DO SOCIO-DEMOGRAPHIC FACTORS SIGNIFICANTLY IMPACT DEPRESSION TREATMENT?

DA LI SOCIJALNO-DEMOGRAFSKI FAKTORI ZNAČAJNO UTIČU NA LEČENJE DEPRESIJE?

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Abstract

Introduction: Depression is a common illness worldwide. Several studies have confirmed a tight relation between certain socio-demographic factors and the risk of undergoing depression.

Aim: This study aims to find out which socio-demographic factors indicate a more unfavorable treatment outcome following depression assessment scales.

Material and methods: The research is a longitudinal study, retrospective in design which consists of two phases. Upon entrance, socio-demographic data (sex, age, marital status, occupation, and education level) and Hamilton Depression Rating Scale (HDRS or HAMD) scores of 30 participants were recorded. After a four-week treatment, HAMD scores were again recorded and compared with those obtained in the initial phase.

Results: Patients with female gender, old age, employment, and low educational level as socio-demographic factors experienced weak changes in the HAMD scores. On the other hand, patients who were male, young aged, unemployed, and had higher education studies scored lower HAMD scores after treatment and, successfully obtained strong changes in the HAMD scores. Results for marital status were inconclusive. The level of statistical significance was set at p < 0.001.

Conclusion: Female gender, aging, lower education and employment are factors that may have attributed to poor treatment improvement and hence should be taken into consideration by general practitioners. Likewise, marital status proved to be a statistically significant factor. However, no inclination towards a specific category was noticed.

Keywords:
depression, longitudinal study, socio-demographic factors

Sažetak

Uvod: Depresija je bolest koja je rasprostranjena širom sveta. Brojne studije pokazuju značajnu povezanost određenih sociodemografskih faktora i depresivnog poremećaja.

Cilj: Cilj ove studije je da otkrije koji sociodemografski faktori doprinose nepovoljnijem ishodu lečenja depresije, uzevši u obzir skorove skala za procenu depresivnosti.

Materijal i metode: Istraživanje predstavlja longitudinalnu studiju, retrospektivnog dizajna, sastavljenu od dve faze. Istraživanjem je obuhvaćeno 30 hospitalizovanih pacijenata sa dijagnozom depresivnog poremećaja. Na prijemu su zabeleženi sociodemografski podaci (pol, starost, bračni status, zanimanje i stepen obrazovanja) i urađena Hamiltonova skala za procenu depresije (HAMD). Nakon četiri nedelje lečenja, ponovljeno je testiranje HAMD skalom i izvršena je komparacija sa rezultatima sa prijema.

Rezultati: Ženski pol, starije životno doba, zaposlenost i niži stepen edukacije predstavljaju sociodemografske faktore koji su u našem istraživanju pokazali manje promene u skorovima HAMD skale na prijemu i otpustu. S druge strane, muški pol, mlađe životno doba, nezaposlenost i viši stepen edukacije su sociodemografski faktori predstavljeni kao prediktori nižeg skora na HAMD skali na otpustu i pokazatelji značajnih promena u skorovima skale na prijemu i otpustu. Nivo statističke značajnosti je postavljen na p < 0,001.

Zaključak: Ženski pol, starije životno doba, zaposlenost i niži stepen edukacije su sociodemografski faktori koji su u našem istraživanju povezani sa lošijim terapijskim ishodom u lečenju depresije. Bračni status je takođe bio statički značajan faktor, ali nije primećena sklonost ka određenoj kategoriji.

Ključne reči:
depresija,
longitudinalna studija,
sociodemografski
faktori

Introduction

Depression is a global health concern, impacting approximately 3.8% of the world's population, roughly 280 million individuals (1). Recurrent and severe depression can escalate into a major health condition, impairing daily life, and potentially leading to suicide, contributing to over 700,000 annual deaths (2).

Depression prevalence varies by the World Health Organization (WHO) regions, ranging from 2.6% among males in the Western Pacific Region to 5.9% among females in the African Region (3). Over time, the incidence of depression has been on the rise, with projected increases in morbidity rates, making it one of the leading causes of disability by 2030 (4).

Numerous global studies conducted over the past two decades show a strong connection between specific socio-demographic factors and depression risk (4-8,10-16). These factors, including gender, marital status, income, and education, are influenced by cultural and ideological variations.

