

Received: 20 Sep. 2015

Accepted: 03 Jan. 2016

Quality appraisal of published qualitative dental, medical and health researches in Iranian Persian language journals

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Original Article

Abstract

BACKGROUND AND AIM: This study aimed to determine the rate of published qualitative research in the field of public health including dental researches in Iran and to appraise their quality.

METHODS: A total of 165 articles which published in 170 Iranian Medical Journals between years 2000 and 2014 were found eligible to the study. 48 papers were selected randomly. The papers were appraised by two calibrated reviewer using the Critical Appraisal Skills Programme (CASP) appraisal framework for qualitative research.

RESULTS: Only 2 studies (about 4%) were on dental topics. About 82% (38-48) studies had sufficient reporting regarding aims, study design, recruitment and data collection, data analysis, finding and implication of research. Only 12 articles (25%) had an adequate discussion of the study limitations. Overall, the assessment showed that 27 papers (about 56%) of studies were well conducted.

CONCLUSION: Qualitative methods are underutilized on dentistry topics, and the quality of qualitative research on health topics in medical journals of Iran is mediocre.

KEYWORDS: Qualitative Research; Critical Appraisal; Oral Health; Iran

Citation: Bozorgmehr E, Malek-Mohammadi T, Hagdoost AA, Hajizamani A. **Quality appraisal of published qualitative dental, medical and health researches in Iranian Persian language journals.** *J Oral Health Oral Epidemiol* 2016; 5(2): 106-13.

Qualitative researches provide appropriate understanding of people's experiences, perspectives and histories in the context of their personal circumstances or settings, and answering "what," "how," and "why" questions.¹

The popularity of qualitative methodologies have increased over the past decades,^{2,3} especially it is now widespread within health services research programs.⁴ A lot of examples of qualitative research can be identified within the health research field.⁴⁻⁶ The importance of qualitative research

should not be discounted^{7,8} because it has a significant place in public health for problem definition, hypothesis generation, and evaluation. The qualitative studies that are poorly designed or have inadequate reporting can lead to inappropriate application of qualitative research in decision-making, health care, health policy, and future research.⁹

However, qualitative researches have been criticized because their procedures and processes are not transparent enough.² Reading critically and analyzing the quality of articles are skills that help to design valid

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and reliable research studies.¹⁰ Critical appraisal skills of research literature are essential for all members of the health-care team, to develop models of evidence-based practice that focus on optimal outcomes. Improvement of the quality and safety of health care depends on the measurement of these outcomes, so there is an extra need for clinicians to have a comprehension of research methodologies so that they can design and implement effective quality assurance programs using valid and reliable methods^{10,11} as well as quality appraisal is an important issue in systematic reviews.¹² There is considerable debate over using which quality criteria are appropriate to assess qualitative studies. Assessment of the quality in qualitative research can be done using the same large concepts of validity (or trustworthiness) used for quantitative research, but these need to be put in a different contextual framework according the aims of qualitative research.¹³ Consequently, skills of critical appraisal are included in formal postgraduate research training.¹⁰

There are no mechanical or “easy” solutions to restrict the likelihood of existing errors in qualitative research. However, there are some ways of improving validity; each of these ways requires the exercise of judgment on the parts related to researcher and reader.¹⁴

Considerable disagreement about the characteristics of good quality qualitative research caused producing guidelines such as checklists.¹⁵ By using these guidelines, the review of qualitative research can be done systematically and scientifically, so the quality of analyzing and reporting qualitative evaluation findings of research undertaken will be improved.^{5,16} Another benefit of guidelines is the contribution of them to the ongoing process of trying to achieve a consensus on what supposes as quality in qualitative research.³

This study aimed to determine the rate of published qualitative dental, medical and health researches in Iranian Persian language journals and appraise their quality.

Methods

A list of scientific databases which included Iranmedex, SID database, Medilab, Magiran, and Google search engine in Persian and English for qualitative studies in Iran was prepared. About 170 Persian-language medical and dental journals have been indexed between 2000 and 2014 in these databases. All articles with qualitative research keyword were extracted. 165 full text articles were available. All these articles were summarized by two experts who were trained and calibrated (90% agreement) in qualitative research methods to choose the articles that have been done by qualitative method certainly. The readers had consensus about the qualitative method of all available full text articles. Then, according to 170 journals and 165 qualitative papers, a pilot study was conducted through appraising 10 articles to know how many papers are enough to reach the aim of the study. It was concluded that 48 articles ($\alpha = 5\%$ and $1-\beta = 85\%$) are the right sample size, which they were selected randomly for evaluation by numbering through a blind selection process. A flow diagram summarizing this process is shown in figure 1.

