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Research Article

Evaluation of attitudes and behaviors of family medicine residency students regarding academic literacy

Aile hekimliği uzmanlık öğrencilerinin akademik okuryazarlık hakkındaki tutum ve davranışlarının değerlendirilmesi

Ferhat Kescioglu, Ismail Arslan, Mehmet Onat Cakit*, Duygu Yengil Taci

University of Health Sciences Ankara Training and Research Hospital, Department of Family Medicine, Ankara, Türkiye

Öz

Amaç: Bu çalışma ile; Ankara ilinde Aile Hekimliği uzmanlık eğitimi alan hekimlerin akademik okuryazarlık ile ilgili tutum ve davranışlarını belirlemek ve bunları etkileyen faktörleri ortaya koymak amaçlanmıştır.

Gereç ve Yöntem: Çalışmaya 188 aile hekimi uzmanlık öğrencisi katılmıştır. Ankara'da eğitim alan Aile Hekimliği uzmanlık öğrencileri çalışmaya dahil edilmiştir. Elektronik ortamda katılımcılara 23 soruluk anket ve Akademik Okuryazarlık Ölçeği (AOÖ) formları gönderilmiştir.

Bulgular: Katılımcıların %68,62'sı kurumlarında, %36,18'si kurumları dışında bilimsel araştırma konusunda eğitim almıştır. Çalışmaya katılan hekimlerin %59'u uzmanlık eğitimleri süresince hiç kongreye katılmamış, %67,61'sı hiç bilimsel araştırmada araştırmacı olarak bulunmamıştır. Çalıştıkları kurumda veya kurumları haricinde kurs, kongre ya da sempozyumda bilimsel araştırma konusunda eğitim alanların AOÖ puanları yüksek bulundu ($p<0,05$). Makale okuma sıklığı arttıkça ölçek puanlarında artış olduğu görüldü ($p<0,05$).

Sonuç: Uzmanlık öğrencilerinin kongre, kurs gibi bilimsel toplantılara katılım oranları, makale okuma sayılarının düşük olduğunu saptadık. Akademik okuryazarlığın Aile Hekimliği eğitimindeki önemine dikkat çekmek ve asistanlığın ilk yıllarından itibaren asistanların bilimsel aktivitelerde bulunmalarının önemini vurgulamak istiyoruz.

Anahtar kelimeler: Aile Hekimliği, Asistan, Uzmanlık eğitimi, Akademik okuryazarlık

Corresponding Author*: Mehmet Onat Çakıt, University of Health Sciences Ankara Training and Research Hospital, Department of Family Medicine, Ankara, Türkiye
E-mail: onatcakit@gmail.com
Orcid: 0000-0002-6880-4633
Doi: 10.18663/tjcl.1330567
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Abstract

Aim: OIt is aimed to determine the attitudes and behaviors of physicians who receive family medicine research assistant training in Ankara province regarding academic literacy and to reveal the factors affecting them.

Material and Methods: 188 Family Medicine research assistants studying in Ankara were included in the study. A 23-question survey and Academic Literacy Scale (ALS) forms were sent to the participants electronically.

Results: 68.62% of the participants got educated on scientific research in their institution and 36.18% outside their institution, 59.0% of physicians have never attended a congress during their residency training and 67.61% of them had never been a researcher in scientific research. ALS scores of those who were trained in scientific research in a course, congress and symposium or at the hospital they work in were found to be significantly higher ($p<0.05$). As the frequency of article reading increased, it was observed that the scale scores increased significantly ($p<0.05$).

Conclusion: We found that the participation rates of the research assistants in scientific meetings such as congresses and courses, the number of articles they read, and the number of those who obtained information by using scientific databases were low. We would like to draw attention to the importance of academic literacy in Family Medicine education and to emphasize the importance of assistants to engage in scientific activities from the first years of residency.

Keywords: Family Practice, Residency, research assistant, Academic literacy

Introduction

Family Medicine is the backbone of primary health care providers and the discipline in which the first contact with the patient is established. Family physicians have a deep and broad knowledge curriculum as they serve a large and diverse patient population [1]. Due to the scope of the family medicine job description, it requires intensive and extensive medical knowledge. Physicians should constantly renew themselves in terms of learning medical knowledge, updating the acquired knowledge and following the literature [2,3].

