RESEARCH



Knowledge and awareness of the use of reporting guidelines in specialist dentists: a cross-sectional study



Taibe Tokgöz Kaplan^{1*} and Semanur Özüdoğru²

Abstract

Background Reporting guidelines are guidelines developed to standardize the reporting of scientific studies, to ensure that it is transparent, accurate, and complete, and to improve the quality of the study. Their use is very important in terms of literature. This study aimed to evaluate the level of knowledge and awareness of specialist dentists about the reporting guidelines of scientific research.

Methods This study was conducted on 240 specialist dentists and research assistants continuing their specialty education in Turkey. A questionnaire on sociodemographic characteristics and respondents' level of knowledge about the Enhancing Quality and Transparency of Health Research (EQUATOR) Network and reporting guidelines was prepared. Data were collected through this questionnaire. Data obtained from the questionnaire were analyzed with IBM SPSS v23. Pearson's Chi-square test, Yates Correction, and Fisher's Exact tests were used to analyze the association between categorical variables(*p* < 0.050).

Results 80.8% of the participants were female,19.2% were male and 48.8% were aged between 30 and 35 years.13.8% of the participants had heard the term EQUATOR Network before. Of these, 10.4% learned it from journal websites, and the rest from congresses and seminars. In scientific papers, 32.9% have served as reviewers, but only 7% have used the reporting guidelines. The title group with the best knowledge of the EQUATOR network was the Associate Professor Prof group with a rate of 44.4%. The most recognized reporting guidelines were CONSORT (17.5%), PRISMA (16.3%), and STROBE (%12.1). 82.5% of the participants would like to be informed about the guidelines.

Conclusions Specialist dentists' awareness and use of scientific research reporting guidelines and the EQUATOR Network are insufficient. However, they would like to have information on this subject. With the conclusion of this study, a great deal of awareness has been created among the participants. In addition, detailed training on reporting guidelines may increase their utilization.

Clinical trial number Not applicable.

Keywords Awareness, Dental and medical research, Knowledge, Reporting guidelines, Reporting quality, Specialist dentists

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Background

Scientific research is conducted to discover basic and current knowledge in any scientific discipline and to develop more detailed scientific thinking with new information. Other researchers must have full access to the information obtained as a result of these research and studies. With transparent and complete reporting, researchers, reviewers, and editors will be able to access this information and the quality and reliability of research will increase. Firstly, general editors came together and established guidelines on the format of articles to be submitted to journals in 1978. The International Committee of Medical Journal Editors (ICMJE) has reported the necessary standards for articles submitted to biomedical journals, last updated in 2008 [1]. Therefore, a common writing language is created by complying with these standards.

The purpose of developing reporting guidelines is to standardize the scientific reporting of studies of various designs, to ensure transparency, accuracy, and completeness, and to improve study quality [2, 3]. In other words, reporting guidelines are 'guidelines that can be followed when reporting research methods and findings' [4, 5]. Some studies have reported that the quality of publications in journals that adopt reporting guidelines has increased [6–8].

EQUATOR is an organization established to improve the management and quality of reporting guidelines. It lists 284 reporting guidelines to standardize the reporting of research, ensure transparency, accuracy, and completeness, and improve the reproducibility and use of health studies [2]. Popham and colleagues [9] have identified five "core" reporting guidelines for major research designs. The best known of these guidelines, and the first of its kind, is the "CONSORT" developed in 1996 for randomized controlled trials [10]. Others are, respectively, "TREND" [11], "PRISMA" [12], "STARD" [13], "STROBE" [14] guideline for observational studies in epidemiology. Two additional reporting guidelines are particularly relevant to veterinary medicine: "ARRIVE [15], and REFLECT [16].

In 2010, Moher et al. [17] published a study on improving health research reporting guidelines. By the way More [3] recommended that veterinary journals "require authors to comply" with relevant reporting guidelines. These guidelines emphasized consensus-based methods and extensively addressed the lack of information on consensus-building from a multidimensional perspective. The level of knowledge and awareness of reporting guidelines has been evaluated in some scientific fields [18–20]. In 2020, Giray et al. conducted a cross-sectional study to evaluate the knowledge and awareness of young physicians about reporting guidelines and the EQUA-TOR network [18]. In a study, the knowledge of editors in veterinary journals about reporting guidelines was evaluated [19]. Öncel et al. conducted a study to evaluate the awareness and usage levels of pediatricians in reporting guidelines [20]. However, there are no studies on the level of awareness and knowledge of specialist dentists about these reporting guidelines and the EQUATOR Network. Therefore, this study aimed to determine the awareness and knowledge levels of specialist dentists in Turkey about reporting guidelines and their thoughts about their routine application.

