PSYCHOGERIATRICS
The Official Journal of the Japanese Psychogeriatric Society

doi:10.1111/psyg.70011 *PSYCHOGERIATRICS* 2025; **25**: e70011

ORIGINAL ARTICLE

# The impact of adverse childhood experiences on older adults' health measured via comprehensive geriatric assessment

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Disclosure: OI, VY, NK, LS, MR and PS declare no conflicts of interest.

*Received 2 June 2024; revision received 17 January 2025; accepted 1 February 2025.*

***Key words:*** *adverse childhood experiences, geriatric assessment, insomnia, older.*

## Abstract

**Background:** Adverse childhood experiences (ACEs) are potentially traumatic events that occur up to the age of 18 years. Such trauma often results in chronic psychological stress that is associated with negative health outcomes across the lifespan. The aim of this study is to investigate associations between ACEs and health outcomes in older adults.
**Methods:** The present study is a cross-sectional design. Sociodemographic information on patients' age, gender, marital status, living status, and education level were collected. Furthermore, a comprehensive geriatric assessment and ACE scale were conducted. The ACE scale consisted of 10 questions that were categorised as psychological, physical, and sexual abuse, as well as neglect. The relationship between detailed comprehensive geriatric assessment parameters and ACE were analyzed.
**Results:** There were 276 (mean age 77.9 ± 7.3 years, and 74.3% female) patients included in the study. The prevalence of ACEs was 43.1%, with psychological ACE being the most common. Female gender, number of medications, the presence of insomnia and dysphagia were higher in older patients who experienced at least one ACE than those without ACE ($P < 0.05$). In multivariate analyses, only the relationship between insomnia and ACE persisted (odds ratio 1.83, 95% CI 1.12–3.01; $P < 0.05$).
**Conclusions:** ACEs were detected in approximately one in every two older adults. Those with ACEs were 1.8 times more likely to experience insomnia. Therefore, when evaluating an older patient with insomnia, ACEs should be evaluated and insomnia should also be questioned in older patients who have experienced ACE.

## INTRODUCTION

Both positive and negative childhood experiences have significant effects on an individual's future mental and psychiatric health, as well as physical illnesses, and the maintenance of well-being throughout life.[1] Adverse childhood experiences (ACEs) encompass traumatic experiences such as emotional and sexual abuse, physical violence, and neglect.[2] Unfortunately, the prevalence of ACEs is very high in all societies. For example, a study conducted in Germany reported that 43.7% of adolescents reported at least one ACE, with 9% reporting simultaneously experiencing four or more negative childhood experiences.[3] The reported frequencies in this study were as follows: parental separation and divorce (19.4%), alcohol consumption and drug use in the family (16.7%), emotional neglect (13.4%), and emotional abuse (12.5%).[3] In another study conducted in China, it was reported that more than half of the participants experienced hunger during childhood (66.73%).[4] In a study involving over 12 000 adolescents in the USA, more than half of

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respondents reported at least one, and one-fourth reported ≥2 categories of ACEs. The most prevalent reported ACE was substance abuse in the household.[5] These results clearly indicate that ACE is a significant public health issue and that the types of ACE vary between societies.

ACE leads to health problems and disabilities at every stage of life. Individuals with ACEs are at increased risk of lifelong chronic illness, engaging in risky behaviours such as alcohol and substance abuse, or engaging in criminal activities.[6,7] For example, post-traumatic stress disorder, depression, suicide, dissociative symptoms, poor mental health, and personality disorders are more common among individuals with negative childhood experiences.[8] Additionally, it has been found that ACEs may increase the risk of ischaemic heart disease, chronic obstructive pulmonary disease, and immune-related diseases.[4] Zhang *et al*. observed that ACEs contribute to the earlier onset of cardiovascular disease and diabetes.[4] Consequently, negative childhood experiences continue to cause physical and mental health problems in later life.

However, the effects of ACE on older people's health or successful ageing are not fully understood. Schafer *et al*. found that higher levels of ACEs were associated with a lower probability of disease avoidance.[9] Rogosch *et al*. and O'Shields and Gibbs reported that childhood maltreatment increased the allostatic load, including biomarkers of the neuroendocrine (dehydroepiandrosterone, cortisol, and norepinephrine), immune (interleukin-6), metabolic (waist circumference, haemoglobin A1C) and cardiovascular systems (systolic blood pressure and heart rate).[10–12] Therefore, the increased allostatic load, in turn, can have a negative effect on successful ageing. However, interestingly, Höltge *et al*. revealed that the highest level of quality of life (i.e., successful ageing) was related to a moderate amount of early-life adversity, suggesting that some amount of early-life adversity could be beneficial for successful ageing.[12] Given this, the present literature on the relationship between ACEs and successful ageing is conflicting.

