Analysis of Studies about Academic Anxiety: A Thematic Review

Akademik Kaygı Üzerine Yapılan Çalışmaların Analizi: Bir Tematik İnceleme

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ABSTRACT

The aim of this research was to analyze academic anxiety studies in the literature using the thematic review method and to determine the current trend in this field. In the research, a meta-synthesis study was carried out including 61 studies, 3 of which were theses and 58 were articles, published between 1981-2021. The studies used in the research were accessed in Dissertations and Theses Global-Proquest, Eric-EBSCOhost, MEDLINE, Science Direct, Scopus, SpringerLink, Taylor and Francis Online, Wiley, ULAKBIM, YÖK Thesis Center and Google Scholar databases. Published articles or theses about determining the nature of academic anxiety in the literature were included in the study. In the examined studies, the relationship of academic anxiety with more than one variable was investigated and it was determined that most studies focused on examining the differences based on demographic variables. The survey model was the most frequently chosen research method, and qualitative research methods were not sufficiently used. The studies examined were carried out mostly by using the questionnaire method in high school level age groups and sample groups of 101-300 people. Therefore, in order to carry out new studies with larger working groups, to examine the academic anxiety of students at higher education level and to carry out reviews, scale development or adaptation studies for higher education students are needed. In addition, there was a limited number of experimental studies conducted about reducing student academic anxiety. Survey and relational based quantitative research needs to be supported by experimental methods.

Keywords: Academic anxiety, thematic review, review

ÖZ

Bu araştırmanın amacı, alanyazında gerçekleştirilen akademik kaygı çalışmalarının tematik inceleme yöntemi kullanılarak analiz edilmesi ve ilgili alandaki mevcut eğilimin belirlenmesidir. Araştırma, 1981-2021 yılları arasında yayınlanmış 3 tez ve 58 araştırma makalesi olmak üzere toplam 61 çalışma üzerinden yürütülmüştür. Araştırma kapsamında kullanılacak çalışmalara Dissertations and Theses Global-Proquest, Eric-Ebscohost, MEDLINE, Science Direct, Scopus, Springerlink, Taylor and Francis Online, Wiley, ULAKBIM, Yök Tez Merkezi ve Google Scholar veri tabanlarından ulaşılmıştır. Araştırmaya dâhil edilecek çalışmalara karar verilirken çalışmanın literatürde akademik kaygının doğasını tespit etmeye yönelik yayınlanmış makale veya tez olması şartı aranmıştır. İncelenen çalışmalarda akademik kaygının birden fazla değişkenle ilişkilerinin araştırıldığı, demografik değişkenlere dayalı olarak farklılıklarının incelendiği çalışmaların yoğunlukta olduğu görülmektedir. Akademik kaygı konusunda yürütülen çalışmalarda en fazla tarama modelli araştırma yönteminin tercih edildiği, nitel araştırma yöntemlerine ise yeteri kadar yer verilmediği tespit edilmiştir. İncelenen çalışmaların en fazla lise düzeyindeki yaş gruplarında ve 101-300 kişilik örneklem gruplarında, yoğunlukla ölçekler aracılığıyla verilerin toplandığı bulgulanmıştır. Dolayısıyla yeni çalışmaların daha geniş çalışma gruplarıyla gerçekleştirilmesi, üst öğrenim düzeyindeki öğrencilerin akademik kaygılarının incelenmesi ve bu incelemenin gerçekleştirilebilmesi amacıyla yükseköğretim öğrencilerine yönelik ölçek geliştirme veya uyarlama çalışmalarının yapılmasına ihtiyaç duyulduğu belirlenmiştir. Ayrıca öğrencilerin akademik kaygılarının azaltılmasına yönelik gerçekleştirilen deneysel çalışmaların da kısıtlı sayıda olduğu görülmektedir. Tarama ve ilişkisel temelli nicel araştırmaların, deneysel yöntemlerle desteklenmesi bir ihtiyaç olarak görülmektedir

Anahtar sözcükler: Akademik kaygı, tematik inceleme, derleme

Introduction

Humans may be faced by many unwanted situations during their lives. Fear may develop as a result of perceiving these situations or events as threats. However, attribution of unrealistic meaning to the same situation will

cause anxiety to occur. The anxiety concept, with a long history in the psychology literature, appears to have been defined in a variety of forms. Lazarus and Averill (1972) defined anxiety as "a feeling involving symbolic, expectational or uncertain elements based on threat assessment." Beck and Emery (2011) stated it was the intense emotional state experienced, along with physical symptoms, due to perceptions of an event or situation as hazardous or harmful. When studies about university students are investigated, globally nearly 25% of the student population experienced a variety of psychological problems (Vitasari et al. 2010, Kumaraswamy 2012), while 20.1% of male students and 17.9% of female students complained of high anxiety (Deb et al. 2010).

