ANXIETY AND ATTITUDES OF MIDWIFERY STUDENTS TOWARD SCIENTIFIC RESEARCH

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Abstract. *The attitudes of midwifery students, who are being trained to perform the profession of midwifery in the future, toward doing scientific research are determining factors in increasing the quality of midwifery and strengthening evidence-based practices. Undergraduate education is an important stage in which basic research-related perspectives and skills are gained for health professions. This descriptive study aims to determine the anxiety and attitudes of midwifery students toward scientific research and to examine the variables that affect them. It was conducted at a public university in western Türkiye and included 246 undergraduate midwifery students. Midwifery students' anxiety toward scientific research was found to be low and their attitudes toward scientific research were positive. The attitudes of students who have experience in doing scientific research, participated in scientific congresses/symposia, have the desire to do scientific research under the guidance of a consultant and follow periodicals, were found to be more positive. Anxiety and positive attitude toward scientific research were found to be negatively related. The results of the regression analysis showed that the students' Research Anxiety affected their Attitude Toward Scientific Research. Students' experiences of conducting scientific research reduce anxiety and affect attitudes positively. Therefore, undergraduate students should be actively involved in scientific research and activities.*
Keywords: *Health professions education; midwifery student; research anxiety; research attitude*

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Introduction

For a profession to gain a scientific quality, its members should detect the challenges they confront, identify the problem and the variables associated with it, and solve these problems utilizing scientific research techniques (Munir & Bolderston, 2009). Midwifery research improves the practice of midwifery and its evidence-based practices (Luyben et al., 2013). Midwives should have a positive attitude toward scientific research to implement evidence-based practices. Unfortunately, clinical midwives do not engage enough in research and cannot reflect the outcomes of treatment procedures (Güner et al., 2015). Undergraduate education is an effective process for gaining a researcher's identity (Clark et al., 2009). The attitudes of midwifery students toward doing scientific research are determining factors in increasing the quality of midwifery and strengthening evidence-based practices.

Background

Midwifery training is given in Türkiye at bachelor, master, and doctoral levels with international standards. Within the scope of the Bologna process, standardization has been made in midwifery education programs in parallel with other higher education programs. It is expected that the midwife candidates who complete the midwifery program have sufficient knowledge and skills specific to the field, especially in professional ethics, occupational legislation, and conducting scientific research (Council of Higher Education, 2016). Midwifery education was designed to support reading, critique, understanding and conducting research skills for midwifery students.

For a profession to gain scientific quality, it is necessary to find scientific information content produced by scientific research and to transfer this information to practice (Campasi & Finn, 2011; Keib et al., 2017; Kes & Şahin, 2019). Midwifery, which is a professional discipline, has knowledge accumulated by all its members. Conducting research to increase professional knowledge is one of the essential elements of a profession (Munir & Bolderston, 2009). Basing midwifery practices on scientific knowledge strengthens the professional identity of the profession. Midwifery research is a way to improve the practice of midwifery and its evidence-based practices (Halabi, 2016; Luyben et al., 2013; Ünver et al., 2018).

It is important for midwives to conduct research and use the information obtained as a result of their research to develop knowledge and applications specific to midwifery. However, studies are mostly carried out by academic midwives. Conversely, clinical midwives do not engage enough in research and cannot reflect the outcomes of treatment procedures (Güner et al., 2015). All over the world, studies in the field of midwifery are increasing in number and quality. Universities are expected to educate students about scientific attitudes and behaviours as well as to lead scientific research (Keib et al., 2017; Ünver et al., 2018). Midwifery students must meet the research culture during their undergraduate education and adopt positive attitudes toward scientific research in order to develop the midwifery profession, contribute to its professionalization, and increase the quality of care, autonomy, and power of midwives.