Today, medical knowledge is constantly increasing and renewing due to the developing and changing technology and world order. At the same time, as a result of technological developments, information sharing is now faster and easier. In addition to the advantage of this, there is also the possibility of accessing incorrect, unproven and scientifically invalid information. The concept of evidence-based medicine has emerged at the point of access to accurate and scientific information. It is necessary to have academic literacy skills in order to develop the ability to access, read, evaluate and be aware of evidence-based medical resources [4,5].

Although there is no quantitative evaluation method for having academic literacy skills, it is possible to have information about the attitudes and behaviors of the residents in this regard. In terms of gaining academic literacy skills, scientific training can be given to specialty students and they can be encouraged to attend organizations such as congresses or courses on this subject. At the same time, in order to increase the interest of specialty students in scientific academic activities and to raise their awareness and knowledge levels on this subject, they can be supported by their trainers in the institutions where they receive training to conduct scientific research. In this way, family physicians can increase their evidence-based medical knowledge, learn methods of acquiring new knowledge when needed, and distinguish between scientific and non-scientific knowledge. Specialty students with academic tendency will also be encouraged and the academicians of future generations will be brought to the society [6-9].

In our study, we aimed to learn the attitudes and behaviors of Family Medicine research assistants studying in training research hospitals and medical faculties in Ankara province about academic literacy. We think that obtaining information about the attitudes and behaviors of research assistants about academic literacy may help to identify the problems in the residency training process and the points that need to be developed and encouraged.

Material And Methods

The research is an observational, prospective and analytical study. Questionnaire forms were prepared via Google Forms in …….. Hospital Family Medicine Clinic and delivered to the participants in the digital environment. All Family Medicine research assistants who were receiving training in university hospitals and training and research hospitals in Ankara province and who agreed to participate in the study were included in the

study, except for research assistants who started Family Medicine recidency training less than 3 months as of the date of completing the questionnaire. From the sample calculation system whose universe is certain; The universe was accepted as 604 and the confidence interval was 95% and the margin of error was 5%, and it was calculated as 188 people at the 90% confidence level. The protocol of our study approved by The …..local Ethics Committee (decision number 22/881 dated 26.01.2022). The study have been conducted in accordance with the Helsinki Declaration of Principles (https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/). All participants included in the study signed the Informed Consent Form online.

A 24-question questionnaire and an Academic Literacy Scale evaluation form prepared on the electronic platform (Google Forms) were presented to the participants by the researcher. The questionnaire and scale form were delivered to the participants via e-mail and filled in electronically.

Nineteen questions were asked to evaluate the attitudes, behaviors and thoughts of research assistants about academic literacy.

After the twenty-four-question questionnaire, the Academic Literacy Scale was used [10].

Academic Literacy Scale (ALS): The ALS has a 5-point Likert type. It consists of 23 items. It has 3 dimensions: Academic Disposition (Tendency), Research Process, and Information Use. Items 10, 11, 12, 13, 14, 15, 16, 17, 20, 23, 24 and 25 belong to academic disposition; items 1, 2, 3, 4, 5, 6, 7 and 8 belong to research process; and items 9, 18, 19 and 22 belong to knowledge utilization sub-dimension. Explanatory factor analysis, test-retest process and confirmatory factor analysis were performed for the validity and reliability of the scale. As a result of the exploratory factor analysis, the three-factor structure of the ALS was confirmed by confirmatory factor analysis (X2=457.55, sd=226, RMSEA=.045, SRMR=.053, NFI=.91, NNFI=.95, CFI=.95, GFI=.92, AGFI=.91). As a result of the test-retest process, Cronbach's Alpha internal consistency coefficient was 0.87 for the overall scale, 0.84 for Factor 1, 0.78 for Factor 2, and 0.76 for Factor 3. Accordingly, it can be said that the scale is reliable and valid. A maximum score of 115 and a minimum score of 23 can be obtained from the scale. A high score indicates a high level of academic literacy, while a low score indicates a low level of academic literacy.

Statistical Analysis

Data were analyzed with SPSS Package Program version 20.0. Number, percentage, mean, standard deviation, median, minimum, maximum, median, minimum, maximum were used in the presentation of descriptive data. Chi-square test was used to compare categorical data. The conformity of continuous variables to normal distribution was evaluated by Shapiro Wilk Test and Kolmogorov Smirnov Test. The Mann Whitney U Test and Kruskal Wallis Test were used for the comparison of variables that conformed to normal distribution, and the Mann Whitney U Test and Kruskal Wallis Test were used for the comparison of variables that did not conform to normal distribution. Spearman Correlation Analysis was used for correlation analysis of variables. $p < 0.05$ was accepted for statistical significance.

