all subdimensions of the Willingness to Work with Older Adults Scale ($r = 0.124 - 0.402$, $p < 0.05$), (Table 8).

Table 1. Distributions of sociodemographic characteristics n = 302

Variables		Number of people (n)	Percentage (%)
Age group (Avg ± SD; Min-Max)	20 years and under	152	50.3
	21 years and older	150	49.7
Gender	Women	252	83.4
	Male	50	16.6
Episode	Elderly care	97	32.1
	Disabled care and rehabilitation	91	30.1
	Physiotherapy	114	37.7
Class	1st grade	114	37.7
	2nd grade	188	62.3
Longest inhabited region	Mediterranean	28	9.3
	Eastern Anatolia	39	12.9
	Aegean	24	7.9
	Southeastern Anatolia	38	12.6
	Central Anatolia	56	18.5
	Black Sea	89	29.5
	Marmara	28	9.3

SD: Standard Deviation, Min: Minimum, Max: Maximum

Table 1. Distributions of sociodemographic characteristics n = 302

Variables		Number of people (n)	Percentage (%)
Mother's education status	Illiterate	41	13.6
	Primary school	125	41.4
	Secondary school	71	23.5
	High school	53	17.5
	Undergraduate and above	12	4.0
Father's education status	Illiterate	9	3.0
	Primary school	92	30.5
	Secondary school	95	31.5
	High school	94	31.1
	Undergraduate and above	12	4.0
Family monthly income	Income is less than expenditure	60	19.9
	Income is equal to expense	196	64.9
	Income is higher than expenditure	46	15.2
Family structure	Nuclear family	222	73.5
	Extended family	78	25.8
	The broken family	2	0.7
Most inhabited place	Village	75	24.8
	Town	2	0.7
	District	106	35.1
	Province	119	39.4
Relatives over the age of 65	Yes	235	77.8
	No	67	22.2
Living with a relative over the age of 65 for a period in your life	Yes	177	58.6
	No	125	41.4
If experienced duration (n = 177)	1-5 Years	85	48.0
	6-10 Years	32	18.1
	11-15 Years	10	5.6
	16 Years and above	50	28.2
Frequency of nursing home/elderly care center visits	Never	194	64.2
	Sometimes	105	34.8
	Often	3	1.0
Desire to work in jobs related to the elderly after graduation	Yes	230	76.2
	No	72	23.8
Course learning status about old age and the aging process	Yes	212	70.2
	No	90	29.8

SD: Standard Deviation, Min: Minimum, Max: Maximum

Table 2. Investigation of differences between sociodemographic characteristics according to Altruism Scale scores