Methods

Study design

This cross-sectional study included research assistants continuing their education in all dental specialties and specialist dentists in Turkey. The study was conducted between January and March 2024. As a result of the literature review, a questionnaire consisting of 17 questions was developed using an online platform (Google Forms). The survey questions can be found in Supplementary File 1. The questions used in this questionnaire were adapted from scales previously used in the literature and supported by academic studies [18-20]. A pilot study was conducted with 15 specialist dentists before the application. The specialist dentists were selected among academicians with the title of Prof. Dr. from different fields of dentistry. In line with the comments received, the questionnaire was revised and the questions were edited for clarity. These steps support the content validity of this questionnaire. To assess the reliability of the questionnaire, Cohen's Kappa analysis was applied instead of Cronbach's Alpha analysis because it included multiplechoice questions (Supplementary file 2). The results show that there is a moderate level of consistency between specific questions and that the reliability of the questionnaire in general is at an adequate level.

The questionnaire was delivered online to all participants. A total of 617 specialist dentists with corporate e-mail addresses were reached. At the beginning of the questionnaire, the purpose of the study was explained and the 'I accept' option was added for those who wanted to participate in the survey by accepting it. Individuals who did not consent to participate in the survey and general dentists were excluded from the study. A reminder e-mail was sent to each participant after two weeks.

The questionnaire consists of two parts. The first part included questions on sociodemographic information such as gender, age, title, and institution of employment. In the second part, the participants were asked about their previous scientific studies, their level of knowledge about the EQUATOR Network and reporting guidelines, and their usage status. In this study, dental professionals were specifically asked about the best-known and most frequently used guidelines on the EQUATOR site. The last two questions asked about their views on reporting guidelines and whether they would like to know more about them.

Statistical analysis

Data collected through the online questionnaire were transferred to an Excel sheet, cleaned, and analyzed with IBM SPSS V23. Pearson's Chi-square test, Yates Correction, and Fisher's Exact tests were used to analyze the association between categorical variables. The results of the analyses were presented as frequency (percentage). The significance level was determined as p < 0.050.

Results

240 people participated in the study and 80.8% of them were female and 19.2% were male. According to the age distribution, the highest number of participants was in the 30–35 age range with 48.8%; according to the titles,33.3% were Specialist Dentists; and according to the working institutions, 38.3% were University Hospital. All demographic and general information of the participants are presented in Table 1.

While 13.8% of the participants had heard of the 'EQUATOR Network' before,10.4% stated that they learned about the EQUATOR network from the internet, 5.4% from dental literature, 5% from journals, 3.8% from professional colleagues, 2.5% from research assistants and 1.7% from dental congresses. In the question of what the EQUATOR Network is about, the 'don't know' option stands out with the highest rate of 82.9%. Before the questionnaire was administered, 80.8% of the participants had participated in any scientific study. In scientific articles, 32.9% served as reviewers, but only 7% used reporting guidelines.When asked about the most frequently used and best-known guidelines, the CONSORT guideline was found with 17.5%. PRISMA was known by 16.3% of participants, STROBE by 12.1% and others by less than 6%. 13.8% of respondents were aware of these guidelines, but only 13.3% found them useful. 82.5% of the participants stated that they would like to be informed about the guidelines (Table 1).

Pearson Chi-Squared Test was used to analyze whether there is a relationship between the number of publications in Turkish or English and the use of reporting guidelines. When the relationship between the number of Turkish publications and the use of reporting guidelines in publications was evaluated, those with 5 or more publications used reporting guidelines the most (27.3%).A statistically significant relationship was found between the number of Turkish publications and the use of reporting guidelines (p = 0.006).When the relationship between the number of English publications and the use of reporting guidelines in publications was evaluated, those with 5 or more publications used reporting guidelines the most (27.7%). A statistically significant correlation was found between the number of publications in English and the use of reporting guidelines (p < 0.001) (Table 2).

