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# Exploring the associations of career transition components with adolescents' career decision-making self-efficacy and anxiety

Osman Söner<sup>1</sup> and Olcay Yılmaz<sup>2\*</sup>

## Abstract

**Background** The transition from high school to college is crucial for adolescents' identity, responsibilities, and career choices and may shape adolescents' lives. This study aims to explore the mediating role of career transition components—situation, self, and support—on the relationship between career decision-making self-efficacy and career anxiety among adolescents.

**Methods** A structural equation modeling approach was employed with participants from senior high schools (n = 806) from various schools in Istanbul, Türkiye. Data were collected using standardized scales measuring career decision-making self-efficacy, career transition components, and career anxiety. To assess mediation effects, Pearson correlation and path analysis were used.

**Results** Career decision-making self-efficacy was positively correlated with career transition components and negatively correlated with career anxiety. The study found evidence of indirect pathways—consistent with partial mediation—via situation and support ( $\beta = .384$  and  $.469$ , respectively), whereas the self-component was not significant. After removing the self-factor, overall model fit improved, suggesting that external situational elements and support systems are more closely associated with lower career anxiety during this transition.

**Conclusion** This study is one of the first to apply Schlossberg's Transition Theory to non-Western adolescent career transitions, providing insights beyond Western paradigms. The Turkish sample—characterized by its collectivist cultural orientation, high university entrance pressure, and diverse schooling system—illuminates how socio-cultural and structural factors influence career development differently. Culturally relevant interventions to reduce career anxiety and improve decision-making self-efficacy in adolescents in similar circumstances can benefit from these findings.

**Keywords** Career decision-making self-efficacy, Career anxiety, Adolescents, Career transition, Higher education, Mediation analysis

## Introduction

The high school years are pivotal for an adolescent's transition to work or higher education, and this preparatory phase involves making career-related decisions [1]. This transitional period is marked by shifts in identity, social role expectations, and the emergence of new decision-making responsibilities [2, 3]. Adolescents face a multitude of challenges including navigating academic uncertainties, redefining their career goals, and coping

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with the psychological demands of increasing autonomy [4]. A successful transition from high school to college has enduring consequences for both academic and career outcomes. Research [4] indicates that students who successfully adjust to college have a higher probability of graduating on schedule, pursuing higher degrees, and attaining job success. As adolescents in high school move on to college, they need to redefine their roles in a different environment [5]. During this phase, students face adapting to a different social environment, finding their role within the college community, and forming a new identity [6]. Particularly, students from varied backgrounds may encounter additional obstacles, such as cultural adaptation, financial strain, or the absence of family assistance [7]. Also, the level of preparedness and support they receive can significantly impact their academic success and personal growth and support networks have a crucial role in facilitating effective transitions [5], particularly in the transition from high school to college. Students who receive substantial support from their family, friends, and mentors are more adept at managing the difficulties that arise during their college experience [8]. In this sense, support systems offer emotional support, practical aid, and direction to assist students in navigating the intricacies of their unfamiliar surroundings [9].

Among many other explanations Schlossberg's Career Transition Theory [5] provides a comprehensive framework for comprehending the complex nature of career changes. The theory offers valuable insights for educators, counselors, and legislators who aim to support youngsters during this critical transition by emphasizing the significance of identity shifts, situational circumstances, self-efficacy, support systems, and coping strategies. The model Schlossberg proposed identifies four primary factors that influence how individuals cope with transitions. The *self-component* emphasizes the individual's personal characteristics and how they influence the transition process. This component encompasses aspects such as one's self-efficacy, resilience, and adaptability, which are critical in navigating career changes. According to the theory, understanding one's own strengths and weaknesses can significantly impact how effectively a person manages transitions. Additionally, the self-component encourages individuals to reflect on their values, interests, and goals, which can guide decision-making during times of change. The *situation-component* focuses on the context and circumstances surrounding an individual's transition. This dimension takes into account factors such as the timing of the transition, the support systems available, and the specific challenges posed by the new environment. Additionally, the presence of social support, such as family, friends, or mentors, can provide essential resources that enhance coping strategies during

transitions. Recognizing and analyzing the situational factors can help individuals better prepare for and adapt to their career changes, ultimately leading to more successful outcomes [10]. The *support-component* of the theory emphasizes the importance of external resources and social networks that individuals can rely on during career transitions. This component highlights how support systems, including family, friends, mentors, and professional networks, play a critical role in helping individuals cope with the challenges associated with change [11]. Finally, the *strategies-component* refers to the specific approaches and techniques that individuals can employ to manage their career transitions effectively. It emphasizes the importance of proactive planning and the development of coping mechanisms to navigate the complexities of change and having a clear set of strategies can empower individuals to take control of their transition process, allowing them to identify potential obstacles and devise solutions to overcome them. Strategies may include the coping techniques utilized by an individual, including problem-solving abilities, information-seeking skills, and flexibility [6].

#### **Career decision-making self-efficacy during transition to college**

Self-efficacy, an individual's confidence in their potential to succeed, holds significant importance in this specific time frame. Bandura [12] found that students with greater self-efficacy are more inclined to actively engage in actions that facilitate their adaptation to the challenges of college life, such as actively seeking out academic resources or establishing social relationships. Moreover, individual traits such as resilience and previous encounters with change can impact how students effectively handle this transition [11]. With a very parallel definition, CDMSE is the extent to which people believe they can competently complete specific career-related tasks [13]. According to Betz, Klein, and Taylor [14], career CDMSE is a critical determinant of effective career decision-making, influencing both the process and outcomes of career choices. Their research expands upon Bandura's [15] notion of self-efficacy, highlighting that people with elevated levels of CDMSE are more inclined to engage in career exploration, persevere through obstacles, and finally reach fulfilling career choices. Individuals with a high level of CDMSE exhibit greater confidence in acquiring knowledge about different career paths, assessing their alternatives, and establishing realistic career objectives [16]. This self-assurance motivates individuals to participate in various investigative endeavors, such as internships, networking, and seeking career advice, subsequently improving their preparedness for future careers [17].