Variables	n	Altruism Scale											
		Total score	Participation in volunteer activities	Financial aid	Help in traumatic situations	Help for the elderly/patients	Physical strength-based help	Assistance in the training process	Help arising from a sense of closeness				
Gender		Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	
Women	252	155.20 ± 19.235	26.08 ± 5.003	24.54 ± 3.564	26.06 ± 3.108	17.10 ± 2.299	20.03 ± 3.291	20.38 ± 3.129	21.00 ± 3.093				
Male	50	148.08 ± 19.459	24.44 ± 5.690	22.76 ± 4.336	25.84 ± 3.599	16.48 ± 2.880	19.44 ± 3.643	19.42 ± 3.615	19.70 ± 3.593				
p		0.018*	0.039*	0.002**	0.657	0.097	0.255	0.053	0.009**				
Episode													
1. Elderly care	97	157.55 ± 18.142	26.57 ± 4.869	24.53 ± 3.717	26.81 ± 2.931	17.72 ± 2.115	20.30 ± 3.286	20.74 ± 3.140	20.88 ± 3.367				
2. Disabled care and rehabilitation	91	152.43 ± 20.637	25.70 ± 5.565	24.04 ± 3.534	25.37 ± 3.552	16.74 ± 2.458	19.77 ± 3.253	19.98 ± 3.448	20.82 ± 3.164				
3. Physiotherapy	114	152.30 ± 19.242	25.25 ± 5.002	24.17 ± 3.969	25.87 ± 2.973	16.59 ± 2.488	19.75 ± 3.488	19.98 ± 3.094	20.68 ± 3.138				
p		0.095	0.177	0.654	0.006**	0.001**	0.429	0.160	0.904				
Class													
1st grade	114	152.54 ± 20.610	25.77 ± 5.154	23.68 ± 4.254	25.71 ± 3.399	16.89 ± 2.429	19.90 ± 3.299	20.05 ± 3.159	20.54 ± 3.313				
2nd grade	188	154.92 ± 18.664	25.84 ± 5.160	24.59 ± 3.381	26.21 ± 3.048	17.06 ± 2.404	19.95 ± 3.393	20.33 ± 3.273	20.94 ± 3.147				
p		0.303	0.918	0.040*	0.185	0.568	0.903	0.470	0.287				
Longest inhabited region													
1. Mediterranean	28	147.79 ± 21.450	24.82 ± 4.846	23.21 ± 3.315	25.36 ± 3.477	16.25 ± 3.170	18.93 ± 4.136	19.00 ± 3.507	20.21 ± 3.872				
2. Eastern Anatolia	39	161.67 ± 21.033	27.36 ± 5.673	25.41 ± 3.992	27.44 ± 3.177	18.08 ± 1.992	20.67 ± 3.963	21.10 ± 4.083	21.62 ± 3.049				
3. Aegean	24	152.50 ± 21.075	25.83 ± 5.139	23.96 ± 3.862	25.17 ± 3.239	16.92 ± 2.636	20.67 ± 2.745	19.33 ± 3.608	20.63 ± 4.189				
4. Southeastern Anatolia	38	154.68 ± 20.006	26.34 ± 4.912	23.95 ± 3.959	26.32 ± 3.189	17.32 ± 2.195	19.95 ± 2.885	20.32 ± 3.281	20.50 ± 3.375				
5. Central Anatolia	56	153.50 ± 19.983	26.23 ± 4.951	24.68 ± 3.527	25.59 ± 3.841	16.38 ± 2.754	19.61 ± 3.596	20.30 ± 3.003	20.71 ± 3.138				
6. Black Sea	89	153.76 ± 17.968	25.31 ± 5.193	23.85 ± 3.933	26.11 ± 2.622	16.93 ± 2.033	20.20 ± 2.989	20.29 ± 2.793	21.06 ± 2.781				
7. Marmara	28	151.89 ± 14.038	24.64 ± 5.101	24.68 ± 3.068	25.64 ± 2.656	17.32 ± 2.091	19.07 ± 3.042	20.50 ± 2.701	20.04 ± 2.963				
p		0.145	0.269	0.214	0.051	0.015*	0.204	0.170	0.421				
*p < 0.05, **p < 0.01, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level													

Table 3. Investigation of differences between sociodemographic characteristics according to Altruism Scale scores

Variables	n	Total score	Altruism Scale							
			Participation in volunteer activities	Financial aid	Help in traumatic situations	Help for the elderly/ patients	Physical strength-based help	Assistance in the training process	Help arising from a sense of closeness	
			Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	
Family monthly income										
1. Income less than expenditure	60	161.08 ± 17.221	27.42 ± 4.756	25.33 ± 3.266	26.85 ± 2.833	17.80 ± 1.894	20.80 ± 3.246	21.30 ± 2.727	21.58 ± 2.689	
2. Income is equal to expense	196	152.62 ± 19.619	25.43 ± 5.274	24.07 ± 3.792	25.85 ± 3.211	16.78 ± 2.507	19.73 ± 3.403	20.00 ± 3.313	20.76 ± 3.216	
3. Income is higher than expenditure	46	150.80 ± 19.509	25.33 ± 4.784	23.59 ± 3.975	25.67 ± 3.413	16.87 ± 2.419	19.67 ± 3.149	19.78 ± 3.231	19.89 ± 3.610	
p		0.006**	0.026*	0.031*	0.076	0.015*	0.081	0.014*	0.026*	
Family structure										
Nuclear family	222	154.38 ± 18.421	25.9 ± 4.869	24.26 ± 3.638	26.02 ± 3.123	17.08 ± 2.285	19.87 ± 3.251	20.36 ± 2.994	20.89 ± 3.108	
Extended family	80	152.99 ± 22.142	25.56 ± 5.91	24.19 ± 4.093	26.03 ± 3.392	16.76 ± 2.741	20.12 ± 3.643	19.85 ± 3.818	20.49 ± 3.497	
p		0.585	0.623	0.886	0.994	0.307	0.579	0.229	0.337	
Mother's education status										
Illiterate	41	150.37 ± 21.330	25.05 ± 4.832	23.12 ± 3.829	26.29 ± 3.444	16.95 ± 2.397	19.24 ± 3.680	19.98 ± 3.732	19.73 ± 3.918	
Primary school	125	157.28 ± 16.487	26.12 ± 4.870	24.73 ± 3.453	26.37 ± 2.867	17.42 ± 2.152	20.66 ± 2.924	20.70 ± 2.803	21.29 ± 2.779	
Secondary school	71	153.99 ± 19.846	26.31 ± 4.987	24.52 ± 3.601	25.51 ± 3.565	17.00 ± 2.336	19.90 ± 3.217	19.93 ± 3.137	20.82 ± 3.445	
High school/ undergraduate and above	65	150.11 ± 22.077	25.15 ± 5.975	23.72 ± 4.267	25.75 ± 3.153	16.22 ± 2.798	19.00 ± 3.779	19.80 ± 3.684	20.46 ± 3.108	
p		0.054	0.382	0.060	0.254	0.013*	0.005**	0.201	0.042*	
Living with a relative over the age of 65 for a period in your life										
Yes	177	154.78 ± 19.666	25.93 ± 5.410	24.43 ± 3.559	26.15 ± 3.375	17.10 ± 2.450	20.07 ± 3.359	20.36 ± 3.305	20.74 ± 3.232	
No	125	152.95 ± 19.098	25.65 ± 4.773	23.98 ± 4.014	25.85 ± 2.910	16.85 ± 2.356	19.74 ± 3.346	20.03 ± 3.118	20.86 ± 3.195	
p		0.421	0.644	0.311	0.423	0.369	0.390	0.383	0.758	
*p < 0.05, **p < 0.01, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level										