Anxiety, notable as one of the commonly observed psychological problems among students, appears to be unavoidable for students faced with intense competition in the field of education. Though an individual's experience of anxiety may trigger formation of bad or unwanted emotions, it may be assessed as a normal emotion that is beneficial when experienced at mild and moderate levels, that provides motivating power to complete a task. For example, anxiety experienced at moderate levels may provide the motivation and energy required by students to complete their academic duties. However, intense anxiety may lead to a range of negative outcomes in the academic life of individuals, along with some problems in a psychopathological sense like lowered living standards, disability and reduced functioning. For example, individuals with high academic anxiety may experience regression of learning levels and academic failure, with weakened learning, academic performance and levels of environmental adjustment (Clark and Scwartz, 1989). As can be seen, to achieve success in educational experiences, students must cope with many problems, both external and internal. In this context, 'academic anxiety' with negative impacts on learning and achievement outcomes is notable (Shakir 2014, Alam 2017). Academic anxiety is defined as worry, irritation and nervous feelings about academic tasks and achievement within educational life (Liebert and Morris 1967, Zeidner 2007, Goetz et al. 2008). Another definition explains academic anxiety as a generalized representation of perceived threat based on stress factors encountered in an environment or context related to any academic task (Schniering and Rapee 2004, Cassady 2010, Beck and Bredemeier 2016). This type of anxiety is stated to be related to probable threats that may occur in academic environments involving certain academic topics like mathematics, science, language learning and the attitude of teachers (Banga 2014, Bihari 2014, Ramana Rao and Chaturvedi 2017). Additionally, Eysenck et al. (2007) emphasized that academic anxiety may occur due to a variety of causes like peer pressure, expectations of friends or family, academic performance history and self-assessment. Thus, academic anxiety is proposed to have three components of cognitive, affective and behavioral elements, emphasizing the social dimension when performance is assessed by others (Zeidner and Mathews 2005). Of these dimensions, the cognitive dimension involves negative thoughts emerging during cognitive assessments and statements devaluing the self (if I fail this exam my whole life is a failure) and difficulties obstructing performance that may be due to anxiety (difficulties with recalling knowledge, reading and understanding questions). The affective dimension involves a person's negative assessment of their physiological state (like nervousness, tight muscles and shaking). The behavioral dimension may display as poor study skills, avoidance and procrastinating over tasks.

Academic anxiety, observable in the cognitive, affective and behavioral dimensions, has been a research focus for experimental psychologists and education psychologists (Gaudry and Spielberger 1971, Spielberger 1966) for decades, and continues to attract the attention of educators and researchers (Kazelskis et al. 2000). Academic anxiety may be generally defined as a multidimensional construct involving an individual achieving success in educational life, performance in expressing themselves and what they know in tests and scientific meetings, researching, writing projects, and organizing interviews with competent individuals in the field. This creates a state of tension experienced with worry due to the educational environment leading to impacts in cognitive, behavioral, affective and somatic terms. In the literature, academic anxiety is emphasized to threaten the psychological health of students, in addition to having impacts over a very broad range including efficiency, competency, personality formation, social identity and career (McDonald 2001). Hence, in the literature it appears much research draws attention to the negative outcomes of anxiety within academic life. For example, intense anxiety negatively affects school performance (Hembree 1988, Seipp 1991), may trigger feelings of hopelessness in students (Cole et al. 1999), may negatively affect many areas from undertaking new academic tasks (Burhans and Dweck 1995) to language learning (Macintyre and Gardner 1991, Saito et al. 1999) and was emphasized to cause deficient motivation about educational life (Zeidner 1998, Schunk et al. 2010). Additionally, academic anxiety was stated to be a predictor of aggressive and hostile behavior of students (Sarason et al. 1960). For this reason, academic anxiety appears to affect the success and performance of children and adults in addition to impacting social and psychological development. Considering the education and career processes of students, it is considered very important to understand this construct.

When the literature is investigated, academic anxiety appears to have significant effects on the mental health of students. For example, a study emphasized that academic anxiety in students was associated at high levels with

depression and that as academic anxiety increased, depression in students also increased (Cassady et al. 2019). In this context, due to the increase in rates of depression among students during the university years, it is considered that paying attention to academic anxiety and its causes, especially, will provide significant benefit (Perez-Rojas et al. 2017). In situations where academic anxiety among students is not identified in the early period, it appears possible they will experience failure, fear of negative outcomes, hopelessness, withdrawal or depression symptoms. At this point, early detection of academic anxiety and early intervention programs to be developed are considered to contribute to reducing depression and negative impacts in students (Costello et al. 2003, Garber and Weersing 2010, Von der Embse et al. 2018). In situations without appropriate assessment and intervention, it is known that suicide attempts occur at increasing levels among individuals with low psychological resilience levels (Garber and Weersing 2010). For example, it was reported that 2320 students died by suicide due to failure in India in one year; in other words, more than six students per day (Amudhan et al. 2019). Additionally, individuals experiencing academic anxiety who display neurotic personality traits were stated to be at higher risk of internalizing mental disorders (Cassady et al. 2019).

As seen in the explanations above, academic anxiety in students appears to be an important factor with negative impacts over a broad range from academic achievement to mental health. From basic education to higher education, it is very important that students know they may experience academic anxiety at all stages and determine situations associated with this anxiety in order to prevent possible negative outcomes that may be experienced or to minimize these impacts. For this reason, the present study investigated the studies about academic anxiety in the literature in terms of topic, scope, aim, method, sample, data collection tools and findings obtained and considered the types of studies that will be required in detail according to the results obtained. Additionally, when studies related to this topic performed in Türkiye are investigated, generally no studies about the nature of academic anxiety in general were encountered, while measures were performed about specific fields of academic anxiety (test anxiety, mathematic anxiety, etc.). Additionally, the majority of studies completed within this scope in the literature were performed in India and limited research about the topic of academic anxiety was identified in the literature. Within the scope of this thematic review, a comprehensive assessment of studies performed about academic anxiety is provided, to identify new studies required in the literature and to prevent studies repeating each other. In short, the present study is thought to contribute to the field by determining the general trend of studies completed about academic anxiety, stated to cause negative outcomes not just during student life but in the long term, and to create a basis for new studies. Additionally, the present study may contribute to understanding factors associated with academic anxiety and hence to the development of effective intervention programs. Within the scope of the present study, responses were sought to questions about studies performed in the field of academic anxiety such as what purposes were targeted, the methods used in research and how the process was completed, the chosen sample groups and data collection tools, and what type of results were obtained.