Undergraduate education is an important stage in which basic research-related perspectives and skills are gained. It is an effective process in gaining researcher identity (Clark et al., 2009). Scientific research education develops not only knowledge and skills but also an attitude toward research. The first step in ensuring the effectiveness of research begins with the research training that its members receive as part of their undergraduate education (Finkelman & Kenner, 2013; Tsai et al., 2014). It is expected that research education provided at the undergraduate level positively affects students' attitudes and anxieties toward conducting research. A high level of research anxiety reduces the sense of self-efficacy and causes a negative attitude toward research (Lei, 2008). Undergraduate education is especially important for midwifery students because it allows them to become acquainted with areas of research in midwifery and to develop research-specific values and skills. There are scientific research methods and statistics courses in the midwifery undergraduate curriculum. These courses are designed to motivate students to conduct midwifery research, teach research stages, and increase their willingness to take part in research projects. However, in Türkiye, scientific research education mostly seems to be necessary for graduate levels rather than undergraduate level education. To ensure that competent graduates are ready to safely care for patients, evidence-based education, which incorporates research to drive instructional methods, is essential (Oermann & Kardong-Edgren, 2018; Ross & Burrell, 2019).

Aim and Research Questions

Overall, few published studies have examined the attitudes of undergraduate midwifery students regarding research. No study has been found in Türkiye that examines midwifery students' anxiety and attitudes toward scientific research. The attitudes of midwifery students, who are being trained to perform the profession of midwifery in the future, toward doing scientific research are determining factors in increasing the quality of midwifery and strengthening evidence-based practices. The purpose of this study was to ascertain the attitudes and anxiety levels of undergraduate midwifery students regarding scientific research and to evaluate those attitudes and levels in relation to various variables.

For this purpose, answers to the following questions were sought:
1. What are the anxiety and attitudes levels of midwifery students toward scientific research?
2. Do midwifery students' anxiety and attitudes levels toward scientific research show a statistically significant difference based on their study year, take a statistics or research methods course, scientific research experience, follow periodicals in the field of health sciences, read and examine articles, participate in scientific congress/symposium and want to do scientific research variables?
3. Is there a significant relationship between midwifery students' anxiety and attitudes levels toward scientific research?
4. Is midwifery students' anxiety a significant predictor of attitudes toward scientific research?

Research Methodology

General Background

The current study was planned as a descriptive and cross-sectional investigation. This study was conducted at a university in western Anatolia, Türkiye, in the midwifery department. The data were obtained from the survey process in May 2021. The questionnaire was sent to the students online, and volunteer students were permitted to participate.

Participants and Procedure

The research group included 319 students enrolled in the Midwifery Department during the academic year 2020-2021. According to the sample calculation with the known population, it was decided that at least 174 students should be included in the sample (95 % confidence interval, 5 % margin of error) (Cochran, 1977). A convenience sampling method was used. Accordingly, 246 students accepted to participate in the study and completed the sample of the study (nearly 77% of the 319 students).

Table 1 lists the general characteristics of the study participants. Students who studied in the third grade were 29.3%. Of the students who took statistics class were 20.3%, whereas 15.9% of them took research methods. Students who do not have any scientific research experience were 74.4%. Those who follow periodicals in the field of health sciences were 34.6%. Students who read and examined articles were 88.6%. Those who attended scientific congresses/symposia amounted to 33.7%. Students who wanted to do scientific research under the guidance of a consultant were 67.9%. The average age was 20.58 ± 2.67.

Table 1

Descriptive Features of Students

	Range	*M*	*SD*
Age	18-40	20.58	2.67
		n	%
Study year	1	58	23.6
	2	70	28.5
	3	72	29.3
	4	46	18.7
Took a statistics course	Yes	50	20.3
	No	196	79.7
Took a research methods course	Yes	39	15.9
	No	207	84.1
Scientific research experience	Yes	63	25.6
	No	183	74.4
Follow periodicals in the field of health sciences	Yes	85	34.6
	No	161	65.4
Read and examine articles	Yes	218	88.6
	No	28	11.4
Participation in scientific congress/symposium	Yes	83	33.7
	No	163	66.3
Want to do scientific research under the guidance of a consultant	Yes	167	67.9
	No	25	10.2
	Hesitant	54	22.0

Note. N = 246.

Study Instrument

The Research Anxiety Scale, the Attitude Toward Scientific Research Scale, and a 9-item questionnaire created by the researcher in response to the literature to gather data on the sociodemographic traits of the participants were used to gather data.