For instance, women, unmarried individuals, and those with lower incomes are more susceptible to depression in various cultural contexts (5). Older adults may be at risk due to health-related issues (7). Lower education levels are associated with a higher likelihood of reporting depressive symptoms, often linked to low-income jobs and job insecurity (8).

While these factors are recognized for their impact on depression onset, their interaction with treatment outcomes remains less clear. This study aims to identify socio-demographic factors indicative of unfavorable treatment outcomes based on depression assessment scales. The treatment regimen for depression at the Clinical Department for Crisis and Affective Disorders includes comprehensive psychotherapy and medication management, tailored to each patient's individual needs.

Material and methods

The study encompassed 30 patients who had completed their hospitalization at the Clinical Department for Crisis and Affective Disorders within the Institute of Mental Health. The data covered the period from May 2021 to November 2021, with the patients diagnosed with depressive disorders according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10).

This research took the form of an observational study rather than an interventional one. The sample comprised individuals with non-psychotic depression, Major Depressive Episode, and Recurrent Depressive Episode. The research design was longitudinal and retrospective, consisting of two phases: the initial phase conducted upon admission and a second phase following a four-week treatment, which involved psychotherapy and pharmacotherapy.

Data collection relied on the examination of medical records, including patient histories and clinical assessment scales. The data encompassed socio-demographic variables, such as sex, age, marital status, occupation, and level of education. In addition, the study incorporated scores from the Hamilton Depression Rating Scale (HDRS or HAMD) obtained at two-time points: upon admission and after a four-week treatment period (9). The HDRS is a widely utilized depression assessment scale, primarily designed to evaluate the severity of depressive symptoms and their changes. It comprises 17 items relating to symptoms experienced over the past week, with scores interpreted as follows: 0 - 7 (normal range or clinical remission), 7

- 17 (mild depression), 18 - 24 (moderate depression), and 25 and above (severe depression).

The research was conducted in compliance with the principles of good scientific practice, with strict confidentiality measures in place for all collected data.

The normality of distribution for HAMD scores was assessed, and due to their non-normal distribution, they are presented as median values (minimum - maximum). Statistical analysis involved nonparametric tests, including the Mann-Whitney test for independent samples and the Wilcoxon test for dependent samples. The statistical analyses were performed using SPSS 21.0 (SPSS Inc., Chicago, Illinois), and the level of statistical significance was set at $p < 0.001$.

Results

According to the assessment scales, the median score upon entrance was 13 (mild depression range) with a minimum of 8 and a maximum of 27. The median score after treatment was 4 (normal range) with a minimum of 1 and a maximum of 13 (**table 1**). All individuals, except 3 (10%), obtained a score between 0 - 7 after 4 weeks of treatment.

Table 1. HAMD scores before and after treatment.

	Median	Minimum	Maximum	
HAMD admission	13.0	8.0	27.0	< 0.001
HAMD after four weeks	4.0	1.0	13.0	

Gender

A total of 30 patients, 20 women (67%) and 10 men (33%) participated in the study (**table 2**). Initially, the median score for women was 11.5 and the median score for men was 15. All patients, women ($p < 0.001$) and men ($p = 0.005$) experienced a statistically significant reduction

Table 2. Percentage of individuals in the categories of sex (gender), marital status and education.

		Count	Column N(%)
Gender	Female	20	66.7
	Male	10	33.3
Marital status	Divorced	6	20.0
	Domestic partnership	2	6.7
	Married	14	46.7
	Single	8	26.7
Education	1.00	3	10.0
	2.00	18	60.0
	3.00	9	30.0

Abbreviations: 1: Primary school, 2: Secondary school and 3: College or University studies.

of the HAMD score (**table 3**). The following figure shows how the pattern of change for both genders is similar (**figure 1**). However, after the four-week treatment, women obtained a median score of 4 (1 - 13) and men obtained a median score of 3.5 (1 - 13) (**table 3**).

Table 3. Gender group HAMD scores before and after treatment.

