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Analysis of Indicators of Loneliness and Their Relationship with Physical Activity Levels in Kosovo

Kaltrina Rrafshi[1ABC] Drenushë Krasniqi[2CDE] Elona Sopa[3ABE] Deniz Celcima[4BCD*]

[1]*College Heimerer, Clinical Psychology, ORCID: 0009-0004-5433-7327, kaltrinarrafshi@gmail.com, Kosovo*

[2]*University of Padova, Clinical, Intercultural and Social Psychology, ORCID: 0009-0004-9542-0848, ddrenushhee@gmail.com, Italy*

[3]*College Heimerer, Clinical Psychology, ORCID: 0009-0007-3262-6525, sopaelona9@gmail.com, Kosovo*

[4]*University for Business and Technology (UBT), BSc in Psychology, ORCID: 0000-0001-9956-1446, deniz.celcima@ubt-uni.net, Kosovo*

**Corresponding author: deniz.celcima@ubt-uni.net*

Authors' Contribution: A: Study design, B: Data collection, C: Data analysis, D: Manuscript preparation, E: Discussion and conclusion

ABSTRACT

Study aim(s): This study aims to examine the prevalence of loneliness among adults in Kosovo, with a focus attention to gender, place of residence, marital status, and lifestyle habits. Additionally, it seeks to analyze the relationship between physical activity levels and experiences of loneliness.

Methods: A total of 128 participants completed a demographic questionnaire, along with two standardized instruments: the UCLA Loneliness Scale and the International Physical Activity Questionnaire (IPAQ). Data were collected virtually following ethical approval, and participation was entirely voluntary.

Results: This study found no statistically significant differences in overall levels of loneliness based on gender, place of residence, or lifestyle. However, responses to specific questions indicated that women exhibited higher levels of sensitivity. Notably, individuals in relationships reported higher levels of loneliness than those who were married or single. Regarding physical activity, men were generally more active than women, and rural residents engaged in more strenuous forms of exercise. A particularly important finding was that walking for more than 10 minutes per day had a positive and statistically meaningful impact on reducing feelings of loneliness.

Conclusion: The findings support the importance of promoting physical activity and suggest that incorporating at least a daily walk may serve as an effective strategy for preventing and managing loneliness.

Keywords: Loneliness, Physical Activity, Gender, Parental Impact, Residence, Marital Status

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INTRODUCTION

Loneliness is defined as an aversive emotional state that occurs when there is a discrepancy between the interpersonal relationships one desires and that one perceives to have [1]. According to Yanguas, Henandis, and Santabalbina (2018), Weiss defines loneliness as a natural phenomenon, a feeling that can emerge at certain moments in life and affect individuals regardless of gender, age, or other socio-demographic characteristics [2]. Loneliness is defined as a state that can lead to irritability, depression, self-centeredness, and that it is associated with objective social isolation, depression, introversion, or poor social skills. However, various studies have shown that these portrayals can be misleading. Loneliness is a unique state in which an individual perceives themselves as socially isolated, even when surrounded by others [3]. Its causes are diverse and may include physical or mental suffering, personal barriers, negative experiences such as the loss of a loved one or bullying, and major life transitions [4]. Another study found that males reported significantly higher levels of loneliness than females, whereas females were significantly higher levels of depression compared to males [5]. In terms of family connection, one study shows that adolescents from families with consistently high-quality connections experience lower levels of loneliness regardless of gender, parental education, mental health, or family income [6]. One study highlights several strategies for coping with loneliness, including building strong interpersonal relationships, seeking emotional support, using digital tools, engaging in activities that promote well-being, and maintaining a positive mindset. Participants also emphasized the importance of seeking professional help and focusing on personal growth as key components in overcoming loneliness [7].