Table 4. Investigation of differences between sociodemographic characteristics according to Altruism Scale scores

Variables	n	Altruism Scale							
		Total score	Participation in volunteer activities	Financial aid	Help in traumatic situations	Help for the elderly/ patients	Physical strength-based help	Assistance in the training process	Help arising from a sense of closeness
		Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD
If experienced. Duration									
1-5 Years	85	154.91 ± 17.267	25.52 ± 5.300	24.46 ± 3.213	26.33 ± 3.103	17.28 ± 2.413	19.98 ± 3.295	20.53 ± 3.069	20.81 ± 3.205
6-10 Years	32	152.16 ± 25.183	25.25 ± 5.588	24.47 ± 4.436	25.5 ± 4.072	17.00 ± 2.640	19.84 ± 3.530	19.81 ± 4.115	20.28 ± 3.896
11 Years and above	60	156.00 ± 19.766	26.87 ± 5.435	24.37 ± 3.570	26.23 ± 3.357	16.90 ± 2.42	20.33 ± 3.398	20.42 ± 3.175	20.88 ± 2.900
p		0.671	0.248	0.986	0.484	0.633	0.751	0.574	0.671
Frequency of nursing home/elderly care center visits									
Never	194	150.17 ± 19.537	24.66 ± 5.208	23.63 ± 3.770	25.66 ± 3.361	16.69 ± 2.561	19.53 ± 3.452	19.75 ± 3.401	20.25 ± 3.2800
Sometimes/ often	108	160.94 ± 17.244	27.88 ± 4.353	25.35 ± 3.476	26.68 ± 2.751	17.56 ± 2.006	20.66 ± 3.048	21.07 ± 2.706	21.75 ± 2.855
p		< 0.001	< 0.001	< 0.001	0.008**	0.003**	0.005**	0.001**	< 0.001
Desire to work in jobs related to the elderly after graduation									
Yes	230	156.03 ± 19.171	26.23 ± 5.074	24.59 ± 3.585	26.26 ± 3.105	17.21 ± 2.441	20.14 ± 3.272	20.52 ± 3.203	21.08 ± 3.183
No	72	147.63 ± 18.952	24.46 ± 5.192	23.15 ± 4.086	25.28 ± 3.358	16.32 ± 2.194	19.28 ± 3.541	19.29 ± 3.151	19.85 ± 3.143
p		0.001**	0.010*	0.004**	0.023*	0.006**	0.047*	0.005**	0.004**
Course learning status about old age and the aging process									
Yes	212	154.78 ± 19.699	25.91 ± 5.221	24.49 ± 3.672	26.05 ± 3.297	17.08 ± 2.478	20.09 ± 3.398	20.33 ± 3.306	20.84 ± 3.359
No	90	152.23 ± 18.739	25.58 ± 4.999	23.68 ± 3.903	25.97 ± 2.935	16.80 ± 2.245	19.56 ± 3.229	19.99 ± 3.041	20.67 ± 2.848
p		0.297	0.609	0.087	0.841	0.356	0.202	0.408	0.669
*p < 0.05, **p < 0.01, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level									