In geriatric practice, cognitive dysfunction, nutritional problems, sarcopenia, incontinence, frailty, sleep disorders, depression, falls, and polypharmacy influence quality of life and functionality to a similar extent as comorbid diseases. The presence or coexistence of geriatric syndromes may be an indication that individuals are not successfully ageing. To date, there is no study examining this topic from this perspective. Therefore, the aim of this study is to examine the relationship between ACEs and comprehensive geriatric assessment (CGA) parameters, to clarify the impact of ACEs on older people's health.

## METHODS

### Participants

This cross-sectional study included older patients who attended one university hospital geriatric outpatient clinic between November 2022 and February 2024. This investigation conformed to the Declaration of Helsinki and was approved by the local ethics committee. Informed consent was obtained from all patients or their relatives. A total of 276 patients underwent CGA.

Inclusion criteria: all older patients who underwent CGA and agreed to fill out the Adverse Childhood Experiences questionnaire.[13]

Exclusion criteria:

1. patients with dementia
2. severe visual or hearing impairment that prevents communication and understanding commands during the examination
3. refusal to participate in the examination
4. fatal illness, life-threatening illness in the last 6 months, or those who have been hospitalised for major surgery, and
5. the presence of an acute health problem (such as infection, acute kidney failure, delirium, stroke).

The following patient characteristics were recorded: age, gender, living status, current smoking use, education years, marital status and comorbidities, hypertension (HT), diabetes mellitus (DM), coronary heart disease, chronic obstructive pulmonary disease (COPD), cerebrovascular disease (CVD), congestive heart failure, peripheral artery disease, Parkinson's disease and osteoarthritis.

### ACEs

ACEs were detected using the Turkish version of the ACEs Questionnaire. This questionnaire asks a series of questions on whether one has experienced domestic emotional violence, physical violence, sexual violence, abuse, emotional and physical neglect, and divorce in the first 18 years of life. It is a self-report scale with 10 yes-no questions.[13]



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### CGA[14]

CGA includes the following.

Number of drugs: patients reported the number of medications they were taking.

Urinary incontinence: it was considered to be present in cases having involuntary urinary leakage in the last 3 months except for when urinary tract infection was present.[15]

Mini-Mental State Examination (MMSE): MMSE was used for the cognitive assessment of patients, with higher values corresponding to a better cognitive status.

Depression: the Yesavage geriatric depression scale-15 was developed for geriatric patients. It consists of 15 questions, a score of five and above is accepted as depression.[16]

Falls: a fall was considered positive if there was at least one fall history in the past year.[15]

Fall risk: Tinetti gait and balance test was performed with the timed up and go (TUG) test. The TUG test was performed by measuring the time it takes for the patient to walk around a point at a distance of 3 m and sit down again. Above 13.5 s is an indicator of fall risk. The Tinetti scale is a total of 28 points, with a maximum balance score of 16 and a maximum walking score of 12. Those who score below 19 are considered to have a high risk of falling.[17]

Mini-Nutritional risk Assessment score (MNA): MNA was created based on the patient's measurements such as height, weight, calf and upper arm circumference, as well as factors and statements related to the patient's diet. The maximum score is 30. Below 23.5 points is associated with impaired nutritional status and accepted as undernutrition.[18]

Loss of appetite: <28 was defined as losing appetite according to the Council on Nutrition Appetite Questionnaire.[19]

Sarcopenia: SARC-F (strength, ambulation, rising from a chair and falls history) score ≥4 with a handgrip strength <16 kg in females and <27 kg in males was defined as probable sarcopenia.[20]

Dependency: Barthel basic daily living activity scale (BADL) is evaluated out of 100 points. The lower the score, the more dependent the patient is in terms of activities of daily living. Below 90 points is moderate and below 62 points is highly dependent. On the Lawton instrumental activities of daily living scale (IADL), patients who do not need any help score 23 points. The lower the score, the higher the dependency. Scores <17 were accepted as dependent.[21]

Excessive daytime sleepiness: the total score for Epworth Sleepiness Scale is based on a scale of 0 to 24, with a score ≥ 11 indicating excessive daytime sleepiness.[22]