Method

This research is a thematic review study. This type of study aims to create a main outline using the general lines of research performed related to a topic, to investigate studies from a critical viewpoint, to synthesize results by combining them and to assess them holistically by interpretation and to infer a general perspective (Au 2007). The present study aimed to provide a qualitative synthesis of research performed about academic anxiety in terms of variables considered and common and different aspects of the studies, in order to provide a guiding resource for researchers wishing to study this topic. Ethics committee documentation was not required as this study did not obtain information about people through the use of any scale, survey, etc.

Data Collection Process

This research is limited to 61 studies in the national and/or international literature published between 1981-2021. The investigated studies appear to associate several different variables with academic anxiety. Additionally, different scale tools (test anxiety, mathematic anxiety, school anxiety, etc.) were used to determine academic anxiety. However, within the scope of this study, studies containing data obtained from scale tools prepared to discover the nature of academic anxiety (Goetz et al. 2007), rather than the subfields of academic anxiety, were included. For example, a study may obtain results about whether test anxiety among students differs based on sex or not and these results may be published under the heading of academic anxiety. Here, high test anxiety or statistical differences based on sex are not direct outcomes due to the general nature of academic anxiety. For this reason, this type of data was excluded from the scope of the study. Additionally, studies investigating the correlations between test anxiety and academic anxiety are important for academic anxiety in terms of test anxiety so this data was included for analysis within the scope of the research. Additionally,

experimental studies were assessed for whether they included intervention programs about reducing academic anxiety or not and intervention programs completed with the scope of academic self-management, academic strengthening and academic self-efficacy were not included within the scope of the research. In this context, literature screening was completed using the keywords 'academic anxiety' and 'akademik kaygı'. Studies to be used within the research were accessed from the Dissertations and Theses Global-Proquest, Eric-EBSCOhost, MEDLINE, Science Direct, Scopus, SpringerLink, Taylor and Francis Online, Wiley, ULAKBIM, YÖK Thesis Center and Google Scholar databases. Additionally, studies not open to access or where the full text could not be reached were excluded from the research. For this reason, after the elimination process, the thematic review study was completed with a total of 61 studies including 3 theses and 58 articles.

Validity and Reliability of the Research

Each of the studies included in the research had the abstract, introduction, method, sample, data collection tools and findings sections assessed in detail and studies in English were translated to Turkish. While reading, data suitable for the purposes of the present study were reviewed, and collected in tables in the computer environment. With the aim of preventing errors in the coding process, the coding process was completed over a large time interval by tabulating data. With the aim of ensuring reliability of coding, the first coding process was reviewed nearly 1 month later, and high levels of consistency were identified between the first and final codings. Additionally, content analysis began after coding was assessed in terms of validity and reliability by two academics who were experts in the field of psychological counseling.

Data Analysis

Within the scope of the research, firstly data obtained from studies completed based on associating variables with academic anxiety were described using tables or graphs. Additionally, assessments of the tables were completed with frequency (f) and percentage of total studies (%).

Results

Firstly content analysis was completed about the aims of 61 studies abiding by the inclusion criteria in the thematic review study. Accordingly, the studies are presented in Table 1 within the framework of general aims and similar aims. As seen in Table 1, when the academic anxiety literature is investigated, nearly half of studies (44.3%) included in the thematic review were observed to consider whether academic anxiety differed or not based on demographic variables like sex, age, socioeconomic level and place of residence. Then, 27.9% of the total studies investigated personality traits, and nearly one third (19.7%) appeared to research the relationship between factors related to school and family with academic anxiety. Only 6 of the 61 studies comprised intervention studies to reduce academic anxiety, while the proportion (3.3%) for scale development studies about identifying the nature of academic anxiety was very low. Studies aiming to identify the correlations between academic anxiety with variables like mental health, social life and support, culture, etc. appeared to be very limited.

Methods Used

The explanations related to methods used in studies included in the thematic review research are given below (Table 2). Studies investigated within the scope of this research appeared to use the quantitative research methods of screening, relational and experimental methods, while 1 study used qualitative research and literature review methods. Research methods mostly comprised the screening method for 47.5%, while the qualitative research method was used least by 1.6% of studies. The intervention programs designed in accordance with the experimental model remained at inadequate levels within these studies. Studies designed according to the experimental model appeared to be constructed about testing the efficacy of yoga, meditation, assertiveness training, Montessori and traditional education with cooperative learning methods. Studies constructed in accordance with the screening model generally collected data using at least 1 scale about determining the academic anxiety of students and aimed to take a snapshot of the existing situation within a short duration. Among research designed according to the relational model, studies investigating the relationships between variables by collecting data in a short period using only scales as data collection tools were notable. The qualitative research method dealt with anxiety using a cognitive behavioral therapy-based focus group interview, one of the commonly used and accepted therapy methods, and proved its efficacy on anxiety. Finally, 2 literature review studies were performed. One of these studies investigated academic anxiety in terms of emotional intelligence, while the other performed an assessment about the causes of academic anxiety.