Individuals possessing strong CDMSE are more inclined to perceive themselves as competent in making informed judgments, especially concerning uncertain or inconsistent information [18]. This sense of self-efficacy decreases anxiety linked to decision-making, enabling individuals to tackle career choices with enhanced clarity and concentration [19]. Individuals with higher CDMSE are generally more resilient in overcoming challenges encountered during decision-making, including limited opportunities or external pressures [17]. Betz and Taylor [20] underline the significance of CDMSE in surmounting work-related challenges. Individuals with low self-efficacy in career decision-making are more susceptible to being hindered by perceived obstacles, such as gender stereotypes, lack of resources, or fear of failure [16]. Conversely, individuals possessing strong CDMSE exhibit greater resilience and resourcefulness, perceiving barriers as challenges to overcome rather than insuperable obstacles [21]. This resilience is especially crucial for individuals from underrepresented backgrounds who may encounter extra hurdles in their professional trajectories [22].

### **The impact of career anxiety on high school students transitioning to college**

Transitioning to college is a crucial milestone in people's lives, as it involves making significant professional decisions. Students have challenges in making vocational choices, and if these challenges are not resolved, they may choose suboptimal career and academic choices, which can have substantial consequences for their future. Similarly, students who struggle to make judgments may not remain and thrive in college [23]. With such a difficult period lying in front of students' paths, CA constitutes a substantial psychological obstacle encountered by high school students during their transition to college. This anxiety likely arises from the pressure to make decisions that would shape their careers in the future, often amidst uncertainty and insufficient data. This anxiety may negatively impact students' mental health, academic performance, and overall adjustment to college life. The pressure to select a career path might induce worry and uncertainty, intensifying anxiety symptoms [24]. Students experiencing elevated career anxiety may have difficulties in decision-making, resulting in emotions of helplessness and diminished control over their future [25]. This emotional distress can significantly affect their mental health, leading to anxiety disorders and depression throughout their college years [26].

The anxiety related to career decision-making could negatively affect students' academic performance. Students experiencing career anxiety may struggle to focus on their studies, resulting in lower grades and academic

disengagement [26]. The stress of making a significant decision can lead to cognitive overload, hindering pupils' ability to process information efficiently and excel academically [27]. The deterioration in academic performance might worsen anxiety, establishing a detrimental cycle that hinders academic achievement. Even in extreme cases, increased career anxiety may result in decision-making paralysis, wherein students feel overwhelmed by the fear of making an erroneous option that they are incapacitated from making any decision at all [28]. This paralysis may hinder the college admission process, lead to missed deadlines, or induce indecision regarding one's major or future trajectory [29]. The failure to make timely judgments could worsen stress and anxiety for students transitioning to college without a definite strategy or direction [30].

Anxiety around career decisions can adversely affect students' capacity to adjust to college life. Students entering college with unresolved career anxiety may struggle to adapt to the new environment, establish relationships, and participate in academic and social opportunities [31]. The persistent ambiguity over their future may result in feelings of alienation and a diminished sense of belonging, essential components of effective college adaptation [32]. In some cases, this may result in college attrition, with students either withdrawing or transferring to alternative institutions to pursue a more defined path [33].

### **Present study**

The transition from high school to college is a pivotal stage in students' academic and personal development, and recent research has yielded significant insights into the challenges and supports that affect their success [34], yet the intricacies of how various components of career transition influence their decision-making self-efficacy and anxiety remain underexplored. Several studies [3, 35, 36] examined the efficacy of various transition programs, while others analyzed the transition phase from diverse viewpoints, including the utilization of technology in transition support [37], inequalities in financial preparedness, and the influence of parental involvement during the transition [38]. Moreover, specific research has sought to comprehend the challenges [39] and potential mental health effects [4] associated with transitioning from high school to college. However, to our knowledge, there is scant research about the interaction of career transition, CDMSE, and CA during this phase.

There is growing consensus that the interaction between CDMSE and CA is shaped by mediating factors such as perceived support and situational appraisal. For example, Lent, Brown, and Hackett's (1994) Social Cognitive Career Theory [17] posits that self-efficacy beliefs are influenced by contextual supports and barriers.

However, recent studies suggest that models like Schlossberg's, which integrate both personal and environmental dimensions, may be more effective for explaining transition-related anxiety in non-Western contexts [2, 40]. A potential transition of theoretical spectacle to Schlossberg's theory requires further research, which is where this present study aims to contribute.

Besides, recent studies have indicated that contextual elements, such as family support and socio-economic status, play a crucial role in shaping adolescents' experiences during this critical transition phase [41]. This highlights the need for a more comprehensive understanding of how personal attributes interact with external influences, which may differ significantly from Western paradigms. Moreover, career anxiety has been increasingly recognized as a significant barrier to successful transitions [42, 43]. Recent research has further explored the mediating role of career transition components—specifically situation, self, and support—demonstrating that these factors can significantly mitigate anxiety among adolescents [40]. This underscores the importance of addressing both psychological and contextual factors in career decision-making processes. As a contextual spectacle, despite the expanding literature, few studies have examined these relationships within non-Western populations. Adolescents in Turkey experience a unique blend of challenges, including high-stakes university entrance exams, familial expectations grounded in collectivist norms, and limited institutional career guidance [34, 44]. These contextual pressures may amplify anxiety and suppress self-efficacy, making it crucial to investigate culturally tailored models of transition.

Furthermore, the study employs a structural equation modeling approach to analyze the relationships between career decision-making self-efficacy, career anxiety, and the identified transition components. This methodological choice allows for a nuanced understanding of how these factors interact, providing insights that are often missing in the literature.

In summary, this research not only addresses a significant gap in the literature by focusing on a non-Western context but also enriches the understanding of how various components of career transition influence adolescents' decision-making self-efficacy and anxiety. By doing so, it sets the stage for future studies to explore these dynamics in diverse cultural settings, ultimately enhancing support strategies for students navigating this critical transition. Consequently, the study's hypotheses were established as follows:

H<sub>1</sub>: A significant relationship exists among adolescents' self-efficacy in career decision-making, career anxiety, and career transitions components.

H<sub>2</sub>: Career decision-making self-efficacy significantly predicts career anxiety in adolescents.

H<sub>3</sub>: Career transition components significantly mediates the effect of career decision-making self-efficacy on career anxiety in adolescents.

