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The comments of dentists contributed in congresses in the field of dentistry on questionnaire-based researches, Tehran, Iran, 2015

Sahar Salajegheh DDS[1], Arash Shahravan DDS[2], Sahand Samieirad DDS, MSc[3], Nader Navabi DDS, MSc[4], Shahla Kakoei DDS, MSc[4], Maryam Alsadat Hashemipour DDS, MSc[4]

Original Article

Abstract

BACKGROUND AND AIM: The questionnaire includes a category of questions that has been prepared based on some certain principles and dentists are requested to complete this form. The aim of this study was the investigation of dentists' opinions about researches based on questionnaires.

METHODS: The present investigation was a descriptive-analytical and cross-sectional study. The questionnaire, which was designed by the researcher, was distributed among 400 participants of congresses by the researchers as group-performance containing personal questions including age, year of graduation, educational degree, and etcetera, general questions, and questions related to dentists' comments about questionnaire researches. The results obtained from this research were analyzed using t-test and chi-square test in SPSS software.

RESULTS: In this evaluation, 400 questionnaires were distributed among 400 dentists; of this number, 305 questionnaires were returned (Response rate = 76.25). Of the participants, 125 people were male (40.9%) and 180 people were female (59.1%) (Ratio of male to female = 0.69). This research indicated that 100% of the participants had previously participated in a research in which the data collection tool was a questionnaire. Moreover, 290 dentists (95.0%) announced that the number of questions in the questionnaire affects their responsiveness. This research showed that there is a significant relation between level of attitude and age (P = 0.01), gender (P = 0.02), and educational degree (P = 0.01). Furthermore, from the viewpoint of women (P = 0.02) and younger people (P = 0.01), the number of questions in the questionnaire and the person who provides the questionnaire affect their responsiveness.

CONCLUSION: The present research revealed that more than half of the participants believed that using a questionnaire in research studies is a suitable method; however, 72.0% of participants had a contrary opinion. In addition, 32.7% of participants had very inclination toward participation in such investigations.

KEYWORDS: Dentists; Questionnaires; Research

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Research or investigation is a trying and organized process to find, restate, and review phenomena, events, behaviors, and tenets. Research is also used to utilize available phenomena to achieve practical solutions and technologies. Research consists of the two aspects of finding the research question and answering that question.[1]

Research techniques include interview, questionnaire, and analysis of documents and evidences. In many sciences, researches

1- MSc Student, Department of Pediatric Dentistry, School of Dentistry, Yazd University of Medical Sciences, Yazd, Iran
2- Professor, Endodontology Research Center AND Department of Endodontology, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran
3- Assistant Professor, Oral and Maxillofacial Diseases Research Center AND Department of Oral and Maxillofacial Surgery, School of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran
4- Associate Professor, Kerman Dental and Oral Diseases Research Center AND Department of Oral Medicine, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran
Correspondence to: Maryam Alsadat Hashemipour DDS, MSc
Email: m_s_hashemipour@yahoo.com

are conducted based on questionnaires and it is a conventional method of collecting field information. The questionnaire method is usually used in descriptive investigations and researches with high geographical area.[2]

The questionnaire includes a category of questions prepared based on certain principles and is provided in writing to people in order to obtain their answers based on their discernment. Several factors and elements are involved in the questionnaire method through the coordinated operation of which the researcher can collect his required information. These elements are the tools of collecting information or questionnaires, planning and executing the questionnaire method, respondents and factors of executing questionnaire method.[3]

The better the questionnaire is designed, the higher the correct answers and the lower the amount of uncompleted questionnaires are.[4] Concurrent with the completion of a questionnaire by a person, the consideration of some measures such as managing communication with the audience is required because respondents are our audiences and they are supposed to help us in advancing the research, the respondent's satisfaction with completing the questionnaire is equivalent to consumer's satisfaction with the product of a company.[4]

In researches in which a questionnaire is used, the participants are themselves responsible for completing the questionnaire and returning it to the researcher. Thus, the questions and guidance related to them should be understandable and clear enough for respondents to perform the role of the interviewer and encourage the participation of the intended people.[5]

The conducted evaluations indicate that many researches in valid journals and websites have been conducted based on a questionnaire. The goal of this investigation was to evaluate the comments of dentists participating in the dentistry congresses in the field of questionnaire researches.