Physical activity is described as any bodily movement produced by skeletal muscles that results in energy expenditure [8]. Despite widespread awareness of the health risks associated with a sedentary lifestyle, a significant proportion of adults in Western societies remain physically inactive. Initiatives to promote physical activity engagement have primarily focused on identifying its determinants and developing intervention strategies to improve long-term engagement. These determinants are generally categorized as non-modifiable factors (e.g., age, gender, and ethnicity) and modifiable factors, which include individual behaviors, personality traits, and social and physical environment [9]. Physical activity offers numerous benefits for overall health. Regular engagement in physical activities is associated with a significant reduction in both cardiovascular and all-cause mortality, contributing to improved cardiovascular health by favorably regulating risk factors. It also plays a critical role in managing type 2 diabetes, helping to delay or prevent its onset and improve glycemic control in diabetic individuals. Exercise increases insulin sensitivity and glucose uptake by muscles, aiding better regulation of blood sugar levels. Additionally, physical activity supports weight management by helping to maintain a healthy weight and body composition. It contributes to muscle and bone health by preserving muscle mass and bone density, thereby reducing the risk of osteoporosis and sarcopenia. Beyond physical benefits, engaging in regular exercise is linked to reduced symptoms of depression and anxiety, enhancing overall mental well-being. Furthermore, physical activity improves functional capacity by boosting physical fitness, strength, and endurance, which leads to better performance in daily activities [10].

In addition to the benefits mentioned above, studies have shown that physical activity is an effective intervention for managing mild to moderate mental health disorders, especially depression and anxiety. Although individuals suffering from depression tend to be less physically active, research shows that increasing aerobic or resistance training can significantly reduce depressive symptoms.

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Additionally, regular exercise has been shown to alleviate symptoms of anxiety and panic disorder, producing effects comparable to those achieved through relaxation techniques and meditation. Acute anxiety is more likely to respond positively to exercise compared to chronic forms. However, it is worth noting that excessive physical activity may lead to overtraining, which can produce symptoms similar to depression [11].

Loneliness brings many changes to an individual's life, making it a critical phenomenon to study, especially in countries where there is no such research. This study aims to find different ways to manage loneliness and raise awareness of its presence among younger populations. Additionally, low fitness levels, often linked to physical inactivity, are important indicators for both physical and psychological well-being. Therefore, the managing loneliness is closely connected to individuals' psychophysical state, which is determined by their level of physical activity. According to the WHO, higher level of physical activity makes it easier to cope with psychological phenomena such as stress, anxiety, etc. [12].

This study aims to examine the presence of loneliness within the Kosovar population, considering variables such as gender, rural or urban residence, marital status (single, in a relationship, engaged, or married), and lifestyle, defined by living arrangements (living alone, with both parents, or with one parent). In addition, the paper aims to analyze the impact of physical activity levels on experiences of loneliness, suggesting that higher levels of physical activity may contribute to a reduction in feelings of loneliness.

METHODS

Study model

This study employs a quantitative research model, utilizing questionnaires to collect data on socio-demographic factors, loneliness, and physical activity levels. The instruments used include the UCLA Loneliness Scale (UCLA-LS) and the International Physical Activity Questionnaire (IPAQ).

Participants

Participants in this study were drawn from the general Kosovar population and represented a mixed-age sample. A total of 128 participants were included in the study. The questionnaire was distributed virtually and was accompanied by an informed consent form, which outlined the description of the study and its objectives, the research procedures, and relevant ethical considerations. Participants were informed that their involvement was entirely voluntary, that their response would remain anonymous and confidential, and the possibility of terminating their participation in the study at any time. Additionally, prior permission was obtained from relevant institutional authorities and lecturers whose classes were involved in the questionnaire distribution.

Data collection tools

Participants first responded to a set of socio-demographic questions, including age, gender (male or female), residence (urban or rural), marital status (single, in a relationship, engaged, or married), living arrangement (with both parents, one parent, or alone), and profession. Following this, they completed the UCLA Loneliness Scale (UCLA-LS), a 20-item questionnaire designed to assess levels of loneliness. Lastly, participants filled out the International Physical Activity Questionnaire (IPAQ), which measures their physical activity levels.