## Methods

### Research design

Using structural equation modeling (SEM), this study examined the indirect association consistent with mediation of adolescents' transition to higher education on the relationship between career decision-making self-efficacy (CDMSE) and career anxiety (CA). SEM offers a holistic approach to analysis that includes measurement and structural models. While the measurement model describes the relationships between latent and observable variables, the structural model reveals the hypothesized paths between these variables [45]. In this study, the mediating role of "situation," "self" and "support" components is based on Schlossberg's Transition Theory [5]. This theory emphasizes that individuals' perceptions of the situation, personal resources and social support levels are determinant in their adaptation to transitions. As a matter of fact, this model, which is widely used in educational and career transitions, shows that individuals who perceive the transition as manageable, have a strong self-concept and have access to adequate social support exhibit lower levels of career anxiety and higher self-efficacy [6]. Furthermore, the career adaptation literature [46] reveals that transition processes are shaped by both individual and contextual factors and is consistent with the conceptualization of these three components as mediating variables. In this context, SEM offers the opportunity to test the extent to which the data set fits the theoretical model and to holistically assess the impact of career transition components on the relationship between CDMSE and CA [47].

Although Schlossberg's Transition Theory [5] was preferred as the main theoretical framework for this study due to its holistic consideration of situational, personal and environmental factors during life transitions, alternative approaches were also considered. In particular, Social Cognitive Career Theory (SCCT) and Career Construction Theory (CCT) are powerful models that offer effective explanations for career decision-making processes and anxiety. However, SCCT focuses more on individual factors, especially self-efficacy, outcome expectations and personal agency, and treats the contextual aspects of the transition process as secondary. Similarly, while CCT emphasizes career adjustment and individual narratives, it may not adequately account for the role of social support systems in educational transitions. In contrast, Schlossberg's model addresses the individual's transition

experience in a multidimensional way, bringing together the nature of the transition (situation), the individual's internal resources (self) and external support networks (support) in a holistic structure. Considering the complex and multi-layered nature of the transition from high school to university, this model allows for a comprehensive analysis of adolescents' self-efficacy and anxiety levels by taking into account both individual and environmental mediating factors, and thus offers the most appropriate approach for the theoretical framework of the study.

### Participants

The participants of this study were senior students from various high schools in Arnavutköy district of Istanbul. The research group was determined by criterion sampling method in which individuals who meet certain criteria are selected [48]. Accordingly, three main criteria were determined: (i) the participants tended to make a career transition to university, (ii) the students who were in their last year of high school, and (iii) their high school graduation status had been clarified. These criteria enabled us to focus on the transition process of the students in a way that was directly aligned with the objectives of the study. The district of Arnavutköy was specifically chosen because of its demographic diversity, and schools within the district were selected using a purposive sampling strategy. Within this strategy, attention was paid to (i) having a high number of 12th grade students, (ii) obtaining the necessary approvals from the school administration for participation in the study, and (iii) representation of different school types such as Anatolian high schools, vocational high schools, and imam hatip high schools. This approach increased the institutional diversity of the study and ensured a more inclusive representation of different educational contexts.

The district of Arnavutköy was specifically chosen for its demographic and socioeconomic diversity, as it is more representative of students who face various challenges in the transition to higher education. The district is home to students from a wide range of socioeconomic backgrounds, from low-income to middle-income families, creating marked differences in students' access to educational resources, parental support and levels of university preparation. This diversity allowed for a deeper examination of the effects of different socioeconomic conditions on CDMSE and CA. However, given that low-income students may experience higher levels of career anxiety due to financial constraints, while high-income students may have better preparation opportunities, it was recognized that the socioeconomic structure of the region may create a potential bias in the sampling process. In order to minimize this potential bias, monthly

family income was included as a control variable in the analysis process. In addition, one-way analysis of variance (ANOVA) was conducted as part of the preliminary analyses to determine whether CDMSE and CA scores differed significantly according to different income levels and school types. Besides, stratified sampling was applied to ensure a balanced distribution of participants according to school types, thus increasing the generalizability of the findings.

The demographic features of the data collection participants are as follows: Regarding gender, 397 (49.3%) are female, and 409 (50.7%) are male. About school type, 157 (19.5%) are enrolled in vocational high schools, 109 (13.5%) in imam hatip high schools, 505 (62.7%) in Anatolian high schools, and 35 (4.3%) in other high school categories. The average age of the students involved in the research was 17.12 years, their average monthly income was 12,851.76 TL, and their average daily study duration was 3.12 h.

### Instruments

In this study, the 'Personal Information Form' developed by the researcher, which includes questions on gender, age, aspiration to make a career transition to university, average monthly income, daily study time and school type, and the 'Career Decision-Making Self-Efficacy Scale,' 'Career Transition to Higher Education Scale' and 'Career Anxiety Scale' were used as data collection tools.

#### *The career decision-making self-efficacy scale*

The Career Decision-Making Self-Efficacy Scale, developed by Betz, Klein, and Taylor [14], was then adapted into Turkish by Işık [49] in 2010. The measurement instrument is a scale of 25 items and employs a five-point Likert-type scoring system. Participants assess their confidence in doing the specified tasks on a scale from "Not Confident at All" (1) to "Very Confident" (5). As the scores on the scale rise, it is inferred that individuals' expectations regarding career decision-making abilities also grow. The validity studies employed the confirmatory factor analysis method, with results indicating the following goodness of fit values: GFI=0.90, AGFI=0.90, CFI=0.92, RMSEA=0.048, and SRMR=0.078. Furthermore, exploratory factor analysis was conducted to assess construct validity, and despite various factor solutions, total scores were predominantly utilized. The reliability analysis of the scale was conducted using Cronbach's alpha for internal consistency, yielding a coefficient of 0.88. The reliability analysis undertaken using the test-retest method yielded a Pearson product-moment correlation coefficient of 0.81. Additionally, the Cronbach internal consistency coefficient of the scale was determined to be 0.92 in the current research.

### **The higher education career transition components scale**

The Higher Education Career Transition Components Scale, developed by Söner and Yılmaz [44], assesses the career transition status of high school seniors regarding higher education. The measurement tool was initially designed based on Schlossberg's 4S theory [5], encompassing the sub-dimensions of Self, Situation, Support, and Strategies. However, factor analysis results indicated that the Strategies sub-dimension lacked a distinct factor structure and failed to meet psychometric criteria. EFA revealed high cross-loadings with other factors, while CFA showed improved model fit upon its exclusion. This suggests that high school seniors may not yet exhibit distinct strategic behaviors in career transition, aligning with findings that coping strategies develop with experience [50]. The strategy sub-dimension proved ineffective in the scale development applied for high school seniors throughout the ensuing process and analysis. The scale was ultimately found to comprise the sub-dimensions of Self, Situation, and Support. The scale has a seven-point Likert format and shall consist of 23 items. The overall score of the scale is unattainable. In the scale development study, the item factor loading values ranged from 0.407 to 0.764. The confirmatory factor analysis results of the scale indicated a satisfactory model fit ( $\chi^2/df=2.643$ ,  $RMSEA=0.05$ ,  $SRMR=0.047$ ,  $CFI=0.917$ ,  $GFI=0.920$ ,  $AGFI=0.902$ ). The Cronbach's alpha internal consistency reliability coefficients for the scale were 0.862 for situation, 0.855 for self, and 0.706 for support dimensions. The test–retest reliability of the scale was assessed by administering it to a group twice, with a three-week delay, yielding coefficients of 0.800 for situation, 0.861 for self, and 0.877 for support. The internal consistency coefficients of Cronbach's alpha were assessed in this study, yielding values of 0.865 for situation, 0.856 for self, and 0.716 for support.