Evaluation of insomnia: The Insomnia Severity Index includes seven self-reported items. Scores range from 0 (no insomnia) to 28 (severe insomnia). A score ≥8 was accepted for the presence of insomnia.[23]

Dysphagia: dysphagia was evaluated using the Eating Assessment Tool (EAT-10), designed for self-reported assessment of swallowing difficulties. Scores on the EAT-10 can total between 0 and 40, with higher scores suggesting more pronounced dysphagia symptoms. The cut-off point on the EAT-10 scale is set at 3. Participants with 3 points or more were accepted as dysphagia.[24]

Frailty: frailty status was defined based on five dimensions of frailty phenotype, including shrinking, exhaustion, low levels of physical activity, weakness, and slowness. People with ≥3 were considered frail, as suggested by Fried *et al*.[25]

### Laboratory findings

Laboratory tests, including complete blood count, kidney functions, and cholesterol levels, were performed to evaluate the biochemical and metabolic status of the patients. Serum vitamin $B_{12}$, folate, and 25(OH)D levels were measured.

### Statistical analyses

Statistical analyses were carried out using SPSS 22.0 (SPSS Inc.). Participants were divided into two groups, older people experiencing any type of ACEs and those with no ACEs, and all statistical analyses were performed to compare the two groups. Continuous variables were evaluated as means and standard deviations. To test for normal distribution, variables were assessed utilising the Kolmogorov–Smirnov test. Normally distributed continuous variables were analyzed by the paired sample *t*-test. In case of non-normal distribution, continuous variables were assessed by the Mann–Whitney *U*-test. Differences between categorical variables were evaluated by the

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Chi-squared test. Univariate and multivariate logistic regression analysis were performed to evaluate associations between ACEs and geriatric syndromes. As female gender, insomnia, number of medications used and dysphagia were significantly associated with ACEs in univariate analysis, we used multivariate analysis in order to eliminate any possible association among them. A probability level of $P < 0.05$ was considered significant.

A sample size of 212 participants was calculated to ensure that the minimum required size was within a 95% confidence interval and 5% of the true proportion.

## RESULTS

The study included 276 patients who presented to the geriatric outpatient clinic. The mean age of the sample was $77.9 \pm 7.3$ years and 205 (74.3%) were female. The frequency of experiencing any ACEs was 43.1%. The most common type of ACE was psychological (33%), and sexual assault was the least common (4%) (Fig. 1). Among those who reported ACEs, 75 (25.7%) experienced only one type, and three (1.1%) reported simultaneous exposure to all types of ACEs.

When comparing those with and without ACEs, female gender, number of medications used, the presence of insomnia, and dysphagia were higher in older patients who experienced at least one ACE compared to those without ACE ($P < 0.05$). There was no difference in age, comorbidities, education, other demographic characteristics, and laboratory parameters between the two groups ($P > 0.05$) (Table 1).

Regarding CGA, among patients with ACEs, approximately one in four had dysphagia (24.6%), which was statistically significant ($P = 0.014$). Additionally, insomnia was significantly more common in those with ACEs ($P = 0.008$).

In univariate analysis, female gender (odds ratio (OR) 1.69, 95% CI 0.96–2.97, $P = 0.067$), insomnia (OR 1.86, 95% CI 1.15–3.01, $P = 0.012$), number of medications used (OR 1.08, 95% CI 1.02–1.16, $P = 0.015$), and dysphagia (OR 2.10, 95% CI 1.12–3.90; $P = 0.020$) were significantly associated with ACEs (Table 2). In the multivariate analysis, the relationship with insomnia (OR 1.83, 95% CI 1.12–3.01; $P = 0.017$) remained significant ($P < 0.05$), while gender, number of medications used, and dysphagia were no longer significant (Table 2).

## DISCUSSION

In our study, approximately one in every two patients experienced ACEs. The most common type of ACE was psychological abuse, followed by physical abuse. Among those with ACEs; being female, the number of medications used, and the presence of insomnia and dysphagia were higher than in those without ACEs. The risk of insomnia was 1.8 times higher in those with ACEs regardless of all other parameters.