The awareness of the term 'EQUATOR network' according to the variables was analyzed with Pearson's Chi-Squared Test with Yates' Continuity Correction test. The analysis of the variables for information about the reporting guidelines according to the variables was performed with Pearson's Chi-Squared Test and Fischer Exact's Test. Table 3 presents the results of the analysis of the awareness of the term 'EQUATOR network' according to the variables and the results of the analysis of the demand for information about reporting guidelines according to the variables.When those who know the term 'EQUATOR network' according to gender are analyzed, 8.7% are male and 14.4% are female and there is no significant relationship between gender and knowing the term 'EQUATOR network' (p = 0.431). When those who know the 'EQUATOR network' according to age are analyzed, 28% of those who know are >40 years old, 21% are 36-40 years old, 13.7% are 30-35 years old and 4.3% are < 30 years old. A statistically significant relationship was found between age and 'EQUATOR network' knowledge(p = 0.011). When those who knew the EQUATOR network were analyzed according to title, 44.4% were Associate Professors, 21.2% were Assistant Professors, 18.8% were Prof Drs, 7.5% were Specialist Dt., 6.3% PhD. DDS and 5.2% Research Assistant. A statistically significant relationship was found between title and knowing the EQUATOR network (p < 0.001). When those who knew the 'EQUATOR network' according to the institution of employment were analyzed, the highest rate was 22.8% for those working in a university hospital and the lowest rate was 4.6% for those who had been a research assistant for 3 years.A statistically significant correlation was found between the institution of employment and the knowledge of the EQUATOR network(p = 0.026).

Questions about having heard the term 'EQUA-TOR network' before and knowing that it was related to reporting guidelines were excluded from the analysis as the data were confusing and unreliable. There was no significant relationship between having knowledge about the EQUATOR network and having participated in scientific studies before (p=0.080) and using reporting guidelines in publications (p = 0.056). The rate of those who knew the EQUATOR network was 29.5% among those with 5 or more Turkish publications and 31.9% among those with 5 or more English publications. A significant correlation was found between the number of Turkish and English publications and EQUATOR network knowledge(p < 0.001). Among those who had heard of reporting guidelines before, 32.3% knew that the EQUATOR network was related to these guidelines.A

Table 1 Descriptive statistics of variables

	Frequency (n)	Percentage
Gender		(70)
Male	46	19.2
Female	194	80.8
Age		
< 30 years	70	29.2
>40 years	25	10.4
30–35 years	117	48.8
36–40 years	28	11.7
Title		
Research Assistant	58	24.2
Assoc. Prof.	18	7.5
PhD. DDS.	16	6.7
Assist. Prof.	52	21.7
Prof Dr		67
Specialist Dentist	80	33.3
Instution		55.5
Public Oral and Dental Health Hosnital	46	19.2
	40	16.7
Possarch Assistant for >3 years		0.7
Research Assistant for 1 year	22	9.2
Research Assistant for 2 years	21	0.0
Research Assistant for 2 years	19	7.9
	92	38.3
	22	12.0
Yes	33	13.8
	207	86.3
what is the EQUATOR Network about?	100	
	199	82.9
Academic study design	9	3.8
Reporting guidelines	32	13.3
How did you learn about the EQUATOR network? *		
l don't know	203	84.6
Dental literaure	13	5.4
Journals	12	5
Internet	25	10.4
Dental congress	4	1.7
Professional Colleagues	9	3.8
During Speciality/PhD Education	6	2.5
Having participated in a research previously		
Yes	194	80.8
No	46	19.2
Number of Turkish publications		
<5	128	53.3
5 and more	44	18.3
None	68	28.3
Number of English publications		
<5	101	42.1
5 and more	47	19.6
None	92	38.3
Number of participants who hear reporting guidelines		
Yes	65	27.1
No	175	72.9
Number of participants who use reporting guidelines during publication process		

Table 1 (continued)

