

The Role of Environmental and Socioeconomic Factors in Mental Health Well-being: Insight from Jordan

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Depression, anxiety, and stress are among the most common psychological disorders affecting people worldwide. These conditions can influence mental well-being, resulting in sustained feelings of sadness, worry, and hopelessness. This study aims to examine the relationship between environmental factors and psychological disorders (i.e., depression, anxiety, and stress) and to explore the relationship between socioeconomic factors and these psychological disorders. Sociodemographic characteristics were collected using separate data collection sheet, environmental and socioeconomic factors were measured using special Likert scale (1-5) questionnaire. Depression, anxiety, and stress were measured using the Arabic version of Depression, Anxiety, and Stress Scale - 21 items (DASS-21). Spearman's Rank Correlation was used to examine the relationship between environmental factors and (anxiety, depression, stress) and socioeconomic factors and (anxiety, depression, stress). The results were considered significant at P value < 0.05, and the confidence interval (CI) was 95%. The study included 409 participants. with a mean age of 36.42 years (SD ± 13.259). The majority were female (59.4%), married (57.2%), had a bachelor's degree (46.5%), and were employed full-time (51.3%). The majority had an income of less than 500 JOD per month (53.5%). A negative significant relationship was found between Depression, anxiety, and stress and all environmental and socioeconomic factors except proximity of green areas Environmental and socioeconomic factors were found to be significantly associated with mental health, indicating that both environmental and personal financial safety play crucial roles in influencing psychological well-being. These findings suggest that interventions aimed at improving access to natural environments and enhancing home security may be beneficial in promoting mental health and reducing depression, anxiety and stress levels within the population.

Keywords: Mental Health, Environment, Socioeconomic factors, Green spaces, House stability.

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1. Introduction

Depression, anxiety, and stress are among the most common psychological disorders affecting people worldwide (Forero, 2023; Tariq, 2022; Wainberg et al., 2017). These conditions can influence mental well-being, resulting in sustained feelings of sadness, worry, and

hopelessness, ultimately, decreasing life satisfaction, reducing productivity, exacerbating mental health challenges, and leading to declined quality of life (Collins et al., 2023; Louis, 2022). Many socioeconomic and environmental factors contribute to their onset and severity. To reduce the level of these conditions, people need to control their surroundings stressors and practice



regular recreational activities that serve as a release and promote relaxation (Bressane et al., 2024).

Green areas such as gardens, parks, and natural forests are places where people usually find the opportunity to relax or practice leisure and recreational activities. The extensive wide spaces, quiet environment, and the engaging view of grasses and trees provide a chance for calmness and unwinding, these restorative and immersive places help people to escape from their daily routine and enhance social connection and integration with nature (Stepansky et al., 2023). For some people, visiting green areas is part of their routine, for others, this opportunity may be not available.

Studies have shown that regular exposure to green areas significantly affects mental health (Heidarzadeh et al., 2021; Kanelli et al., 2023; Liu et al., 2022). For instance, Fowler Davis and colleagues observed that green spaces may have a role in preventing cognitive frailty (Fowler Davis et al., 2024), Ningtyas et al., conducted a mix-method study to investigate the effect of nature exposure on mental health and well-being, the authors found that participants who spending more time in nature space reported better mental health, they conclude that spending time in nature can promote emotional rejuvenation, cognitive restoration, and relaxation (Ningtyas et al., 2023).

Socioeconomic factors such as housing stability and financial affordability are fundamental for human mental well-being, they serve as a framework for different aspects of life, stable housing reflects that individuals have a safe and consistent environment. Which in turn, promotes a sense of belonging and enhances social integration. Moreover, planning for future and professional growth requires a feeling of security and steadiness. On the other hand, housing instability, such as eviction and frequent moves hurt individuals' mental, physical, and social well-being.

Studies documented that recurrent house moving is associated with poorer mental health (Cheung & Wong, 2022; Ishii et al., 2020). Individuals who change their house frequently are more vulnerable to experience anxiety and other psychological disorders compared with those who do not (Lim et al., 2022; Oishi & Talhelm, 2012). Park & Seo conducted a longitudinal study to investigate the relationship between residential instability and perceived health status, the finding of this study implied that house instability had a negative

significant impact on perceived health status, and renters who experienced residential instability exhibited more severe depressive symptoms compared to those with stable house (Park & Seo, 2020).