Table 5. Investigation of differences between socioemographic characteristics of elderly individuals according to Willingness to Work Scale scores

Variables		n	Willingness to Work with Elderly Individuals Scale						
			Total score	Participation in volunteer activities		Financial aid	Help in traumatic situations		Help for the elderly/ patients
				Location ± SD	Location ± SD		Location ± SD	Location ± SD	
Gender									
Women	252	78.49 ± 15.301	15.38 ± 4.024	23.25 ± 4.458	21.18 ± 5.376	18.68 ± 5.092			
Male	50	75.90 ± 15.646	15.34 ± 3.910	21.72 ± 5.551	21.38 ± 5.182	17.46 ± 6.028			
p		0.277	0.952	0.035*	0.812	0.135			
Episode									
1. Elderly care	97	86.65 ± 10.146	15.71 ± 4.013	25.35 ± 3.479	24.05 ± 3.358	21.54 ± 3.536			
2. Disabled care and rehabilitation	91	81.49 ± 15.868	16.32 ± 4.621	22.96 ± 5.051	22.36 ± 4.893	19.86 ± 5.248			
3. Physiotherapy	114	68.01 ± 12.880	14.32 ± 3.161	21.03 ± 4.369	17.89 ± 5.296	14.77 ± 4.234			
p		< 0.001	0.001**	< 0.001	< 0.001	< 0.001			
Class									
1st grade	114	74.95 ± 16.424	14.96 ± 4.199	22.71 ± 4.789	19.49 ± 5.730	17.79 ± 5.547			
2nd grade	188	79.95 ± 14.401	15.62 ± 3.863	23.17 ± 4.618	22.26 ± 4.804	18.89 ± 5.060			
p		0.006**	0.161	0.409	< 0.001	0.077			
Longest inhabited region									
1. Mediterranean	28	80.04 ± 14.326	16.18 ± 4.714	22.32 ± 4.816	22.11 ± 4.756	19.43 ± 3.957			
2. Eastern Anatolia	39	82.28 ± 14.607	16.18 ± 4.236	24.33 ± 4.100	22.72 ± 4.989	19.05 ± 5.062			
3. Aegean	24	81.92 ± 17.116	16.63 ± 5.396	23.54 ± 4.128	22.13 ± 4.287	19.63 ± 6.163			
4. Southeastern Anatolia	38	76.63 ± 14.372	14.21 ± 3.338	22.97 ± 5.248	20.74 ± 4.769	18.71 ± 4.603			
5. Central Anatolia	56	73.80 ± 14.619	14.86 ± 2.497	22.38 ± 4.474	19.61 ± 6.187	16.96 ± 4.858			
6. Black Sea	89	80.29 ± 15.688	15.69 ± 4.141	23.61 ± 4.481	22.01 ± 5.144	18.99 ± 5.601			
7. Marmara	28	70.25 ± 13.866	13.96 ± 3.786	20.68 ± 5.292	18.79 ± 5.480	16.82 ± 5.894			
p		0.004**	0.038*	0.035*	0.006**	0.093			
Difference		2-7	2-7	2-7	2-7	-			
*p < 0.05, **p < 0.01, ***p < 0.001, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level									

*p < 0.05, **p < 0.01, ***p < 0.001, Mean, SD. Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level

Table 6. Investigation of differences between elderly individuals and sociodemographic characteristics according to Willingness to Work Scale scores