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Table1. UCLA Loneliness Scale (University of California, Los Angeles Loneliness Scale)

No.	Items	Often	Sometimes	Rarely	Never
1	I am unhappy doing so many things alone.				
2	I have nobody to talk to.				
3	I cannot tolerate being so alone.				
4	I lack companionship.				
5	I feel as if nobody really understands me.				
6	I find myself waiting for people to call or write.				
7	There is no one I can turn to.				
8	I am no longer close to anyone.				
9	My interests and ideas are not shared by those around me.				
10	I feel left out.				
11	I feel completely alone.				
12	I am unable to reach out and communicate with those around me.				
13	My social relationships are superficial.				
14	I feel starved for company.				
15	No one really knows me well.				
16	I feel isolated from others.				
17	I am unhappy being so withdrawn.				
18	It is difficult for me to make friends.				
19	I feel shut out and excluded by others.				
20	People are around me but not with me.				

The UCLA Loneliness Scale is a widely used and well-validated self-report questionnaire developed by the University of California, Los Angeles. It is designed to assess individuals' subjective feelings of loneliness and social isolation by measuring the frequency of these experiences through a series of statements rated on a Likert scale. This tool is commonly used in both clinical and research settings to evaluate emotional and social well-being [13].

Table 2. International Physical Activity Questionnaire (IPAQ)

No	Items	Response
1	During the past 7 days, on how many days did you do strenuous physical activity such as heavy lifting, digging, aerobics, or fast cycling? (0–7 days)	___ days
2	How much time did you usually spend doing vigorous physical activity on one of those days? (minutes per day)	___ minutes per day
3	During the past 7 days, on how many days did you do moderate physical activity such as light weight lifting, cycling at a normal pace, or playing doubles tennis? (Exclude walking) (0–7 days)	___ days
4	How much time did you usually spend doing moderate physical activity on one of those days? (minutes per day)	___ minutes per day
5	During the last 7 days, on how many days did you walk for at least 10 minutes without stopping? (0–7 days)	___ days
6	How long did you usually spend walking on one of those days? (minutes per day)	___ minutes per day

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KOSALB

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7	During the last 7 days, how much time did you spend sitting on a workday? (Include work, home, study, leisure) (hours per day)	___ hours per day

Table 2 presents data from the International Physical Activity Questionnaire (IPAQ), a self-report tool used to assess the frequency and duration of various physical activities and sedentary behavior over the past seven days. It captures data on strenuous and moderate physical activities, walking, and time spent sitting [14].

Data analysis

The results of the normality test (Kolmogorov-Smirnova) indicated that the data did not follow a normal distribution ($p<0.05$), suggesting that the data are non-parametric and significantly deviate from a normal distribution. Based on these results, nonparametric analyses were applied in the study, including the Mann-Whitney U Test for comparisons between two independent groups, the Kruskal-Wallis Test for comparisons among three or more groups, and Spearman's correlation to assess the relationship between levels of loneliness and physical activity. However, the impact of physical activity levels on loneliness was tested using parametric analysis, specifically Linear Regression, because the physical activity variables are continuous rather than categorical. Additionally, the loneliness questionnaire variables were combined into.

FINDINGS

Table 3. Gender differences in loneliness levels conducted through Mann Whitney U test

UCLA Items	Gender	X̄±SD	Mann-Whitney U	Sig. (2-tailed)
Item 1	Male	2.29±.94	1694.0	.553
	Female	2.42±1.00		
Item 2	Male	3.10±.82	1760.0	.804
	Female	3.07±1.00		
Item 3	Male	2.83±.93	1690.5	.539
	Female	2.94±.95		
Item 4	Male	2.67±1.05	1772.0	.857
	Female	2.71±1.08		
Item 5	Male	2.43±.96	1709.0	.609
	Female	2.35±1.04		
Item 6	Male	2.38±.85	1486.0	.093
	Female	2.70±1.13		
Item 7	Male	3.00±.93	1677.0	.487
	Female	3.09±1.00		
Item 8	Male	3.21±1.04	1732.5	.672
	Female	3.33±.97		
Item 9	Male	2.40±.85	1259.0	.004
	Female	2.91±.91		
Item 10	Male	3.40±.91	1755.5	.767