There are many studies in the literature regarding the frequency of ACEs, and the rates in these studies are high. For example, in a study conducted in China,

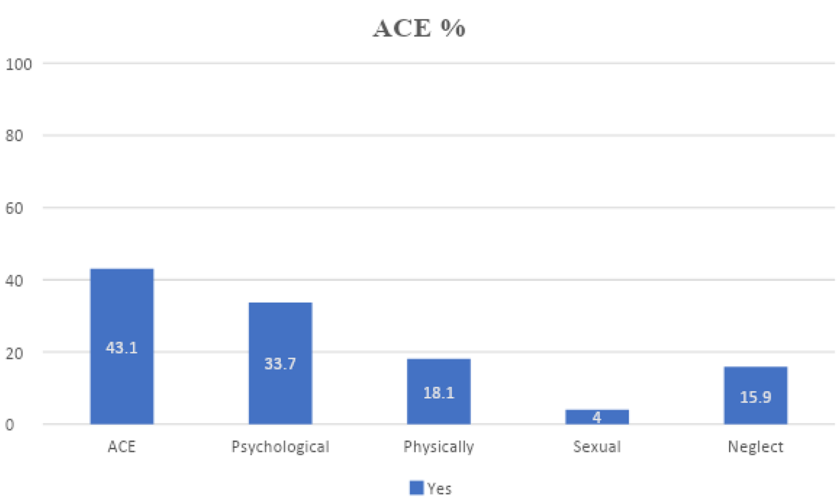


**Figure 1** Adverse childhood experiences (ACE).


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**Table 1** Comparison of patients' characteristic according to adverse childhood experiences (ACE)

| Variable | ACE (−) (*n*: 157) | ACE (+) (*n*: 119) | *P*-value |
|---|---|---|---|
| Demographic features | | | |
| Age, years† | 78.2 ± 7.4 | 77.6 ± 7.2 | 0.519 |
| Female sex (%) | 110 (70.1%) | 95 (79.8%) | **0.044** |
| Education, years‡ | 5 (4.0–8.5) | 5 (1.0–8.0) | 0.105 |
| Living status | | | |
| Alone | 26 (16.6%) | 22 (18.5%) | 0.397 |
| Someone | 131 (83.4%) | 97 (81.5%) | |
| Smoker | 12 (7.6%) | 11 (9.2%) | 0.396 |
| Marital status | | | |
| Single/divorced/widowed | 68 (43.3%) | 56 (47.5%) | 0.287 |
| Married | 89 (56.7%) | 62 (52.5%) | |
| BMI (kg/m$^2$)† | 29.3 ± 5.6 | 29.7 ± 5.8 | 0.596 |
| Comorbidities | | | |
| Hypertension | 115 (73.2%) | 90 (75.6%) | 0.380 |
| Diabetes mellitus | 52 (33.1%) | 51 (42.9%) | 0.063 |
| Coronary heart disease | 22 (14.0%) | 20 (16.8%) | 0.318 |
| COPD | 9 (5.7%) | 10 (8.4%) | 0.264 |
| Cerebrovascular disease | 18 (11.5%) | 9 (7.6%) | 0.197 |
| Congestive heart failure | 16 (10.2%) | 15 (12.6%) | 0.567 |
| Peripheral artery disease | 3 (1.9%) | 2 (1.7%) | 1.000 |
| Parkinson's | 8 (5.1%) | 5 (4.2%) | 0.481 |
| Osteoarthritis | 44 (28.0%) | 34 (28.6%) | 0.513 |
| Laboratory findings | | | |
| Vitamin D, nmol/L‡ | 24.9 (16.2–32.8) | 23.3 (13.0–33.9) | 0.627 |
| Vitamin $B_{12}$, pg/mL‡ | 392.5 (288.5–587.5) | 417.5 (325.3–584.0) | 0.454 |
| Folate, ng/mL‡ | 7.4 (5.8–9.3) | 7.8 (5.8–11.2) | 0.234 |
| Comprehensive geriatric assessment | | | |
| Number of drugs‡ | 6 (4.0–9.0) | 7 (5.0–10.0) | **0.034** |
| Urinary incontinence | 84 (53.8%) | 63 (52.9%) | 0.489 |
| MMSE‡ | 26 (24.0–28.0) | 26 (24.0–28.0) | 0.951 |
| Depression | 58 (36.9%) | 54 (45.8%) | 0.089 |
| Falling, in1 year | 62 (39.5%) | 57 (48.3%) | 0.091 |
| TUG based fall risk | 82 (52.6%) | 60 (51.3%) | 0.465 |
| Tinetti based fall risk | 20 (13.0%) | 17 (14.3%) | 0.445 |
| Undernutrition | 68 (43.6%) | 49 (42.6%) | 0.486 |
| Probable sarcopenia | 30 (19.1%) | 25 (21.0%) | 0.404 |
| BADL dependent | 50 (32.3%) | 44 (37.0%) | 0.246 |
| IADL dependent | 72 (45.9%) | 57 (47.9%) | 0.415 |
| Dysphagia | 21 (13.5%) | 29 (24.6%) | **0.014** |
| Insomnia | 63 (40.1%) | 66 (55.5%) | **0.008** |
| Excessive daytime sleepiness | 9 (5.8%) | 14 (11.8%) | 0.060 |
| Frailty | 57 (36.3%) | 51 (43.6%) | 0.137 |
| Loss of appetite | 74 (47.1%) | 64 (54.2%) | 0.148 |