Variables	n	Willingness to Work with Elderly Individuals Scale				
		Total score	Participation in volunteer activities	Financial aid	Help in traumatic situations	Help for the elderly/ patients
		Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD
Family monthly income						
Income is less than expenditure	60	80.02 ± 13.494	15.65 ± 3.507	24.12 ± 4.255	21.48 ± 4.859	18.77 ± 5.080
Income is equal to expense	196	77.99 ± 15.674	15.34 ± 4.181	22.71 ± 4.772	21.32 ± 5.360	18.62 ± 5.251
Income is higher than expenditure	46	75.80 ± 16.279	15.13 ± 3.868	22.76 ± 4.696	20.43 ± 5.852	17.48 ± 5.573
p		0.375	0.792	0.117	0.549	0.372
Family structure						
Nuclear family	222	77.37 ± 15.39	15.10 ± 3.842	22.90 ± 4.593	21.04 ± 5.516	18.33 ± 5.318
Extended family	80	80.04 ± 15.209	16.15 ± 4.352	23.27 ± 4.946	21.72 ± 4.781	18.90 ± 5.131
p		0.187	0.044*	0.551	0.335	0.414
Most inhabited place						
1.Village/ town	77	80.91 ± 13.673	15.83 ± 4.057	23.99 ± 4.191	21.79 ± 4.753	19.30 ± 4.766
2nd district	106	79.23 ± 15.262	15.21 ± 3.759	23.16 ± 4.404	21.89 ± 5.144	18.97 ± 5.478
3rd province	119	75.18 ± 16.108	15.22 ± 4.177	22.21 ± 5.102	20.24 ± 5.742	17.50 ± 5.275
p		0.024*	0.506	0.031*	0.038*	0.032*
Difference		1-3	-	1-3	1.2-3	1-3
Relatives over the age of 65						
Yes	235	78.08 ± 15.490	15.30 ± 3.998	22.87 ± 4.556	21.34 ± 5.383	18.57 ± 5.351
No	67	77.99 ± 15.022	15.61 ± 4.026	23.43 ± 5.109	20.79 ± 5.186	18.15 ± 4.989
p		0.964	0.577	0.388	0.462	0.565
Living with a relative over the age of 65 for a period in your life						
Yes	177	79.90 ± 15.297	15.59 ± 4.036	23.42 ± 4.754	21.87 ± 5.329	19.02 ± 5.221
No	125	75.46 ± 15.136	15.06 ± 3.943	22.40 ± 4.528	20.29 ± 5.228	17.70 ± 5.256
p		0.013*	0.263	0.063	0.011*	0.032*

*p < 0.05, **p < 0.01, ***p < 0.001, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level

*p < 0.05, **p < 0.01, ***p < 0.001, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level

Table 7. Investigation of differences between elderly individuals and sociodemographic characteristics according to Willingness to Work Scale scores

Variables	n	Willingness to Work with Elderly Individuals Scale				
		Total score	Participation in volunteer activities	Financial aid	Help in traumatic situations	Help for the elderly/ patients
		Location ± SD	Location ± SD	Location ± SD	Location ± SD	Location ± SD
If experienced. duration						
1-5 years	85	79.95 ± 16.547	15.51 ± 4.205	23.32 ± 4.612	22.01 ± 5.824	19.12 ± 5.778
6-10 years	32	76.53 ± 15.877	14.84 ± 3.968	22.69 ± 5.833	20.84 ± 5.612	18.16 ± 5.200
11 years and above	60	81.62 ± 12.909	16.10 ± 3.817	23.95 ± 4.32	22.22 ± 4.377	19.35 ± 4.364
p		0.317	0.354	0.464	0.475	0.567
Frequency of nursing home/elderly care center visits						
Never	194	75.64 ± 15.218	15.06 ± 3.839	22.29 ± 4.635	20.36 ± 5.301	17.93 ± 5.142
Sometimes/ often	108	82.41 ± 14.713	15.94 ± 4.232	24.27 ± 4.511	22.75 ± 5.072	19.45 ± 5.373
p		< 0.001	0.067	< 0.001	< 0.001	0.016*
Desire to work in jobs related to the elderly after graduation						
Yes	230	82.04 ± 13.093	15.65 ± 3.916	23.99 ± 4.255	22.49 ± 4.438	19.92 ± 4.451
No	72	65.33 ± 15.232	14.49 ± 4.159	19.83 ± 4.599	17.15 ± 5.935	13.86 ± 5.036
p		< 0.001	0.031*	< 0.001	< 0.001	< 0.001
Course learning status about old age and the aging process						
Yes	212	80.64 ± 14.375	15.55 ± 4.115	23.50 ± 4.456	22.37 ± 4.681	19.23 ± 5.028
No	90	71.98 ± 15.968	14.94 ± 3.700	21.82 ± 5.005	18.50 ± 5.808	16.71 ± 5.422
p		< 0.001	0.228	0.004**	< 0.001	< 0.001
*p < 0.05, **p < 0.01, ***p < 0.001, Mean, SD: Standard Deviation, t: Independent Sample T Test, F: One-Way Analysis of Variance (ANOVA), Difference: Tukey Test, p: significance level						