Table 1. Data about purposes of academic anxiety studies			
Studies	**Purposes**	**f**	**%**
Sharma and Jaswal 2002, Bhansali and Trivedi 2008, Kumari 2010, Mahato and Jangir 2012, Attri and Neelam 2013, Kumar 2013, Aparnath 2014, Banga 2014a, Banga 2014b, Das et al. 2014, Sahu and Jha 2014, Shakir 2014, Sharma 2014, Siddiqui and Rehman 2014, Mahajan 2015, Thakur and Kumar 2015, Ahuja 2016, Banga 2016, Babu and Zeliang 2017, Gul 2017, Njue and Anand 2018, Rani 2017, Sharma 2017, Hasan 2018, Jabeen and Andrabi 2018, Kaur and Chawla 2018, Yang et al. 2019	Determination of differentiation based on demographic variables (age, sex, socioeconomic level, place of residence)	27	44.3
Grover and Smith 1981, Gillen-O'Neel et al. 2011, Etiafani and Listiara 2015, Ahuja 2016, Jan et al. 2017, Sati and Vig 2017, Hasan 2018, Njue and Anand 2018, Cassady et al. 2019, Kurniawan et al. 2019, Yang et al. 2019, Fiorilli et al. 2020, Kayani et al. 2020, Kayani et al. 2021, Kumari 2010, Li et al. 2020, Dobos et al. 2021	Correlation with personal psychology variables	17	27.9
Gillen-O'neel et al. 2011, Mahato and Jangir 2012, Sharma 2014, Siddiqui and Rehman 2014, Mahajan 2015, Thakur and Kumar 2015, Babu and Zeliang 2017, Hasan 2018, Jabeen and Andrabi 2018, Fiorilli et al. 2020, Li et al. 2020, Romano et al. 2020	Correlation with school and school climate	12	19.7
Grover and Smith 1981, Milgram and Toubiana 1999, Verma et al. 2002, Kumari 2010, Nasution and Rola 2012, Das et al. 2014, Parvez and Shakir 2014, Shakir 2014, Hasan 2016, Alam 2017, Yang et al. 2019, Li et al. 2020	Correlation with academic life variables	12	19.7
Sharma and Jawsal 2002, Kumari 2010, Waring 2012, Banga 2014b, Kumar 2014, Mahajan 2015, Rani 2017, Hasan 2018, Jabeen and Andrabi 2018, Kaur and Chawla 2018,	Correlations with family and family climate	10	16.4
Mohebi et al. 2012, Kumar and Tiwary 2014, Dhiksha and Suresh 2016, Situmorang 2018, Jyoti 2019, Vats et al. 2020	Assessment of efficacy on academic anxiety of experimental studies	6	9.8
Sharma 2017, Katarina 2018, Yang et al. 2019, Dobos et al. 2021, Nicholas 2021,	Correlation with mental health variables	5	8.2
Rani and Kalan 2015, Ahuja 2016, Fiorilli et al. 2020, Romano et al. 2020	Correlation with emotional intelligence	4	6.6
Sani and Singh 2013, Kayani et al. 2020, Kayani et al. 2021,	Correlation with sport	3	4.9
Crystal et al. 1994, Gillen-O'neel et al. 2011, Aparnath 2014,	Correlation with culture	3	4.9
Rehman 2016, Gul 2017, Dobos et al. 2021,	Social life and social support systems	3	4.9
Sharma and Jawsal 2002, Parvez and Shakir 2014	Correlation with science branch	2	3.3
Gogol et al. 2014, Cassady et al. 2019	Scale development	2	3.3
Lenka and Kant 2012, Sati and Vig 2017	Investigation of academic anxiety of students with special needs	2	3.3

Sample Groups

The sample sizes and age groups of studies included in the thematic review were examined. Of these studies, 22% (n=13) had sample size from 0-110, 49% (n=29) had sample size from 100 to 300, 5% (n=3) had sample size from 1001-1500 and 5% (n=3) had sample size of 1500 and above. For this reason, the majority of studies had samples of 300 or less (71%, n=42), while 14% of studies (n=8) had sample size of 500 and above. With the aim of increasing the generalizability of findings obtained from new studies to be performed, it is clear there is a need for studies with larger sample sizes.

The classification in terms of age groups was assessed for the studies investigated within the scope of the research. Accordingly, the majority of studies (51%, n=30) were completed with the age group at high school level. Studies about academic anxiety among university students, a period when intense relationships are created in an academic sense and academic work is experienced more intensely, comprised 17% (n=10) of all studies.

Data Collection Tools

It was identified that 58 studies included within the scope of the thematic review used surveys/scales. The studies appeared to use different scales/surveys, like the academic anxiety scale for children, academic anxiety scale and academic feelings scale. The majority of investigated studies were completed in India and these studies appeared to use academic anxiety scales developed for the Indian sample. Only 2 studies performed literature screening and one study collected data with a focus group interview. When the data collection tools are generally investigated, data were collected with limited scale tools, and diversification of data collection tools can be said to be important in terms of obtaining findings with high validity and reliability.

Table 2. Research methods used in studies				
Studies	**Research Method**		**f**	**%**
Sharma and Jawsal 2002, Bhansali and Trivedi 2008, Kumari 2010, Lenka and Kant 2012, Mahato and Jangir 2012, Attri and Neelam 2013, Kumar 2013, Sani and Singh 2013, Aparnath 2014, Banga 2014a, Banga 2014b, Gogol et al. 2014, Sahu and Jha 2014, Sharma 2014, Siddiqui and Rehman 2014, Mahajan 2015, Rani and Kalan 2015, Thakur and Kumar 2015, Ahuja 2016, Banga 2016, Hasan 2016, Babu and Zeliang 2017, Gul 2017, Rani 2017, Sati and Vig 2017, Sharma 2017, Hasan 2018, Jabeen and Andrabi 2018, Kaur and Chawla 2018	Quantitative	Survey	29	47.5
Grover and Smith 1981, Crystal et al. 1994, Milgram and Toubiana 1999, Verma et al. 2002, Gillen-O'Neel et al. 2011, Waring 2012, Nasution and Rola 2012, Das et al. 2014, Parvez and Shakir 2014, Shakir 2014, Etiafani and Listiara 2015, Alam 2017, Katarina 2018, Njue and Anand 2018, Kurniawan et al. 2019, Cassady et al. 2019, Yang et al. 2019, Fiorilli et al. 2020, Kayani et al. 2020, Kayani et al. 2021, Li et al. 2020, Romano et al. 2020, Dobos et al. 2021, Nicholas 2021		Correlational Research	24	39.3
Mohebi et al. 2012, Kumar and Tiwary 2014, Dhiksha and Suresh 2016, Jyoti 2019, Vats et al. 2020		Experimental Method	5	8.2
Rehman 2016, Jan et al. 2017	Literature Review		2	3.3
Situmorang 2018	Qualitative Research		1	1.6