Results

The study included 188 family medicine research assistants, of which 61.70% (n=116) were female and 38.30% (n=72) were male. The mean age of the participants was 29.51 ± 4.72 years, and the mean years of occupation was 4.83 ± 4.24 years.

Table 1 shows the percentages of positive (yes) responses of the participants to the nineteen questions about the attitudes, behaviors and thoughts of residents about academic literacy. The total score and subscale scores of the participants are shown in Table 2. In general, it was observed that the scale scores of the participants were high.

There was no statistically significant difference between the groups in terms of the answers given to the questionnaire questions, the total ALS score and the subscale scores according to gender ($p>0.05$).

Those who answered yes to the question "Have you received training on conducting scientific research at the institution where you are currently working?" had higher scale scores than those who answered no ($p<0.05$) (Table 3).

The total score and subscale scores of those who answered yes to the question " Have you received training on conducting scientific research outside your institution " were higher than those who answered no ($p<0.05$) (Table 4).

The total score and sub-scale scores of those who answered yes to the question "Did you attend a scientific congress during your specialty training" were higher than those who answered no ($p<0,05$) (Table 5).

It was observed that the scale scores increased as the number of scientific articles read per week increased ($p<0.05$) (Table 6).

Table 1. Proportions of YES answers given by the participants to the questions on evaluating their attitudes, behaviors and thoughts about academic literacy

	n	%
The time allocated for academic and scientific activities in my institution is sufficient.	112	59.57
Scientific and academic activities at my institution are supported by lecturers	149	79.25
I think that participating in scientific and academic activities is important for my education	169	89.89
I think that participating in scientific and academic activities increases my knowledge and experience in the profession of medicine	170	90.42
Have you received training on conducting scientific research at the institution where you are currently working?	129	68.61
Do you want to receive training in conducting scientific research?	148	78.72
Have you received training on conducting scientific research outside your institution (Symposium, course, congress, etc.)?	68	36.17
Did you attend a scientific congress during your specialty training?	77	40.95
Have you been a researcher in any scientific research at your institution (Case presentation, Case series, Research article, etc.)?	61	32.44
I think thesis studies are scientific researches	147	78.19
Has your thesis topic been determined?	73	38.82
*I think I have allocated enough time for my thesis.	54	28.72
*I have no problems in collecting data for my thesis.	40	21.27
*I think that my thesis is related to the aims and learning objectives of family medicine	61	32.44
*I think my thesis will make a scientific contribution to family medicine	54	28.72

*Those who answered no to the question "Has your thesis topic been determined?" did not answer these questions.

Table 2. Participants' Academic Literacy Scale total score and subscale scores

	mean±SD	median (min-max)
Academic Literacy Scale	82.31±14.83	82.52(39.0-115.0)
Academic tendency	42.95±7.37	44.0 (21-55)
Knowledge utilization	14.99±2.71	15.0 (8.0-20.0)
Research process	24.52±6.94	25.0 (8.0- 40.0)

min: minimum, max: maximum, SD: standard deviation

Table 3. Comparison of the scale scores of the groups according to the question 'Have you received training on conducting scientific research at your current institution?

	Have you received training on conducting scientific research at the institution where you are currently working?				
	Yes (n=129)		No (n=59)		
Academic Literacy Scale	Mean±SD	Median (min-max)	Mean±SD	Median (min-max)	p
Total score	85.11±13.92	87.0 (47.0-115.0)	75.91±14.73	77.0 (39.0-106.0)	<0.001
Academic tendency	43.94±6.85	44.0 (25.0-55.0)	40.55±7.87	41.0 (21.0-54.0)	0.009
Knowledge utilization	15.32±2.57	15,0 (10.0-20.0)	14.0±2.79	14.0 (8.0-19.0)	0.002
Research process	25.83±6.64	26.0 (10.0-40.0)	21.42±6.55	22.0 (8.0-34.0)	<0.001

min: minimum, max: maximum, SD: standard deviation, p: Mann Whitney U Test

Table 4. Comparison of the scale scores of the groups according to the question 'Have you received training on conducting and conducting scientific research outside your institution?'