	Frequency (<i>n</i>)	Percentage (%)
Yes	33	13.8
No	207	86.3
Number of participants who act as reviewers		
Yes	79	32.9
No	161	67.1
Number of participants who use reporting guidelines as a reviewer		
l don't know	49	20.4
Yes	17	7.1
No	174	72.5
Which of the reporting guidelines do you know? *		
l don't know	172	71.7
ARRIVE	8	3.3
CARE	6	2.5
CONSORT	42	17.5
ENTREQ	3	1.3
MOOS	1	0.4
ORION	15	6.3
PRISMA	39	16.3
SPIRIT	9	3.8
SPQR	3	1.3
SQUIRE	6	2.5
STARD	7	2.9
STREGA	4	1.7
STROBE	29	12.1
TREND	3	1.3
Thoughts about the guidelines		
I find it necessary	16	6.7
I find it rigid and unnecessary	1	0.4
I think it should not be used often	2	0.8
l find it useful	32	13.3
I have no information to comment	189	78.8
Request for information about the guidelines		
Yes	198	82.5
No	42	17.5

Table 2	The relationship between	the number of publications in	Turkish and English and the	use of reporting guidelines
			5	1 33

Parameter	Yes	No	Total	Test Statistic	<i>p</i> -value
Number of Turkish publications					
<5	17 (13.3)	111 (86.7)	128 (53.3)	10.358	0.006 x
5 and more	12 (27.3)	32 (72.7)	44 (18.3)		
None	4 (5.9)	64 (94.1)	68 (28.3)		
Number of English publications					
<5	18 (17.8)	83 (82.2)	101 (42.1)	19.475	< 0.001 x
5 and more	13 (27.7)	34 (72.3)	47 (19.6)		
None	2 (2.2)	90 (97.8)	92 (38.3)		

^x Pearson's Chi Squared Test; n(%)

significant correlation was found between having heard of reporting guidelines before and knowing the EQUA-TOR network(p < 0.001). It was statistically significant that 26.6% of the reviewers of scientific articles were aware of the EQUATOR network(p < 0.001). According to the analysis of the desire to have more information about reporting guidelines; Associate Professors(100%) want to be informed the most. A statistically significant relationship was found between the desire to be informed about reporting guidelines and