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	Female	3.35±.95		
Item 11	Male	3.50±.80	1625.0	.293
	Female	3.30±.95		
Item 12	Male	3.26±.98	1771.0	.839
	Female	3.29±1.00		
Item 13	Male	2.62±.96	1744.0	.739
	Female	2.67±.91		
Item 14	Male	2.29±1.01	1666.0	.461
	Female	2.44±1.02		
Item 15	Male	2.26±1.08	1501.5	.110
	Female	2.59±1.09		
Item 16	Male	3.36±.93	1714.0	.599
	Female	3.27±.96		
Item 17	Male	2.93±.94	1751.0	.768
	Female	2.97±1.02		
Item 18	Male	3.19±.86	1764.0	.818
	Female	3.14±1.08		
Item 19	Male	3.31±.92	1773.0	.851
	Female	3.34±.92		
Item 20	Male	2.88±1.01	1761.5	.813
	Female	2.91±1.07		

Table 3 presents the results of gender differences loneliness levels, showing no statistically significant differences overall ($p>0.05$). However, for the question "I do not share my ideas and interests with the people around me," women reported statistically higher values than men ($p<0.05$).

Table 4. Gender differences in physical activity conducted through Mann Whitney U test

IPAQ Items	Gender	X̄±SD	Mann-Whitney U	Sig
Item 1	Male	3.04±2.37	1169.0	.001
	Female	1.65±1.99		
Item 2	Male	56.61±63.71	871.0	.001
	Female	23.27±59.05		
Item 3	Male	4.73±18.33	1553.0	.173
	Female	1.54±1.93		
Item 4	Male	36.26±42.30	1257.0	.004
	Female	20.45±55.38		
Item 5	Male	5.11±2.26	1756.0	.790
	Female	5.05±2.13		
Item 6	Male	58.52±68.08	1537.0	.171
	Female	46.01±77.02		
Item 7	Male	5.69±3.83	1589.0	.268
	Female	5.15±3.94		

From the table above, it can be concluded that men engage in physical activity on a significantly higher number of days per week compared to women ($p<0.05$). Men spend more time per day on physical activity, including walking, with these differences also reaching statistical significance is ($p<0.05$).

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Table 5. Differences in loneliness levels based on place of residence (Mann Whitney U test)

UCLA Items	Residence	X̄±SD	Mann-Whitney U	Sig
Item 1	Urban	2.41±.97	1657.5	.501
	Rural	2.29±1.00		
Item 2	Urban	3.07±.95	1755.5	.879
	Rural	3.10±.94		
Item 3	Urban	2.92±.95	1731.0	.779
	Rural	2.88±.92		
Item 4	Urban	2.74±1.03	1670.5	.547
	Rural	2.61±1.13		
Item 5	Urban	2.34±1.01	1706.5	.683
	Rural	2.44±1.05		
Item 6	Urban	2.57±1.07	1735.5	.800
	Rural	2.63±1.04		
Item 7	Urban	3.15±.89	1573.0	.254
	Rural	2.88±1.12		
Item 8	Urban	3.24±.98	1599.0	.284
	Rural	3.39±1.02		
Item 9	Urban	2.79±.91	1613.5	.362
	Rural	2.63±.94		
Item 10	Urban	3.38±.91	1777.5	.972
	Rural	3.34±.99		
Item 11	Urban	3.34±.88	1642.5	.410
	Rural	3.41±.97		
Item 12	Urban	3.32±.99	1655.5	.454
	Rural	3.20±1.00		
Item 13	Urban	2.69±.95	1684.5	.593
	Rural	2.59±.86		
Item 14	Urban	2.43±.92	1655.0	.496
	Rural	2.32±1.21		
Item 15	Urban	2.45±1.09	1682.0	.592
	Rural	2.56±1.11		
Item 16	Urban	3.31±.91	1770.0	.938
	Rural	3.27±1.02		
Item 17	Urban	2.90±.98	1603.0	.330
	Rural	3.07±1.01		
Item 18	Urban	3.11±1.01	1636.0	.415
	Rural	3.24±1.01		
Item 19	Urban	3.36±.88	1740.5	.805
	Rural	3.27±1.00		
Item 20	Urban	2.80±1.06	1506.5	.139
	Rural	3.10±.99		

Note: It should be noted that the observed range for the control group is narrower than the theoretical minimum due to the presence of tied values in the data. As a result, the findings should be interpreted with caution. The urban group consisted of 87 participants, while the rural group included 41 participants.