	Have you received training on conducting scientific research outside your institution (symposium, course, congress, etc.)?				
	Yes (n=68)		No (n=120)		
Academic Literacy Scale	Mean±SD	Median (min-max)	Mean±SD	Median (min-max)	p
Total score	89.71±12 33	91.0 (56.0-115.0)	78.0±14.8	78.0 (39.0-115.0)	<0.001
Academic tendency	45.65±6.47	46.0 (26.0-55.0)	41.31±7.33	42.0 (21.0-55.0)	<0.001
Knowledge utilization	15.89±2.62	16.0 (10.0-20.0)	14.45±2.67	15.0 (8.0-20.0)	<0.001
Research process	28.24±5.36	28.0 (18.0-40.0)	22.39±6.82	23.0 (8.0-40.0)	<0.001
min: minimum, max: maximum, SD: standard deviation, p: Mann Whitney U Test					

Table 5. Comparison of the scale scores of the groups according to the question 'Have you attended a scientific congress during your specialty training?'

	Did you attend a scientific congress during your specialty training?				
	Yes (n=77)		No (n=111)		
Academic Literacy Scale	Mean±SD	Median (min-max)	Mean±SD	Median (min-max)	p
Total score	86.24±15.36	88.0 (41.0-115.0)	79.42±13.74	79.0 (39.0-107.0)	0.001
Academic tendency	43.98±7.11	45.0 (23.0-55.0)	42.16±7.28	43.0(21.0-55.0)	0.090
Knowledge utilization	15.43±2.75	16.0 (8.0-20.0)	14.61±2.53	15.0 (8.0-20.0)	0.026
Research process	26.97±6.99	27.0 (9.0-40.0)	22.75±6,37	23.0 (8.0-39.0)	<0.001
min: minimum, max: maximum, SD: standard deviation, p: Mann Whitney U Test					

Tablo 6. Comparison of scale scores of groups according to the number of scientific articles read weekly

	Number of scientific articles read per week				
	0 (n=36)		Above 0 (n=152)		
Academic Literacy Scale	Mean±SD	median (min-max)	Mean±SD	median (min-max)	p
Total score	73.69±14.92	77.0(39.0-106.0)	84.25±14.0	86.0(41.0-115.0)	<0.001
Academic tendency	39.74±7.96	40.0(21.0-53.0)	43.57±6.99	44.0(23.0-55.0)	0.004
Knowledge utilization	14.0±2.68	15.0(8.0-19.0)	15.12±2.64	15.0(9.0-20.0)	0.051
Research process	19.81±7.53	26.0(9.0-40.0)	25.56±6.38	26.0(9.0-40.0)	<0.001
min: minimum, max: maximum, SD: standard deviation, p: Mann Whitney U Test,					

Discussion

In this study, we found that Family Medicine research assistants' thoughts about academic and scientific activities were positive, and that they were satisfied with the education they received in their institutions and the support of their trainers and considered them sufficient. However, although they were positive in their thoughts, we found that their participation rates in scientific meetings such as congresses and courses and the number of articles they read were low. Receiving research training and reading scientific articles, increased the academic literacy of family medicine residents.

In a study conducted with residents, Aysan et al. reported that

two thirds of the residents believed that theoretical training was inadequate and one third believed that practical training was also inadequate. The majority found the duration and number of educational meetings inadequate. In the same study, in 53% of the departments where regular educational meetings were held, the duration of the meetings was less than 2 hours per week and only 44% of these meetings were in the form of case meetings [7]. In the study by Yılmaz et al. two thirds of the specialty students reported that their universities did not provide them with the necessary opportunities to write articles and two out of three residents did not receive training on publication ethics during their specialty training [8]. Sayek et al. reported that 67% of specialty students received 2 hours or less of formal education per week in the Turkish Medical Association's Medical Specialty Education report [9]. In this study, 60% of the participants stated that they found the time allocated to academic and scientific activities in their institutions sufficient. This made us think that family medicine clinics give more importance to academic and scientific activities.

In this study, it was observed that approximately 70% of the participants did not receive training on conducting scientific research at the institution where they worked. Approximately 64% of them did not receive training in an organization such as a course or symposium outside their institution. Similarly, those who attended a scientific congress were less in number than those who did not. Aysan et al. reported in a multicenter study that 78 percent of the participants received no training in planning and conducting scientific research and 52 percent were not encouraged to conduct scientific research [7]. In a study by Emre et al. evaluating residents' anxiety about scientific research, 51.6% of the residents had received research training and 39.7% had taken part in the preparation of a scientific research [11]. In a study conducted with specialty students in India, the knowledge and attitudes of the participants towards medical research were investigated and it was reported that 60% of them had knowledge about conducting research [12]. In another study conducted in Japan, it was reported that less than 20% of the participants had training on clinical research and the majority had insufficient skills and knowledge about statistics [13]. Yet another study conducted by Uzuner et al. with family medicine residents, reported that 90% of the participants stated that courses and congresses were necessary [14]. In the literature, although the status of receiving training related to scientific activities varied, it was approximately similar to our study. Similarly, those who wanted to receive training were in the majority. The low rate of receiving training outside the institution of employment in our study may be due to financial reasons as these courses usually require a participation fee and congresses cannot be organized as frequently as before during the pandemic period.