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Table 3

	Knowledge of EC	QUATOR Netwo	rk accordin	g to variable	Se	Request to by variable	be informe s	ed about rep	orting guid	elines
Parameter	Participants who don't know reporting guidelines	Participants who know reporting guidelines	Total	Test Statistic	<i>p</i> -value	Yes	°N	Total	Test Statistic	<i>p-</i> val- ue
Gender										
Male	42 (91.3)	4 (8.7)	46 (19.2)	0.621	0.431 <i>x</i>	34 (73.9)	12 (26.1)	46 (19.2)	2.217	azed
Female	166 (85.6)	28 (14.4)	194 (80.8)			164(84.5)	30 (15.5)	194 (80.8)		
Age										
<30 Years	67 (95.7)	3 (4.3)	70 (29.2)	11.212	0.011 y	56 (80)	14 (20)	70 (29.2)	1.251	0419
>40 Years	18 (72)	7 (28)	25 (10.4)			21(84)	4 (16)	25 (10.4)		
30–35 Years	101 (86.3)	16 (13.7)	117(48.8)			96 (82.1)	21 (18)	117 (48.8)		
36-40 Years	22 (78.6)	6 (21.4)	28 (11.7)			25(89.3)	3 (10.7)	28 (11.7)		
Title										
Research Assistant	55 (94.8)	3 (5.2)	58 (24.2)	24.629	< 0.001 y	46 (79.3)	12 (20.7)	58 (24.2)	15.825	6002
Assoc. Prof.	10 (55.6)	8 (44.4)	18 (7.5)			18 (100)	(0) 0	18 (7.5)		
PhD. DDS.	15 (93.8)	1 (6.3)	16 (6.7)			13 (81.3)	3 (18.8)	16 (6.7)		
Assist. Prof.	41 (78.9)	11 (21.2)	52 (21.7)			50 (96.2)	2 (3.9)	52 (21.7)		
Prof. Dr	13 (81.3)	3 (18.8)	16 (6.7)			12 (75)	4 (25)	16 (6.7)		
Specialist Dentist	74 (92.5)	6 (7.5)	80 (33.3)			59 (73.8)	21 (26.3)	80 (33.3)		
Instution										
Public Oral and Dental Health Hospital	41 (89.1)	5 (10.9)	46 (19.2)	12.755	0.026 y	35 (76.1)	11 (23.9)	46 (19.2)	14.384	0137
Private clinic/hospital	38 (95)	2 (5)	40 (16.7)			27 (67.5)	13 (32.5)	40 (16.7)		
Research Assistant for ≥ 3 years	21 (95.5)	1 (4.6)	22 (9.2)			17 (77.3)	5 (22.7)	22 (9.2)		
Research Assistant for 1 year	20 (95.2)	1 (4.8)	21 (8.8)			18 (85.7)	3 (14.3)	21 (8.8)		
Research Assistant for 2 years	17 (89.5)	2 (10.5)	19 (7.9)			16 (84.2)	3 (15.8)	19 (7.9)		
Universiy Hospital	71 (77.2)	21 (22.8)	92 (38.3)			85 (92.4)	7 (7.6)	92 (38.3)		
Number of participants who hear ÊQUATOR Network										
Yes	9 (27.3)	24 (72.7)	33 (13.8)		< 0.001 z	29 (87.9)	4 (12.1)	33 (13.8)	0.396	<i>200x</i>
No	199 (96.1)	8 (3.9)	207 (86.3)			169(81.6)	38 (18.4)	207 (86.3)		
Having participated in a research previously										
Yes	164 (84.5)	30 (15.5)	194(80.8)	3.072	0.080 x	167(86.1)	27 (13.9)	194 (80.8)	7.750	and the second s
No	44 (95.7)	2 (4.4)	46 (19.2)			31 (67.4)	15 (32.6)	46 (19.2)		
Number of Turkish publications										
<5	110 (85.9)	18 (14.1)	128(53.3)	18.348	< 0.001 y	106(82.8)	22 (17.2)	128 (53.3)	2.135	0440
5 and more	31 (70.5)	13 (29.5)	44 (18.3)			39 (88.6)	5 (11.4)	44 (18.3)		
None	67 (98.5)	1 (1.5)	68 (28.3)			53 (77.9)	15 (22.1)	68 (28.3)		
Number of English publications										
<5	88 (87.1)	13 (12.9)	101(42.1)	20.490	< 0.001 y	84 (83.2)	17 (16.8)	101 (42.1)	2.709	0287
5 and more	32 (68.1)	15 (31.9)	47 (19.6)			42 (89.4)	5 (10.6)	47 (19.6)		

	Knowledge of EQ	UATOR Networ	k according	j to variable	S	Request to by variable	be informe s	d about rep	orting guide	lines
Parameter	Participants who don't know reporting guidelines	Participants who know reporting guidelines	Total	Test Statistic	<i>p</i> -value	Yes	No No	Total	Test Statistic	<i>p</i> - val- ue
None	88 (95.7)	4 (4.4)	92 (38.3)			72 (78.3)	20 (21.7)	92 (38.3)		
Number of participants who hear reporting guidelines										
Yes	44 (67.7)	21 (32.3)	65 (27.1)	25.567	< 0.001 x	59 (90.8)	6 (9.2)	65 (27.1)	3.473	<i>x</i> 700
No	164 (93.7)	11 (6.3)	175(72.9)			139 (79.4)	36 (20.6)	175 (72.9)		
Number of participants who use reporting guidelines during publi- cation process										
Yes	25 (75.8)	8 (24.2)	33 (13.8)		0.056 z	29 (87.9)	4 (12.1)	33 (13.8)	0.396	ж ССОл
No	183 (88.4)	24 (11.6)	207(86.3)			169 (81.6)	38 (18.4)	207 (86.3)		
Number of participants who act as reviewers										
Yes	58 (73.4)	21 (26.6)	79 (32.9)	16.221	$< 0.001 \ x$	73 (92.4)	6 (7.6)	79 (32.9)	7.013	008 <i>x</i>
No	150 (93.2)	11 (6.8)	161(67.1)			125 (77.6)	36 (22.4)	161 (67.1)		
Number of participants who use reporting guidelines as a reviewer										
I don't know	44 (89.8)	5 (10.2)	49 (20.4)	7.751	0.021 <i>y</i>	39 (79.6)	10 (20.4)	49 (20.4)	0.682	Ølly
Yes	11 (64.7)	6 (35.3)	17 (7.1)			15 (88.2)	2 (11.8)	17 (7.1)		
No	153 (87.9)	21 (12.1)	174(72.5)			144 (82.8)	30 (17.2)	174 (72.5)		
Request for information about the guidelines										
Yes	168 (84.9)	30 (15.2)	198(82.5)	2.400	0.121 x					
No	40 (95.2)	2 (4.8)	42 (17.5)							
x Pearson's Chi Squared Test With Yates' Continuity Correction; y Pearson's Chi Squa	ıred Test; ^z Fisher's Exac	t Test; n(%)								