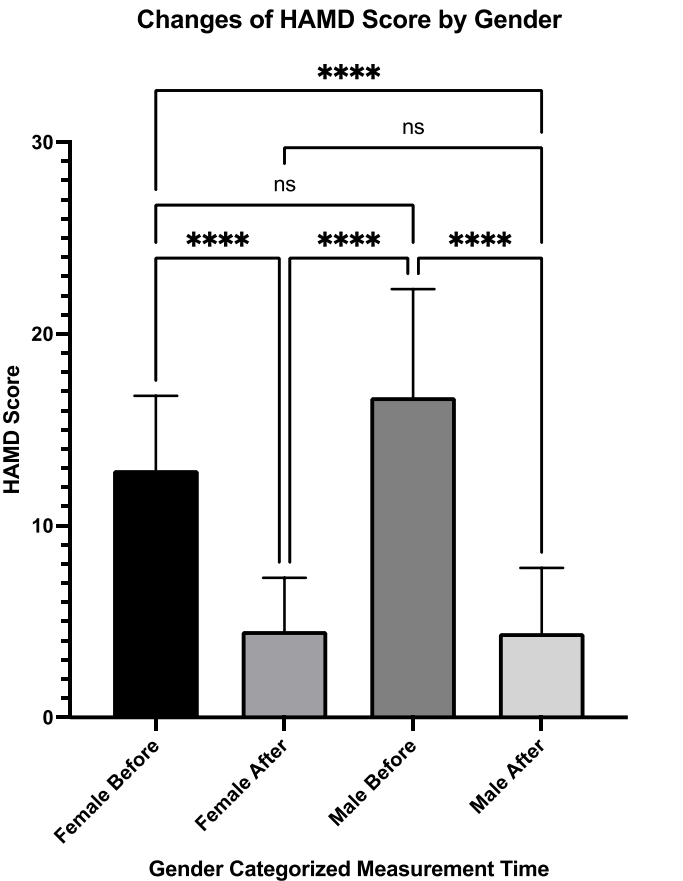|		Gender	
		Female	Male
HAMD admission	Median	11.5	15.0
	Minimum	8.0	10.0
	Maximum	24.0	27.0
HAMD after four weeks	Median	4.0	3.5
	Minimum	1.0	1.0
	Maximum	13.0	13.0
	p	< 0.001	0.005

Figure 1. Changes of HAMD scores by Gender.
*p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.

Age

The mean age of the sample was 48.60 (19 - 71) (**table 4**). The figure attached below shows how, as age increases, the level of the HAMD score increases in both time frames (before and after the four-week treatment) (**figure 2**). Nonetheless, a similar degree of improvement was noticed in all ages. Individuals who were aged under 50 had a significant change in the HAMD scores ($p < 0.001$), as well as participants aged over 50 years old ($p = 0.001$) (**table 5**).

Table 4. Mean age.

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Age	30	19	71	48.60	13.955
Valid N (list-wise)	30				
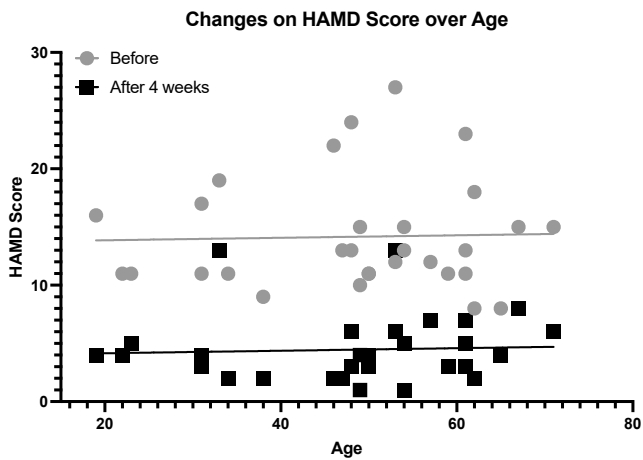
Figure 2. Changes on HAMD scores over Age.

Table 5. Age group HAMD scores before and after treatment.

		Age groups	
		< 50	> 50
HAMD admission	Median	12.0	13.0
	Minimum	9.0	8.0
	Maximum	24.0	27.0
HAMD after four weeks	Median	3.5	5.0
	Minimum	1.0	1.0
	Maximum	13.0	13.0
	p	< 0.001	0.001

Marital status

Of all individuals, 6 (20%) were divorced, 2 (6.7%) claimed to have a domestic partnership, 14 (46.7%) were married and, 8 (26.7%) were single (**table 2**).

Changes in the HAMD scores were statistically significant for those patients who claimed to be in a relationship (married or domestic) (p < 0.001) and for those who were not (single or divorced) (p = 0.001) (**table 6**). Participants belonging to the single or divorced group obtained an initial HAMD score of 14, while the married or in a relationship group obtained an initial score of 12.5. The final score obtained in both groups was 4 (**table 6**).