Recently, growing attention on the impact of socioeconomic and environmental factors on mental health has emerged as a critical area of research (Reece et al., 2021). This study was undertaken in Jordan; a Middle Eastern country classified by the World Bank as a low-income country and has limited green spaces. Therefore, the present study contributes to the current body of knowledge by providing insight into the relationship between environmental and socioeconomic factors and mental health well-being among Jordanian people. This study aims to (1) examine the relationship between (the frequency of visiting green areas and the proximity of these green areas) and psychological disorders (i.e., depression, anxiety, and stress), (2) explore the relationship between socioeconomic factors such as house stability, house type, and income and these psychological disorders,

2. Methods and Materials

2.1. Design and Population

The current study implements the cross-sectional design to examine the relationship between environmental and socioeconomic factors and (anxiety, depression, and stress). Participants are adults who are living in Jordan, aged more than 18 years and do not have known mental disorders.

2.2. Sample and Sampling

Participants were invited to participate in the present study using convenience sampling methods. To ensure a wide-ranging and effective reaching, participants were contacted utilizing various network platforms, this approach facilitating quick engagement and maximizing response rate. The sample size was calculated using G* Power calculator (version 3.1.9.7.). Based on the following values; alpha (α)=0.05, power ($1-\beta$)=0.95, and medium effect size, the required sample size was 400 participants.

2.3. Study Instrument

The demographic characteristics (age, gender, marital status, education level, and monthly income) of the participants were collected using a separate data collection sheet. Environmental and socioeconomic factors were measured using a special Likert scale (1-5) questionnaire designed by the authors. The questionnaire provides information regarding participant's exposure to the green areas such as the proximity of the nearest garden or park and the frequency of visiting green areas. Additionally, the questionnaire gathers information about home stability like the duration of living in the current house, property tenure, and the financial capability to fulfill housing affordability.

Depression, anxiety, and stress were measured using the Arabic version of Depression, Anxiety, and Stress Scale - 21 items (DASS-21). DASS-21 is a three-domains scale designed to assess the severity of these psychological symptoms. The scale consists of 21 items; the respondents rate their symptoms on a 4-points Likert scale (from 0 to 3), where 0 represents no symptoms and 3 represent severe symptoms. The subscale scores are retrieved by summing the responses within each

domain. DASS-21 was validated to be used in the Arabic language (Al-Hayani et al., 2023; Ali et al., 2017).

2.4. Statistical Analysis

Inferential and descriptive statistics were used to test and describe the study variables. The Statistical Package for the Social Sciences (SPSS) (version 29.0.2) was used to analyze the data. Categorical data were presented as frequencies and percentages, and continuous data were demonstrated as means (m) and standard deviations (SD±). Spearman's Rank Correlation was used to examine the relationship between environmental factors and (anxiety, depression, stress) and socioeconomic factors and (anxiety, depression, stress). The results were considered significant at P value < 0.05, and the confidence interval (CI) was set at 95%.

3. Results

The analysis included 409 participants. The age of participants ranged from 15 to 75 years, with a mean age of 36.42 years (SD ± 13.259). The majority of participants were female (59.4%), married (57.2%), had a bachelor's degree (46.5%), and were employed fulltime (51.3%). Additionally, the most common income category was less than 500 JOD per month (53.5%). (Table 1).

Table 1

Sociodemographic characteristics of the participants

Variable	Category	Frequency	Percent	Valid Percent
Gender	Female	243	59.4	59.4
	Male	166	40.6	40.6
Marital Status	Single	155	37.9	37.9
	Married	234	57.2	57.2
	Divorced	16	3.9	3.9
	Widowed	4	1.0	1.0
Educational Level	Below high school	11	2.7	2.7
	High school	45	11.0	11.0
	Diploma	108	26.3	26.3
	Bachelor	190	46.5	46.5
	Master	42	10.3	10.3
	PhD	13	3.2	3.2
Employment Status	Unemployed	130	31.8	31.8
	Full time	210	51.3	51.3
	Part time	28	6.8	6.8
	Retired	41	10.0	10.0
Income	Less than 500 JOD	219	53.5	53.5
	500-750 JOD	78	19.1	19.1
	750-1000 JOD	46	11.2	11.2
	More than 1000 JOD	66	16.1	16.1

Regarding psychological disorders, the analysis showed that, the mean score of anxiety was 6.45 (SD ± 5.030) with 24.2% had extremely severe symptoms. The depression mean score was 7.32 (SD ±5.323) with 14.4%

had extremely severe symptoms. The stress mean score was 8.99 (SD ± 5.303) with 10% was categorised as having extremely severe symptoms (Table 2 and Table 3).