### **The career anxiety scale**

The Career Anxiety Scale was developed by Gündüz and Yılmaz [51] to assess the career anxiety experienced by teenagers during their career development. The measure comprises two sub-dimensions (career choice anxiety and family influence anxiety) and contains 14 items. As the score obtained from the scale increases, anxiety decreases. The Cronbach's alpha score for the career choice anxiety sub-dimension was 0.797, while for the anxiety regarding family influence sub-dimension, it was 0.742, indicating adequate internal consistency reliability of the scale. The goodness of fit indices for the scale were  $\chi^2/df=2.518$ ,  $RMSEA=0.067$ ,  $CFI=0.95$ ,  $NFI=0.92$ ,  $NNFI=0.94$ ,  $SRMR=0.055$ ,  $GFI=0.92$ , and  $AGFI=0.90$ . The item-factor loadings are as follows: In the family influence sub-dimension of anxiety, the range was

between 0.399 and 0.588; in the anxiety sub-dimension concerning career choice, the range was between 0.313 and 0.577. The Cronbach's alpha coefficient was re-evaluated for this study, yielding a value of 0.812 for anxiety related to family influence, 0.807 for anxiety over career choice, and 0.884 for the overall score of career anxiety.

### **Data collection**

The data for this study were collected during the first semester of the academic year, specifically between October and November, when high school seniors begin actively engaging in career decision-making and preparing for university entrance exams. This period was deliberately chosen because it marks the initial phase of the transition process, where students start to assess their academic standing, explore potential career paths, and experience the first signs of career-related anxiety. Prior research indicates that CA begins to emerge early in the academic year and progressively intensifies as students approach high-stakes exams [26]. By collecting data during this phase, the study captures students' psychological states at a time when uncertainty about their future is still prevalent, allowing for an in-depth examination of how CDMSE and CA interact in the early stages of the transition to higher education.

### **Data analysis**

Before conducting the data analysis, extreme values were assessed. Mahalanobis distances were computed, and 12 outliers were eliminated from the dataset. Subsequently, the skewness and kurtosis values were analyzed, and given that these values ranged from  $-1$  to  $+1$ , it was concluded that they demonstrated a normal distribution [52]. Structural Equation Modeling (SEM) was chosen over alternative methods, such as hierarchical regression, due to its ability to test complex mediation effects, account for measurement errors, and simultaneously analyze multiple relationships among latent and observed variables. Unlike regression models, which examine relationships in a stepwise manner, SEM provides a holistic approach by integrating confirmatory factor analysis (CFA) and structural path analysis within a single framework. This allows for a more precise estimation of indirect effects, making it particularly suitable for investigating the mediating role of career transition components in the relationship between CDMSE and CA. Additionally, SEM enables the modeling of measurement errors, thereby improving the reliability and validity of the findings [15]. Pearson correlation and path analysis were employed to assess the mediation analysis of the variables' relationship. Five thousand bootstrap loadings were executed to ascertain the bootstrap coefficient and confidence intervals. At this stage, it was observed that

the lower and upper confidence intervals were not zero due to the bootstrap loading [53].

The SPSS 26.0 program was utilized to analyze the gathered data's descriptive statistics and conduct correlation analyses, whereas the AMOS 20.0 tool was employed for path analysis. To ensure the robustness of the mediation analysis, standardized beta coefficients were examined, confirming that no extreme values exceeded the critical threshold of  $\pm 2.5$  [51], ensuring the stability of the model. Additionally, variance inflation factor (VIF) values were computed to detect multicollinearity among predictor variables, all of which remained below 5 [54], suggesting no significant collinearity issues. These results confirm that multicollinearity did not distort the mediation analysis and that the relationships among variables were statistically valid. The model's compatibility was assessed by  $\chi^2/df$ , RMSEA, CFI, GFI, NFI, SRMR, and AGFI values. At this point, the evaluation ranges of these indices [55–58] were determined by the ranges presented below (Table 1):

The mediation model analysis was performed according to the framework established by Baron and Kenny [59]. This structure necessitates a substantial correlation among the mediating variables, the situation, self, and support, as well as CDMSE and CA. Furthermore, when controlling for the independent variable, CDMSE, the mediating variables—situation, self, and support—should show a significant path to the dependent variable, CA.

**Table 1** Model Fit Index Values

| Indexes | Acceptable Fit           | Good Fit                  |
|---------|--------------------------|---------------------------|
| CMIN/DF | $2 < \chi^2/df \leq 3$   | $0 \leq \chi^2/df \leq 2$ |
| GFI     | $.90 \leq GFI < .95$     | $.95 \leq GFI \leq 1.00$  |
| AGFI    | $.85 \leq AGFI < .90$    | $.90 \leq AGFI \leq 1.00$ |
| SRMR    | $.05 \leq SRMR \leq .08$ | $0 \leq SRMR < .05$       |
| NFI     | $.90 \leq NFI < .95$     | $.95 \leq NFI \leq 1.00$  |
| CFI     | $.95 \leq CFI < .97$     | $.97 \leq CFI \leq 1.00$  |
| RMSEA   | $.05 < RMSEA \leq .08$   | $0 \leq RMSEA \leq .05$   |

**Table 2** Descriptive Statistics and Correlation Values

|              | Mean   | Standard Deviation | Kurtosis | Skewness | 1      | 2      | 3      | 4     | 5 |
|--------------|--------|--------------------|----------|----------|--------|--------|--------|-------|---|
| 1. CDMSE     | 91.139 | 19.856             | -.388    | .263     | 1      |        |        |       |   |
| 2. CA        | 46.084 | 13.652             | .099     | -.063    | .397** | 1      |        |       |   |
| 3. Situation | 43.842 | 10.715             | -.546    | .394     | .425** | .345** | 1      |       |   |
| 4. Self      | 40.256 | 9.954              | -.939    | 1.084    | .406** | .308** | .705** | 1     |   |
| 5. Support   | 29.110 | 7.636              | -.676    | .322     | .118** | .146** | .027   | .071* | 1 |

\*\* . $p < .01$

\* . $p < .05$

To ascertain the mediating role within the model, adjusting for the mediating variable is necessary, resulting in a diminished predictive power of the independent variable, CDMSE, on CA. Mediation analyses were performed with this type of approach.