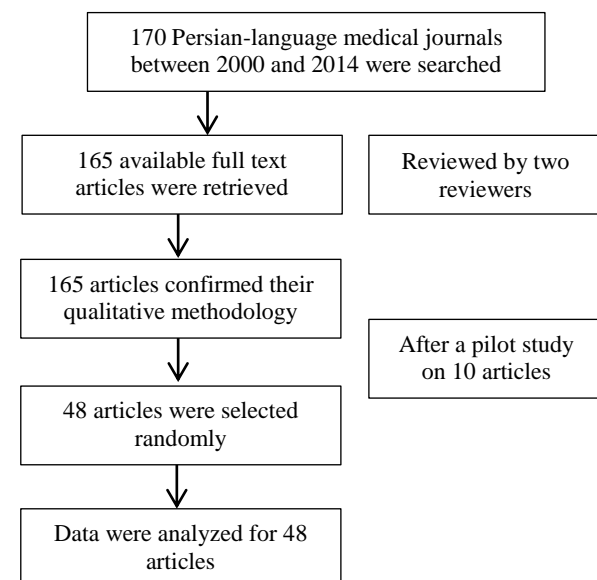


Figure 1. Flow chart of the study

Critical appraisal tool

There is considerable variability in intent,

components, construction, and psychometric characteristics of published critical appraisal tools to report research. There is no “gold standard” critical appraisal tool for any study design, nor is there any widely accepted generic tool that can be applied equally well across study types. No tool was specific to allied health research requirements. Thus, interpretation of the critical appraisal of research reports currently needs to be considered in light of the properties and intent of the critical appraisal tool chosen for the task¹⁷ but numbers of appraisal frameworks are available for the assessment of qualitative research and easy-to-use, study design-specific checklists to guide the reader through a research article.^{1,17} We used Appendix H Methodology checklist designed for qualitative studies. This qualitative checklist is planned based on accepted principles of implementing qualitative research and that may affect its quality. Using this qualitative checklist is appropriate for people with basic understanding of qualitative methodology.¹⁸

The criteria used in this checklist are adapted from: The Qualitative Research and

Health Working Group, Liverpool School of Tropical Medicine and National Critical Appraisal Skills Programme (CASP) Collaboration for Qualitative Methodologies, CASP 10 questions to help you make sense of qualitative research. The checklist contains 13 questions grouped into six themes include aims of the research, study design, recruitment and data collection, data analysis, findings/interpretations, implementation of research and then overall assessment of the study (Table 1) and it also has provided hints for completing.¹⁸ Rigor, credibility, and relevance have been considered in the framework. Initial questions are about clear statement of the study aims and the appropriateness of a qualitative approach.

Two qualitative methodologies trained researcher were selected to appraise each article independently. Kappa (90%) was calculated for evaluating inter-rater reliability of the researcher. Five studies were selected randomly by both researcher and appraise 2 weeks later to test the reliability of their work, and there was 85% agreement for intra-examiner by test-retest evaluation.

Table 1. Frequency of articles that met the H Methodology criteria

Criteria	n (%)
Aims of the research	
Are the aims and objectives of the research clearly stated?	48 (100)
Is a qualitative approach appropriate?	48 (100)
Study design	
Is (are) the research question(s) clearly defined and focused?	38 (82)
Are the methods used appropriate to the research question(s)?	38 (82)
Recruitment and data collection	
Is the recruitment or sampling strategy appropriate to the aims of the research?	41 (87)
Are methods of data collection adequate to answer the research question?	44 (93)
Are the roles of researchers clearly described?	29 (62)
Have ethical issues been addressed adequately?	14 (31)
Data analysis	
Is the data analysis sufficiently rigorous?	44 (93)
Findings/interpretation	
Are the findings internally coherent, credible (valid)?	47 (98)
Are the findings relevant?	47 (98)
Implications of research	
Are the implications of the study clearly reported?	44 (93)
Is there adequate discussion of the study limitations?	12 (25)
Overall assessment of the study	+ ++ + ++
How well was the study conducted? Code ++, + or –	21 27 44% 56%

By an administrator, the journal title, date and authors' names were masked and each article was identified by a unique code. The researcher appraised each article independently and then discussed to reach a consensus. If there was disagreement between them about some qualitative items, consultation with a third expert researcher was implemented.