Table 8. Investigation of the relationships between altruism scale scores and willingness to work with elderly individuals scale scores

Ratings	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Altruism total score													
r	1												
p													
2. Participation in volunteer activities													
r	0.797	1											
p	<0.001												
3. Financial aid													
r	0.837	0.599	1										
p	<0.001	<0.001											
4. Help in traumatic situations													
r	0.790	0.495	0.638	1									
p	<0.001	<0.001	<0.001										
5. Helping the elderly/patients													
r	0.797	0.572	0.636	0.653	1								
p	<0.001	<0.001	<0.001	<0.001									
6. Physical strength-based assistance													
r	0.756	0.468	0.586	0.499	0.590	1							
p	<0.001	<0.001	<0.001	<0.001	<0.001								
7 Assistance in the training process													
r	0.795	0.560	0.586	0.578	0.559	0.559	1						
p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001							
8. Help derived from a sense of closeness													
r	0.819	0.544	0.622	0.653	0.583	0.592	0.644	1					
p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
9. Willingness to work with elderly individuals total score													
r	0.377	0.342	0.261	0.260	0.304	0.275	0.350	0.304	1				
p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
10. Attitude													
r	0.124	0.213	0.036	0.025	0.015	0.073	0.162	0.091	0.624	1			
p	0.031*	<0.001	0.533	0.664	0.800	0.206	0.005**	0.115	<0.001				
11. Subjective norm													
r	0.402	0.325	0.270	0.307	0.370	0.293	0.383	0.322	0.802	0.333	1		
p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
12. Perceived behavioral norm													
r	0.335	0.251	0.281	0.267	0.272	0.250	0.289	0.271	0.849	0.320	0.609	1	
p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
13. Intention													
r	0.311	0.294	0.209	0.195	0.270	0.233	0.266	0.256	0.870	0.442	0.580	0.678	1
p	<0.001	<0.001	<0.001	0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
*p < 0.05, **p < 0.01, ***p < 0.001, r: Pearson correlation coefficient, p: significance level													

Discussion

Altruism can be described as prosocial behavior directed toward benefiting others without self-interest and often involving personal cost. The present study explored how altruism relates to willingness to work with older adults among students enrolled in associate degree programs in elderly care, disability care and rehabilitation, and physiotherapy. While overall altruism scores did not significantly differ across departments, students in elderly care programs demonstrated higher performance in the domains of assisting in traumatic circumstances and supporting older adults or patients compared with their peers in other disciplines. Higher altruism subscale scores were also observed among students residing in the Eastern Anatolia region, those whose mothers had attained only primary-level education, and those reporting financial strain.

Regarding career preferences toward older populations, elderly care students achieved the highest scores across the total willingness scale and its subdimensions, whereas physiotherapy students scored lowest. Willingness to engage in geriatric care was also elevated among students from Eastern Anatolia, those raised in extended households, residents of rural settlements, second year students, and individuals who had previously lived with relatives aged 65 years or older. Furthermore, altruism was moderately and positively associated with willingness to work with older adults across total and subscale measures.

Earlier investigations provide context for these findings. Arslanoğlu et al. [15] reported that altruistic tendencies among healthcare professionals differed according to demographic characteristics and were more pronounced in female nurses. Aydın [16] similarly documented greater altruism scores among women in nursing professions. Baysal et al. [17] observed higher empathy among female nursing students and among those expressing an intention to work with older people, although empathy was unrelated to income status, duration of residence in a region, household composition, cohabitation with older relatives, or frequency of visits to nursing homes. In partial agreement with these reports, the current study identified higher altruism levels among female participants and among students inclined toward geriatric practice, while no differences emerged based on household type or living with older relatives. Nonetheless, variations were detected in selected altruism subdomains according to economic conditions, residential region, and patterns of nursing home visitation, potentially reflecting differences in the assessment instruments employed.

Pekçetin and Günal [18] reported that senior students in health programs demonstrated higher altruism scores in the subdimension related to helping older adults or patients when compared with first-year students. Consistent with these findings, the present study also revealed that second year students exhibited higher altruism levels than those in their first year.