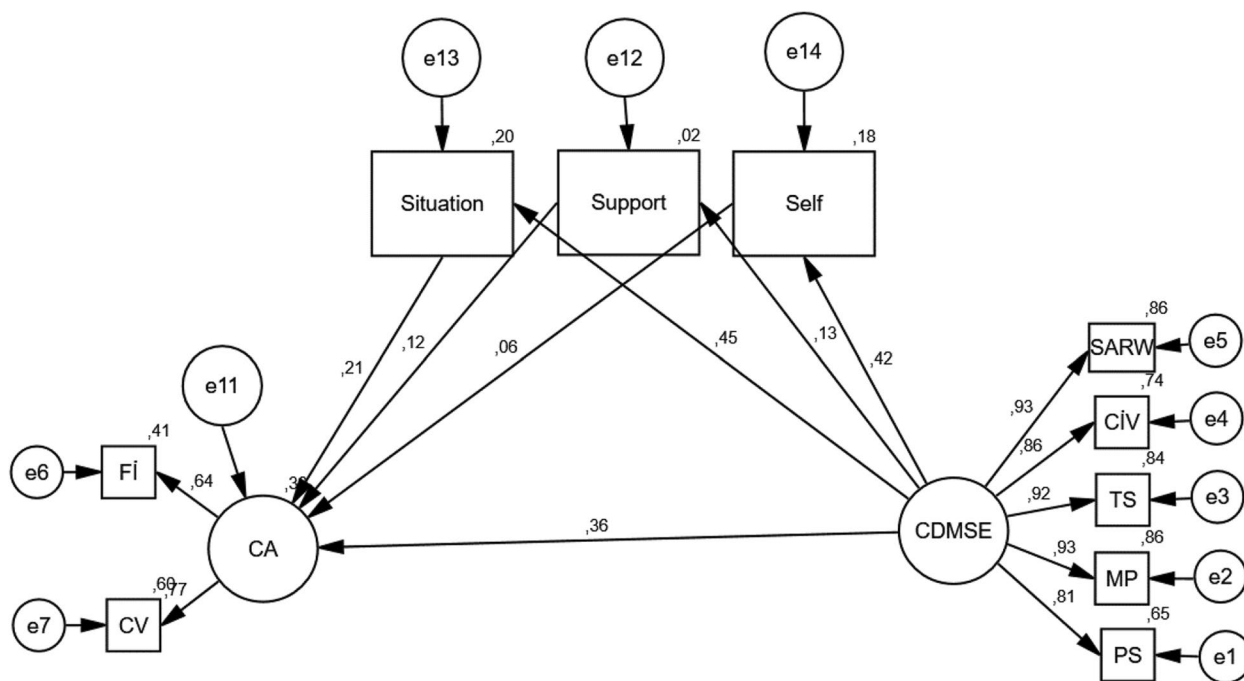
**Results**

Table 2 presents descriptive statistical information about the self, situation, and support sub-dimensions of career transition to higher education components, CDMSE, and CA of participants, along with the findings of the Pearson Correlation Analysis conducted to explore the relationships among these variables.

Analysis of the data in Table 2 reveals a positive and significant correlation between CDMSE and CA ( $r = 0.397, p < 0.01$ ), as well as with the sub-dimensions of career transition to higher education components: situation ( $r = 0.425, p < 0.01$ ), self ( $r = 0.406, p < 0.01$ ), and support ( $r = 0.118, p < 0.01$ ). A positive and significant correlation exists between CA and the sub-dimensions of career transition to higher education: situation ( $r = 0.345, p < 0.01$ ), self ( $r = 0.308, p < 0.01$ ), and support ( $r = 0.146, p < 0.01$ ).

Following the investigation of correlational relationships, path analysis was performed to ascertain the mediating roles of situation, self, and support in the relationship between CDMSE and CA, as outlined in the model. The findings of the analysis are presented in Fig. 1.

The studies were performed without alterations to the model proposed for the analysis. The studies revealed that the model had a poor overall fit [ $\chi^2/df = 16.342, RMSEA = 0.138, CFI = 0.909, GFI = 0.906, NFI = 0.904, SRMR = 0.0749, AGFI = 0.833$ ]. According to Hu and Bentler [60], an RMSEA value below 0.06 and CFI and GFI values above 0.95 indicate good model fit. Given that the initial model did not meet these criteria, a reassessment of its components was necessary. Furthermore, the analysis of the pathways revealed that the connection between the self component and career anxiety was not significant. This finding aligns with Savickas [46] and