Research Anxiety Scale (RAS): it was created by Büyüköztürk to determine the students' research concerns. The 5-point Likert-type scale includes 12 items and a single factor. Expressions that directly reflect the state of anxiety (items 1, 5, 6, 7, 9, 10, and 12) were scored by giving numerical values from 5 to 1 from "completely agree" to "totally disagree." Items that do not directly reflect the state of anxiety (items 2, 3, 4, 8, and 11) were scored inversely. The scale yields a score that ranges between 12 and 60. Higher scores imply a high level of anxiety. The scale's internal consistency coefficient is .870 (Büyüköztürk, 1997). It was found to be .920 in this study.

Attitude Toward Scientific Research Scale (ATSRS): Korkmaz et al. created it to assess students' attitudes toward scientific research. It consists of 30 items on a 5-point Likert scale with four subscales. The increase in scores indicates a negative attitude for the first sub-dimension (Reluctance to Help Researchers) and second sub-dimension (Negative Attitude Toward Research), and a positive attitude for the third sub-dimension (Positive Attitude Toward Research) and the fourth sub-dimension (Positive Attitude Toward Researchers). A negative attitude is expressed by the first two subscales, while a positive attitude is expressed by the third and fourth subscales. For this reason, it is not meaningful to calculate a total score for the whole scale, and separate processing is required on sub-dimensions. Internal consistency coefficients were .85, .81, .80, and .76, respectively (Korkmaz et al., 2011). In this study, they are .871, .884, .924, and .947, respectively.

Student Information Form: The researcher designed it in accordance with the literature (Kes & Şahin, 2019; Ünver et al., 2018; Yılmaz et al., 2020). The characteristics of the students such as their age, gender, study year, whether they took statistics and research courses, their research experience, their experience of attending scientific meetings, and their status of following periodicals were asked.

Data Analysis

Categorical data were expressed with frequency and percentage distribution, whereas continuous data were expressed with arithmetic mean and standard deviation. The compliance of the data to normal distribution was examined using the Kolmogorov–Smirnov test, histogram, and probability plots. T-test and one-way ANOVA test were used in the comparison of the groups. Post Hoc analysis was performed according to the distribution of variances using Tukey or Tamhane tests. Correlation coefficients and statistical significance were calculated using the Pearson Correlation test. The significance level was accepted as $p \leq .05$. SPSS 21.0 statistics program was used for analysis.

Ethical Considerations

The organization where the study was conducted granted permission and ethics committee approval (protocol: 02/28). Students who agreed to participate in the study provided written consent, which was obtained after they were informed. From the creators of the scales used in the study, necessary permissions were obtained.

Research Results

Students' Research Anxiety: In Table 2, it is shown whether the "Attitude Toward Scientific Research Scale" scores of the students differ according to various variables. The anxiety level of students who took the research methods course ($p = .033$) had the experience of doing scientific research ($p = .001$), followed the periodicals in the field of health sciences ($p = .020$), and had the experience of participating in a scientific congress/symposium ($p < .001$) was significantly lower. The anxiety level of students who wanted to do scientific research under the guidance of a counsellor was found to be significantly lower than those who did not want to and who were hesitant about this ($p = .002$). Students' level of anxiety did not change according to their grade level, taking statistics courses and reading/reviewing articles ($p > .05$). There was no relationship between the age of students and their anxiety toward scientific research ($r = -0.119, p > .288$). Students got an average score of 23.92 ± 9.29 on the anxiety scale.

Table 2
Students' Scores of the Research Anxiety Scale

		M	SD	Test value	p
Study year	1	24.55	9.83		
	2	24.42	10.48	$F = .104$	.957
	3	23.67	7.15		
	4	23.06	10.84		
Took a statistics course	Yes	23.19	9.83	$t = .411$	.682
	No	24.16	9.18		
Took a research methods course	Yes	20.60	5.38	$t = .213$	.033*
	No	24.64	9.82		
Scientific research experience	Yes	19.45	5.59	$t = .499$	.001*
	No	25.50	9.85		
Follow periodicals in the field of health sciences	Yes	21.26	7.01	$t = .366$	.020*
	No	25.72	10.25		
Read and examine articles	Yes	23.60	9.20	$t = .045$	.299
	No	27.43	10.34		
Participation in scientific congress/symposium	Yes	20.09	5.88	$t = .632$	< .001**
	No	26.52	10.29		
Want to do scientific research under the guidance of a consultant	Yes	21.94b	8.27	$F = .006$	.002*
	No	32.43a	11.96		
	Hesitant	28.57a	8.86		

Note. $N = 246$. Means with different subscripts differ at the p = .05 level by Tukey's HSD.
*$p < .05$. **$p < .001$.