Findings of Studies

The results obtained from the investigated studies are presented in Table 3. It appeared that studies included in the thematic review investigated the relationship between academic anxiety with many topics. Among these, it is notable that studies mostly researched whether academic anxiety differed based on the sex of individuals or not. In addition to some study findings showing the academic anxiety of students statistically significantly differed according to sex, several studies found that academic anxiety did not differ at statistically significant levels according to the sex of students. Just as there are studies stating that the difference was due to girls having higher academic anxiety points then boys (Bhansali and Trivedi 2008, Attri and Neelam 2013, Aparnath 2014, Das et al. 2014, Banga 2016, Hasan, 2018, Kaur and Chawla 2018), there are studies stating that boys had higher academic anxiety (Gul 2017, Jabeen and Andrabi 2018). Additionally, it was emphasized that as the age of individuals increased, academic anxiety also increased (Babu and Zeliang 2017). It appeared there were correlations between academic anxiety with the socioeconomic level, ethnic identity and religion of individuals. For example, Hindu girls experienced more academic anxiety compared to boys, while Muslim boys experienced more academic anxiety compared to Hindu boys (Aparnath 2014). No explanation or discussion about the causes of this situation were identified. Students living in urban areas were determined to experience more academic anxiety compared to students living in rural areas or smaller settlements (Sahu and Jha 2014, Hasan 2018).

The correlation between academic anxiety with achievement was also investigated (Grover and Smith 1981, Parvez and Shakir 2014, Shakir 2014, Hasan 2016, Alam 2017). However, a study which found that success was not affected by academic anxiety; in other words, that there was no relationship between academic anxiety and achievement (Das et al. 2014), is notable. In the literature there are studies researching the correlations between mental health and related variables with the academic anxiety of individuals. For example, academic anxiety was identified to be associated with mental health status (Sharma 2017), aggressiveness (Katarina 2018), childhood trauma, depression and mood regulation difficulties (Dobos et al. 2021), self-harm (Nicholas 2021) and addictions-smart phone (Yang et al. 2019). In short, according to the findings, it may be said that the mental health of individuals is negatively impacted by the increase in academic anxiety among students.

Several studies dealt with correlations with emotional intelligence (EQ), which may be summarized as individuals being aware of their feelings, able to manage them and able to be empathic. Just as there are studies which identified a correlation between emotional intelligence and academic anxiety, and that increasing emotional intelligence skills may reduce academic anxiety (Fiorilli et al. 2020, Romano et al. 2020), there are studies stating there is no significant correlation between emotional intelligence and academic anxiety (Rani and Kalan 2015, Ahuja 2016).

Family variables like relationships within families, the place where individuals first begin socialization processes, family surroundings, etc. have an important place in laying the first personality foundations of the individual. In addition to studies showing significant relationships between the family experiences of individuals with psychological symptoms (Daniel and Shek, 1998), there are studies showing that educational life affects academic anxiety (Kumari 2010, Kumar 2013, Mahajan 2015, Rani 2017, Kaur and Chawla 2018). However, there are also studies documenting no statistical correlation between family structure/status with the academic anxiety of students (Sharma and Jaswal 2002, Waring 2012, Banga 2014b, Hasan 2018, Jabeen and Andrabi 2018).

Variables linked to school, like the school type the individual attends and socio-emotional school climate, are associated with academic anxiety (Gillen-O'Neel et al. 2011, Thakur and Kumar 2015, Fiorilli et al. 2020, Li et al. 2020, Romano et al. 2020). Students attending state schools were stated to experience more academic anxiety compared to students in private schools (Babu and Zeliang 2017, Hasan 2018, Jabeen and Andrabi 2018). There are limited numbers of studies researching the correlations with branch of education (Sharma and Jaswal 2002, Parvez and Shakir 2014), and with doing sports or physical activity (Sani and Singh 2013, Kayani et al. 2020, Kayani et al. 2021). Hence, according to these studies, academic anxiety did not significantly differ based on whether the area of education was science or social sciences; however, participating in physical activity and regular sport was emphasized to cause an ameliorating effect on academic anxiety.

Additionally, when studies researching the correlation between academic anxiety and personality traits are investigated, elements accepted as being positive aspects of personality like general well-being (Njue and Anand 2018), self-development (Kayani et al. 2020, 2021), extraversion and emotional stability (Kurniawan et al. 2019), adjustment (Ahuja 2016), externality (Grover and Smith 1981), self-regulation (Yang et al. 2019), self-efficacy (Li et al. 2020), self-confidence (Sati and Vig 2017), psychological resilience (Fiorilli et al. 2020) and self-esteem (Kumari 2010) were identified to have reducing effects on academic anxiety. Negative personality traits like neuroticism (Cassady et al. 2019), perfectionism (Dobos et al. 2021), and self-criticism (Kayani et al. 2020, 2021) fed academic anxiety. Additionally, individuals with high academic anxiety had high levels of loneliness (Gul 2017), and in this situation perceived social support systems function as an important mechanism in coping with their experience of this negative situation (Dobos et al. 2021).