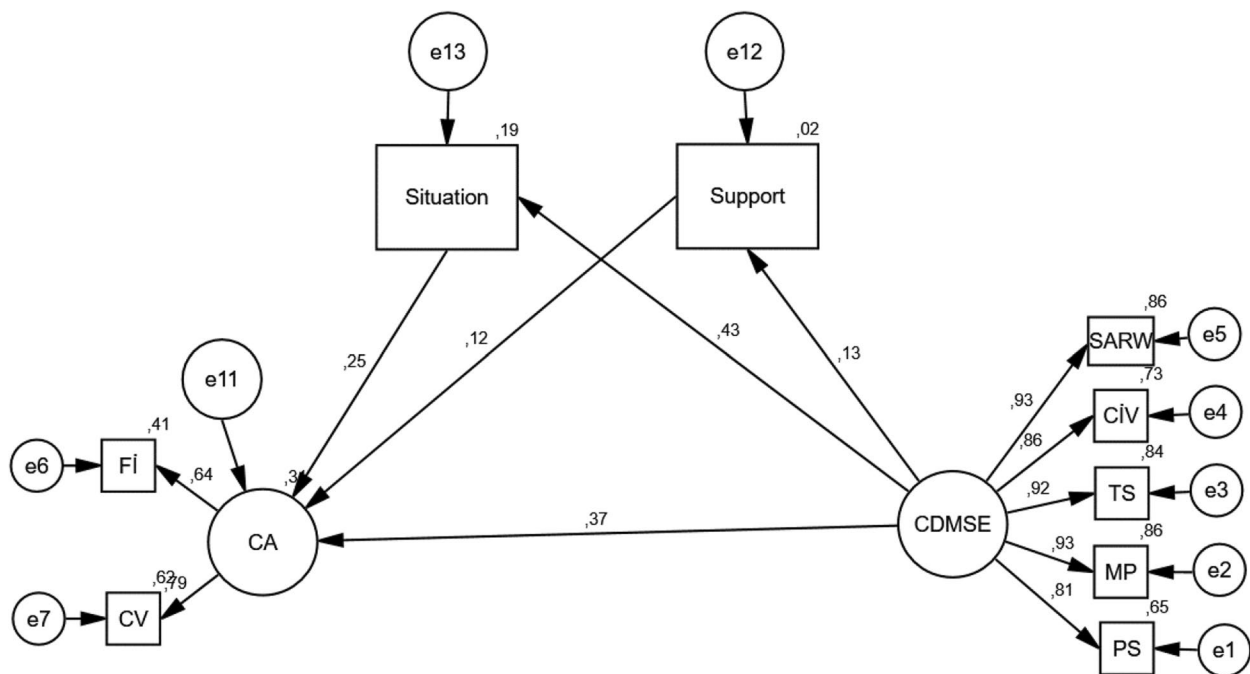


**Fig. 1** The mediating role of situation, self, and support in the relationship between CDMSE and CA. CDMSE = Career Decision-Making Self-Efficacy; CA = Career Anxiety

Lent, Brown, and Hackett [17], who suggest that self-perception primarily influences career development through indirect mechanisms rather than directly affecting career anxiety. Although the self-component demonstrated a significant correlation with CDMSE and CA ( $r=0.406$ ,  $p<0.01$ ), the mediation analysis did not confirm its indirect effect. This discrepancy suggests that while self-perceptions are related to CDMSE and CA, their role as a mediator may be diminished when situational and support factors are included in the model. This finding aligns with the idea that external environmental factors might have a stronger influence on career anxiety during transitions, overriding the potential mediating effect of self-perceptions. Additionally, the nonsignificant mediation effect may be due to the variance explained by other mediators, which absorb the predictive power of the self-component. Subsequently, with the elimination of the self-factor from the model (Fig. 2), it was observed that the values fell within the desired range [ $\chi^2/df=2.562$ , RMSEA=0.044, CFI=0.992, GFI=0.983, NFI=0.987, SRMR=0.0197, AGFI=0.967]. These improved fit indices support the theoretical justification for model modification, as they now align with widely accepted structural equation modeling (SEM) standards [60].

Table 3 presents the regression results from the analyses carried out to determine the mediating role of career transition to higher education components in the impact of CDMSE on CA.

The model analysis investigating the indirect association consistent with mediation of career transition to higher education components on the relationship between CDMSE and CA revealed a decreased standardized regression coefficient from  $\beta=0.455$  to  $\beta=0.380$  ( $p<0.001$ ). Figure 2 illustrates that the influence of CDMSE on CA diminished when situation and support sub-dimensions of career transition to higher education were incorporated into the analysis. It was shown that despite the reduction in beta values, both variables retained their predictive power. It was determined that CDMSE directly influences CA and also affects it indirectly through situation and support factors sub-dimensions of career transition to higher education components. This situation indicates a partial mediating influence of the situation. It supports sub-dimensions of career transition to higher education components in the relationship between adolescents' career CDMSE and CA. Following assessing the indirect association consistent with mediation, the bootstrap confidence interval was analyzed to evaluate the extent of the mediating influence on the situation and its support. Upon examining the data in Table 3, it is evident that the lower and upper ranges of the bootstrap do not equal zero [55], indicating that both situations ( $\beta=0.384$ , 95% CI [0.054, 0.017]) and support ( $\beta=0.469$ , 95% CI [0.017, 0.033]) exhibit an indirect association consistent with mediation.



**Fig. 2** Revised model: The mediating role of situation and support in the relationship between CDMSE and CA

**Table 3** Regression Values for the Model

| Regression Values                        |   |                         | Standard |      |        |       | Bias (%95)  |             |
|--|---|-------------------------|----------|------|--------|-------|-------------|-------------|
|  |   |                         | B        | S.E  | C.R    | P     | Lower Limit | Upper Limit |
| Situation                                | ← | CDMSE                   | 1.305    | .104 | 12.581 | <.001 |             |             |
| Support                                  | ← | CDMSE                   | .271     | .077 | 3.515  | <.001 |             |             |
| CA                                       | ← | Situation               | .086     | .015 | 5.557  | <.001 |             |             |
| CA                                       | ← | Support                 | .057     | .019 | 3.064  | <.001 |             |             |
| CA                                       | ← | CDMSE (Indirect Effect) | .380     | .052 | 7.320  | <.001 |             |             |
| CA                                       | ← | CDMSE (Direct Effect)   | .455     | .057 | 7.917  | <.001 |             |             |
| CA ← Situation ← CDMSE (Indirect Effect) |   |                         | .384     |      |        |       | .054        | .157        |
| CA ← Support ← CDMSE (Direct Effect)     |   |                         | .469     |      |        |       | .017        | .033        |

**Discussion**

The transition from high school to college represents a pivotal moment in the lives of adolescents. This period is not merely a change in educational institutions; it is a significant life transition characterized by the assumption of new roles, the encounter of heightened expectations, and the adjustment to unfamiliar environments. During this time, adolescents face numerous challenges, particularly in the realm of career decision-making. This study delves into the intricate relationship between CDMSE and CA, with a particular emphasis on how the components of career transition—namely self, situation and support—mediate this relationship.

The findings of this study align with previous research that indicates a negative correlation between CDMSE and CA. Specifically, higher levels of self-efficacy in career decision-making are associated with lower levels of anxiety. This relationship is consistent with the work of Gati et al. [25], who highlighted that poor readiness and inadequate information can adversely impact the career decision-making process. Adolescents who possess a strong belief in their capabilities are more likely to engage actively in career exploration and decision-making. The adverse correlations between self-efficacy and anxiety shown in the literature indirectly support the research findings [61–65]. Nevertheless, the findings of Crossley

and Stanton [66] indicate that anxiety might occasionally have a beneficial influence on self-efficacy, which contradicts the anticipated outcomes and does not substantiate the research results. Also according to Cho [67], minimal anxiety can even enhance individual performance. Abele and Spurk [68] assert that elevated self-efficacy reduces anxiety as it more accurately forecasts career outcomes. This scenario underscores the significance of perceived control in individuals' decision-making processes. The dynamic interplay between CDMSE and CA suggests that enhancing adolescents' self-efficacy can serve as a protective factor against the anxiety that often accompanies the decision-making process regarding their future careers.