Students' Attitude Toward Scientific Research: Table 3 shows whether the scores of the students' attitudes toward the scientific research scale differ according to various variables. The "Positive Attitude Toward Research" ($p = .002$) and "Positive Attitude Toward Researchers" ($p = .019$) sub-dimension scores of the students with scientific research experience were significantly higher than those who did not have that experience. Students who followed periodicals had a more positive attitude in all sub-dimensions than those who did not. Significantly lower scores were obtained in the "Reluctance to Help Researchers" ($p = .010$) and "Negative Attitude Toward Research" ($p = .006$) sub-dimensions, whereas they got significantly higher scores in the "Positive Attitude Toward Research" ($p < .001$) and "Positive Attitude Toward Researchers" ($p = .005$) sub-dimensions. Students who read/examined articles got significantly higher scores from the "Positive Attitude Toward Researchers" sub-dimension ($p = .024$). Students participating in a scientific congress/symposium received significantly lower ($p = .001$) scores from the "Negative Attitude Toward Research" sub-dimension, whereas they got significantly higher scores in the "Positive Attitude Toward Research" ($p < .001$) and "Positive Attitude Toward Researchers" sub-dimensions ($p = .006$). Students' attitudes did not change according to their grade level, or their status of taking statistics, or research methods courses ($p > .05$).

Table 3
Students' Scores of the Attitude Toward Scientific Research Scale

		Reluctance to be helpful to researchers			Negative attitude toward research			Positive attitudes toward research			Positive attitude toward researchers		
		M	*SD*	Test	*M*	*SD*	Test	*M*	*SD*	Test	*M*	*SD*	Test
Study year	1	17.21	5.71		16.53	5.28		26.16	5.37		25.78	5.08	
	2	18.54	5.58	F=1.127	16.81	5.34	F=2.025	24.50	5.49	F= 1.257	24.90	5.50	F= 3.059
	3	18.49	5.88	p= .339	18.69	5.60	p= .111	25.04	6.05	p= .290	23.14	5.56	p= .059
	4	19.24	6.40		17.22	6.26		26.04	5.17		25.17	4.65	
Took a statistics course	Yes	18.76	6.09	t= .565	16.88	6.22	t= -0.696	26.68	5.43	t= 1.916	25.14	4.59	t= .738
	No	18.23	5.82	p= .573	17.50	5.46	p= .487	24.99	5.58	p= .057	24.52	5.51	p= .461
Took a research methods course	Yes	18.49	6.09	t= .169	16.03	6.06	t= .634	26.64	5.58	t= .975	25.03	5.26	t= .488
	No	18.31	5.84	p= .866	17.63	5.51	p= .102	25.09	5.56	p= .112	24.57	5.36	p= .626
Scientific research experience	Yes	18.33	6.76	t= -0.013	16.57	5.46	t= -1.316	27.24	4.85	t= 3.192	26.00	4.14	t= 2.363
	No	18.34	5.54	p= .990	17.65	5.66	p= .189	24.68	5.68	p= .002*	24.17	5.62	p= .019*
Follow periodicals in the field of health sciences	Yes	17.02	6.29	t= -2.591	16.04	5.12	t= -2.751	27.27	4.82	t= 4.287	25.84	4.07	t= 2.866
	No	19.04	5.52	p= .010*	18.08	5.76	p= .006*	24.32	5.70	p< .001**	24.01	5.81	p= .005*
Read and examine articles	Yes	18.46	5.96	t= .909	17.34	5.61	t= -0.233	25.50	5.45	t=1.240	24.92	5.08	t= 2.276
	No	17.39	5.09	p= .364	17.61	5.79	p= .816	24.11	6.49	p= .216	22.50	6.74	p= .024*
Participation in scientific congress/symposium	Yes	17.43	6.03	t= -1.740	15.72	5.28	t= -3.357	27.11	4.43	t=3.987	25.95	4.08	t= 2.784
	No	18.80	5.74	p= .083	18.21	5.61	p= .001*	24.44	5.90	p< .001**	23.98	5.77	p= .006*
Want to do scientific research under the guidance of a consultant	Yes		5.96	F=5.450	16.83b	5.62	F=3.506	26.34a	5.56	F=10.556	25.08a	5.34	F= 3.737
	No	19.28	5.88	p= .005*	17.24	6.21	p= .032*	21.68b	7.00	p< .01**	22.00b	7.51	p= .025*
	Hesitant		5.01		19.13a	5.06		23.93	3.67		24.50	3.60	