Geçim and Güner [19] found that willingness to provide care for older adults was significantly greater among students who

were female, lived in extended households, and had previously cohabited with older individuals. In a comprehensive review, Dai et al. [20] identified the presence of older family members and positive perceptions of aging as important contributors to nurses' inclination to work with older populations. In a study conducted by Akyol et al. [21] with nursing students, it was reported that positive attitudes towards the elderly and elderly care experience increased the desire to work with the elderly. In the study conducted by Guo et al. [22] with nursing students in China, attitudes towards the elderly and professional interest are among the important factors affecting students' willingness to work with the elderly. In a systematic review by Wang et al. [23], it was stated that approximately half of nursing students are willing to work in elderly care, and experience living or caring for the elderly increases this desire. In agreement with these studies, our results indicated significantly higher willingness scores among female participants, students from extended families, and those with prior experience of living with older relatives. In contrast, Başer Seçer [24] reported no significant associations between elderly care students' desire to work with older adults and variables such as gender, academic year, family structure, or cohabitation with older individuals. Such discrepancies may stem from uncontrolled contextual factors.

Kahraman et al. [25] observed more favorable attitudes toward older adults among elderly care students residing in extended families and rural areas. Parallel to these observations, our findings demonstrated greater willingness to work with older individuals among students living in extended households and in villages.

Although no previous research has examined the direct association between altruism and willingness to work with older adults using the same measurement instruments as in the present study, related evidence exists. Temiz and Öztürk [26] identified a weak but significant positive correlation between ageism and empathy among students. Kartal et al. [27] similarly reported a weak positive association between empathic tendencies and altruism in health-related student populations. Gümüş [28] found that favorable age-related attitudes were positively linked to vocational students' intentions to work with older adults. Chi et al. [29] demonstrated that nursing students' willingness to pursue a career in geriatrics is primarily driven by their positive perceptions of aging and previous volunteering experiences with the elderly. Likewise, Rathnayake et al. [30] demonstrated a significant positive relationship between attitudes toward older adults and willingness to engage in geriatric care among nursing students in Sri Lanka. In the study conducted by Won and Jang [31], it was reported that the level of empathy and voluntary experience with the elderly significantly increased the students' desire for elderly care. In a study conducted in Vietnam, Thoung et al. [32] showed that students' level of knowledge, attitudes, and experiences of elderly care towards the elderly were associated with their willingness to care for

the elderly. In the study conducted by Uzuntarla and Ceyhan [33], it was reported that there was a significant relationship between the level of altruism of the students and their attitudes towards the elderly. In line with these studies, our findings revealed a significant positive association between altruism levels and willingness to work with older adults among students enrolled in elderly care, disability care and rehabilitation, and physiotherapy programs.

This study has several limitations. First, the research was conducted with students studying at a single institution. This may limit the generalizability of the findings to all students in health-related fields. Second, the data were collected through self-report questionnaires, which may include biases due to participants' tendency toward social desirability. In addition, the cross-sectional design of the study does not allow for establishing causal relationships between the variables. Therefore, future studies involving larger samples from different universities and employing different research designs may provide a more comprehensive contribution to the literature.

Conclusion

Overall, the results indicate a meaningful positive relationship between altruism and willingness to work with older adults among associate degree health students. Although overall altruism did not differ significantly across academic departments, higher scores among elderly care students in the domains of assisting during traumatic situations and supporting older or ill individuals suggest a stronger orientation toward caregiving roles. From a sociodemographic perspective, higher altruism subscale scores and willingness levels among female students, second year students, and those residing in the Eastern Anatolia Region point to the potential influence of cultural and environmental contexts on prosocial behaviors and professional preferences. Furthermore, the robust association between altruism and intention to work with older adults underscores the value of educational strategies that cultivate empathy, altruistic attitudes, and prosocial orientations within health curricula. Expanding geriatric-focused coursework, enriching clinical placements, and reinforcing value-based educational frameworks may therefore represent effective approaches for increasing students' motivation to work with older populations.

Ethical Approval

Ethical approval for this study was obtained from the Publication Ethics Committee of Social and Human Sciences at Kastamonu University, with the decision dated April 10, 2025 (Protocol No: 2500047570; Decision No: 4/49).

Patient Consent

Written informed consent was obtained from all participants prior to their participation in the study.

Conflict of Interest

The authors confirm the absence of any conflicts associated with this work.

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