A substantial positive relationship has been found between the CDMSE and the sub-dimensions of career transition to higher education in adolescents: situation, self, and support. Upon reviewing the literature, it is evident that certain studies corroborate the research findings [5, 69, 70]. Added to that, Hopson and Adams [71] asserted that the transition to higher education is typically an anticipated crisis and that individuals can generally navigate this process, which contradicts the research findings. Furthermore, Crossley and Stanton [66] asserted that the influence of psychological distress on social support is not invariably predictable, which contradicts the research findings. This research indicates that adolescents' self-efficacy judgments and support mechanisms significantly influence their transition to higher education. The cultural traits and social contexts of the group from which the data were obtained influence the relationship and the strength between competency expectations and career transitions to higher education. In a country like Türkiye, where population density is rising, individuals' aspirations to pursue higher education for employment opportunities are influenced by both personal and societal considerations.

Additionally, the presence of extreme beta values and multicollinearity was assessed to ensure the robustness of the mediation model. The standardized regression coefficient decreased from  $\beta=0.455$  to  $\beta=0.380$  ( $p<0.001$ ) when the situation and support sub-dimensions were introduced, indicating a significant indirect association consistent with mediation. Examination of standardized beta coefficients confirmed that no extreme values exceeded the critical threshold of  $\pm 2.5$  [45], ensuring the stability of the model. Furthermore, variance inflation factor (VIF) values were computed to detect multicollinearity among predictor variables, all of which remained below 5 [54], suggesting no significant collinearity issues. These results confirm that multicollinearity did not distort the mediation analysis and that the relationships among variables were statistically valid.

The results revealed that the model initially demonstrated a poor fit, which improved with the removal of the self component. The sub-dimensions of career transition to higher education were found to partially mediate the impact of CDMSE on CA. The influence of CDMSE on CA diminished with the inclusion of situational and social support components, however it retained its predictive significance. Consequently, it was established that situational and social support are somewhat indirectly associated with the connection between CDMSE and CA. The situation component encompasses the specific circumstances surrounding the transition to higher education, such as the timing of the transition and the level of control adolescents feel they have over their decisions. Schlossberg [5] posited that successful adaptation to new environments is critical, and a supportive situation can significantly mitigate feelings of anxiety. Similarly, support, as identified in this study, plays a crucial role in facilitating effective transitions for adolescents. Emotional, practical, and informational support from family, peers, and mentors can help adolescents navigate the complexities of career decision-making. This finding resonates with the work of Super, Savickas, and Super [70], who emphasized the significance of interpersonal support systems in enabling students to explore career anxiety amidst uncertainty and indecision. The positive correlation between perceived support and CDMSE suggests that when adolescents believe they have robust support networks, their confidence in making career-related decisions increases, thereby reducing anxiety. This dynamic highlights the importance of fostering supportive environments for adolescents during their transition to higher education. Interestingly, the self-component, which encompasses personal attributes such as resilience and self-awareness, did not demonstrate a significant indirect association consistent with mediation in this study. This finding may indicate that during the transition to higher education, adolescents are more influenced by external situational factors and support systems rather than their internal self-perceptions. As noted by Nicholson and Carroll [71], successful transitions often require individuals to unlearn or adapt their established identities. This process may lead adolescents to prioritize external factors over their self-efficacy beliefs, particularly in the face of anticipated crises associated with career decisions. The transition to college often involves a reevaluation of one's identity and goals, which can be disorienting and stressful for many adolescents.

Upon reviewing the literature, it was found that, aside from the absence of direct investigations, several indirect studies [61, 69, 72–75] corroborated the research findings. Furthermore, the discovery that the self component did not mediate the association between CDMSE

and CA indicates that anxiety dynamics during transition processes are more influenced by social support and contextual factors. Louis [76] asserted that the influence of individual traits may be constrained when individuals navigate new roles and surroundings during transitional processes, with environmental supports and expectations assuming a more significant role. Schlossberg [5] also argued that robust social support structures are essential for the efficacy of individual factors during the transition phase. Guan et al. [69] demonstrated that environmental influences, such as familial support, exert a greater influence on individuals' decision-making processes than personal qualities.

The lack of a significant indirect association consistent with mediation for the self-component, contrary to theoretical anticipations based on Schlossberg's transition theory [5], requires further examination. Schlossberg asserted that self-perception is essential in managing transitions; nevertheless, our findings indicate that during transitional periods, particularly in adolescence, external situational factors and support systems may have a more significant influence. This behavior may not be exclusive to Turkish adolescents but rather reflective of a wider pattern seen in transitional times, where individuals may be more dependent on external influences and support than to their self-perceptions [71]. This situation demonstrates that people's adaptation processes are influenced by both internal resources and external support networks within their social milieu. Specifically, it was established that social support and the individual's self-perception of competence facilitate the alleviation of anxiety during the transition phase. The cultural background of adolescents in Türkiye is a significant aspect that either reinforces or diminishes this relationship. In collectivist cultures like Türkiye, where familial and societal expectations significantly influence individual decisions [77], the reliance on external support systems can overshadow personal self-efficacy beliefs. This finding is consistent with research indicating that social support plays a critical role in career decision-making processes within collectivist contexts [61]. The emphasis on familial influence in Türkiye, where decisions often reflect collective rather than individual aspirations, may explain why adolescents prioritize external support mechanisms over their self-perceptions of competence. This cultural context suggests that adolescents may experience heightened anxiety when they perceive inadequate support or guidance, thereby undermining their self-efficacy beliefs. Such dynamics highlight the importance of fostering environments that not only provide external support but also encourage self-reflection and personal agency, enabling adolescents to build resilience and confidence in their decision-making abilities. Furthermore, Hopson and

Adams [78] categorize anticipated crises as foreseeable and unanticipated crises as unpredictable. The transition to higher education is largely perceived as an anticipated crisis, leading individuals to engage in cognitive adjustments that might diminish the perceived impact of the self-component on anxiety. This perspective is supported by Chudzikowski et al. [79], who explored career transitions from a comparative national viewpoint, highlighting the role of both internal and external factors in shaping occupational trajectories. Interpretations are necessarily associative. The cross-sectional design precludes causal claims about CDMSE, transition components, and career anxiety; longitudinal or experimental designs are needed to test causal mechanisms.