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Based on the results presented in the table above, residence does not have a statistically significant effect on participants' levels of loneliness, as indicated by a p-value greater than 0.05.

Table 6. Differences based on place of residence in physical activity (Mann Whitney U test)

IPAQ Items	Residence	X̄±SD	Mann-Whitney U	Sig
Item 1	Urban	1.81±2.06	1391.5	.037
	Rural	2.73±2.42		
Item 2	Urban	34.16±62.06	1752.0	.868
	Rural	34.34±63.82		
Item 3	Urban	3.03±12.83	1734.5	.790
	Rural	1.65±2.02		
Item 4	Urban	28.02±57.84	1630.0	.418
	Rural	20.58±35.99		
Item 5	Urban	5.20±2.06	1648.5	.470
	Rural	4.80±2.37		
Item 6	Urban	44.54±42.35	1610.5	.375
	Rural	61.95±115.75		
Item 7	Urban	5.37±3.38	1477.5	.116
	Rural	5.22±4.87		

Note: It should be noted that the observed range for the control group is narrower than the theoretical minimum due to the presence of tied values in the data. As a result, the findings should be interpreted with caution. The urban group consisted of 87 participants, while the rural group included 41 participants.

According to the results in Table 6, the only statistically significant difference between rural and urban participants is in the number of days engaged in strenuous physical activity, which is higher in rural areas ($p<0.05$). No significant differences were found between in the other physical activity variables ($p>0.05$).

Table 7. Comparison of loneliness levels by marital status (Kruskal Wallis) Pairwise Comparisons

UCLA Items	Status	X̄±SD	Kruskal-Wallis H	Sig
Item 1	Single	2.21±.92	4.157	.245
	In a relationship	2.58±.90		
	Engaged	2.40±1.51		
	Married	2.61±1.02		
Item 2	Single	2.89*±.93	9.958	.019
	In a relationship	3.21±.85		
	Engaged	3.80*±.44		
	Married	3.30*±.98		
	Single	2.85±.92	1.338	.720

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KOSALB

Original Article

Item 3	In a relationship	2.89±.99		
	Engaged	2.80±1.30		
	Married	3.06±.93		
Item 4	Single	2.72±1.03	2.080	.556
	In a relationship	2.89±1.15		
	Engaged	2.20±1.09		
	Married	2.61±1.11		
Item 5	Single	2.37±1.04	2.043	.564
	In a relationship	2.11±.80		
	Engaged	2.60±1.14		
	Married	2.52±1.06		
Item 6	Single	2.52±.98	2.839	.417
	In a relationship	2.47±1.26		
	Engaged	3.20±1.30		
	Married	2.73±1.06		
Item 7	Single	2.90±1.00	5.707	.127
	In a relationship	3.37±.89		
	Engaged	3.60±.54		
	Married	3.15±.97		
Item 8	Single	3.20±1.00	2.306	.511
	In a relationship	3.53±.90		
	Engaged	3.20±1.30		
	Married	3.36±.99		
Item 9	Single	2.66±.87	3.562	.313
	In a relationship	2.63±.83		
	Engaged	3.20±1.30		
	Married	2.91±1.01		
Item 10	Single	3.35±.92	2.442	.486
	In a relationship	3.11±1.15		
	Engaged	3.80±.44		
	Married	3.4±8.87		
Item 11	Single	3.32±.93	2.205	.531
	In a relationship	3.21±1.03		
	Engaged	3.80±.44		
	Married	3.48±.83		
Item 12	Single	3.18±1.03	2.609	.456
	In a relationship	3.53±.90		
	Engaged	3.60±.89		
	Married	3.30±.98		
Item 13	Single	2.59±.90	1.427	.699
	In a relationship	2.63±.95		
	Engaged	3.00±1.00		
	Married	2.76±.96		
Item 14	Single	2.49±1.09	2.696	.441
	In a relationship	2.37±.89		
	Engaged	2.60±1.14		
	Married	2.15±.90		
Item 15	Single	2.49±1.13	3.199	.362
	In a relationship	2.11±.93		
	Engaged	2.60±1.14		