*Note*: The bold values show statistically significant results. † Groups of the variable are represented as mean ± standard deviation. ‡ Groups of the variable are represented as median (interquartile range). *BADL, Barthel Activities of Daily Living; BMI, body mass index; COPD, chronic obstructive pulmonary disease; IADL, instrumental activities of daily living; MMSE, Mini-Mental State Examination; TUG, timed up and go. Groups of categorical variables are represented as *n* (%).

**Table 2** Factors associated with adverse childhood experiences in logistic regression analysis

| | Univariate | | | Multivariate† | | |
|---|---|---|---|---|---|---|
| | OR | 95% CI | *P* | OR | 95% CI | *P* |
| Female | 1.69 | 0.96–2.97 | 0.067 | 1.50 | 0.84–2.71 | 0.175 |
| Insomnia | 1.86 | 1.15–3.01 | **0.012** | 1.83 | 1.12–3.01 | **0.017** |
| Number of drugs | 1.08 | 1.02–1.16 | **0.015** | 1.06 | 1.00–1.14 | 0.072 |
| Dysphagia | 2.10 | 1.12–3.90 | **0.020** | 1.86 | 0.98–3.55 | 0.060 |

*Note*: The bold values show statistically significant results. † Adjustment for age, sex, insomnia, number of drugs and dysphagia.

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the rate of at least one ACE was reported as 80.9%, in the USA as 75.3%, and in Germany as 43.7%.[3,26,27] The results of a small number of studies in Turkey are also similar. However, in these studies, ACEs were questioned mostly in paediatric and adolescent age groups. As a result of an analysis conducted by Zeynep Sofuoğlu *et al*., the lifetime frequency of psychological ACEs of students who participated in the research and attended school was found to be 70.5%, the frequency of physical abuse was 58.3%, and the frequency of neglect was 42.6%.[28] According to the findings in the same study, the frequencies in the previous year were reported as 62.7%, 46.0% and 37.5%, respectively. In another study, 60.5% of college students aged 18–25 years reported being exposed to at least one type of ACE.[29] In the present study, the prevalence of ACEs was 43%, which is slightly higher than in previous studies. The possible reason for the difference in the frequency of ACEs reported between young and elderly populations in our society may be that the participants included in other studies were educated to express themselves or understand ACEs. Furthermore, the education levels of older adults in the present study were low. Another reason may be that new experiences have reduced the impact of old negativities. Cultural differences may also affect ACE rates between populations.

In the present study, the presence of ACE was higher in older women. This finding is consistent with previous studies. Gender differences affect both the frequency of ACEs and the consequences of ACEs.[30,31] Specifically, it has been reported that females have an increased risk of experiencing ACEs compared to males. Indeed, a previous study found that 29% of female youth reported multiple ACEs, which was more than twice the proportion of male youth (14%). Females also report different types of ACEs compared to males. For example, sexual abuse is more commonly reported among females.[30,31] An important finding of the present study was that the number of medications used was higher in elderly people who reported ACEs compared to those who did not. Indeed, ACEs are known to increase the risk of drug abuse, especially at young ages.[32] However, none of the older participants in the present study reported drug abuse. Interestingly, as shown in some previous studies; comorbid diseases such as hypertension, DM, and coronary artery disease, that would increase the number of medications taken, were not higher in those with ACEs than in those without.[33] However, we did not evaluate drug groups in our study. Previous studies have shown that anxiety and depression are more common in those with ACEs.[34] In our study, the frequency of depression in those with and without ACEs was found to be 45.8% and 36.9%, respectively. Although it was not statistically significant, perhaps the use of psychiatric drugs such as antidepressants was high in these patients. On the other hand, since chronic pain along with emotional problems can also be associated with ACEs, these patients may have used more analgesics.[35] One of the interesting results of this study is the relationship between ACEs and dysphagia. There is no information on this relationship in the literature, but impaired oral health in those with ACEs may also contribute to the development of dysphagia.[36] As a result, older people with ACEs tend to use more medications and have swallowing dysfunction; more detailed studies on the subject are now needed.