Table 2

Classification of the participants according to the severity of the symptoms

Disorder	Category	Frequency	Percent	Valid Percent
Anxiety	Normal	143	35.0	35.0
	Mild	30	7.3	7.3
	Moderate	86	21.0	21.0
	Severe	51	12.5	12.5
	Extremely sever	99	24.2	24.2
Depression	Normal	147	35.9	35.9
	Mild	63	15.4	15.4
	Moderate	85	20.8	20.8
	Severe	55	13.4	13.4
	Extremely sever	59	14.4	14.4
Stress	Normal	184	45.0	45.0
	Mild	57	13.9	13.9
	Moderate	66	16.1	16.1
	Severe	61	14.9	14.9
	Extremely severe	41	10.0	10.0

Table 3

Psychological disorders levels

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Anxiety	409	0	21	6.45	5.030
Depression	409	0	21	7.32	5.323
Stress	409	0	21	8.99	5.303

Correlation analysis revealed that the frequency of visiting green areas was negatively correlated with anxiety (r = -0.138, p = 0.005), depression (r = -0.171, p = 0.001), and stress (r = -0.185, p = 0.000).

However, the proximity of green areas showed no significant correlations with anxiety (r = -0.079, p = 0.112), depression (r = -0.077, p = 0.120), or stress (r = -0.089, p = 0.072) (Table 4).

Table 4

Correlation between psychological disorders and green areas characteristics

Variable	Correlation	Frequency of visiting green areas	Proximity of green areas
Anxiety	Correlation Coefficient	-.138**	-.079
	Sig.	.005	.112
	N	409	409
Depression	Correlation Coefficient	-.171**	-.077
	Sig.	.001	.120
	N	409	409
Stress	Correlation Coefficient	-.185**	-.089
	Sig.	.000	.072
	N	409	409

** . Correlation is significant at the 0.01 level (2-tailed).

Additional correlation analysis indicated that housing type, stability feeling, and financial security were associated with mental health outcomes. Specifically, anxiety was negatively correlated with housing type ($r = -0.143$, $p = 0.004$), stability feeling ($r = -0.245$, $p = 0.000$), and financial security ($r = -0.275$, $p = 0.000$). Depression

showed negative correlations with housing type ($r = -0.102$, $p = 0.039$), stability feeling ($r = -0.270$, $p = 0.000$), and financial security ($r = -0.290$, $p = 0.000$). Stress was also negatively correlated with housing type ($r = -0.155$, $p = 0.002$), stability feeling ($r = -0.242$, $p = 0.000$), and financial security ($r = -0.280$, $p = 0.000$) (Table 5).

Table 5

Correlation between psychological disorders and housing characteristics

Variable	Correlation	Housing Type	House stability	Income	Financial Security
Anxiety	Correlation Coefficient	-.143**	-.221**	-.176	-.275**
	Sig. (2-tailed)	.004	.000	.000	.000
	N	409	409	409	409
Depression	Correlation Coefficient	-.102*	-.159**	-.131	-.290**
	Sig. (2-tailed)	.039	.000	.001	.000
	N	409	409	409	409
Stress	Correlation Coefficient	-.155**	-.206**	-.138	-.280**
	Sig. (2-tailed)	.002	.000	.000	.000
	N	409	409	409	409

** . Correlation is significant at the 0.01 level (2-tailed).

4. Discussion

4.1. Environmental Factors

In the present study, statistically significant correlations have been observed between (depression, anxiety, and stress) and frequency of visiting green areas, and between (depression, anxiety, and stress) and (housing type, stability feeling, and financial security). Whereas the relationship between the proximity of green areas and (depression, anxiety, and stress) was not statistically significant.

The findings suggest a possible protective role of the exposure to green areas against mental disorders. These results were in agreement with previous studies that demonstrated that contact with green areas including parks, forests, and grasslands had a significant positive impact on mental health. For instance, Bressane et al. conducted a cross-sectional study to explore the relationship between contacting with green areas and the occurrence of (depression, anxiety, and stress). The results of their study revealed that the probability of stress occurrence was 97.95% for people who had rarely contacted the green spaces compared to 20% for those who frequently contacted, additionally, the authors found that the probability was 3.6 fold higher for anxiety

and 4.8 folds higher for depression with those who had rarely contacted green areas (Bressane et al., 2022).

Rural areas have much more green spaces than urban areas. In a study by Cox et al., residents who live in rural areas showed better mental health status than those who live in urban areas (Cox et al., 2018). Correspondingly, studies have shown that being surrounded by green spaces is associated with better mental health (Beyer et al., 2014; Fan et al., 2011; Rautio et al., 2018).