In our survey, when physicians were asked whether they had been involved in any scientific research as a researcher, it was observed that 32% of the assistants had conducted a scientific research. Aysan et al. showed that 54% of residents in Turkey did not have a scientific publication, 71% did not have an article, 84% did not have an article in an international journal and as a general comment, the number of scientific publications of residents was very low [7]. Yıkılkan et al. In the study in which the educational needs of family medicine residents receiving education in Ankara province were evaluated, 28.6% had at least one article, oral presentation or poster, provided that it was published in a journal or presented at a congress [15]. In the medical specialty education report, it was stated that 41% of specialty students did not participate in scientific research and this rate was 35% in university hospitals and 51% in training and research hospitals [9]. In the literature, as in our study, it is seen that less than half of the specialty students have a scientific study. The excessive workload and the lack of knowledge and experience of residents in conducting scientific research may have caused this. In addition, the inability to organize congresses and courses during the pandemic period and the opening of new services and outpatient clinics within the scope of the fight against the pandemic and the emergence of extra work areas such as filiation services may have increased the workload. We think that academic and scientific activities may have been disrupted for these reasons.

When we assessed the article reading status of our participants, we found that 19% of them did not read any articles at all and in general, the number of articles read was low. In a study, 83% of specialty students stated that they did not read enough articles and when the number of articles read was analyzed, it was found that 33% read once a week, 35% read once a month and 27% read less frequently [15]. Mandhare et al. reported that the knowledge, attitudes and behaviors of participants who received training on medical research were significantly better than those who did not receive training [12]. Similarly, in our study, we found that the scale scores of those who stated that they received training in organizations such as

courses and symposiums at the institution where they worked or outside their institutions were high. In a study conducted on family physicians in the USA, it was found to be related with developing a positive attitude towards research, using guidelines more frequently in treatment decision-making and the habit of scanning medical literature more frequently [16]. In a study conducted in Canada, it was observed that physicians trained in specialties where special time was allocated for research published more articles [17]. When the total mean scores of the participants who did not receive training in our study were examined, it was found that the participants who received training scored approximately ten points less than the participants who received training, indicating that there was a significant difference when the maximum score that could be obtained from the scale was taken into consideration. In our study, similar to the literature, it was observed that having received training had a direct effect on academic literacy skills.

In a study conducted in Türkiye, the mean number of publications per participant was 2.2, which was lower than those reported in the literature, although a precise comparison could not be made [18]. Namdari et al. found that among orthopaedic residents in the United States, those who were academicians after their training had an average of 4.8 publications and those who were not academicians had 2.4 publications, and that the number of studies conducted was associated with academician status [19]. In Germany, where conducting scientific research is part of the medical curriculum, students were involved in 28% of publications at a specific institution [20]. In Croatia, 23% of undergraduate students were involved in a research Project [21]. In our study, it was observed that those who had previously conducted scientific research (n:61, 32%) had higher scores on the Research Process, a subheading of the Academic Literacy Scale. This result shows that similar to the literature, previous studies provide familiarity with the scientific literature and a better command of the technical knowledge in the research process. However, it should be noted that in our study, we did not ask the participants what type of publications they published or how many studies each of them had. For this reason, we could not compare the scale score with the number of studies conducted by the individuals. This is one of the drawback of our study.

Conclusion

We observed that research assistants had positive opinions about academic and scientific activities, were satisfied with the education they received at their institutions and the support of their instructors, and considered them adequate. However, their participation rates in scientific meetings such as congresses and courses and the number of articles they read were low. We found that the education received and reading scientific articles positively affected academic literacy. We would like to draw attention to the importance of academic literacy in Family Medicine education and emphasize the importance of scientific activities for residents from the first years of residency before they reach the thesis stage.

Ethics Committee Approval

The study was conducted with the approval of the XXXXXXX Hospital Clinical Researches Ethics Committee (Date: 26/1/2022, Decision No: 22-881).

Informed Consent

Written consent was obtained from the participants in this study electronically.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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