Note. N = 246. Means with different subscripts differ at the *p* = .05 level by Tukey's HSD or Tamhane T2 test. **p* < .05. ***p* < .001.

Participants' age and the sub-dimension "Reluctance to Help Researchers" showed a low level of significant negative correlation (*r* = .161, *p* = .012). As age increased, the score for reluctance to help researchers decreased. A low level of positive correlation was found between the age of the participants and the "Positive Attitude Toward Research" sub-dimension (*r* = .191, *p* = .003). As age increased, the positive attitude toward research increased.

The Relationship between the Research Anxiety and the Attitude Toward Scientific Research: The correlation findings between the two scales are given in Table 4. Significant relationships were found between the "Anxiety Toward Scientific Research Scale" and all sub-dimensions of the "Attitude Toward Scientific Research Scale." At moderate and high levels significant relationships were found between the sub-dimensions of "Reluctance to Help Researchers" ($r = .517$, $p < .001$) and "Negative attitude toward research" ($r = .606$, $p < .001$) of the attitude scale and anxiety scale. Increasing anxiety and negative attitude toward research increased the reluctance to help researchers. There was a negative, moderate to high significant relationship between the sub-dimensions of "Positive Attitude Toward Research" ($r = −0.721$, $p < .001$) and "Positive Attitude Toward Researchers" ($r = −0.431$, $p < .001$) of the attitude scale and anxiety scale. Increasing anxiety toward research decreased positive attitudes toward research and researchers.

Table 4

The Relationship between the Research Anxiety Scale and the Attitude Toward Scientific Research Scale

		Attitude Toward Scientific Research Scale			
		Reluctance to be helpful to researchers	Negative attitude toward research	Positive attitudes toward research	Positive attitude toward researchers
Research Anxiety Scale	r	.517	.606	−0.721	−0.431
	p	< .001*	< .001*	< .001*	< .001*

Note. $N = 246$.
*$p < .001$.

Effect of Research Anxiety on the Attitude Toward Scientific Research: Four simple linear regression models with Research Anxiety and subdimensions of Attitude Toward Scientific Research Scale were performed. The results showed that the students' research anxiety affected their attitude toward scientific research. The first regression model explained 26.6% of the variance, the second 23.3%, the third 39.3%, and the fourth and final 9.3%. Table 5 presents the findings.

Table 5

Effect of Students' Research Anxiety on the Their Attitude Toward Scientific Research (n=246)

Model 1
Reluctance to be helpful to researchers

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
Research Anxiety	.387	.042	.516	9.258	< .001*

Constant=7.982, $F_{(1,245)}$=85.703, $p < .001$, R^2 = 26.6%

Model 2
Negative attitude toward research

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
Research Anxiety	.347	.041	0.482	8.462	< .001*

Constant=8,033, $F_{(1,245)}$=71.614, $p < .001$, R^2 = 23.3%

Model 3
Positive attitudes toward research

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
Research Anxiety	-0.444	.036	-0.627	−1.368	< .001*

Constant=37.402, $F_{(1,245)}$=152.976, $p < .001$, R^2 = 39.3%

Model 4
Positive attitude toward researchers

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
Research Anxiety	-0.206	.042	-0.305	−4.926	< .001*

Constant=30.298, $F_{(1,245)}$=24.268, $p < .001$, R^2=9.3%

Note. N = 246. SE= standard errors
*$p < .001$.