Insomnia is associated with many negative clinical consequences in older patients, such as cardiac problems and nutritional problems.[37] Moreover, drugs used to treat insomnia may have side effects such as delirium.[38] Therefore, it is important to know the underlying factors that may cause insomnia. This study found that insomnia was 1.8 times more common in those with ACE. Some possible mechanisms that could explain this relationship include: ACE causes long-term stress in individuals; this stress can cause insomnia by causing chronic activation of the hypothalamic–pituitary–adrenal axis.[39] Multiple studies have shown that a history of childhood abuse or maltreatment is associated with increased cortisol reactivity, supporting the proposed hypothesis.[39,40] Another proposed mechanism of this association is increased neuron activity in the brain as measured by electroencephalography (EEG), particularly in patients with insomnia. A recent study conducted among patients with insomnia reported that participants with a history of moderate to severe childhood maltreatment exhibited increased β EEG activity compared to those with no history of maltreatment. This study provides initial evidence that increased brain activity may explain the association between ACEs and adult



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insomnia.[41] Finally, shortened telomere length has been demonstrated in ACE exposure and insomnia is significantly associated with shorter telomeres.[42,43] Pigeon *et al*. found that simultaneous psychotherapy for ACEs improves insomnia in cases of treatment-resistant insomnia.[44] Given this, it may be suggested that ACEs should be questioned in older people with insomnia and interventions should accordingly be developed.

Findings from the present study should be interpreted in light of its limitations. First, the present study was cross-sectional in nature. Second, drug categories could not be evaluated. Third, the subjective nature of reactions to trauma may have affected the results. However, clear strengths of the present study include a sufficient sample size and that many geriatric evaluation parameters were simultaneously obtained.

In conclusion, approximately one in two older patients reported ACEs and females reported a higher prevalence of ACEs than males. Findings suggest that ACEs are associated with a higher number of medications used in older patients. Additionally, ACEs are associated with difficulty swallowing and insomnia. Insomnia was 1.8 times more common in older patients with ACEs than those without. For these reasons, ACEs should be questioned before pharmacological treatment is given to older patients with insomnia, and necessary interventions such as psychotherapy should simultaneously be considered. Additionally, to reduce childhood ACEs, children who need help should be identified early and home inspections should be conducted if necessary. As seen from the present study, the effects of negative experiences in the first 18 years of life continue in later years of life.

## AUTHOR CONTRIBUTIONS

Study design: NK, PS. Data analysis: PS, VY. Preparation of the manuscript: VY, OI, PS. Critical review of the manuscript: LS, MR. All authors contributed to the draft and revision of the manuscript and approved the version to be published.

## ETHICS STATEMENT

The study was approved by the Bezmialem Vakif University ethics committee.

## PATIENT CONSENT STATEMENT

Informed consent to participate was granted by individuals before starting the assessment.

## DATA AVAILABILITY STATEMENT

If requested, the data can be obtained from the corresponding author.

## REFERENCES

1 Daines CL, Hansen D, Novilla MLB, Crandall AA. Effects of positive and negative childhood experiences on adult family health. *BMC Public Health* 2021 [cited 2024 May 29]; **21**: 651.
2 Gilbert LK, Matthews S, Dube SR, Annor FB. Approaches for measuring cumulative childhood adversity: a study of youth from 5 sub-Saharan African countries. *Child Abuse Negl* 2024 [cited 2024 May 29]; **150**: 106542.
3 Witt A, Sachser C, Plener PL, Brähler E, Fegert JM. The prevalence and consequences of adverse childhood experiences in the German population. *Dtsch Arztebl Int* 2019 [cited 2024 May 30]; **116**: 635–642.
4 Zhang K, Wu B, Zhang W. Adverse childhood experiences in relation to comorbid cardiovascular diseases and diabetes among middle-aged and old adults in China. *Geriatr Gerontol Int* 2022 [cited 2024 May 30]; **22**: 12–18.
5 Felitti VJ, Anda RF, Nordenberg D *et al*. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *Am J Prev Med* 1998 [cited 2024 May 30]; **14**: 245–258.
6 Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics* 2003 [cited 2024 May 30]; **111**: 564–572.
7 Dube SR, Anda RF, Felitti VJ, Croft JB, Edwards VJ, Giles WH. Growing up with parental alcohol abuse: exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse Negl* 2001 [cited 2024 May 30]; **25**: 1627–1640.
8 Huffman N, Shih CH, Cotton AS *et al*. Association of age of adverse childhood experiences with thalamic volumes and post-traumatic stress disorder in adulthood. *Front Behav Neurosci* 2023 [cited 2024 May 30]; **17**: 1147686.
9 Schafer MH, Ferraro KF. Childhood misfortune as a threat to successful aging: avoiding disease. *Gerontologist* 2012; **52**: 111–120. https://doi.org/10.1093/geront/gnr071.
10 Rogosch FA, Dackis MN, Cicchetti D. Child maltreatment and allostatic load: consequences for physical and mental health in children from low-income families. *Dev Psychopathol* 2011; **23**: 1107–1124.
11 O'Shields J, Gibbs JJ. Depressive symptoms, childhood maltreatment, and allostatic load: the importance of sex differences. *Psychoneuroendocrinology* 2021; **126**: 105130.
12 Höltge J, Mc Gee SL, Thoma MV. The curvilinear relationship of early-life adversity and successful aging: the mediating role of mental health. *Aging Ment Health* 2019; **23**: 608–617.
13 Gündüz A, Yaşar AB, Gündoğmuş İ, Savran C, Konuk E. Adverse childhood events Turkish form: validity and reliability study. *Anadolu Psikiyatri Derg* 2018 [cited 2024 May 30]; **19**: 68–75.