### Conclusions

This study highlights the complex interplay between CDMSE, CA, and the components of career transition. The findings reveal that situational and supportive factors significantly shows an indirect path in the relationship between CDMSE and CA, highlighting the importance of external resources in navigating the complexities of career decision-making. In alignment with Türkiye's 2023 Education Reform Agenda [80], which aims to enhance educational outcomes and reduce youth unemployment, these insights emphasize the necessity of fostering situational support systems. By prioritizing mentorship programs, peer support initiatives, and comprehensive career guidance, educational institutions can empower students to make informed career choices, thereby mitigating anxiety and enhancing readiness for the workforce.

Moreover, findings suggest that while individual factors such as self-concept are important, the dominant influence may come from external resources such as social networks and perceived support, significantly reducing career anxiety. The relevance of these findings may extend beyond Türkiye, offering valuable insights for similar collectivist settings in the Middle East and Asia. In cultures where familial and social support play pivotal roles in decision-making, the emphasis on situational support and community engagement can be instrumental in shaping effective interventions. As such, this study not only contributes to the understanding of career transition processes in Türkiye but also provides a framework for addressing the challenges faced by youth in comparable cultural contexts, ultimately fostering a more robust and adaptable workforce.

### Practical implications

The findings of this study reveal that educators, counselors and policy makers should develop comprehensive and multidimensional support systems to increase career decision-making self-efficacy (CDMSE) and decrease

career anxiety (CA) in adolescents. Especially in the Turkish context, it is important to concretize these support systems with school-based, feasible and measurable intervention programs. In this regard, a structured mentoring program can be implemented under the coordination of guidance services in high schools and with the support of provincial directorates of national education. Within the scope of the program, senior university students and early-career professionals—especially those who graduated from the same school type or district—can voluntarily mentor senior high school students. The mentoring process can be conducted in small groups of four to five students per mentor in bi-weekly online or face-to-face sessions for three months. The content of the program can be structured to include career story sharing, exploration of personal strengths, information about academic and vocational pathways, and strategies for dealing with career-related concerns. To evaluate effectiveness, pre- and post-intervention CDMSE and CA levels can be measured with standardized scales, and qualitative data can be collected through focus group interviews. The expected outcomes of this intervention include clarity in students' career goals, a decrease in the level of stress related to decision-making processes, and an increase in the perception of readiness for higher education. Mentoring programs can be supplemented with school-based career guidance workshops to increase family involvement in students' career planning processes; this will support young people to make more informed and balanced career choices by providing emotional and structural contribution to the decision-making process, especially in collectivist societies like Türkiye where family ties are strong.

### Future directions

Future research should explore the dynamics of CDMSE and CA in diverse cultural and educational contexts to enhance the generalizability of the findings. Longitudinal studies could provide deeper insights into how these relationships evolve over time, particularly as students progress through their educational journeys and face varying career-related challenges. Additionally, it would be beneficial to examine other psychological and environmental variables that may influence the interplay between CDMSE, CA, and career transition components. Investigating the role of technology in facilitating career decision-making and support systems could also yield valuable insights, especially in an increasingly digital world.

### Limitations

This study has several limitations that should be acknowledged in interpreting the results. First, the reliance on self-reported data introduces the possibility

of response bias, particularly social desirability effects. Given the cultural context of Türkiye—where academic success and future career plans are often tied to family expectations—participants may have overreported self-efficacy or underreported anxiety, thereby affecting the observed relationships. This bias could have attenuated or inflated the strength of associations between CDMSE, CA, and transition components. Also, the study sample is confined to a particular cultural and educational context, which may restrict the generalizability of the findings to other environments. Especially the sample used for this study may exhibit potential bias due to the overrepresentation of Anatolian high schools (62.7%), which could distort results in favor of academically tracked students. Second, the cross-sectional design limits causal inferences. It is unclear whether higher CDMSE leads to reduced anxiety, or if low anxiety boosts perceived efficacy. Longitudinal designs are needed to capture the dynamic evolution of these variables during the transition process. Additionally, important contextual factors such as parental education, school performance, and peer influence were not included in the analysis. These could act as confounding variables, particularly in collectivist cultures where career decisions are heavily shaped by family and community input.

To overcome these limitations, future research should integrate multi-informant methods (e.g., parent or teacher ratings), include longitudinal tracking, and employ mixed-method designs to triangulate quantitative findings with qualitative insights, offering a richer understanding of adolescent transitions in diverse sociocultural contexts.

### Abbreviations

|       |   |
|-------|---|
| CA    | Career Anxiety                              |
| CDMSE | Career Decision-Making Self-Efficacy        |
| SEM   | Structural Equation Modeling                |
| CFA   | Confirmatory Factor Analysis                |
| EFA   | Exploratory Factor Analysis                 |
| VIF   | Variance Inflation Factor                   |
| RMSEA | Root Mean Square Error of Approximation     |
| CFI   | Comparative Fit Index                       |
| GFI   | Goodness-of-Fit Index                       |
| AGFI  | Adjusted Goodness-of-Fit Index              |
| NFI   | Normed Fit Index                            |
| SRMR  | Standardized Root Mean Square Residual      |
| SCCT  | Social Cognitive Career Theory              |
| CCT   | Career Construction Theory                  |
| ANOVA | Analysis of Variance                        |
| TL    | Turkish lira                                |
| SPSS  | Statistical Package for the Social Sciences |
| AMOS  | Analysis of Moment Structures               |

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### Authors' contributions

OY conceptualized and designed the research and obtained required permissions. OS collected the data and performed the statistical analyses. OY reviewed the analyses. Both OY and OS drafted and revised the manuscript.

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### Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

### Declarations

#### Ethics approval and consent to participate

This study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the TED University Human Research Ethics Committee (Approval Decision No. 26.05.2022–16502). Data collection commenced upon the completion of ethical approvals and the requisite legal authorizations. At the onset of the study, participants were provided with comprehensive information regarding the nature of the study, privacy policy, and conditions of participation using a written informed consent to participate which was obtained from all of the participants.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare no competing interests.

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