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KOSALB

Original Article

	Married	2.67±1.10		
Item 16	Single	3.27±.97	2.843	.417
	In a relationship	3.11±.93		
	Engaged	3.60±.89		
	Married	3.42±.93		
Item 17	Single	2.97±1.02	.520	.914
	In a relationship	2.84±1.06		
	Engaged	3.20±.83		
	Married	2.94±.93		
Item 18	Single	3.13±.95	4.807	.186
	In a relationship	3.16±1.16		
	Engaged	4.00±.00		
	Married	3.09±1.10		
Item 19	Single	3.35±.91	.717	.869
	In a relationship	3.16±1.06		
	Engaged	3.40±.89		
	Married	3.36±.89		
Item 20	Single	2.87±1.09	2.100	.552
	In a relationship	2.68±1.10		
	Engaged	3.40±.89		
	Married	3.00±.93		

**Single/Married (p=.014), Single/Engaged (p=.025)*

Based on the results, the level of loneliness turns out to be statistically higher among individuals who are engaged compared to those who are married or single ($p<0.05$). Additionally, married people result in a higher level of loneliness compared to single individuals ($p<0.05$). In contrast, the "in a relationship" status turns out to be statistically invalid ($p>0.05$).

Table 8. Comparison of loneliness levels by lifestyle/life habits (Kruskal Wallis)

UCLA Items	Parental status	$\bar{X}$±SD	Kruskal Wallis H	Sig
Item 1	Both parents	2.30±.94	1.958	.376
	One parent	2.61±1.14		
	Living alone	2.57±1.01		
Item 2	Both parents	3.11±.90	.293	.864
	One parent	3.00±.97		
	Living alone	2.93±1.20		
Item 3	Both parents	2.90±.94	.157	.925
	One parent	3.00±.84		
	Living alone	2.86±1.09		
Item 4	Both parents	2.73±1.08	1.019	.601
	One parent	2.72±1.07		
	Living alone	2.43±1.01		
Item 5	Both parents	2.44±.98	1.723	.422
	One parent	2.17±1.15		
	Living alone	2.21±1.12		
	Both parents	2.63±1.08		

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KOSALB

Original Article

Item 6	One parent	2.44±1.04	.471	.790
	Living alone	2.57±.93		
Item 7	Both parents	3.15±.97	3.514	.173
	One parent	2.78±.87		
	Living alone	2.86±1.09		
Item 8	Both parents	3.32±.97	1.058	.589
	One parent	3.33±.97		
	Living alone	3.00±1.17		
Item 9	Both parents	2.79±.93	4.362	.113
	One parent	2.83±.92		
	Living alone	2.29±.72		
Item 10	Both parents	3.42±.90	.969	.616
	One parent	3.17±1.09		
	Living alone	3.29±.99		
Item 11	Both parents	3.43±.85	1.209	.546
	One parent	3.22±1.11		
	Living alone	3.14±1.02		
Item 12	Both parents	3.31±.97	1.114	.573
	One parent	3.06±1.11		
	Living alone	3.36±1.00		
Item 13	Both parents	2.73±.87	2.495	.287
	One parent	2.50±1.15		
	Living alone	2.36±.92		
Item 14	Both parents	2.42±1.02	.439	.803
	One parent	2.39±1.14		
	Living alone	2.21±.89		
Item 15	Both parents	2.55±1.09	3.073	.215
	One parent	2.50±1.20		
	Living alone	2.00±.96		
Item 16	Both parents	3.40±.90	4.554	.103
	One parent	3.11±1.02		
	Living alone	2.86±1.09		
Item 17	Both parents	3.01±1.00	1.894	.388
	One parent	2.89±.96		
	Living alone	2.64±1.00		
Item 18	Both parents	3.23±.96	1.526	.466
	One parent	2.94±1.16		
	Living alone	2.93±1.14		
Item 19	Both parents	3.40±.86	1.531	.465
	One parent	3.11±1.13		
	Living alone	3.14±1.02		
Item 20	Both parents	2.98±1.05	2.803	.246
	One parent	2.67±.90		
	Living alone	2.64±1.15		

According to the results presented in the table above, there are no statistically significant differences in loneliness levels based on lifestyle, specifically whether participants live with their parents or not ($p>0.05$).