Discussion

Professionals must be inquisitive, learning-minded, inventive, creative, and self-reliant in order to retain their professionalism (Laaksonen et al., 2013). It is reported that midwives in the field do not show much interest in scientific research. The most important reason for this is that midwives do not have information about doing research (Güner et al., 2015). Undergraduate education is an important process in which students gain basic knowledge, application skills, and attitudes toward scientific research (Campasi & Finn, 2011; Gerçek et al., 2016; Kes & Şahin, 2019). Clinical practice is currently being guided by health sciences research and innovative scientific advancements (Al-Shalawy & Haleem, 2015). Students may have bad preconceived notions about research. Educating them on clinically accurate research results has the potential to modify their attitudes and increase their appreciation of research, perhaps enhancing midwifery practices.

In studies conducted with nursing students, it was found that students' anxiety toward conducting research was moderate (Kes & Şahin, 2019) or high (Gerçek et al., 2016; Güleç & Saruhan, 2013). In most of these studies, more than half of the participants affirmed that conducting research made them nervous, anxious and scared (Amoo & Gbadamosi, 2021; Muzzmal et al., 2018). In this study, students got an average score of 23.92 ± 9.29 on the anxiety scale. Given that the scale ranges from 12 to 60, we can assume that the degree of anxiety is quite low.

As undergraduate education progresses, it is expected that students' awareness of scientific research will increase and their attitude will change positively (Fernández-Cano et al., 2021). There is mixed information about how the program level influences students' views toward nursing research. Regarding some research results, fourth-year students had more positive attitudes toward research when compared with third-year students in the nursing education program (Halabi, 2016). In a survey of third-year nursing students in Türkiye, they were found to have more positive views toward research (Ünver et al., 2018). In another study conducted with nursing students, positive attitudes were found to be lower in the fourth grade (Kes & Şahin, 2019). In our study, students' anxiety and attitudes toward scientific research do not change according to grade level ($p > .05$). Studies in the literature yielded similar results (İlhan et al., 2016). These results suggest that undergraduate education has a low effect on gaining a positive attitude toward research. Instructors should address the importance, benefits, and necessity of doing research frequently in educational activities. Educators should highlight the investigative role of midwives and encourage students to read scientific publications and conduct research. In this respect, they should provide them with the necessary consultation and support (Henricson et al., 2018). Students underline that the biggest impediment to undertaking research is a lack of mentoring and support (Arif et al., 2018; El Achi, 2020). One of the main functions of university education is to provide students with research experience and skills, as well as a positive attitude toward them. For this purpose, undergraduate education programs include courses on scientific research and statistics.

The anxiety level of the students who took the research methods course was significantly low in our study. Increased knowledge may have decreased anxiety. It was concluded that taking statistics or research methods courses did not affect the attitude toward scientific research. It is possible to see similar results in the literature (İlhan et al., 2016; Kes & Şahin, 2019; Yılmaz et al., 2020). In some studies conducted with nursing students, it was mentioned that students who participated in a scientific research course had more optimistic views (Halabi, 2016; Keib et al., 2017). The anxiety and attitudes toward research are expected to be positively influenced by the lessons on this topic (El Achi et al., 2020; Houlden et al., 2009; Ross & Burrell, 2019). The absence of the expected positive effect can be interpreted as a low effectiveness of the courses. Reviewing these courses in terms of content, instructional approaches used, and practical exercises will be helpful.

A significant proportion of students read and study papers relevant to their fields. Reading articles increases their knowledge and awareness of national and international professional developments and trends. It can also help to develop a positive attitude toward scientific research. As expected, it was observed that students who read articles had lower anxiety levels and had more positive attitudes toward researchers. A similar result was obtained in a study conducted with nursing students (Kes & Şahin, 2019).

A total of 34.6% of the students follow periodicals in the field of health sciences. Following publications play an active role in professional development as well as increasing scientific knowledge sharing. In our study, students who follow periodicals in the field of health sciences have significantly lower anxiety levels and positive attitudes toward research. In the literature, it is seen that students who follow professional periodicals regularly have more positive attitudes toward research (Kes & Şahin, 2019; Ünver et al., 2018; Yılmaz et al., 2020). Gaining the ability to follow scientific studies will help to raise the standard of care in professional life and to increase the use of evidence-based care practices (Fernández-Cano et al., 2021).