Results for each group (divorced, married, and single) were also considered statistically significant (**figure 3**).

In the divorced group, the gender difference was further analyzed. **Figure 4** shows how both the female gender (p < 0.001) and male gender (p < 0.01) experienced a statistically significant change in the HAMD score.

Employment

Individuals were grouped into 2 main categories regarding their employment status. The unemployed and employed group. According to statistics, both groups successfully improved their medical condition after the fourth week of treatment. Nevertheless, individuals belonging to the employed group did show higher marks in the HAMD scoring before and after treatment (**figure 5**).

Table 6. Marital Status HAMD scores before and after treatment.

		Marital Status	
		1.00	2.00
HAMD admission	Median	14.0	12.5
	Minimum	9.0	8.0
	Maximum	22.0	27.0
HAMD after four weeks	Median	4.0	4.0
	Minimum	1.0	2.0
	Maximum	13.0	13.0
	p	0.001	< 0.001

Abbreviations: 1: Single or divorced, 2: Married or in a relationship.
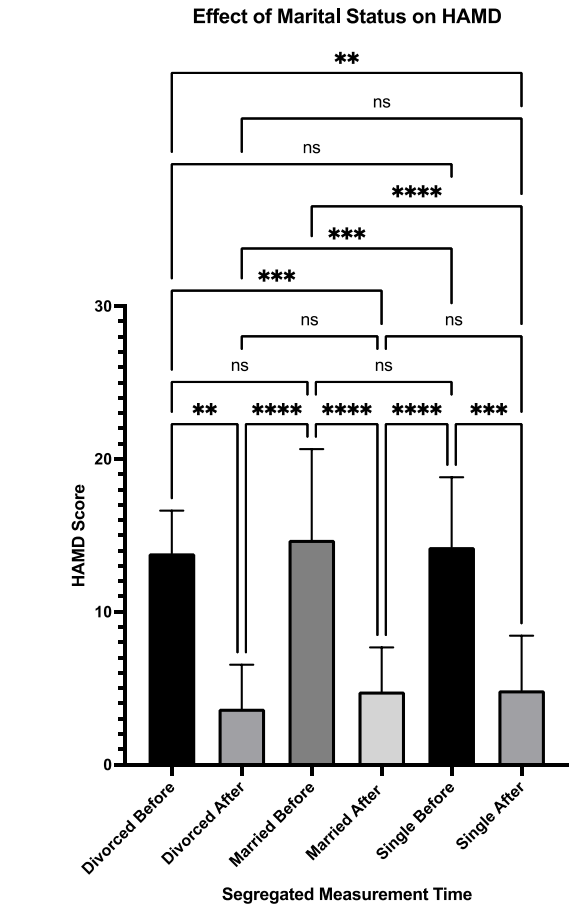
Figure 3. Effect of Marital status.
*p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.

Figure 4. Effect of Gender in Divorced.
*p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.

Figure 5. Changes on HAMD scores for employed and unemployed individuals.
*p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.

Education

Education levels were categorized as 1, primary school, 2, secondary schools, and 3, college and/or university graduates (**table 2**).

Out of the sample, 3 (10%) obtained primary school education, 18 (60%) secondary education, and 9 (30%) obtained college or university degrees (**table 2**).

All HAMD score changes were statistically significant except for the group of individuals with only primary education (**figure 6**). Such results indicate that the primary school group was too small to make any objective assessment. The group with higher education attained lower marks in both (initial and final) HAMD scores compared to the group with secondary education.
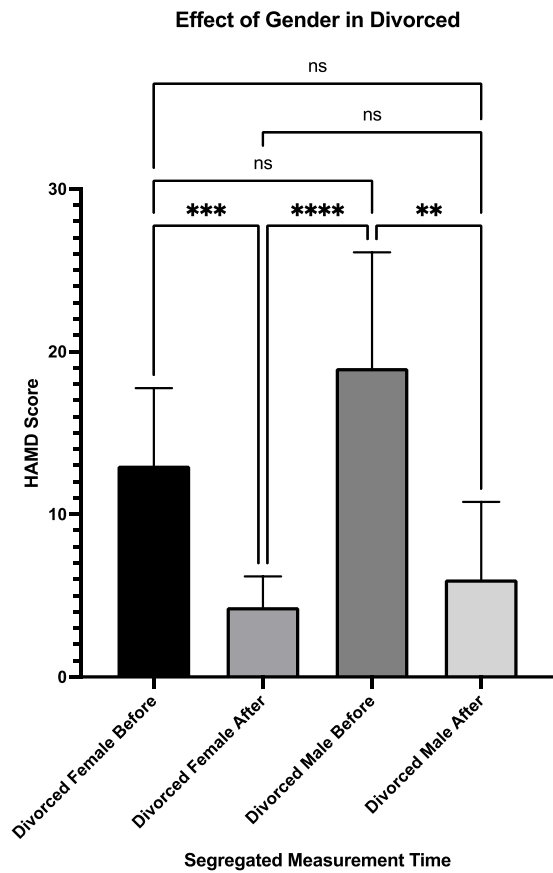