Methods

This study was designed as a descriptive-analytical and cross-sectional study with the ethical code 95000090. The intended population in this evaluation was dentists participating in the dentistry congresses held in Tehran, Iran, (2016-2017). The participants were selected through simple random sampling method. The questionnaire, which was designed by the researcher, was distributed among 400 participants of congresses by the researchers as group-performance containing personal questions, general questions, and questions related to dentists' comments about questionnaire researches.

Questions of this questionnaire were designed by two dentistry specialists and a statistics specialist. To evaluate the validity and reliability of the questionnaire, the scientific validity of the questionnaire was confirmed through its distribution among 10 dentistry specialists and the level and understandability of the questions were discussed; 16 questions were at suitable and very suitable levels and 2 questions were unsuitable that were removed from the questionnaire. The validity of the questionnaire's contents was at a favorable level. Then, this questionnaire was given to 30 general dentists within 2 weeks in order to evaluate its stability. Total stability of the questionnaire was obtained (0.75) through intraclass correlation coefficient (ICC) and was at a favorable level; the stability of the questions was between 0.89 and 0.71. The results obtained from this research were analyzed using t-test and chi-square test in SPSS software (version 18, SPSS Inc., Chicago, IL, USA). The significance level was $P < 0.05$.

Results

In this evaluation, 400 questionnaires were distributed among 400 dentists, of which 305 questionnaires were returned (Response rate = 76.25). Among these participants, 125 people were male (40.9%) and 180 people were female (59.1%) (ratio of male to female = 0.69) as it is tabulated in table 1.

Table 1. Demographic profiles of the participants (n = 305)

Parameter		n (%)
Sex	Male	125 (40.9)
	Female	180 (59.1)
Age (year)	< 30	145 (47.5)
	> 30	160 (52.5)
Years since graduation	< 5	150 (49.1)
	> 5	152 (50.9)
Degree of education	Dentist specialist	73 (23.9)
	General dentist	232 (76.1)
Type of activity	Clinic	45 (14.7)
	Dental office	220 (72.1)
	Dental faculty	15 (4.9)
	Multiple locations	26 (8.3)

This research indicated that 100% of the participants had previously participated in a research in which the data collection tool was a questionnaire, and about half of the people (44.3%) believed that they had not responded to questions accurately and patiently.

Equal to 72.0% (220 people) believed that the results obtained from this type of researches are not applicable (Table 2).

Among the participants, 290 people (95.0%) announced that the number of questions in the questionnaire has an important impact on their responsiveness. Moreover, 1.9% (6 people) of the participants consulted with another person in order to respond to questions and 41.6% of the participants always responded to questions based on their personal opinions (Table 3).

This research indicated that 23.0% of the participants were forced to respond to the questionnaire to politeness and that they had no interest in cooperation, and about 32.0% of questionnaires were completed under compulsion. In this investigation, 56 people (18.4%) of the participants responded to questions without much attention to them.

This research indicated a significant relation between questions of attitude and age (P = 0.01), gender (P = 0.02), and educational degree (P = 0.01). In other words, a more positive attitude toward questionnaire investigations was observed in women compared to men, in older individuals, and in specialists compared to general dentists. Furthermore, in the viewpoint of women (P = 0.02) and younger people (P = 0.01), the number of questions in the questionnaire and the person who provides the questionnaire have an effect on responsiveness to questions in the questionnaire (Table 4).

Discussion

This research showed that until now, 100% of the participants have participated in a research in which the data collection tool was a questionnaire and about half of the participants stated that they did not respond to questions in the questionnaires accurately and patiently. Moreover, 64.9% of the participants stated that investigation based on a questionnaire is a suitable method for research, and 65.2% agreed that the results of this type of investigations are attributable.