Among the studies investigated, it appears studies based on experimental models involving intervention programs about reducing academic anxiety remained limited. When these studies are examined, it was determined that yoga (Kumar and Tiwary 2014), assertiveness training (Mohebi et al. 2012), meditation (Vats et al. 2020), Montessori education (Dhiksha and Suresh 2016) and cooperative learning methods (Jyoti 2019) were effective in reducing the academic anxiety of students. Additionally, one study completed with focus group interviews (Situmorang 2018) emphasized that the maladjusted beliefs of academic anxiety were due to cognitive distortions and that cognitive behavioral therapy may be helpful in this context.

Finally, academic anxiety of students with special needs was considered and there were no significant differences in the academic anxiety of students with learning disability and with hearing disability (Lenka and Kant 2012). However, it was reported that students with learning disability stated they felt high academic anxiety (Sati and Vig 2017). In addition, students with high academic anxiety were emphasized to require more guidance than students with low academic anxiety (Sharma 2014).

Table 3. Results related to academic anxiety

Studies	Results	f	%
Sharma and Jawsal 2002[*], Bhansali and Trivedi 2008, Mahato and Jangir 2012[*], Attri and Neelam 2013, Aparnath 2014, Banga 2014b[*], Das et al. 2014, Kumar 2014[*], Sahu and Jha 2014, Shakir 2014, Sharma 2014, Siddiqui and Rehman 2014, Mahajan 2015[*], Thakur and Kumar 2015[*] Ahuja 2016[*], Banga 2016, Babu and Zeliang 2017[*], Gul 2017, Rani 2017[*], Sharma 2017, Hasan 2018, Jabeen and Andrabi 2018, Kaur and Chawla 2018, Njue and Anand 2018[*], Yang et al. 2019	Significant differentiation of academic anxiety based on sex	25	41.0
Grover and Smith 1981, Kumari 2010, Gillen-O'neel et al. 2011[*], Etiafani and Listiara 2015, Ahuja 2016, Sati and Vig 2017, Hasan 2018[*], Njue and Anand 2018, Cassady et al. 2019, Kurniawan et al. 2019, Yang et al. 2019, Fiorilli et al. 2020, Kayani et al. 2020, Kayani et al. 2021, Li et al. 2020, Dobos et al. 2021	Significant correlation between academic anxiety and personality traits	16	26.2
Sharma and Jawsal 2002[*], Kumari 2010, Waring 2012[*], Banga 2014b[*], Kumar 2014, Mahajan 2015, Rani 2017, Hasan 2018[*], Jabeen and Andrabi 2018 [*], Kaur and Chawla 2018	Significant correlation between academic anxiety with family structure/status variables	10	16.4
Grover and Smith 1981, Das et al. 2014[*], Parvez and Shakir 2014, Shakir 2014, Hasan 2016, Alam 2017	Significant correlation between academic anxiety and achievement	6	9.8
Milgram and Toubiana 1999, Verma et al. 2002, Kumari 2010, Nasution and Rola 2012, Yang et al. 2019, Li et al. 2020	Significant correlation between academic anxiety with academic life variables (procrastination, interest, self-management, problem-solving, study habits)	6	9.8
Mahato and Jangir 2012, Siddiqui and Rehman 2014[*], Mahajan 2015[*], Babu and Zeliang 2017, Hasan 2018, Jabeen and Andrabi 2018,	Significant differentiation of academic anxiety based on school type and school environment	6	9.8
Mohebi et al. 2012, Kumar and Tiwary 2014, Dhiksha and Suresh 2016, Jyoti 2019, Vats et al. 2020	Yoga, assertiveness training, meditation, Montessori training and cooperative learning had reducing effects on academic anxiety	5	8.2
Gillen-O'neel et al. 2011, Thakur and Kumar 2015, Fiorilli et al. 2020, Li et al. 2020, Romano et al. 2020	Significant correlation between academic anxiety and socioemotional school climate	5	8.2
Sharma 2017, Katarina 2018, Yang et al. 2019, Dobos et al. 2021, Nicholas 2021	Significant correlation between academic anxiety and mental health variables	5	8.2
Rani and Kalan 2015[*], Ahuja 2016[*], Fiorilli et al. 2020, Romano et al. 2020	Significant correlation between academic anxiety and emotional intelligence	4	6.6
Kumar 2014[*], Sahu and Jha 2014, Thakur and Kumar 2015, Hasan 2018	Significant differentiation of academic anxiety based on place of residence (rural, urban)	4	6.6
Kumari 2010, Banga 2014a[*], Siddiqui and Rehman 2014	Significant differentiation of academic anxiety based on socioeconomic level	3	4.9
Rehman 2016, Gul 2017, Dobos et al. 2021	Significant correlation between academic anxiety with social support and loneliness	3	4.9
Sani and Singh 2013, Kayani et al. 2020, Kayani et al. 2021	Significant differentiation of academic anxiety based on playing sports	3	4.9
Crystal et al. 1994, Gillen-O'neel et al. 2011, Aparnath 2014	Significant differentiation of academic anxiety based on culture and religion	3	4.9
Gogol et al. 2014, Cassady et al. 2019	Valid and reliable scale tools about academic anxiety	2	3.3
Lenka and Kant 2012[*], Sati and Vig 2017	Significant differences in academic anxiety points of children with special needs	2	3.3
Sharma and Jawsal 2002[*], Parvez and Shakir 2014[*]	Significant differentiation of academic anxiety based on branch of education (science-social science)	2	3.3
Babu and Zeliang 2017	Academic anxiety increases as age increases	1	1.6
Situmorang 2018	CBT practice has reducing effect on academic anxiety	1	1.6
Sharma 2014	Significant correlation between academic anxiety and guidance requirements	1	1.6