title (p = 0.007). When the desire to be informed about the reporting guidelines according to the institution of employment was evaluated; those working in university hospitals (92.4%) wanted to be informed the most. A statistically significant relationship was found between the institution of employment and the desire to have information about reporting guidelines (p = 0.013)0.86.1%of those who had previously participated in a scientific study and 67.4% of those who had not participated stated that they wanted to be informed about reporting guidelines. A statistically significant relationship was found between the desire to be informed about reporting guidelines and participation in a scientific study (p = 0.005). No statistically significant relationship was found between the number of studies published in Turkish or English and the desire to be informed about reporting guidelines (p = 0.344 - p = 0.258). 92.4% of those who were refereeing scientific articles and 77.6% of those who were not stated that they would like to be informed about reporting guidelines.A statistically significant relationship was found between being a reviewer of scientific articles and the desire to be informed about reporting guidelines (p = 0.008).

Discussion

The main purpose of medical studies is to improve health services by contributing to scientific knowledge. To prevent this, ICMJE updated the standards for manuscripts submitted to biomedical journals in 2008 [1]. For this purpose, authors, editors and reviewers can follow the guidelines and checklists in the reporting guidelines to identify missing information, assess the quality of the study and make a transparent contribution to science. When the literature is reviewed, although there are studies on the level of use of reporting guidelines by journal editors and reviewers, there is no study on the level of awareness and knowledge about reporting guidelines and the EQUATOR network in the field of dentistry. This is the first study to determine the level of knowledge and awareness of specialist dentists in Turkey about the applicability of reporting guidelines.13.8% of the participants reported that they had heard the term 'EQUA-TOR network' before.Unfortunately, the results of this study showed that the level of knowledge of specialist dentists about the guidelines was quite low. Among the participants, those with 5 or more English publications and those with less than 5 Turkish publications used reporting guidelines most frequently. In a study evaluating the level of knowledge of pediatricians about reporting guidelines, only 20% of the participants stated that they knew these guidelines and 10.7% stated that they had used these guidelines before [20]. In the same study, it was determined that 84.6% of the participants had participated in scientific studies before, but only 5.8% of them knew about the EQUATOR network. In this study, 80.8% of the participants participated in scientific studies and 13.8% stated that they knew the EQUATOR network. Therefore, specialist dentists have a higher level of knowledge about the EQUATOR network (13.8%) or reporting guidelines (17.1%). In this study, the level of knowledge about the EQUATOR network was statistically significantly higher in the >40 age group, in the associate professor group, and in those working in a university hospital. Since intensive scientific studies should be carried out while preparing for an associate professorship; it can be thought that researchers learn and use the EQUATOR network by experiencing it with age.In addition, it can be interpreted that more information can be accessed in environments such as university hospitals where many academicians are actively working, and scientific information is updated and learned through academic and clinical activities.

A study conducted among editors of veterinary science journals showed that 52.9% of the participants were aware of reporting guidelines and 35.1% of the participants had these reporting guidelines in their journals [19]. Since journal editors adhering to the guidelines and encouraging reviewers in the article evaluation process will ensure a more objective evaluation, the awareness rate of editors may be higher. In addition, some scientific journals also require authors to declare which guidelines they follow, which may encourage learning.