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Table 9. The impact of physical activity on loneliness levels

IPAQ Items	F	Sig	R square	B	Standardized Coefficients	Sig.
Item 1				.324	Beta	.558
Item 2				.041	.204	.098
Item 3				-.159	-.134	.131
Item 4	2.149	.004	.111	-.034	-.140	.229
Item 5				1.076	.185	.048
Item 6				-.016	-.095	.300
Item 7				-.453	-.140	.118

The previous table shows that only walking for more than 10 min per day has a statistically significant positive impact on reducing loneliness ($p<0.05$). Based on the B value, this means that for each additional day a person walks for more than 10 minutes, the dependent variable (score) increases on average by approximately 1.076 units, assuming all other factors in the statistical model remain unchanged. Furthermore, the R squared value shows that 11% of the variance in loneliness can be explained by this variable, indicating a modest but meaningful relationship.

DISCUSSION

The results regarding gender differences in the level of loneliness showed no statistically significant differences, except for the statement, "I do not share my ideas and interests with the people around me," where women reported higher values. According to well-known evolutionary theory, this finding may be interpreted as loneliness being more internalized in women, who tend to be more sensitive to various social aspects [15]. One side of the study coincides with our results; therefore, it is important to study the problem further.

From the results of the study, it can be concluded that the number of days per week which the population engages in physical activities is statistically higher in men. Additionally, both the duration of daily activity and the time spent walking each day are statistically higher in men. This finding is consistent with the literature; according to a study, several factors that influence this phenomenon, including men having greater social support from friends, more benefits from physical exercise, fewer obstacles, and a greater enjoyment of physical activity compared to women [16].

Based on the results shown in the table above, residence is not a statistically significant variable in the level of loneliness. However, the number of days with strenuous physical activity is higher in rural areas, likely because the larger environmental space allow for more physical activities compared to urban areas. The study by Fan, Wen, and Jones also found that 'rural residents reported more total physical activity than city residents, with the differences being attributed mainly to family physical activity' [17].

The level of loneliness is statistically higher among engaged people compared to married and single individuals. Additionally, married people exhibit higher levels of loneliness than single people. Whereas, being "in a relationship" was found to be statistically insignificant. A study by Liu et al., conducted during the COVID-19 period, found that

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divorced and widowed older adults experienced higher levels of loneliness, with divorced older adults feeling lonelier than before pandemic. Similarly, another study on self-rated health (SRH) found that older adults who were unmarried and living alone were 38% more likely to report poor self-rated health than those who were currently married and cohabiting in rural India [18].

According to the results in the table above, there are no statistically significant differences in the level of loneliness based on living arrangements, whether living with parents or without, likely because the majority of the population lives with other family members, considering that the largest number of participants in the study are women. However, further research is recommended to bettter understand the role of the family as a whole in influencing loneliness levels in the population. One study similarly found no significant difference in loneliness between individuals from nuclear and joint families [19]. Furthermore, another study showed that young adults living with their parents reported lower levels of loneliness compared to those living alone or with peers [18]. The previous table shows that only walking more than 10 min per day has a significant positive impact on reducing loneliness. A published study also found that a single 10-minute walk significantly improved the mood of young people, suggesting that even short periods of walking can provide immediate mental health benefits [21].

CONCLUSION

This research concludes that loneliness among the adult population in Kosovo is not significantly influenced by factors such as gender, residence or lifestyle. However, marital status emerged as an important determinant, with engaged people experiencing higher levels of loneliness. Additionally, men were found to participate more frequently in physical activities, particularly in rural areas. Notably, the most significant finding was the positive impact of walking for more than 10 minutes per day in reducing loneliness, underlining the importance of regular physical engagement for psychological well-being. These results suggest the need for targeted interventions and public health policies that promote physical mobility, particularly amomg groups most at risk of experiencing loneliness. This research aims to raise awareness about the role on of physical activity in supporting mental health, with a specific focus on alleviating loneliness.

CONFLICT OF INTERESTS

No potential conflict of interest was reported by the authors.

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