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14 Topcu A, Yasin AI, Besiroglu M *et al*. Prevalence and co-incidence of geriatric syndromes according to the ECOG performance status in older cancer patients. *Front Med Lausanne* 2024 [cited 2024 May 30]; **11**: 1331246.
15 Ates Bulut E, Soysal P, Isik AT. Frequency and coincidence of geriatric syndromes according to age groups: single-center experience in Turkey between 2013 and 2017. *Clin Interv Aging* 2018 [cited 2024 May 30]; **13**: 1899–1905.
16 Durmaz B, Soysal P, Ellidokuz H, Isik AT. Validity and reliability of geriatric depression scale-15 (short form) in Turkish older adults. *North Clin Istanb* 2018 [cited 2024 May 30]; **5**: 216–220.
17 Dokuzlar O, Koc Okudur S, Smith L *et al*. Assessment of factors that increase risk of falling in older women by four different clinical methods. *Aging Clin Exp Res* 2020 [cited 2024 May 30]; **32**: 483–490. Available from: https://pubmed.ncbi.nlm.nih.gov/31115877/.
18 Soysal P, Koc Okudur S, Kilic N, Ipar O, Smith L. The prevalence of undernutrition and associated factors in older obese patients. *Aging Clin Exp Res* 2022 [cited 2024 May 30]; **34**: 483–490.
19 Wilson MMG, Thomas DR, Rubenstein LZ *et al*. Appetite assessment: simple appetite questionnaire predicts weight loss in community-dwelling adults and nursing home residents. *Am J Clin Nutr* 2005; **82**: 1074–1081.
20 Cruz-Jentoft AJ, Bahat G, Bauer J *et al*. Sarcopenia: revised European consensus on definition and diagnosis. *Age Ageing* 2019 [cited 2024 May 30]; **48**: 601.
21 Soysal P, Koc Okudur S, Uslu F, Smith L. Functional loss and worsening geriatric assessment parameters are more common in dementia with Lewy bodies than Alzheimer's disease. *Psychogeriatrics* 2023 [cited 2024 May 30]; **23**: 77–85.
22 Soysal P, Heybeli C, Koc Okudur S, Caliskan Bozyel E, Smith L, Kazancioglu R. Prevalence and co-incidence of geriatric syndromes according to glomerular filtration rate in older patients. *Int Urol Nephrol* 2023 [cited 2024 May 30]; **55**: 469–476.
23 Soysal P, Smith L, Dokuzlar O, Isik AT. Relationship between nutritional status and insomnia severity in older adults. *J Am Med Dir Assoc* 2019 [cited 2024 May 30]; **20**: 1593–1598.
24 Nishida T, Yamabe K, Ide Y, Honda S. Utility of the eating assessment Tool-10 (EAT-10) in evaluating self-reported dysphagia associated with Oral frailty in Japanese community-dwelling older people. *J Nutr Health Aging* 2020; **24**: 3–8.
25 Fried LP, Tangen CM, Walston J *et al*. Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci* 2001; **56**: M146–eM157.
26 Lin L, Wang HH, Lu C, Chen W, Guo VY. Adverse childhood experiences and subsequent chronic diseases among middle-aged or older adults in China and associations with demographic and socioeconomic characteristics. *JAMA Netw Open* 2021 [cited 2024 May 30]; **4**: e2130143.
27 Desch J, Bakour C, Mansuri F, Tran D, Schwartz S. The association between adverse childhood experiences and insomnia symptoms from adolescence to adulthood: evidence from the add health study. *Sleep Health* 2023 [cited 2024 May 30]; **9**: 646–653.
28 Sofuoğlu Z, Oral R, Aydin F *et al*. Epidemiological study of negative childhood experiences in three provinces of Turkey. *Turk Pediatri Ars* 2014 [cited 2024 May 30]; **49**: 47–56.
29 Özşahin Z, Ünver H, Güven Santur S, Tarihi G, Yazar S, C A. Relationship between adverse childhood experiences and premenstrual syndrome. *Med Records* 2022 [cited 2024 May 30]; **4**: 27–34.