Reporting guidelines guide authors, reviewers, and editors for the transparency and successful progress of scientific studies [21]. Although they evaluate articles easier, especially for reviewers, many reviewers are not familiar with these guidelines. According to the results of this study, only 7% of the participants who served as reviewers for scientific articles used reporting guidelines. Another study reported that only 4.6% of 65 pediatricians who served as reviewers used reporting guidelines [20]. If journal editors encourage reviewers to use these guidelines, the awareness and use of reviewers will increase and scientific studies will become more valuable. When the results of the two studies are compared, it can be considered that the use of guidelines has become widespread in the intervening 6 years.

While planning a scientific study, it was thought that researchers could learn reporting guidelines during the literature review on the subject they are interested in, and this situation was investigated in this study. The rates of using reporting guidelines and knowing the EQUA-TOR network were found to be significant in those with more than 5 Turkish publications. Similarly, the rates of using reporting guidelines and knowing the EQUATOR network were found to be significant in those with more than 5 publications in English. Even among those who had heard/used reporting guidelines before, only 32.3% of the participants stated that they knew the relationship between the EQUATOR network and reporting guidelines.It is seen that accurate and detailed information is not obtained.

When the most frequently used and known guidelines were analyzed, it was seen that 17.5% of the participants knew CONSORT and 16.3% knew PRISMA. The results support the findings of similar studies [18, 20]. CON-SORT is one of the most cited reporting guidelines in the medical literature and has been revised over time [6]. In a study conducted with editors in veterinary journals, CONSORT was found to be the most widely recognized guideline, and this is reflected in the use of CONSORT in veterinary journals [22], and encouraging comments on the ARRIVE guidelines [15, 23] were considered to contribute to their implementation.

A study revealed that only 25.5% of urological journals included at least one reporting guideline. Of these, CON-SORT was the most frequently used, with less than 6% mentioning [9]. In this study among specialist dentists, the situation was no different, with 6% or less knowing all guidelines except CONSORT, ARRIVE, and STROBE. This may be because the researchers did not investigate the guidelines, or it may be because the types of studies that require the application of these guidelines are not common disciplines.

Journals can make guidelines available in different ways: -Included in instructions for authors to follow. -Included in instructions for reviewers to consider. -A list of reporting guidelines can be included as mandatory on the journal page [24]. On the other hand, for editors, compliance with reporting guidelines may be a criterion in the manuscript evaluation process [3, 24]. One systematic review reported gaps in the reporting of studies even when medical journals endorsed CONSORT [6]. In two other studies, there was no improvement in the quality of articles on diagnostic accuracy studies when STARD was included in the author guidelines and reporting was not done appropriately [25, 26]. In another study, authors found it difficult to apply high methodological standards after the study was completed [27]. As suggested in our survey and elsewhere, implementation of reporting guidelines before the study starts will ensure time management and that the study can proceed with confidence. If possible, knowledge of reporting guidelines should be emphasized theoretically in undergraduate education and then both theoretically and practically in postgraduate education [19, 24]. Some scientific journals provide recommendations to inform authors and reviewers about the EQUATOR communication network and reporting guidelines, as awareness is low in many fields [28, 29]. Unfortunately, it seems that reporting guidelines are underutilized by reviewers in medical journals [30], and reviewers and editors ignore non-compliance with reporting guidelines to publish [25]. It would therefore be appropriate to assess the impact of implementation if more health sciences and medical journals adopt reporting guidelines in the future.

The EQUATOR network is an internet network of all reporting guidelines and provides access to the most upto-date versions of guidelines and checklists [2]. In this study, although %80.8 of the participants had participated in scientific studies, only %13.8 were aware of the EQUA-TOR network. Most of the participants who were aware of the EQUATOR network learned about it from the journals they served as reviewers or through the internet. In a previous study, 87% of the participants stated that they did not know about the EQUATOR network; 30.7% of those who knew about it stated that they learned about it from the journals they were reviewing [20]. They have contributed to raising awareness about this network at congresses and seminars.

Remarkably, %1.2 of participants consider reporting guidelines to be rigid and unnecessary. However, most of them would like to be informed about the guidelines. In this study, the participants in the associate professor group, those who work in a university hospital, those who have participated in scientific studies before and those who are reviewers of scientific articles want to get information about reporting guidelines. According to these results, it can be considered that those who are active in academic life want to have information about reporting guidelines. To overcome this deficiency in scientific studies, authors and reviewers should be encouraged to use reporting guidelines in the planning, presentation and publication stages of the study.