Figure 6. Effect of Education on HAMD.
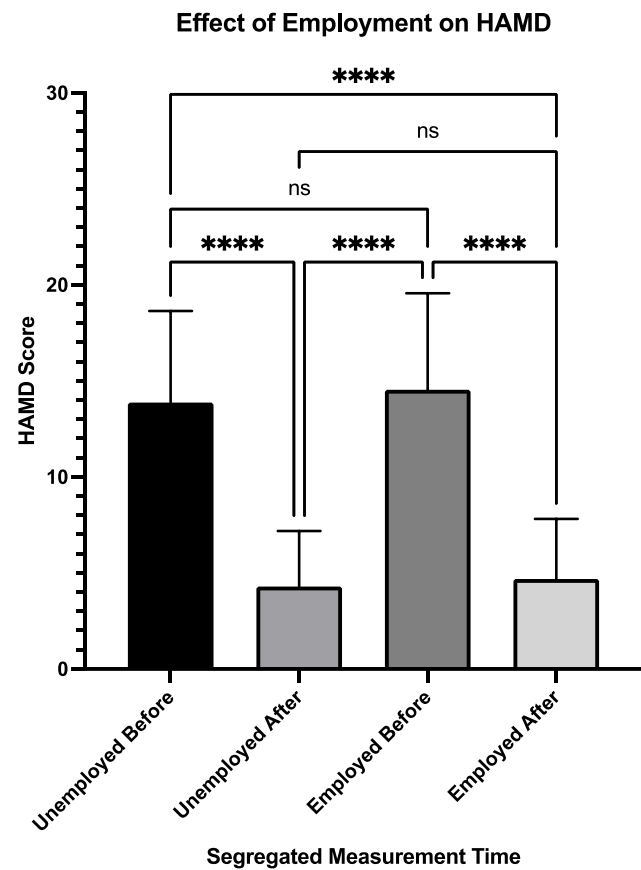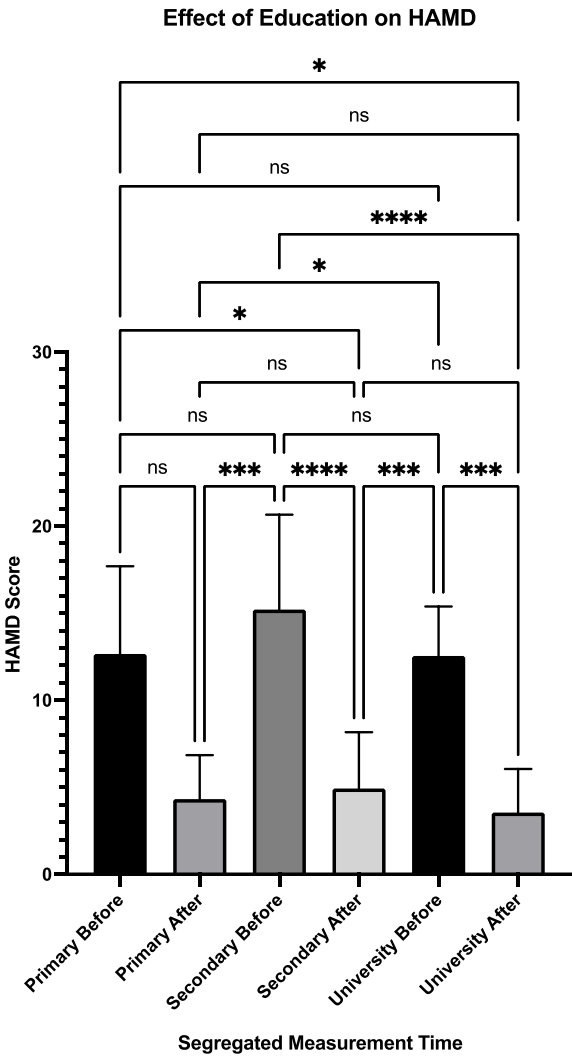*p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001.