Chapple indicated that questionnaire research is an easy way for investigation; however, in the opinion of this researcher, questionnaire investigations may have some defects such as inaccuracy of registered information, invalidity of reported results, and a questionable conclusion.[6] The investigations conducted by Wright indicate that investigation based on websites, online questionnaires, and even questionnaires that have been sent through E-mail are not verifiable and valid.[7]

Table 2. Responses of participants to general questions about questionnaire researches

Item	CA	A	CD	D	NC
	n (%)	n (%)	n (%)	n (%)	n (%)
Investigation based on questionnaire is a suitable method for research.	122 (40.0)	76 (24.9)	30 (9.8)	47 (15.4)	30 (9.8)
Results of such investigations are attributable.	54 (17.7)	145 (47.5)	36 (11.8)	40 (13.1)	25 (8.2)
I read all questions in the questionnaire accurately.	32 (10.5)	131 (42.9)	80 (26.2)	50 (16.4)	12 (3.9)
Results of such investigations are not valid.	77 (25.2)	143 (46.9)	20 (6.5)	45 (14.7)	20 (6.5)

CA: Completely agreeable; A: Agreeable; CD: Completely disagreeable; D: Disagreeable; NC: No comment

Table 3. Responses of participants to questions about designing the questionnaire and their accuracy and way of responding to questions

Question about designing questionnaire	Very high	High	Low	Very low
	n (%)	n (%)	n (%)	n (%)
Do the number of questions impact responsiveness?	90 (29.5)	200 (65.5)	10 (3.2)	5 (1.6)
Is a person who gives you the questionnaire effective on your responsiveness?	150 (49.2)	75 (24.6)	40 (13.1)	40 (13.1)
Is the appearance of the questionnaire (in terms of cleanliness, suitable font, and etcetera) important in your responsiveness?	85 (28.0)	125 (41.0)	70 (23.0)	25 (8.2)
To what degree are you inclined to participate in such investigations?	42 (13.8)	58 (19.0)	180 (59.0)	25 (8.2)
How do you evaluate the accuracy of results of questionnaire researches?	65 (21.3)	102 (33.4)	103 (33.8)	35 (11.5)
Questions about responsiveness	Always	Usually	Sometimes	Rarely
I respond to questions only based on my personal opinion.	127 (41.6)	125 (4.1)	49 (16.1)	4 (1.4)
I consult other people in responding to questions.	6 (1.9)	25 (8.2)	110 (36.1)	176 (57.7)
I leave responding to the questionnaire to another person.	37 (12.1)	55 (18.0)	85 (27.0)	128 (42.0)

The questionnaire consists of a series of questions that are written in accordance with certain principles and presented in writing to individuals, and questions are answered responsibly based on their own discretion. Based on a research, Francis Galton invented the questionnaire.[8] The use of the questionnaire as a method to collect data has been increased in researches of national and international health cares in recent years.[9-11] Researchers can use the questionnaire to assess knowledge, attitude, emotion, cognition, purpose, or behavior.[11]

Questionnaires have some advantages compared to other types of demographic methods such as they are cheap like telephone and lingual surveys, they do not require much effort by the interviewer, and often they have standard responses that simplify data collection.

Table 4. Relation between questions in the questionnaire and demographic characteristics

Questions	Degree of education		P**	Years since graduation		P**	Gender		P**	Age (year)		P**
	SD	GD		≤ 5	> 5		Female	Male		> 30	< 30	
Do you respond to questions in the questionnaire accurately?	65	105	0.050	150	120	0.050	100	70	0.040*	130	140	0.060
To what extent are inclined to participate in such investigations?	50	50	0.001*	55	45	0.070	60	40	0.080	70	30	0.010
In your opinion, what percentage of questions in the questionnaire is understandable and the reader does not require guidance for?	40	189	0.001*	127	102	0.040*	129	100	0.120	109	120	0.120
What percentage of questions in questionnaires is related to the evaluated issue?	35	203	0.001*	138	100	0.020*	143	95	0.001*	108	130	0.050
How do you evaluate the accuracy of results of questionnaire researches?	25	142	0.020*	100	67	0.010*	130	37	0.001*	112	55	0.001*
Do you respond to a questionnaire when you are not willing to?	35	35	0.001*	35	35	0.020*	40	30	0.050	40	30	0.210

SD: Specialist dental; GD: General dentist
P < 0.05 is significant. *t-test, **chi-square