Gradual implementation of reporting guidelines may give authors the chance to improve their study design by anticipating reporting requirements. Using these guidelines at the very beginning of the study will facilitate the appropriate and accurate presentation of the study findings [28]. By incorporating guideline recommendations, many methodological errors can be avoided in the early stages of the study and a more valuable study can emerge. In addition, their use at every stage of scientific studies will enable researchers to present more accurate data within the scope of the study and make the studies more useful for researchers, doctors, dentists, and patients. Even while this study was still being conducted, awareness about reporting guidelines started to be raised among the participants.

Limitations

This study has some limitations. Firstly, although attempts were made to reach universities and hospitals in different geographical regions of Turkey to represent the general population of specialist dentists and the questionnaire was delivered, there is a need for studies involving more specialist dentists. Also it is very important to plan long-term studies for future research to follow up the results of training on reporting guidelines. Secondly, reporting guidelines mainly focus on clinical medicine and epidemiological study design, but these are not well-developed disciplines in all dental branches. Therefore, the participation rate may be low. In the future, studies in specific disciplines such as endodontics, pediatric dentistry or maxillofacial surgery could be conducted to initiate the use of reporting guidelines. In addition, since the study was conducted voluntarily, they may have refused to participate in the study. Since the level of awareness of reporting guidelines is generally low, the impact of this situation on the study was limited. Another limitation was the misinterpretation of the questions. Those who answered 'no' to the question 'Have you ever heard of the term EQUATOR network?' should not have answered the question 'What is the EQUATOR network about?'. Therefore, data was lost and the relevant question could not be analyzed.

Conclusions

The following conclusions can be drawn from this first study on the level of awareness and knowledge of specialist dentists in Turkey about reporting guidelines and the EQUATOR network:

- There is a desire to be informed about reporting guidelines, which are not yet recognized among specialist dentists and the level of use during scientific studies is insufficient. More effective training for editors, reviewers, and authors on reporting guidelines would support their adoption by dental and health sciences journals in the future.
- If more dental and health sciences journals used such guidelines to ensure accurate and complete reporting in clinical trials, the quality of publications could be improved. In addition, publication rates may increase and acceptance rates in reputable journals may increase. Raising awareness and encouraging the use of reporting guidelines to produce highquality publications will contribute to research clarity and the presentation of studies in a common terminology.

Abbreviations

CONSORT The consolidated standards of reporting trials statement for reporting randomized controlled trials

- TREND Transparent reporting of evaluations with nonrandomised designs PRISMA Preferred reporting items for systematic reviews and meta-analyses
- STARD Standards for the reporting of diagnostic accuracy studies

STROBE The strengthening the reporting of observational studies in epidemiology

- ARRIVE Animal research: reporting of in vivo experiments
- CARE Consensus-based clinical case reporting
- SPQR Standards for reporting qualitative research

 SQUIRE
 Standards for quality improvement reporting excellence

 CHEERS
 Consolidated health economic evaluation reporting standards

 SPIRIT
 standard Protocol Items: Recommendations for Interventional Trials

 STREGA
 STrengthening the reporting of genetic association studies

 ORION Outbreak reports and intervention studies of nosocomial infection
 Meta-analysis of observational studies in epidemiology

 ENTREQ
 ENTAREQ
 ENhancing transparency in reporting the synthesis of qualitative

ENTREQ ENTRACIng transparency in reporting the synthesis of qualitative research

REFLECT Randomized controlled trials for livestock and food safety

Supplementary Information

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Supplementary Material 1

Supplementary Material 2

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Author contributions

TTK and SÖ: study concept and design, data acquisition, statistical analysis, TTK: interpretation, manuscript drafting, critical content revisions. All authors approved the final version for submission.

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Data availability

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

Declarations

Ethics approval and consent to participate

This study involving human participants was conducted in accordance with the 1964 Helsinki Declaration and its subsequent amendments or similar ethical standards. This cross-sectional study was approved by the Istanbul Medeniyet University Clinical Research Ethics Committee (Approved by decision number 2023/0513). The Google form used explained that participation in the survey was voluntary and documented informed consent for participation with the click of a button which was a required task before one could proceed further to the next parts of the questionnaire.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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