* There is no significant difference

Discussion

Within the scope of content analysis, 61 articles and theses were investigated. Of the students investigated within the scope of the thematic review, 58 were quantitative, 1 was qualitative and 2 were literature reviews. The screening model was most frequently used among quantitative research methods. It is important that among quantitative research methods relational models, allowing detailed analysis, should be used instead of the screening model, providing a more surficial perspective, to reveal the relationship networks in depth. Additionally, research methods like experimental, case and action research, performed with the aim of determining change during the academic anxiety process, are important; however, it was determined that only limited numbers of studies used these methods within the investigated studies. It appears no mixed pattern studies were included in the academic anxiety literature. Findings with higher validity and reliability may be accessed by assessing findings obtained through different data collection methods. If future research is prepared with mixed methods and experimental methods, it will enrich the academic anxiety literature.

When findings obtained within the scope of the thematic review are assessed, the studies appeared to assess the associations between demographic variables, personality traits, mental health, family structure/status, academic variables, school and school climate, experimental studies implementing intervention programs aiming to reduce academic anxiety, emotional intelligence, sport, culture and branch of learning with academic anxiety. The majority of the studies investigated whether academic anxiety differed based on demographic variables or not. When studies investigating the relationship between demographic variables and academic anxiety are assessed, these findings contained repeated findings. The research model chosen initially by the researchers may affect the variables used in these studies. Additionally, considering nearly all of these studies were designed as quantitative research, it can be said that the ability to identify whether there were significant differences based on variables like sex, age, place of residence and socioeconomic status does not require advanced level statistical information and that analysis and interpretation of findings is relatively easier compared to other statistical methods. For this reason, it is recommended to redesign new research within this scope by assessing demographic variables as moderator variables or control variables. Additionally, demographic variables like socioeconomic status markers, environmental conditions and educational level may be included among external variables affecting the dependent variable in classic research designs and excessive impact of these external variables may endanger the validity of the research. For this reason, if external variables are not controlled, it is important to state this, at least, in the research and to inform readers about the impact on the study. In addition to this, it is stated that demographic variables like demographic location, socioeconomic level and sex play a role in the noise variable emerging due to artificial relationships disrupting the quality of the correlations and obscuring the relationship by affecting one or both of the dependent and independent variables at times (Şencan 2007). It is important that researchers consider what conditions may negatively affect the correlations between the dependent variable and independent variable during preliminary investigations to be performed before research. For this reason, it is considered important to include demographic variables in studies.

The research included in the thematic review was investigated for numbers in the sample groups and age groups. In this context, a large majority, 71%, of the studies included sample groups comprising 0 to 300 people. When the literature is investigated about determination of suitable sample sizes, Hair et al. (2006) stated that the minimum number of participants should be 10 times the number of items included on the scale, Tabachnick and Fidell (2001) stated participants should be determined by multiplying the number of items by 5, and Preacher and MacCallum (2002) emphasized the need to include 100-250 participants. As a result, there is no consensus in the literature about determining the sample size. However, deciding on sample size by using a priori power analysis, gaining popularity in recent years with the aim of proving the credibility of study findings, and increasing the quality, validity and reliability of research, is evaluated as an important element in terms of validity and reliability (Başkale 2016). At this point, researchers determining sample size based on this criteria in future studies will increase the quality, validity and reliability of study findings. As a result of the thematic review, it was identified that 7% of studies were completed with primary school students, 18% with middle school students, 63% with high school students and 12% with university students. Additionally, no research was performed with postgraduate groups and a gap was observed in the literature at this point. For this reason, it is recommended to perform research investigating the relationships between academic anxiety and some mental health variables in individuals in the university and postgraduate periods, the educational level when relationships, activities, duties and responsibilities are experienced most intensely among all educational stages, and also to perform comparative/longitudinal studies between educational periods for individuals at university and postgraduate level.

When studies investigating the associations between personality traits and academic anxiety are assessed, there appear to be studies associating positive personality traits like general well-being, internal motivation, self-expression, self-development, extraversion, emotional stability, adjustment, self-regulation, self-respect, self-efficacy, self-confidence, psychological resilient and self-esteem, in addition to studies associating negative personality traits like self-criticism, perfectionism and neuroticism, with academic anxiety. The results identified within this scope found that students with high academic anxiety have a disadvantage due to negative personality traits, while positive personality traits play an important role in reducing the effects of academic anxiety. For example, individuals with high academic anxiety have weaker social relationships, lower levels of self-regulation strategies, negative personality traits, and psychological resilience and self-esteem are negatively impacted by their experience of anxiety (Kumari 2010, Cassady et al. 2019, Kurniawan et al. 2019, Yang et al. 2019, Kayani et al. 2020, Kayani et al. 2021, Dobos et al. 2021). Hence, when studies investigating the relationship between mental health variables with academic anxiety are examined, academic anxiety was high in those exposed to a variety of trauma in the childhood period and academic anxiety experienced by individuals with mental health problems like depression and aggression predicted this situation (Katarina 2018, Dobos et al. 2021). At this point, it is possible to say that intervention programs to be developed to reduce the impacts of academic anxiety are important. Literature screening found limited numbers of intervention programs designed in accordance with the experimental model. Additionally, the investigated experimental studies identified that assertiveness training, cooperative learning, meditation, Montessori education and yoga were effective in reducing academic anxiety. However, generally, the number of intervention studies was inadequate and it is thought that academic anxiety has not been given the required importance. For this reason, in terms of reducing academic anxiety of individuals and supporting psychological well-being, intervention studies to develop positive personality traits appear to be important. Additionally, based on the finding that perceived social support reduces academic anxiety, it is considered necessary to support students by making student personality services more active in the student period. Additionally, one study completed with the focus group interview method (Situmorang 2018) emphasized that academic anxiety was due to cognitive distortions and that cognitive behavioral therapy practices may be effective in reducing academic anxiety. For this reason, it is considered beneficial to run experimental studies in accordance with the cognitive behavioral therapy school by identifying the cognitive distortions about academic anxiety in individuals during intervention studies within the scope of preventive guidance services organized by school psychological counselors and other mental health workers.