30 Jones MS, Pierce H, Shafer K. Gender differences in early adverse childhood experiences and youth psychological distress. *J Crim Justice* 2022; **83**: 101925.
31 Agbaje OS, Nnaji CP, Nwagu EN *et al*. Adverse childhood experiences and psychological distress among higher education students in Southeast Nigeria: an institutional-based cross-sectional study. *Arch Public Health* 2021 [cited 2024 May 30]; **79**: 62. Available from: https://pubmed.ncbi.nlm.nih.gov/33926542/.
32 Sebalo I, Königová MP, Sebalo Vňuková M, Anders M, Ptáček R. The associations of adverse childhood experiences (ACEs) with substance use in young adults: a systematic review. *Subst Abuse* 2023 [cited 2024 May 30]; **17**: 11782218231193914. Available from: https://pubmed.ncbi.nlm.nih.gov/38025908/.
33 Carr AL, Massou E, Kelly MP, Ford JA. Mediating pathways that link adverse childhood experiences with cardiovascular disease. *Public Health* 2024 [cited 2024 May 30]; **227**: 78–85. Available from: https://pubmed.ncbi.nlm.nih.gov/38134567/.
34 Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse childhood experiences and the risk of depressive disorders in adulthood. *J Affect Disord* 2004 [cited 2024 May 30]; **82**: 217–225. Available from: https://pubmed.ncbi.nlm.nih.gov/15488250/.
35 Antoniou G, Lambourg E, Steele JD, Colvin LA. The effect of adverse childhood experiences on chronic pain and major depression in adulthood: a systematic review and meta-analysis. *Br J Anaesth* 2023 [cited 2024 May 30]; **130**: 729–746.
36 Bahanan L, Ayoub S. The association between adverse childhood experiences and oral health: a systematic review. *J Public Health Dent* 2023 [cited 2024 May 30]; **83**: 169–176.
37 Fotbolcu H, Soysal P. Effect of insomnia and excessive daytime sleepiness on cardiac functions in older adults. *Psychogeriatrics* 2023 [cited 2024 May 30]; **23**: 800–807.
38 Kalan U, Soysal P, Isik AT. Delirium associated with only one dose of zopiclone in an older adult. *Psychogeriatrics* 2018 [cited 2024 May 30]; **18**: 321–323.
39 Kajeepeta S, Gelaye B, Jackson CL, Williams MA. Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep Med* 2015 [cited 2024 May 30]; **16**: 320–330.
40 Heim C, Newport DJ, Heit S *et al*. Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. *Jama* 2000 [cited 2024 May 30]; **284**: 592–597.
41 Bader K, Schäfer V, Nissen L, Schenkel M. Heightened beta EEG activity during nonrapid eye movement sleep in primary insomnia patients with reports of childhood maltreatment. *J Clin Neurophysiol* 2013 [cited 2024 May 30]; **30**: 188–198.
42 Lang J, McKie J, Smith H *et al*. Adverse childhood experiences, epigenetics and telomere length variation in childhood and beyond: a systematic review of the literature. *Eur Child Adolesc Psychiatry* 2020 [cited 2024 May 30]; **29**: 1329–1338.
43 Sabot D, Lovegrove R, Stapleton P. The association between sleep quality and telomere length: a systematic literature review. *Brain Behav Immun Health* 2023 [cited 2024 May 30]; **28**: 100577.
44 Pigeon WR, May PE, Perlis ML, Ward EA, Lu N, Talbot NL. The effect of interpersonal psychotherapy for depression on insomnia symptoms in a cohort of women with sexual abuse histories. *J Trauma Stress* 2009 [cited 2024 May 30]; **22**: 634–638.


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