One of the serious limitations of questionnaires is that they must be designed in a way that people can easily read and respond to them. Therefore, in some groups, the use of a questionnaire may not be appropriate for data collection. In addition, as a kind of survey, the questionnaire has many similar problems related to the structure and questioning of the questionnaires, and the bias in answering questions which can be similar in other surveys.[9,10]

Based on published reports of types of papers published in recent years in Iran, more than half of papers are descriptive (mostly through questionnaire) and a lower number are analytical.[12,13]

Moreover, scientometric studies found that a large percentage of published articles in the country were descriptive and used a questionnaire as a tool for data collection.[12]

Results obtained from this research indicated that in the opinion of 290 participants, the number of questions in the questionnaire has an important role in responsiveness. Furthermore, in the opinion of 210 participants, the appearance of the questionnaire (in terms of cleanliness, suitable font, and etcetera) is very important in responsiveness.

In researches using the questionnaire, the participating members or community partake by filling in the questionnaire and returning it to the researcher; therefore, questions and guidance related to it should be clear and understandable. The instructions, questions, and guidance should be designed in such a way as to encourage the interested individuals to continue to cooperate and return the questionnaire.[8]

Research has shown that questions in the questionnaire should be short and understandable (maximally between 16 and 20 words).[13,14] In addition, Rattray et al.[10] reported that increasing the quality of questions is very important.

Dillman argued that grammatical questions should be minimized.[14] Furthermore, in the questionnaire, researchers should use the present tense to replace the unknown and refrain from repeating words.[14] Other ways to increase the willingness of people to respond to questionnaires are the using specific words rather than general terms, breaking complex questions into simple questions, avoiding ambiguous words to the extent possible, and perhaps not to use aware of the responses that are designed to be tailored to people's attitudes, as well as using words that provide a socially desirable response.[14,15]

The results of this study showed that 62% of the participants were aware that the questionnaire was not readable. Moreover, 78% of the participants stated that the questions raised in the questionnaires were related to the subject under review.

According to a study by Yaghmaei, many questionnaires are not completed through the steps mentioned or the researcher has been silent about these steps.[16] This research indicated that 23% of participants responded to questionnaires to observe politeness and that they were not interested in cooperation, and about 32% of questionnaires were completed under compulsion. The notable point in this investigation is that 56 participants (18.4%) responded to questionnaires without reading the questions.

The cause of this issue can be the low cost and easiness of collecting data of the investigation, irregular development of postgraduate education without providing the required infrastructures, and obligation of students and faculty members to publish papers. PubMed Website indicated that during the last 21 years (1995-2016), 11523 questionnaire investigations have been published on this website; among this number, 22.3% (2576 papers) were related to Iran, this number is approximately 5 times that published in the US.

Based on some researches, in addition to the rapid growth of descriptive researches, a reduction has been observed in researches that require demographic interventions to solve the problem.[16,17]

The requirement for students to publish a paper forces them to use questionnaires to quickly carry out research and publish their results in the increasing number of internal medical journals. According to Aghili et al., at least 7 years after the publication of 9797 scientific articles published in scientific journals during the years 1998-2001, 90% of them were not referenced.[12]

Finally, this study showed that that respondents were agree with 20 questions for every questionnaire. Eventually, all researches that use questionnaires should consider the following points in designing their questionnaire in order to obtain the cooperation of the respondents.

The name, family name, and address to which the questionnaire should be sent should be mentioned at the beginning and end of the questionnaire.

Questions should be given at the first of questionnaire and the way to respond them should be specified.

The arrangement of the questions should follow a logical order.

In questionnaires that are very long, the most important questions should not come at the end of questionnaire and questionnaires should be made shorter if possible.

Information should be expressed completely in each question so that the question is meaningful for respondents.

The length of questionnaires is effective on the accuracy of responses; thus, questionnaires should be concise if possible. In other words, only questions that are required to achieve the goals of the research should be incorporated into the questionnaire.

Conclusion

The results of this research indicated that more than half of the participants believe investigation based on the questionnaire to be a suitable method for research; however, 72.0% of participants believed that results from this type of research are not applicable and 32.7% of participants had very low inclination toward participation in such investigations.

Conflict of Interests

Authors have no conflict of interest.

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