Personal, family, institutional, social and political factors were each assessed as risk factors for academic anxiety (Rehman 2016). For example, when studies investigating the association between family and relationship factors with academic anxiety are investigated among studies included in the thematic review, controlling, protective, punitive, rejecting or excessively permissive families and dominant mothers were important factors increasing academic anxiety. For this reason, individuals living with their families may have higher academic anxiety. However, encouraging parental attitudes and positive psychosocial environment within the family were emphasized to have reducing effects on academic anxiety (Kumar 2013, Mahajan 2015, Rani 2017). Again studies emphasized that individuals living with their parents displayed lower depressive symptoms compared to other students, while individuals living with step-parents or single parents had a tendency to report more stress in academic experiences linked to less supportive family relationships (Barrett and Turner 2005). For this reason, family structure may be assessed as an important risk factor in terms of both mental health and academic anxiety and stress. Hence, focusing on strengthening the family, encouraging school-family cooperation and inclusion of families in preventive interventions may provide reducing effects on high anxiety and stress levels experienced by individuals in academic life.

When the achievement-academic life-school context of studies investigated within the scope of the thematic review is assessed, academic anxiety negatively affected achievement, academic anxiety affected study habits and more academic procrastination occurred (Milgram and Toubiana 1999, Yang et al. 2019). Additionally, a variety of studies emphasized that positive school environment, encouraging and supportive teacher attitudes, and positive feelings like school belonging and commitment among students had ameliorating roles on academic anxiety (Gillen-O'Neel et al. 2011, Thakur and Kumar 2015, Li et al. 2020, Romano et al. 2020). Additionally, uncaring, negative attitudes toward school and school burnout led the way to feelings of inadequacy and negatively impacted the psychosocial well-being of students and this was a feature feeding academic anxiety (Fiorilli et al. 2020). In this context, it appears important to increase the functionality of in-school social support mechanisms, and to develop appropriate intervention programs by identifying individuals experiencing school burnout organized by school psychological counselors and psychological counseling centers in universities. As academic anxiety increases, the psychological support needs of individuals increase (Sharma 2014). Considering research findings showing that social support perceptions negatively impact academic anxiety (Dobos et al.

2021), it can be said to be important to perform studies about improving social support mechanisms. Development of the academic self-management skills of individuals was emphasized to cause a significant fall in academic anxiety (Nasution and Rola 2012). Additionally, physical activity or regular sport habits were documented to play an ameliorating role in academic anxiety (Sani and Singh 2013, Kayani et al. 2020). In this context, encouragement about ensuring student participation in sports activities according to their interests or acquiring a hobby, especially in school, gains importance.

Finally, scale development studies appear to be limited among the studies evaluated within the scope of this thematic analysis (Gogol et al. 2014, Cassady et al. 2019). Most academic anxiety studies investigated in the research were identified to use scale tools developed in accordance with Indian culture, among scales generally used as data collection tools. However, as these scales and the validity-reliability studies could not be accessed, they could not be included within the scope of the research. Additionally, it was determined that scalea used in the research were about determining academic anxiety of students at undergraduate-postgraduate level. Considering the prevalence of academic anxiety among students and the lack of such a scale tool for the university sample, development of academic anxiety scale tools is an important need.

Conclusion

When the current findings are assessed, academic anxiety is a common phenomenon among students and it may lead to serious and permanent results if not dealt with correctly. Additionally, it appears important to assess the impacts on academic anxiety of intervention programs created to ensure development of skills like coping skills for academic life and anxiety, academic efficacy, cooperative study, stress and time management for students. When the studies investigated within the scope of this research are examined, family appears to have important impacts on academic anxiety, like all areas of development. For this reason, it is thought that in-depth investigation of the relationships between family and relational factors with academic anxiety in future studies will provide important clues about determining the causes of academic anxiety. Additionally, schools may organize social activities or seminars supporting self-confidence, self-esteem and other positive personality traits to reduce academic anxiety and to increase performance during presentations or educational activities. When scale tools used to determine academic anxiety are investigated for studies investigated within the scope of the research, nearly all studies were completed in India and scales were scale tools developed for the Indian sample. Attempts were made to contact the researchers developing these scale tools; however, no response was obtained. For this reason, development or adaptation of scale tools for the Turkish sample with the aim of being able to identify academic anxiety at high school, university and postgraduate level will provide significant contributions to the literature. The current research has some limitations. These limitations include that the research only considered studies that were open access and where the full text was reached among articles and theses published from 1981 to 2021 and that it comprised studies completed about the nature of academic anxiety.

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