For overall, assessment of the study according to the notes of the framework, if all or most of the criteria have been fulfilled or where they have not been fulfilled the conclusions of the study or review were thought very unlikely to alter, we assigned ++ to the article. If some of the criteria have been fulfilled or those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions, we assigned + to the article; if few or no criteria fulfilled, the conclusions of the study are thought likely or very likely to alter the assigned code was negative (-).

Results

Out of 48 papers, 12 (25%) were published in medical journals, 34 (70%) papers in nursing and health journals and only 2 studies (about 4%) were published in dental journals (Figure 2).

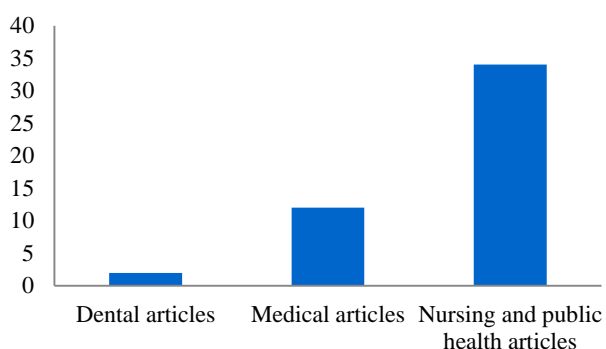


Figure 2. Frequency of qualitative papers in different subjects

Table 1 shows the frequency of papers that met each criterion of this qualitative checklist.

Aims of the research

In all 48 papers (100%) appraised in the

study, the goals of the research and the importance of these goals were clearly stated, as well as the qualitative approach was appropriate.

Study design

The study design was addressed in 38 (82%) papers. In these articles, the research question(s) clearly was defined and focused, and also the methods used were appropriate to the research question(s). While in rest of them study design items have not been addressed.

Recruitment and data collection

More than 62% have met recruitment and data collection items, for example, recruitment or sampling strategy was appropriate to the aims of the research. Methods of data collection were adequate to answer the research question and the roles of researcher were clearly described, but only in 14 (31%) articles ethical issues have been addressed adequately.

In large number of them, data analysis was sufficiently rigorous (93%) and problems were not apparent in analysis reports. In 7% of papers, there were problems with methodological rigor concerned a lack of detail in reporting that enables readers to see how the findings were derived, for example, some of them did not discuss items such as data saturation.

Findings/interpretation

Almost all qualitative researchers (98%) have reported the findings in a coherent and credible way and the findings were relevant and only 2% of them did not have enough discuss to judge about the relevance of the findings.

Implications of research

About 44 (93%) articles had clear reports about the implication of the study, for example the findings were placed in the local context (geographical, cultural, and socioeconomics). There discussed findings in wider context (in relation to other studies on the same topics) but only 12 (25%) had

adequate discussion on the study limitations because the weaknesses of the study design were discussed, and there was a discussion of new areas where research is needed.

According to the notes of the framework overall assessment showed that approximately half of papers (about 56%) of studies were well conducted and fewer than half of articles have not enough reports of the research.

Discussion

As we can see in the results of this appraisal of qualitative research in medical, health and dental studies in Iran, more than half of qualitative researches had met H Methodology checklist criteria.

Application of qualitative study is increasing in the field of medicine, public, and oral health; therefore, some problems may decrease the quality of this type of research. For example, some researchers may not have adequate grounding in theory or practice of qualitative study or they may not have enough experience and training, some of them are unwilling to request the assistance from whom that are expert in qualitative methodology. Moreover, the time and costs for doing a high-quality qualitative study is important.¹⁹ In addition, there is a lack of consensus between qualitative research approaches about how to assure quality of research. This reflects past and ongoing debates among qualitative researchers about how to define quality, and even the nature of qualitative research itself.²⁰ Consumers of research (researchers, administrators, educators, and clinicians) frequently use standard critical appraisal tools to evaluate the quality of published research reports. However, there is no consensus regarding the most appropriate critical appraisal tool for allied health research.¹⁷ However, there are frameworks and checklists equip reviewers to assess the quality of qualitative researches.¹⁵

Qualitative researchers often neglect a total description of their qualitative research

techniques and procedures. Providing detailed, clear and transparent accounts of the processes and steps used in the study method can enhance the integrity of the published qualitative studies. Transparency is essential if qualitative methodologies are to be developed further and to maintain methodological rigor.²

As we can see in the results of the study, only two articles (4%) were published in dental journals, so contribution of the qualitative study in dental journals was so low. Why the rate of qualitative study in the field of dentistry In Iran is too low? What is necessary to be done regarding this issue (low rate of qualitative methods in dental studies) in Iran. A hypothetical reason can be related to inadequate education of qualitative methods in graduate or postgraduate course of students. Of course, there may be more reasons that can be revealed with research.