Of the students who took part in the study, the rate of students with experience in doing scientific research is 25.6%. This rate should be increased. Students should be encouraged and consulted. It was observed that students with scientific research experience had a significantly lower level of anxiety toward research, and their attitudes toward research and researchers were more positive. Similarly, students who want to do scientific research under the guidance of a counsellor have significantly lower anxiety levels and positive attitudes. Although the rate of students who have taken courses on statistics and scientific research and who have experience in doing scientific research is low, most of them want to do scientific research under the guidance of an advisor (67.9%). This rate indicates that there is a high motivation for students to do scientific research. This motivation should be put to good use. Instructors should encourage pupils to do scientific research and provide the opportunity for them to do so. Only through practice can students begin to grasp the notion and significance of research (Tingen et al., 2009; Uysal-Toraman et al., 2017). There are findings in the literature that students participating in the scientific research process have more positive views toward doing research (El Achi et al., 2020; Ross & Burrell, 2019; Ünver et al., 2018; Uysal Toraman et al., 2017; Yılmaz et al., 2020). Having research experience contributes to students' professional identity and improves their thinking and decision-making processes (Henttonen et al., 2021). Students' research experience influences their perspective on research and enables them to gain positive views. The acquisition of research skills gives midwives the power and capacity to raise service standards.

In the study, the rate of students attending scientific congresses/symposia is 33.7%. It was observed that students with this experience had significantly lower anxiety levels and positive attitudes toward research. The number of studies in the literature in line with this finding is quite large (Kes & Şahin, 2019; Ünver et al., 2018). Some research results showed that participating in scientific activities did not affect anxiety levels and attitude toward scientific research (Özdil et al., 2019; Yılmaz et al., 2020). To see the effect of scientific activities, it is necessary to increase the students' awareness level as well as their participation in the activities. Students can acquire positive attitudes by being supported in their involvement in scientific activities and encouraged to pursue scientific research. Teachers should prioritize enhancing undergraduate students' exposure to medical research (El Achi et al., 2020). Finding a committed and enthusiastic mentor is a well-documented element that enhances student engagement in research, according to studies (DeVoe and Hess, 2018).

In the study, it was observed that while the level of anxiety toward scientific research was not affected by increasing age, the attitude changed positively. As the age increases, the "Positive Attitude toward Research" increases and the "Reluctance to Help Researchers" decreases. There is conflicting evidence about the age's effect on research attitudes (Halabi, 2016; Ünver et al., 2018). Similarly, in a study conducted with nursing students, a positive correlation was found between the average age and the mean scores of the "Positive Attitude Toward Research"

sub-dimension (Ünver et al., 2018). Halabi (2016) found that younger students had more positive attitudes. Another study found that older medical students had more optimistic views (Meraj et al., 2016).

A significant relationship between research anxiety and all sub-dimensions of the attitude toward the research scale was found in the study. Increased anxiety in research enhances negative attitudes to scientific research and reduces positive attitudes. It is emphasized in the literature that a high level of research anxiety causes students to develop a negative attitude toward research (Gerçek et al., 2016; Lei, 2008). Students cannot be expected to develop a positive attitude toward a situation that increases their anxiety level. Increasing knowledge and skills toward research will not only increase positive attitude but also decrease anxiety.

Limitations

Research participants were recruited from a single baccalaureate midwifery program in Türkiye. The results cannot be applied to all Turkish or international students studying midwifery. The study is restricted to the time it was conducted, the data collecting form created for the study, and the student replies.

Conclusions and Implications

As a result, midwifery students' anxiety toward scientific research was found to be low and their attitudes toward scientific research were positive. Significant relationships were found between anxiety and attitude toward scientific research. Doing scientific research and attending scientific meetings decreases anxiety and positively affects attitudes. Students who have a negative attitude toward research may be reluctant and inefficient in evidence-based practices when they begin their careers. The acquisition of research knowledge and culture related to the profession begins with undergraduate education. For this reason, it should be ensured that during their undergraduate education, midwifery students cultivate a positive attitude toward research. In addition, developing a positive attitude will decrease research anxiety. It is clear that midwifery students are keen to conduct research, thus efforts should be made to develop their potential as researchers as soon as feasible. Undergraduate students should be actively involved in scientific research and activities. Opportunities should be created, and students should be supported. Early exposure to scientific research, contributes to building a strong midwifery education for students and quality midwifery care for women.

Conflict of Interests

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