In addition to a subjective rating of mental health, symptoms of psychological disorders can be assessed objectively. In a study by Ulrich et al., the authors aimed to assess the impact of exposure to natural environments such as vegetation and water on stress recovery time compared with exposure to the urban environment. The author used both physiological and self-rating indicators to assess stress recovery time after experiencing a stressful situation. They concluded that, compared with the urban groups, nature subjects had faster recovery time and this effect was proven in physiological and self-rating indicators (Ulrich et al., 1991).

Environmental psychology is a branch of psychology that studies the interaction between people, and their environment. This includes the effect of the built and natural environment on people's wellbeing and Behaviours (De Groot, 2018). Attention Restoration Theory (ART) is a widely common theory in the

environmental psychology field. The theory proposes that cognitive exhaustion and loss of concentration can be restored by spending time in nature. According to Kaplan, escaping from routine habits to the natural environment allows for more recovery and restore the directed attention capacity (Kaplan & Kaplan, 1989; Kaplan, 1995; Kaplan & Berman, 2010). Human brain has a limited capacity to focus on specific tasks for a long time, prolonged thinking and concentration results in cognitive exhaustion and a decline in frustration tolerance. Therefore, people need to replenish and reload their energy.

The results revealed that the frequency of visiting green areas was significantly associated with the level of (depression, anxiety, and stress). conversely, the relationship between proximity of green areas and these psychological disorders was not statistically significant, this could indicate the deeper mental benefits of active engagement with these areas than only living nearby. In this context, studies have shown that practicing physical activities in green areas is more influential on mental well-being than practicing in more built areas. For instance, Song et al compared the influence of walking in vegetation with walking Inside constructed environments. The authors found that people who often walk in green areas such as parks had lower anxiety and stress levels compared with those who walk in artificial environments (Mackay & Neill, 2010). Similarly, Pretty et al observed a significant lower depression level among those who usually walk around lakes and parks compared with those who walk inside shopping malls (Pretty et al., 2006).

4.2. Socioeconomic Factors

Consistent with other findings, the present study showed significant relationships between home stability and mental disorders (depression, anxiety, and stress). Studies have demonstrated that stable housing conditions are positively associated with better mental well-being. For instance, Kim and Burgard assessed the association between mental health and some home stability factors such as eviction, moving to another house, and moving due to cost reasons, in their study, individuals who move due to cost reasons were more likely to have a new attack of anxiety, while those who experienced eviction were more likely to have depressive symptoms (Kim & Burgard, 2022). Similarly,

Kang proposed that frequent moves and unstable house conditions can worsen mental health status, and result in increased levels of anxiety and depression (Kang, 2022). Moreover, Padgett's work emphasized that stable housing provides a sense of security and fosters social networks, which are vital for mental health (Padgett, 2020).

In this context, individuals mostly face house instability due to financial difficulties. Financial condition plays a critical role in individuals' capability to maintain a stable living environment. Which in turn is linked to their mental health status. In the present study, participants were asked to rate their financial capacity to fulfill housing affordability; the result revealed a significant negative correlation with (depression, anxiety, and stress). Similarly, Bialowolski et al assessed the relationship between financial condition and mental health; the authors found that financial safety was significantly associated with both anxiety and depression (Bialowolski et al., 2021). Bateni & Khorshidi argued that financial difficulties exacerbate mental health conditions and influence overall well-being (Bateni & Khorshidi, 2024). Moreover, in the present study, monthly income was significantly associated with (depression, anxiety, and stress). this result supports the claim that socioeconomic status plays a deterrent role in mental health status (Botha et al., 2024; Dirx et al., 2023; Kübilay, 2023).

5. Conclusion

Environmental and socioeconomic factors were found to be significantly associated with mental health, indicating that both environmental factors and personal financial safety play crucial roles in influencing psychological well-being. These findings suggest that interventions aimed at improving access to natural environments and enhancing home security may be beneficial in promoting mental health and reducing depression, anxiety and stress levels within the population.

6. Recommendations and Future Research

Policy-makers are recommended to focus on creating structured green spaces with public recreation and socialization opportunities. Additionally, policy-makers are recommended to boost public awareness regarding the effect of these environmental and socioeconomic

factors on mental well-being, while individuals are recommended to spend more time in green areas and make interaction with the natural environment part of their regular habits. Moreover, people are advised to make their decisions regarding property ownership according to their affordability.

Future studies are recommended to compare the psychological effects of spending time on mobile phones versus spending time in green spaces. Specifically, studies could explore how these activities impact mental health outcomes such as depression, anxiety, stress, and overall well-being. This comparison could help determine the relative benefits of nature exposure versus mobile phone use on mental health.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

This study prioritized respondents' rights and privacy. All data were handled confidentially, and participation was entirely voluntary. No risks were associated with participation, and ethical approval was obtained before the study began.

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