About 25% of these qualitative studies were related to different topics of medicine and health that were published in medical journals, whereas it is worth mentioning that the majority of papers (70%) were published in nursing and health journals. As well as the majority of authors were graduates of nursing and health, therefore these professionals are dealing with qualitative study more than other professionals of medicine and health, as some articles addressed this issue.²¹

According to the idea of both researchers in this study (if there was no consensus between them we request the opinion of the third researcher) in 100% of articles the objectives of the research were addressed and qualitative approach was appropriate for the objectives. It means that based on the hints of the checklist; in all of articles, the goals of the research were stated clearly and the researcher mentioned why these goals are important. Appropriateness of qualitative approach of all studies was acceptable because the research methodology sought to understand or illuminate the subjective experiences or views of research participant

and what is happening and the reasons why observed situation or outcomes occurred.

The research approach influences its design and the research design helps reader about the implementation of the research approach. In 82% of studies, the research design was appropriate to address the aims of the study as the question(s) was relevant to the aim of the study and structured in a way that sought to answer all the objectives of the study. Some of researchers had not justified the research design (for example they did not discuss how they decided to use which methods).

Despite enough funding and resources for a project, the process of a study may be compromised. For example, the sample size in a study may be insufficient in relation to the aims of the study, a situation observed in some of the papers appraised in this study. By a too small size sample, findings cannot adequately represent all the dimensions of a problem or the full range of views held by members of the target population, limiting conceptual generalization.²²

In any research project, recruitment forms are an important part of the research. In qualitative researches the researcher often wants to collect the thoughts or opinions of a specific group of people who have experienced a specific phenomenon. Therefore for qualitative researchers, it is more important to ensure that participants have experienced the phenomenon so randomly selecting people who may not be able to answer the questions may not be a correct approach.²³ There should be an explanation of the selection of the sampling strategy (e.g., purposive sampling, theoretical sampling, extreme case sampling, snowball sampling) and how it is appropriate to the aims of the research and methodology selected (e.g., grounded theory, ethnography, phenomenology).

The researcher should illustrate with justification about sampling methodology, why the selected participants were the most appropriate to access to the type of knowledge sought, why some people were

not selected to take part.² The most common methods of data collection within qualitative research are interview, questionnaire or observation. These different methods have been designed to obtain slightly different data. Therefore, the method of data collection should address the research issue/question.²³ In our study, more than 87% of articles have met recruitment and data collection items and sampling strategy was appropriate to the aims of the research.

Only in 14 articles (31%) ethical issues have been addressed adequately, whereas Ethical issues are important and should be considered at every step of the research process. This is not just about obtaining "ethical approval" for a study but also ensuring the rights of participants are not violated. When reporting qualitative research, participants' anonymity and confidentiality must not be breached ethically.²³ According to our results, ethical issues were not considered adequately in Iran or maybe reporting of them is not appropriate, because there were not sufficient details of how the research was explained to the participants. Consent procedure used and how consent was obtained were not explained as well as there were not clear notes about confidentiality and privacy assurance in the study. Some of them did not report seeking approval from the ethics committee.

Reporting of data analysis was clear in more than 90% of articles and the findings clearly displayed. Most of researchers organized qualitative data into common groups/topics (themes) and reported with examples (quotes) from each them. Some of researchers have critically examined their own role, potential bias and influence during analysis and selection of data for presentation.

Through almost all qualitative studies appraised in this study the findings were derived from analysis of collected data, and there was adequate discussion of the findings, the findings were relevant to the study aims/objectives/questions, but these items had not been met in one article.

Because some limitation in a study process may affect the quality of the research and consequently the results of that, reports of limitations are necessary for any qualitative study. However, this issue was neglected in the most of the qualitative researches in Iran.

There were only few studies in the field of dentistry in the literature to compare their results to other studies.⁵ Because oral health has an important subjective aspect, therefore qualitative research adjacent to clinical surveys is recommended.

Conclusion

The qualitative methods are underutilized on dentistry topics in Iran and the most

frequency of qualitative methods were presented in nursing and health journals. The quality of more than half of qualitative research in dental, medical and health journals of Iran is good but less than half of them had not met some important items of Appendix H Methodology checklist for the qualitative study.

Conflict of Interests

Authors have no conflict of interest.

Acknowledgments

Authors wish to sincere thanks to dental school librarian for their help and cooperation.

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