Discussion

The four-week treatment achieved an overall success, with the vast majority of patients, except for a 10% minority, attaining HAMD scores within the normal range (0 - 7) post-treatment. Notably, no consistent factor could be identified within this 10%.

Upon a detailed examination of various

socio-demographic factors, it became evident that specific characteristics might serve as potential risk factors for depression.

It is worth noting that the study included a greater number of female participants (20) compared to male participants (10) (**table 2**). While such disparities may have introduced statistical variability, they also underscore the high prevalence of depression among women.

Interestingly, despite men initially having a higher median score (15), their final HAMD scores were lower than those of women. These findings suggest that the male group experienced more significant and favorable outcomes compared to the female group, aligning with prior research (4-6, 10, 11).

From a clinical and scientific perspective, it is important to acknowledge that women often experience earlier exposure to hormonal changes and puberty. Mood swings and premenstrual syndrome, although distinct from major depression, should be considered as potential influencing factors. Additionally, life events such as pregnancy, menopause, and changing life circumstances can significantly predispose women to depression (12).

Numerous studies have identified age as a contributing factor to depression (4-7, 11, 13, 15, 16). The age-related increase in chronic conditions and functional disability plays a crucial role in the emergence of depressive symptoms (13). Furthermore, older individuals are more likely to encounter events such as bereavement or a decline in socioeconomic status upon retirement, which can lead to feelings of isolation, loneliness, or psychological distress (13).

Statistical analysis underscores the significance of age as a factor. It reveals that changes in HAMD scores were more successful in individuals under the age of 50 than in those aged 50 and above. Notably, HAMD ratings for individuals aged 50 and above were consistently higher both before and after treatment.

The marital status of individuals may impact the onset and treatment of depression. Some studies suggest that marriage provides enhanced emotional, financial, and social support, leading to improved psychosocial coping resources for daily challenges (14). However, the findings of this study indicate that both single and married participants experienced similar improvements in HAMD scores, deviating from previous research (5, 6, 14, 15).

Employment typically offers financial stability and fosters feelings of self-esteem, self-regard, and respect (4). However, contrary to previous research, employment was found to be a disadvantage in the treatment of depression and recovery, as the employed group exhibited higher HAMD scores in both periods. Jobs characterized by long working hours, low income, and associated economic stressors can exert significant physical and psychological pressure on individuals, potentially triggering depressive episodes. Additionally, in regions affected by economic crises, individuals with lower educational attainment may be limited to lower-income positions, compounding their vulnerability to depression (4).

Except for the group with only primary education, all educational levels exhibited significant changes in this study (**figure 6**). The limited number of participants in the primary education group may have impacted the evaluation process. Nevertheless, individuals with higher educational qualifications experienced more pronounced alterations than those with lower levels of education. A more recent study published in 2017 also found that individuals with university education tended to have lower HAMD scores (16).

It is crucial to acknowledge the limitation of the study's sample size. Due to the small number of participants and limited data, the results may be inconclusive and should be interpreted with caution. Furthermore, the absence of a placebo group in the study precludes the assessment of treatment effectiveness in isolation. Therefore, it is imperative to clarify that the findings only suggest that socio-demographic factors may play a role in the onset and course of depression therapy, recognizing the multifaceted nature of depression treatment.

Conclusion

Findings have indicated that older age, female gender, lower educational attainment, and employment status are all significant predictors of the onset of depression symptoms and their recovery. While the influence of marital status on depression treatment was observed, further research is warranted in this area. The increasing global prevalence of depression symptoms and disorders marks the need to enhance the recognition and treatment of depression in primary care settings.

Educational and informative programs should be implemented to enhance general practitioners' awareness of the presentation, manifestation, and diagnosis of depression. Identifying and addressing risk factors early in the course of depression can be instrumental in diagnosis and therapy, particularly because depression may manifest with various somatic symptoms, leading to potential misdiagnosis. Therefore, these factors should be considered in the diagnostic process.

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